DETROIT LAKES POLICE STATION

807 SUMMIT AVE, DETROIT LAKES, MN 56501

QA CONTRACT SET - FEBRUARY 19, 2020

PROJECT RENDERING

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PROJECT LOCATION

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BKV GROUP

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CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION
	02/19/2020	PLUMBING PLAN REVIEW

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	-
CHECKED BY	-
COMMISSION NUMBER	2106-02

SHEET TITLE

COVER SHEET

SHEET NUMBER

G100

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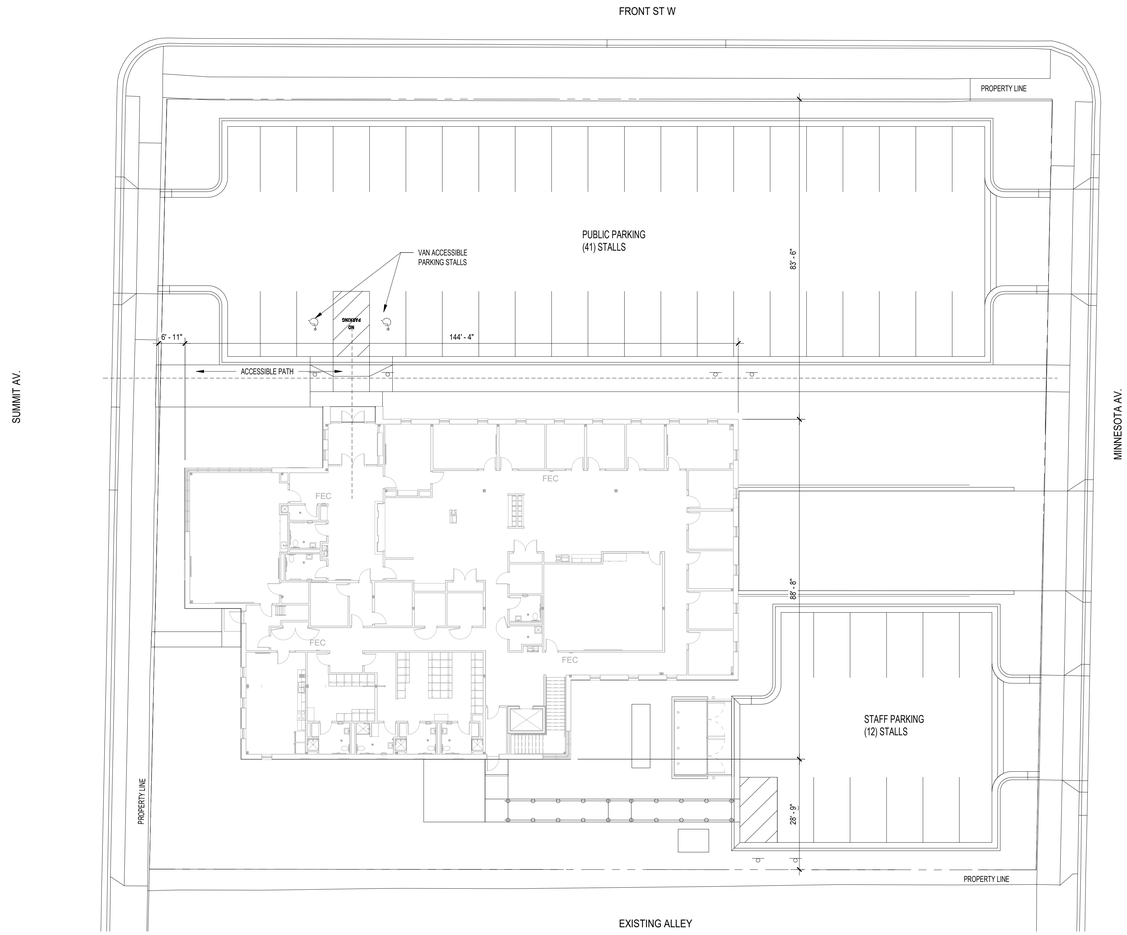

1 G120 CODE PLAN - SITE
1/16" = 1'-0"

CODE REVIEW SUMMARY:

Project Summary

This project consists of new construction of a Police Station with below grade parking.

GOVERNING CODES, LAWS & AGENCIES:

CODES AND REFERENCE MANUALS - 2015 MSBC

Codes

2015 Minnesota State Building Code (2012 IBC basis)

Contains MN Rules 1300, 1301, 1302, 1303, 1305, 1306, 1307, 1309, 1311, 1315, 1325, 1335, 1350, 1360, 1361 and 1370

1	**Occupancy Classification**	Primary Occupancy: B Primary Occupancy: S Accessory Occupancy: A-3	
2	**Type of Construction**	Type II-B Non-separated occupancies Fully Sprinklered meeting NFPA 13	
3	**Allowable Area**	Type II-B, B Occupancy Allowable Building Area per IBC 503, A_a = 23,000 sf per building story • Building complies with allowable area per building story, refer to code plans for gross areas per building story. • A-3 Occupancy at Community Room is less than 10% of floor area on level 1 and considered accessory area.	
4	**Allowable Height**	Type II-B, B-Occupancy A_h = 55' and 3 Building Stories • Actual = 20' and 2 Building Stories. • Building complies with allowable stories and height.	
5	**Fire Resistance of Building Elements**	Building Element	II-B (hours)
		Structural Frame	0
		Bearing wall – Exterior	0
		Bearing walls – Interior	0
		Nonbearing walls – Exterior	0 (X > 30)
		Nonbearing walls – Interior	0
		Floor Construction	0
		Roof Construction	0
		Firewall between buildings	NA
6	**Fire Resistance and Opening Protection at Exterior Walls**	Type II-B with greater than 30-foot yard at all sides. • There is no Fire Resistance and Opening Protection scheduled for this project.	
7	**Fire Barrier**	There are no Fire Barriers scheduled for this project.	
8	**Vertical Openings**	Shafts, Exit Enclosures	1-hour Fire Resistance
9	**Fire Partitions**	There are no Fire Partitions scheduled for this project.	
10	**Corridors**	Rating for B Occupancy = 0 HR* Rating for S Occupancy = 0 HR*	*Rating for B, S Occupancies = 0 HR when sprinklered.
11	**Fire & Draft Stops**	Building is Type II-B, Noncombustible - thus fire blocking and draft stops are not required.	
12	**Means of Egress**	Exit Element	Dimension
		Exit Door (Minimum)	36" (3'-0")
		Corridor (Minimum)	44" (3'-8") - maintain 22" beyond projection of in-swinging door
		Stairway (Minimum)	44" (3'-8")
		Stairway with for Accessible means of Egress (Minimum)	44" (3-8") – (Sprinklered building - IBC 1007.3 Exception 1) Minimum width of 48" is not required in sprinklered buildings.
		Guard Height (Minimum)	42" (3'-6")
		Egress Stair Height (Minimum)	80" (6'-8")
		Egress Ceiling Height (Minimum)	90" (7'-6")
		Dead End Corridor 1018.4, Exception #2	50' Max (B-Occupancy) 20' Max (A-Occupancy)
		Common Path Distance w/ Sprinkler	100' Maximum (B, S-Occupancy)
		Exit Access Travel Distance w/ Sprinkler	300' Max (B-Occupancy) 250' Max (S-Occupancy) 250' Max (A-Occupancy)
13	**Occupant Load**	See Code Plans for exit access travel and number of occupants.	
14	**Fire Extinguisher**	Provide Fire Extinguishers in compliance with IBC 906. Maximum Travel Distance to a Fire Extinguisher shall not exceed 75'.	
15	**Interior Finishes**	**For Occupancy Group B**	Rating
		Stairways, ramps, passageways	B
		Corridors, exit access stairways, exit access ramps	C
		Rooms, enclosed spaces	C
		For Occupancy Group A-3	
		Stairways, ramps, passageways	B
		Corridors, exit access stairways, exit access ramps	B
		Rooms, enclosed spaces	C
16	**Roof Access**	Access to roof top mechanical units per MSBC 1300.4500 and Mechanical Code.	
17	**Accessibility**	Common Areas	All public use and common use areas are required to be designed and constructed to comply with MNSC 1341.
		Parking	

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DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	-
CHECKED BY	-
COMMISSION NUMBER	2106-02

SHEET TITLE

CODE SUMMARY & CODE SITE PLAN

SHEET NUMBER

G120

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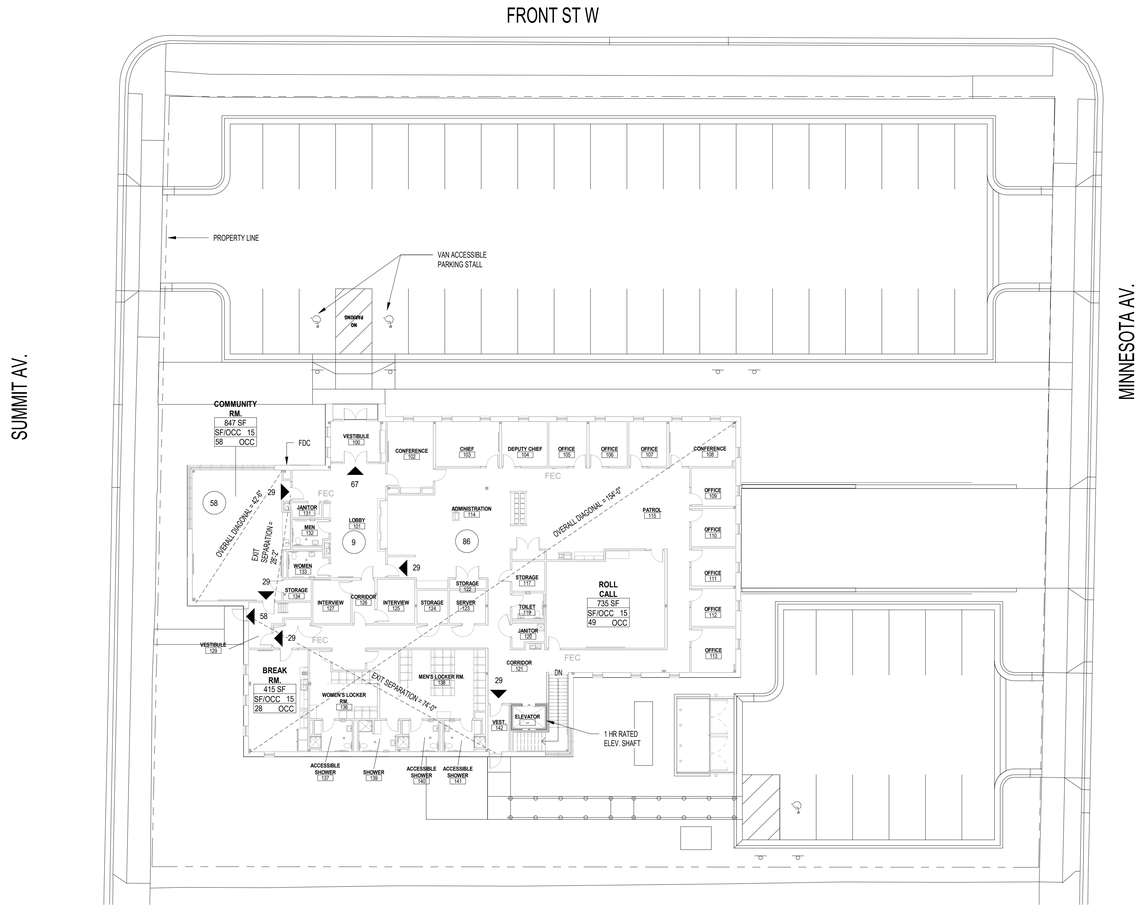
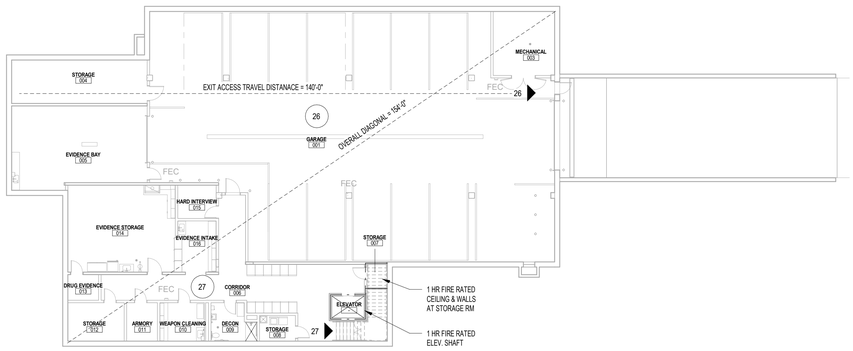


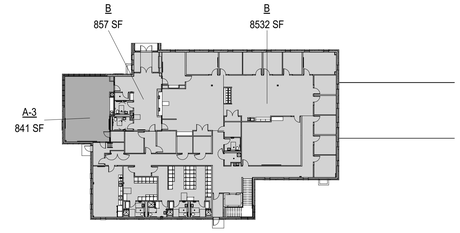
1 G122 CODE PLAN - LEVEL 1
1/16" = 1'-0"



2 G122 CODE PLAN - LOWER LEVEL
1/16" = 1'-0"

OCCUPANCY CLASSIFCATION

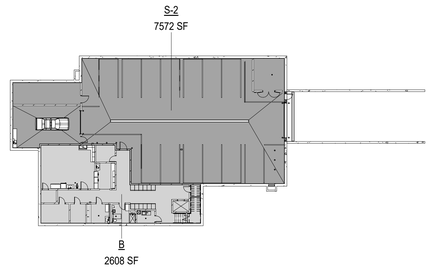
A-3
B



3 G122 OCC. PLAN - LEVEL 1
1/32" = 1'-0"

OCCUPANCY CLASSIFCATION

B
S-2



4 G122 OCC. PLAN - LOWER LEVEL
1/32" = 1'-0"

TRUE NORTH

CODE LEGEND

- 1 HR RATED FIRE BARRIER
- 2 HR RATED FIRE BARRIER
- PROPERTY LINE
- FE — FIRE EXTINGUISHER: SEE FLOOR PLANS FOR FIRE EXTINGUISHER TYPES AND LOCATIONS
- FEC — FIRE EXTINGUISHER AND CABINET: SEE FLOOR PLANS FOR FIRE EXTINGUISHER TYPES AND LOCATIONS
- SPC — CLASS-III FIRE STANDPIPE IN CABINET
- SP — CLASS-III FIRE STANDPIPE
- EXIT TRAVEL DISTANCE
- # — NUMBER OF OCCUPANTS EXITING

LIFE SAFETY AREA TAG:

Name — INDICATES ROOM NAME
150 SF — INDICATES ROOM SQUARE FOOTAGE
SF/OCC 20 — INDICATES ROOM SQUARE FOOTAGE PER OCCUPANT
20 OCC — INDICATES ROOM OCCUPANCY

LIFE SAFETY DOOR TAG:

32" REQUIRED
36" PROVIDED
INDICATES REQUIRED WIDTHE PER OCCUPANT
INDICATES PROVIDE WIDTH

CODE PLAN NOTES:

1. SEE SHEET G120 FOR CODE SUMMARY
2. EXIT ACCESS TRAVEL DISTANCE PER IBC 1016.1 IS 400 FEET AT S-2.
3. MAXIMUM TRAVEL DISTANCE TO FIRE EXTINGUISHER PER IFC 906.3 IS 75 FEET.

GSF AREA BY BUILDING BY LEVEL (Gross Building)

Level	Area
LOWER LEVEL	10864 SF
LEVEL 1	10858 SF
	21722 SF
TOTAL GSF	21722 SF

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DRAWN BY	MJH
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COMMISSION NUMBER	2106-02

SHEET TITLE

CODE PLANS

SHEET NUMBER

G122

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A

AC	AIR COMPRESSOR
A/C	AIR CONDITIONING
A/E	ARCHITECT / ENGINEER
AB	ANCHOR BOLT
ABV	ABOVE
ACC	ACCESS(IBLE)(ORIES)
ACOUS	ACOUSTIC(AL)
ACS	AUTOMATIC CONTROL SYSTEM
ACT	ACOUSTIC CEILING TILE (REFER TO MATERIAL ID)
AD	AREA DRAIN
ADD	ADDENDUM
ADDL	ADDITIONAL
ADDM	ADDENDUM
ADH	ADHESIVE
ADJ	ADJUSTABLE
ADJ	ADJACENT
AES	ARCHITECTURALLY EXPOSED FABRICATION STEEL
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
AFF	ABOVE FINISH FLOOR
AFMS	AIRFLOW MEASURING STATION
AGGR	AGGREGATE
AHU	AIR HANDLING UNIT
ALUM	ALUMINUM
ALT	ALTERNATE
AMP	AMPHERE
ANCH	ANCHOR(AGE)
ANOD	ANODIZED
AP	ACCESS PANEL (REFER TO MATERIAL ID)
APPROX	APPROXIMATE(LY)
ARCH	ARCHITECT(URAL)
AS	AIR SEPARATOR
ASI	ARCHITECT'S SUPPLEMENTAL INSTRUCTION
AUTO	AUTOMATIC (CONTROL SYSTEM)
AV	AUDIO VISUAL
AVG	AVERAGE
AWW	ARCHITECTURAL WOODWORK

B

B	BOILER
B/	BOTTOM (OF)
B/W	BETWEEN
BA	BATH
BB	BURNUSHED BLOCK (REFER TO MATERIAL ID)
BCS	BABY CHANGING STATION
BD	BOARD
BEL	BELOW
BFE	BOTTOM OF FOOTING ELEVATION
BFP	BACKFLOW VALVE
BG	BATHROOM GROUP
BHP	BREAK HORSEPOWER
BIT	BITUMINOUS
BKG	BACKING
BLDG	BUILDING
BLE	BRICK LEDGE ELEVATION
BLK	BLOCK
BLKG	BLOCKING
BLW	BELOW
BM	BEAM
BMS	BUILDING MANAGEMENT SYSTEM
BO	BOTTOM OF
BOF	BOTTOM OF FOOTING
BOS	BOTTOM OF STEEL
BOT	BOTTOM
BR	BEDROOM
BR	BACKER ROD
BRDG	BRIDGING
BRG	BEARING
BRKT	BRACKET
BSMT	BASEMENT
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
BTWN	BETWEEN
BULL	BULLETIN
BUR	BUILT UP ROOFING (REFER TO MATERIAL ID)
BV	BALL VALE
BW	BOTH WAYS
BWV	BACKWATER VALVE

C

C	AMERICAN STD CHANNEL (STRUC SHAPE)
C/C	CENTER TO CENTER
CAB	CABINET
CALC	CALCULAT(E)(ED)(ION)
CAT	CATEGORY
CCTV	CLOSED CIRCUIT TELEVISION
CD	CONDENSATE DRAIN
CEM	CEMENT
CEM PLAS	CEMENT PLASTER (REFER TO MATERIAL ID)
CEN	CENT(ER)(TRAL)
CF	CUBIC FEET
CFH	CUBIC FEET PER HOUR
CFLASH	COUNTER FLASHING
CFM	CUBIC FEET PER MINUTE
CFMF	COLD FORMED METAL FLASHING
CFRD	CONTROLLER FLOW ROOF DRAIN
CG	CORNER GUARD
CH	COAT HOOK
CHAM	CHAMFER
CI	CHILLER
CIP	CAST IN PLACE
CIR	CIRCLE
CIRC	CIRCULATING
CJ	CONTROL JOINT
CJP	COMPLETE JOINT PENETRATION
CKT	CIRCUIT
CKV	CHECK VALVE
CL	CENTER LINE
CLG	CEILING
CLOS	CLOSET
CLR	CLEAR(ANCE)
CMU	CONCRETE MASONRY UNIT (REFER TO MATERIAL ID)
CNR	CORNER
CNTR	COUNTER
CO	CLEAN OUT
COL	COLUMN
COMB	COMBINATION
COMP	COMPOSITE
COMPU	COMPUTER
CONC	CONCRETE
CONF	CONFERENCE
COND	CONDITION
CONDE	CONDENSATE
CONN	CONNECT(ED)(ION)
CONST	CONSTRUCTION
CONST JT	CONSTRUCTION JOINT
CONT	CONTINU(E)(OUS)(ATION)
CONTR	CONTRACT(OR)
COORD	COORDINATE
COP	COPING
CORR	CORRIDOR
CP	CONSTRUCTION PACKAGE
CPT	CARPET (REFER TO MATERIAL ID)
CPU	CENTRAL PROCESSING UNIT
CRS	COURSE(S)
CS	CLINICAL SINK
CSK	COUNTER(SINK)(SUNK)
CSWK	CASEWORK
CT	CERAMIC TILE (REFER TO MATERIAL ID)
CT	COOLING TOWER
CTR	CENTER
CTRL	CONTROL
CU	CUBIC
CU FT	CUBIC FEET
CU IN	CUBIC INCH(ES)
CU YD	CUBIC YARD
CUH	CABINET UNIT HEATER
CUST	CUSTOM
CW	COLD WATER
CYL	CYLINDER

D

D	DATA OUTLET
D	DEEP, DEPTH
dB	DECIBELS
D&E	DRILL AND EPOXY GROUT
DB	DRYBULB
DBA	DEFORMED BAR ANCHOR
DBE	DECK BEARING ELEVATION
DBL	DOUBLE
DDC	DIRECT DIGITAL CONTROL
DEG	DEGREE(S)
DEMO	DEMO(LISH)(LITION)(lition)
DEPT	DEPARTMENT
DET	DETAIL
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIAG	DIAGONAL
DIF	DIFFEREN(CE)(TIAL)
DIFF	DIFFUSER
DIM	DIMENSION
DISC	DISCONNECT
DIST	DISTRIBUT(E)(ION)
DIV	DIVI(DE)(DED)(DER)(SION)
DJ	DEFLECTION JOINT
DL	DEAD LOAD
DMPR	DAMPER
DN	DOWN
DO	DITTO
DOC	DOCUMENT(S)
DPS	DIFFERENTIAL PRESSURE SENSOR
DR	DOOR
DS	DOWNSPOUT
DWG(S)	DRAWING(S)
DWR	DRAWER
DWL	DOWEL(REBAR)

E

E	EAST, EASTING
EA	EACH
EAT	ENTERING AIR TEMPERATURE
EF	EACH FACE
EHD	ELECTRIC HAND DRYER
EIFS	EXTERIOR INSULTION FINISH SYSTEM (REFER TO MATERIAL ID)
EJ	EXPANSION JOINT (REFER TO MATERIAL ID)
EL	ELEVATION
ELEC	ELECTRIC(AL)
ELEV	ELEVATOR
EMBED	EMBEDMENT
EMER	EMERGENCY
EMS	EMERGENCY MANAGEMENT SYSTEM
ENCL	ENCLOS(E)(ED)(URE)
ENGR	ENGINEER(S)
ENTR	ENTRANCE
EQ	EQUAL
EQ SP	EQUALLY SPACED
EQUIP	EQUIPMENT
EST	ESTIMAT(E)(ED)
ES	EACH SIDE
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EW	EACH WAY (REBAR REINFORCING)
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EWT	ENTERING WATER TEMPERATURE
EX	EXAMPLE
EXA	EXHAUST AIR
EXC	EXCAVAT(E)(ED)(ION)
EXCL	EXCLUD(E)(ED)(ING)
EXCP	EXCEPT
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPAN(D)(SION)
EXP	EXPOSE(D)
EXP ANCH	EXPANSION ANCHOR
EXT	EXTERIOR
EXTRU	EXTRU(DED)(SION)

F

°F	FAHRENHEIT
F	FIRE PIPE
F/F	FACE TO FACE
FA	FIRE ALARM
FAB	FABRICAT(E)(ED)
FAS	FASTEN(ED)(ER)
FB	FACE BRICK (REFER TO MATEIAL ID)
FC(S)	FACE(S)
FCO	FLOOR CLEANOUT
FCU	FAN COIL UNIT
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FDN	FOUNDATION
FDPR	FIRE DAMPER
FDV	FIRE DEPARTMENT VALVE
FDS	FLOOR DIVIDER STRIP (SEE ALSO TS MATERIAL ID)
FE	FIRE EXTINGUISHER (REFER TO MATERIAL ID)
FEC	FIRE EXTINGUISHER CABINET (REFER TO MATERIAL ID)
FF	FINISH FLOOR
FFE	FINISH FLOOR ELEVATION
FGL	FIBERGLASS
FHC	FIRE HOSE CABINET
FIN	FINISH(ED)
FIX	FIXTURE
FLASH	FLASHING
FLEX	FLEXIBLE
FLG	FLANGE
FLUOR	FLOURESCENT
FLR	FLOOR(ING)
FLS	FLAMMABLE LIQUID SEPARATOR
FLTL	FIXED LINTEL
FO	FACE OF
FOG	FACE OF GYP BD
FOIC	FURNISHED BY OWNER, INSTALLED BY CONTRACTOR
FOIO	FURNISHED BY OWNER, INSTALLED BY OWNER
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FOSH	FACE OF SHEATHING
FOW	FACE OF WALL
FP	FIREPROOF(ING)
FPM	FEET PER MINUTE
FPR	FIRE PROTECTION
FPTH	FIRE PUMP TEST HEADER
FR	FRAME
FRMG	FRAMING
FRT	FIRE RETARDANT TREATED WOOD
FS	FAR SIDE
FS	FOOTING STEP
FS	FULL SIZE
FSP	FIRE STANDPIPE
FT (')	FOOT, FEET
FT²	SQUARE FEET
FTG	FOOTING
FTHD	FEET OF HEAD
FTR	FINNED TUBE RADIATION
FUR	FURRING
FUT	FUTURE
FV	FIELD VERIFY
F&T	FLOAT AND THERMISTATIC TRAP

G

GA	GAUGE
GA	GYPSUM ASSOCIATION
GAL	GALLON(S)
GALV	GALVANIZED
GB	GRAB BAR (REFER TO MATERIAL ID)
GC	GENERAL CONTRACTOR
GENL	GENERAL
GFI	GROUND FAULT CIRCUIT INTERRUPTER
GL	GLASS (REFER TO MATERIAL ID)
GLB	GLUE LAMINATED BEAM
GLZ CMU	GLAZED CMU (REFER TO CMU MATERIAL ID)
GND	GROUND FAULT CIRCUIT
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	GRADE
GRL	GRILLE (REFER TO MATERIAL ID)
GROM	GROMET (REFER TO MATERIAL ID)
GRT	GRAT(E)(ING) (REFER TO MATERIAL ID)
GRV	GRAVITY ROOF VENTILATOR
GSKT	GASKET
GWH	GAS WATER HEATER
GV	GATE VALVE
GYP	GYPSUM
GYP BD	GYPSUM BOARD (REFER TO MATERIAL ID)

H

H	HIGH, HEIGHT, HUMIDIFIER
HB	HOSE BIB
HCP	HANDICAP
HD	HEAD
HD	HEAVY DUTY
HDR	HEADER
HDW	HARDWARE
HDWD	HARDWOOD
HK	HOOK
HM	HOLLOW METAL
HO	HOLD OPEN
HORIZ	HORIZONTAL
HORZ	HORIZONTAL
HP	HORSEPOWER
HP	HEAT PUMP
HPC	HIGH PERFORMANCE COATINGS
HPT	HIGH POINT
HR	HANDRAIL(S)
HR	HOUR
HSS	HOLLOW STRUCTURAL SECTION (STRUC SHAPE)
HT	HEIGHT
HTG	HEATING
HTR	HEATER
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING
HX	HEAT EXCHANGER
HY	YARD HYDRANT
HZ	HERTZ

I

ID	INSIDE DIAMETER / DIMENION
IF	INSIDE FACE
IN (")	INCH(ES)
INCL	INCLU(DE)(DED)(DING)(SIVE)
INFO	INFORMATION
INSUL	INSULALAT(E)(ED) (REFER TO MATERIAL ID)
INT	INTERIOR
INV	INVERT ELEVATION

J

JAN	JANITOR
JBE	JOIST BEARING ELEVATION
JC	JANITOR CLOSET
JS	JANITOR'S SINK
JST	JOIST
JT	JOINT

K

K	KIP (1000 POUNDS)
K	KITCHEN SINK
KIT	KITCHEN
KLF	KIPS PER LINEAR FOOR
KO	KNOCK OUT
KS	KNEE SPACE
KYBD	KEYBOARD
KW	KILOWATT
KWH	KILOWATT HOUR

L

L	ANGLE (STRUCT SHAPE)
L	LONG, LENGTH
LAB	LABORATORY
LAM	LAMINAT(E)(ED)(ION)
LAT	LEAVING AIR TEMPERATURE
LAV	LAVATORY
LB(S)	POUND(S)
LF	LINEAR FOOT, FEET
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLTL	LOOSE LINTEL
LLV	LONG LEG VERTICAL
LOC	LOCAT(E)(ION)
LONG	LONGITUDINAL(LY)
LPT	LOW POINT
LT	LIGHT
LTG	LIGHTING
LTL	LINTEL
LTWT	LIGHTWEIGHT
LVL	LEVEL
LVR	LOUVER (REFER TO MATERIAL ID)
LWR	LEAVING WATER TEMPERATURE

M

MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MBR	MEMBER
MDF	MEDIUM DENSITY FIBERBOARD
MDO	MEDIUM DENSITY OVERLAY
MECH	MECHANICAL(LY)
MED	MEDIUM
MEMB	MEMBRANE
MEZZ	MEZZANINE
MFD	MANUFACTURED
MFR(G)	MANUFACTUR(ER)(ING)
MGR	MANAGER
MIN	MINIMUM
MIN	MINUTE
MIR	MIRROR (REFER TO MATERIAL ID)
MIRR	MIRROR (OPPOSITE SIDE)
MISC	MISCELLANEOUS
MISC	MISCELLANEOUS CHANNEL (STRUCT SHAPE)
MKR	MARKER
MKBD	MARKER BOARD (REFER TO MATERIAL ID)
MO	MASONRY OPENING
MOD	MODULAR
MON	MONITOR
MOR	MORTAR
MT(D)	MOUNT(ED)
MTG	MOUNTING
MTL	METAL
MUL	MULLION
MWO	MICROWAVE OVEN

N

N	NITROGEN
N	NORTH, NORTHING
NA	NOT APPLICABLE
NEC	NECESSARY
NIC	NOT IN CONTRACT
NO	NUMBER
NO2	NITROUS OXIDE
NOM	NOMINAL
NR	NON RATED
NRC	NOISE REDUCTION COEFFICIENT
NS	NEAR SIDE
NSG	NON-SHRINK GROUT
NTS	NOT TO SCALE
NW	NORMAL WEIGHT

O

O	OXYGEN
OA	OVERALL
OC	ON CENTER
OCH	ON CENTER HORIZONTAL
OCV	ON CENTER VERTICAL
OD	OUTSIDE DIAMETER / DIMENSION
OF	OUTSIDE FACE
OFC	OFFICE
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OPOI	OWNER PROVIDED, OWNER INSTALLED
OFS	OVERFLOW SCUPPER
OH	OVERHANG
OH	OVERHEAD
OHD	OVERHEAD DOOR (REFER TO MATERIAL ID)
OPNG	OPENING
OPP	OPPOSITE
OPT	OPTION(AL)
ORD	OVERFLOW ROOF DRAIN
OZ	OUNCE

P

PA	PUBLIC ADDRESS
PAR	PARALLEL
PB	PUSH BUTTON
PBD	PARTICLE BOARD
PC(S)	PIECE(S)
PCC	PRECAST CONCRETE
PCF	POUNDS PER CUBIC FOOT
PED	PEDESTAL
PERF	PERFORATE(D)
PERIM	PERIMETER
PERM	PERMANENT(LY)
PREFIN	PREFINISH(ED)
PIL	PILASTER
PL	PLATE
PL	PROPERTY LINE
PLAS	PLASTER (REFER TO MATERIAL ID)
PLAM	PLASTIC LAMINATE (REFER TO MATERIAL ID)
PLF	POUNDS PER LINEAL FOOT
PLYWD	PLYWOOD
PNL	PANEL (REFER TO MATERIAL ID)
POL	POLISH(ED)
PR	PAIR
PR	PROPOSAL REQUEST
PREF	PREFERR(ANCE)(ED)
PREFAB	PREFABRICATE(D)
PROJ	PROJECT(ION)(OR)
PROP	PROPERTY
PRV	POWER ROOF VENTILATOR
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PAINT(ED) (REFER TO MATERIAL ID)
PT	POINT
PT	POST TENSION(ED)(ING)
PTD	PAINT(ED) (REFER TO MATERIAL ID)
PTD	PAPER TOWEL DISPENSER
PTN	PARTITION
PTS	PNEUMATIC TUBE STATION

Q

QT	QUARRY TILE (REFER TO MATERIAL ID)
QTY	QUANTITY

R

R	RADIUS, RADII
R	RISER
R AND R	REMOVE(D) AND REPLACE(D)
R & S	ROD AND SHELF
RA	RETURN AIR
RAD	RADIAT(OR)(ION)
RB	RESILIENT BASE (REFER TO MATERIAL ID)
RC	REINFORCED CONCRETE
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REC	RECESSED
RECEP	RECEPTACLE
REF	REFER(ENCE)
REFR	REFRIGERAT(OR)(ED)
REG	REGISTER
REINF	REINFORC(E)(ED)(ING)(EMENT)XP(D)
REM	REMOV(E)(ED)(ABLE)
REQ(D)	REQUIRE(D)
REQT	REQUIREMENTS(S)
RET	RETURN(ED)
REV	REVIS(E)(ED)(ION)
REV	REVERSE(D)
RM	ROOM
RNG	RANGE

R

RO	ROUGH OPENING
RQMT(S)	REQUIREMENT(S)
RUB	RUBBER
RVL	REVEAL
RWL	RAIN WATER LEADER

S

S	S SHAPE (STRUCT SHAPE)
S	SOUTH, SOUTHING
S/R	SHELF AND ROD
SA	SUPPLY AIR
SBLK	SPLASH BLOCK
SC	SEALED CONCRETE
SCHED	SCHEDULE
SD	SOAP DISPENSER (REFER TO MATERIAL ID)
SDH	SIDELIGHT HEIGHT
SDW	SIDELIGHT WIDTH
SECT	SECTION
SF	SQUARE FOOT/FEET
SHT	SHEET
SHTG	SHEATHING
SHWR	SHOWER
SIM	SIMILAR
SKLT	SKYLIGHT(S)
SL(R)	SEAL(ER)
SLH	SHORT LEG HORIZONTAL
SLNT	SEALANT (REFER TO MATERIAL ID / SPECIFICATIONS)
SLV	SHORT LEG VERTICAL
SLV	SLEEVE
SND	SANITARY NAPKIN DISPENSER (REFER TO MATERIAL ID)
SNR	SANITARY NAPKIN RECEPTACLE (REFER TO MATERIAL ID)
SOG	SLAB ON GRADE
SPC	SPACE(S)
SPEC(S)	SPECIFICATION(S)
SPKR	SPEAKER
SQ	SQUARE
SQ(FT)	SQUARE FOOT/FEET
SRCJ	SPECIALLY ROUGHENED CONSTR JT
SS	SOLID SURFACE (REFER TO MATERIAL ID)
SST	STAINLESS STEEL
STC	SOUND TRANSMISSION CLASS
STD	STANDARD
STIF	STIFFENER
STL	STEEL
STN	STONE
STNB	STONE BASE TILE (REFER TO MATERIAL ID)
STOR	STORAGE
STR	STAIR
STRUCT	STRUCTUR(E)(AL)
SUSP	SUSEN(D)(DED)(SION)
SW	SWITCH
SYM	SYMMETR(Y)(ICAL)
SYS	SYSTEM(S)

T

T	THERMOSTAT
T	TOILET
T	TREAD
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
T/	TOP (OF)
T/D	TELEPHONE DATA OUTLET
TBE	TOP OF BEAM ELEVATION
TCE	TOP OF PILE CAP (CASSION) ELEVATION
TD	TRENCH DRAIN
TDE	TOP OF DECK ELEVATION
TEL	TELEPHONE
TEMP	TEMPORARY
TERM	TERMINA(L)(TE)(ION)
TERR	TERRAZZO (REFER TO MATERIAL ID)
TFE	TOP OF FOOTING ELEVATION
TH	TRANSOME HEIGHT
THK	THICK(NESS)
THRES	THRESHOLD
TJE	TOP OF JOIST ELEVATION
TKBD	TACKBOARD (REFER TO MATERIAL ID)
TLE	TOP OF LEDGE ELEVATION
TME	TOP OF MASONRY ELEVATION
TMPD	TEMPERED
T.O.	TOP OF
TOW	TOP OF WALL
TPE	TOP OF PIER ELEVATION
TPE	TOP OF PLANK ELEVATION
TPG	TOPPING
TPH	TOILET PAPER HOLDER (REFER TO MATERIAL ID)
TR	TRANSOM
TRANS	TRANSITION
TRANSL	TRANSLUCENT
TRANSP	TRANSPARENT
TRANSV	TRANSVERSE
TS	TUBE STEEL
TSE	TOP OF SLAB ELEVATION
TV	TELEVISION
TYP	TYPICAL

U

UC	UNDER CABINET
UG	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORY
UNFIN	UNFINISH(ED)
UNO	UNLESS NOTED OTHERWISE
UR	URINAL
UTIL	UTILITY
UV	ULTRAVIOLET

V

V	VALVE
V	VENT
VAC	VACUUM
VAR	VAR(Y)(IES)(IATION)
VB	VAPOR BARRIER (REFER TO MATERIAL ID)
VB	VINYL BASE (REFER TO MATERIAL ID)
VBRI	VIEW BOX ROUGH IN
VCT	VINYL COMPOSITE TILE (REFER TO MATERIAL ID)
VEN	VENEER
VENT	VENTILAT(ION)(OR)
VERT	VERTICAL
VEST	VESTIBULE
VIF	VERIFY IN FIELD
VOL	VOLUME
VP	VENEER PLASTER
VR	VAPOR RETARDER (REFER TO MATERIAL ID)
VSL	VACUUM BOTTLE SLIDE
VWC	VINYL WALL COVERING

W

W	W SHAPE (STRUCT SHAPE)
W	WEST, WESTING
W	WIDE, WIDTH
W/	WITH
W/O	WITHOUT
WCAB	WALL CABINET
WC	WALL COVERING (REFER TO MATERIAL ID)
WC	WATER CLOSET
WD	WOOD
WDW	WINDOW
WF	WIDE FLANGE
WH	WALL HYDRANT
WH	WATER HEATER
WL	WIND LOAD
WP	WATERPROOF(ING) (REFER TO MATERIAL ID)
WPT	WORK(ING) POINT
WR	WATER RESISTENT
WSCT	WAINSCOT
WSG	WEATHERSTRIPPING
WT	STRUCTURAL TEE (STRUCT SHAPE)
WT	WEIGHT
WWF	WELDED WIRE FABRIC

Y

YD	YARD

SYMBOLS

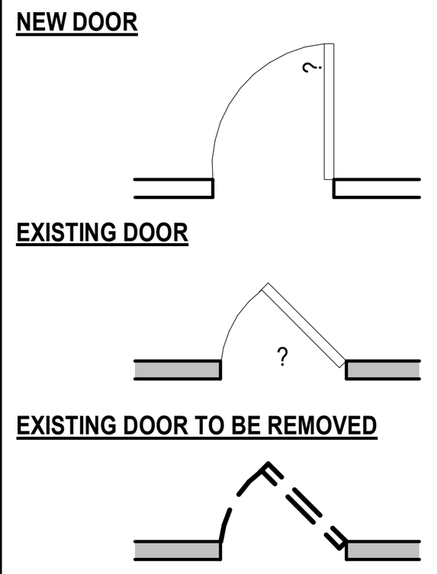
~	APPROXIMATE(LY)
@	AT
&	AND
∟	ANGLE
℄	CENTERLINE
Φ Ø	DIAMETER
#	NUMBER
/	PER
⊥	PERPENDICULAR
±	PLUS OR MINUS

DOOR OPENING SYMBOLS

NEW DOOR

EXISTING DOOR

EXISTING DOOR TO BE REMOVED



WINDOW & OTHER OPENING SYMBOLS

EXTERIOR WINDOW AND LOUVER IDENTIFICATION TAGS ARE INDICATED ON THE EXTERIOR ELEVATIONS.

REFERENCE SYMBOLS

REFERENCE SYMBOLS INDICATE THAT ADDITIONAL INFORMATION CONCERNING THE PART OF THE WORK REFERENCED MAY BE FOUND AT THE LOCATION INDICATED BY THE SYMBOL AND AS DESCRIBED BELOW.

DETAIL CALLOUT:
INDICATES DETAIL CALLOUT NUMBER
INDICATES SHEET WHERE DETAIL CALLOUT IS DRAWN

DETAIL:
INDICATES AREA OF DETAIL CUT PARALLEL TO VIEW

DETAIL PLAN OR ELEVATION:
INDICATES AREA OF ENLARGED PLAN OR ENLARGED ELEVATION

DETAIL CALLOUT:
INDICATES DETAIL NUMBER
INDICATES SHEET WHERE DETAIL IS DRAWN
INDICATES AREA OF DETAIL CUT PERPENDICULAR TO VIEW

BUILDING SECTION:
INDICATES BUILDING SECTION NUMBER
INDICATES SHEET WHERE BUILDING SECTION IS DRAWN

WALL SECTION:
INDICATES WALL SECTION NUMBER
INDICATES SHEET WHERE WALL SECTION IS DRAWN

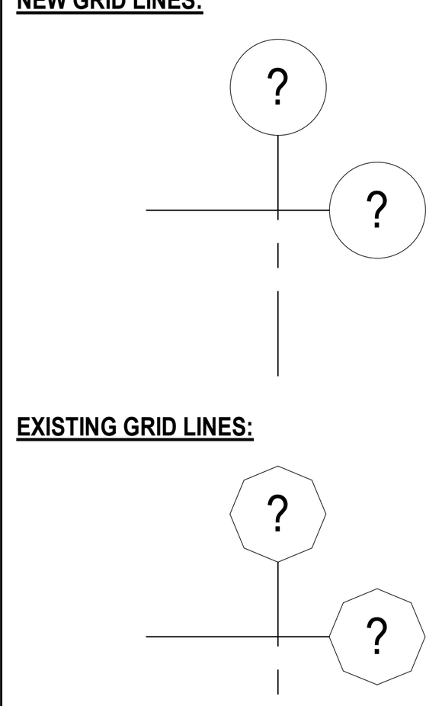
EXTERIOR ELEVATION:
INDICATES EXTERIOR ELEVATION NUMBER
INDICATES SHEET WHERE EXTERIOR ELEVATION IS DRAWN

INTERIOR ELEVATION (SINGLE):
INDICATES INTERIOR ELEVATION NUMBER
INDICATES SHEET WHERE INTERIOR ELEVATION IS DRAWN

INTERIOR ELEVATION (MULTIPLE):
INDICATES INTERIOR ELEVATION NUMBER
INDICATES SHEET WHERE INTERIOR ELEVATION IS DRAWN

NEW GRID LINES:

EXISTING GRID LINES:



REVISION:
REVISION NUMBER - SEE REVISION HISTORY ON TITLE BLOCK OF EACH SHEET

REVISION CLOUD:
REVISION NUMBER - SEE REVISION HISTORY ON TITLE BLOCK OF EACH SHEET

KEYNOTE:
SEE CORRESPONDING NUMBERED KEY NOTE ON SHEET WHERE REFERENCE OCCURS

WINDOW TAG:
SEE CORRESPONDING NUMBERED KEY NOTE ON SHEET WHERE REFERENCE OCCURS

ELEVATION LEVEL:
INDICATES FLOOR LEVEL
INDICATES FLOOR LEVEL ELEVATION

PARTITION TAG:
FIRST TWO DIGITS INDICATE BASIC PARTITION TYPE AS DEFINED ON SHEET A602
FINAL DIGIT INDICATES ADDITIONAL COMPONENTS GROUP IF REQUIRED. IF REQUIRED THEN REFER TO ADDITIONAL COMPONENTS MATRIX ON SHEET A602
FRAMING UNIT SIZE CATEGORY
1 = 1 5/8" STUDS
2 = 2 1/2" STUDS
3 = 3 5/8" STUDS
4 = 4" STUDS / 4" (NOM) CMU
6 = 6" STUDS / 6" (NOM) CMU
8 = 8" STUDS / 8" (NOM) CMU
12 = 12" (NOM) CMU
H = HAT CHANNELS
BASIC PARTITION ASSEMBLY CATEGORY
FIRE RATING OF PARTITION IN HOURS. RATING MAY EXCEED RATING REQUIRED BY CODE

FLOOR TAG:
INDICATE BASIC FLOOR TYPE AS DEFINED ON SHEET A603

ROOF TAG:
INDICATE BASIC ROOF TYPE AS DEFINED ON ROOF PLAN SHEETS

EXISTING WALL TO REMAIN

EXISTING WALL TO BE REMOVED

ROOM NAME & NUMBER

ROOM NAMES AND ROOM NUMBERS ARE SHOWN ON 1/8" SCALE FLOOR PLANS. WHERE 1/8" SCALE ENLARGED FLOOR PLANS ARE NOT PROVIDED FOR AN AREA, SEE 1/4" SCALE FLOOR PLANS FOR ROOM NAMES AND NUMBERS. WHERE SUCH DESIGNATIONS ARE DUPLICATED ON OTHER PLANS OF DIFFERENT SCALES, SUCH DESIGNATIONS ARE PROVIDED FOR REFERENCE ONLY.

ROOM NAME
ROOM NUMBER
ROOM SQUARE FOOTAGE

DOOR NUMBERING SYSTEM

DOOR NUMBERS ARE TYPICALLY SHOWN ON 1/8" SCALE ENLARGED FLOOR PLANS. WHERE 1/8" SCALE ENLARGED FLOOR PLANS ARE NOT PROVIDED FOR AN AREA, SEE 1/4" SCALE FLOOR PLANS FOR DOOR NUMBERS. WHERE DOOR OPENING DESIGNATIONS ARE DUPLICATED ON OTHER PLANS OF DIFFERENT SCALES, SUCH DESIGNATIONS ARE PROVIDED FOR REFERENCE ONLY.

THE DOOR OPENING DESIGNATION IS THE ROOM NUMBER TOWARD WHICH THE DOOR SWINGS FOLLOWED BY THE DOOR OPENING SUFFIX AS INDICATED ON THE PLANS. SEE SHEET A?.?? FOR DOOR SCHEDULE AND INFORMATION

DOOR OPENING SUFFIX

ROOM NAME & NUMBER

DOOR NUMBER = 101

INTERIOR ROOM FINISH & FLOOR TRANSITION TAGS

INTERIOR ROOM FINISH TAGS AND FLOOR (DOOR) TRANSITION TAGS ARE SHOWN ON 1/8" SCALE FLOOR PLANS. WHERE 1/8" SCALE ENLARGED FLOOR PLANS ARE NOT PROVIDED FOR AN AREA, SEE 1/4" SCALE FLOOR PLANS FOR ROOM NAMES AND NUMBERS. WHERE SUCH DESIGNATIONS ARE DUPLICATED ON OTHER PLANS OF DIFFERENT SCALES, SUCH DESIGNATIONS ARE PROVIDED FOR REFERENCE ONLY.

INTERIOR ROOM FINISH TAG:
INDICATES CEILING FINISH; IF AN ASTERISK IS PRESENT, REFER TO RCP
INDICATES WALL FINISH; IF AN ASTERISK IS PRESENT, REFER TO INTERIOR ELEVATIONS
INDICATES BASE FINISH; IF AN ASTERISK IS PRESENT, REFER TO INTERIOR ELEVATIONS
INDICATES FLOOR FINISH; IF AN ASTERISK IS PRESENT, REFER TO ENLARGED PLANS

INTERIOR ROOM FINISH TAG:
WALL — INDICATES WALL FINISH

FINISH PATTERN OR GRAIN TAG:
INDICATES FINISH DIRECTION

FLOOR (DOOR) TRANSITION TAG:
INDICATES FLOOR FINISH

SHEET NOTES

A. THE PURPOSE OF THIS SHEET IS TO ILLUSTRATE AND DEFINE TYPICAL GRAPHICS SYMBOLS AND SYSTEMS OF GRAPHIC SYMBOLS WHICH MAY OCCUR ON THE ARCHITECTURAL DRAWINGS.
B. THE ILLUSTRATION OF A SYMBOL OR SYSTEM OF SYMBOLS ON THIS SHEET DOES NOT NECESSARILY INDICATE THAT THE BUILDING ITEM OR SYSTEM DESCRIBED BY THE SYMBOL IS USED AS PART OF THE WORK OF THIS PROJECT. REFER TO THE PLANS, ELEVATIONS, SECTIONS, SCHEDULES, DETAILS, AND SPECIFICATIONS TO DETERMINE THE SCOPE OF THE WORK.
C. SYMBOLS ARE NOT DRAWN TO SCALE. TO DETERMINE ACTUAL SIZES OF ELEMENTS REPRESENTED BY SYMBOLS, REFER TO THE SPECIFICATIONS AND OTHER DRAWINGS AS MAY APPLY.
D. FOR INFORMATION REGARDING SYMBOLS WHICH ARE USED AS ABBREVIATIONS, REFER TO THE ARCHITECTURAL ABBREVIATIONS SHOWN ON SHEET A?.?.
E. CERTAIN SYMBOLS MAY INCORPORATE SPECIAL ABBREVIATIONS AS PART OF THE SYMBOL. SUCH ABBREVIATIONS ARE AS DEFINED ON THIS SHEET.
F. HATCHED AREAS ARE SHOWN FOR REFERENCE ONLY AND ARE GENERALLY OUTSIDE OF PROJECT SCOPE

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CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION
	12/16/2019	DESIGN DEVELOPMENT

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	-
CHECKED BY	-
COMMISSION NUMBER	2106-02

SHEET TITLE

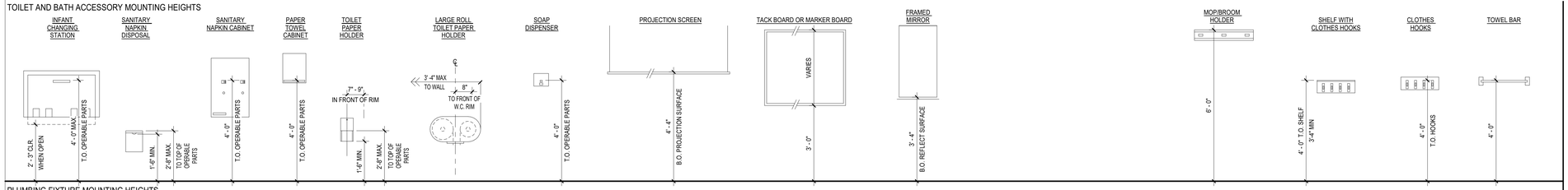
SYMBOLS & ABBREVIATIONS

SHEET NUMBER

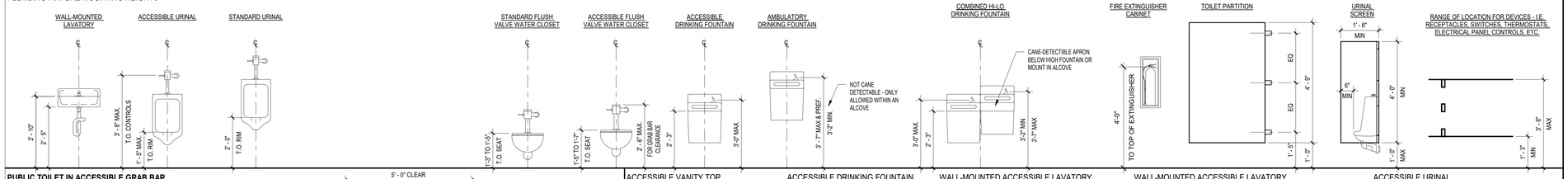
G130

BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_AI_R19.rvt
2/20/2020 9:47:48 AM

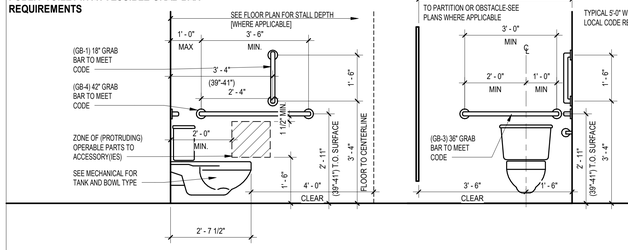
TOILET AND BATH ACCESSORY MOUNTING HEIGHTS



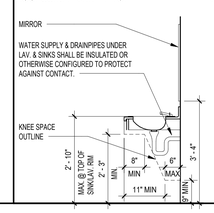
PLUMBING FIXTURE MOUNTING HEIGHTS



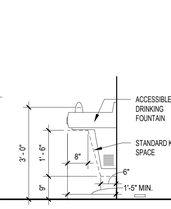
PUBLIC TOILET IN ACCESSIBLE GRAB BAR REQUIREMENTS



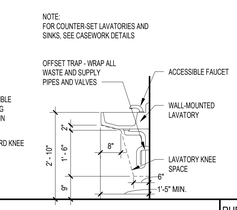
ACCESSIBLE VANITY TOP



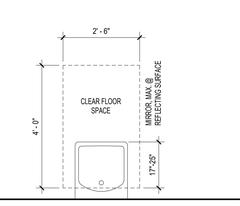
ACCESSIBLE DRINKING FOUNTAIN



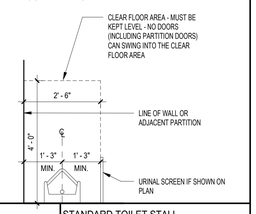
WALL-MOUNTED ACCESSIBLE LAVATORY



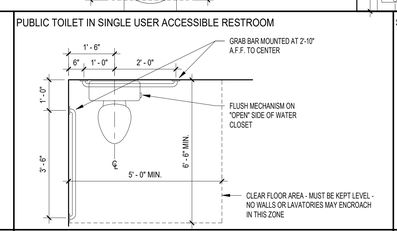
WALL-MOUNTED ACCESSIBLE LAVATORY



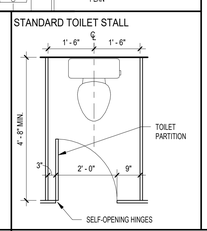
ACCESSIBLE URINAL



PUBLIC TOILET IN SINGLE USER ACCESSIBLE RESTROOM



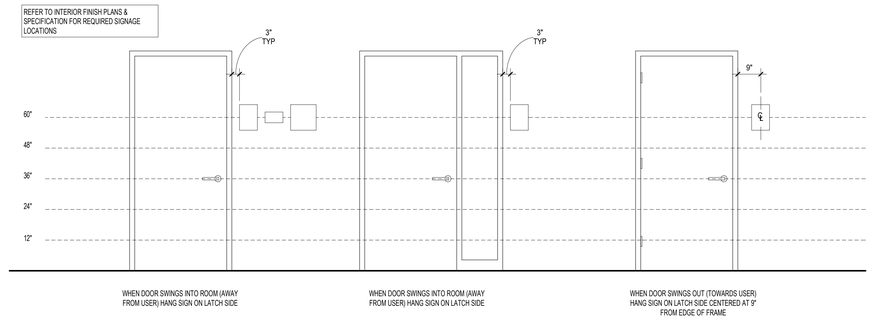
STANDARD TOILET STALL



NOTES:
1. IF ANY ACCESSORIES ARE MOUNTED ABOVE A COUNTER, THE TOP OF OPERABLE PARTS CAN BE NO HIGHER THAN 3'-8" A.F.F.
2. SURFACE MOUNTED ACCESSORIES THAT PROJECT MORE THAN 4" FROM THE FACE OF THE WALL MUST BE MOUNTED IN AN ALCOVE, OVER A COUNTER, OR WITH THE BOTTOM EDGE NO MORE THAN 2'-3" A.F.F.
3. WHEN MOUNTED NEAR A GRAB BAR, PROVIDE AT LEAST 2" CLEARANCE BETWEEN THE TOP OF AN ACCESSORY AND THE BOTTOM OF THE GRAB BAR OR 1'-0" CLEARANCE BETWEEN THE BOTTOM OF AN ACCESSORY AND THE TOP OF A GRAB BAR. DOES NOT APPLY TO FULLY RECESSED ACCESSORIES.
4. FOR ACCESSORIES NOT INDICATED OR DIFFERING SUBSTANTIALLY FROM THE DIAGRAMS, CONSULT THE ARCHITECT PRIOR TO INSTALLATION OF BLOCKING/ BACKING.
5. PLUMBING FIXTURES SHOWN ARE DIAGRAMMATIC. SEE PLUMBING DRAWINGS FOR SPECIFICATIONS OF FIXTURE TO BE INSTALLED.
6. ALL DIMENSIONS FOR ACCESSIBILITY REQUIREMENTS ARE TAKEN TO FINISHED SURFACE.
7. DRAWINGS @ 1/2" = 1'-0" SCALE.

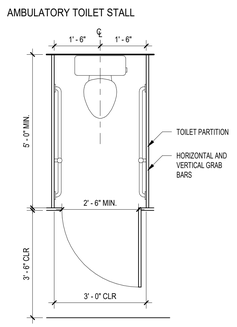
MISC. FIXTURE/ACCESSORY MOUNTING HEIGHTS:

SHOWER HEAD	7'-0" TO BOTTOM OF SHOWER HEAD
COAT ROD & SHELF	5'-6" TO TOP OF SHELF 3'-4" AND 6'-8" AT DOUBLE (ADAPTABLE AND HANDICAP) 4'-0" TO TOP OF SHELF AT SINGLE (HCP)
ADA SIGNAGE	60" AFF TO CENTER OF SIGN 40" TO LESS THAN OR EQUAL TO 70" ABOVE FLOOR TO BASELINE OF CHARACTERS. TACTILE CHARACTERS SHALL BE 48" MIN. ABOVE THE FLOOR, MEASURED TO THE BASELINE OF THE LOWEST TACTILE CHARACTER, AND 60" MAX ABOVE THE FLOOR, MEASURED TO THE BASELINE OF THE HIGHEST TACTILE CHARACTER.

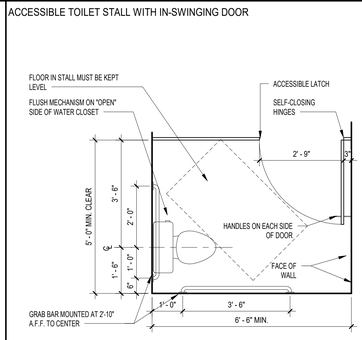


2 / G140 INTERIOR SIGNAGE TYPICAL MOUNTING HEIGHT
1/2" = 1'-0"

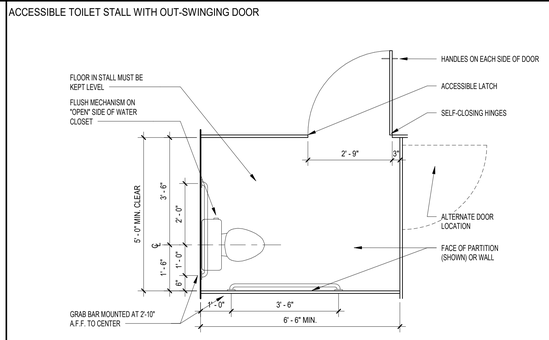
AMBULATORY TOILET STALL



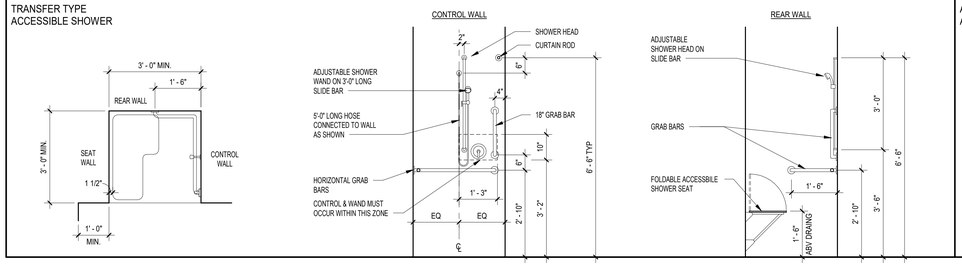
ACCESSIBLE TOILET STALL WITH IN-SWINGING DOOR



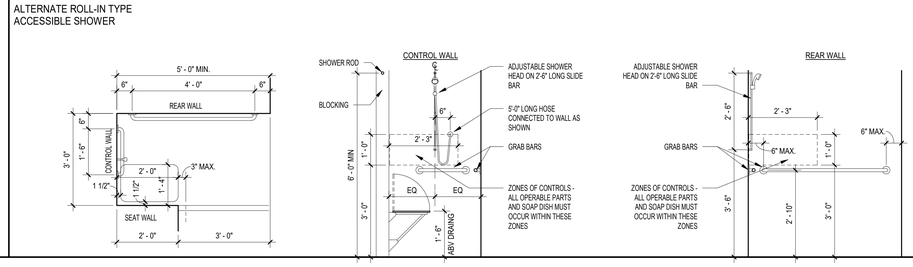
ACCESSIBLE TOILET STALL WITH OUT-SWINGING DOOR



TRANSFER TYPE ACCESSIBLE SHOWER



ALTERNATE ROLL-IN TYPE ACCESSIBLE SHOWER



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Landscape Architecture
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CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION
	12/16/2019	DESIGN DEVELOPMENT

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	Author
CHECKED BY	Checker
COMMISSION NUMBER	2106-02

SHEET TITLE

ACCESSIBILITY & MOUNTING HEIGHTS

SHEET NUMBER

G140

BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_AI_R19.rvt
2/20/2020 9:47:49 AM

GENERAL

1. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY LEVEL D. THIS QUALITY WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE DATA."
2. THE CONTRACTOR SHALL NOTIFY UTILITY COMPANIES FOR UNDERGROUND LOCATIONS 48 HOURS PRIOR TO BEGINNING CONSTRUCTION AND/OR AS NECESSARY THROUGHOUT CONSTRUCTION. MINNESOTA - GOPHER STATE ONE CALL PHONE NUMBER: 1-800-252-1166 or 811.
3. ALL SITE WORK AND MATERIAL SHALL CONFORM TO THE MOST CURRENT EDITIONS OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION (MNDOT) "STANDARD SPECIFICATIONS FOR CONSTRUCTION", THE MOST CURRENT VERSIONS OF THE MINNESOTA PLUMBING AND ACCESSIBILITY CODE, AND THESE DRAWINGS.
4. ALL PEDESTRIAN ACCESS ROUTES, PARKING AREAS, AND/OR OTHER ACCESSIBLE AREAS SHALL BE IN ACCORDANCE WITH THE MOST CURRENT VERSION OF THE MINNESOTA ACCESSIBILITY CODE.
5. THE CONTRACTOR SHALL TAKE MEASURES TO PROTECT ALL EXISTING UTILITIES AND STRUCTURES, INCLUDING ANY BRACING, SHEETING, AND/OR OTHER METHODS OF PROTECTION NECESSARY. ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
6. THE PROJECT AREA INCLUDES MULTIPLE AERIAL UTILITIES. OVERHEAD UTILITIES HAVE BEEN SIMPLIFIED ON THE PLAN SHEETS AND ARE SHOWN BY ONE OVERHEAD POWER LINE. THIS ONE LINE MAY REPRESENT SEVERAL POWER LINES AS WELL AS COMMUNICATIONS CABLES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ALL OVERHEAD UTILITIES PRIOR TO SUBMITTING A BID.
7. ALL REMOVALS SHALL BE IN ACCORDANCE WITH MNDOT 2104.
8. EXISTING BITUMINOUS AND CONCRETE SHALL BE SAW CUT AT THE REMOVAL LIMITS AND WHERE PAVEMENT IS TIED TO OR INTEGRAL WITH ADJACENT STRUCTURES. ALL SAW CUTTING SHALL BE INCIDENTAL TO THE PAVEMENT BEING REMOVED. WATER SHALL BE USED DURING ALL SAW CUTTING OPERATIONS TO KEEP DUST TO A MINIMUM. MULTIPLE SAW CUTS MAY BE NECESSARY IF INITIAL CUT EDGE BECOMES DAMAGED.
9. THE CONTRACTOR SHALL HAVE WATER ONSITE AT ALL TIMES THROUGHOUT CONSTRUCTION FOR DUST CONTROL AND DURING BACKFILL AND COMPACTION OPERATIONS. WATER FOR DUST CONTROL SHALL BE APPLIED AS NECESSARY OR WITHIN 1 HOUR OF OWNERS REQUEST. BACKFILL MATERIAL SHALL BE WETTED IF MATERIAL IS DRYER THAN OPTIMUM MOISTURE CONTENT.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY TEMPORARY GRADING, PIPING, AND OR PUMPING NECESSARY TO ENSURE STORMWATER ON THE SITE IS PROPERLY MANAGED THROUGHOUT ALL STAGES OF CONSTRUCTION.
11. CONCRETE CURING COMPOUND SHALL BE IN ACCORDANCE WITH MNDOT 3754 AND SHALL BE EVENLY APPLIED OVER ENTIRE WIDTH OF THE CONCRETE WALK, PAVEMENT, AND CURB. DURING APPLICATION THE CONTRACTOR SHALL PROVIDE PROTECTION FOR BUILDING FRONTS, LIGHTS POLES, FIRE HYDRANTS, ETC. FROM OVER SPRAY.
12. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT ALL FRESHLY POURED CONCRETE FROM VEHICLE, BIKE, OR PEDESTRIAN TRAFFIC AND DAMAGE CAUSED BY CONSTRUCTION. ANY SURFACE WITH FOOTPRINTS, TRACKS OR DAMAGE SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
13. THE SITE SHALL BE KEPT CLEAN AND FREE OF DEBRIS, EXCESS MATERIAL, EQUIPMENT, TOOLS AND/OR OTHER AT ALL TIMES. THE SITE SHALL BE BACKFILLED AND GRADED SMOOTH EACH DAY PRIOR TO NIGHT SUSPENSION. ALL EQUIPMENT LEFT WITHIN THE SITE AT NIGHT SHALL BE PARKED TOGETHER IN A LINE. ALL TOOLS, FORMS OR OTHER SHALL BE REMOVED FROM THE SITE DAILY.
14. CONSTRUCTION STAGING AREA SHALL BE KEPT ORDERLY. FOLLOWING CONSTRUCTION, ALL MATERIAL, EQUIPMENT, AND DEBRIS SHALL BE REMOVED & DISPOSED OF PROPERLY AND TOPSOIL & TURF SHALL BE RESTORED.
15. PROPERTY LINES SHOWN ON PLAN VIEWS OBTAINED FROM COUNTY GIS AND ARE SHOWN FOR REFERENCE PURPOSES ONLY. THESE ARE NOT LEGAL BOUNDARIES AND ARE CONSIDERED APPROXIMATE.
16. ALL WATER AND SANITARY SEWER MATERIAL, INSTALLATION, AND TESTING REQUIREMENTS SHALL BE IN ACCORDANCE WITH MINNESOTA DEPARTMENT OF LABOR AND INDUSTRY AND 2015 MINNESOTA PLUMBING CODE.
17. CONTRACTOR SHALL NOT PARK OR STORE ANY MATERIAL ON SUMMIT AVENUE, THE NORTH SIDE OF FRONT STREET, OR THE EAST SIDE OF MINNESOTA AVENUE AT ANY TIME.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS FOR WORK WITHIN THE RIGHT-OF-WAY OR CONNECTIONS TO EXISTING UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DEVELOP AND IMPLEMENT ANY TEMPORARY TRAFFIC CONTROL THAT MAY BE NECESSARY FOR THE WORK.
19. THE CITY OF DETROIT LAKES WILL OBTAIN THE PELICAN RIVER WATERSHED DISTRICT AND CITY OF DETROIT LAKES LAND DISTURBANCE PERMIT. ANY OTHER PERMITS NECESSARY FOR THE WORK INCLUDING THE MPCA NPDES GENERAL STORMWATER PERMIT SHALL BE PAID FOR AND OBTAINED BY THE CONTRACTOR. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IMPLEMENT THE REQUIREMENTS OF ANY PERMIT ON THE OWNER'S BEHALF. ANY FINES OR VIOLATIONS LEVIED TO THE OWNER AS A RESULT OF THE CONTRACTOR'S IMPROPER IMPLEMENTATION OF ANY PERMIT SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND ALL COSTS SHALL BE PAID BY THE CONTRACTOR.

SUBMITTALS

1.01 ENGINEER'S REVIEW
- A. THE REVIEW OF SHOP DRAWINGS, DATA AND SAMPLES WILL BE FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT AND CONTRACT DOCUMENTS. THEY SHALL NOT BE CONSTRUED:
  - AS PERMITTING ANY DEPARTURE FROM THE CONTRACT REQUIREMENTS;
  - AS RELIEVING THE CONTRACTOR OF RESPONSIBILITY FOR ANY ERRORS, INCLUDING DETAILS, DIMENSIONS, AND MATERIALS;
  - AS APPROVING DEPARTURES FROM DETAILS FURNISHED BY THE ENGINEER, EXCEPT AS OTHERWISE PROVIDED HEREIN.
- B. THE REVIEW AND APPROVAL OF SHOP DRAWINGS, SAMPLES OR PRODUCT DATA BY THE ENGINEER SHALL NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY FOR THE FULFILLMENT OF THE TERMS OF THE CONTRACT. ALL RISKS OF ERROR AND OMISSION ARE ASSUMED BY THE CONTRACTOR AND THE ENGINEER WILL HAVE NO RESPONSIBILITY THEREFOR.
- C. IF THE SHOP DRAWINGS, DATA OR SAMPLES AS SUBMITTED DESCRIBE VARIATIONS AND SHOW A DEPARTURE FROM THE CONTRACT REQUIREMENTS WHICH ENGINEER FINDS TO BE IN THE INTEREST OF THE OWNER AND TO BE SO MINOR AS NOT TO INVOLVE A CHANGE IN CONTRACT PRICE OR CONTRACT TIME, THE ENGINEER MAY RETURN THE REVIEWED DRAWINGS WITHOUT NOTING AN EXCEPTION.
- D. SUBMITTALS WILL BE RETURNED TO THE CONTRACTOR UNDER ONE OF THE FOLLOWING CODES:

  APPROVED: ASSIGNED WHEN THERE ARE NO NOTATIONS OR COMMENTS ON THE SUBMITTAL. WHEN RETURNED UNDER THIS CODE THE CONTRACTOR MAY RELEASE THE EQUIPMENT, MATERIAL FOR MANUFACTURE AND/OR MATERIAL FOR DELIVERY SUPPLIED.

  APPROVED AS NOTED: ASSIGNED WHEN A CONFIRMATION OF THE NOTATIONS AND COMMENTS IS NOT REQUIRED BY THE CONTRACTOR. THE CONTRACTOR MAY RELEASE THE EQUIPMENT, MATERIAL FOR MANUFACTURE, AND/OR MATERIAL FOR DELIVERY; HOWEVER, ALL NOTATIONS AND COMMENTS MUST BE INCORPORATED INTO THE FINAL PRODUCT.

  NOT APPROVED/RESUBMIT: IS ASSIGNED WHEN THE SUBMITTAL DOES NOT MEET THE INTENT OF THE CONTRACT DOCUMENTS. THE CONTRACTOR MUST RESUBMIT THE ENTIRE SUBMITTAL. IT MAY BE NECESSARY TO RESUBMIT USING A DIFFERENT MANUFACTURER/SUPPLIER TO MEET THE CONTRACT DOCUMENTS.

1.02 CONTRACTOR'S RESPONSIBILITIES
- A. REVIEW, STAMP, AND SIGN OR INITIAL ALL SHOP DRAWINGS, PRODUCT DATA AND SAMPLES, INCLUDING THOSE BY SUBCONTRACTORS, PRIOR TO SUBMISSION TO DETERMINE AND VERIFY THE FOLLOWING:
  - FIELD MEASUREMENTS
  - FIELD CONSTRUCTION CRITERIA
  - CATALOG NUMBERS AND SIMILAR DATA
  - CONFORMANCE WITH RELATED SECTIONS AND/OR THE CONTRACT DOCUMENTS
- B. EACH SHOP DRAWING, SAMPLE AND PRODUCT DATA SUBMITTED BY THE CONTRACTOR SHALL HAVE AFFIXED TO IT THE FOLLOWING CERTIFICATION STATEMENT INCLUDING THE CONTRACTOR'S COMPANY NAME AND SIGNED BY THE CONTRACTOR: "CERTIFICATION STATEMENT: BY THIS SUBMITTAL, I HEREBY REPRESENT THAT I HAVE DETERMINED AND VERIFIED ALL FIELD MEASUREMENTS, FIELD CONSTRUCTION CRITERIA, MATERIALS, DIMENSIONS, CATALOG NUMBERS AND SIMILAR DATA AND I HAVE CHECKED AND COORDINATED EACH ITEM WITH OTHER APPLICABLE APPROVED SHOP DRAWINGS AND ALL CONTRACT REQUIREMENTS." SHOP DRAWINGS THAT ARE NOT STAMPED WILL NOT BE REVIEWED.
- C. NOTIFY THE ENGINEER IN WRITING, AT THE TIME OF SUBMITTAL, OF ANY DEVIATIONS IN THE SUBMITTALS FROM THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
- D. NO PORTION OF THE WORK REQUIRING A SHOP DRAWING, SAMPLE, OR PRODUCT DATA SHALL BE STARTED NOR SHALL ANY MATERIALS BE FABRICATED, SHIPPED, OR INSTALLED PRIOR TO THE APPROVAL OR QUALIFIED APPROVAL OF SUCH ITEM. FABRICATION PERFORMED, MATERIALS PURCHASED OR ON-SITE CONSTRUCTION ACCOMPLISHED WHICH DOES NOT CONFORM TO APPROVED SHOP DRAWINGS AND DATA SHALL BE AT THE CONTRACTOR'S RISK. THE OWNER WILL NOT BE LIABLE FOR ANY EXPENSE OR DELAY DUE TO CORRECTIONS OR REMEDIES REQUIRED TO ACCOMPLISH CONFORMITY.
- E. PROJECT WORK, MATERIALS, FABRICATION, AND INSTALLATION SHALL CONFORM TO APPROVED SHOP DRAWINGS, APPLICABLE SAMPLES, AND PRODUCT DATA.
- F. THE CONTRACTOR REMAINS RESPONSIBLE FOR DETAILS AND ACCURACY, FOR COORDINATING THE WORK WITH ALL OTHER ASSOCIATED WORK AND TRADES, FOR SELECTING FABRICATION PROCESSES, FOR TECHNIQUES OF ASSEMBLY, AND FOR PERFORMING WORK IN A SAFE MANNER.
- G. IF THE CONTRACTOR CONSIDERS ANY CORRECTION INDICATED ON THE SHOP DRAWINGS TO CONSTITUTE A CHANGE TO THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL GIVE WRITTEN NOTICE THEREOF TO THE ENGINEER WITHIN 14 CALENDAR DAYS OF THE DATE THE ENGINEER RETURNED THE SUBMITTAL.
- H. WHEN THE SHOP DRAWINGS HAVE BEEN COMPLETED TO THE SATISFACTION OF THE ENGINEER, THE CONTRACTOR SHALL CARRY OUT THE CONSTRUCTION IN ACCORDANCE THEREWITH AND SHALL MAKE NO FURTHER CHANGES THEREIN EXCEPT UPON WRITTEN INSTRUCTIONS FROM THE ENGINEER.
- I. FOLLOWING ENGINEER'S REVIEW AND APPROVAL, CONTRACTOR SHALL DISTRIBUTE TO SUBCONTRACTORS, SUPPLIERS, AND ALL OTHER NECESSARY PARTIES.

EXCAVATION AND EMBANKMENT

SECTION 1 - GENERAL

1.01 MNDOT 2105 SHALL APPLY AS MODIFIED BELOW:
- A. MNDOT TABLE 2105-5 IS MODIFIED SUCH THAT THE RELATIVE COMPACTION WITHIN AN EXCAVATION TRENCH AND BACKFILL OF STRUCTURES, 2452, "STRUCTURAL EXCAVATION AND BACKFILLS", WITHIN THE ROAD, SIDEWALK, OR PARKING LOT AREAS SHALL BE 95% MINIMUM > 3FT BELOW GRADING GRADE, AND 100% MINIMUM ≤ 3FT BELOW FINISHED GRADE. RELATIVE COMPACTION WITHIN AN EXCAVATION TRENCH AND BACKFILL OF STRUCTURES, 2452, "STRUCTURAL EXCAVATION AND BACKFILLS", OUTSIDE THE ROAD, SIDEWALK, OR PARKING LOT AREAS, IN UNIMPROVED AREAS (SUCH AS TURFED AREAS) SHALL BE 95% MINIMUM FOR ALL DEPTHS.

WALKS, CURB, AND PAVEMENTS

SECTION 1 - GENERAL AND MATERIAL

1.01 CONCRETE:
- A. ALL MATERIAL AND WORKS SHALL BE IN ACCORDANCE WITH MNDOT 2461.
- B. SEE DETAILS FOR MIX DESIGNATIONS.

1.02 BITUMINOUS
- A. ALL MATERIAL AND WORKS SHALL BE IN ACCORDANCE WITH MNDOT 2360.
- B. SEE DETAILS FOR MIX DESIGNATIONS.

SECTION 2 - EXECUTION

2.01 CONCRETE:
- A. IT IS THE CONTRACTOR'S RESPONSIBILITY DEVELOP AND IMPLEMENT A JOINTING PLAN. ALL JOINTS SHALL BE SAW CUT.
- B. EXPANSION MATERIAL SHALL BE PROVIDE AT CONNECTIONS TO EXISTING CONCRETE OR STRUCTURES. EXPANSION JOINTS SHALL BE PROVIDE AT INVERVALS NOT TO EXCEED FIFTY (50) FEET.
- C. THE SURFACE OF CONCRETE WALKS, DRIVEWAYS, OR SIMILAR SURFACES SHALL BE REASONABLY FREE OF DEFECTS CAUSED BY EITHER WORKMANSHIP OR MATERIALS. DEFECTS INCLUDE BUT ARE NOT LIMITED TO SPALL, FLAKING, IMPRESSIONS, RANDOM CRACKING, OR OTHER UNDESIRABLE SURFACE IRREGULARITIES.
- D. SURFACE DEFECTS SHALL NOT EXCEED THREE (3) PER 50 SF, FOR SPOT DEFECTS SUCH AS SPALLS, OR MORE THAN 3% PER 50 SF SURFACE AREA, FOR MORE WIDESPREAD DEFECTS SUCH AS FLAKING, AS DETERMINED BY THE ENGINEER. ANY CONCRETE SURFACE CONTAINING RANDOM CRACK(S) SHALL BE CONSIDERED DEFECTIVE. AREAS CONTAINING DEFECTS, WHICH EXCEED THESE ALLOWABLE LIMITS, OR RANDOM CRACKING SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.

2.02 BITUMINOUS
- E. MNDOT 2360.2.G.1.a, 2360.2.G.1.b, and 2360.2.G.1.c DO NOT APPLY. PLANT CERTIFICATION IS NOT REQUIRED.
- F. MNDOT 2360.3.D.1 SHALL BE REPLACED WITH THE FOLLOWING:

  MAXIMUM DENSITY SHALL APPLY. COMPLETE THE PAVEMENT TO AT LEAST THE MINIMUM REQUIRED MAXIMUM DENSITY VALUES IN ACCORDANCE WITH TABLE 2306-19, "REQUIRED MINIMUM LOT DENSITY (MAT)". FOUR CORES SHALL BE OBTAINED FOR EACH LOT. TABLE 2360-21 SHALL BE MODIFIED TO STATE A MINIMUM OF ONE LOT SHALL BE TAKEN PER LIFT OF BITUMINOUS PER PARKING LOT. THE MAXIMUM PAY FACTOR FOR ALL TYPES OF DENSITIES SHALL BE 1.00 (NO INCENTIVE PAYMENTS WILL BE MADE).
- G. REQUIREMENTS OF MNDOT 2399 SHALL NOT APPLY.

BENCHMARKS

SUMMIT AVE / FRONT ST HYDRANT (TOP NUT):

NORTHING: 136875.265
EASTING: 458323.306
ELEVATION: 1364.530
DATUM: NAVD88

MINNESOTA AVE / FRONT ST HYDRANT (TOP NUT):

NORTHING: 136863.707'
EASTING: 458691.069'
ELEVATION: 1357.770'
DATUM: NAVD88

WATER SYSTEMS

PART 1 - GENERAL

1.01 SUBMITTALS
- A. SUBMITTALS SHALL INCLUDE THE NAMES OF PIPE AND FITTING MANUFACTURERS AND SUPPLIERS.
- B. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL PIPE, FITTINGS, VALVES, HYDRANTS, AND OTHER ITEMS INCLUDED IN THIS SPECIFICATION.
- C. SUBMIT WRITTEN COPIES OF ALL BACTERIA AND PRESSURE TESTING RESULTS.

1.02 LEAD CONTENT
- A. ALL WATER SYSTEM COMPONENTS, WHICH COME IN CONTACT WITH DRINKING WATER, SHALL BE IN COMPLIANCE WITH THE MOST CURRENT LEAD BAN PROVISIONS IN SECTION 1417 OF THE SAFE DRINKING WATER ACT.

PART 2 - PRODUCTS

2.01 WATER PIPE (2" AND LESS)
- A. WATER PIPE OF 2-INCH AND LESS IN DIAMETER, SHALL BE TYPE "K" COPPER CONFORMING TO ASTM B-88 OR SIDR 7 (200 PSI) POLYETHYLENE (PE) PIPE CONFORMING TO ASTM D 2239, ASTM D2737, AND ASTM D 3035 AND AWWA C901.
  1. PE WATER SERVICE PIPE SHALL BE INSTALLED WITH A STAINLESS STEEL INSERT STIFFENER AT POINT(S) OF CONNECTION TO FITTINGS. STIFFINER SHALL BE A MINIMUM OF 2-INCHS IN LENGTH.

2.02 WATER PIPE (4" AND LARGER)
- A. SHALL BE POLYVINYL CHLORIDE (PVC) - DR 18, 235 PSI
- B. PVC WATER PIPE SHALL CONFORM TO THE LATEST REVISION OF AWWA C900 OR AWWA C905.
- C. PIPE SHALL HAVE AN INTEGRAL BELL WITH GASKETED JOINT. GASKET SHALL MEET THE REQUIREMENTS OF ASTM F477. JOINT DESIGN SHALL MEET THE REQUIREMENTS OF ASTM D3139.
- D. PIPE SHALL CONFORM TO CAST IRON PIPE DIAMETERS.

2.03 WATER PIPE (4" AND LARGER) - INSTALLATION BY DIRECTIONAL DRILL
- A. ALL WATER DISTRIBUTION PIPE, LARGER THAN 4-INCH IN DIAMETER, UTILIZED IN HORIZONTAL DIRECTIONAL DRILLING (HDD) INSTALLATIONS SHALL BE FUSED C900 OR C905.

2.04 FITTINGS (2" AND LESS)
- A. CONNECTIONS, SHALL USE DOUBLE-BOLT, STAINLESS STEEL, BAND-TYPE SADDLES AS MANUFACTURED BY FORD (MODEL FS303), POWER SEAL (3412), OR APPROVED EQUAL.
- B. ONLY COMPRESSION COUPLINGS SHALL BE USED.
- C. CORPORATION COCKS SHALL BE MUELLER H-15008, FORD F-1000, A.Y. MCDONALD 7470B-33, OR APPROVED EQUAL, IN ACCORDANCE WITH AWWA C-800. THREADS SHALL BE LEFT END.
- D. CURB STOPS SHALL BE MUELLER H-15155, FORD B44M, A.Y. MCDONALD 76104-33 OR APPROVED EQUAL IN ACCORDANCE WITH AWWA C-800. SHALL BE MINNEAPOLIS PATTERN BALL VALVE WITH PACK JOINT AT BOTH ENDS.
- E. CURB BOXES SHALL BE MINNEAPOLIS PATTERN EXTENSION TYPE WITH STANDARD BRASS PENTAGON HEAD PLUG, IN ACCORDANCE WITH AWWA C-800. THE UPPER SECTION SHALL BE ONE AND ONE-HALF (1 ½) INCH IN DIAMETER FOR A NINE (9) FOOT BURY. UNITS SHALL BE FORD EM2-108-67-66R, A.Y. MCDONALD 5614, WITH TYPE PL LID, OR APPROVED EQUAL. THE CURB BOX SHALL INCLUDE SHUTOFF ROD EXTENSION.

2.05 FITTINGS (4" AND LARGER) - DUCTILE IRON FITTINGS
- A. DUCTILE IRON FITTINGS SHALL BE CLASS 350 AND SHALL CONFORM TO AWWA C153, ANSI A21.53 AND AWWA C111/ANSI A21.11.
- B. POLYETHYLENE ENCASEMENT IS NOT REQUIRED UNLESS SPECIFICALLY IDENTIFIED IN THE DRAWINGS.
- C. BOLTS AND NUTS FOR MECHANICAL JOINT FITTINGS SHALL BE COR BLUE, STAINLESS STEEL OR APPROVED EQUAL. ANTI-SEIZE PASTE SHALL BE APPLIED TO ALL STAINLESS STEEL BOLTS PRIOR TO INSTALLATION.
- D. BELL DIMENSIONS SHALL BE IN STRICT ACCORDANCE WITH THE MANUFACTURES DESIGN AND SHALL BE CLASS 350; EQUAL TO "TYLER", "SIGMA", OR "STAR".
- E. MECHANICAL JOINT RESTRAINTS SHALL BE PVC STARGRIP SERIES 4000 BY STAR, ONE-LOK SERIES SLCE BY SIGMA, TUFGRIP SERIES 2000 BY TYLER UNION, AND MEGALUG SERIES 2000PV BY EBAA IRON.
- F. COUPLERS SHALL BE EITHER LONG PATTERN SLEEVE, MEETING REQUIREMENTS OF DUCTILE IRON FITTINGS HEREIN, OR DUCTILE IRON COUPLER.
- G. ALTERNATIVELY, COUPLERS SHALL MEET THE FOLLOWING REQUIREMENTS:
  1. COUPLERS SHALL BE MANUFACTURED BE HYMAX, AS MANUFACTURED BY KRAUSZ, ALPHA, AS MANUFACTURED BY ROMAC, OR APPROVED EQUAL.
  2. ALL COUPLERS SHALL MEET THE REQUIREMENTS OF AWWA C-219, NSF 61, AND NSF 372.
  3. BODY AND CENTERING RING SHALL BE DUCTILE IRON CASTING ASTM A536 GRADE 65-45-12
  4. GASKETS SHALL BE EITHER EPDM OR NBR. COUPLER SHALL BE PROVIDED WITH UNIVERSAL OR CHANGEABLE GASKETS THAT WILL ACCOMMODATE A VARIETY OF PIPE MATERIALS AND CLASSES INCLUDING DUCTILE IRON, CAST IRON, PVC, AND HDPE
  5. BODY AND ALL CAST IRON COMPONENTS SHALL BE COATED WITH A MINIMUM OF 14 MIL OF FUSION BONDED EPOXY.
  6. ALL BOLTS, NUTS, AND OTHER HARDWARE SHALL BE 304 STAINLESS STEEL.
  7. COUPLER SHALL ALLOW FOR A MINIMUM OF 4 DEGREES OF DEFLECTION AND UP TO 0.25-INCHES OF OFFSET BETWEEN PIPES BEING JOINED.
  8. CAPABLE OF A MINIMUM WORKING PRESSURE OF 200 PSI.

2.06 GATE VALVES AND BOXES
- A. VALVE AND BOXES SHALL CONFORM TO THE LATEST REVISION OF ASTM D-429-14 AND ONE OF THE FOLLOWING AWWA C509 OR AWWA C515.
- B. VALVES SHALL BE OF THE INSIDE SCREW, NON-RISING STEM, RESILIENT WEDGE TYPE WITH EPOXY COATING ON THE INTERIOR AND EXTERIOR.
- C. VALVES SHALL BE RATED FOR WORKING PRESSURE OF TWO HUNDRED FIFTY (250) POUNDS PER SQUARE INCH GAUGE (PSIG) COLD WATER WORKING PRESSURE.
- D. ALL EXTERIOR VALVE BOLTS SHALL BE MADE OF STAINLESS STEEL.
- E. VALVE BOXES SHALL BE MADE OF CAST IRON AND SHAFT SHALL BE FIVE AND ONE-QUARTER (5 ¼) INCH DIAMETER. VALVE BOX COVERS SHALL BE LETTERED 'WATER'. ALL EXPOSED NUTS, BOLTS AND WASHERS SHALL BE STAINLESS STEEL.
- F. ALL VALVE BOXES SHALL BE INSTALLED UPON THE VALVE WITH THE USE OF A GATE VALVE BONNET AS MANUFACTURED BY ADAPTOR, INC. OR APPROVED EQUAL.
- G. ALL VALVES BOXES SHALL BE INSTALLED WITH A VALVE STEM EXTENSION WITH TWO (2) CENTERING COLLARS SPACED EVENLY ALONG THE LENGTH OF THE STEM. THE EXTENSION STEM SHALL NOT BE BOLTED TO THE VALVE OPERATING NUT.

2.07 FIRE HYDRANTS
- A. HYDRANTS SHALL BE OF THE NON-JACKETED TYPE AS MANUFACTURED BY WATEROUS (WB-67), AMERICAN DARLING (B-62B), OR APPROVED EQUAL.
- B. HYDRANTS SHALL CONFORM TO THE LATEST REVISION OF AWWA C502.64.
- C. HYDRANTS SHALL BE OF THE TRAFFIC-FLANGE TYPE WITH A 16-INCH BREAKOFF SECTION. THE MAIN VALVE OPENING SHALL BE 5 ¼ INCHES. HYDRANT BARREL SHALL HAVE A MINIMUM INSIDE DIAMETER OF 7 3/8-INCHES. SHUTOFF TYPE SHALL BE COMPRESSION.
- D. INLET CONNECTION SHALL BE 6-INCH MECHANICAL JOINT FITTING.
- E. DELIVERY CLASSIFICATION SHALL BE TWO HOSE NOZZLES (2 ½" NATIONAL STANDARD) AND ONE PUMPER NOZZLE (4 ½").
- F. HYDRANTS SHALL GENERALLY BE SUPPLIED SUCH THAT THE BURY DEPTH IS 9-FEET FROM THE GROUND SURFACE TO THE TOP OF THE CONNECTING PIPE. HOWEVER, THE BURY LENGTH MAY VARY FROM LOCATION TO LOCATION TO ACCOMMODATE THE FIELD CONDITIONS AND TOPOGRAPHY. CONTRACTOR SHALL REVIEW THE DRAWINGS AND PROVIDE HYDRANT BURY LENGTHS TO ACCOMMODATE TOPOGRAPHY, IN-SLOPES, BACK SLOPES, ETC. AND ACHIEVE THE SPECIFIED BURY DEPTH.
- G. NOZZLE DIAMETERS AND THREADS SHALL CONFORM TO THE OWNER'S STANDARDS AND SHALL BE VERIFIED WITH THE OWNER.
- H. THE OPERATING AND CAP NUTS SHALL CONFORM TO THE OWNER'S STANDARDS AND SHALL BE VERIFIED WITH THE OWNER.
- I. HYDRANTS SHALL OPEN TO THE LEFT (COUNTERCLOCKWISE).
- J. HYDRANTS SHALL INCLUDE OPEN DRAIN HOLES.
  1. CONTRACTOR SHALL PLUG DRAIN HOLES IN THE FIELD AS DIRECTED BY THE ENGINEER. FURNISHING AND INSTALLATION OF THE PLUG SHALL BE CONSIDERED INCIDENTAL TO THE HYDRANT INSTALLATION.
  2. WHEN DRAIN HOLES ARE PLUGGED, THE CONTRACTOR SHALL PROVIDE A METAL TAG STATING, "DRAIN HOLES PLUGGED" THIS TAG SHALL BE AFFIXED TO THE FLANGE BOLT ON THE TOP OF THE HYDRANT.
- K. ALL NOZZLE CAPS SHALL BE PROVIDED WITH CHAINS.
- L. THE FINISH PAINT ABOVE THE GROUND LINE SHALL CONFORM TO THE OWNER'S STANDARDS AND SHALL BE VERIFIED WITH THE OWNER.
- M. SUPPLY AND SHIP WEEP HOLE PLUGS WITH ALL HYDRANTS.
- N. HYDRANTS SHALL BE SUPPLIED WITH MARKER ROD. MARKER SHALL CONSIST OF A MINIMUM 5-FOOT LONG, 3/8-INCH DIAMETER FIBERGLASS ROD. THE ROAD SHALL A MINIMUM OF THREE 2-INCH RED REFLECTIVE BANDS EVENLY SPACED ALONG THE LENGTH OF THE MARKER. MOUNTING ASSEMBLY SHALL BE SPRING LOADED AND AFFIX TO THE UPPER HOUSING FLANGE OF THE HYDRANT.

2.08 TRACE WIRE
- A. OPEN TRENCH - TRACE WIRE SHALL BE #12 AWG COPPER CLAD STEEL, HIGH STRENGTH WITH MINIMUM 450 LB. BREAK LOAD, WITH MINIMUM 30 ML HDPE INSULATION THICKNESS. WIRE SHALL BE COPPERHEAD #13 AWG OR APPROVED EQUAL.
- B. DIRECTIONAL DRILLING/BORING - TRACE WIRE SHALL BE #12 AWG COPPER CLAD STEEL, EXTRA HIGH STRENGTH WITH MINIMUM 1,150 LB. BREAK LOAD, WITH MINIMUM 30 ML HDPE INSULATION THICKNESS. WIRE SHALL BE COPPERHEAD EXTRA HIGH STRENGTH OR APPROVED EQUAL.
- C. TRACE WIRE - PIPE BURSTING/SLIP LINING - TRACE WIRE SHALL BE 7 X 7 STRANDED COPPER CLAD STEEL, EXTREME STRENGTH WITH 4,700 LB. BREAK LOAD, WITH MINIMUM 50 ML HDPE INSULATION THICKNESS. WIRE SHALL BE COPPERHEAD SOLOSHOT EXTREME HIGH STRENGTH OR APPROVED EQUAL.

2.09 TRACE WIRE CONNECTORS
- A. ALL MAINLINE TRACE WIRES MUST BE INTERCONNECTED IN INTERSECTIONS, AT MAINLINE TEES AND MAINLINE CROSSES. AT TEES, THE THREE WIRES SHALL BE JOINED USING A SINGLE 3-WAY LOCKABLE CONNECTOR. AT CROSSES, THE FOUR WIRES SHALL BE JOINED USING A 4-WAY CONNECTOR. USE OF TWO 3-WAY CONNECTORS WITH A SHORT JUMPER WIRE BETWEEN THEM IS AN ACCEPTABLE ALTERNATIVE.
- B. DIRECT BURY WIRE CONNECTORS - SHALL INCLUDE 3-WAY LOCKABLE CONNECTORS AND MAINLINE TO LATERAL LUG CONNECTORS SPECIFICALLY MANUFACTURED FOR USE IN UNDERGROUND TRACE WIRE INSTALLATION. CONNECTORS SHALL BE DIELECTRIC SILICON FILLED TO SEAL OUT MOISTURE AND CORROSION, AND SHALL BE INSTALLED IN A MANNER SO AS TO PREVENT ANY UNINSULATED WIRE EXPOSURE.
- C. DIRECT BURY CONNECTORS SHALL BE COPPERHEAD, DRYCONN, OR APPROVED EQUAL.
- D. NON LOCKING FRICTION FIT, TWIST ON, OR TAPED CONNECTORS ARE PROHIBITED.

2.10 TRACE WIRE TERMINATION/ACCESS BOXES
- A. NON-ROADWAY OR TRAFFIC: SHALL BE COPPERHEAD ADJUSTABLE LITE DUTY OR APPROVED EQUAL.
- B. TRAFFIC OR DRIVEWAY: SHALL BE COPPERHEAD ROADWAY BOX WITH 6" FLANGE OR APPROVED EQUAL.
- C. FIRE HYDRANT TERMINATIONS: SHALL BE ABOVE GROUND TWO TERMINAL WITH 1" CONDUIT. COPPERHEAD FLANGE MOUNT OR APPROVED EQUAL.
- D. ALL GRADE LEVEL/IN-GROUND ACCESS BOXES SHALL BE APPROPRIATELY IDENTIFIED WITH "SEWER" OR "WATER" CAST INTO THE CAP AND BE COLOR CODED.

2.11 TRACE WIRE GROUNDING
- E. DRIVE IN 1.5 LB. MAGNESIUM ANODE: COPPERHEAD PART # ANO-1005 (1.5 LB)

PART 3 - EXECUTION

3.01 EXAMINATION AND PREPARATION
- A. CONTRACTOR SHALL TAKE MEASURES TO AVOID DAMAGE DURING DELIVERY AND STORAGE OF THE MATERIALS IS ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ANY DAMAGED MATERIALS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
- B. CONTRACTOR SHALL LOCATE EXISTING UNDERGROUND UTILITIES AND FACILITIES PRIOR TO EXCAVATION.

3.02 PROTECTION
- A. CONTRACTOR SHALL PROVIDE SUPPORTS, PROTECTION, AND MAINTENANCE OF UNDERGROUND AND SURFACE FACILITIES.
- B. CONTRACTOR SHALL PROVIDE PROTECTION FOR VEHICULAR AND PEDESTRIAN TRAFFIC THROUGHOUT THE CONSTRUCTION PERIOD.

3.03 PIPE INSTALLATION
- A. CONTRACTOR SHALL INSPECT ALL PIPES FOR SOUNDNESS AND REPLACE AND DAMAGED LENGTHS OF PIPE.
- B. ALL PIPES SHALL BE CLEANED OF ANY FOREIGN MATTER.
- C. ALL SERVICE LINES SHALL BE SEAMLESS CONSISTING OF ONE (1) UNIFORM PIPE.
- D. INSTALL PIPE TO LINES AND GRADES AS SHOWN ON THE DRAWINGS. ASSEMBLE JOINTS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- E. INSTALL THRUST BLOCKING AND/OR MECHANICAL JOINT RESTRAINTS AS DETAILED IN THE DRAWINGS.
- F. CONTRACTOR SHALL HAVE AVAILABLE, ON THE JOB SITE, A COMPLETE SUPPLY OF FITTINGS AND MATERIALS FOR UNKNOWN OR UNEXPECTED PIPE SIZES AND TYPES.
- G. THE CONTRACTOR SHALL KEEP DETAILED RECORDS AND DRAWINGS OF THE LOCATION AND CONFIGURATION OF ALL SEWER SYSTEMS. RECORDS SHALL INCLUDE ELEVATIONS, GRADES, SIZES, LENGTHS, LOCATION OF FITTINGS, CONFIGURATIONS OF RISERS, OR OTHER DATA THAT WILL PROVIDE FOR CLEAR DEPICTION OF THE SERVICE LATERAL INSTALLATION. RECORDS SHALL BE TURNED OVER TO THE ENGINEER WEEKLY.

3.04 CONNECTION TO EXISTING SYSTEM
- A. CONTRACTOR SHALL CONNECT (OR RECONNECT) ALL NEW MAINS AND SERVICE LATERALS TO EXISTING PIPES, EVEN IF NOT SPECIFICALLY DEPICTED IN THE DRAWINGS. CONTRACTOR SHALL COORDINATE WITH ANY LOCAL JURISDICTIONS FOR CONNECTION REQUIREMENTS.
- B. PROVIDE ALL NECESSARY TRANSITION ADAPTORS, MECHANICAL JOINT COUPLINGS, AND FITTINGS TO PROPERLY MAKE CONNECTION BETWEEN DIFFERING PIPE SIZES AND MATERIALS.
- C. CONNECTION TO EXISTING SYSTEM SHALL BE MADE BY BELL AND SPIGOT CONNECTION OR DUCTILE IRON FITTING WHEN POSSIBLE. COUPLERS MAY BE UTILIZED WHEN THESE OPTIONS ARE NOT PRACTICAL. COUPLERS SHALL BE INSTALLED PER MANUFACTURES RECOMMENDATION AND COMPRESSION BOLTS TIGHTENED WITH A TORQUE WRENCH TO MANUFACTURES RECOMMENDATION.

3.05 CONNECTION OF SERVICE LATERALS
- A. PROVIDE ALL NECESSARY ADAPTORS AND FITTINGS FOR RECONNECTION OF EXISTING SERVICE LATERALS AT EDGE OF RIGHT-OF-WAY, OR OTHER LOCATION AS SPECIFIED. A WIDE RANGE OF SIZE AND MATERIALS ARE ANTICIPATED FOR THE PROPOSED PROJECT LOCATION.
- B. CONNECTIONS MADE AT LESS THAN 8-FEET IN DEPTH SHALL BE INSULATED AT THE POINT OF CONNECTION.

3.06 PLACEMENT OF INSULATION
- A. WATERMAIN AND SERVICE LATERALS SHALL BE INSULATED IN LOCATION WHERE THE PIPE IS SUBJECT TO FREEZING CONDITIONS DUE TO SHALLOW LOCATIONS (LESS THAN EIGHT AND A HALF (8.5) FEET IN DEPTH, WHEN IN CLOSE PROXIMITY TO A STORM SEWER, AND AS DIRECTED BY THE ENGINEER.
- B. RIGID INSULATION BOARD SHALL BE PLACED WITHIN THE PIPE ENCASEMENT ZONE, SIX (6) INCHES ABOVE THE PIPE. PRIOR TO PLACEMENT OF THE INSULATION, GRANULAR MATERIAL, MEETING THE REQUIREMENTS OF MNDOT 3149, SHALL BE LEVELED AND COMPACTED UNTIL THERE IS NO FURTHER VISUAL EVIDENCE OF INCREASED CONSOLIDATION OR THE DENSITY OF THE COMPACTED LAYER CONFORMS TO THE DENSITY REQUIREMENTS SPECIFIED IN THE SECTION 02220 THEN LEVELED AND LIGHTLY SCARIFIED TO A DEPTH OF ONE HALF (1/2) INCH. BORROW MATERIAL PLACED ABOVE AND BELOW THE INSULATION SHALL BE FREE OF ROCK OR STONE FRAGMENTS MEASURING ONE AND ONE HALF (1 ½) INCHES OR GREATER.
- C. INSULATION BOARDS SHALL BE PLACED ON THE SCARIFIED MATERIAL WITH THE LONG DIMENSION PARALLEL TO THE CENTERLINE OF THE PIPE. BOARDS SHALL BE PLACED IN A SINGLE LAYER WITH TIGHT JOINTS. NO CONTINUOUS JOINTS OR SEAMS SHALL BE PLACED DIRECTLY OVER THE PIPE. IF TWO OR MORE LAYERS OF INSULATION BOARDS ARE USED, EACH LAYER SHALL BE STAGGERED MANNER THAT WILL PROVIDE JOINT OVERLAPS A MINIMUM OF 6 INCHES ON THE UNDERLYING SHEETS AND THE EDGES SHALL BE TRIM AND SQUARE SO TO COVER THE JOINTS OF THE LAYER IMMEDIATELY BELOW.
- D. THE CONTRACTOR SHALL EXERCISE PRECAUTION TO INSURE THAT ALL JOINTS BETWEEN BOARDS ARE TIGHT DURING PLACEMENT AND BACKFILLING WITH ONLY EXTRUDED ENDS PLACED END TO END OR EDGE TO EDGE.
- E. THE FIRST LAYER OF MATERIAL PLACED OVER THE INSULATION SHALL BE 6 INCHES IN DEPTH, FREE OF ROCK OR STONE FRAGMENTS MEASURING ONE AND ONE HALF (1 ½) INCHES OR GREATER. THE MATERIAL SHALL BE PLACED IN SUCH A MANNER THAT WILL PRECLUDE DAMAGE TO THE INSULATION MATERIAL AND OPERATION OF CONSTRUCTION EQUIPMENT DIRECTLY ON THE INSULATION. COMPACTION SHALL BE COMPLETED WITH EQUIPMENT WHICH EXERTS A CONTRACT PRESSURE OF LESS THAN EIGHTY (80) PSI.

3.07 VALVES AND BOXES
- A. BOXES SHALL BE DIRECTLY SUPPORTED A VALVE BODY BONNET ADAPTOR AND BE PLUMB OVER THE VALVE OPERATING NUT.
- B. ALL VALVE BOXES SHALL BE LEFT A MINIMUM OF TWELVE (12) INCHES BELOW SUBGRADE UNTIL BASE PAVEMENT IS PLACED. ADJUST BOXES IN ACCORDANCE WITH SECTION 02735.
- C. PRIOR TO FINAL PAVING, THE CONTRACTOR SHALL, IN THE PRESENCE OF THE OWNER, OPERATE ALL VALVES AND VERIFY THAT THEY ARE IN THE CORRECT POSITIONS (OPEN OR CLOSED). ALL VALVES SHALL BE IN THE OPEN POSITION UNLESS OTHERWISE SPECIFIED BY THE DRAWINGS OR THE OWNER.
- D. ADJUST ALL CURB STOP BOXES, IN NON-SURFACED (PAVED) AREAS TO FINISHED GRADE. CURB STOP BOXES IN PAVED/SURFACED AREAS SHALL BE LEFT 2-INCHES BELOW FINISHED GRADE AND A SECONDARY ACCESS CASTING INSTALLED OVER THE BOX. THE ACCESS CASTING SHALL BE SET PRIOR TO THE SURFACING AND ADJUSTED AS NECESSARY TO ¼-INCH BELOW FINISHED GRADE.
- E. PROVIDE CURB BOXES OF SUFFICIENT HEIGHT TO ALLOW FOR A MINIMUM OF 12-INCHES OF FUTURE ADJUSTMENT UPWARD OR DOWNWARD FROM PROPOSED FINISHED GRADE.

3.08 HYDRANT INSTALLATION
- A. CONTRACTOR SHALL SET HYDRANTS TO MAINTAIN MINIMUM PIPE COVER. NOZZLES SHALL BE TWENTY FOUR (24) INCHES ABOVE FINISHED GRADE.
- B. HYDRANTS SHALL BE SET PLUMB WITH PROPER NOZZLE FACING THE STREET PERPENDICULAR TO THE CURB LINE.
- C. HYDRANT BOWL SHALL BE BRACED AGAINST THE VERTICAL FACE OF UNEXCAVATED SOIL WITH CONCRETE BACKING AND IT SHALL BE TIED WITH RODS OR CLAMPS.
- D. HYDRANTS SHALL BE SUPPORTED ON A CONCRETE BASE NO LESS THAN SIX (6) INCHES THICK.
- E. WEEP HOLES SHALL BE PLUGGED ON ALL HYDRANTS WHERE THE NORMAL GROUNDWATER ELEVATION IS ABOVE OR WITHIN 2-FEET BELOW THE WEEP HOLE ELEVATION.
  1. FURNISH AND INSTALL AN ALUMINUM TAG WITH RAISED STAMPED LETTERING STATING "WEEP HOLES PLUGGED - PUMP AFTER EACH USE". TAG SHALL BE AFFIXED TO THE UPPER FLANGE BOLTS OF HYDRANT HOUSING.
- F. WHEN WEEP HOLES ARE LEFT OPEN (UNPLUGGED), THE CONTRACTOR SHALL PROVIDE A DRAINAGE PIT OF 2'X2'X2', FILLED WITH COARSE ROCK AND WRAPPED IN GEOTEXTILE FABRIC, UNDERNEATH THE BOWL.
- G. HYDRANTS SHALL BE THOROUGHLY CLEANED AFTER INSTALLATION.

3.09 WATERMAIN CROSSING
- A. WATERMAIN CROSSINGS SHALL BE CONSTRUCTED IN CASES WHERE VERTICAL GRADE/ALIGNMENT OTHER UTILITIES, TYPICALLY SANITARY SEWER OR STORM SEWER, CREATE A GRADE CONFLICT WITH THE WATERMAIN.
- B. THE CROSSINGS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAILS IN THE DRAWINGS.
- C. THE CONTRACTOR SHALL ALL REASONABLE MEASURES TO AVOID NEED FOR A CONSTRUCTED CROSSING. AVOIDANCE MEASURES INCLUDE ADJUSTMENT TO THE GRADE AND ELEVATIONS OF THE WATERMAIN. ALL CHANGES IN WATERMAIN GRADES SHALL BE APPROVED IN ADVANCE BY THE ENGINEER.

3.10 TRACE WIRE TERMINATION/ACCESS (IF DIRECTED BY OWNER)
- A. ALL TRACE WIRE TERMINATION POINTS MUST UTILIZE AN APPROVED TRACE WIRE ACCESS BOX (ABOVE GROUND ACCESS BOX OR GRADE LEVEL/IN-GROUND ACCESS BOX AS APPLICABLE), SPECIFICALLY MANUFACTURED FOR THIS PURPOSE.
- B. A MINIMUM OF 2 FT. OF EXCESS/SLACK WIRE IS REQUIRED IN ALL TRACE WIRE ACCESS BOXES AFTER ADJUSTMENT TO FINISHED GRADE.
- C. ALL TRACE WIRE ACCESS BOXES MUST INCLUDE A MANUALLY INTERRUPTIBLE CONDUCTIVE/CONNECTIVE LINK BETWEEN THE TERMINAL(S) FOR THE TRACE WIRE CONNECTION AND THE TERMINAL FOR THE GROUNDING ANODE WIRE CONNECTION.
- D. GROUNDING ANODE WIRE SHALL BE CONNECTED TO THE IDENTIFIED (OR BOTTOM) TERMINAL ON ALL ACCESS BOXES.
- E. TRACE WIRE MUST TERMINATE AT AN ABOVE-GROUND TRACE WIRE ACCESS BOX, AFFIXED TO THE BUILDING EXTERIOR DIRECTLY ABOVE WHERE THE UTILITY ENTERS THE BUILDING, AT AN ELEVATION NOT GREATER THAN 5 VERTICAL FEET ABOVE FINISHED GRADE, OR TERMINATE AT AN APPROVED GRADE LEVEL/IN-GROUND TRACE WIRE ACCESS BOX, LOCATED WITHIN 2 LINEAR FEET OF THE BUILDING BEING SERVED BY THE UTILITY.
- F. HYDRANTS - TRACE WIRE MUST TERMINATE AT AN ABOVE-GROUND TRACE WIRE ACCESS BOX, PROPERLY AFFIXED TO THE HYDRANT GRADE FLANGE. AFFIXING WITH TAPE OR PLASTIC TIES SHALL NOT BE ACCEPTABLE.
- G. LONG-RUNS, IN EXCESS OF 500 LINEAR FEET WITHOUT SERVICE LATERALS OR HYDRANTS - TRACE WIRE ACCESS MUST BE PROVIDED UTILIZING AN APPROVED GRADE LEVEL/IN-GROUND TRACE WIRE ACCESS BOX, LOCATED AT THE EDGE OF THE ROAD RIGHT-OF-WAY, AND OUT OF THE ROADWAY. THE GRADE LEVEL/IN-GROUND TRACE WIRE ACCESS BOX SHALL BE DELINEATED USING A MINIMUM 48" POLYETHYLENE MARKER POST, COLOR CODED PER APWA STANDARD FOR THE SPECIFIC UTILITY BEING MARKED.
- H. TRACE WIRE MUST BE PROPERLY GROUNDED AT ALL DEAD ENDS/STUBS.
- I. GROUNDING OF TRACE WIRE SHALL BE ACHIEVED BY USE OF A DRIVE-IN MAGNESIUM GROUNDING ANODE ROD WITH A MINIMUM OF 20FT OF #14 RED HDPE INSULATED COPPER CLAD STEEL WIRE CONNECTED TO ANODE (MINIMUM 0.5 LB.) SPECIFICALLY MANUFACTURED FOR THIS PURPOSE, AND BURIED AT THE SAME ELEVATION AS THE UTILITY. GROUNDING ANODE MUST BE DRIVEN INTO UNDISTURBED SOIL (BURYING ANODES WITH DISTURBED SOIL IS NOT ALLOWED)
- J. WHEN GROUNDING THE TRACE WIRE AT DEAD ENDS/STUBS, THE GROUNDING ANODE SHALL BE INSTALLED IN A DIRECTION 180 DEGREES OPPOSITE OF THE TRACE WIRE, AT THE MAXIMUM POSSIBLE DISTANCE.
- K. WHEN GROUNDING THE TRACE WIRE IN AREAS WHERE THE TRACE WIRE IS CONTINUOUS AND NEITHER THE MAINLINE TRACE WIRE OR THE GROUNDING ANODE WIRE WILL BE TERMINATED AT/ABOVE GRADE, INSTALL GROUNDING ANODE DIRECTLY BENEATH AND IN-LINE WITH THE TRACE WIRE. DO NOT COIL EXCESS WIRE FROM GROUNDING ANODE. IN THIS INSTALLATION METHOD, THE GROUNDING ANODE WIRE SHALL BE TRIMMED TO AN APPROPRIATE LENGTH BEFORE CONNECTING TO TRACE WIRE WITH A MAINLINE TO LATERAL LUG CONNECTOR.
- L. WHERE THE ANODE WIRE WILL BE CONNECTED TO A TRACE WIRE ACCESS BOX, A MINIMUM OF 2 FT. OF EXCESS/SLACK WIRE IS REQUIRED AFTER MEETING FINAL ELEVATION.

3.11 TESTING
- A. ALL SYSTEM COMPONENTS, INCLUDING SERVICE MAINS, SERVICES AND LATERALS, SHALL BE HYDROSTATICALLY TESTING IN ACCORDANCE WITH AWWA C605 AND THE REQUIREMENTS OF THE LATEST EDITION OF THE MINNESOTA PLUMBING CODE.

3.12 DISINFECTION
- A. THE CONTRACTOR SHALL FOLLOW THE FOLLOWING DISINFECTION PROCEDURE:
  1. THE SYSTEM, INCLUDING ALL MAINS, FITTINGS, AND SERVICE LATERALS, SHALL BE DISINFECTED BY EITHER THE CONTINUOUS FEED METHOD OR THE SLUG METHOD AS SPECIFIED UNDER AWWA C651 AND THE LATEST VERSION OF THE MINNESOTA PLUMBING CODE.
  2. ADMISSION OF DISINFECTANT SOLUTION INTO OR THE FLUSHING THEREOF THROUGH EXISTING MAINS OR SERVICES SHALL BE PROHIBITED.
  3. DURING DISINFECTION, ALL VALVES SHALL BE OPERATED TO ENSURE THAT ALL APPURTENANCES ARE DISINFECTED. VALVES SHALL BE MANIPULATED IN SUCH A MANNER THAT THE STRONG CHLORINE SOLUTION IN THE LINE BEING CHLORINATED WILL NOT FLOW BACK INTO THE SUPPLY LINE. CHECK VALVES, IF REQUIRED, SHALL BE USED.
  4. EXISTING MAINS OR SERVICES THAT COULD HAVE BEEN CONTAMINATED DURING WORK REQUIRING CONNECTIONS TO THE NEW WATER LINES SHALL BE FLUSHED AND DISINFECTED IN ACCORDANCE WITH AWWA C651.
  5. ALL CHLORINATED WATER DISCHARGED TO DRAINAGE COURSES OR STORM SEWERS SHALL BE NEUTRALIZED BY DILUTION OR CHEMICAL TREATMENT. THE RATE AND MANNER OF DISPOSAL AND THE CHLORINE RESIDUAL OF WASTED WATER SHALL BE ACCEPTABLE TO THE OWNER, ENGINEER, AND THE APPROPRIATE APPLICABLE REGULATORY AGENCIES.
- B. FINAL FLUSHING
  1. UPON COMPLETION OF CHLORINATION, BUT BEFORE SAMPLING AND BACTERIOLOGICAL TESTING, ALL HEAVILY CHLORINATED WATER SHALL BE REMOVED FROM THE WATER LINES BY FLUSHING WITH POTABLE WATER UNTIL THE CHLORINE RESIDUAL IN THE WATER LINES IS NOT HIGHER THAT THAT GENERALLY PREVAILING IN THE REMAINDER OF THE SYSTEM.
- C. BACTERIOLOGICAL TESTING
  1. SAMPLING AND TESTING OF WATER IN THE WATER LINES SHALL BE PERFORMED AFTER FINAL FLUSHING IN ACCORDANCE WITH THE MOST CURRENT AWWA STANDARD C651 AND THE REQUIREMENTS OF THE LATEST VERSION OF MINNESOTA PLUMBING CODE. FOLLOWING DISINFECTION AND FINAL FLUSHING, AND BEFORE THE NEW MAIN IS CONNECTED TO THE DISTRIBUTION SYSTEM, TWO CONSECUTIVE SETS OF ACCEPTABLE SAMPLES SHALL BE TAKEN FROM THE NEW WATERMAIN. THE SAMPLES SHALL BE TAKEN EITHER AT LEAST 16 HOURS APART; OR AT LEAST 16 HOURS AFTER FINAL FLUSHING AND TAKEN AT LEAST 15 MINUTES APART WHILE THE SAMPLE TAP REMAINS RUNNING BETWEEN SAMPLE SETS.
  2. WRITTEN LABORATORY TEST RESULTS MUST BE SUBMITTED TO THE OWNER PRIOR TO PLACING THE WATER SYSTEM BACK IN SERVICE.
- D. FINAL CONNECTION AND FLUSHING OF SERVICE LATERALS
  1. THE CONTRACTOR SHALL PROVIDE A WRITTEN NOTICE, TO ALL PROPERTIES CONNECTED TO THE EFFECTED PORTION OF WATERMAIN, THAT IT MAY BE NECESSARY TO FLUSH THEIR SERVICE LINE AND INTERNAL PLUMBING WHEN THE WATERMAIN IS PLACED BACK IN SERVICE.
  2. THE NOTICE SHOULD ADVISE THE PROPERTY OWNERS OF POSSIBLE DISCOLORATION, CHLORINE ODOR, AND INSTRUCTIONS FOR FLUSHING THEIR PLUMBING SYSTEM. THE CONTRACTOR SHALL PROVIDE A PHONE NUMBER OF A REPRESENTATIVE OF THE CONTRACTOR THAT MAY BE CONTRACTED FOR QUESTIONS OR ASSISTANCE.
  3. THE CONTRACTOR WILL NOT PLACE ANY SERVICE LINE BACK IN OPERATION (OR REMOVE A TEMPORARY CONNECTION) WITHOUT MAKING VERBAL COMMUNICATION WITH THE PROPERTY OWNER. THE INTENSION IS TO ENSURE THAT OWNER IS AVAILABLE AT THE PROPERTY TO VERIFY PROPER OPERATION OF THE INTERNAL PLUMBING AFTER THE SERVICE LINE IS PLACE BACK IN OPERATION. MOST OFTEN THIS ACTIVITY WILL NEED TO TAKE PLACE AFTER NORMAL BUSINESS HOURS.
  4. THE CONTRACTOR MUST NOTIFY THE ENGINEER OF ANY PROPERTIES THAT THEY HAVE BEEN UNABLE TO MAKE CONTACT WITH. THE ENGINEER WILL THEN DETERMINE THE APPROPRIATE ACTION WITH THE OWNER. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR PLACE A SERVICE LATERAL BACK IN SERVICE WITHOUT VERBAL COMMUNICATION WITH PROPERTY OWNER OR EXPLICIT DIRECTION FROM THE ENGINEER.

SEWER SYSTEMS

SECTION 1 - GENERAL

1.01 SUBMITTALS/SHOP DRAWINGS
- A. SUBMIT SHOP DRAWINGS OF ALL PIPE, FITTINGS, AND VALVES.
- B. SUBMIT SHOP DRAWINGS OF ALL MANHOLE, FRAMES, AND CASTINGS.
- C. SHOP DRAWING SHALL INDICATE AT A MINIMUM, MANUFACTURER'S NAME AND ADDRESS, SIZES OR DIMENSIONS, AND GENERAL ORIENTATION.

SECTION 2 - PRODUCTS

2.01 SEWER MANHOLES, COVERS, AND FRAMES
- A. SHALL BE IN ACCORDANCE WITH MNDOT 2506 AND DIVISION S AND THE LATEST VERSION OF THE MINNESOTA PLUMBING CODE.
- B. ALL PIPE PENETRATIONS SHALL BE SEALED WITH A WATERTIGHT FLEXIBLE RUBBER BOOT.

2.02 SANITARY SEWER PIPE AND FITTINGS
- A. SHALL BE SCHEDULE 40 CONFORMING TO THE LATEST EDITION OF THE MINNESOTA PLUMBING CODE AND ASTM D 1785, ASTM D 2665, AND ASTM F 794.
  1. ALL PIPE SHALL BE MARKED AT NO GREATER THAN FIVE (5) FOOT INTERVALS WITH THE FOLLOWING:
     - a. MANUFACTURER'S NAME
     - b. NOMINAL PIPE SIZE AND MATERIAL DESIGNATION
     - c. PVC CELL CLASSIFICATION
- B. PVC GRAVITY SEWER PIPE FITTINGS
  1. ALL PVC GRAVITY SEWER PIPE FITTINGS AND ACCESSORIES SHALL BE COMPATIBLE WITH THE PIPING THEY ARE JOINED TO AND SHALL BE THE SAME CLASS AND GRADE AS THE MAIN LINE PIPE.
  2. ALL FITTINGS SHALL BE MARKED WITH THE FOLLOWING:
     - a. MANUFACTURER'S NAME
     - b. NOMINAL SIZE AND MATERIAL DESIGNATION
     - c. REFERENCE ASTM STANDARD

2.03 STORM SEWER PIPE AND FITTINGS
- A. STORM PIPE AND FITTINGS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SANITARY SEWER PIPE AND FITTINGS OR DUAL WALL (SMOOTH INTERIOR), HIGH-DENSITY POLYETHYLENE (HDPE) PIPE IN ACCORDANCE WITH THE LATEST VERSION OF THE MINNESOTA PLUMBING CODE AND THE BELOW:
  1. HDPE PIPE SHALL BE IN ACCORDANCE WITH ASTM F 2306.
  2. HDPE JOINTS SHALL BE WATERTIGHT IN ACCORDANCE WITH ASTM D 3212.
  2. ALL PIPE SHALL BE MARKED AT NO GREATER THAN FIVE (5) FOOT INTERVALS WITH THE FOLLOWING:
     - d. MANUFACTURER'S NAME
     - e. NOMINAL PIPE SIZE AND MATERIAL DESIGNATION
     - f. PVC CELL CLASSIFICATION

SECTION 3 - EXECUTION

3.01 PROTECTION AND VERIFICATION
- A. PROTECTION
  1. SUPPORT, PROTECT, AND MAINTAIN ALL EXISTING SURFACE AND UNDERGROUND UTILITIES FOR THE DURATION OF THE PROJECT.
  2. PROVIDE FOR THE PROTECTION OF VEHICULAR AND PEDESTRIAN TRAFFIC FOR THE DURATION OF THE PROJECT.
  3. UNLESS OTHERWISE PROVIDED FOR, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REMOVAL AND REPLACEMENT, RELOCATION, OR TEMPORARY BRACING OF ANY UTILITY NECESSARY TO COMPLETE THE WORK.
  4. ENGINEER MAY ORDER OR CONSIDER MINOR MODIFICATIONS TO GRADES OR ALIGNMENTS TO AVOID CONFLICT WITH OTHER UTILITIES.
- B. VERIFICATION
  1. ALL EXISTING UTILITIES SHALL BE LOCATED PRIOR TO ANY EXCAVATION WORK.
  2. CONTRACTOR SHALL COORDINATE WITH OWNERS OF EXISTING UTILITIES PRIOR TO ANY EXCAVATION WORK.

3.02 INSTALLATION OF MANHOLES
- A. SHALL BE IN ACCORDANCE WITH MNDOT 2605 AND DIVISION S INSTALLATION OF PIPING

3.03 INSTALLATION OF PIPING
- A. ALL SANITARY SEWER SHALL BE INSTALLED IN ACCORDANCE WITH MNDOT 2451, AS IT PERTAINS TO TRENCHING, EXCAVATION, PLACEMENT, AND BACKFILLING FOR PREFABRICATED STRUCTURES AND PIPE, ALONG WITH ANY ADDITIONAL REQUIREMENTS CONTAINED HEREIN.
- B. GRAVITY SEWER AND FORCEMAIN INSTALLATION
  1. INSPECT ALL PIPE PRIOR TO INSTALLATION. CLEAN PIPE OF ALL DEBRIS AND FOREIGN MATTER. REPLACE ANY DAMAGED LENGTHS.
  2. LAY PIPE TO LINE AND GRADE AS SHOWN ON THE DRAWINGS.
  3. ALL PIPING SHALL BE LAID WITH THE BELLS UP-GRADE FOR GRAVITY INSTALLATIONS.
  4. ALL PIPING SHALL BE LAID WITH THE BELLS INTO THE DIRECTION OF FLOW FOR FORCEMAIN INSTALLATIONS.
  5. ASSEMBLE PIPE AND JOINTS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
  6. CONTRACTOR SHALL EMPLOY THE USE OF A PIPE GRADE LASER TO ENSURE PIPE IS LAID TO THE SPECIFIED GRADE AND LINE.
  7. CLEAN ALL FOREIGN MATTER FROM INTERIOR OF PIPE PRIOR TO PLACEMENT.
  8. CAP OR PLUG PIPE OPENING IN THE TRENCH AS NECESSARY TO PREVENT WATER OR OTHER MATTER FROM ENTERING THE PIPE DURING CONSTRUCTION.
  9. PIPE SHALL NOT BE PLACED ON SOFT OR UNSUITABLE SUBGRADE FOUNDATION. CONTRACTOR SHALL BE REQUIRED TO OVER EXCAVATE UNSUITABLE FOUNDATION MATERIAL AND REPLACE IT WITH SUITABLE GRANULAR MATERIAL OR ROCK, AS DEEMED NECESSARY BY THE ENGINEER, AT NO ADDITIONAL COST TO THE OWNER.
- C. THE CONTRACTOR SHALL KEEP DETAILED RECORDS AND DRAWINGS OF THE LOCATION AND CONFIGURATION OF ALL SEWER SYSTEMS. RECORDS SHALL INCLUDE ELEVATIONS, GRADES, SIZES, LENGTHS, LOCATION OF FITTINGS, CONFIGURATIONS OF RISERS, OR OTHER DATA THAT WILL PROVIDE FOR CLEAR DEPICTION OF THE SERVICE LATERAL INSTALLATION. RECORDS SHALL BE TURNED OVER TO THE ENGINEER WEEKLY.

1.01 PLACEMENT OF INSULATION
- A. SANITARY SEWER AND SERVICE LATERALS SHALL BE INSULATED IN LOCATION WHERE THE PIPE IS SUBJECT TO FREEZING CONDITIONS DUE TO SHALLOW LOCATIONS (LESS THAN SEVEN AND A HALF (7.5) FEET IN DEPTH, AND/OR WHEN IN CLOSE PROXIMITY TO A STORM SEWER.
- B. RIGID INSULATION BOARD SHALL BE PLACED WITHIN THE PIPE ENCASEMENT ZONE, SIX (6) INCHES ABOVE THE PIPE. PRIOR TO PLACEMENT OF THE INSULATION, GRANULAR MATERIAL, MEETING THE REQUIREMENTS OF MNDOT 3149, SHALL BE LEVELED AND COMPACTED UNTIL THERE IS NO FURTHER VISUAL EVIDENCE OF INCREASED CONSOLIDATION OR THE DENSITY OF THE COMPACTED LAYER CONFORMS TO THE DENSITY REQUIREMENTS SPECIFIED IN THE SECTION 02220 THEN LEVELED AND LIGHTLY SCARIFIED TO A DEPTH OF ONE HALF (1/2) INCH. BORROW MATERIAL PLACED ABOVE AND BELOW THE INSULATION SHALL BE FREE OF ROCK OR STONE FRAGMENTS MEASURING ONE AND ONE HALF (1 ½) INCHES OR GREATER.
- C. INSULATION BOARDS SHALL BE PLACED ON THE SCARIFIED MATERIAL WITH THE LONG DIMENSION PARALLEL TO THE CENTERLINE OF THE PIPE. BOARDS SHALL BE PLACED IN A SINGLE LAYER WITH TIGHT JOINTS. NO CONTINUOUS JOINTS OR SEAMS SHALL BE PLACED DIRECTLY OVER THE PIPE. IF TWO OR MORE LAYERS OF INSULATION BOARDS ARE USED, EACH LAYER SHALL BE STAGGERED MANNER THAT WILL PROVIDE JOINT OVERLAPS A MINIMUM OF 6 INCHES ON THE UNDERLYING SHEETS AND THE EDGES SHALL BE TRIM AND SQUARE SO TO COVER THE JOINTS OF THE LAYER IMMEDIATELY BELOW.
- D. THE CONTRACTOR SHALL EXERCISE PRECAUTION TO INSURE THAT ALL JOINTS BETWEEN BOARDS ARE TIGHT DURING PLACEMENT AND BACKFILLING WITH ONLY EXTRUDED ENDS PLACED END TO END OR EDGE TO EDGE.
- E. THE FIRST LAYER OF MATERIAL PLACED OVER THE INSULATION SHALL BE 6 INCHES IN DEPTH, FREE OF ROCK OR STONE FRAGMENTS MEASURING ONE AND ONE HALF (1 ½) INCHES OR GREATER. THE MATERIAL SHALL BE PLACED IN SUCH A MANNER THAT WILL PRECLUDE DAMAGE TO THE INSULATION MATERIAL AND OPERATION OF CONSTRUCTION EQUIPMENT DIRECTLY ON THE INSULATION. COMPACTION SHALL BE COMPLETED WITH EQUIPMENT WHICH EXERTS A CONTRACT PRESSURE OF LESS THAN EIGHTY (80) PSI.

3.04 TESTING
- A. ALL SEWERS INCLUDING PIPE, MANHOLES, AND CLEANOUTS SHALL BE TESTING IN ACCORDANCE WITH THE LATEST VERSION OF THE MINNESOTA PLUMBING CODE AND THE AUTHORITY HAVING JURISDICTION.
- B. CONTRACTOR SHALL FURNISH ALL EQUIPMENT, MATERIALS, AND LABOR FOR PERFORMING THE TESTS AND MEASUREMENTS.

TRENCHING, BACKFILLING & COMPACTION

PART 1 - GENERAL

1.01 DESCRIPTION
- A. THIS WORK SHALL CONSIST OF THE EXCAVATION, BACKFILLING, AND COMPACTION FOR THE PURPOSES OF INSTALLING NEW AND/OR RELOCATING OR ADJUSTING EXISTING UNDERGROUND UTILITIES.

PART 2 - PRODUCTS

2.01 GRANULAR MATERIALS
- A. GRANULAR MATERIALS FURNISHED FOR FOUNDATION, BEDDING, ENCASEMENT, BACKFILL, OR OTHER PURPOSES AS MAY BE SPECIFIED SHALL CONSIST OF ANY NATURAL OR SYNTHETIC MINERAL AGGREGATE SUCH AS SAND, GRAVEL, CRUSHED ROCK, CRUSHED STONE, OR SLAG, THAT SHALL BE SO GRADED AS TO MEET THE GRADATION REQUIREMENTS SPECIFIED HEREIN FOR EACH PARTICULAR USE BY THE MATERIAL MANUFACTURER OR AS INDICATED IN THE PLANS, SPECIFICATIONS, OR SPECIAL PROVISIONS.
  1. GRANULAR MATERIAL GRADATION CLASSIFICATIONS: GRANULAR MATERIALS FURNISHED FOR USE IN FOUNDATION, BEDDING, ENCASEMENT, OR BACKFILL CONSTRUCTION SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
- A. FOUNDATION MATERIALS SHALL HAVE 100 PERCENT BY WEIGHT PASSING THE 1-1/2 INCH SIEVE AND A MAXIMUM OF 10 PERCENT BY WEIGHT PASSING THE NO. 4 SIEVE.
- B. BACKFILL MATERIALS SHALL CONSIST OF EXISTING TRENCH MATERIALS, EXCEPT AS OTHERWISE SPECIFIED IN THIS SPECIFICATION OR ELSEWHERE IN THE CONTRACT DOCUMENTS.
- C. BEDDING AND ENCASEMENT MATERIALS FOR FLEXIBLE PIPE, WHERE IMPROVED PIPE FOUNDATION IS NOT REQUIRED, SHALL MEET THE REQUIREMENTS OF MNDOT SPECIFICATION 3149.2B1, GRANULAR BORROW, EXCEPT THAT 100 PERCENT BY WEIGHT SHALL PASS THE ONE-INCH SIEVE.
- B. A GRADATION REPORT FROM AN APPROVED INDEPENDENT TESTING LABORATORY OF THE PROPOSED GRANULAR MATERIALS SHALL BE FURNISHED TO THE ENGINEER UPON REQUEST. A GRADATION REPORT SHALL BE SUBMITTED AND APPROVED BEFORE ANY OFF-SITE/IMPORTED GRANULAR MATERIALS ARE DELIVERED TO THE PROJECT (IF APPLICABLE).

PART 3 - EXECUTION

3.01 GRADES AND UTILITY CONFLICTS
- A. UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS THE WATER PIPE SHALL GENERALLY BE PLACED WITH THE MINIMUM OF NINE (9) FEET OF COVER. HOWEVER, A GREATER DEPTH MAY BE REQUIRED TO AVOID CONFLICT WITH EXISTING/PROPOSED STORM AND SANITARY SEWERS AND SEWER SERVICES.
- B. IN LOCATIONS WHERE SEWER IS IN DIRECT CONFLICT WITH EXISTING WATERMAIN AND WATER SERVICES THE WATER MAIN AND WATER SERVICES SHALL BE LOWERED TO PROVIDE AT LEAST 18-INCHES OF VERTICAL DISTANCE BETWEEN THE TOP OF THE WATER MAIN OR SERVICE AND THE BOTTOM OF THE SANITARY.
- C. WATERMAINS CROSSING ABOVE STORM OR SANITARY SEWERS SHALL BE LAID TO PROVIDE A SEPARATION OF AT LEAST 18-INCHES BETWEEN THE BOTTOM OF THE WATER MAIN AND THE TOP OF THE SEWER. WHEN LOCAL CONDITIONS PREVENT A VERTICAL SEPARATION AS DESCRIBED, THE FOLLOWING CONSTRUCTION SHALL BE USED:
  1. SEWERS PASSING OVER OR UNDER WATERMAINS SHALL BE CONSTRUCTED OF MATERIALS EQUAL TO WATERMAIN STANDARDS OF CONSTRUCTION FOR A DISTANCE OF AT LEAST 9-FEET ON EITHER SIDE OF THE WATERMAIN.
  2. WATERMAIN PASSING UNDER SEWERS SHALL, IN ADDITION, BE PROTECTED BY PROVIDING:
- A. A VERTICAL SEPARATION OF AT LEAST 18-INCHES BETWEEN THE BOTTOM OF THE SEWER AND THE TOP OF THE WATERMAIN;
- B. ADEQUATE STRUCTURAL SUPPORT FOR THE SEWERS TO PREVENT EXCESSIVE DEFLECTION OF JOINTS AND SETTLING ON AND BREAKING OF THE WATERMAINS;
  3. A LENGTH OF WATER PIPE SHALL BE CENTERED AT THE POINT OF CROSSING SO THAT THE JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER.
  4. WATERMAINS/SERVICES SHALL BE LAID AT LEAST 10-FEET HORIZONTALLY FROM ANY SANITARY SEWER OR STORM SEWER.

3.02 PROTECTION OF SURFACE STRUCTURES
- A. ALL SURFACE STRUCTURES AND FEATURES LOCATED OUTSIDE THE PERMISSIBLE EXCAVATION LIMITS FOR UNDERGROUND INSTALLATIONS, TOGETHER WITH THOSE WITHIN THE CONSTRUCTION AREAS WHICH ARE INDICATED IN THE PLANS AS BEING SAVED, SHALL BE PROPERLY PROTECTED AGAINST DAMAGE AND SHALL NOT BE DISTURBED OR REMOVED WITHOUT APPROVAL OF THE ENGINEER. WITHIN THE CONSTRUCTION LIMITS, AS REQUIRED, THE REMOVAL OF IMPROVEMENTS SUCH AS PAVING, CURBING, WALKS, TURF, ETC., SHALL BE SUBJECT TO ACCEPTABLE REPLACEMENT AFTER COMPLETION OF UNDERGROUND WORK, WITH ALL EXPENSE OF REMOVAL AND REPLACEMENT BEING BORNE BY THE CONTRACTOR TO THE EXTENT THAT SEPARATE COMPENSATION IS NOT SPECIFICALLY PROVIDED FOR IN THE CONTRACT DOCUMENTS.
- B. OBSTRUCTIONS SUCH AS STREET SIGNS, GUARD POSTS, SMALL CULVERTS, MAILBOXES, AND OTHER ITEMS OF PREFABRICATED CONSTRUCTION MAY BE TEMPORARILY REMOVED DURING CONSTRUCTION PROVIDED THAT ESSENTIAL SERVICE IS MAINTAINED IN A RELOCATED SETTING AS APPROVED BY THE ENGINEER AND THAT NONESSENTIAL ITEMS ARE PROPERLY STORED FOR THE DURATION OF CONSTRUCTION. UPON COMPLETION OF THE UNDERGROUND WORK, ALL SUCH ITEMS SHALL BE REPLACED IN THEIR PROPER SETTING AT THE SOLE EXPENSE OF THE CONTRACTOR.
- C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF EXISTING OVERHEAD UTILITIES AND POLES. THIS SHALL INCLUDE ARRANGING WITH THE UTILITY AND PAYING THE UTILITY FOR HOLDING POLES THAT WILL BE CLOSE TO THE EDGE OF ANY TRENCH.
- D. IN THE EVENT OF DAMAGE TO ANY SURFACE IMPROVEMENTS, EITHER PRIVATELY OR PUBLICLY OWNED, IN THE ABSENCE OF CONSTRUCTION NECESSITY, THE CONTRACTOR WILL BE REQUIRED TO REPLACE OR REPAIR THE DAMAGED PROPERTY TO THE SATISFACTION OF THE ENGINEER AND WITHOUT COST TO THE OWNER.

3.03 INTERFERENCE OF UNDERGROUND STRUCTURES
- A. WHEN ANY UNDERGROUND STRUCTURE INTERFERES WITH THE PLANNED PLACEMENT OF THE PIPELINE OR APPURTENANCES TO SUCH AN EXTENT THAT ALTERATIONS IN THE WORK ARE NECESSARY TO ELIMINATE THE CONFLICT OR AVOID ENDANGERING EFFECTS ON EITHER THE EXISTING OR PROPOSED FACILITIES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND THE OWNER OF THE EFFECTED STRUCTURE. WHEN ANY EXISTING FACILITIES ARE ENDANGERED BY THE CONTRACTOR'S OPERATIONS, THE CONTRACTOR SHALL CEASE WORK AT THE SITE AND TAKE SUCH PRECAUTIONS AS MAY BE NECESSARY TO PROTECT THE IN-PLACE STRUCTURES UNTIL A DECISION IS MADE AS TO HOW THE CONFLICT WILL BE RESOLVED.

3.04 REMOVAL OF SURFACE IMPROVEMENTS
- A. REMOVAL OF SURFACE IMPROVEMENTS IN CONNECTION WITH TRENCH EXCAVATION SHALL BE LIMITED TO ACTUAL NEEDS FOR INSTALLATION OF THE PIPELINE AND APPURTENANCES, BASED ON THE ALLOWABLE TRENCH WIDTHS AND ANY OTHER CONTROLS IMPOSED IN CONNECTION WITH THE WORK. REMOVAL OPERATIONS SHALL BE COORDINATED EFFECTIVELY WITH THE EXCAVATION AND INSTALLATION OPERATIONS AS WILL CAUSE THE LEAST PRACTICAL DISRUPTION. THE DEBRIS RESULTING FROM REMOVALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH MNDOT SPECIFICATION 2104
- B. ANY REUSABLE MATERIALS GENERATED DURING THE WORK, SUCH AS AGGREGATE, SOD, TOPSOIL, SHALL BE SEGREGATED FROM OTHER WASTE MATERIALS AND BE STOCKPILED SO AS TO MAINTAIN SUITABILITY AND PERMIT PROPER REUSE.

3.05 DEWATERING
- A. CONTRACTOR SHALL PROVIDE ALL LABOR AND EQUIPMENT NEEDED TO COMPLETE DEWATERING OF SUBGRADE SOILS FOR TRENCH INSTALLATION OF UNDERGROUND UTILITIES OR OTHER SUCH IMPROVEMENTS.
- B. DEWATER DISCHARGE WITH ELEVATED IRON CONCENTRATIONS WILL NOT BE PERMITTED TO DISCHARGE TO ANY SURFACE INFRASTRUCTURE (I.E TO CURB AND GUTTER OR PAVEMENTS). THIS DISCHARGE MUST BE PIPED TO NEAREST STORM SEWER, AND/OR NATURAL DRAINAGE WAY.
- C. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A DEPARTMENT OF NATURAL RESOURCES (DNR) WATER APPROPRIATION PERMIT AND COMPLETING DEWATERING ACTIVITIES IN ACCORDANCE WITH DNR AND OTHER REGULATORY AGENCY RULES AND REGULATIONS.
- D. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETING DEWATERING ACTIVITIES IN ACCORDANCE WITH THE PROJECT'S STORMWATER POLLUTION PREVENTION PLAN (SWPPP).
- E. DEWATERING SHALL BE UTILIZED TO ELIMINATE WATER FROM TRENCH SLOPES AND BOTTOMS RESULTING IN STABLE CONDITIONS FOR LAYING PIPE. THE SOIL SHALL BE DEWATERED, BELOW THE BOTTOM OF TRENCH ELEVATION, IN A MANNER THAT PROVIDES A FIRM AND SUITABLE PIPE FOUNDATION. UNSUITABLE PIPE FOUNDATIONS, AS A RESULT OF INADEQUATE DEWATERING SHALL BE, REMOVED AND CORRECTED WITH ROCK.
- F. ENGINE DRIVEN PUMPS OR GENERATORS, OPERATING FOR MORE THAN 48 HOURS, SHALL BE EQUIPPED WITH A SOUND ATTENUATING ENCLOSURE. THE ENCLOSURE SHALL REDUCE NOISE TO LESS THAN SEVENTY (70) DECIBELS AT TWENTY-THREE (23) FEET.
- G. ALL EQUIPMENT, MATERIAL, AND LABOR REQUIRED FOR DEWATERING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE CONSIDERED INCIDENTAL WORK.

3.06 EXCAVATION AND PREPARATION OF TRENCH
- A. OPERATIONAL LIMITATIONS AND REQUIREMENTS
  1. NO TRENCH SHALL REMAIN OPEN OVER NIGHT WITHOUT THE CONSENT OF THE OWNER AND PROPER PROTECTION SUCH AS FENCING AND BARRICADES.
  2. ALL INSTALLATIONS SHALL BE ACCOMPLISHED BY OPEN TRENCH.
  3. THE EXCAVATING OPERATIONS SHALL BE CONDUCTED SO AS TO CAREFULLY EXPOSE ALL IN-PLACE UNDERGROUND STRUCTURES WITHOUT DAMAGE. WHEREVER THE EXCAVATION EXTENDS UNDER OR APPROACHES SO CLOSE TO AN EXISTING STRUCTURE AS TO ENDANGER IT IN ANY WAY, PRECAUTIONS AND PROTECTIVE MEASURES SHALL BE TAKEN AS NECESSARY TO PRESERVE THE STRUCTURE AND PROVIDE TEMPORARY SUPPORT. HAND METHODS OF EXCAVATING SHALL BE UTILIZED TO PROBE FOR AND EXPOSE ALL EXISTING UNDERGROUND UTILITIES.
- B. CLASSIFICATION AND DISPOSITION OF MATERIALS
  1. EXCAVATED MATERIALS WILL BE CLASSIFIED IN ACCORDANCE WITH MNDOT 2105.
  2. UNCLASSIFIED MATERIALS SHALL INCLUDE MUCK, RUBBLE, WOOD DEBRIS, AND BOULDER STONE, MASONRY OR CONCRETE FRAGMENTS LESS THAN ONE CUBIC YARD IN VOLUME, TOGETHER WITH OTHER MISCELLANEOUS MATTER THAT CAN BE REMOVED EFFECTIVELY WITH POWER OPERATED EXCAVATORS WITHOUT RESORTING TO DRILLING AND BLASTING.
  3. EXCAVATED MATERIALS WILL BE CLASSIFIED FOR REUSE AS BEING EITHER SUITABLE OR UNSUITABLE FOR BACKFILL OR OTHER SPECIFIED USE, SUBJECT TO SELECTIVE CONTROLS. ALL SUITABLE MATERIALS SHALL BE RESERVED FOR BACKFILL TO THE EXTENT NEEDED, AND ANY SURPLUS REMAINING SHALL BE UTILIZED FOR OTHER CONSTRUCTION ON THE PROJECT. TO THE EXTENT PRACTICABLE, GRANULAR MATERIALS AND TOPSOIL SHALL BE SEGREGATED FROM OTHER MATERIALS DURING THE EXCAVATING AND STOCKPILING OPERATIONS SO AS TO PERMIT BEST USE OF THE AVAILABLE MATERIALS AT THE TIME OF BACKFILLING.
  4. ALL EXCAVATED MATERIALS RESERVED FOR BACKFILL OR OTHER USE ON THE PROJECT SHALL BE STORED AT LOCATIONS THAT WILL CAUSE A MINIMUM OF INCONVENIENCE TO OWNER, ADJACENT PROPERTIES, AND OTHER SPECIAL INTERESTS. THE MATERIAL SHALL NOT BE DEPOSITED SO CLOSE TO THE EDGES OF THE EXCAVATIONS AS IT WOULD CREATE HAZARDOUS CONDITIONS.
  5. ALL MATERIALS CONSIDERED UNSUITABLE, FOR ANY USE ON THE PROJECT, SHALL BE IMMEDIATELY REMOVED FROM THE PROJECT AND BE DISPOSED OF BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.
- C. EXCAVATION LIMITATIONS AND REQUIREMENTS
  1. TRENCH EXCAVATING SHALL BE TO A DEPTH THAT WILL PERMIT PREPARATION OF THE FOUNDATION AS SPECIFIED AND INSTALLATION OF THE PIPELINE AND APPURTENANCES AT THE PRESCRIBED LINE AND GRADE, EXCEPT WHERE ALTERATIONS ARE SPECIFICALLY AUTHORIZED. TRENCH WIDTHS SHALL BE SUFFICIENT TO PERMIT THE PIPE TO BE LAID AND JOINED PROPERLY AND THE BACKFILL TO BE PLACED AND COMPACTED AS SPECIFIED. EXTRA WIDTH SHALL BE PROVIDED AS NECESSARY TO PERMIT CONVENIENT PLACEMENT OF SHEETING AND SHORING AND TO ACCOMMODATE PLACEMENT OF APPURTENANCES.
  2. EXCAVATIONS SHALL BE EXTENDED BELOW THE BOTTOM OF STRUCTURE AS NECESSARY TO ACCOMMODATE ANY REQUIRED GRANULAR FOUNDATION MATERIAL. WHEN ROCK OR UNSTABLE FOUNDATION MATERIALS ARE ENCOUNTERED AT THE ESTABLISHED GRADE, ADDITIONAL MATERIALS SHALL BE REMOVED TO PRODUCE AN ACCEPTABLE FOUNDATION.
  3. WHERE NO OTHER GRADE CONTROLS ARE INDICATED OR ESTABLISHED FOR THE PIPELINE, THE EXCAVATING AND FOUNDATION PREPARATIONS SHALL BE SUCH AS TO PROVIDE A MINIMUM COVER OVER THE TOP OF THE PIPE AS SPECIFIED. TRENCH WIDTHS SHALL ALLOW FOR AT LEAST SIX INCHES OF CLEARANCE ON EACH SIDE OF THE JOINT HUBS. THE MAXIMUM ALLOWABLE WIDTH OF THE TRENCH AT THE TOP OF PIPE LEVEL SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS TWO FEET, SUBJECT TO THE CONSIDERATIONS FOR ALTERNATE PIPE LOADING SET FORTH BELOW. THE WIDTH OF THE TRENCH AT THE GROUND SURFACE SHALL BE HELD TO A MINIMUM TO PREVENT UNNECESSARY IMPACT TO SURFACE STRUCTURES.
- D. SHEETING AND BRACING EXCAVATIONS
  1. ALL EXCAVATIONS SHALL BE SHEETED, SHORED, AND BRACED AS WILL MEET ALL REQUIREMENTS OF THE APPLICABLE SAFETY CODES AND REGULATIONS; AND PREVENT DISTURBANCE OR SETTLEMENT OF ADJACENT SURFACES, FOUNDATIONS, STRUCTURES, UTILITIES, AND OTHER PROPERTIES. ANY DAMAGE TO THE WORK UNDER CONTRACT OR TO ADJACENT STRUCTURES OR PROPERTY CAUSED BY SETTLEMENT, WATER OR EARTH PRESSURES, SLIDES, CAVE-INS, OR OTHER CAUSES DUE TO FAILURE OR LACK OF SHEETING, SHORING, OR BRACING OR THROUGH NEGLIGENCE OR FAULT OF THE CONTRACTOR IN ANY MANNER SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AND WITHOUT DELAY.
  2. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR PROPER AND ADEQUATE PLACEMENT OF SHEETING, SHORING, AND BRACING, WHEREVER AND TO SUCH DEPTHS THAT SOIL STABILITY MAY DICTATE THE NEED FOR SUPPORT TO PREVENT DISPLACEMENT. BRACING SHALL BE SO ARRANGED AS TO PROVIDE AMPLE WORKING SPACE AND SO AS NOT TO PLACE STRESS OR STRAIN ON THE IN-PLACE STRUCTURES TO ANY EXTENT THAT MAY CAUSE DAMAGE.
  3. SHEETING, SHORING AND BRACING MATERIALS SHALL BE REMOVED ONLY WHEN AND IN SUCH MANNER AS WILL ASSURE ADEQUATE PROTECTION OF THE IN-PLACE STRUCTURES AND PREVENT DISPLACEMENT OF SUPPORTED GROUNDS.
- E. PREPARATION AND MAINTENANCE OF FOUNDATIONS
  1. FOUNDATION PREPARATIONS SHALL BE CONDUCTED AS NECESSARY TO PRODUCE A STABLE FOUNDATION AND PROVIDE CONTINUOUS AND UNIFORM PIPE BEARING BETWEEN BELL HOLES. THE INITIAL EXCAVATING OR BACKFILLING OPERATIONS SHALL PRODUCE A SUBGRADE LEVEL SLIGHTLY ABOVE FINISHED GRADE AS WILL PERMIT HAND SHAPING TO FINISHED GRADE BY TRIMMING OF HIGH SPOTS AND WITHOUT THE NEED FOR FILLING OF LOW SPOTS TO GRADE. FINAL SUBGRADE PREPARATIONS SHALL BE SUCH AS TO PRODUCE A FINISHED GRADE AT THE CENTERLINE OF THE PIPE THAT IS WITHIN 0.03 FOOT OF A STRAIGHT LINE BETWEEN PIPE JOINTS AND TO PROVIDE BELL-HOLE EXCAVATION AT EACH JOINT AS WILL PERMIT PROPER JOINING OF PIPE AND FITTINGS.
  2. IN EXCAVATIONS MADE BELOW GRADE TO REMOVE ROCK OR UNSTABLE MATERIALS, THE BACKFILLING TO GRADE SHALL BE MADE WITH AVAILABLE SUITABLE MATERIALS UNLESS PLACEMENT OF GRANULAR FOUNDATION OR BEDDING MATERIAL IS SPECIFIED AND PROVIDED FOR OR IS ORDERED BY THE ENGINEER. PLACEMENT OF THE BACKFILL SHALL BE IN RELATIVELY UNIFORM LAYERS NOT EXCEEDING 8 INCHES IN LOOSE THICKNESS. EACH LAYER OF BACKFILL SHALL BE COMPACTED THOROUGHLY, BY MEANS OF APPROVED MECHANICAL COMPACTION EQUIPMENT, AS WILL PRODUCE UNIFORM PIPE SUPPORT THROUGHOUT THE FULL PIPE LENGTH AND FACILITATE PROPER SHAPING OF THE PIPE BED.
  3. WHERE PLACEMENT OF FOUNDATION MATERIALS WILL NOT PROVIDE AN ADEQUATE FOUNDATION FOR LAYING PIPE DUE TO THE INSTABILITY OF THE EXISTING MATERIALS AND WHERE ORDERED BY THE ENGINEER, THE CONTRACTOR SHALL PLACE GEOTEXTILE TYPE I FABRIC ON TOP OF THE UNSTABLE MATERIALS PRIOR TO PLACING FOUNDATION MATERIALS. SUFFICIENT GEOTEXTILE FABRIC SHALL BE USED TO COMPLETELY ENCLOSE THE FOUNDATION MATERIALS AND PIPE.
  4. CARE SHALL BE TAKEN DURING FINAL SUBGRADE SHAPING TO PREVENT ANY OVER-EXCAVATION. SHOULD ANY LOW SPOTS DEVELOP, THEY SHALL ONLY BE FILLED WITH APPROVED MATERIAL, WHICH SHALL HAVE OPTIMUM MOISTURE CONTENT AND BE COMPACTED THOROUGHLY.
  5. THE CONTRACTOR SHALL INSTALL AND OPERATE A DEWATERING SYSTEM OF WELLS OR POINTS TO MAINTAIN PIPE TRENCHES FREE OF WATER WHEREVER NECESSARY.

3.07 TRENCH BACKFILLING AND COMPACTION
- A. THE BACKFILLING SHALL BE ACCOMPLISHED WITH THE USE OF SUITABLE MATERIALS SELECTED FROM THE EXCAVATED MATERIALS TO THE EXTENT AVAILABLE AND PRACTICAL. SHOULD THE MATERIALS AVAILABLE WITHIN THE TRENCH SECTION BE UNSUITABLE OR INSUFFICIENT, WITHOUT LOADING AND HAULING OR THE EMPLOYMENT OF UNREASONABLE MEASURES, THE REQUIRED ADDITIONAL MATERIALS SHALL BE FURNISHED FROM OUTSIDE SOURCES.
- B. SUITABLE MATERIAL SHALL BE DEFINED AS A MINERAL SOIL FREE OF FOREIGN MATERIALS (RUBBISH, DEBRIS, ETC.), FROZEN CLUMPS, OVERSIZE STONE, ROCK, CONCRETE OR BITUMINOUS CHUNKS, AND OTHER UNSUITABLE MATERIALS, THAT MAY DAMAGE THE PIPE INSTALLATION, PREVENT THOROUGH COMPACTION, OR INCREASE THE RISKS OF AFTER SETTLEMENT UNNECESSARILY. MATERIAL SELECTION SHALL BE SUCH AS TO MAKE THE BEST AND FULLEST UTILIZATION OF WHAT IS AVAILABLE, TAKING INTO CONSIDERATION PARTICULAR NEEDS OF DIFFERENT BACKFILL ZONES. MATERIAL CONTAINING STONE, ROCK, OR CHUNKS OF ANY SORT SHALL ONLY BE UTILIZED WHERE AND TO THE EXTENT THERE WILL BE NO DETRIMENTAL EFFECTS.
- C. WITHIN THE PIPE BEDDING AND ENCASEMENT ZONES DESCRIBED AS THAT PORTION OF THE TRENCH WHICH IS BELOW AN ELEVATION ONE FOOT ABOVE THE TOP OF THE PIPE, THE MATERIALS PLACED SHALL BE LIMITED IN PARTICLE SIZE TO 1-1/2 INCHES MAXIMUM. ABOVE THESE ZONES, THE PLACEMENT OF MATERIAL CONTAINING STONES, BOULDERS, CHUNKS, ETC. GREATER THAN 8 INCHES IN ANY DIMENSION SHALL NOT BE ALLOWED.
- D. ALL FLEXIBLE PIPE SHALL BE BEDDED IN ACCORDANCE WITH ASTM SPECIFICATION D2321, "RECOMMENDED PRACTICE FOR UNDERGROUND INSTALLATION OF FLEXIBLE THERMOPLASTIC SEWER PIPE". THIS SHALL INCLUDE PLACEMENT OF GRANULAR BEDDING AND ENCASEMENT MATERIALS FROM A POINT SIX INCHES BELOW THE BOTTOM OF PIPE TO A POINT TWELVE INCHES ABOVE THE TOP OF THE PIPE. PLACEMENT AND COMPACTION OF BEDDING AND ENCASEMENT MATERIALS AROUND THE PIPE SHALL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF THE PIPE. WHERE EXISTING SOILS DO NOT MEET THE REQUIREMENTS OF BEDDING AND ENCASEMENT MATERIALS, THE CONTRACTOR SHALL FURNISH THE REQUIRED GRANULAR MATERIALS.
- E. COMPACTION OF MATERIALS PLACED WITHIN THE PIPE BEDDING AND ENCASEMENT ZONES SHALL BE ACCOMPLISHED WITH PORTABLE OR HAND EQUIPMENT METHODS, SO AS TO ACHIEVE THOROUGH CONSOLIDATION UNDER AND AROUND THE PIPE AND AVOID DAMAGE TO THE PIPE. ABOVE THE COVER ZONE MATERIAL, THE USE OF HEAVY ROLLER TYPE COMPACTION EQUIPMENT SHALL BE LIMITED TO SAFE PIPE LOADING.
- F. BACKFILL MATERIALS SHALL BE CAREFULLY PLACED IN UNIFORM LOOSE THICKNESS LAYERS UP TO 12 INCHES THICK SPREAD OVER THE FULL WIDTH AND LENGTH OF THE TRENCH SECTION TO PROVIDE SIMULTANEOUS SUPPORT ON BOTH SIDES OF THE PIPELINE. GRANULAR BACKFILL MAY BE PLACED IN 12 INCH LAYERS ABOVE AN ELEVATION ONE FOOT ABOVE THE TOP OF THE PIPE, AND WITH THE PROVISION THAT, BY AUTHORITY AND AT THE DISCRETION OF THE ENGINEER IN CONSIDERATION OF THE DEMONSTRATED CAPABILITY OF SPECIAL TYPE VIBRATING COMPACTORS, THE STATED MAXIMUMS MAY BE INCREASED.
- G. EACH LAYER OF BACKFILL MATERIAL SHALL BE COMPACTED EFFECTIVELY, BY APPROVED MECHANICAL OR HAND METHODS, UNTIL THERE IS NO FURTHER VISUAL EVIDENCE OF INCREASED CONSOLIDATION OR THE DENSITY OF THE COMPACTED LAYER CONFORMS TO THE DENSITY REQUIREMENTS SPECIFIED HEREIN. COMPACTION OF THE IN-PLACE LAYER SHALL BE COMPLETED ACCEPTABLY BEFORE PLACING MATERIAL FOR A SUCCEEDING LAYER THEREON. THE MANNER OF PLACEMENT, COMPACTION EQUIPMENT, OR PROCEDURE EFFECTIVENESS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.
- H. COMPACTION OF BACKFILL SHALL MEET THE DENSITY REQUIREMENTS OF MNDOT SPECIFICATION 2105. COMPACTION REQUIREMENTS AS NOTED UNDER ROADS SHALL ALSO APPLY TO PARKING LOTS, CURB AND GUTTER, SIDEWALKS, TRAILS, ETC... COMPACTION OF BACKFILL IN ALL OTHER AREAS SHALL BE QUALITY COMPACTION IN ACCORDANCE WITH MNDOT 2105.
- I. THE CONTRACTOR SHALL EMPLOY ALTERNATE COMPACTION TECHNIQUES IN AREAS NEAR BUILDINGS, PARTICULARLY IN SERVICE LATERAL TRENCHES, AND FOUNDATIONS SUCH THAT VIBRATION IS LIMITED AND DOES NOT DAMAGE THE BUILDING FOUNDATION, STRUCTURE OR FAÇADE. ANY DAMAGE TO BUILDING STRUCTURES SHALL BE FULLY REPAIRED TO THE SATISFACTION AT THE CONTRACTOR'S EXPENSE.

City of Detroit Lakes

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Apex Project #:	19.178.0112
Date:	February 19, 2020
Drawn By:	TJS
Checked By:	JSO
Approved By:	JAP

REVISIONS

Issue #	Description	Date

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Print Name: Jon A. Pratt

Signed: ____

Date: 02/19/20 License Number: 46267

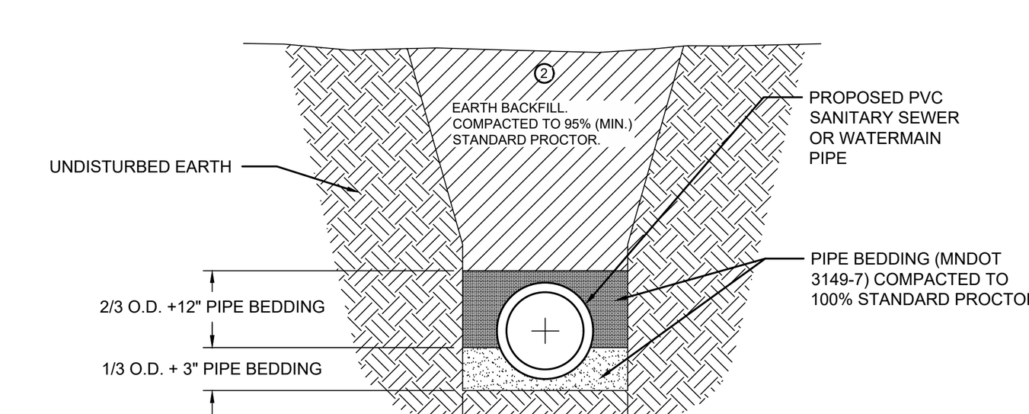
PRELIMINARY

DETROIT LAKES
POLICE STATION

GENERAL NOTES
& SPECIFICATIONS

Sheet:

1 OF 8

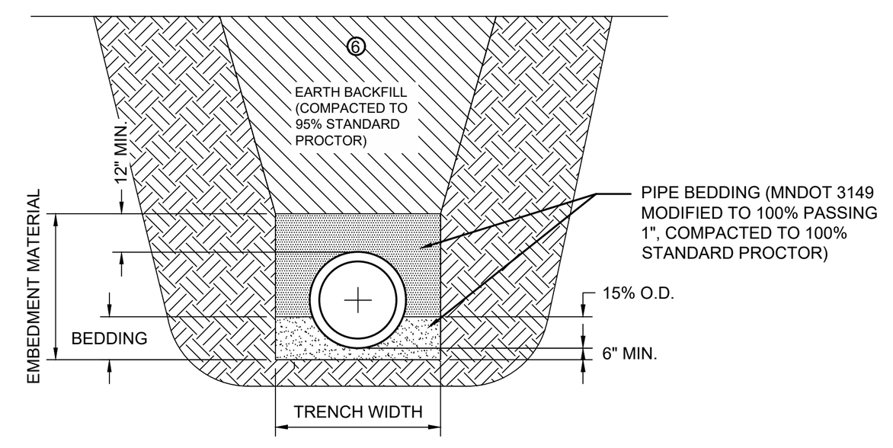


NOTE:

1. APPLIES TO ALL PVC WATERMAIN AND SANITARY SEWER PIPE.

(2) EARTH BACKFILL MUST BE COMPACTED TO 100% STANDARD PROCTOR WITHIN 3' OF FINISHED GRADE.

(1) PVC PIPE TRENCH BACKFILL DETAIL
NO SCALE

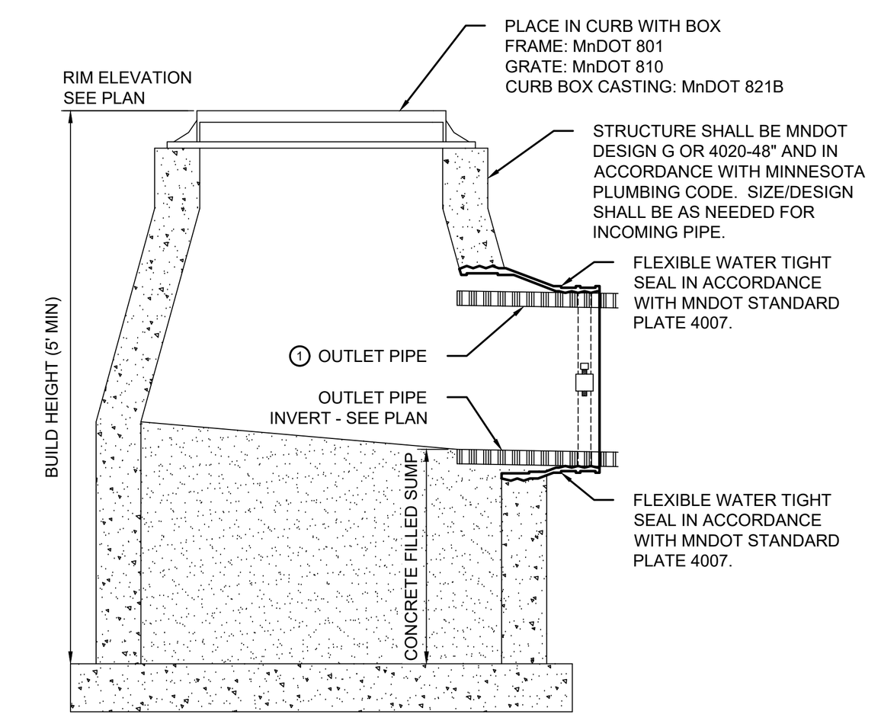


NOTE:

1. THE PIPE SIZE IS BASED ON THE NOMINAL INSIDE DIAMETER OF THE PIPE.
2. INSTALLATION SHALL BE PER MANUFACTURER REQUIREMENTS.
3. A DEFLECTION TEST IS REQUIRED FOR ACCEPTANCE OF PIPE. TELEVISING MAY BE USED IN LIEU OF A DEFLECTION TEST.
4. DURING CONSTRUCTION, PIPE UNDER SHALLOW COVER SHALL BE PROTECTED FROM POSSIBLE DAMAGE DUE TO LOADING FROM HEAVY EQUIPMENT.
5. NEVER PERFORM PIPE INSTALLATION, EMBEDMENT COMPACTION OR DEFLECTION TESTING IN STANDING WATER.

(6) EARTH BACKFILL MUST BE COMPACTED TO 100% STANDARD PROCTOR WITHIN 3' OF FINISHED GRADE.

(2) PLASTIC STORM SEWER PIPE INSTALLATION REQUIREMENTS
NO SCALE

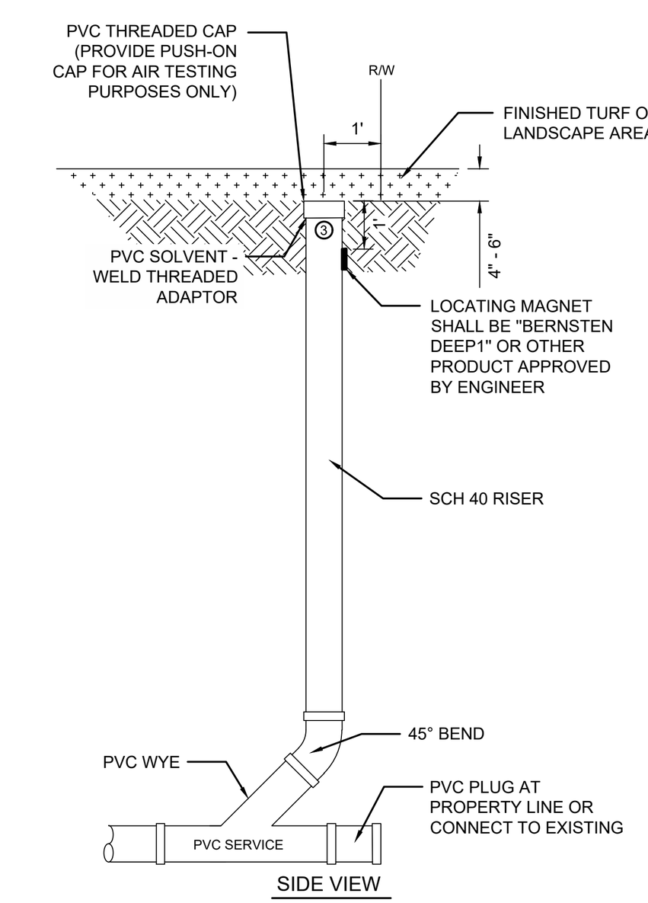


NOTES:

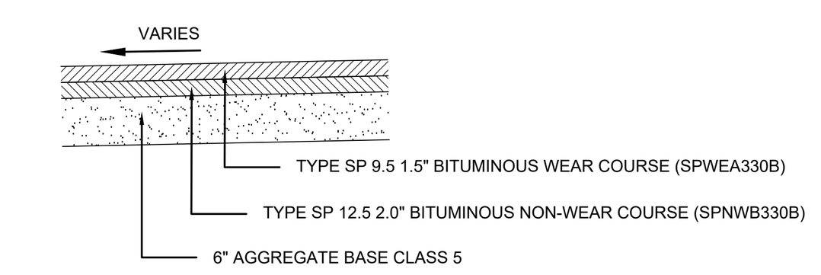
(1) PIPE SHALL BE BED IN ACCORDANCE WITH PIPE MANUFACTURERS RECOMMENDATIONS. SEE PLAN FOR PIPE CONFIGURATIONS.

2. ALL MATERIAL, CONSTRUCTION, AND TESTING SHALL BE IN ACCORDANCE WITH MNDOLI INCLUDING ANY TESTING REQUIREMENTS.

(3) CONCRETE INLET DETAIL
NO SCALE



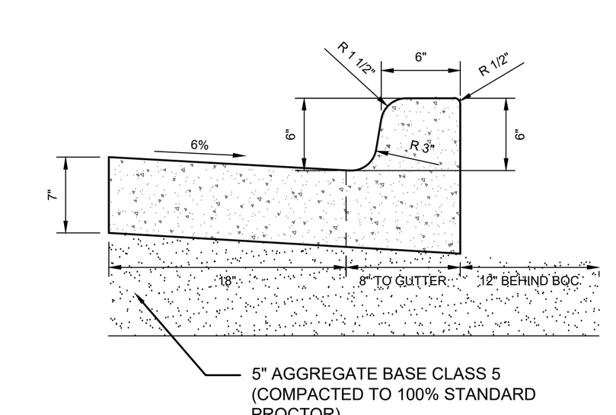
(4) SANITARY SERVICE CLEANOUT
NO SCALE



NOTES:

1. DETAIL APPLIES TO PARKING LOTS, INTERSECTIONS, AND OTHER AREAS NOT INCLUDED IN PROPOSED TYPICAL SECTIONS.

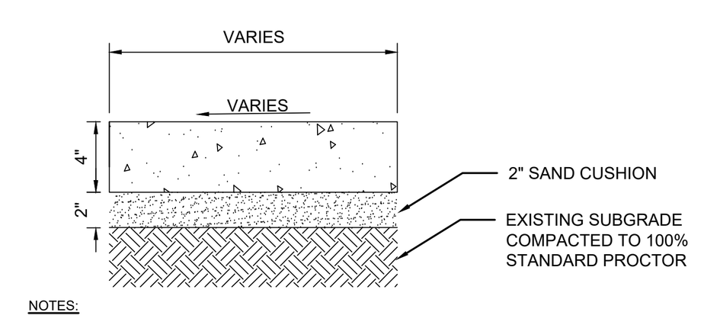
(5) BITUMINOUS SECTION DETAIL
NO SCALE



NOTES:

1. LONGITUDINAL JOINT WHEN ADJACENT TO RIGID PAVEMENT OR BASE. (SEE STANDARD PLANS MANUAL FOR JOINT INFORMATION).
2. SLOPE 0.06 FT/FT NORMAL, UNLESS OTHERWISE SPECIFIED. IF A DIFFERENT GUTTER SLOPE IS PERMITTED. THE FORM MAY BE TILTED.
3. SLIP FORM CURB SHALL BE MNDOT CONCRETE MIX 3F32. MANUAL PLACEMENT SHALL BE MNDOT 3F52.

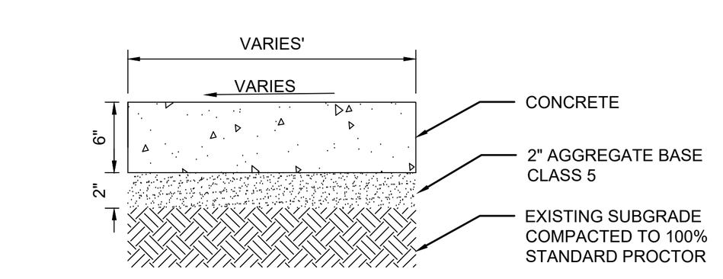
(6) CURB & GUTTER DESIGN B618
NO SCALE



NOTES:

1. CONCRETE SHALL BE MNDOT MIX NO. 3F52 AND SHALL BE JOINTED BY SAW CUT. IT IS THE CONTRACTORS RESPONSIBILITY TO LAYOUT THE JOINTING PLAN. MAXIMUM PANEL SIZE SHALL BE 6' x 6'
2. 1/2" MIN. EXPANSION JOINTS SHALL BE USED ADJACENT TO STRUCTURES AND EXISTING CONCRETE.
3. CONCRETE WALK THICKNESS WILL BE 4" EXCEPT FOR PEDESTRIAN RAMPS AND LANDINGS WHICH SHALL BE INCREASED TO 6".

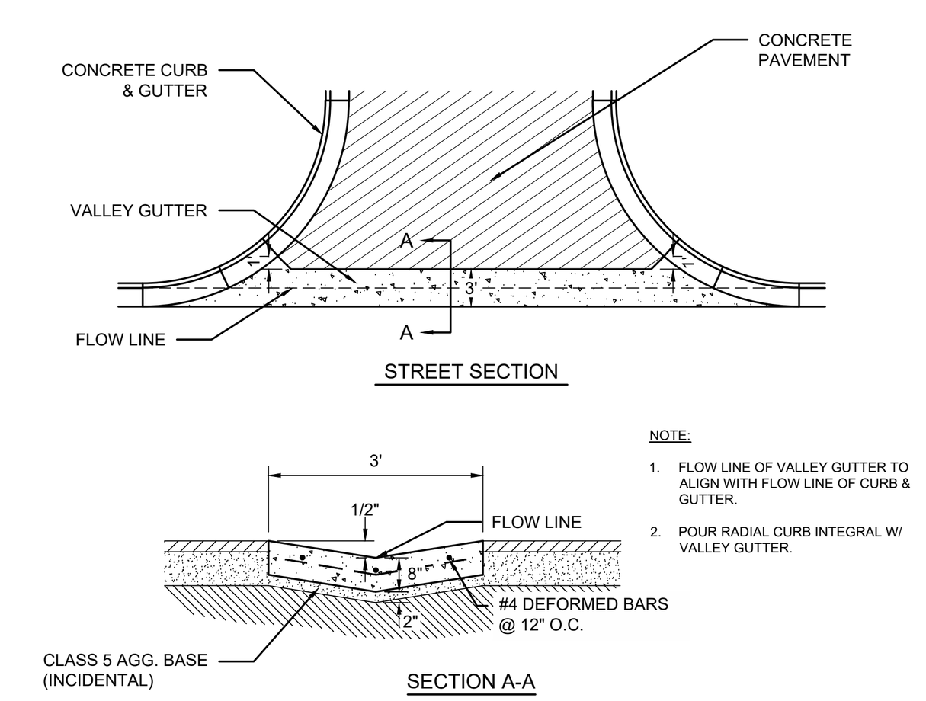
(7) 4" CONCRETE SIDEWALK SECTION
NO SCALE



NOTES:

1. CONCRETE SHALL BE JOINTED BY SAW CUT. IT IS THE CONTRACTORS RESPOSIBILITY TO LAYOUT THE JOINTING PLAN. MAXIMUM PANEL SIZE SHALL BE 9' x 9'.
2. 1/2" MIN. EXPANSION JOINTS SHALL BE USED ADJACENT TO STRUCTURES AND EXISTING CONCRETE.

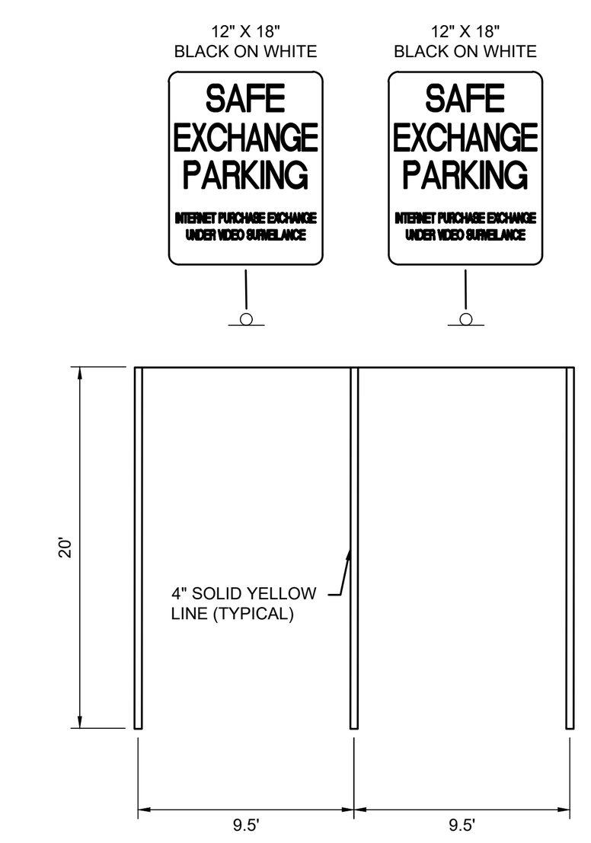
(8) 6" CONCRETE PAVEMENT DETAIL
NO SCALE



NOTE:

1. FLOW LINE OF VALLEY GUTTER TO ALIGN WITH FLOW LINE OF CURB & GUTTER.
2. POUR RADIAL CURB INTEGRAL W/ VALLEY GUTTER.

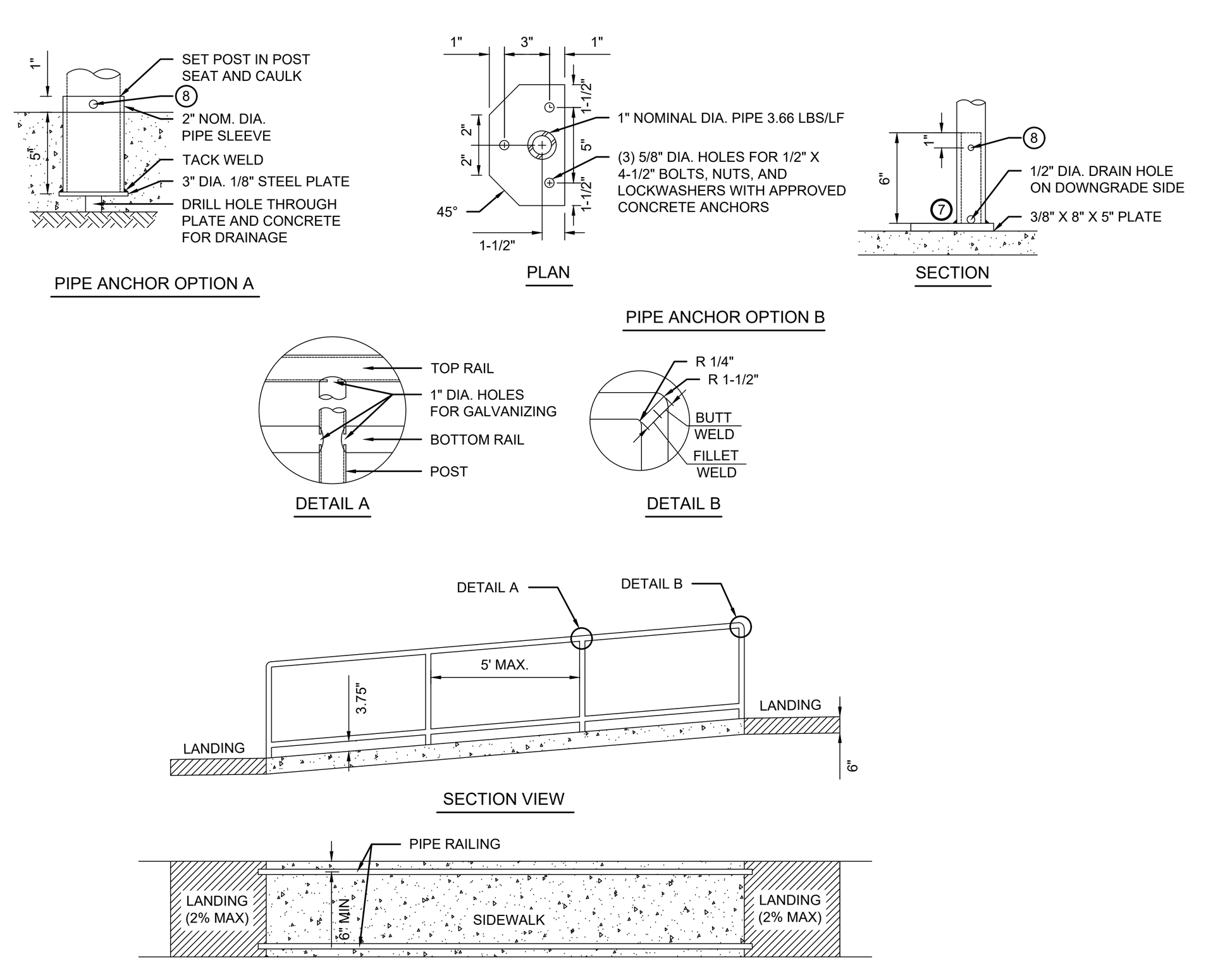
(9) 3' TYPICAL VALLEY GUTTER DETAILS
NO SCALE



NOTES:

1. CONTRACTOR SHALL INSTALL SAFE EXCHANGE SIGNS CENTERED ON EACH STALL IN ACCORDANCE WITH THE SIGN INSTALLATION DETAIL.
2. THE SAFE EXCHANGE PARKING STALL DESIGNATION SHALL BE PROVIDED ON A SIGN (12" X 18" - BLACK ON WHITE) CENTERED AT THE HEAD END OF THE SAFE EXCHANGE PARKING STALL A MAXIMUM OF 96" FROM THE HEAD OF THE SAFE EXCHANGE PARKING STALL, AND BE MOUNTED 60"-66" ABOVE FINISHED GRADE, MEASURED TO THE BOTTOM OF THE SIGN.

(10) SAFE EXCHANGE PARKING STALLS DETAIL
NO SCALE



NOTES:

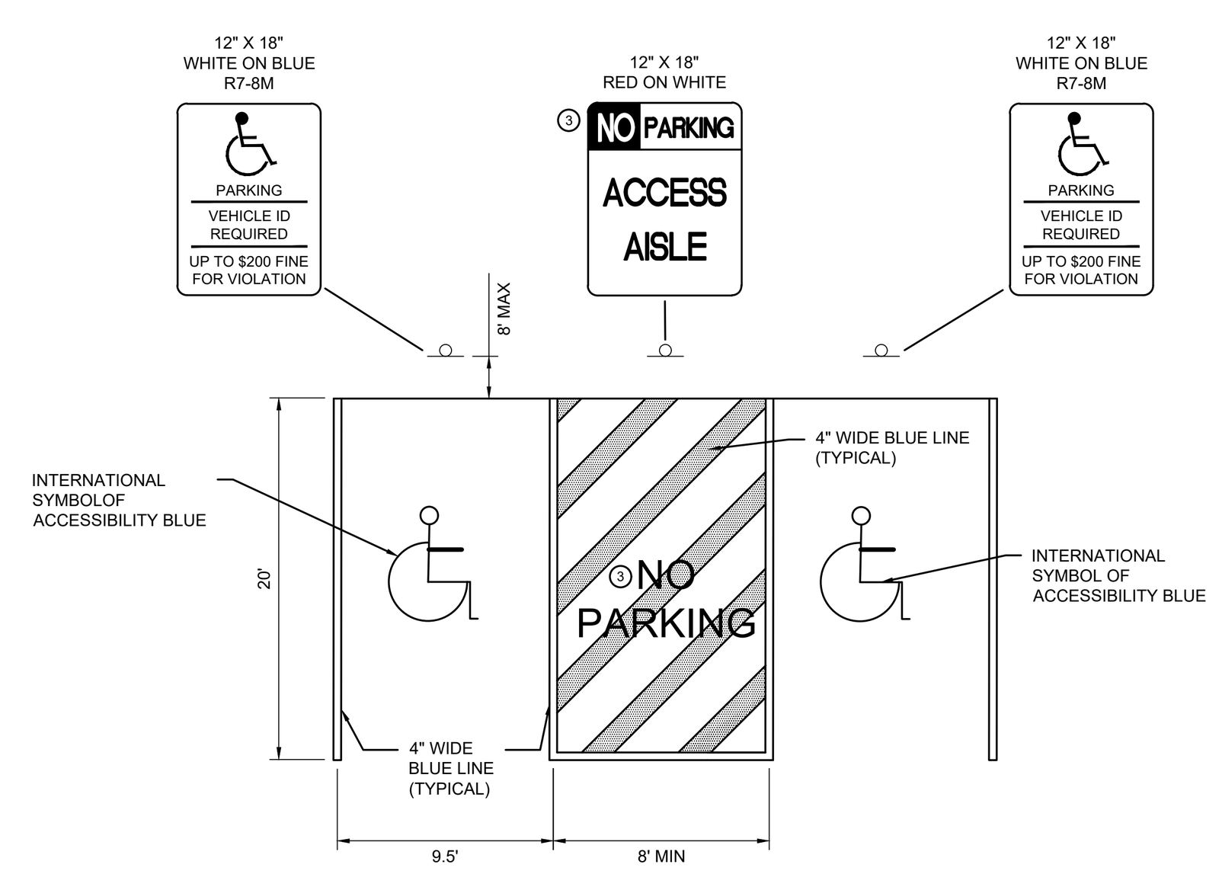
1. POSTS AND RAILS SHALL BE 1.5" NOM. DIAMETER STANDARD PIPE AT 2.72 LBS/FT, PER SPEC 3362.
2. ALL STRUCTURAL STEEL SHALL BE MnDOT SPEC 3306.
3. FABRICATION SHALL BE PER MnDOT SPEC 2471.
4. PROVIDE VENT HOLES AS NECESSARY FOR GALVANIZING.
5. ALL CONNECTIONS SHALL BE MITERED, FULL BUTT WELDED AND GROUND SMOOTH.
6. GALVANIZE AFTER FABRICATION, PROVIDE WEEP HOLES AS APPROPRIATE.

(7) POSTS SHALL BE SET VERTICAL, UNLESS OTHERWISE NOTED. SHIM AS REQUIRED TO PREVENT WOBBLE.

(8) DRILL 7/16" DIAMETER HOLE THROUGH POST AND POST ANCHOR AFTER ASSEMBLY. INSERT BOLT OR PIN IN HOLE AND UPSET END TO HOLD ASSEMBLY TOGETHER SECURELY.

9. CONTRACTOR SHALL PAINT PIPE RAILING TO MATCH EXISTING PIPE RAILINGS. VERIFY PAINT COLOR WITH ENGINEER BEFORE PAINTING.

(11) PEDESTRIAN PIPE RAILING FOR RAMP
NO SCALE

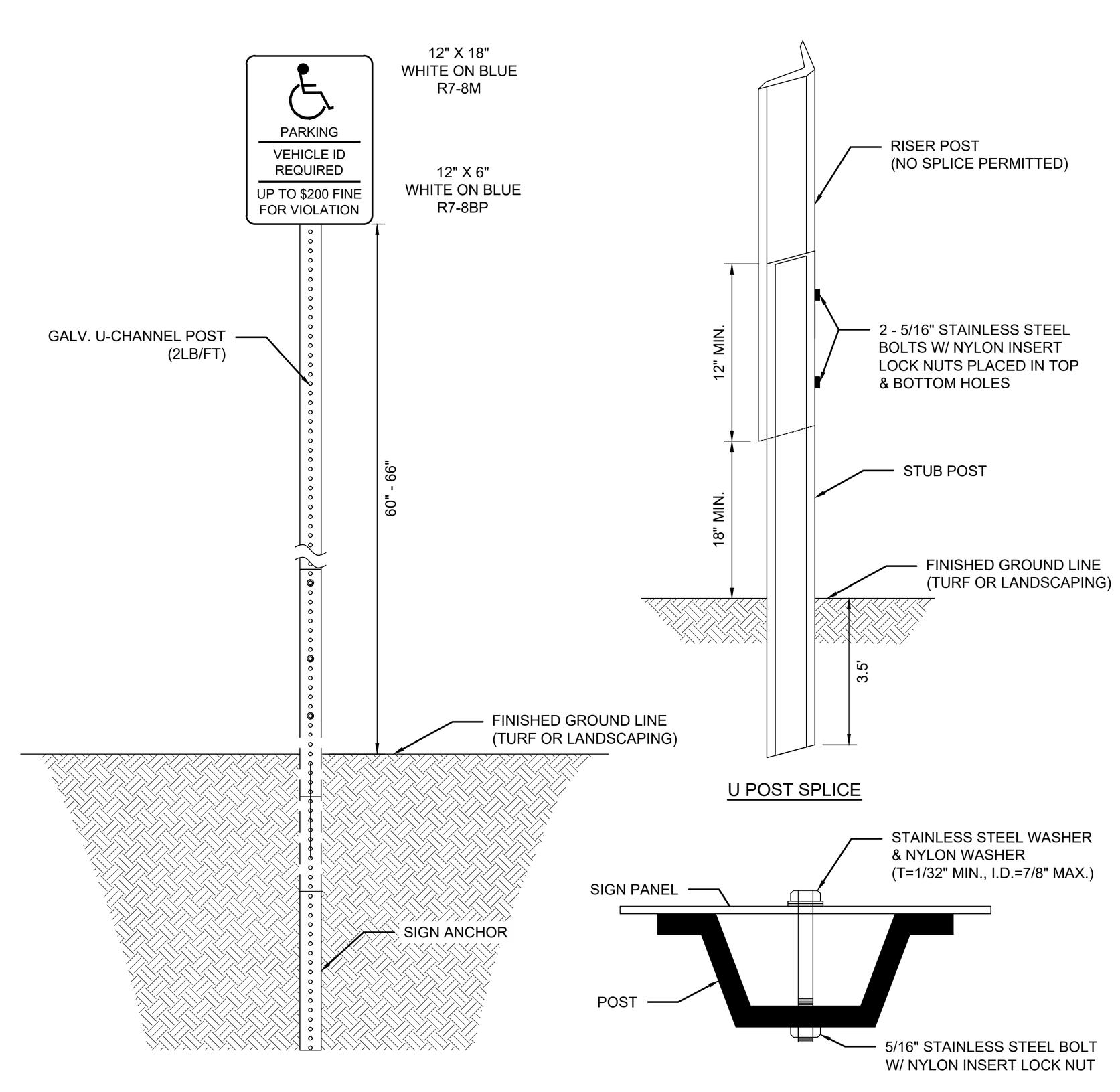


NOTES:

1. CONTRACTOR SHALL INSTALL ADA SIGNS CENTERED ON EACH STALL IN ACCORDANCE WITH THE ADA SIGN INSTALLATION DETAIL.
2. MAX. CROSS SLOPE IN ANY DIRECTION SHALL NOT EXCEED 2.0%.

(3) THE ACCESS AISLE "NO PARKING" DESIGNATION SHALL BE PROVIDED ON A SIGN (12" X 18" - RED ON WHITE) CENTERED AT THE HEAD END OF THE ACCESS AISLE A MAXIMUM OF 96" FROM THE HEAD OF THE ACCESS AISLE, AND BE MOUNTED 60"-66" ABOVE FINISHED GRADE, MEASURED TO THE BOTTOM OF THE SIGN. A SIGN INDICATING NO PARKING SHALL NOT BE REQUIRED WHERE THE SIGN WOULD OBSTRUCT A CURB RAMP OR PEDESTRIAN ROUTE. IN THIS CASE, THE "NO PARKING" DESIGNATION SHALL BE PROVIDED ON THE SURFACE OF THE ACCESS AISLE.

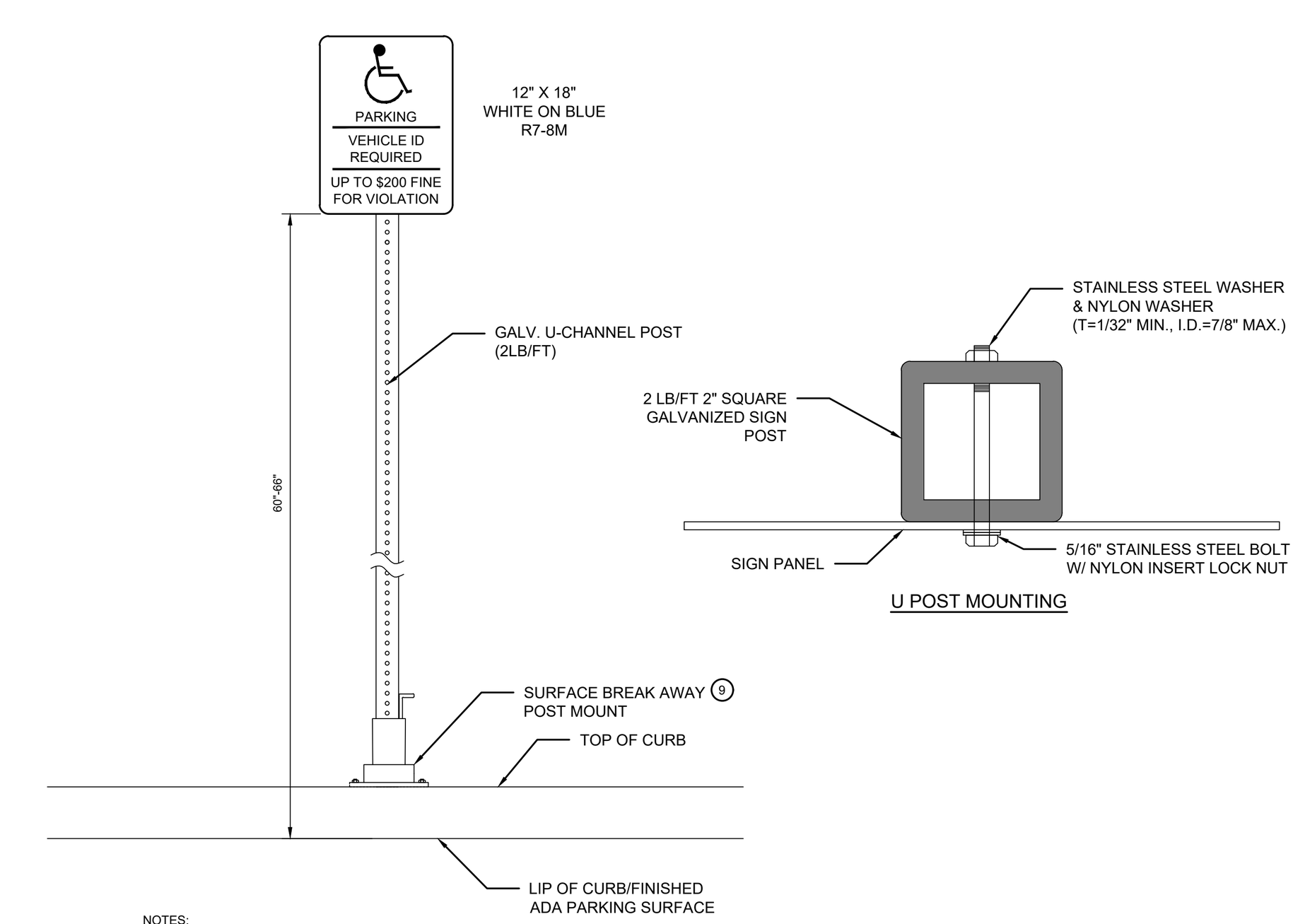
(12) TYPICAL ADA PARKING STALL DETAIL
NO SCALE



NOTES:

1. SIGNS SHALL BE CONSTRUCTED TO MEET MNMUTCD STANDARDS.
2. DATE OF FABRICATION DECALS SHALL BE APPLIED TO THE BACK SIDE RIGHT CORNER OF EACH SIGN.
3. SIGN POSTS, SIGNS AND INSTALLATION SHALL BE IN ACCORDANCE WITH MNDOT TRAFFIC ENGINEERING MANUAL.
4. SIGN LOCATIONS INDICATED IN THE CONTRACT ARE APPROXIMATE; FINAL DETERMINATION SHALL BE MADE IN THE FIELD BY THE ENGINEER.
5. USE 3 LB/FT STUB POSTS, RISER POSTS, STRINGERS, KNEE BRACES, LATERAL BRACES AND KNEE BRACE STUB POSTS. ALL SHALL CONFORM TO MNDOT 3401.
6. MOUNTING (PUNCH CODE) FOR TYPE C SIGN PANELS SHALL BE AS INDICATED IN THE STANDARD SIGNS MANUAL UNLESS OTHERWISE SPECIFIED.
7. ALL RISER (VERTICAL) U POSTS SHALL BE SPLICED. DRIVEN STUB POSTS SHALL BE AT LEAST 7' LONG.
8. USE STAINLESS STEEL 5/16" BOLTS, WASHERS AND NYLON INSERT LOCK NUTS AS SHOWN FOR ALL GROUND MOUNTED AND OVERHEAD MOUNTED SIGNS.
9. STAINLESS STEEL WASHER W/ SAME DIMENSIONS SHALL BE PROVIDED BETWEEN ALL NYLON WASHERS AND BOLT HEADS.
10. SIGN POST SHALL BE CENTER ON ADA PARKING STALL AND 2' BEHIND BACK OF CURB OR A MINIMUM OF 2.5' FROM THE END OF THE PARKING STALL. SIGNS WITHIN CONCRETE PAVEMENT OR SIDEWALKS SHALL BE SURFACE MOUNTED W/ KLEEN BREAK MODEL 425 BY XCESSORIES SQUARED. 2 LB/FT GALVANIZED SQUARE POST SHALL BE UTILIZED IN LIEU OF U-POST IN THESE SURFACE MOUNT APPLICATIONS

(13) ADA SIGN INSTALLATION IN TURF DETAIL
NO SCALE



NOTES:

1. SIGNS SHALL BE CONSTRUCTED TO MEET MNMUTCD STANDARDS.
2. DATE OF FABRICATION DECALS SHALL BE APPLIED TO THE BACK SIDE RIGHT CORNER OF EACH SIGN.
3. SIGN POSTS, SIGNS AND INSTALLATION SHALL BE IN ACCORDANCE WITH MNDOT TRAFFIC ENGINEERING MANUAL.
4. SIGN LOCATIONS INDICATED IN THE CONTRACT ARE APPROXIMATE; FINAL DETERMINATION SHALL BE MADE IN THE FIELD BY THE ENGINEER.
5. MOUNTING (PUNCH CODE) FOR TYPE C SIGN PANELS SHALL BE AS INDICATED IN THE STANDARD SIGNS MANUAL UNLESS OTHERWISE SPECIFIED.
6. USE STAINLESS STEEL 5/16" BOLTS, WASHERS AND NYLON INSERT LOCK NUTS AS SHOWN FOR ALL GROUND MOUNTED AND OVERHEAD MOUNTED SIGNS.
7. STAINLESS STEEL WASHER W/ SAME DIMENSIONS SHALL BE PROVIDED BETWEEN ALL NYLON WASHERS AND BOLT HEADS.
8. SIGN POST SHALL BE CENTER ON ADA PARKING STALL AND 2' BEHIND BACK OF CURB OR A MINIMUM OF 2.5' FROM THE END OF THE PARK ING STALL.

(9) SURFACE MOUNT SHALL BE KLEEN BREAK MODEL 425 BY XCESSORIES SQUARED. MOUNT SHALL BE SHIMMED USING GALVANIZED WASHERS AS NECESSARY TO ENSURE SIGN POST IS PLUMB.

10. REINSTALLATION OF EXISTING SIGNS, POST, AND MOUNT SHALL BE MEASURED & PAID BY THE EACH UNDER THE CONTRACT BID ITEM "REINSTALL SIGN". ANY NEW HARDWARE (I.E. BOLTS, WASHERS, NUTS, ETC.) SHALL BE INCIDENTAL. INSTALLATION OF NEW SIGN ASSEMBLY INCLUDING BOTH SIGN PANELS, POST & MOUNT SHALL BE MEASURED & PAID FOR UNDER THE CONTRACT BID ITEM "INSTALL SIGN".

(14) ADA SIGN INSTALLATION IN PAVEMENT DETAIL
NO SCALE

Bismarck - Detroit Lakes
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Detroit Lakes, Minnesota 56501
Office: 218-844-2580
www.apexenggroup.com

Apex Project #: 19.178.0112
Date: February 19, 2020
Drawn By: TJS
Checked By: JSO
Approved By: JAP

REVISIONS		
Issue #	Description	Date

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Print Name: Jon A. Pratt
Signed: [illegible]
Date: 02/19/20 License Number: 46267

PRELIMINARY

DETROIT LAKES
POLICE STATION

GENERAL DETAILS

Sheet:
2 OF 8

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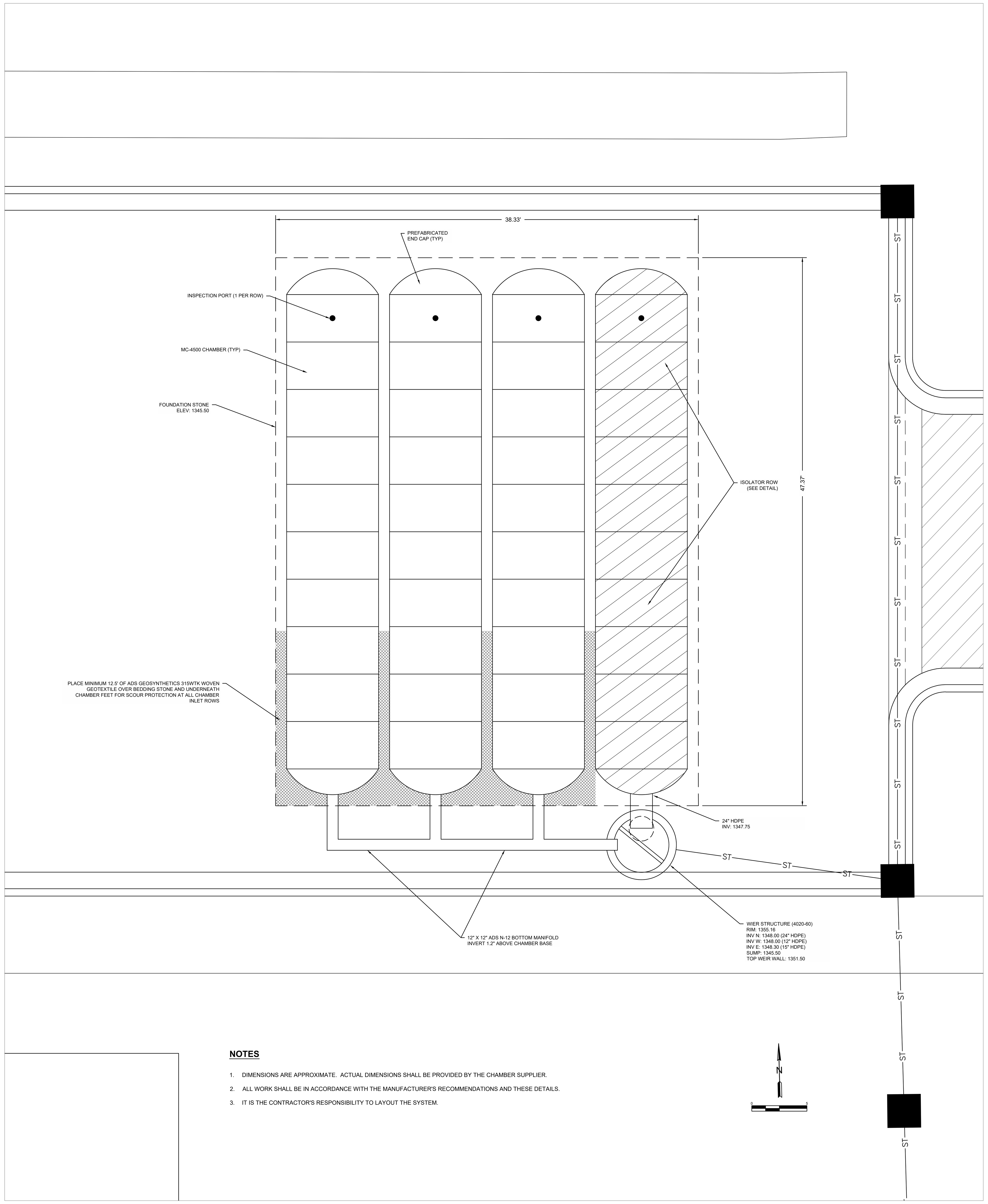


NOTES

1. DIMENSIONS ARE APPROXIMATE. ACTUAL DIMENSIONS SHALL BE PROVIDED BY THE CHAMBER SUPPLIER.
2. ALL WORK SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND THESE DETAILS.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LAYOUT THE SYSTEM.

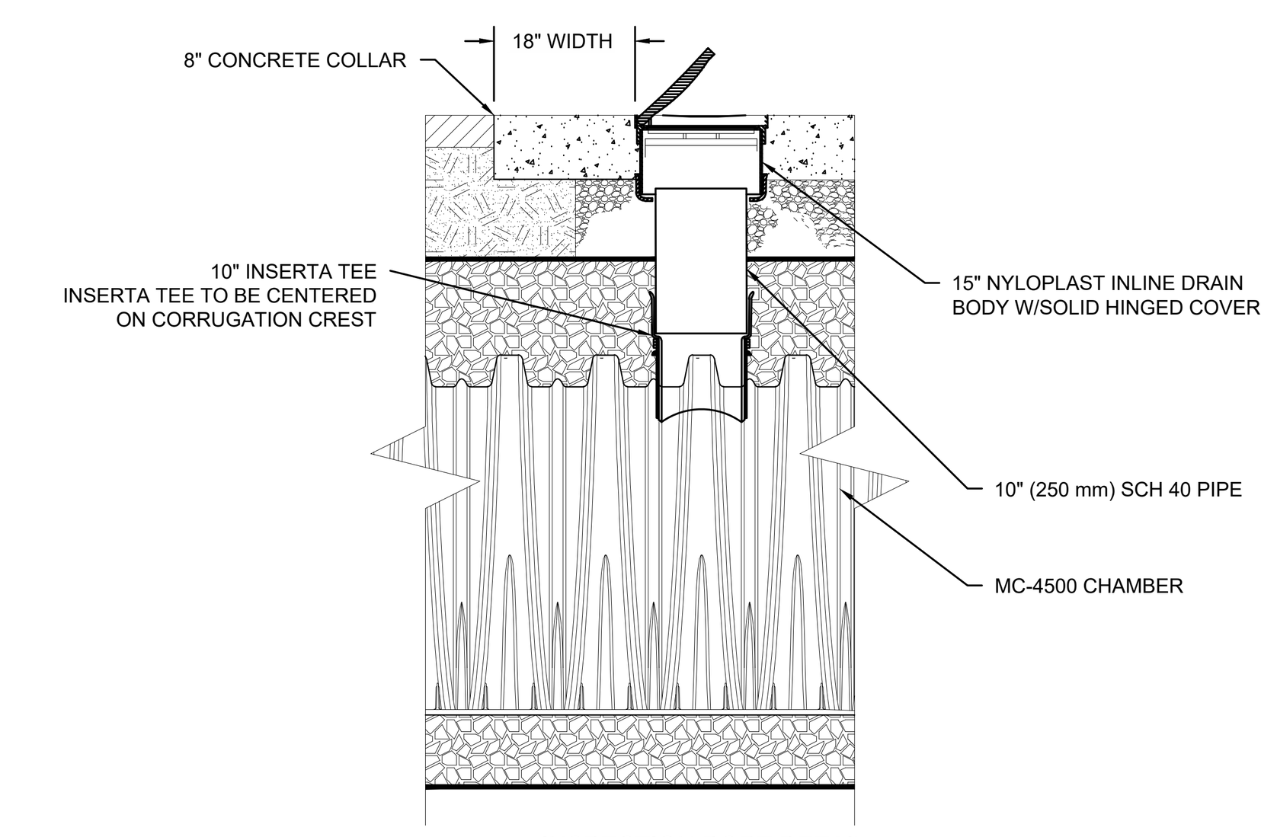
(1) UNDERGROUND SYSTEM PLAN VIEW
NO SCALE

CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-4500 OR APPROVED EQUAL. CONSTRUCTION DETAILS WERE PROVIDED BY ADS STORMTECH.
2. CHAMBERS SHALL BE MANUFACTURED FROM VIRGIN POLYPROPYLENE OR POLYETHYLENE RESINS.
3. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
4. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
5. CHAMBERS SHALL MEET ASTM F2922 (POLYETHYLENE) OR ASTM F2418-16 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
6. CHAMBERS SHALL BE DESIGNED AND ALLOWABLE LOADS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
7. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. THE CHAMBER MANUFACTURER SHALL SUBMIT THE FOLLOWING UPON REQUEST TO THE SITE DESIGN ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE:
   a. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY AASHTO FOR THERMOPLASTIC PIPE.
   b. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET. THE 50 YEAR CREEP MODULUS DATA SPECIFIED IN ASTM F2418 OR ASTM F2922 MUST BE USED AS PART OF THE AASHTO STRUCTURAL EVALUATION TO VERIFY LONG-TERM PERFORMANCE.
   c. STRUCTURAL CROSS SECTION DETAIL ON WHICH THE STRUCTURAL EVALUATION IS BASED.
8. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

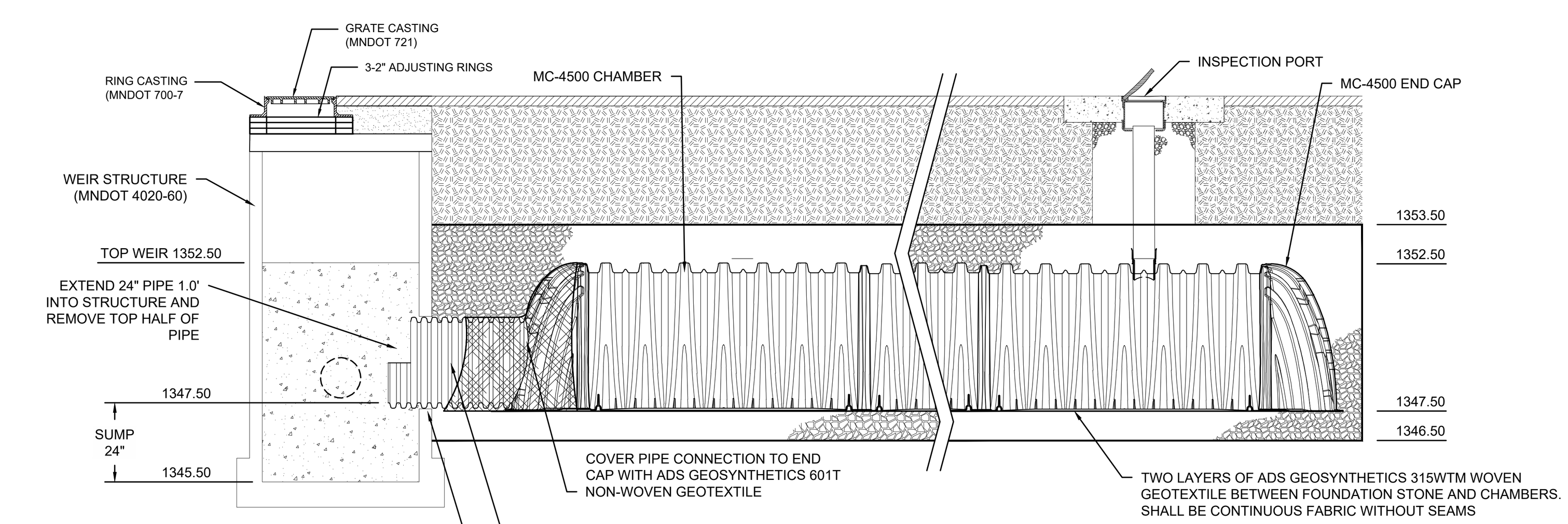
CONSTRUCTION NOTES

1. CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURE RECOMMENDATIONS.
3. CHAMBERS SHALL NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. RECOMMENDED BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
4. BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR. THE USE OF CONSTRUCTION EQUIPMENT OVER CHAMBERS SHALL BE LIMITED AND IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
5. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
6. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
7. MAINTAIN MINIMUM 6" SPACING BETWEEN THE CHAMBER ROWS.
8. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4-2".
9. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE ENGINEER.



(1) INSPECTION PORT DETAIL
NO SCALE

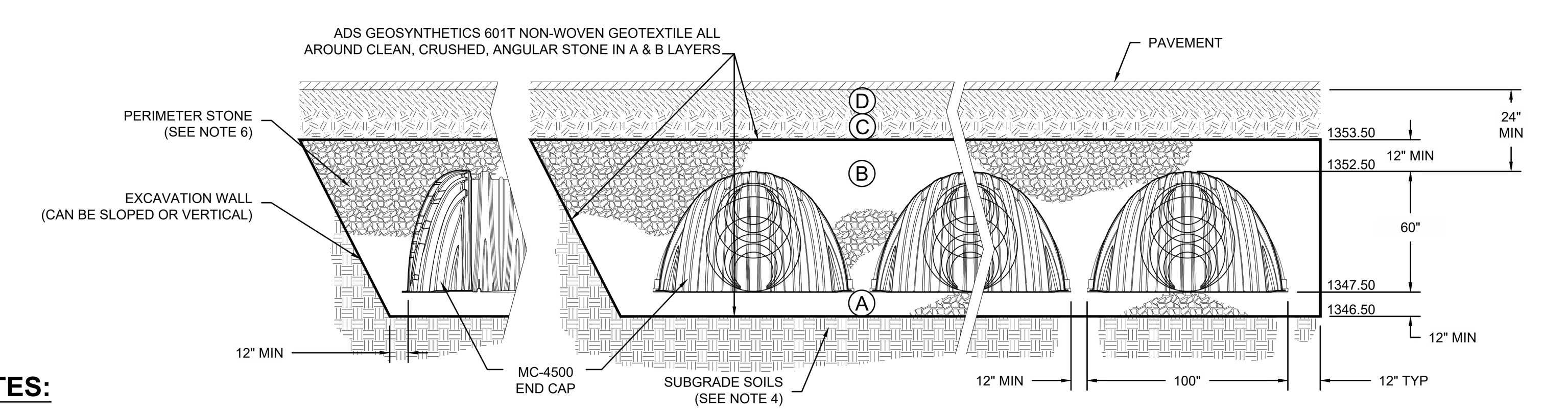
UNDERGROUND INFILTRATION SYSTEM DETAILS



(2) ISOLATOR ROW DETAIL
NO SCALE

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. [2 3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



NOTES:

1. CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

(3) UNDERGROUND SYSTEM CROSS SECTION AND BEDDING DETAIL
NO SCALE

City of Detroit Lakes

Apex Engineering Group

Bismarck - Detroit Lakes
Dickinson - Fargo
920 McKinley Ave
Detroit Lakes, Minnesota 56501
Office: 218-844-2580
www.apexenggroup.com

Apex Project #: 19.178.0112
Date: February 19, 2020
Drawn By: TJS
Checked By: JSO
Approved By: JAP

REVISIONS		
Issue #	Description	Date

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Print Name: XXXX

Signed:

Date: X/XX/XX License Number: XXXXX

PRELIMINARY

DETROIT LAKES POLICE STATION

INFILTRATION SYSTEM PLAN AND DETAILS

Sheet:

3 OF 8

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GENERAL CONSTRUCTION ACTIVITY INFORMATION

1. PROJECT NAME:
DETROIT LAKES POLICE DEPARTMENT

2. PROJECT LOCATION:
CITY/STATE: DETROIT LAKES, MINNESOTA
COUNTY: BECKER COUNTY
PROJECT AREA DESCRIPTION: PROJECT IS LOCATED WITHIN THE CITY LIMITS OF DETROIT LAKES SOUTHEAST OF THE INTERSECTION OF SUMMIT AVENUE AND FRONT STREET; APPROXIMATELY 0.5 MILES SOUTHEAST OF THE INTERSECTION OF US HIGHWAY 10 & US HIGHWAY 59.

3. DESCRIPTION OF WORK:
PROJECT WILL CONSIST OF SITE GRADING, A NEW POLICE STATION BUILDING, BITUMINOUS PARKING LOTS, STREET RECONSTRUCTION, AND INSTALLATION OF AN UNDERGROUND INFILTRATION SYSTEM.

4. EXISTING DRAINAGE PATTERNS AND RECEIVING WATERS:
THE MAJORITY OF THE SITE STORMWATER FLOWS OVERLAND FROM WEST TO EAST TO MINNESOTA STREET AND IS CAPTURED IN THE CITY'S STORM SEWER SYSTEM. THE VERY WEST PORTION OF THE SITE DRAINS TO SUMMIT AVENUE. SUMMIT AVENUE DISCHARGES TO THE SAME STORM SYSTEM AS MINNESOTA AVENUE.

5. PROPOSED DRAINAGE PATTERNS AND RECEIVING WATERS:
THE MAJORITY OF THE PROPOSED SITE IMPROVEMENTS WILL BE CAPTURED BY STORM SEWER AND ROUTED TO AN UNDER GROUND INFILTRATION SYSTEM. ONCE THE INFILTRATION BASIN REACHES CAPACITY, THE EXCESS RUNOFF WILL SURCHAGE THROUGH THE GRATE CASTING AND DISCHAGE TO THE CITY STORM SEWER VIA OVERLAND FLOW. THE WEST AND SOUTH PORTIONS OF THE PROPERTY CANNOT BE PRACTICALLY CAPTURED AND WILL CONTINUE TO DISCHARGE TO CITY RIGHT OF WAY THAT DISCHARGES TO THE CITY STORM SEWER.

6. SPECIAL OR IMPAIRED WATERS:
THE MPCA'S CONSTRUCTION STORMWATER SPECIAL AND IMPAIRS WATER SEARCH ONLINE WAS REVIEWED ON SEPTEMBER 23, 2019 AND IT WAS DETERMINED THERE ARE NO KNOWN IMPAIRED OR SPECIAL WATERS AND ARE NO KNOWN CALCAREOUS FENS WITHIN 1 MILE OF THE PROJECT.

7. DRINKING WATER SUPPLY MANAGEMENT AREA (DWSMA):
THE PROJECT FALLS WITHIN THE DETROIT LAKES WELLHEAD PROTECTION DWSMA. THERE ARE NO ADDITIONAL WELLHEAD REQUIREMENTS FOR PERMANENT STORMWATER MANAGEMENT.

8. ADDITIONAL REQUIREMENTS:
THE PROJECT WILL REQUIRE AN NPDES PERMIT FOR GENERAL CONSTRUCTION THROUGH THE MPCA, A PELICAN RIVER WATERSHED DISTRICT (PRWD) PERMIT, AND A LAND DISTURBANCE PERMIT FROM THE CITY OF DETROIT LAKES AS THE TOTAL LAND DISTURBANCE ACTIVITIES ARE GREATER THAN 1.0 ACRE.

9. GENERAL DESCRIPTION OF EROSION AND SEDIMENT BMPS:
EROSION CONTROL WILL GENERALLY BE PROVIDED BY MINIMIZING SITE DISTURBANCE, TEMPORARY SITE GRADING IN A MANNER DISCHARGE IS CONTAINED ONSITE, TEMPORARY STABILIZATION IF NECESSARY, AND PERMANENT STABILIZATION. SEDIMENT CONTROL WILL BE PROVIDED BY SILT FENCE, FILTER ROLL, AND INLET PROTECTION. SEE THE SWPPP PLANS FOR MORE SPECIFIC DETAILS AND LOCATIONS OF ALL PROPOSED BMP'S.

10. PROJECT PHASING:
THE LAND DISTURBANCES SHALL BE MINIMIZED TO THE EXTENT POSSIBLE AND DISTURBED ARES SHALL BE STABILIZED BEFORE PROCEEDING TO NEW DISTURBANCE IF AT ALL POSSIBLE. THE FOLLOWING GENERAL PHASING SHALL BE FOLLOWED AT A MINIMUM:
 - INSTALLATION OF PERIMETER CONTROL AND EXISTING INLET/CULVERT PROTECTION SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBANCES.
 - AREAS TO BE PROTECTED SUCH AS NATURAL BUFFERS, EXISTING VEGETATION AND/OR TREES SHALL BE PROTECTED AS SHOWN ON THE PLANS PRIOR TO ANY LAND DISTURBANCES NEAR THESE AREAS.
 - NEW INLETS SHALL BE PLATED OR PROTECTED FROM RECEIVING RUNOFF IMMEDIATELY FOLLOWING INSTALLATION. APPROPRIATE INLET PROTECTION SHALL BE INSTALLED WITHIN 8 HOURS OF INLET GRATE INSTALLATION.
 - MAINTENANCE AND INSPECTIONS SHALL OCCUR AS DESCRIBED IN THE 'CONSTRUCTION INSPECTION AND MAINTENANCE' SECTION OF THIS SWPPP.
 - TEMPORARY AND PERMANENT STABILIZATION SHALL BE IN ACCORDANCE WITH THE NPDES PERMIT REQUIREMENTS.
 - FOLLOWING FINAL ESTABLISHMENT ALL PERMANENT BMP'S SHALL BE INSPECTED AND MAINTAINED AS NECESSARY AND ALL TEMPORARY SEDIMENT AND EROSION CONTROL BMP'S SHALL BE REMOVED.

SEASONAL SUSPENSION:
IT IS THE CONTRACTOR'S RESPONSIBILITY TO IMPLEMENT TEMPORARY OR PERMANENT STABILIZATION PRIOR TO ANY WINTER SUSPENSION. IF REMAINING GROWING SEASON IS LIMITED AND INSUFFICIENT TO ESTABLISH PERMANENT COVER, TEMPORARY STABILIZATION OR DORMANT SEEDING SHALL BE IMPLEMENTED AT THE CONTRACTOR'S CHOICE AND EXPENSE. ANY DORMANT SEEDING THAT DOES NOT ADEQUATELY ESTABLISH SHALL BE RE-SEEDED THE FOLLOWING GROWING SEASON.

SWPPP DESIGNER

1. SWPPP WAS PREPARED BY PERSONNEL CERTIFIED IN THE DESIGN OF STORM WATER POLLUTION PREVENTION PLANS (SWPPP).

JONATHAN OLSON, PE
APEX ENGINEERING GROUP
JON.OLSON@APEXENGGROUP.COM
920 McKINLEY AVENUE
DETROIT LAKES, MN 56501
PHONE NUMBER: 218-844-2580

2. A COPY OF THE DESIGNERS CERTIFICATION IS SHOWN BELOW:

UNIVERSITY OF MINNESOTA

Jonathan S Olson

Design of Construction SWPPP (May 31 2021)

SWPPP AMENDMENT PROCEDURES

1. THE DEPICTED EROSION & SEDIMENT CONTROL PLANS INCLUDING ESTIMATED QUANTITIES SHOULD BE USED AS A GENERAL GUIDELINE. THE CONTRACTOR'S CONSTRUCTION METHODS, MEANS, SEQUENCING AND/OR PROSECUTION OF WORK MAY REQUIRE ALTERNATIVE AND/OR ADDITIONAL EROSION AND SEDIMENT BMP'S TO COMPLY WITH THE REQUIREMENTS OF THE NPDES GENERAL STORM WATER PERMIT. ANY ADDITIONAL MEASURES SHALL BE IMPLEMENTED BY THE AT THE CONTRACTOR'S EXPENSE.
2. THE CONTRACTOR'S SITE MANAGER SHALL MODIFY THIS SWPPP AS NECESSARY, OR AS DIRECTED BY THE OWNER, ENGINEER, EPA, MPCA, OR OTHER APPLICABLE REGULATORY AUTHORITY THROUGHOUT THE ENTIRE CONSTRUCTION DURATION AND UNTIL THE NOTICE OF TERMINATION IS FILED WITH THE MPCA.
3. MODIFICATIONS TO THE SWPPP SHOULD BE MADE IF DESIGNED BMP'S ARE INSUFFICIENT OR THERE HAS BEEN A CHANGE IN DESIGN, CONSTRUCTION, OPERATIONS, MAINTENANCE, AND/OR WEATHER CONDITIONS THAT HAVE SIGNIFICANTLY IMPACTED THE POTENTIAL FOR POLLUTANTS TO DISCHARGE TO SURFACE OR UNDERGROUND WATER.
4. ALL MODIFICATIONS SHOULD BE NOTED ON THE ONSITE SWPPP IN INK BY THE SITE MANAGER AND SHALL BE DATED AND INITIALED BY THE SITE MANAGER THAT MADE THE MODIFICATIONS.
5. NOTES DOCUMENTING THE REASON FOR THE MODIFICATIONS SHOULD BE INCLUDED ON THE ONSITE SWPPP. ADDITIONALLY, IF A LESS EFFECTIVE BMP IS USED, JUSTIFICATION AS TO HOW THE REPLACEMENT BMP WILL EFFECTIVELY PROVIDE PROTECTION FOR THE SITE CHARACTERISTICS MUST BE PROVIDED.

OWNER INFORMATION & RESPONSIBILITIES

1. OWNER INFORMATION

CITY OF DETROIT LAKES
1025 ROOSEVELT AVENUE
DETROIT LAKES, MN 56501
PHONE: 218-847-5658

2. IT IS THE OWNER'S RESPONSIBILITY TO INSPECT AND MAINTAIN THE PERMANENT STORMWATER MANAGEMENT BMP'S TO THE DESIGN SWPPP REQUIREMENTS THROUGHOUT THE LIFE OF THE IMPROVEMENT. SEE 'LONG-TERM MAINTENANCE REQUIREMENTS' SECTION OF THIS SWPPP.
3. THE OWNER SHALL KEEP COPIES OF THE FOLLOWING FOR A MINIMUM OF THREE (3) YEARS AFTER CONTRACTOR SUBMITS THE NOTICE OF TERMINATION:
4. THE SWPPP WITH ANY NOTED CHANGES OR MODIFICATIONS REQUIRED DURING CONSTRUCTION.
5. ANY OTHER STORMWATER RELATED PERMITS.
6. RECORDS OF ALL INSPECTION AND MAINTENANCE CONDUCTED DURING CONSTRUCTION.
7. ALL REQUIRED CALCULATIONS FOR DESIGN OF TEMPORARY AND PERMANENT STORMWATER MANAGEMENT SYSTEMS.

CONTRACTOR RESPONSIBILITIES

1. CONTRACTOR SHALL HAVE THE SOLE RESPONSIBILITY TO IMPLEMENT THIS SWPPP AND INSPECT AND MAINTAIN ALL BMP'S THROUGHOUT ALL STAGES OF CONSTRUCTION UNTIL FINAL STABILIZATION IS ACHIEVED AND A NOTICE OF TERMINATION IS SUBMITTED.
2. CONTRACTOR MUST HAVE TRAINED AND CERTIFIED INDIVIDUAL(S) WHO IS RESPONSIBLE FOR THE INSTALLATION/MAINTENANCE, AND INSPECTIONS/MANAGEMENT OF THE SITE THROUGHOUT THE DURATION OF THE PROJECT (TWO SEPARATE CERTIFICATIONS LIKELY REQUIRED). THE CONTRACTOR SHALL COMPLETE THE BELOW TABLE IN INK ON THE ONSITE SWPPP BEFORE ANY CONSTRUCTION ACTIVITY BEGINS.

ROLE	NAME	COMPANY	CERTIFICATION INFORMATION (CERTIFYING AGENCY AND EXPIRATION DATE)
INSTALLATION AND MAINTENANCE			
SITE MANAGER (BMP INSPECTOR)			

3. THE CONTRACTOR SHALL PROVIDE CONTACT INFORMATION AND PROJECT SCHEDULE TO THE PRWD A MINIMUM OF ONE WEEK IN ADVANCE OF COMMENCING WORK.
4. CONTRACTOR OR TRAINED PERSONNEL LISTED SHALL INSPECT THE CONSTRUCTION SITE IN ACCORDANCE WITH THE NPDES PERMIT INCLUDING RECORD KEEPING REQUIREMENTS. SEE 'CONSTRUCTION INSPECTION AND MAINTENANCE' SECTION OF THIS SWPPP.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MODIFY THIS SWPPP AS NECESSARY OR IMPLEMENT ANY SWPPP MODIFICATIONS MADE BY THE OWNER OR ENGINEER. SEE 'SWPPP AMENDMENT PROCEDURES' ON THIS SHEET.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A WEATHER TIGHT BOX OR OTHER DEVICE FOR HOUSING ALL REQUIRED ONSITE DOCUMENTATION. THE BOX SHALL BE LOCATED IN A VISIBLE LOCATION AND ACCESSIBLE AT ALL TIMES THROUGHOUT THE DURATION OF THE CONSTRUCTION. THE MINIMUM ONSITE DOCUMENTATION SHALL INCLUDE:
   - COPY OF THIS SWPPP WITH MODIFICATIONS NOTED IN INK
   - UP TO DATE INSPECTION AND MAINTENANCE FORMS/RECORDS
   - COPY OF INSTALLER'S CERTIFICATION
   - COPY OF INSPECTOR/SITE MANAGER'S CERTIFICATION
   - COPY OF CONTRACTOR'S SPILL PREVENTION & RESPONSE PLAN
6. COPIES OF ALL ONSITE DOCUMENTATION AS LISTED ABOVE SHALL BE PROVIDED TO THE OWNER UPON SUBMISSION OF THE NOTICE OF TERMINATION AND/OR AT THE REQUEST OF THE OWNER THROUGHOUT THE WORK.

POTENTIAL SEDIMENT AND OTHER POLLUTANTS

1. OTHER POLLUTANT SOURCES ON THE SITE WILL BE THOSE CONSISTENT WITH CONSTRUCTION ACTIVITY AND MUST BE CONTROLLED BY THE CONTRACTOR. THESE SOURCES WILL INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING: FUELS, OILS, GREASES, GARBAGE, CONSTRUCTION DEBRIS. THESE OTHER POTENTIAL POLLUTANTS SHALL BE PROPERLY STORED IN SEALED CONTAINERS.
2. CONTRACTOR SHALL HAVE A SPILL PREVENTION AND RESPONSE PLAN FOR VEHICLE AND EQUIPMENT FUELING AND SHALL INCLUDE DRIP PANS OR ABSORBENTS. ANY SPILLS SHALL BE IMMEDIATELY REPORTED TO THE MPCA.
3. DURING PERIODS OF EXPOSED SOILS, DRY/DUSTY CONDITIONS MAY DEVELOP. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTROL DUST BY WATERING. WATERING MAY BE NECESSARY MULTIPLE TIMES DAILY.
4. PORTABLE TOILETS SHALL BE PROVIDED ON SITE AT ALL TIMES. TOILETS SHALL BE SECURED AND STAKED TO PREVENT TIPPING. PORTABLE TOILETS SHALL BE PUMPED AND CLEANED FREQUENTLY.
5. ONSITE VEHICLE OR EQUIPMENT WASHING AND ENGINE DEGREASING IS PROHIBITED. VEHICLES OR EQUIPMENT SHALL BE REMOVED FROM THE SITE, WASHED/DEGREASED AT APPROPRIATE FACILITY, AND RETURNED.
6. CONCRETE WASHOUTS SHALL BE CONTAINED IN A LINED CONCRETE WASHOUT OR BY A TRUCK MOUNTED CHUTE CONTAINMENT SYSTEM.

CONSTRUCTION INSPECTION AND MAINTENANCE

1. INSPECTIONS ARE REQUIRED A MINIMUM OF ONCE EVERY SEVEN (7) DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS OF A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS.
2. ALL INSPECTIONS AND REQUIRED MAINTENANCE MUST BE DOCUMENTED WITHIN 24 HOURS AND STORED ONSITE AS DESCRIBED UNDER THE CONTRACTOR RESPONSIBILITIES. A COMPREHENSIVE LIST OF ITEMS THAT ARE REQUIRED FOR INSPECTION, MAINTENANCE, AND DOCUMENTATION IS INCLUDED IN THE MPCA GENERAL PERMIT AND IS GENERALLY SUMMARIZED BELOW:
   - DATE AND TIME OF INSPECTION.
   - NAME(S) OF PERSON(S) CONDUCTING INSPECTIONS.
   - FINDINGS OF INSPECTIONS, INCLUDING SPECIFIC LOCATION WHERE CORRECTIVE/MAINTENANCE ACTIONS ARE NEEDED.
   - CORRECTIVE/MAINTENANCE ACTIONS TAKEN INCLUDING DATES, TIMES, AND PARTY COMPLETING THE CORRECTIVE/MAINTENANCE ACTIONS.
   - DATE AND AMOUNT OF RAINFALL GREATER THAN 0.5 INCH IN 24 HOUR PERIOD.
   - SOURCE OF RAINFALL DATA. MUST BE A RAIN GAUGE ONSITE PROVIDED BY THE CONTRACTOR OR BY A WEATHER STATION THAT IS WITHIN ONE MILE OF THE PROJECT.
   - REQUIREMENT TO OBSERVE, DESCRIBE, REPORT IF NECESSARY, AND PHOTOGRAPH ANY DISCHARGE THAT MAY BE OCCURING DURING THE INSPECTION.
3. THE BELOW LIST IS NOT COMPREHENSIVE BUT A GENERAL LISTING OF CRITICAL ITEMS THAT SHOULD BE REVIEWED DURING EACH INSPECTION:
   - INSPECT ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMP'S.
   - INSPECT RECEIVING WATERS INCLUDING DITCHES AND CURBS FOR ANY EROSION OR SEDIMENT DEPOSITION.
   - INSPECT ADJACENT PAVEMENT FOR TRACKING.
4. THE FOLLOWING LIST IS NOT COMPREHENSIVE BUT A GENERAL LISTING OF WHEN CRITICAL MAINTENANCE RELATED ITEMS ARE NECESSARY:
   - SILT FENCE, SEDIMENT CONTROL LOGS, EARTH BERMS, AND/OR STYLES OF PERIMETER TYPE CONTROLS MUST BE CLEANED, REPAIRED, REPLACED, OR SUPPLEMENTED 24 HOURS OF DISCOVERY WHEN THEY BECOME NONFUNCTIONAL OR SEDIMENT REACHES ONE-HALF THE HEIGHT OF THE DEVICE WITHIN.
   - PERMANENT AND TEMPORARY SEDIMENTATION BASINS MUST BE DRAINED AND THE SEDIMENT REMOVED WITHIN 72 HOURS OF DISCOVERY ONCE THE SEDIMENT COLLECTED IN THE BASIN REACHES ONE-HALF THE STORAGE VOLUME .
   - TRACKED SEDIMENT SHALL BE SWEPT WITHIN 2 HOURS.
   - SEDIMENT SHALL BE REMOVED FROM ALL STORM SEWER AND INFILTRATION SYSTEMS WITHIN 24 HOURS.
   - RILLS, GULLIES, OR OTHER EROSIONS SHALL BE REPAIRED.
   - IN THE EVENT OF A SEDIMENT-LADEN DISCHARGE TO A SURFACE WATER, CONTRACTOR SHALL CONTACT LOCAL, REGIONAL, STATE OR FEDERAL AUTHORITIES AND OBTAIN ANY PERMIT NECESSARY FOR REMOVAL OF ANY DELTAS OR SEDIMENT. REMOVAL AND STABILIZATION SHALL OCCUR WITHIN 7 DAYS OF GAINING PERMISSION BY APPROPRIATE AGENCY.
5. INSPECTIONS MAY BE SUSPENDED DURING FROZEN GROUND CONDITIONS. INSPECTIONS MUST BE REINSTATED AFTER RUNOFF OCCURS OR WITHIN 24 HOURS OF RESUMING CONSTRUCTION.

EXISTING AND PROPOSED SURFACE AREAS

1. TOTAL PROJECT AREA (AREA TO BE DISTURBED): 46,455 SF
PRE-CONSTRUCTION IMPERVIOUS SURFACE: 2,877 SF
POST-CONSTRUCTION IMPERVIOUS SURFACE: 34,208 SF
TOTAL NEW IMPERVIOUS SURFACE ACRES: 31,331 SF
2. THE PROJECT DOES NOT INCLUDE ONE ACRE OF NEW IMPERVIOUS SURFACE. PERMANENT STORMWATER MANAGEMENT IS NOT REQUIRED UNDER THE REQUIREMENTS OF THE MPCA NPDES GENERAL STORMWATER PERMIT.
3. THE PROJECT DOES NOT INCLUDE 10 OR MORE ACRES DRAINING TO A COMMON LOCATION. THE PROJECT WILL NOT INCLUDE REQUIRE A TEMPORARY SEDIMENT BASIN UNLESS SITE CONDITIONS OR CONSTRUCTION METHODS REQUIRE.

GENERAL EROSION/SEDIMENT BMP NOTES

1. ANY BMP THAT REQUIRES ADJUSTMENT OR REMOVAL FOR SHORT-TERM WORK ITEM SHALL BE REMOVED, ADJUSTED, AND/OR REPLACED AT THE CONTRACTOR'S EXPENSE.
2. CONTRACTOR SHALL HAVE A STREET SWEEPER ONSITE AT ALL TIMES. SWEEPER SHALL COLLECT DUST AND DEBRIS. BROOMS WITHOUT COLLECTION ARE PROHIBITED. SEDIMENT TRACKING ONTO ADJACENT PAVEMENTS SHALL BE SWEPT A MINIMUM OF ONCE PER DAY OR AS DIRECTED BY THE OWNER OR ENGINEER. MULTIPLE SWEEPING OPERATIONS MAY BE REQUIRED DAILY.
3. CONTRACTOR SHALL UTILIZE EROSION AND SEDIMENT CONTROL BMP'S AT ALL STOCKPILES, THIS INCLUDES PERIMETER SILT FENCE AND TEMPORARY STABILIZATION IF NECESSARY.
4. DO NOT STOCKPILE MATERIALS, PARK EQUIPMENT OR VEHICLES ON NATURAL BUFFERS, IN DRAINAGE WAYS, SURFACE WATERS, OR INFILTRATION AREAS.
5. DO NOT DRAIN TURBID WATER OFFSITE. TURBID WATER MUST BE TREATED BY AN ON SITE TEMPORARY OR PERMANENT SEDIMENTATION BASIN OR OTHER METHOD BEFORE OFF SITE DISCHARGE .
6. DRAINAGE DITCHES, SWALES AND/OR INFILTRATION AREAS SHALL BE KEPT OFFLINE (STORMWATER TEMPORARILY ROUTED AROUND) OR RIGOROUSLY PROTECTED WITH SILT FENCE AND/OR SEDIMENT CONTROL LOG UNTIL VEGETATIVE COVER REACHES 70% THE EXPECTED ESTABLISHMENT.
7. IF DOWN GRADIENT SEDIMENT CONTROLS ARE OVERLOADED, CONTRACTOR SHALL CLEAN/REPLACE AND INSTALL ADDITIONAL UPGRADIENT SEDIMENT CONTROLS OR REDUNDANT BMP'S.
8. INLET AND CULVERT PROTECTION SHALL BE IN PLACE AT ALL TIMES. EACH INLET/CULVERT MUST BE PROTECTED WITH THE APPROPRIATE BMP FOR THE CORRESPONDING PHASE OF CONSTRUCTION. INLETS/CULVERTS MAY REQUIRE MULTI TYPES OF PROTECTION THROUGHOUT THE DURATION OF CONSTRUCTION.
9. SEE SWPPP DETAILS AND PLAN SHEETS FOR ADDITIONAL NOTES AND REQUIREMENTS.

DEWATERING

1. DEWATERING IS NOT ANTICIPATED HOWEVER IF IT IS REQUIRED, IT SHALL COMPLY WITH THIS SECTION.
2. TURBID DEWATERING DISCHARGE OFFSITE IS STRICTLY PROHIBITTED. TURBID DEWATERING DISCHARGE MUST BE TREATED ONSITE BY EITHER A TEMPORARY OR PERMANENT SEDIMENTATION BASIN OR OTHER APPROPRIATE BMP PRIOR TO OFFSITE DISCHARGE.
3. IF FILTERS ARE UTILIZED FOR TREATING TURBID WATER, FILTER BACKWASH MUST BE HAULED AWAY, FILTERED, OR APPLIED ON SITE IN A MANNER THAT DOES NOT CAUSE EROSION OR SEDIMENT GENERATING DISCHARGE.
4. SURFACE DISCHARGE IS PROHIBITED. ANY DEWATERING DISCHARGE SHALL BE DIRECTLY DISCHARGED TO CITY STORM SEWER.
5. ALL WATER FROM DEWATERING MUST BE DISCHARGED IN A MANNER THAT DOES NOT CAUSE NUISANCE CONDITIONS, EROSION IN RECEIVING CHANNELS OR ON DOWNSLOPES, OR INUNDATIONS TO WETLAND CAUSING ADVERSE IMPACT TO THE WETLANDS.

LONG TERM MAINTENANCE REQUIREMENTS

1. INSPECTIONS AND MAINTENANCE WILL BE COMPLETED IN ACCORDANCE WITH THE CITY'S MS4 PERMIT AND INSPECTION SCHEDULE.
2. RECORDS OF ALL INSPECTIONS AND MAINTENANCE WILL BE KEPT BY THE OWNER AND COPIES SHALL BE SUBMITTED TO PERMITTING AGENCIES IMMEDIATELY UPON THEIR REQUEST.
3. CORRECTIVE ACTIONS AS DIRECTED BY PERMITTING AGENCIES SHALL BE COMPLETED WITHIN 14 DAYS OF THEIR NOTIFICATION OR SOONER IF REQUIRED.

PERMIT TERMINATION CONDITIONS

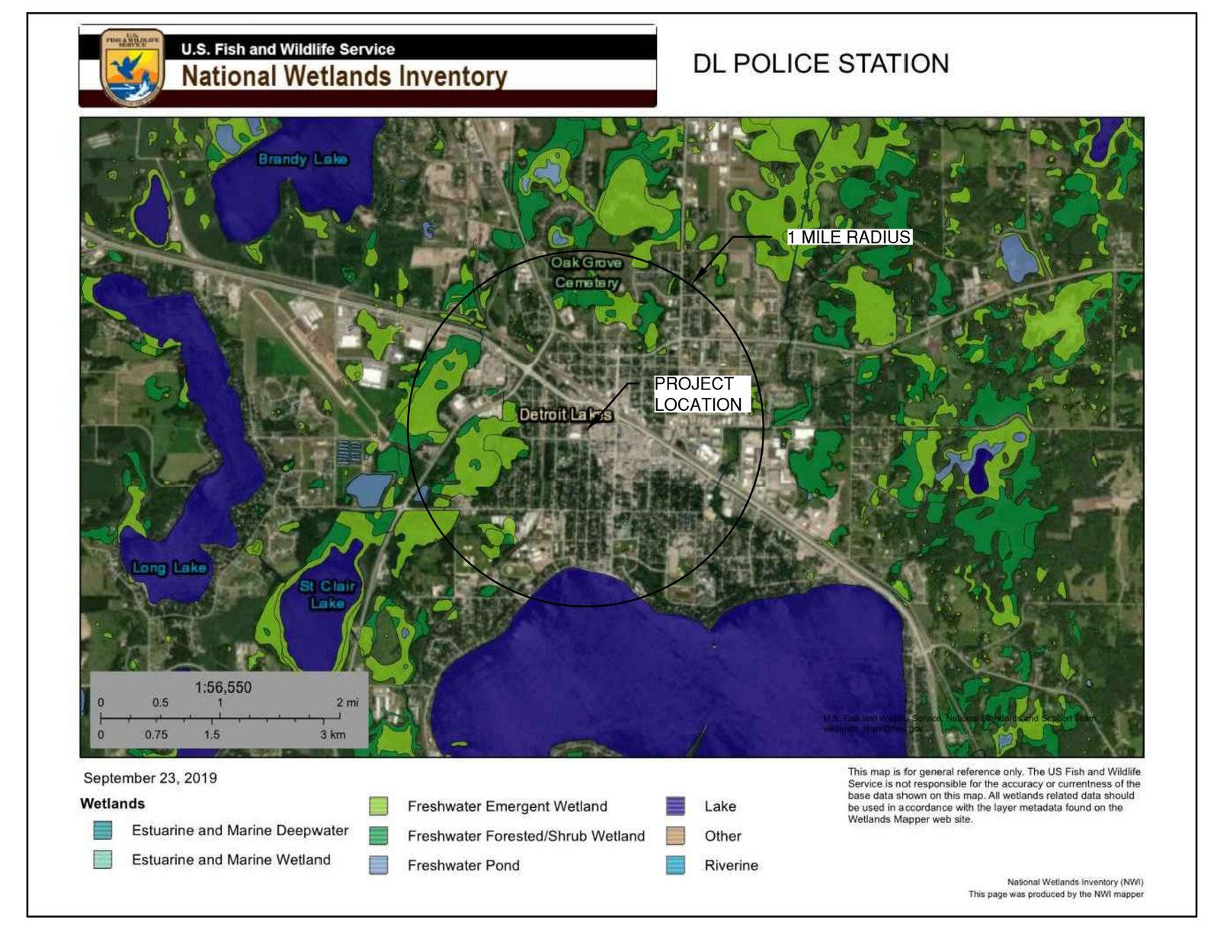
1. VEGETATIVE RESTORATION IS REQUIRED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO WATER, MOW, SPRAY FOR WEEDS, REPAIR WASHOUTS OR BARE SPOTS, RE-SEED, AND RE-MULCH AS NECESSARY.
2. SEE LANDSCAPE PLAN FOR ADDITIONAL REQUIREMENTS.
3. THE ESTIMATED TURF ESTABLISHMENT QUANTITIES ARE BASED ON THE AREAS SHOWN ON THE PERMANENT STABILIZATION PLANS. ANY AREAS DISTURBED BEYOND THE LIMITS SHOWN SHALL ALSO BE RESTORED BY APPROPRIATE MEANS. NO ADDITIONAL PAYMENT WILL BE MADE FOR ANY RESTORATION REQUIREMENTS BEYOND THE LIMITS SHOWN.
4. FINAL STABILIZATION MUST BE ACHIEVED; 70% THE EXPECTED VEGETATIVE COVER IS OBTAINED IN ALL AREAS OF THE PROJECT AND APPROVED BY THE ENGINEER.
5. ONCE FINAL STABILIZATION IS ACHIEVED, SEDIMENT SHALL BE REMOVED FROM ALL CONVEYANCE SYSTEMS, WET SEDIMENTATION BASINS, AND/OR FILTRATION BASINS, AND ALL TEMPORARY BMP'S SHALL BE REMOVED.
6. ONCE THE ABOVE 2 ITEMS HAVE BEEN COMPLETED, THE CONTRACTOR SHALL COMPLETE AND SUBMIT THE NOTICE OF TERMINATION TO THE MPCA.

GENERAL STORMWATER MANAGEMENT NOTES

1. ONSITE PERMANENT STORMWATER MANAGEMENT IS REQUIRED UNDER THE PELICAN RIVER WATERSHED DISTRICT AND CITY OF DETROIT LAKES PERMITS.
2. PERMANENT STORMWATER MANAGEMENT HAS BEEN DESIGNED IN ACCORDANCE WITH THE FOLLOWING AGENCY REQUIREMENTS:
   - MPCA GUIDLINES
   - PELICAN RIVER WATERSHED DISTRICT
   - DWSMA REQUIREMENTS
3. PERMANENT STORMWATER MANAGEMENT WILL BE PROVIDED BY UNDERGROUND INFILTRATION CHAMBERS.
4. INFILTRATION IS REQUIRED.
5. WEB SOIL SURVEY IS ONLY ACCEPTABLE FOR PRELIMINARY DESIGN OF INFILTRATION BASINS. 14 SOIL BORINGS RANGING IN DEPTH FROM 12 TO 20 FEET WERE ANALYZED ON OCTOBER 30, 2019 AND CONFIRMED THE SOIL IS SUITABLE FOR INFILTRATION. WATER WAS OBSERVED AT A DEPTH OF 11 TO 19 FEET BELOW THE SURFACE RANGING IN ELEVATION FROM 1338' TO 1344'.

INFILTRATION DESIGN AND PERFORMANCE

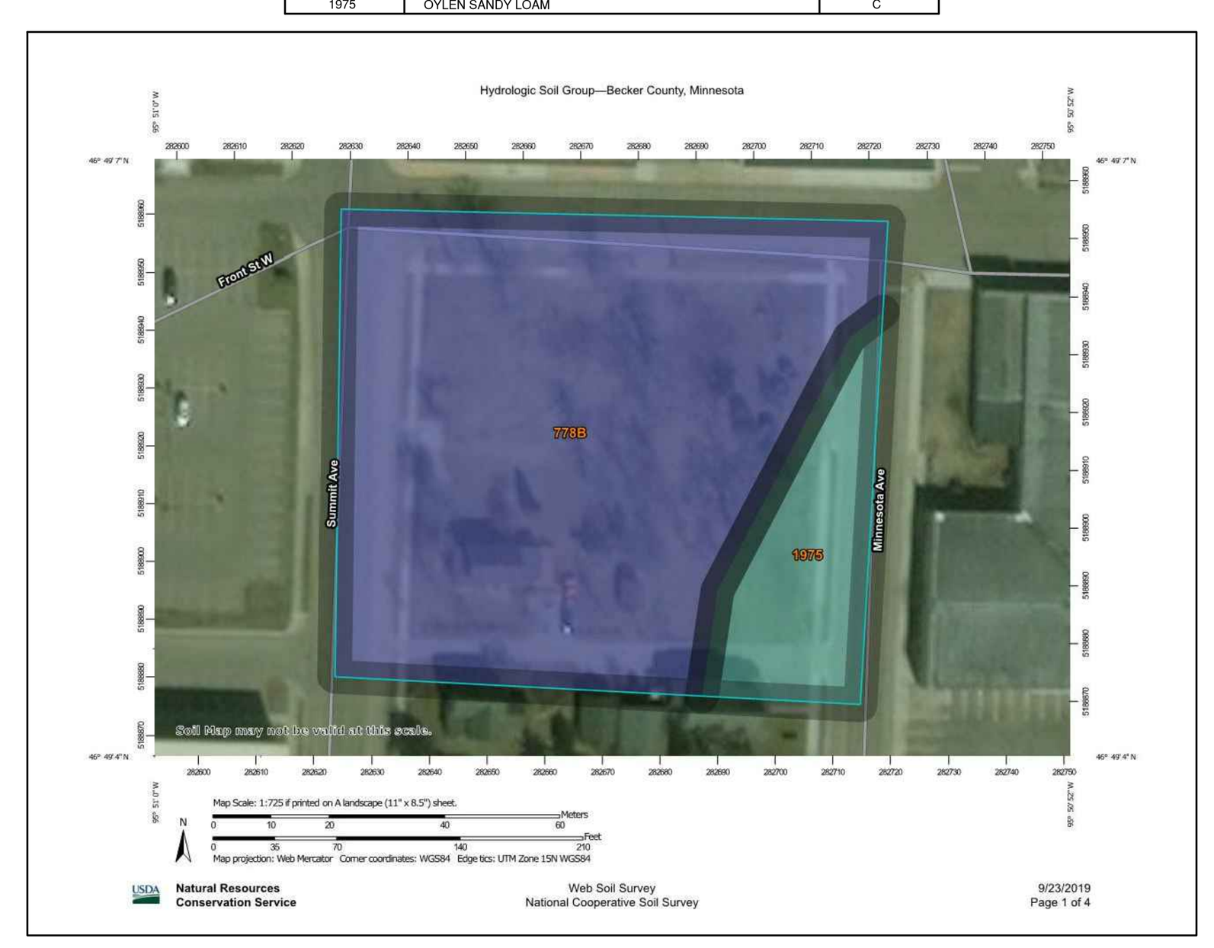
1. INFILTRATION SYSTEMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
2. HEAVY EQUIPMENT, VEHICLES, AND MATERIAL SHALL BE KEPT FREE OF INFILTRATION AREAS PRIOR TO AND FOLLOWING CONSTRUCTION.
3. PRETREATMENT SHALL BE PROVIDED BY AN ISOLATOR ROW ON THE UNDERGROUND INFILTRATION SYSTEM.
4. THE WATER QUALITY VOLUME FOR PRWD IS 1.1" FROM THE SITE IMPERVIOUS SURFACE. UTILIZING 1.1" OVER THE TOTAL SITE IMPERVIOUS SURFACE OF 34,208 SQUARE FEET (SF), A TOTAL OF 3,136 CUBIC FEET (CF) STORAGE IS REQUIRED. THE SYSTEMS AS DESIGN AS A CAPACITY OF 7,811 CF. THE ADDITIONAL STORAGE IS REQUIRED TO SATISFY THE PELICAN RIVER WATERSHED DISTRICT 100 YEAR RATE CONTROL REQUIREMENT.
5. EXISTING 5, 25, AND 100 YEAR RUNOFF RATES: 0.54 CFS, 1.86 CFS, AND 3.79 CFS
6. PROPOSED 5, 25, AND 100 YEAR RUNOFF RATES: 0.14 CFS, 0.41 CFS, AND 3.67 CFS
7. ASSUMING AN INFILTRATION RATE OF 0.80 INCHES PER HOUR, THE 60" (4.3' EFFECTIVE DEPTH) INFILTRATION SYSTEM WILL DRAIN IN 41.3 HOURS.



NATIONAL WETLAND INVENTORY MAP

NRCS WEB SOIL SURVEY MAP LEGEND

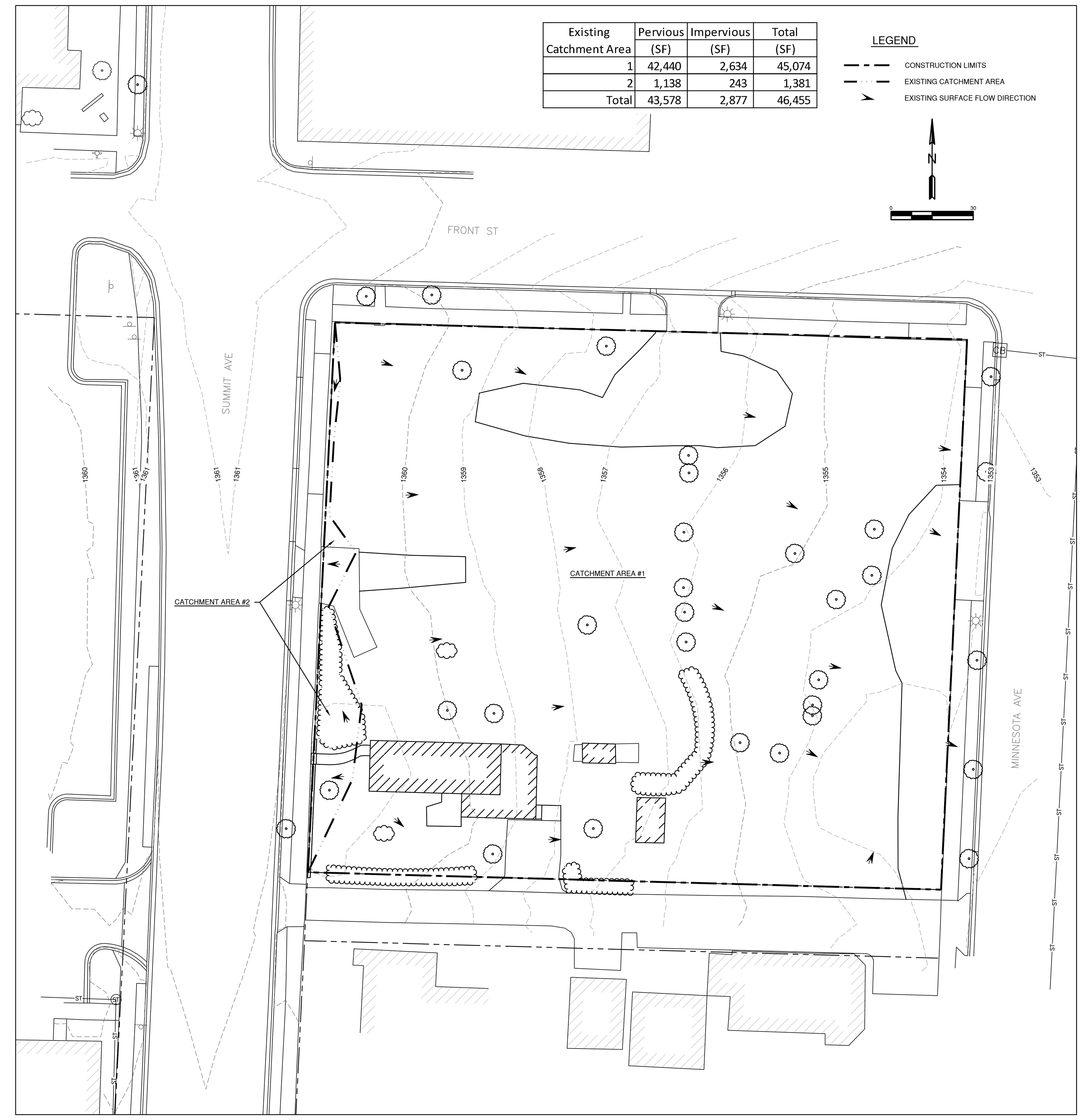
MAP NO.	SOIL NAME	HSG
778B	DORESET-CORLISS COMPLEX, 1 TO 6 PERCENT SLOPES	B
1975	OYLEN SANDY LOAM	C



NRCS WEB SOIL SURVEY MAP

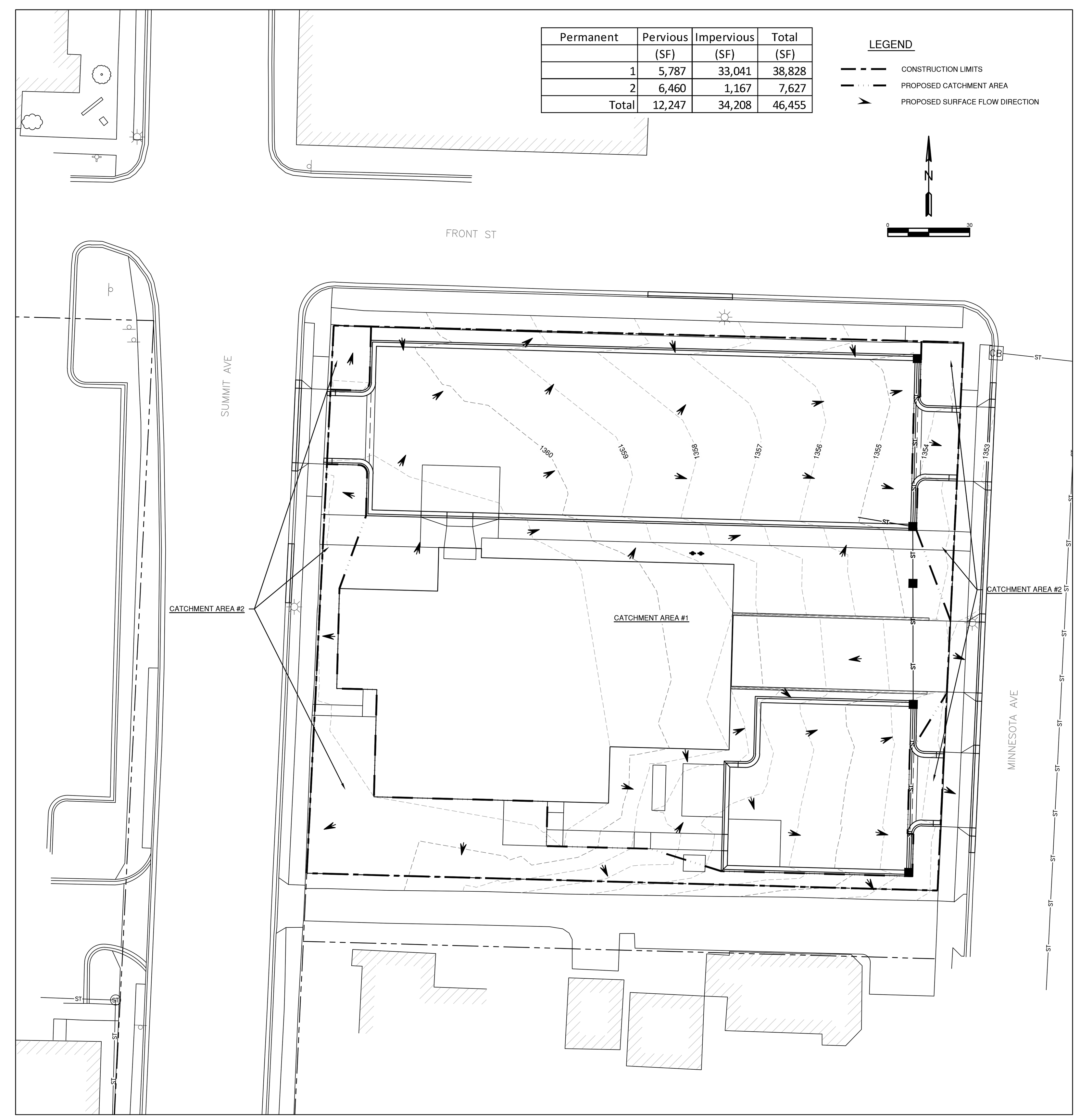
GENERAL SOIL NOTES

1. EXISTING TOPSOIL AND VEGETATION SHALL BE PRESERVED TO THE EXTENT POSSIBLE.
2. CONTRACTOR SHALL MINIMIZE USE OF HEAVY EQUIPMENT IN PERVIOUS SURFACE AREAS TO THE EXTENT POSSIBLE. WHEN PROPOSED PERVIOUS SURFACE AREAS ARE REQUIRED FOR HEAVY EQUIPMENT USE, THESE AREAS SHALL BE SCARIFIED TO A MINIMUM 12" DEPTH AND PERMANENTLY STABILIZED AS NECESSARY TO RESTORE TO EXISTING CONDITIONS.
3. THE BELOW ARE THE HYDRAULIC SOIL GROUP (HSG) DESCRIPTIONS THAT CORRESPOND TO THE NRCS WEB SOIL SURVEY MAP:
   A. SAND, LOAMY SAND OR SANDY LOAM TYPE SOILS. LOW RUNOFF POTENTIAL AND HIGH INFILTRATION RATES. THEY CONSIST PRIMARILY OF DEEP, WELL TO EXCESSIVELY WELL DRAINED SANDS OR GRAVELS.
   B. LOAM OR SILT LOAM. MODERATE INFILTRATION RATE EVEN WHEN THOROUGHLY WETTED. PRIMARILY MODERATELY DEEP TO DEEP, MODERATELY WELL TO WELL DRAINED SOILS. TEXTURE RANGES FROM MODERATELY FINE TO MODERATELY COARSE.
   C. SANDY CLAY LOAM. LOW INFILTRATION RATES ESPECIALLY WHEN THOROUGHLY WETTED. SOIL TEXTURE MODERATELY FINE TO FINE.
   D. CLAY LOAM, SILTY CLAY LOAM, SANDY CLAY, SILTY CLAY OR CLAY. THIS SOIL GROUP HAS THE HIGHEST RUNOFF POTENTIAL. VERY LOW INFILTRATION RATES ESPECIALLY WHEN THOROUGHLY WETTED. CONSIST PRIMARILY OF CLAY SOILS WITH A HIGH SWELLING POTENTIAL.
4. SOIL BORINGS WERE COMPLETED BY CHOSEN VALLEY TESTING AND RESULTS WERE SUMMARIZED IN A DESIGN PHASE GEOTECHNICAL REPORT DATED OCTOBER 30, 2019. THE ACTUAL INPLACE SOILS WERE DOCUMENTED BE HYDRAULIC SOIL GROUP A (SP SOILS). ACCORDING TO THE MINNESOTA STORMWATER MANUAL THESE SOILS ARE SUITABLE FOR INFILTRATION AND AN INFILTRATION RATE OF 0.80 INCHES PER HOURS IS TO BE ASSUMED.
   A. GROUNDWATER WAS OBSERVED AT AN ELEVATION OF 1342.50 WHICH ALLOWS SUFFICIENT DEPTH FOR UNDERGROUND INFILTRATION.



Existing Catchment Area	Pervious (SF)	Impervious (SF)	Total (SF)
1	42,440	2,634	45,074
2	1,138	243	1,381
Total	43,578	2,877	46,455

EXISTING TOPOGRAPHY AND DRAINAGE PATTERNS



Permanent	Pervious (SF)	Impervious (SF)	Total (SF)
1	5,787	33,041	38,828
2	6,460	1,167	7,627
Total	12,247	34,208	46,455

PROPOSED TOPOGRAPHY AND DRAINAGE PATTERNS

City of Detroit Lakes

Apex Engineering Group
Bismarck - Detroit Lakes
Dickinson - Fargo
920 McKinley Ave
Detroit Lakes, Minnesota 56501
Office: 218-844-2580
www.apexenggroup.com

Apex Project #: 19.178.0112
Date: February 19, 2020
Drawn By: TJS
Checked By: JSO
Approved By: JAP

REVISIONS

Issue #	Description	Date

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Print Name: Jon A. Pratt

Signed: [illegible]

Date: 02/19/20 License Number: 46267

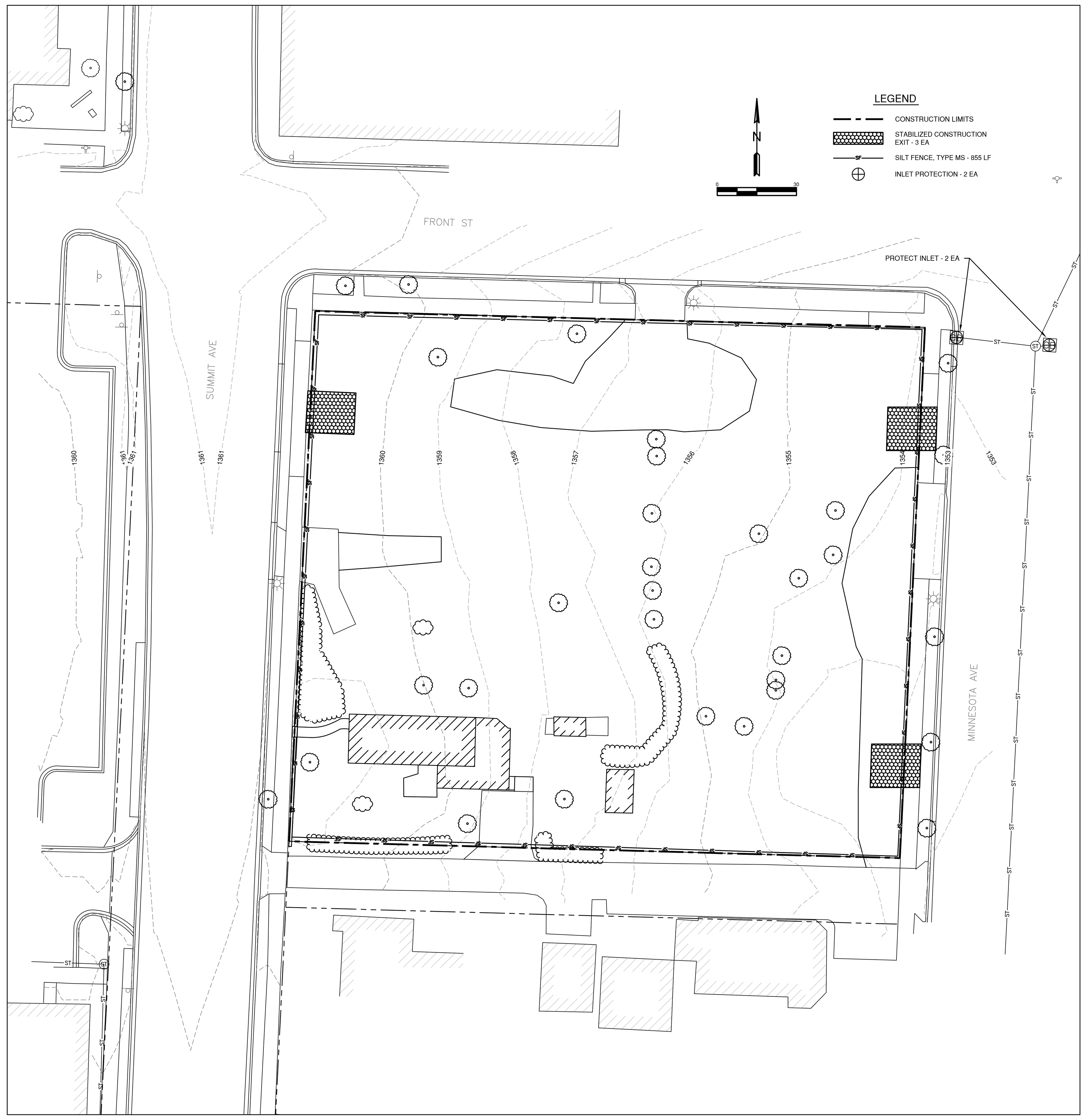
PRELIMINARY

DETROIT LAKES POLICE STATION

SWPPP - GENERAL NOTES, MAPS, AND SOIL INFORMATION DRAINAGE PATTERNS

Sheet:

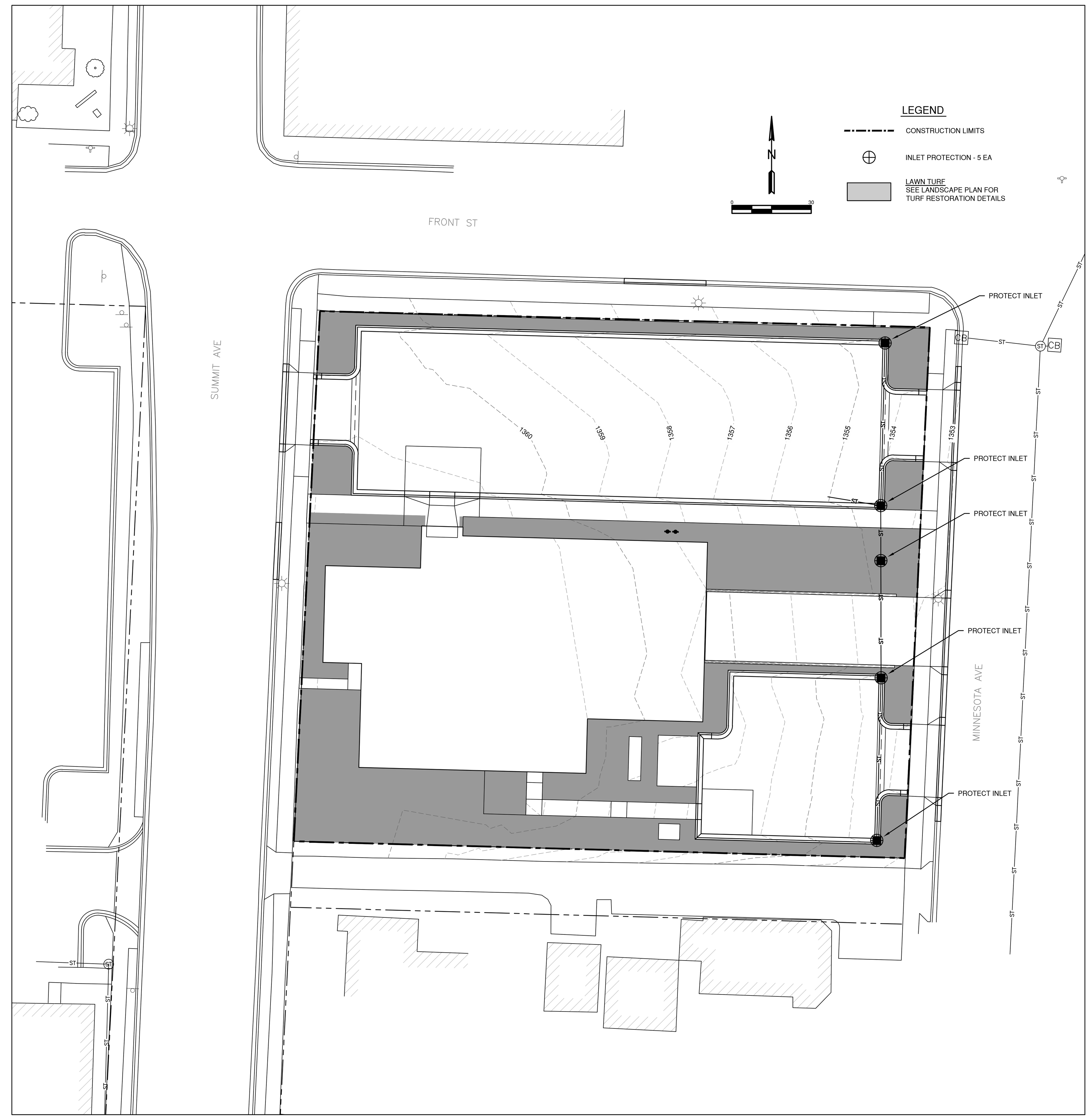
4 OF 8



NOTES:

1. ALL INITIAL TEMPORARY EROSION AND SEDIMENT CONTROL BMP'S SHOWN ON THIS SHEET SHALL BE IMPLEMENTED PRIOR TO ANY LAND DISTURBANCE OR REMOVAL ACTIVITIES AND SHALL REMAIN IN-PLACE UNTIL 70% ESTABLISHMENT IS ACHIEVED OR CONSTRUCTION SEQUENCING REQUIRES.
2. ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMP'S SHALL BE INSTALLED IN A TIMELY MANNER THROUGHOUT THE DURATION OF THE PROJECT IN ACCORDANCE WITH THE TIMELINES DEFINED IN THE NPDES PERMIT.
3. THE CONTRACTOR SHALL MINIMIZE SITE DISTURBANCE TO THE EXTENT POSSIBLE. ALL WORK SHALL BE WITHIN THE CONSTRUCTION LIMITS SHOWN. ANY LAND DISTURBANCE BEYOND THE CONSTRUCTION LIMITS SHALL BE RESTORED TO THE PRE-EXISTING CONDITIONS AT THE CONTRACTOR'S EXPENSE.
4. ALL DISTURBED AREAS SHALL BE TEMPORARILY STABILIZED ANY TIME CONSTRUCTION HAS TEMPORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME WITHIN 14 CALENDAR DAYS. TEMPORARY STABILIZATION WILL LIKELY REQUIRE MULTIPLE MOBILIZATIONS AND THE SAME AREA MAY REQUIRE MULTIPLE APPLICATIONS OF TEMPORARY STABILIZATION. TEMPORARY STABILIZATION SHALL INCLUDE MNDOT SEED MIX 21-111 AND HYDRAULIC MULCH MATRIX. TEMPORARY STABILIZATION QUANTITIES AND AREAS NOT SHOWN AS THEY WILL VARY BASED ON CONTRACTOR'S PROSECUTION OF WORK.
5. CONTRACTOR SHALL MAINTAIN ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMP'S UNTIL PERMANENT EROSION CONTROL UNTIL 70% EXPECTED VEGETATIVE GROWTH IS ACHIEVED.

INITIAL TEMPORARY EROSION AND SEDIMENT CONTROL PLAN



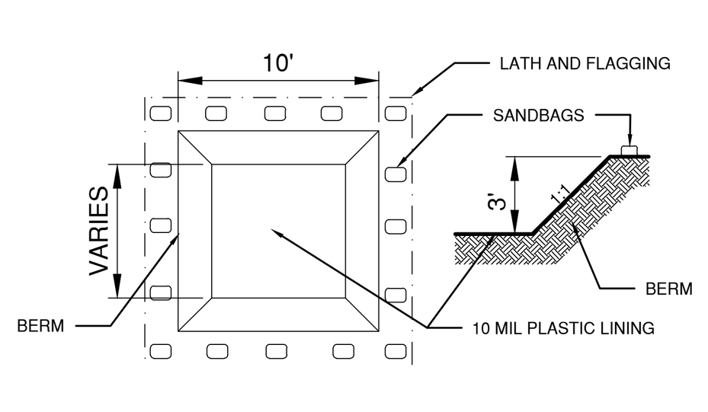
NOTES:

1. CONTRACTOR SHALL MAINTAIN ALL EROSION AND SEDIMENT CONTROL BMP'S AS DEPICTED ON THE INITIAL TEMPORARY EROSION AND SEDIMENT CONTROL PLAN AND THIS SHEET UNTIL PERMANENT EROSION CONTROL UNTIL 70% EXPECTED VEGETATIVE GROWTH IS ACHIEVED.
2. INLET PROTECTION SHALL BE PROVIDED ON ALL NEW INLETS WITHIN 8 HOURS OF INSTALLATION OR ANY FORECAST RAIN WHICHEVER COMES FIRST.
3. IN THE EVENT THAT PERMANENT STABILIZATION CANNOT BE COMPLETED WITHIN THE ALLOWED NPDES PERMIT TIME FRAMES, THE CONTRACTOR WILL BE RESPONSIBLE FOR TEMPORARY STABILIZATION.
4. ALL AREAS DISTURBED BY THE CONSTRUCTION ACTIVITY SHALL BE RESTORED BY THE CONTRACTOR AS SOON AS PRACTICAL. PHASING OF PERMANENT STABILIZATION MAY BE REQUIRED AS PORTIONS OF WORK ARE COMPLETED IN ORDER TO STABILIZE AREAS WITHIN 14 DAYS FOLLOWING COMPLETION OF CONSTRUCTION. MULTIPLE MOBILIZATIONS WILL BE REQUIRED.
5. APPLY HYDRAULIC MULCH MATRIX AND HYDRAULIC REINFORCED FIBER MATRIX AT RATES NECESSARY FOR 100% GROUND COVERAGE. TO ACHIEV100% GROUND COVERAGE MAY REQUIRE MULTIPLE APPLICATIONS.
6. VEGETATIVE RESTORATION IS REQUIRED. ONCE 70% OF THE EXPECTED VEGETATIVE COVER IS ACHIEVED IN ALL AREAS OF THE PROJECT, AND HAS BEEN ACCEPTED BY THE OWNER AND ENGINEER, THE CONTRACTOR SHALL REMOVE ALL SYNTHETIC EROSION AND SEDIMENT BMP'S AND SUBMIT THE NOTICE OF TERMINATION TO THE MPCA.

FINAL TEMPORARY EROSION AND SEDIMENT CONTROL PLAN - PERMANENT STABILIZATION PLAN

BMP ESTIMATED QUANTITIES	
INLET/CULVERT PROJECTION	7 EACH
SILT FENCE, TYPE MS	855 LF
STABILIZED CONSTRUCTION EXIT	3 EACH
TEMPORARY STABILIZATION	DEPEND ON CONTRACTOR MEANS, METHODS, AND SCHEDULING

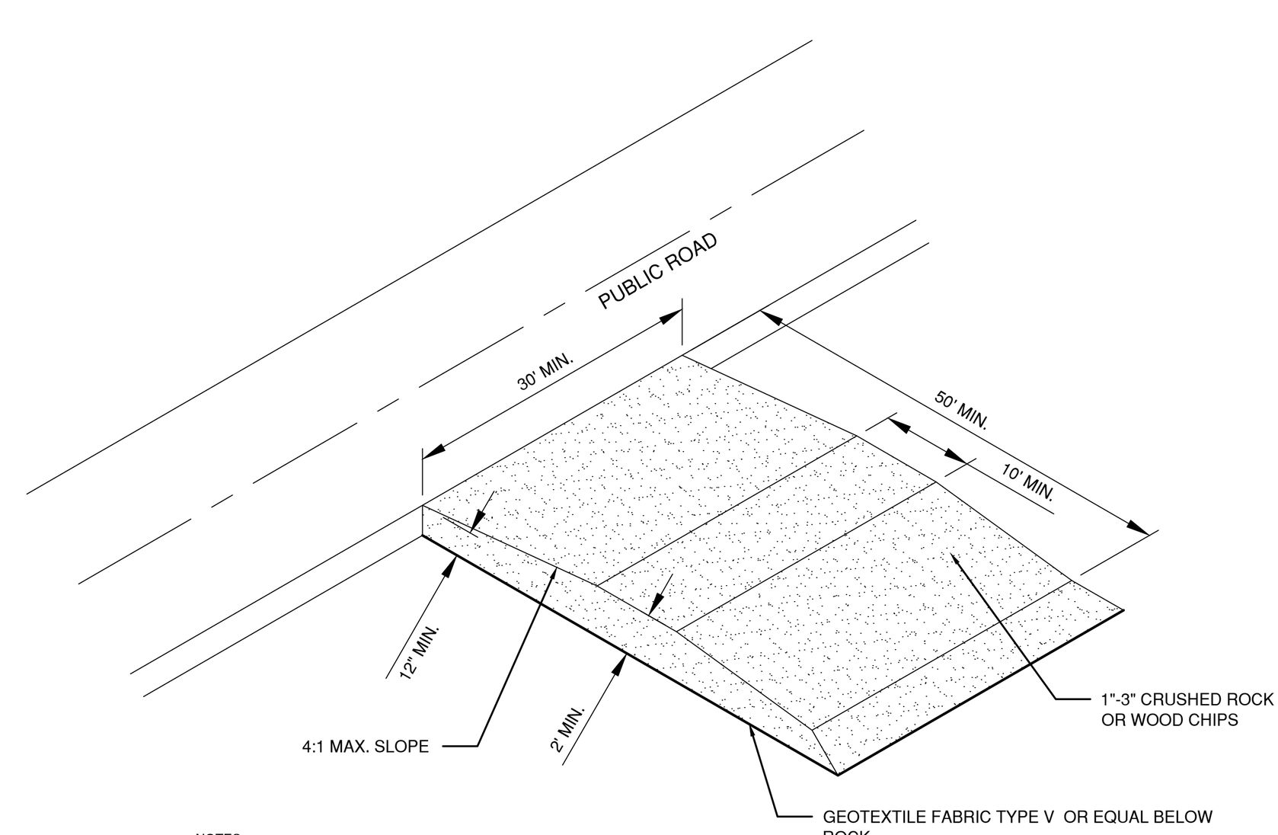
TURF ESTABLISHMENT ESTIMATED QUANTITIES	
LAWN TURF SEE LANDSCAPE PLAN FOR TURF RESTORATION DETAILS	12,300 SF



NOTES:

1. CONCRETE WASHOUT AREAS SHALL BE CONSTRUCTED IF READY-MIX TRUCKS ARE NOT EQUIPPED WITH CHUTE WASHOUT SYSTEMS. LOCATION TO BE DETERMINED IN FIELD.
2. IF CONCRETE WASHOUT MAKES ACCIDENTAL CONTACT WITH SOILS OR DISCHARGES TO WATERS OF THE STATE, STATE LAW REQUIRES NOTIFYING THE STATE DUTY OFFICER AND IMMEDIATELY STOP FURTHER DISCHARGE, REMOVE DISCHARGE MATERIALS AND RESTORE THE SITE TO PRE-DISTURBANCE CONDITIONS.
3. DESIGNATED CONCRETE WASHOUT AREAS SHALL BE POSTED WITH A SIGN OR SPRAY PAINTED IN A CONSPICUOUS MANNER, AND INSPECTED AS OFTEN AS NECESSARY TO FUNCTION WITHOUT DISCHARGE.
4. WASHOUT BMP MUST BE SITED MORE THAN 200 FT FROM A DNR PUBLIC OR PERMIT LISTED SPECIAL WATER UNLESS ROBUST, REDUNDANT BEST PRACTICE PROTECTION MEASURES ARE INSTALLED AND AMENDED INTO THE SWPPP.

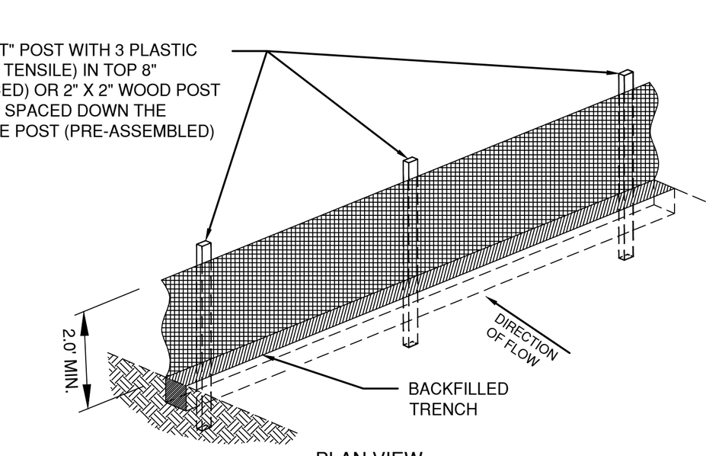
(1) CONCRETE WASHOUT AREA DETAIL
NO SCALE



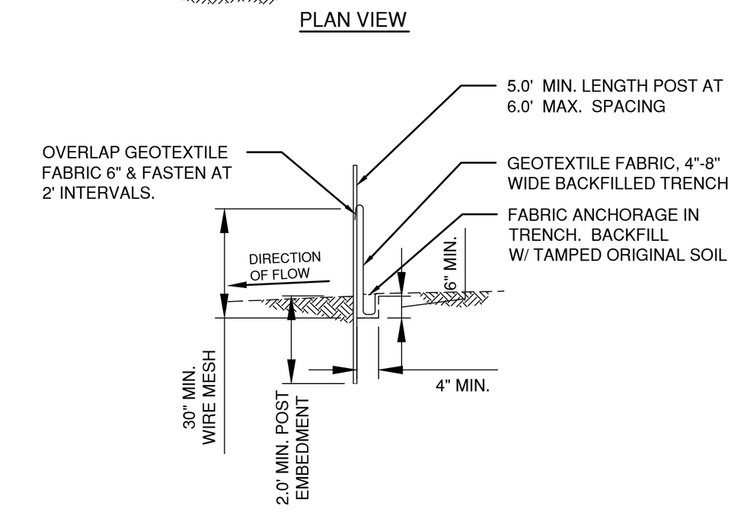
NOTES:

1. CRUSHED ROCK SHALL BE REMOVED AND REPLACED AS NECESSARY THROUGHOUT PROJECT OR AT THE DIRECTION OF THE ENGINEER.
2. TRACKING ONTO PUBLIC STREET OR PAVEMENT BEYOND THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE SWEPT A MINIMUM OF ONCE PER DAY OR AS DIRECTED BY THE ENGINEER OR OWNER OF THE STREET. MULTIPLE SWEEPINGS MAY BE REQUIRED DAILY.

(2) STABILIZED CONSTRUCTION EXIT
NO SCALE



PLAN VIEW



SECTION VIEW

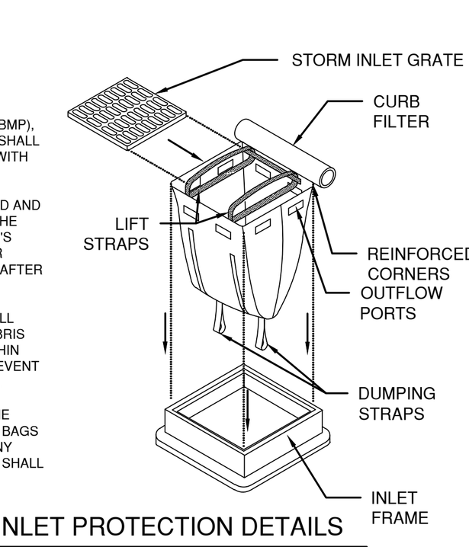
NOTES:

1. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
2. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.

(3) SILT FENCE DETAILS
NO SCALE

NOTES:

1. FILTER BAGS OR AN EQUAL "BEST MANAGEMENT PRACTICE" DEVICE (BMP), AS APPROVED BY THE ENGINEER , SHALL BE USED AND MUST BE EQUIPPED WITH EMERGENCY OVERFLOWS.
2. BMP DEVICES SHALL BE MAINTAINED AND REPLACED AT THE DIRECTION OF THE ENGINEER; NON FUNCTIONING BMP'S MUST BE REPAIRED, REPLACED, OR SUPPLEMENTED WITHIN 24 HOURS AFTER DISCOVERY OF VIOLATION.
3. THE CONTRACTOR WILL REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM VICINITY OF INLETS AND WITHIN FILTER BAGS AFTER EACH STORM EVENT OR WHEN GREATER THEN 1/3 FULL.
4. CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED IN THE FILTER BAGS DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.



(4) TYPE C INLET PROTECTION DETAILS
NO SCALE

City of Detroit Lakes

Apex Engineering Group

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Apex Project #: 19.178.0112
Date: February 19, 2020
Drawn By: TJS
Checked By: JSO
Approved By: JAP

REVISIONS		
Issue #	Description	Date

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Print Name: Jon A. Pratt
Signed: [illegible]
Date: 02/19/20 License Number: 46267

PRELIMINARY

DETROIT LAKES
POLICE STATION

SWPPP - EROSION AND SEDIMENT CONTROL PLAN
PERMANENT STABILIZATION PLAN

Sheet:
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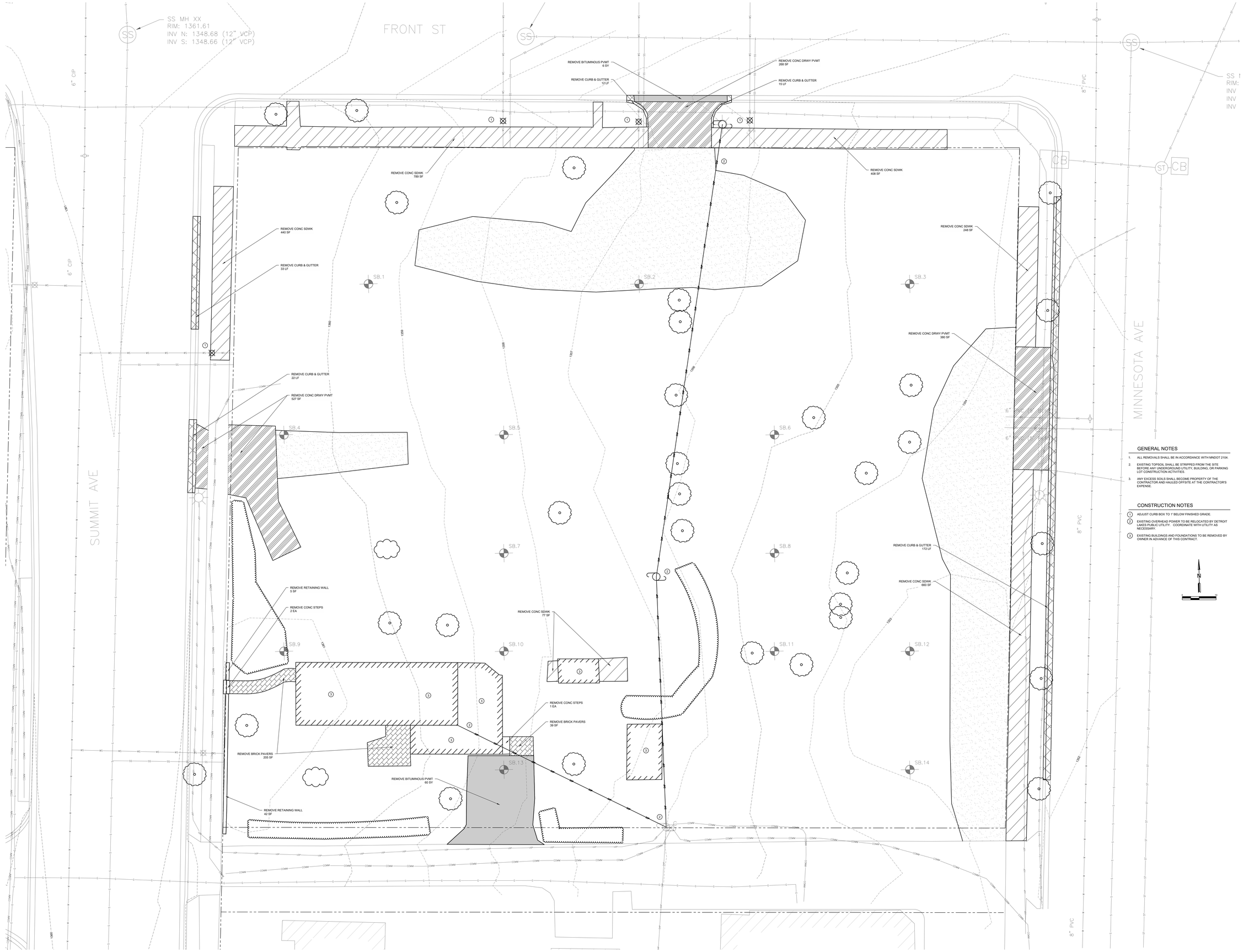

GENERAL NOTES

1. ALL REMOVALS SHALL BE IN ACCORDANCE WITH MNDOT 2104.
2. EXISTING TOPSOIL SHALL BE STRIPPED FROM THE SITE BEFORE ANY UNDERGROUND UTILITY, BUILDING, OR PARKING LOT CONSTRUCTION ACTIVITIES.
3. ANY EXCESS SOILS SHALL BECOME PROPERTY OF THE CONTRACTOR AND HAULED OFFSITE AT THE CONTRACTOR'S EXPENSE.

CONSTRUCTION NOTES

1. ADJUST CURB BOX TO 1' BELOW FINISHED GRADE.
2. EXISTING OVERHEAD POWER TO BE RELOCATED BY DETROIT LAKES PUBLIC UTILITY. COORDINATE WITH UTILITY AS NECESSARY.
3. EXISTING BUILDINGS AND FOUNDATIONS TO BE REMOVED BY OWNER IN ADVANCE OF THIS CONTRACT.

LEGEND

- REMOVE BITUMINOUS PAVEMENT
- REMOVE CONCRETE SIDEWALK
- REMOVE CONCRETE PAVEMENT
- SALVAGE GRAVEL - 720 SY
- REMOVE CONCRETE PAVERS
- REMOVE BUILDING
- REMOVE CONCRETE CURB & GUTTER
- CLEAR & GRUB - 32 TREES
- CLEAR BRUSH
- SB.6 SOIL BORE NAME & APPROXIMATE LOCATION

EXISTING PLAN SYMBOLS

- RIGHT-OF-WAY LINE
- FENCE
- SANITARY SEWER - EXISTING
- STORM SEWER - EXISTING
- WATER - EXISTING
- TELEPHONE
- FIBER OPTIC
- OVERHEAD POWER
- UNDERGROUND POWER
- GAS
- CURB & GUTTER - EXISTING
- COMMUNICATIONS MANHOLE (MHC)
- ELECTRICAL MANHOLE (MHE)
- SANITARY MANHOLE (SS)
- STORM MANHOLE (ST)
- HYDRANT
- GATE VALVE
- INLET (CB)
- STREET SIGN
- POWER POLE
- STREET LIGHT
- TREE
- TREE LINE EDGE
- TELEPHONE PEDESTAL (TP)

City of Detroit Lakes

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PRELIMINARY

Print Name: Jon A. Pape

Signed:

Date: 02/19/20 License Number: 46267

DETROIT LAKES POLICE STATION

EXISTING CONDITIONS & REMOVAL PLAN

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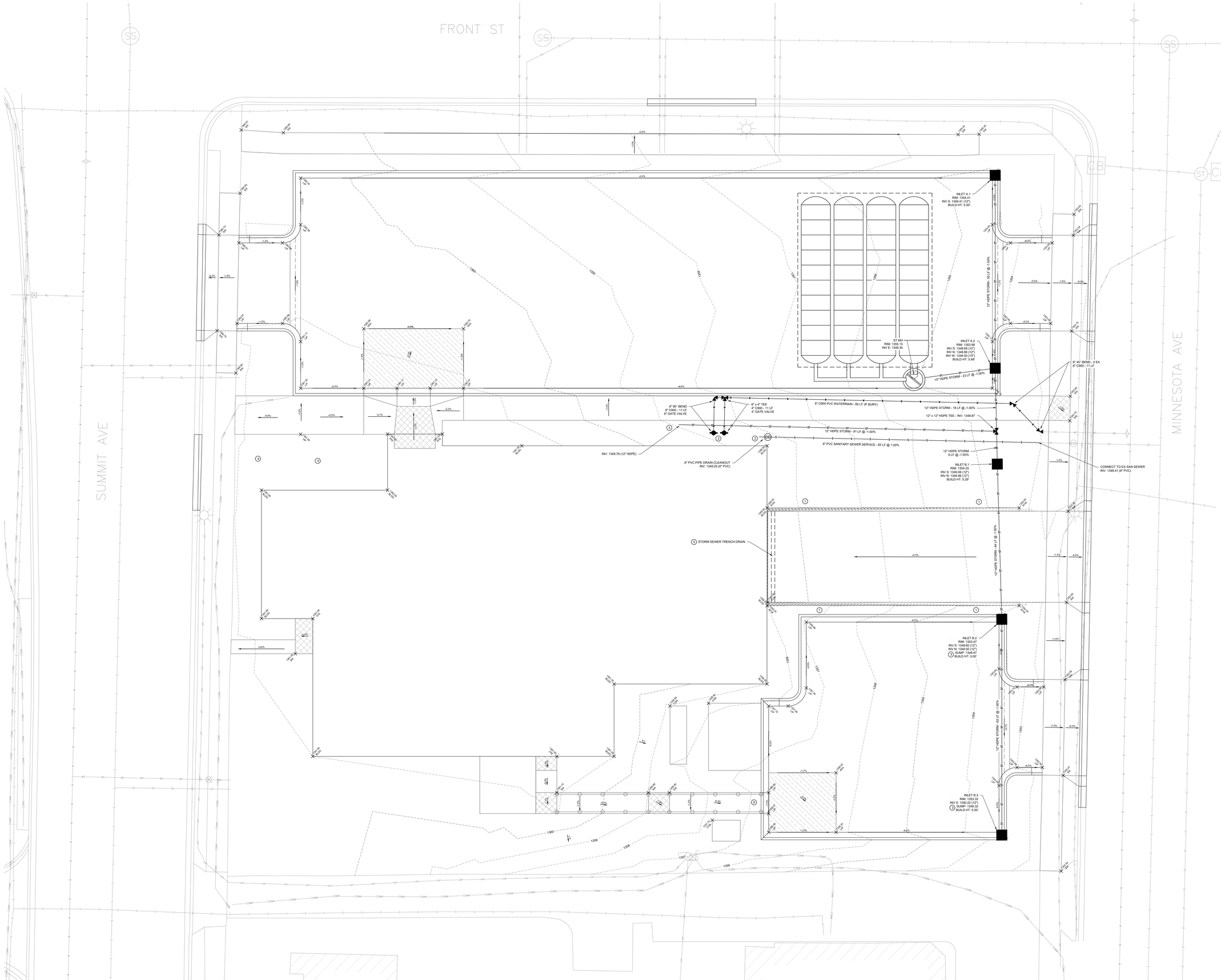

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LEGEND

- PAVEMENT SLOPE
- TURF SLOPE
- CONTOUR ELEVATION
- FINISHED FLOOR ELEVATION
- GUTTER LIP ELEVATION
- SIDEWALK ELEVATION
- ASPHALT ELEVATION
- CONCRETE ELEVATION
- ADA PARKING STALL ELEVATION
- HIGH POINT ELEVATION
- LOW POINT ELEVATION
- TOP OF RETAINING WALL ELEVATION
- ADA PARKING STALL & ACCESS AISLE/ROUTE (2% MAX SLOPE IN ANY DIRECTION)
- ADA LANDING (2% MAX SLOPE IN ANY DIRECTION)

GENERAL NOTES

1. ALL SIDEWALK AND ACCESSIBLE ROUTES FROM HANDICAP PARKING STALLS SHALL BE IN ACCORDANCE WITH THE MOST CURRENT VERSION OF THE MINNESOTA ACCESSIBILITY CODE.
2. ALL WATERMAIN, SANITARY SEWER, AND STORM SEWER INSTALLATION, MATERIAL, AND TESTING REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE 2015 MINNESOTA PLUMBING CODE.
3. WATER SERVICES SHALL BE INSTALLED AT A MINIMUM DEPTH OF 9.0'. ANY AREAS OF LESS COVER SHALL BE INSULATED.

CONSTRUCTION NOTES

1. TOP OF RETAINING WALL SHALL BE 6" ABOVE ADJACENT TURF GRADE ADJACENT TURF TO DRAIN AWAY FROM RETAINING WALL.
2. EXTEND WATER AND SANITARY SEWER SERVICE LINES 5' FROM OUTSIDE EDGE OF BUILDING. COORDINATE WITH MECHANICAL FOR CONNECTIONS. PROVIDE FITTINGS AS NECESSARY. 10' OF SEPARATION REQUIRED BETWEEN SEWER AND WATER PIPES.
3. CATCH BASIN SUMP SHALL BE CONCRETE FILLED WITH CONSTRUCTED INVERTS.
4. GRADE SWALE AS NECESSARY TO DRAIN AREA WEST TOWARDS SUMMIT AVENUE.
5. COORDINATE LOCATION, DEPTH, AND CONNECTION TO BUILDING STORM WITH MECHANICAL CONTRACTOR.
6. GRADES ARE NEAR MAX ON PEDESTRIAN ACCESS ROUTE. ACTUAL CONSTRUCTED FINISHED FLOOR ELEVATION SHALL BE VERIFIED AND CURB AND GUTTER GRADES AT RAMP SHALL BE ADJUSTED. IF NECESSARY TO MAINTAIN ADA COMPLIANCE.

N

DETROIT LAKES
POLICE STATION

GRADING AND UTILITY
PLAN

Sheet:

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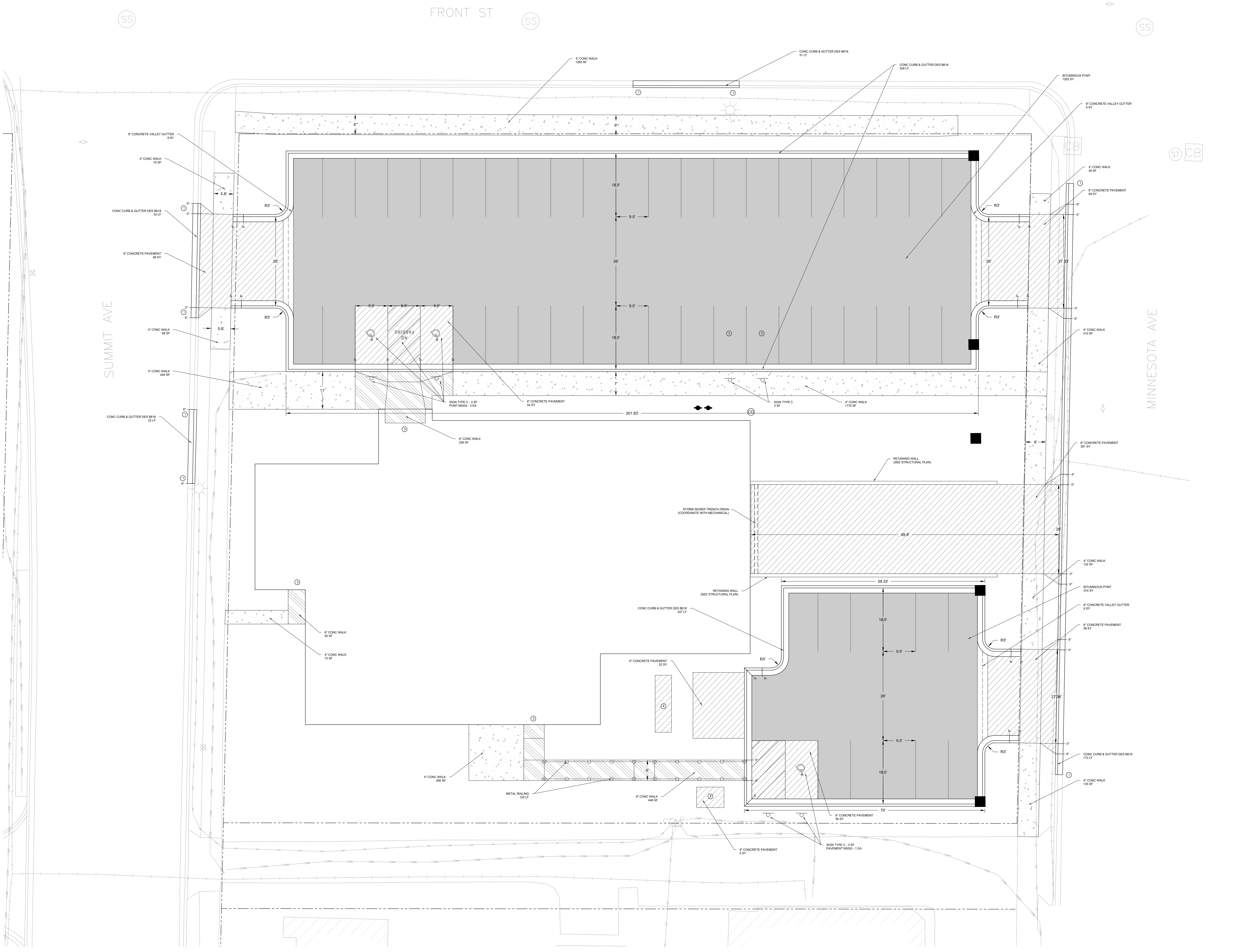

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PRELIMINARY

LEGEND

▨	BITUMINOUS PAVEMENT
▨	4" CONCRETE SIDEWALK PAVEMENT
▨	6" CONCRETE SIDEWALK PAVEMENT
▨	6" CONCRETE PAVEMENT
— — —	8" CONCRETE VALLEY GUTTER
═	CONCRETE CURB & GUTTER
—o—	PIPE RAILING
53	NUMBER OF PARKING STALLS
6" —	CURB HEIGHT

GENERAL NOTES

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LAYOUT ALL PARKING LOT PAVEMENT MARKINGS AND STRIPING. STRIPING COLOR SHALL BE WHITE (EXCEPT FOR BLUE AT ACCESSIBLE STALLS, SEE DETAIL) UNLESS DIRECTED OTHERWISE BY THE OWNER. STRIPING MATERIAL SHALL BE 4" SOLID LINE WATER-BASED TRAFFIC PAINT IN ACCORDANCE WITH MNDOT SPEC 2582. ESTIMATED PARKING LOT QUANTITIES 748 LF 4" SOLID LINE PAINT (WHITE), 226 LF 4" SOLID LINE PAINT (BLUE), AND 17 LF 4" SOLID LINE PAINT (YELLOW)
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THE PARKING LOT IS GRADED/PAVED SUCH THAT THERE IS NO AREA OF STANDING WATER FOLLOWING PAVING OPERATIONS. ANY AREAS OF PONDING SHALL BE CORRECTED BY REMOVAL AND REPLACEMENT AT THE EXPENSE OF THE CONTRACTOR.
3. ALL PERMANENT SIGNS SHALL BE IN ACCORDANCE WITH CURRENT MNMUTCD. SEE DETAILS FOR ACCESSIBLE PARKING STALL SIGNS AND SAFE EXCHANGE PARKING STALL SIGNS.

CONSTRUCTION NOTES

1. MATCH CURB & GUTTER HEIGHT, WIDTH, AND SHAPE TO EXISTING CURB & GUTTER AT TRANSITIONS. PATCH BITUMINOUS AS NECESSARY.
2. SAFE EXCHANGE PARKING STALLS. SEE DETAIL.
3. STOOP LOCATION. SEE STRUCTURAL PLAN.
4. CONCRETE GENERATOR PAD PER THE RECOMMENDATION OF THE GENERATOR SUPPLIER. COORDINATE WITH MECHANICAL.
5. CONCRETE TRANSFORMER PAD. COORDINATE SIZE, LOCATION, AND CONDUIT PENETRATIONS WITH DETROIT LAKES PUBLIC UTILITY.

DETROIT LAKES
POLICE STATION

PAVING PLAN

Sheet:
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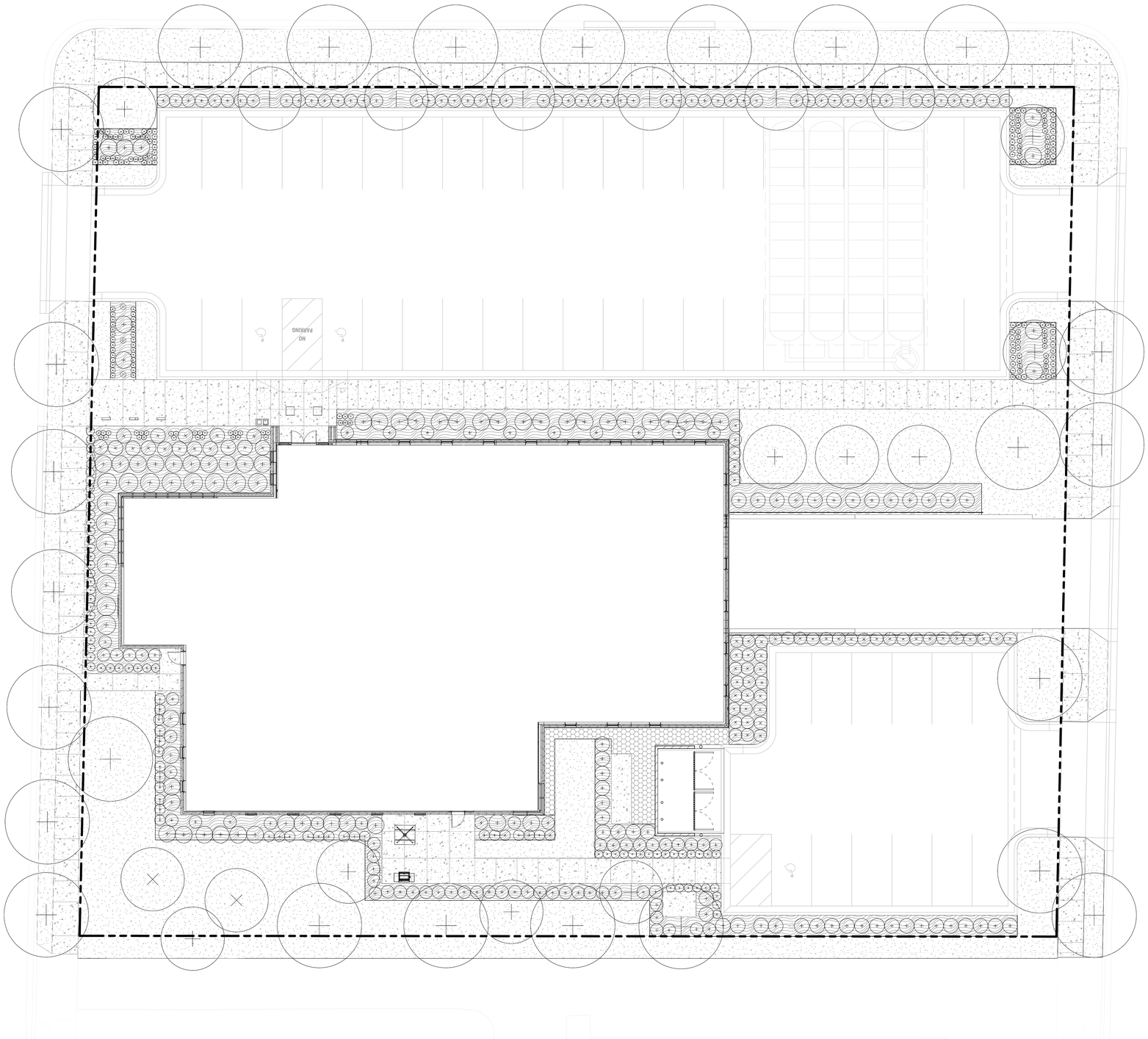

1 L001 OVERALL SITE LANDSCAPE REFERENCE PLAN
3/32" = 1'-0"

GENERAL NOTES

1. LANDSCAPE CONTRACTOR SHALL INSPECT THE SITE AND BECOME FAMILIAR WITH EXISTING CONDITIONS RELATING TO THE NATURE AND SCOPE OF WORK.
2. LANDSCAPE CONTRACTOR SHALL VERIFY PLAN LAYOUT AND DIMENSIONS SHOWN AND BRING TO THE ATTENTION OF THE LANDSCAPE ARCHITECT DISCREPANCIES WHICH MAY COMPROMISE THE DESIGN AND/OR INTENT OF THE PROJECT'S LAYOUT.
3. LANDSCAPE CONTRACTOR SHALL ASSURE COMPLIANCE WITH APPLICABLE CODES AND REGULATIONS GOVERNING THE WORK AND/OR MATERIALS SUPPLIED.
4. LANDSCAPE CONTRACTOR SHALL PROTECT EXISTING ROADS, CURBS/GUTTERS, TRAILS, TREES, LAWNS AND SITE ELEMENTS DURING CONSTRUCTION OPERATIONS. DAMAGE TO SAME SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER.
5. LANDSCAPE CONTRACTOR SHALL VERIFY ALIGNMENT AND LOCATION OF UNDERGROUND AND ABOVE GRADE UTILITIES AND PROVIDE THE NECESSARY PROTECTION FOR SAME BEFORE CONSTRUCTION / MATERIAL INSTALLATION BEGINS (MINIMUM 10'-0" CLEARANCE).
6. UNDERGROUND UTILITIES SHALL BE INSTALLED SO THAT TRENCHES DO NOT CUT THROUGH ROOT SYSTEMS OF ANY EXISTING TREES TO REMAIN.
7. EXISTING CONTOURS, TRAILS, VEGETATION, CURB/GUTTER AND OTHER ELEMENTS ARE BASED UPON INFORMATION SUPPLIED TO THE LANDSCAPE ARCHITECT BY OTHERS. LANDSCAPE CONTRACTOR SHALL VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION AND NOTIFY LANDSCAPE ARCHITECT OF SAME.
8. ALIGNMENT AND GRADES OF THE PROPOSED WALKS, TRAILS AND/OR ROADWAYS ARE SUBJECT TO FIELD ADJUSTMENT REQUIRED TO CONFORM TO LOCALIZED TOPOGRAPHIC CONDITIONS AND TO MINIMIZE TREE REMOVAL AND GRADING. CHANGES IN THE ALIGNMENT AND GRADES MUST BE APPROVED BY THE LANDSCAPE ARCHITECT.
9. LANDSCAPE CONTRACTOR SHALL REVIEW THE SITE FOR DEFICIENCIES IN THE PLANT MATERIAL SELECTIONS AND OTHER SITE CONDITIONS WHICH MIGHT NEGATIVELY AFFECT PLANT ESTABLISHMENT, SURVIVAL OR WARRANTY. UNDESIRABLE PLANT MATERIAL SELECTIONS OR SITE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT PRIOR TO BEGINNING OF WORK.
10. LANDSCAPE CONTRACTOR SHALL PREPARE AND SUBMIT REPRODUCIBLE AS-BUILT DRAWING(S) OF LANDSCAPE INSTALLATION, IRRIGATION AND SITE IMPROVEMENTS UPON COMPLETION OF CONSTRUCTION INSTALLATION AND PRIOR TO PROJECT ACCEPTANCE.
11. NO PLANTS WILL BE INSTALLED UNTIL FINAL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
12. SOD AREAS DISTURBED DUE TO GRADING SHALL BE REPLACED, UNLESS NOTED OTHERWISE.
13. WHERE SOD ABUTS PAVED SURFACES, FINISHED GRADE OF SOD/SEED SHALL BE HELD 1" BELOW SURFACE ELEVATION OF TRAIL, SLAB, CURB, ETC.
14. SOD SHALL BE LAID PARALLEL TO THE CONTOURS AND SHALL HAVE STAGGERED JOINTS. ON SLOPES STEEPER THAN 3:1 OR IN DRAINAGE SWALES, SOD SHALL BE STAKED SECURELY.
15. PROPOSED PLANT MATERIAL SHALL COMPLY WITH THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60.1. UNLESS NOTED OTHERWISE, DECIDUOUS SHRUBS SHALL HAVE AT LEAST 5 CANES AT THE SPECIFIED HEIGHT. ORNAMENTAL TREES SHALL HAVE NO 'V' CROTCHES AND SHALL BEGIN BRANCHING NO LOWER THAN 3' FEET ABOVE THE ROOT BALL. STREET AND BOULEVARD TREES SHALL BEGIN BRANCHING NO LOWER THAN 6' ABOVE FINISHED GRADE.
16. LANDSCAPE CONTRACTOR SHALL ASSURE COMPLIANCE WITH APPLICABLE CODES AND REGULATIONS GOVERNING THE WORK AND/OR MATERIALS SUPPLIED.
17. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR ONGOING MAINTENANCE OF NEWLY INSTALLED MATERIALS UNTIL TIME OF OWNER ACCEPTANCE. ACTS OF VANDALISM OR DAMAGE WHICH MAY OCCUR PRIOR TO OWNER ACCEPTANCE SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.
18. LANDSCAPE CONTRACTOR SHALL WARRANTY NEW PLANT MATERIAL THROUGH ONE CALENDAR YEAR FROM THE DATE OF THE OWNER ACCEPTANCE. NO PARTIAL ACCEPTANCE WILL BE CONSIDERED.
19. PLANTING AREAS (NOT OVER STRUCTURE) RECEIVING GROUND COVER, PERENNIALS, ANNUALS, AND/OR VINES SHALL RECEIVE A MINIMUM OF 18" DEPTH OF PLANTING SOIL CONSISTING OF AT LEAST 45 PARTS TOPSOIL, 45 PARTS SCREENED COMPOST OR MANURE AND 10 PARTS SAND.
20. ANNUAL AND PERENNIAL PLANTING BEDS TO RECEIVE 4" DEEP SHREDDED HARDWOOD MULCH WITH NO WEED BARRIER.
21. SHRUB BED MASSINGS TO RECEIVE 4" DEEP SHREDDED HARDWOOD MULCH WITH FIBER MAT WEED BARRIER.
22. STEEL EDGER TO BE USED TO CONTAIN SHRUBS, PERENNIALS AND ANNUALS WHERE PLANTING BED MEETS SOD UNLESS OTHERWISE NOTED.
23. REFER TO CIVIL FOR SITE DEMOLITION INFORMATION.
24. REFER TO CIVIL FOR ADDITIONAL SITE GRADING AND UTILITY INFORMATION
25. IF A DISCREPANCY EXISTS BETWEEN THE NUMBER OF PLANTS SHOWN IN THE PLANT MATERIALS SCHEDULE AND THE PLANS, THE PLANS SHALL GOVERN.
26. CONTRACTOR SHALL STAKE OUT LOCATION OF ALL PROPOSED TREES FOR APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.

IRRIGATION NOTES

1. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A PERFORMANCE IRRIGATION PLAN AND SPECIFICATIONS AS PART OF THE SCOPE OF WORK WHEN BIDDING. THESE SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO ORDER AND/OR INSTALLATION. IT SHALL BE THE LANDSCAPE CONTRACTOR'S RESPONSIBILITY TO INSURE THAT SODDED/SEEDED AND PLANTED AREAS ARE IRRIGATED PROPERLY, INCLUDING THOSE AREAS DIRECTLY AROUND AND ABUTTING BUILDING FOUNDATION.
2. SHRUB & PERENNIAL BEDS TO BE IRRIGATED WITH DRIP IRRIGATION. SOD TO BE IRRIGATED WITH SPRAY.
3. LANDSCAPE CONTRACTOR SHALL PROVIDE THE OWNER WITH A WATERING/LAWN IRRIGATION SCHEDULE APPROPRIATE TO THE PROJECT SITE CONDITIONS AND TO PLANT MATERIALS GROWTH REQUIREMENTS.
4. LANDSCAPE CONTRACTOR SHALL INSURE THAT SOIL CONDITIONS AND COMPACTION ARE ADEQUATE TO ALLOW FOR PROPER DRAINAGE AROUND THE CONSTRUCTION SITE. UNDESIRABLE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT PRIOR TO BEGINNING OF WORK. IT SHALL BE THE LANDSCAPE CONTRACTOR'S RESPONSIBILITY TO INSURE PROPER SURFACE AND SUBSURFACE DRAINAGE IN ALL PLANTING AREAS.
5. COORDINATE IRRIGATION SLEEVING LOCATIONS WITH GENERAL CONTRACTOR.
6. RAIN SENSORS TO BE INCLUDED WITHIN THE IRRIGATION DESIGN.
7. IRRIGATION LIMITS TO EXTEND TO STREET BACK OF CURB.

SURVEY NOTES

1. ALL EXISTING CONDITIONS SHOWN ON THIS DRAWING ARE BASED ON AN OWNER-FURNISHED SURVEY. BKV GROUP OFFERS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED, FOR THE ACCURACY OR RELIABILITY OF THE INDICATED EXISTING CONDITIONS.
2. THE CONTRACTOR SHALL FIELD VERIFY ALL CRITICAL EXISTING CONDITIONS INCLUDING, BUT NOT LIMITED TO, EXISTING BUILDING LOCATIONS, UTILITY LOCATIONS AND INVERT ELEVATIONS, AND EXISTING SITE GRADES PRIOR TO THE START OF WORK.
3. ANY OBSERVED DEVIATIONS FROM CONDITIONS INDICATED ON THE DRAWINGS SHALL BE BROUGHT TO THE ARCHITECT OR LANDSCAPE ARCHITECT'S ATTENTION IMMEDIATELY UPON DISCOVERY. NO WORK SHALL PROCEED IN THE AREAS OF ANY DISCOVERED DEVIATIONS UNTIL THE DIFFERENCES ARE RESOLVED.

SHEET INDEX:

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CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION
	12/18/2019	DESIGN DEVELOPMENT SET

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	EW
CHECKED BY	BH
COMMISSION NUMBER	2106-02

SHEET TITLE

LANDSCAPE TITLE SHEET

SHEET NUMBER

L001

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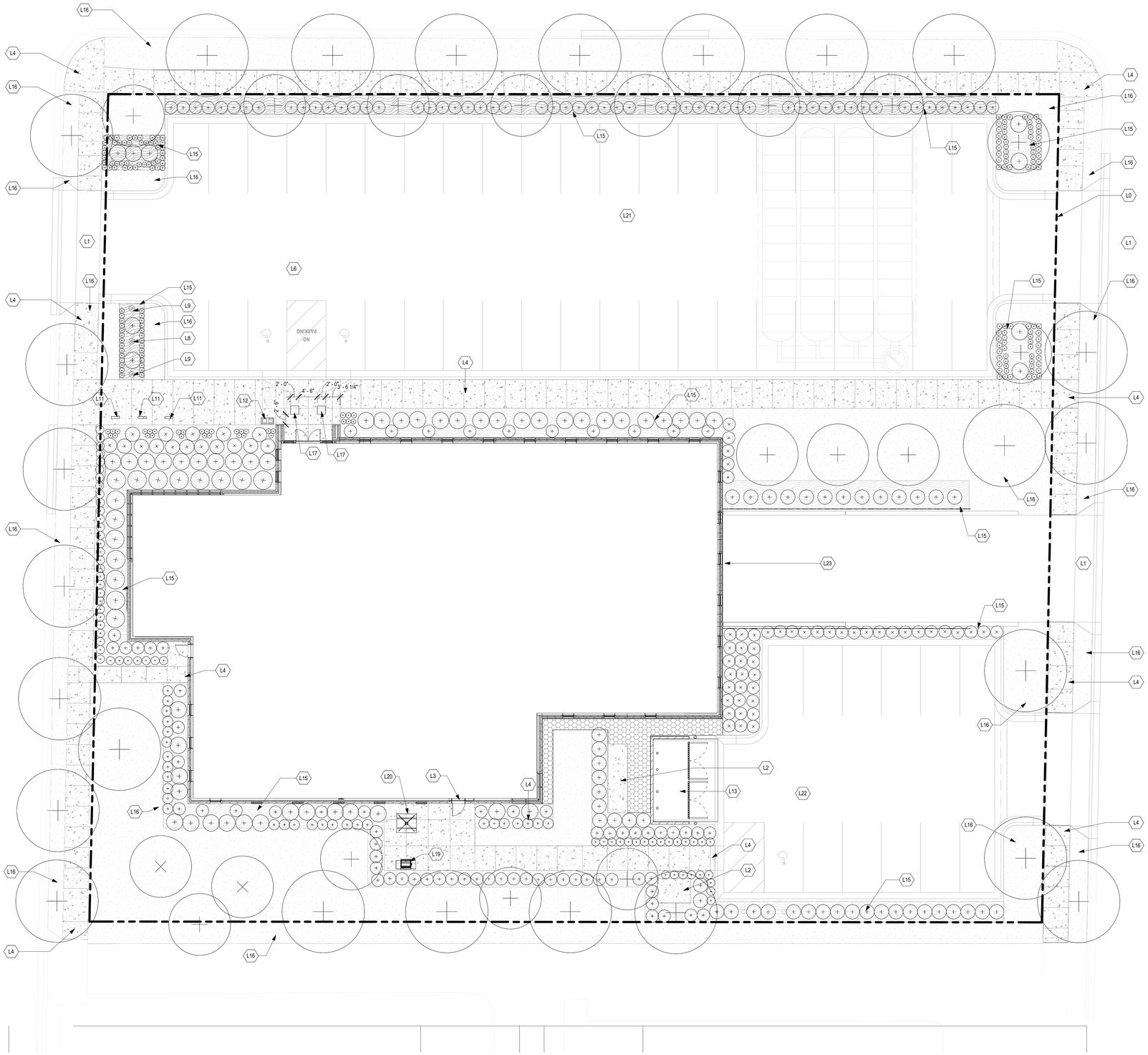

1 L100 SITE LANDSCAPE PLAN
3/32" = 1'-0"

KEY NOTES:

L0	PROPERTY LINE
L1	SITE ENTRY
L2	CONCRETE PAD FOR TRANSFORMMER/GENERATOR; SEE ELECTRICAL
L3	BUILDING ENTRY
L4	C.I.P. CONCRETE; SEE CIVIL
L6	BITUMINOUS PAVING; SEE CIVIL
L8	35' TALL FLAG POLE WITH INTEGRAL TOP-MOUNTED LIGHT; FLAG SIZE 6'-10" RECOMMENDED;SEE 5/L300
L9	30' TALL FLAG POLE WITH INTEGRAL TOP-MOUNTED LIGHT; FLAG SIZE 6'-10" RECOMMENDED;SEE 5/L300
L11	BIKE RACK; "ICON HITCH" BY DERO,
L12	TRASH AND RECYCLING RECEPTACLE; "SELECT" DOUBLE BY LANDSCAPE FORMS; METALLIC SILVER FINISH;FFE BY OWNER
L13	TRASH ENCLOSURE; SEE ARCH.
L15	MASS PLANTING BED; INCLUDES 12" PLANTING SOIL MIX, 4" SHREDDED HARDWOOD MULCH, AND STEEL EDGING IN ALL LOCATIONS WHERE MASS PLANTING BED MEETS TURF LAWN;SEE 2/L300
L16	TURF GRASS SOD,IRRIGATED;
L17	BENCH/BOLLARD;"SOCRATES" BY LANDSCAPE FORMS, 24"L X 24"W X 18"H; CAST STONE, COLOR:GRAY
L19	GAS GRILL BY OWNER
L20	PICNIC TABLE; "GRETCHEN" BY LANDSCAPE FORMS, SILVER METALLIC FINISH, JARRAH WOOD SLATS
L21	PUBLIC PARKING
L22	STAFF PARKING
L23	POLICE GARAGE ACCESS

GRAPHIC LEGEND:

C.I.P. PLAIN CONCRETE, TYP.

TURFGRASS: SOD, IRRIGATED (SEE SPEC)

HARDWOOD MULCH, SHREDDED

CRUSHED STONE MAINTENANCE STRIP; GRAY TRAP SIZE .75" - 1.5"

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SHEET TITLE

OVERALL SITE/LANDSCAPE PLANS

SHEET NUMBER

L100

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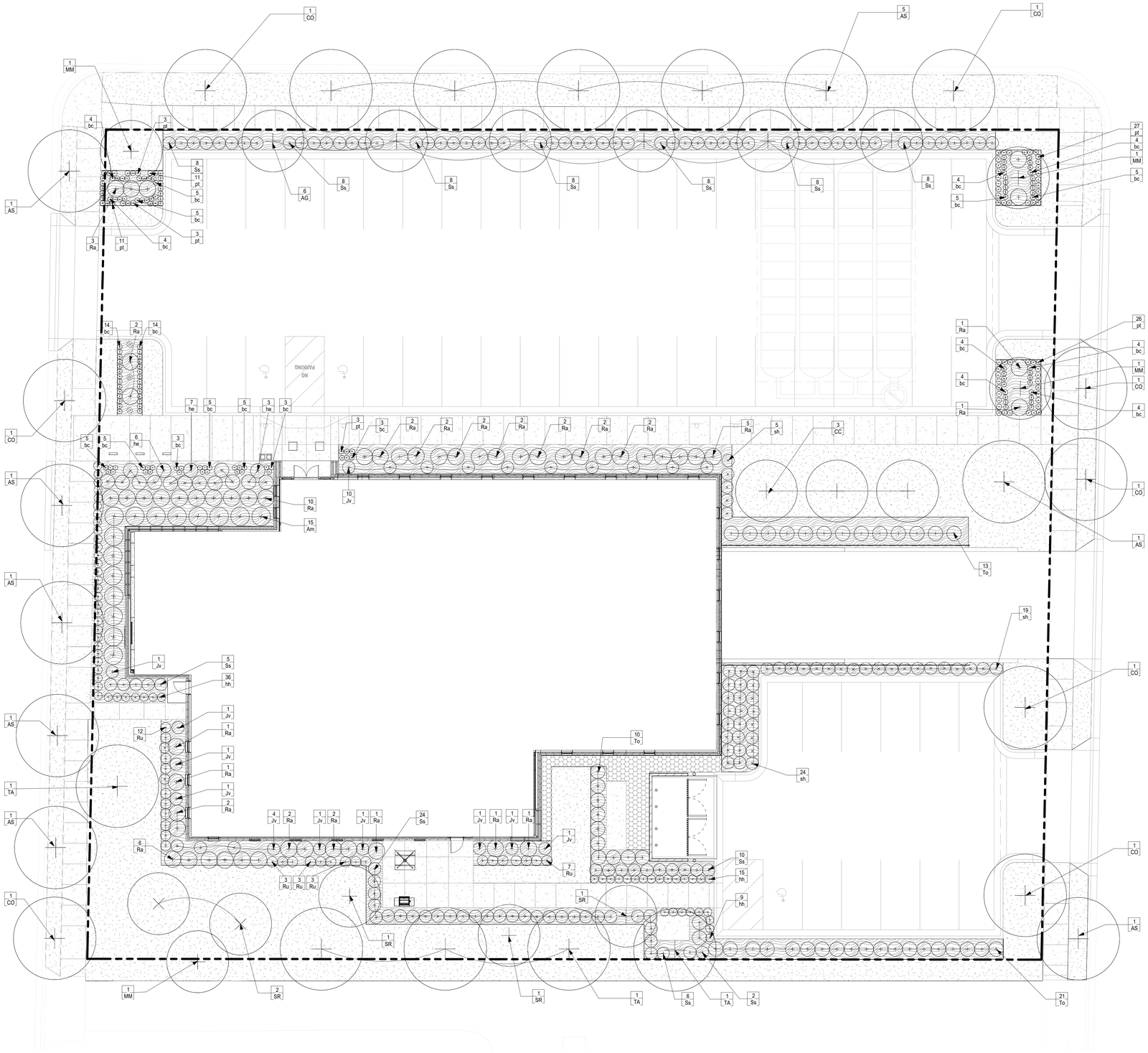

1 L101 OVERALL SITE LANDSCAPE PLANTING PLAN
3/32" = 1'-0"

PROPOSED PLANT SCHEDULE:

QTY	SYM	COMMON NAME	SCIENTIFIC NAME	PLANTING SIZE	COMMENTS
PERENNIALS/GROUNDCOVERS/GRASSES					
113	bc	WINTER GLOW BERGENIA	Bergenia cordifolia 'Winter Glow'	#1 CONT.	H:14" W:20"
16	he	EARTH ANGEL HOSTA	Hosta x 'Earth Angel'	#5 CONT.	H:18" W:18"
60	hh	HAPPY RETURNS DAYLILY	Hemerocallis 'Happy Returns'	#1 CONT.	H:18" W:18"
80	pt	GREEN CARPET PACHYSANDRA	Pachysandra terminalis 'Green Carpet'	#1 CONT.	H:8" H:8"
48	sh	PRAIRIE DROPSEED	Sporobolus heterolepis	#2 CONT.	H:2' W:2'
EVERGREEN/CONIFEROUS SHRUBS					
23	Jv	TAYLOR JUNIPER	Juniperus virginiana 'Taylor'	6' B&B	H:18' W:3'
44	To	HOLMSTRUP ARBORVITAE	Thuja occidentalis 'Holmstrup'	6' B&B	H:8' W:3'
DECIDUOUS SHRUBS					
15	Am	IROQUOIS BLACK CHOKEBERRY	Aronia melanocarpa 'Morton'	#5 CONT.	H:2'6" W:4'6"
55	Ra	GRO LOW FRAGRANT SUMAC	Rhus aromatica 'Gro-Low'	#5 CONT.	H:4' W:4'
28	Ru	PAVEMENT FOXI ROSE	Rosa 'UHLster'	#5 CONT.	H:4' W:4'
103	Ss	SEM FALSE SPIREA	Sorbaria sorbifolia 'Sem'	#5 CONT.	H:4' W:4'
DECIDUOUS ORNAMENTAL TREES					
6	AG	AUTUMN BRILLIANCE SERVICEBERRY	Amelanchir x grandiflora 'Autumn Brilliance'	8' B&B	H:25' W:20'
3	CC	BLUE BEECH	Carpinus caroliniana	1.5" CAL.	H:25' W:20'
4	MM	PROFUSION CRABAPPLE	Malus moerlandsii 'Profusion'	1.5" CAL.	H:30' W:25'
3	SR	IVORY SILK JAPANESE TREE LILAC	Syringa reticulata 'Ivory silk'	1.5" CAL.	H:25' W:20'
DECIDUOUS CANOPY TREES					
12	AS	FALL FIESTA SUGAR MAPLE	Acer saccharum 'Bailsta'	2.5" CAL.	H:70' W:50'
9	CO	HACKBERRY	Celtis occidentalis L	2.5" CAL.	H:80' W:60'
5	TA	BOULEVARD LINDEN	Tilia americana 'Boulevard'	2.5" CAL.	H:40' W:25'

GRAPHIC LEGEND:

C.I.P. PLAIN CONCRETE, TYP.

TURFGRASS: SOD, IRRIGATED (SEE SPEC)

HARDWOOD MULCH, SHREDDED

CRUSHED STONE MAINTENANCE STRIP; GRAY TRAP SIZE .75" - 1.5"

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LANDSCAPE PLANTING PLAN

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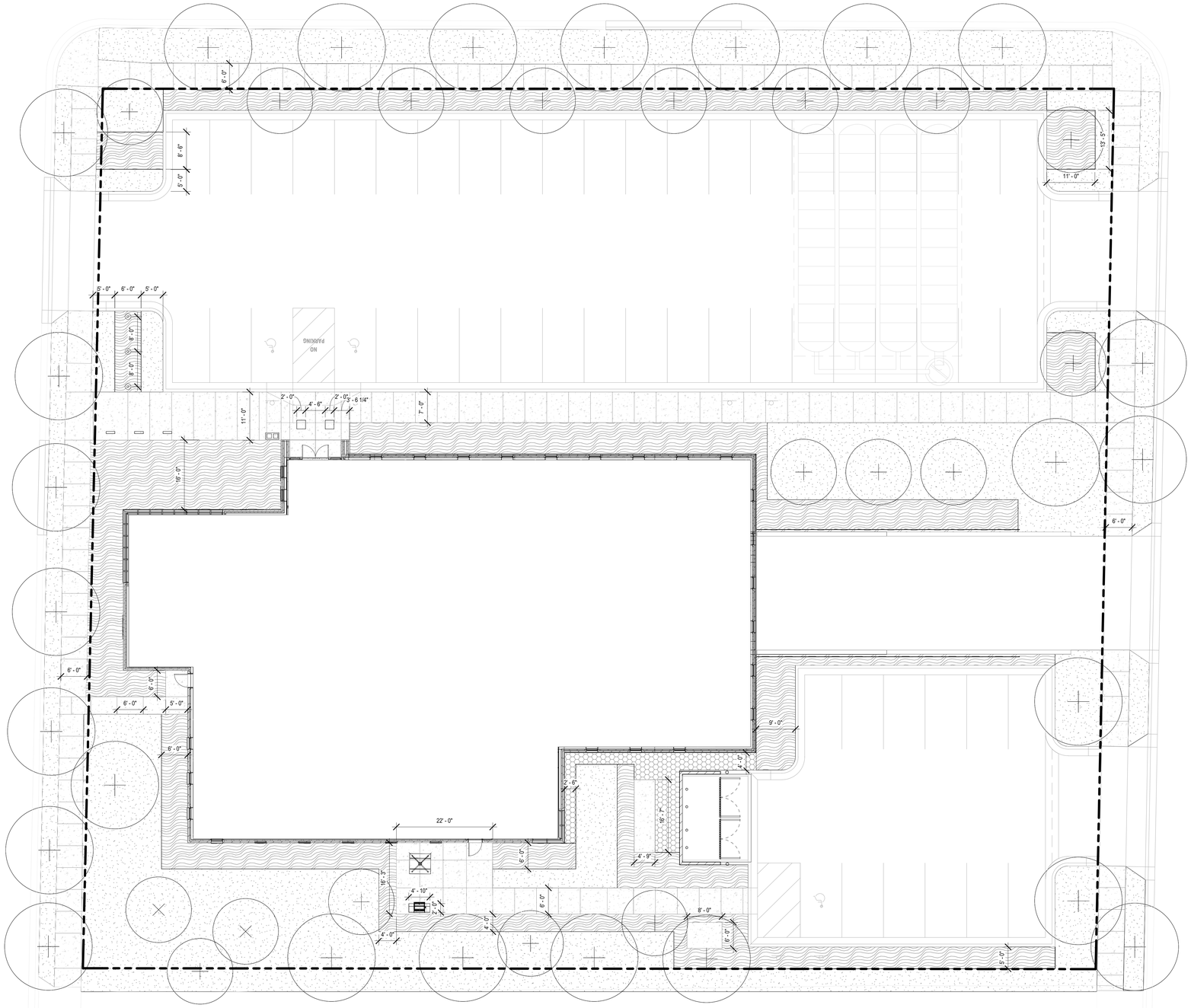

1 L200 OVERALL SITE LANDSCAPE REFERENCE PLAN LAYOUT
3/32" = 1'-0"

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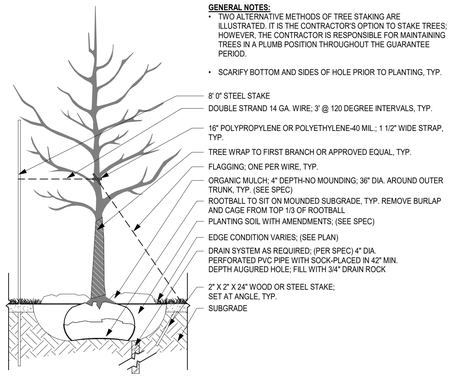
LAYOUT & SURFACING PLAN

SHEET NUMBER

L200

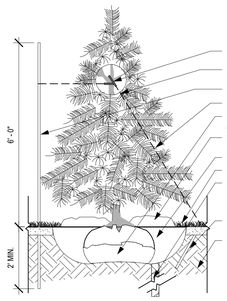
TRUE NORTH PLAN NORTH



GENERAL NOTES:

- TWO ALTERNATIVE METHODS OF TREE STAKING ARE ILLUSTRATED. IT IS THE CONTRACTOR'S OPTION TO STAKE TREES; HOWEVER, THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TREES IN A PLUMB POSITION THROUGHOUT THE GUARANTEE PERIOD.
- SCARIFY BOTTOM AND SIDES OF HOLE PRIOR TO PLANTING, TYP.

8' 0" STEEL STAKE
DOUBLE STRAND 14 GA. WIRE; 3' @ 120 DEGREE INTERVALS, TYP.
16" POLYPROPYLENE OR POLYETHYLENE-40 MIL.; 1 1/2" WIDE STRAP, TYP.
TREE WRAP TO FIRST BRANCH OR APPROVED EQUAL, TYP.
FLAGGING; ONE PER WIRE, TYP.
ORGANIC MULCH; 4" DEPTH-NO MOUNDING; 36" DIA. AROUND OUTER TRUNK, TYP. (SEE SPEC)
ROOTBALL TO SIT ON MOUNDED SUBGRADE, TYP. REMOVE BURLAP AND CAGE FROM TOP 1/3 OF ROOTBALL
PLANTING SOIL WITH AMENDMENTS; (SEE SPEC)
EDGE CONDITION VARIES; (SEE PLAN)
DRAIN SYSTEM AS REQUIRED; (PER SPEC) 4" DIA. PERFORATED PVC PIPE WITH SOCK-PLACED IN 42" MIN. DEPTH AUGURED HOLE; FILL WITH 3/4" DRAIN ROCK
2" X 2" X 24" WOOD OR STEEL STAKE; SET AT ANGLE, TYP.
SUBGRADE



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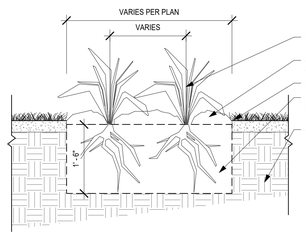
- SCARIFY BOTTOM AND SIDES OF HOLE PRIOR TO PLANTING, TYP.
- CONIFERS TO HAVE SHREDDED HARDWOOD MULCH UNLESS OTHERWISE NOTED. NO MULCH TO BE IN CONTACT WITH TRUNK, TYP.

16" POLYPROPYLENE OR POLYETHYLENE-40 MIL.; 1 1/2" WIDE STRAP, TYP.
DOUBLE STRAND 14 GA. WIRE; 3' @ 120 DEGREE INTERVALS, TYP.
8' 0" STEEL STAKE
FLAGGING; ONE PER WIRE, TYP.
ROOTBALL TO SIT ON MOUNDED SUBGRADE, TYP. REMOVE BURLAP AND CAGE FROM TOP 1/3 OF ROOTBALL
ORGANIC MULCH; 4" DEPTH-NO MOUNDING; 36" DIA. AROUND OUTER TRUNK, TYP. (SEE SPEC)
PLANTING SOIL WITH AMENDMENTS; (SEE SPEC)
EDGE CONDITION VARIES; (SEE PLAN)
DRAIN SYSTEM AS REQUIRED; (PER SPEC) 4" DIA. PERFORATED PVC PIPE WITH SOCK-PLACED IN 42" MIN. DEPTH AUGURED HOLE; FILL WITH 3/4" DRAIN ROCK
2" X 2" X 24" WOOD OR STEEL STAKE; SET AT ANGLE, TYP.
SUBGRADE

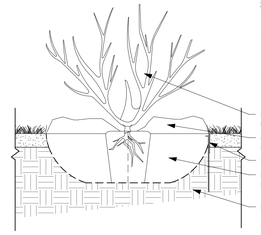
1 L300 TREE PLANTING DETAILS-TYP.
1/2" = 1'-0"



GENERAL NOTES:

- HAND LOOSEN ROOTS OF CONTANERIZED MATERIAL, TYP.

PERENNIAL PLANT SPACING VARIES; (SEE PLANT MATERIALS SCHEDULE)
SHREDDED HARDWOOD MULCH; (SEE SPEC); 4" DEPTH, TYP.
EDGE CONDITION VARIES PER PLAN
PLANTING SOIL; (SEE SPEC) 18" MIN. DEPTH UNLESS OTHERWISE NOTED
SUBGRADE

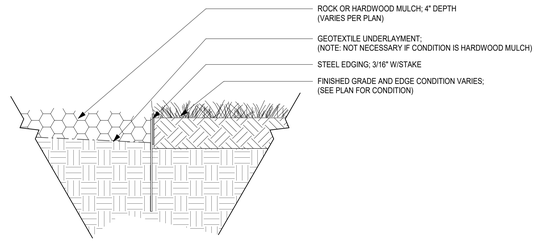


GENERAL NOTES:

- HAND LOOSEN ROOTS OF CONTANERIZED MATERIAL, TYP.
- SCARIFY BOTTOM AND SIDES OF PLANTING PIT PRIOR TO INSTALLATION
- CENTERING OF SHRUB IN BED TO TAKE PRECEDENCE OVER DIMENSION FROM EDGE

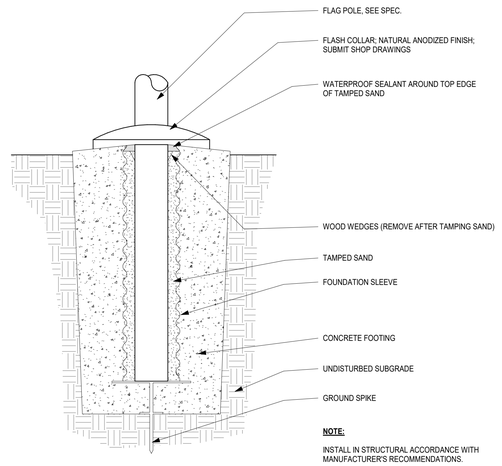
SHRUB PLANT SPACING VARIES; (SEE PLANT MATERIALS SCHEDULE)
SHREDDED HARDWOOD MULCH; (SEE SPEC); 4" DEPTH, TYP.
EDGE CONDITION VARIES PER PLAN
PLANTING SOIL; (SEE SPEC) 18" MIN. DEPTH UNLESS OTHERWISE NOTED
SUBGRADE

2 L300 SHRUB AND PERENNIAL PLANTING DETAILS-TYP.
3/4" = 1'-0"



ROCK OR HARDWOOD MULCH; 4" DEPTH (VARIES PER PLAN)
GEOTEXTILE UNDERLAYMENT; (NOTE: NOT NECESSARY IF CONDITION IS HARDWOOD MULCH)
STEEL EDGING; 3/16" W/STAKE
FINISHED GRADE AND EDGE CONDITION VARIES; (SEE PLAN FOR CONDITION)

4 L300 STEEL EDGER DETAIL
1 1/2" = 1'-0"



FLAG POLE, SEE SPEC.
FLASH COLLAR; NATURAL ANODIZED FINISH; SUBMIT SHOP DRAWINGS
WATERPROOF SEALANT AROUND TOP EDGE OF TAMPED SAND
WOOD WEDGES (REMOVE AFTER TAMPING SAND)
TAMPED SAND
FOUNDATION SLEEVE
CONCRETE FOOTING
UNDISTURBED SUBGRADE
GROUND SPIKE

NOTE:

INSTALL IN STRUCTURAL ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

5 L300 FLAGPOLE BASE DETAIL
3/4" = 1'-0"

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CONSTRUCTION DETAILS

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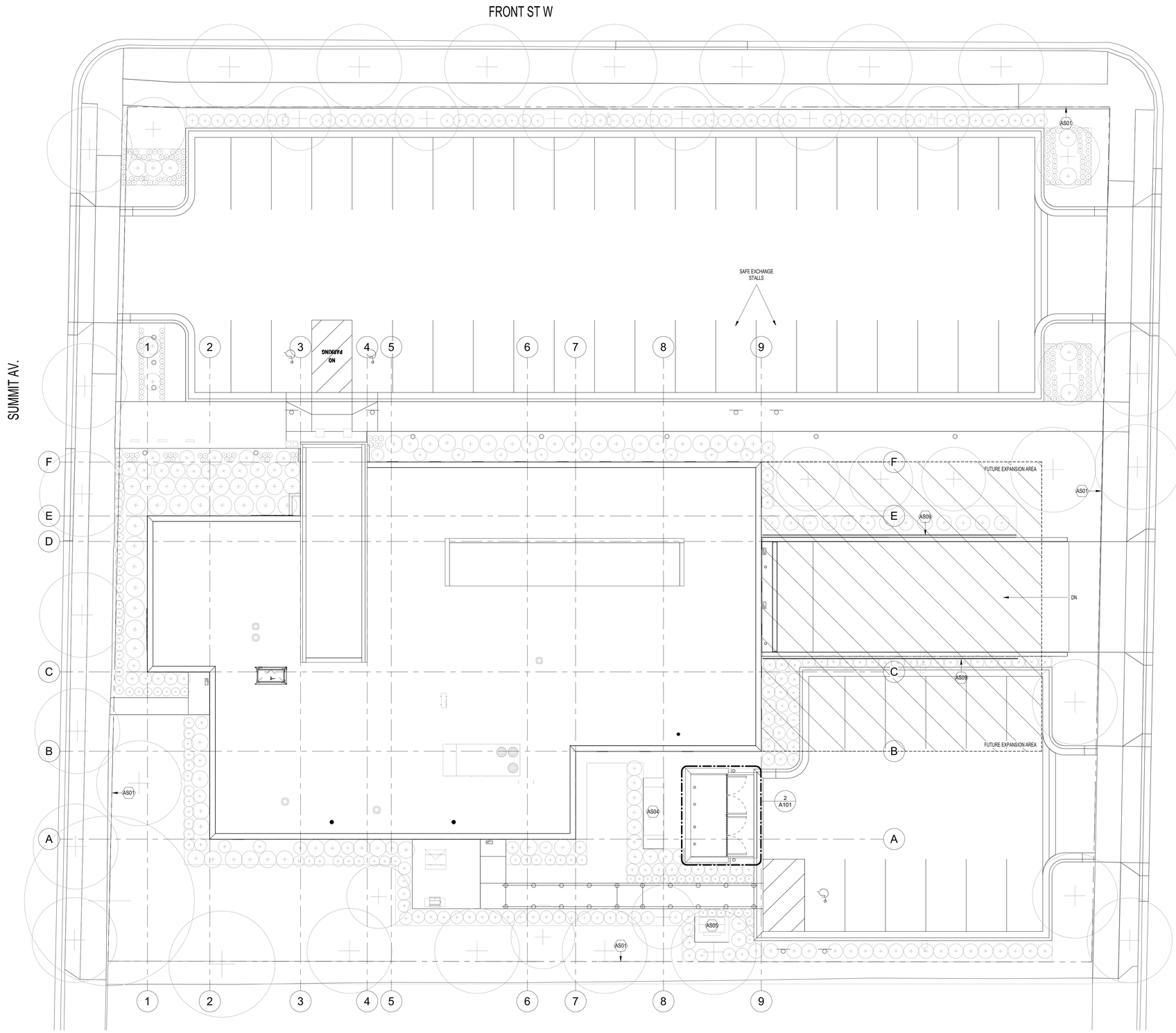

1 A010 SITE PLAN
1" = 10'-0"

SITE PLAN GENERAL NOTES

1. DO NOT SCALE THE DRAWINGS. WHERE DIMENSIONS ARE NOT PROVIDED OR ARE UNCLEAR, REQUEST CLARIFICATION FROM THE ARCHITECT.
2. VERIFY ALL EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES UPON DISCOVERY.
3. REFER TO SITE SURVEY FOR EXISTING TOPOGRAPHY, UTILITIES, AND OTHER PERTINENT INFORMATION.
4. REFER TO 'C' SERIES (CIVIL) DRAWINGS FOR SITE DEMOLITION, EROSION CONTROL, SITE GRADING, UTILITIES, AND SITE PAVING.
5. REFER TO 'L' SERIES (LANDSCAPE) DRAWINGS FOR LANDSCAPING PLANTINGS, SPECIALITY PAVING, AND SITE FURNISHINGS.
6. REFER TO 'E' SERIES (ELECTRICAL) DRAWINGS FOR SITE LIGHTING AND SITE POWER.
7. REFER TO 'T' SERIES (TECHNOLOGY) DRAWINGS FOR SITE SECURITY AND ACCESS CONTROL.
8. REFER TO 'M' SERIES (MECHANICAL) DRAWINGS FOR BUILDING STORM WATER, SANITARY SEWER, AND OTHER UTILITY CONNECTION LOCATIONS.

KEYNOTES - ARCHITECTURAL SITE

AS01	PROPERTY LINE. REFER TO SITE SURVEY AND CIVIL DRAWINGS.
AS04	GENERATOR; PROVIDE CONCRETE EQUIPMENT PAD. REFER TO ELECTRICAL DRAWINGS.
AS05	ELECTRICAL TRANSFORMER; PROVIDE CONCRETE EQUIPMENT PAD. REFER TO ELECTRICAL DRAWINGS.
AS09	METAL FENCE. REFER TO SPECIFICATIONS.

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ARCHITECTURAL SITE PLAN

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A010

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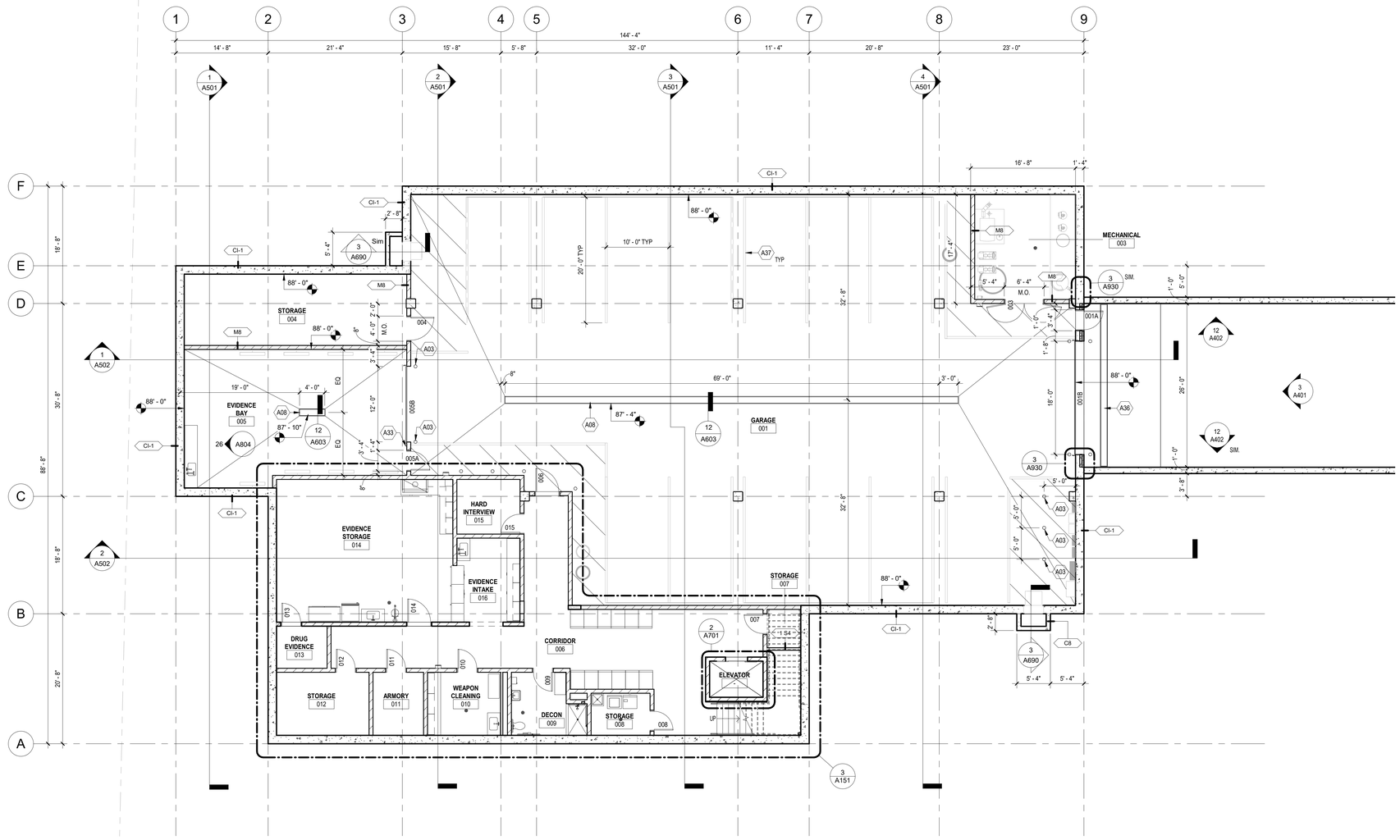
FLOOR PLAN GENERAL NOTES

1. DO NOT SCALE THE DRAWINGS. WHERE DIMENSIONS ARE NOT PROVIDED OR ARE UNCLEAR, REQUEST CLARIFICATION FROM THE ARCHITECT.
2. VERIFY ALL EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES UPON DISCOVERY.
3. ALL WORK SHALL BE DONE IN ACCORDANCE WITH LOCAL BUILDING CODES. COMPLIANCE WITH ALL APPLICABLE CODES WILL BE REQUIRED TO BE MET OR EXCEEDED.
4. REFER TO REFLECTED CEILING PLANS FOR CEILING HEIGHTS AND CEILING FINISHES.
5. REFER TO CODE PLANS FOR LOCATIONS OF RATED WALLS, SMOKE BARRIERS, FIRE EXTINGUISHER CABINETS, ETC.
6. REFER TO INTERIOR FINISH PLANS AND ROOM FINISH SCHEDULE FOR ROOM FINISHES.
7. REFER TO INTERIOR FURNITURE PLANS FOR FURNITURE/FIXTURE LAYOUT.
8. REFER TO G140 SHEET FOR TYPICAL MOUNTING ELEVATIONS.
9. ARCHITECTURAL FINISHED FLOOR ELEVATIONS ARE TO TOP OF CONCRETE SLAB OR TOPPING.
10. UNLESS NOTED OTHERWISE, ALL NON-RATED INTERIOR WALLS SHALL BE TYPE 'S4', EXTENDING UP TO UNDERSIDE OF FLOOR OR ROOF DECK ABOVE WITH MINERAL WOOL ACOUSTIC BATT INSULATION. SCRIBE GYPSUM BOARD TO IRREGULARITIES OF DECK ABOVE AND SEAL AROUND ALL PENETRATIONS WITH ACOUSTIC SEALANT.
11. PLAN DIMENSIONS ARE TO FINISHED SURFACE OF MASONRY WALLS, OR TO CENTERLINE OF STUDS AT METAL STUD INTERIOR WALLS, UNLESS NOTED OTHERWISE. REFER TO SHEET A602 CONSTRUCTION ASSEMBLY TYPES FOR MORE INFORMATION.
12. COORDINATE ALL LOCATIONS FOR IN-WALL BLOCKING AND/OR WALL-BACKING FOR ITEMS SUCH AS TOILET ACCESSORIES, GRAB BARS, CASEWORK, WALL-MOUNTED FIXTURES, MARKER BOARDS,VISUAL DISPLAY BOARDS, AUDIO-VISUAL EQUIPMENT AND HANDRAILS, ETC. INSTALL FIRE-RESISTIVE TREATED WOOD BLOCKING OR METAL BACKING PLATES IN METAL STUD PARTITIONS.
13. TRANSITIONS BETWEEN FINISH FLOOR ELEVATION(S) SHALL NOT EXCEED 1/2 INCH, UNLESS NOTED OTHERWISE.
14. PROVIDE 4 INCH HIGH CONCRETE HOUSEKEEPING PADS BELOW ALL FLOOR-MOUNTED INTERIOR MECHANICAL AND ELECTRICAL EQUIPMENT. VERIFY EXACT SIZES AND LOCATIONS WITH AFFECTED TRADES.
15. CONTRACTOR SHALL INSTALL CONTINUOUS PERFORATED DRAIN TILE AROUND THE OUTSIDE PERIMETER OF BUILDING ADDITION AND CONNECT TO SUMP. REFER TO FOUNDATION DETAILS AND SPECIFICATION FOR MORE INFORMATION. SEE PLUMBING DRAWINGS FOR SUMP LOCATION.



1 A100 LOWER LEVEL
1/8" = 1'-0"

TRUE NORTH

KEYNOTES - ARCHITECTURAL

A03	6" DIA. CONCRETE FILLED GALV. STEEL BOLLARD, CAST IN PLACE.
A08	RECESSED TRENCH DRAIN, SLOPE FLOOR MINIMUM 1/4" PER FT TO DRAIN. REFER TO PLUMBING DRAWINGS.
A33	OVERHEAD DOOR OPERATOR PUSH BUTTON LOCATION.
A36	TRENCH DRAIN, SEE PLUMBING.
A37	WHITE PAINT STRIPPING, TYPICAL.

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FLOOR PLAN LOWER LEVEL

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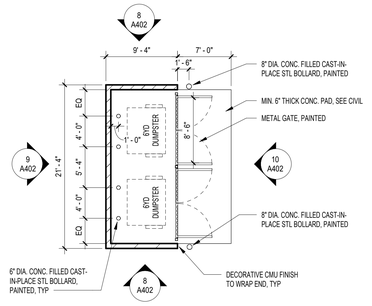
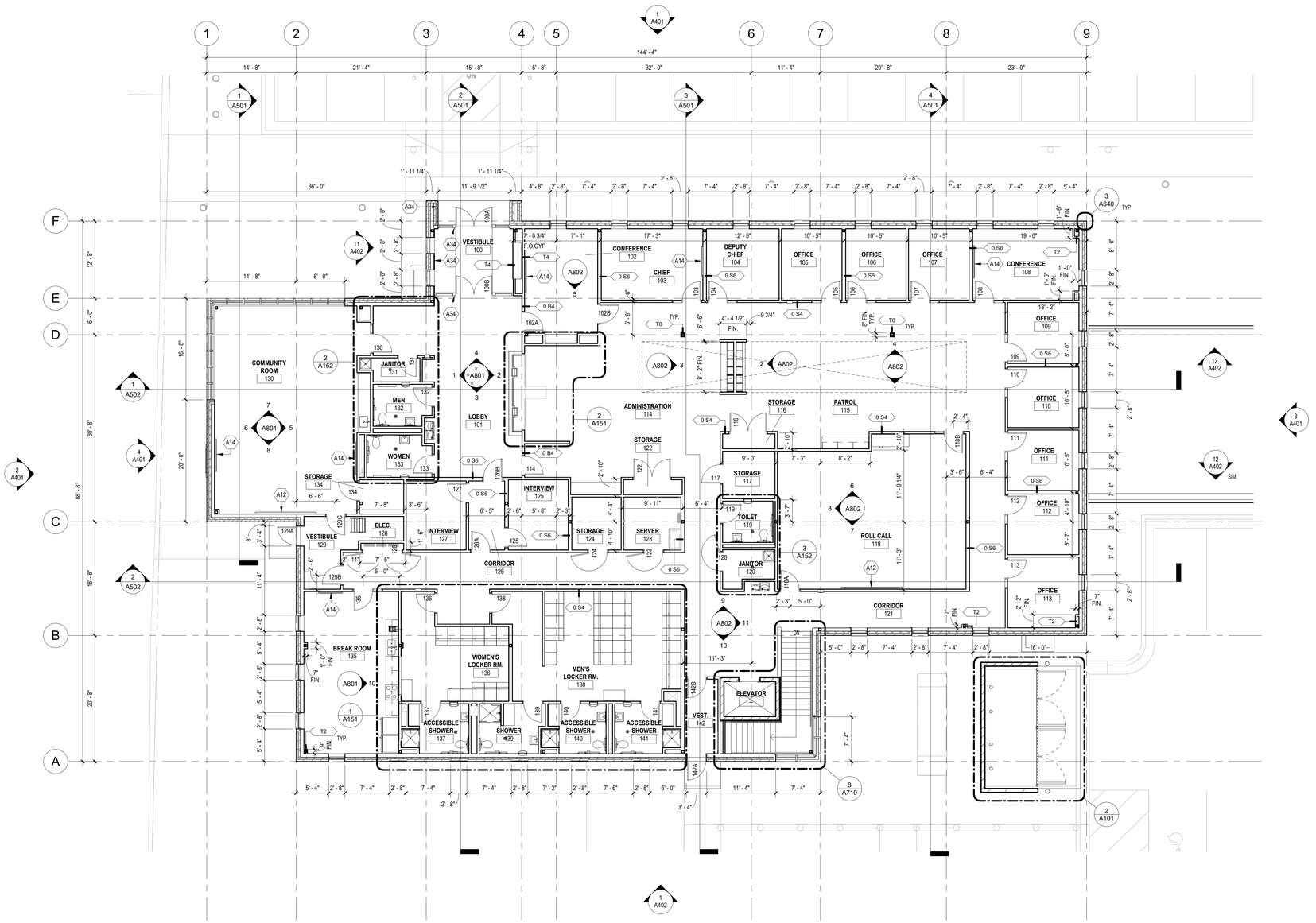


2 A101 PLAN - TRASH ENCLOSURE
1/8" = 1'-0"



1 A101 LEVEL 1
1/8" = 1'-0"

FLOOR PLAN GENERAL NOTES

1. DO NOT SCALE THE DRAWINGS. WHERE DIMENSIONS ARE NOT PROVIDED OR ARE UNCLEAR, REQUEST CLARIFICATION FROM THE ARCHITECT.
2. VERIFY ALL EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES UPON DISCOVERY.
3. ALL WORK SHALL BE DONE IN ACCORDANCE WITH LOCAL BUILDING CODES. COMPLIANCE WITH ALL APPLICABLE CODES WILL BE REQUIRED TO BE MET OR EXCEEDED.
4. REFER TO REFLECTED CEILING PLANS FOR CEILING HEIGHTS AND CEILING FINISHES.
5. REFER TO CODE PLANS FOR LOCATIONS OF RATED WALLS, SMOKE BARRIERS, FIRE EXTINGUISHER CABINETS, ETC.
6. REFER TO INTERIOR FINISH PLANS AND ROOM FINISH SCHEDULE FOR ROOM FINISHES.
7. REFER TO INTERIOR FURNITURE PLANS FOR FURNITURE/FIXTURE LAYOUT.
8. REFER TO G140 SHEET FOR TYPICAL MOUNTING ELEVATIONS.
9. ARCHITECTURAL FINISHED FLOOR ELEVATIONS ARE TO TOP OF CONCRETE SLAB OR TOPPING.
10. UNLESS NOTED OTHERWISE, ALL NON-RATED INTERIOR WALLS SHALL BE TYPE 'S4', EXTENDING UP TO UNDERSIDE OF FLOOR OR ROOF DECK ABOVE WITH MINERAL WOOL ACOUSTIC BATT INSULATION. SCRIBE GYPSUM BOARD TO IRREGULARITIES OF DECK ABOVE AND SEAL AROUND ALL PENETRATIONS WITH ACOUSTIC SEALANT.
11. PLAN DIMENSIONS ARE TO FINISHED SURFACE OF MASONRY WALLS, OR TO CENTERLINE OF STUDS AT METAL STUD INTERIOR WALLS, UNLESS NOTED OTHERWISE. REFER TO SHEET A602 CONSTRUCTION ASSEMBLY TYPES FOR MORE INFORMATION.
12. COORDINATE ALL LOCATIONS FOR IN-WALL BLOCKING AND/OR WALL-BACKING FOR ITEMS SUCH AS TOILET ACCESSORIES, GRAB BARS, CASEWORK, WALL-MOUNTED FIXTURES, MARKER BOARDS,VISUAL DISPLAY BOARDS, AUDIO-VISUAL EQUIPMENT AND HANDRAILS, ETC. INSTALL FIRE-RESISTIVE TREATED WOOD BLOCKING OR METAL BACKING PLATES IN METAL STUD PARTITIONS.
13. TRANSITIONS BETWEEN FINISH FLOOR ELEVATION(S) SHALL NOT EXCEED 1/2 INCH, UNLESS NOTED OTHERWISE.
14. PROVIDE 4 INCH HIGH CONCRETE HOUSEKEEPING PADS BELOW ALL FLOOR-MOUNTED INTERIOR MECHANICAL AND ELECTRICAL EQUIPMENT. VERIFY EXACT SIZES AND LOCATIONS WITH AFFECTED TRADES.
15. CONTRACTOR SHALL INSTALL CONTINUOUS PERFORATED DRAIN TILE AROUND THE OUTSIDE PERIMETER OF BUILDING ADDITION AND CONNECT TO SUMP. REFER TO FOUNDATION DETAILS AND SPECIFICATION FOR MORE INFORMATION. SEE PLUMBING DRAWINGS FOR SUMP LOCATION.

KEYNOTES - ARCHITECTURAL

A12	WALL-MOUNTED MARKER BOARD, BY OTHERS, PROVIDE IN-WALL BACKING FOR MOUNTING.
A14	WALL-MOUNTED DISPLAY, REFER TO TECHNOLOGY DRAWINGS AND ELECTRICAL FOR ROUGH-IN REQUIREMENTS. PROVIDE IN-WALL BLOCKING FOR MOUNTING.
A34	AUTOMATIC DOOR OPERATOR PUSH BUTTON LOCATION, REFER TO ELECTRICAL DRAWINGS AND DOOR HARDWARE FOR MORE INFORMATION.

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CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	MJH
CHECKED BY	DHJ
COMMISSION NUMBER	2106-02

SHEET TITLE

FLOOR PLAN
LEVEL 1

SHEET NUMBER

A101

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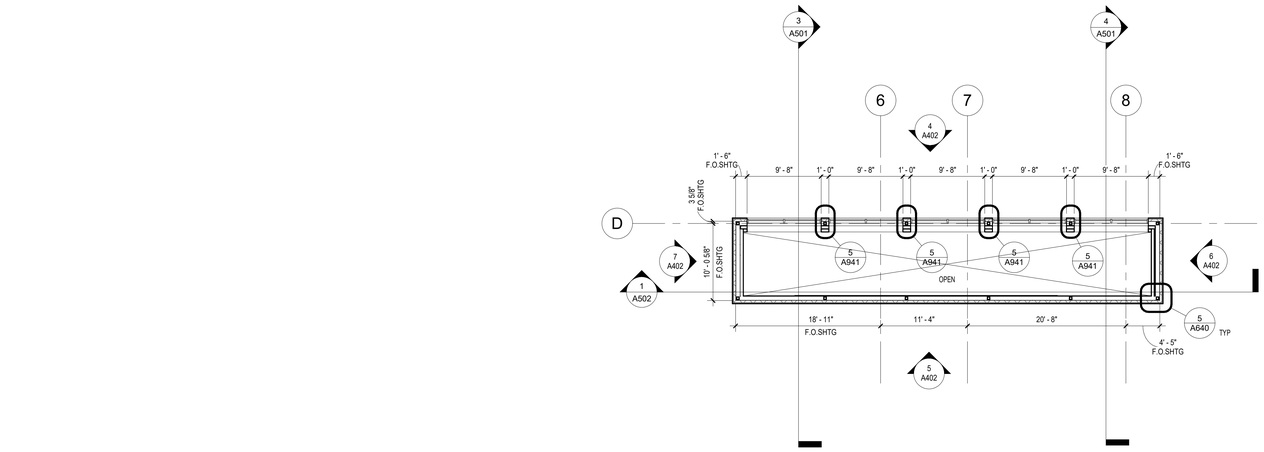
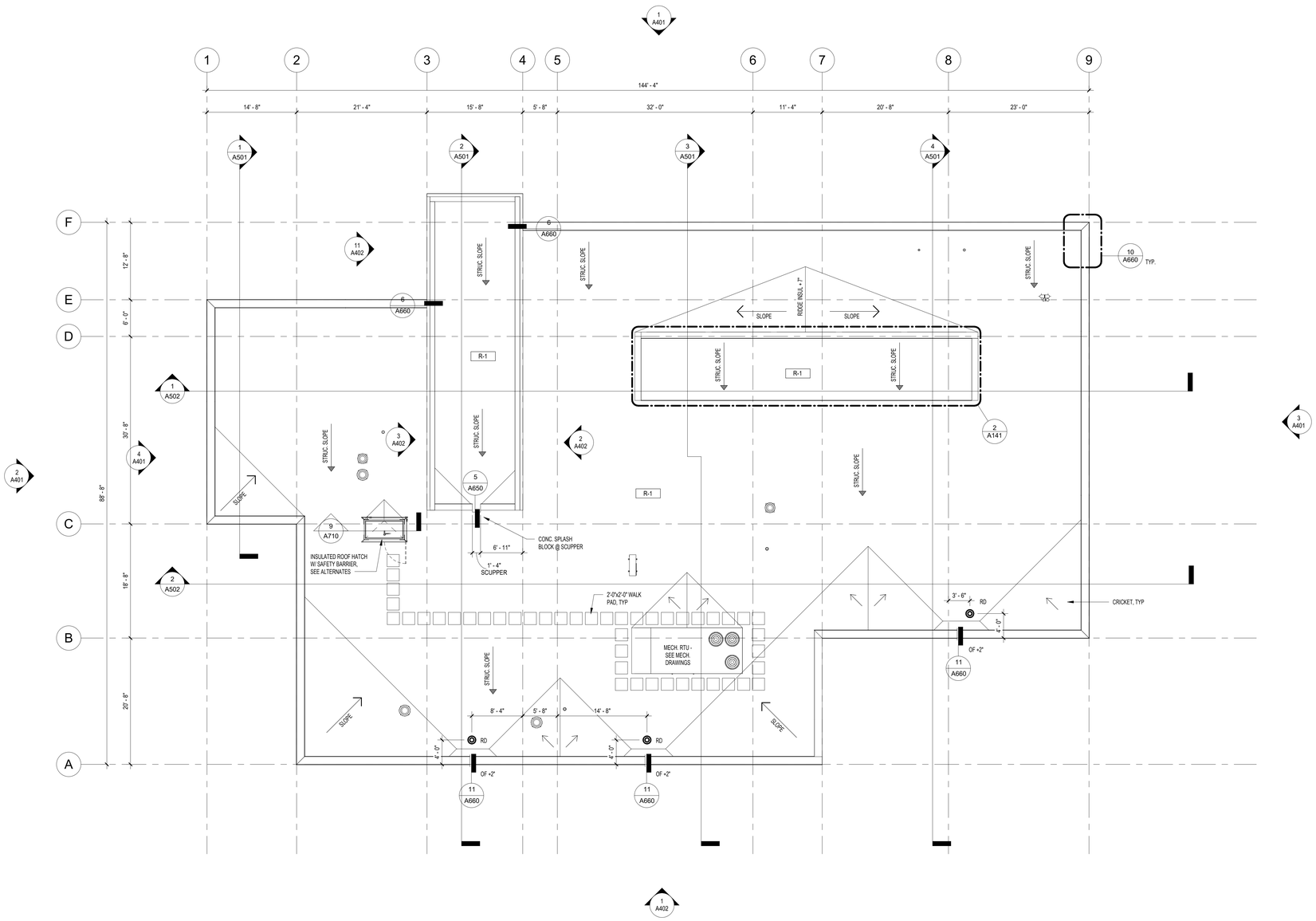


2 A141 PLAN - CLERESTORY AREA
1/8" = 1'-0"



1 A141 ROOF PLAN
1/8" = 1'-0"

ROOF PLAN GENERAL NOTES

1. DO NOT SCALE DRAWINGS.
2. ROOF SLOPES ARE INDICATED WITH ARROWS, POINTING IN THE DOWNWARD SLOPE DIRECTION. TYPICAL ROOF SLOPES (STRUCTURE) ARE 1/4" PER FOOT U.N.O.
3. ROOF INSULATION AND CRICKETS SHALL BE TAPERED TO DRAIN AT 1/4" PER FOOT EXCEPT WHERE NOTED OTHERWISE.
4. ROOF INSULATION OVER SLOPED ROOF STRUCTURE SHALL BE A CONSTANT THICKNESS TO MEET OVERALL MINIMUM R-VALUE REQUIRED AS DETAILED ON SHEET A601, WITH THE EXCEPTION OF AREAS WITH TAPERED INSULATION, CRICKETS AND/OR ROOF DRAINS.
5. INSULATION THICKNESS AT ROOF DRAINS SHALL BE 2" MINIMUM
6. INSULATION THICKNESS NOTED ON PLANS REPRESENTS ADDITIONAL INSULATION THICKNESS BEYOND MINIMUM R-VALUE THICKNESS REQUIRED FOR THE ROOF ASSEMBLY.
7. COORDINATE ALL ROOF PENETRATIONS AND CURBS RELATED TO ROOF MOUNTED EQUIPMENT WITH MECHANICAL, PLUMBING. ELECTRICAL, AND OTHER TRADES. NOT ALL PENETRATIONS AND ROOF - MOUNTED ITEMS MAY BE INDICATED ON THIS DRAWING.
8. REFER TO ARCHITECTURAL FLOOR PLANS FOR OVERALL BUILDING DIMENSIONS.
9. INSTALL CRICKETS WHERE NEEDED TO SHED WATER AWAY FROM EQUIPMENT, CURBS, OR OTHER ROOF-MOUNTED ITEMS. SLOPE CRICKETS A MINIMUM OF 1/4" PER FOOT.
10. AT ALL ROOFTOP MECHANICAL EQUIPMENT CURBS, PROVIDE FULL DEPTH INSULATION INSIDE OF ROOF CURBS AND WRAPS AROUND SUPPLY AND RETURN DUCTS AS THEY PENETRATE THE ROOF STRUCTURE.
11. VERIFY LOCATION OF ALL STRUCTURE COMPONENTS BELOW ROOF DRAIN LOCATIONS PRIOR TO INSTALLATION.
12. SEE A660 SERIES SHEETS FOR TYPICAL ROOF DETAILS.
13. REFER TO ALTERNATES LISTED IN THE PROJECT MANUAL REGARDING ROOF SYSTEMS.

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CHECKED BY	DHJ
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SHEET TITLE

ROOF PLAN

SHEET NUMBER

A141

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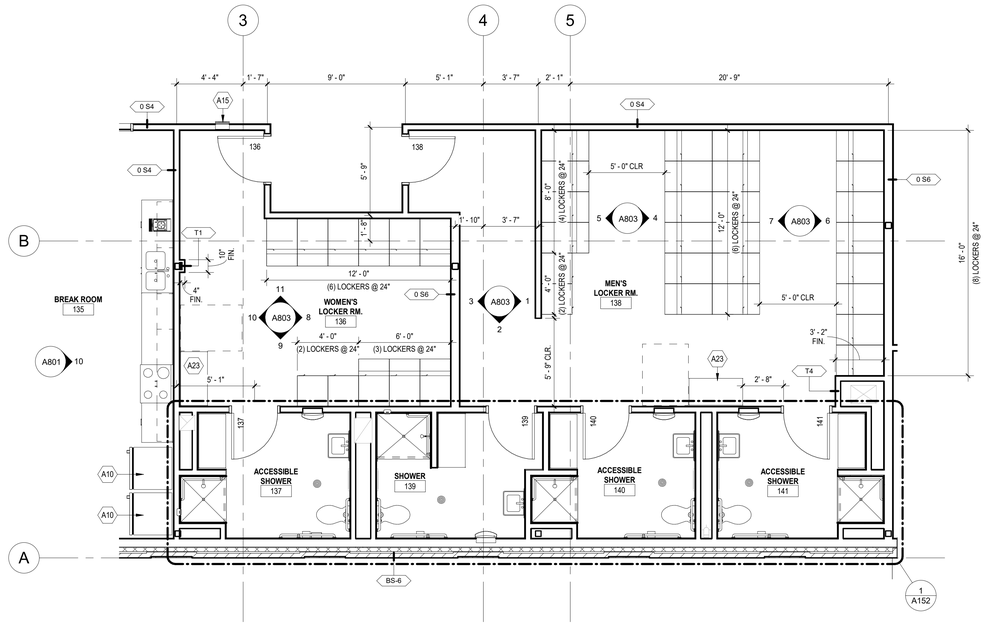
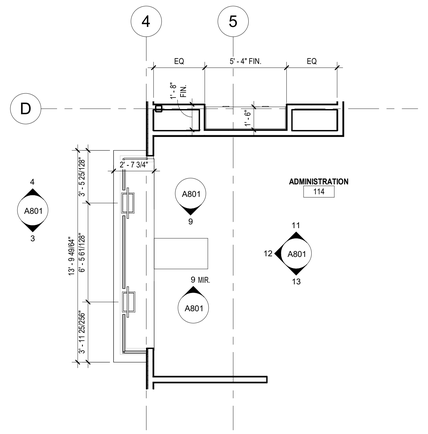


1 A151 ENLARGED PLAN - LOCKER ROOMS / BREAK ROOM
1/4" = 1'-0"



2 A151 ENLARGED PLAN - RECEPTION COUNTER
1/4" = 1'-0"

3 A151 ENLARGED PLAN - LOWER LEVEL
1/4" = 1'-0"

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FLOOR PLAN GENERAL NOTES

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6. REFER TO INTERIOR FINISH PLANS AND ROOM FINISH SCHEDULE FOR ROOM FINISHES.
7. REFER TO INTERIOR FURNITURE PLANS FOR FURNITURE/FIXTURE LAYOUT.
8. REFER TO G140 SHEET FOR TYPICAL MOUNTING ELEVATIONS.
9. ARCHITECTURAL FINISHED FLOOR ELEVATIONS ARE TO TOP OF CONCRETE SLAB OR TOPPING.
10. UNLESS NOTED OTHERWISE, ALL NON-RATED INTERIOR WALLS SHALL BE TYPE 'S4', EXTENDING UP TO UNDERSIDE OF FLOOR OR ROOF DECK ABOVE WITH MINERAL WOOL ACOUSTIC BATT INSULATION. SCRIBE GYPSUM BOARD TO IRREGULARITIES OF DECK ABOVE AND SEAL AROUND ALL PENETRATIONS WITH ACOUSTIC SEALANT.
11. PLAN DIMENSIONS ARE TO FINISHED SURFACE OF MASONRY WALLS, OR TO CENTERLINE OF STUDS AT METAL STUD INTERIOR WALLS, UNLESS NOTED OTHERWISE. REFER TO SHEET A602 CONSTRUCTION ASSEMBLY TYPES FOR MORE INFORMATION.
12. COORDINATE ALL LOCATIONS FOR IN-WALL BLOCKING AND/OR WALL-BACKING FOR ITEMS SUCH AS TOILET ACCESSORIES, GRAB BARS, CASEWORK, WALL-MOUNTED FIXTURES, MARKER BOARDS, VISUAL DISPLAY BOARDS, AUDIO-VISUAL EQUIPMENT AND HANDRAILS, ETC. INSTALL FIRE-RESISTIVE TREATED WOOD BLOCKING OR METAL BACKING PLATES IN METAL STUD PARTITIONS.
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15. CONTRACTOR SHALL INSTALL CONTINUOUS PERFORATED DRAIN TILE AROUND THE OUTSIDE PERIMETER OF BUILDING ADDITION AND CONNECT TO SUMP. REFER TO FOUNDATION DETAILS AND SPECIFICATION FOR MORE INFORMATION. SEE PLUMBING DRAWINGS FOR SUMP LOCATION.

KEYNOTES - ARCHITECTURAL

A03	6" DIA. CONCRETE FILLED GALV. STEEL BOLLARD, CAST IN PLACE.
A05	MOP SINK, REFER TO PLUMBING DRAWINGS.
A06	RECESSED FLOOR DRAIN, REFER TO PLUMBING DRAWINGS.
A07	EMERGENCY EYEWASH/SHOWER COMBO UNIT, REFER TO PLUMBING.
A10	REFRIGERATOR, BY OWNER.
A15	FIRE EXTINGUISHER WITH CABINET, RECESSED - REFER TO SPECIFICATIONS.
A16	FIRE EXTINGUISHER WITH CABINET, SURFACE MOUNTED - REFER TO SPECIFICATIONS.
A17	RESIDENTIAL-STYLE WASHING MACHINE, BY OWNER.
A18	RESIDENTIAL-STYLE ELECTRIC CLOTHES DRYER, BY OWNER.
A23	ACCESSIBLE FLOOR MOUNTED BENCH SEAT, 42"x20"x16"H, REFER TO SPECIFICATIONS.
A30	METAL EVIDENCE PASS-THRU LOCKERS, REFER TO SPECIFICATIONS.
A31	ULTRASONIC GUN CLEANER, BY OWNER.
A38	STEEL LINTEL AT 8'-8" WITH SOAPED IN CMU AT BOTH SIDES, SEE STRUCTURAL FOR SIZING/REINFORCING.
A39	INSTALL 2'-0" HIGH ACOUSTIC WALL PANELS DIRECT ATTACH TO WALL AT TOP, CONTINUOUS AROUND ROOM.

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PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	MJH
CHECKED BY	DHJ
COMMISSION NUMBER	2106-02

SHEET TITLE

ENLARGED PLANS

SHEET NUMBER

A151

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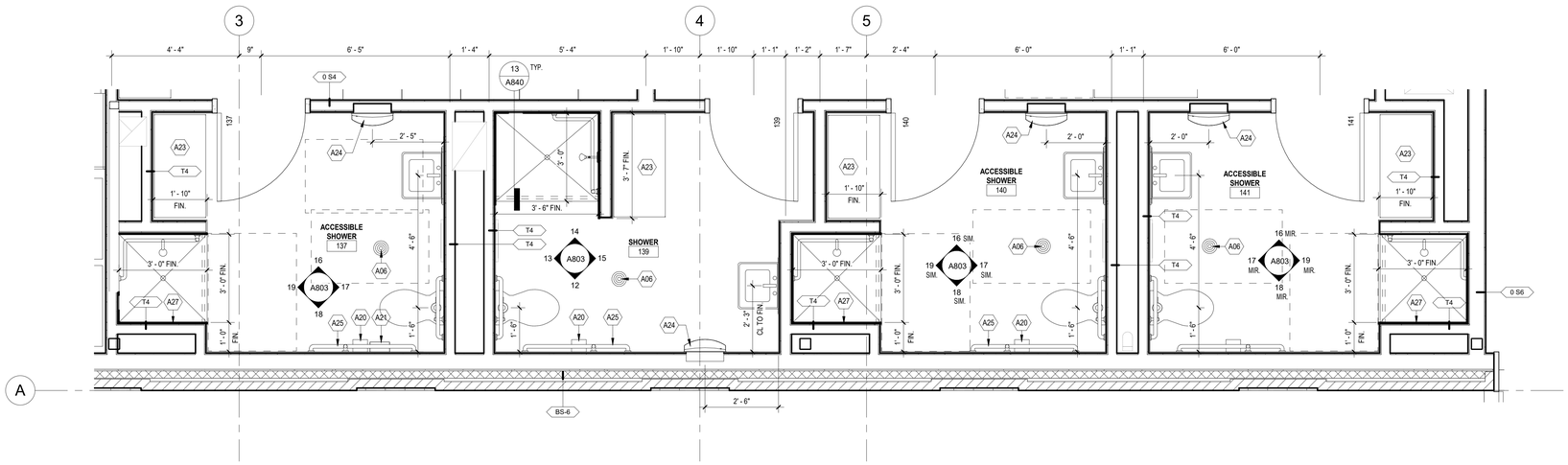
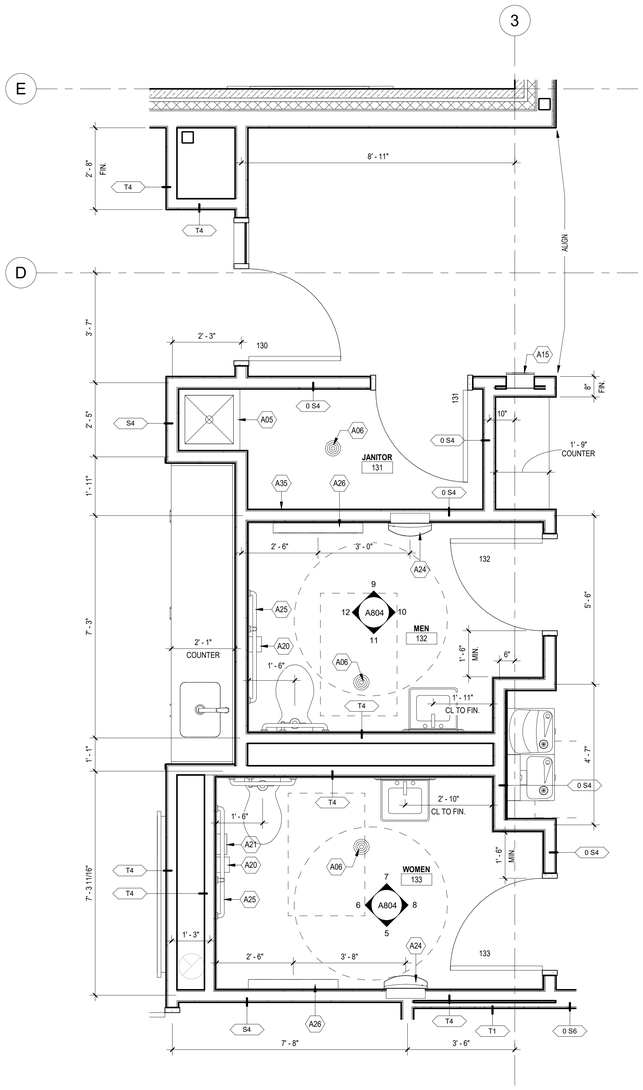


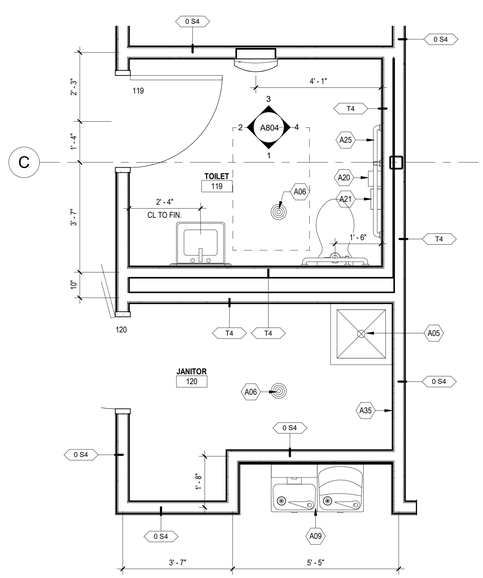
1 / A152 ENLARGED PLAN - LOCKER/SHOWER ROOMS

1/2" = 1'-0"



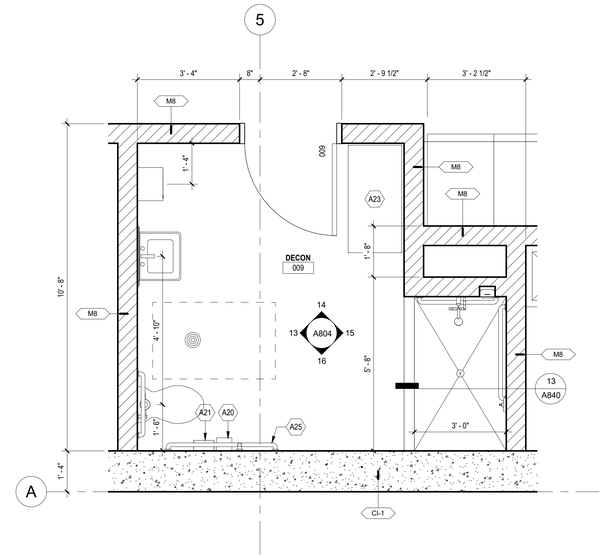
2 / A152 ENLARGED PLAN - LOBBY RESTROOMS

1/2" = 1'-0"



3 / A152 ENLARGED PLAN - TOILET 119

1/2" = 1'-0"



4 / A152 ENLARGED PLAN - DECON 009

1/2" = 1'-0"

FLOOR PLAN GENERAL NOTES

1. DO NOT SCALE THE DRAWINGS. WHERE DIMENSIONS ARE NOT PROVIDED OR ARE UNCLEAR, REQUEST CLARIFICATION FROM THE ARCHITECT.
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5. REFER TO CODE PLANS FOR LOCATIONS OF RATED WALLS, SMOKE BARRIERS, FIRE EXTINGUISHER CABINETS, ETC.
6. REFER TO INTERIOR FINISH PLANS AND ROOM FINISH SCHEDULE FOR ROOM FINISHES.
7. REFER TO INTERIOR FURNITURE PLANS FOR FURNITURE/FIXTURE LAYOUT.
8. REFER TO G140 SHEET FOR TYPICAL MOUNTING ELEVATIONS.
9. ARCHITECTURAL FINISHED FLOOR ELEVATIONS ARE TO TOP OF CONCRETE SLAB OR TOPPING.
10. UNLESS NOTED OTHERWISE, ALL NON-RATED INTERIOR WALLS SHALL BE TYPE 'S4', EXTENDING UP TO UNDERSIDE OF FLOOR OR ROOF DECK ABOVE WITH MINERAL WOOL ACOUSTIC BATT INSULATION. SCRIBE GYPSUM BOARD TO IRREGULARITIES OF DECK ABOVE AND SEAL AROUND ALL PENETRATIONS WITH ACOUSTIC SEALANT.
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14. PROVIDE 4 INCH HIGH CONCRETE HOUSEKEEPING PADS BELOW ALL FLOOR-MOUNTED INTERIOR MECHANICAL AND ELECTRICAL EQUIPMENT. VERIFY EXACT SIZES AND LOCATIONS WITH AFFECTED TRADES.
15. CONTRACTOR SHALL INSTALL CONTINUOUS PERFORATED DRAIN TILE AROUND THE OUTSIDE PERIMETER OF BUILDING ADDITION AND CONNECT TO SUMP. REFER TO FOUNDATION DETAILS AND SPECIFICATION FOR MORE INFORMATION. SEE PLUMBING DRAWINGS FOR SUMP LOCATION.

KEYNOTES - ARCHITECTURAL

A05	MOP SINK, REFER TO PLUMBING DRAWINGS.
A06	RECESSED FLOOR DRAIN, REFER TO PLUMBING DRAWINGS.
A09	DRINKING FOUNTAIN, REFER TO PLUMBING.
A15	FIRE EXTINGUISHER WITH CABINET, RECESSED - REFER TO SPECIFICATIONS.
A20	TOILET PAPER DISPENSER, REFER TO SPECIFICATIONS.
A21	SANITARY NAPKIN DISPOSAL, REFER TO SPECIFICATIONS.
A23	ACCESSIBLE FLOOR MOUNTED BENCH SEAT, 42"x20"x18"H, REFER TO SPECIFICATIONS.
A24	SEMI-RECESSED PAPER TOWEL/WASTE RECEPTACLE, REFER TO SPECIFICATIONS.
A25	STAINLESS STEEL GRAB BAR, INSTALL PER STATE ACCESSIBILITY CODE REQUIREMENTS.
A26	BABY CHANGING STATION, REFER TO SPECIFICATIONS.
A27	PROVIDE IN-WALL BLOCKING FOR FUTURE WALL-MOUNTED FOLDING SHOWER SEAT.
A35	MOP HOLDER AND SHELF, REFER TO SPECIFICATIONS.

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DETROIT LAKES POLICE STATION

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CHECKED BY	DHJ
COMMISSION NUMBER	2106-02

SHEET TITLE

ENLARGED PLANS

SHEET NUMBER

A152

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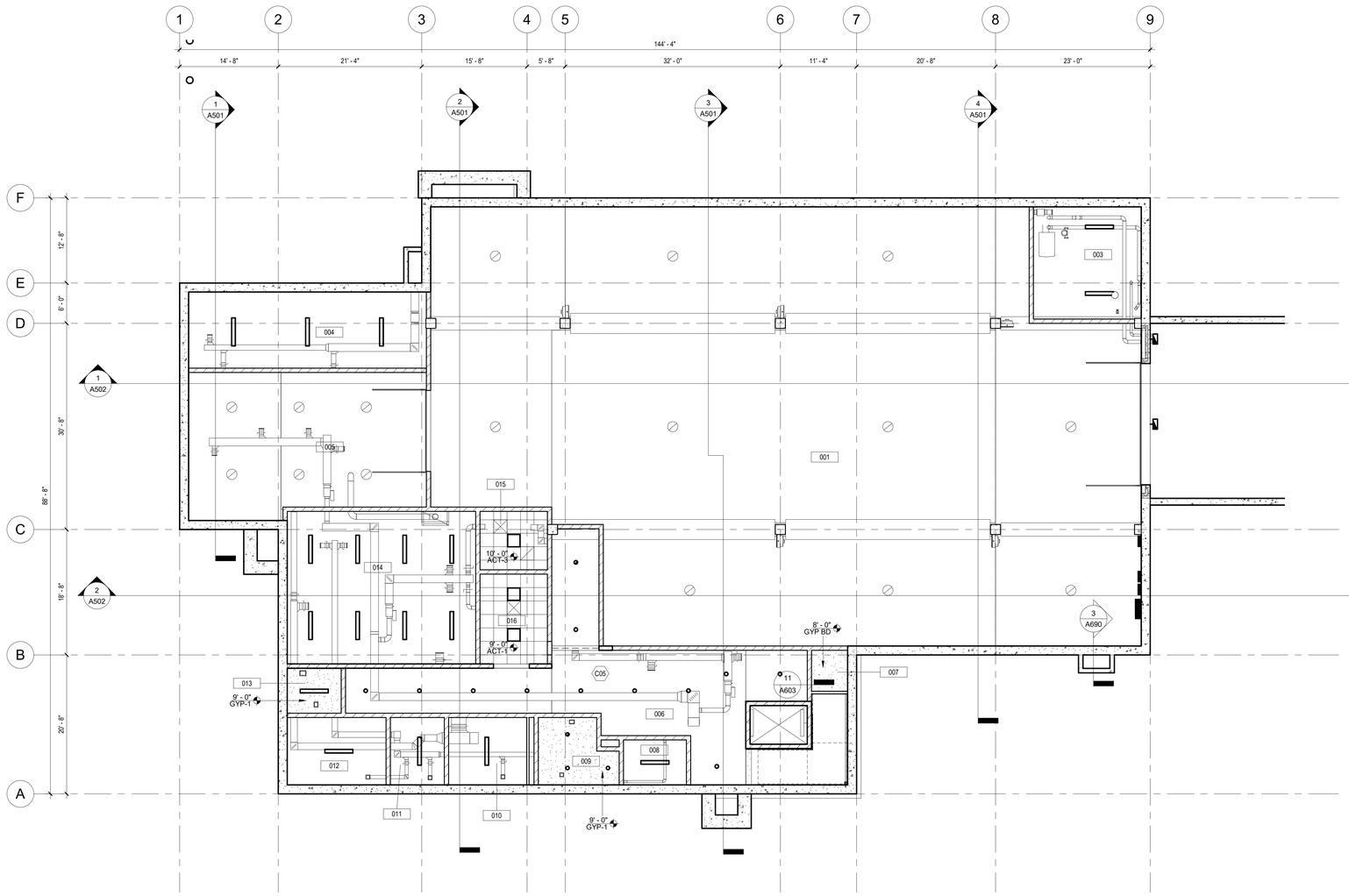
GENERAL RCP NOTES

1. DO NOT SCALE DRAWINGS
2. LOCATION OF DEVICES AND EQUIPMENT SHOWN ON DRAWINGS OF OTHER DISCIPLINES ARE SCHEMATIC AND GENERAL. SPECIFIC LOCATIONS OR GUIDELINES INDICATED ON THE ARCHITECTURAL DRAWINGS SHALL GOVERN THE LOCATION OF EXPOSED WORK OF ALL TRADES.
3. INSTALL SPRINKLER HEADS, SMOKE ALARMS, LIGHT FIXTURES AND OTHER EXPOSED FIXTURES/DEVICES AT CENTER OF ACOUSTICAL TILE (WHERE OCCURS), AT CENTER OF SOFFIT (WHERE OCCURS), OR AT CENTER OF ROOM, UNO. IF DIMENSION TO LOCATE A SPECIFIC DEVICE IS GIVEN IN ONE DIRECTION, CONTRACTOR TO CENTER THE DEVICE ON CEILING OR SOFFIT IN OTHER DIRECTION
4. REMOVE ALL BARCODE, TAGS, ETC. FROM CONDUIT, PIPING AND DUCTWORK PRIOR TO INSTALLATION. ROTATE PERMANENT MARKINGS TO CONCEAL.
5. ALL CEILING HEIGHTS INDICATED ARE FROM TOP OF FINISHED FLOOR, UNO.
6. AT ALL EXPOSED CEILING CONDITIONS, COORDINATE ALL WIRING, CONDUIT, DUCTS, ETC FOR AN ORGANIZED FINISHED LOOK.
7. REFER TO MECHANICAL, PLUMBING, AND ELECTRICAL FOR ADDITIONAL INFORMATION.
8. SEE INTERIOR ELEVATIONS/ SECTIONS/ DETAILS FOR ADDITIONAL INFORMATION ON FINISHED SOFFIT, BULKHEAD, CEILING, ETC.
9. PAINT ALL GYPSUM BOARD CEILINGS, REFER TO INTERIOR ROOM FINISH SCHEDULE.
10. INSTALL MECHANICAL AND PLUMBING WORK TIGHT TO STRUCTURAL ELEMENTS TO MAINTAIN MAXIMUM CEILING HEIGHT UNLESS NOTED OTHERWISE.
11. LIGHT FIXTURES SHOWN FOR REFERENCE ONLY, SEE ELECTRICAL DRAWINGS FOR FIXTURE TYPE.



1 A300 LOWER LEVEL - RCP - OVERALL
1/8" = 1'-0"

KEYNOTES - REFLECTED CEILING PLAN

C05	EXPOSED STRUCTURE, PAINT ALL EXPOSED SURFACES.

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CHECKED BY	DHJ
COMMISSION NUMBER	2106-02

SHEET TITLE

LOWER LEVEL REFLECTED CEILING PLAN

SHEET NUMBER

A300

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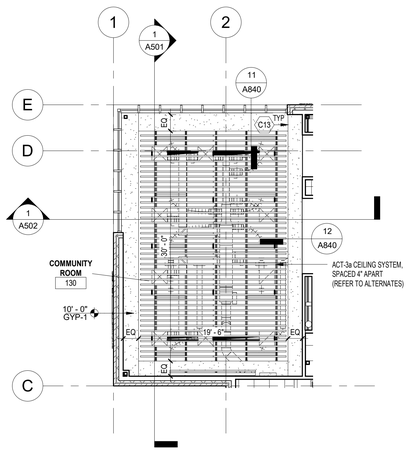
1 A301 LEVEL 1 - RCP - OVERALL
1/8" = 1'-0"



2 A301 COMMUNITY RM RCP (REFER TO ALTERNATES)
1/8" = 1'-0"

3 A301 LOBBY REFLECTED CEILING PLAN
1/4" = 1'-0"

TRUE NORTH

GENERAL RCP NOTES

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4. REMOVE ALL BARCODE, TAGS, ETC. FROM CONDUIT, PIPING AND DUCTWORK PRIOR TO INSTALLATION. ROTATE PERMANENT MARKINGS TO CONCEAL.
5. ALL CEILING HEIGHTS INDICATED ARE FROM TOP OF FINISHED FLOOR, UNO.
6. AT ALL EXPOSED CEILING CONDITIONS, COORDINATE ALL WIRING, CONDUIT, DUCTS, ETC FOR AN ORGANIZED FINISHED LOOK.
7. REFER TO MECHANICAL, PLUMBING, AND ELECTRICAL FOR ADDITIONAL INFORMATION.
8. SEE INTERIOR ELEVATIONS/ SECTIONS/ DETAILS FOR ADDITIONAL INFORMATION ON FINISHED SOFFIT, BULKHEAD, CEILING, ETC.
9. PAINT ALL GYPSUM BOARD CEILINGS. REFER TO INTERIOR ROOM FINISH SCHEDULE.
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11. LIGHT FIXTURES SHOWN FOR REFERENCE ONLY, SEE ELECTRICAL DRAWINGS FOR FIXTURE TYPE.

KEYNOTES - REFLECTED CEILING PLAN

C01	PROVIDE PREFINISHED METAL CLOSURE TRIM TO MATCH T-GRID TO CLOSE GAP BETWEEN FRAME AND FACE OF WALL AT CEILING.
C05	EXPOSED STRUCTURE, PAINT ALL EXPOSED SURFACES.
C08	RECESSED CEILING MOUNTED PROJECTOR SCREEN. REFER TO TECHNOLOGY DRAWINGS.
C13	GYP BD CONTROL JOINT.

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PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	MJH
CHECKED BY	DHJ
COMMISSION NUMBER	2106-02

SHEET TITLE

LEVEL 1 REFLECTED CEILING PLAN

SHEET NUMBER

A301

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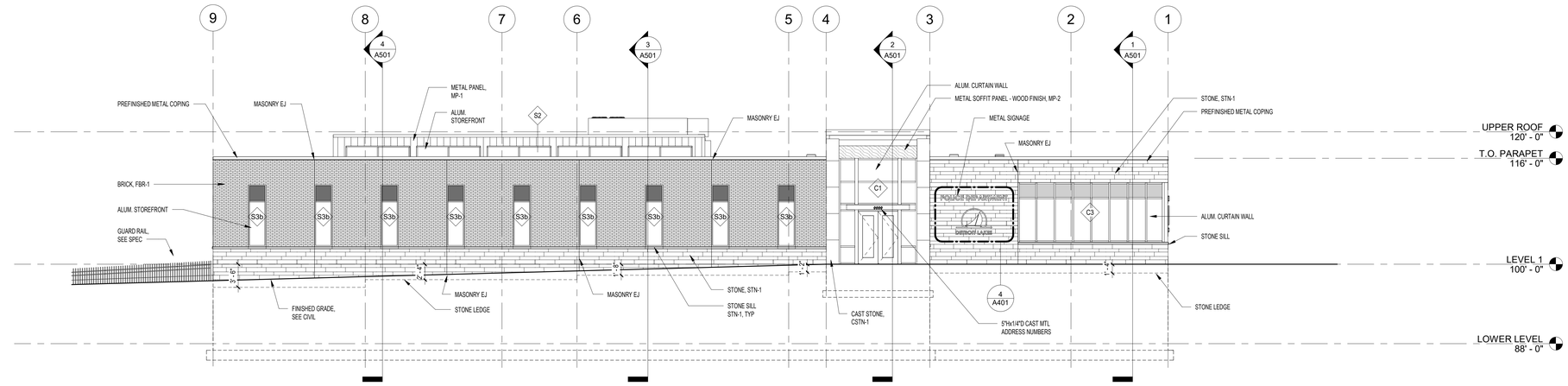
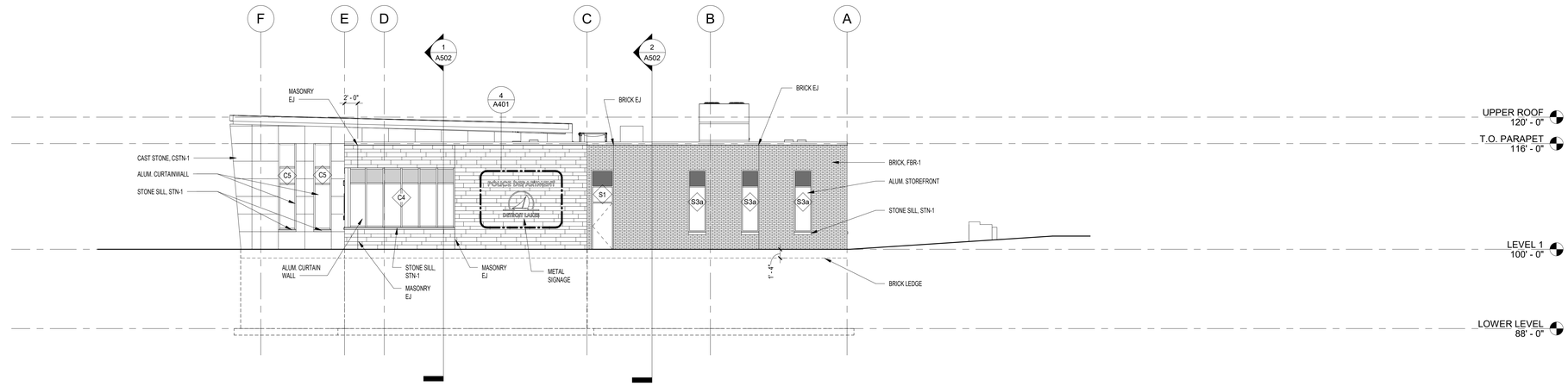
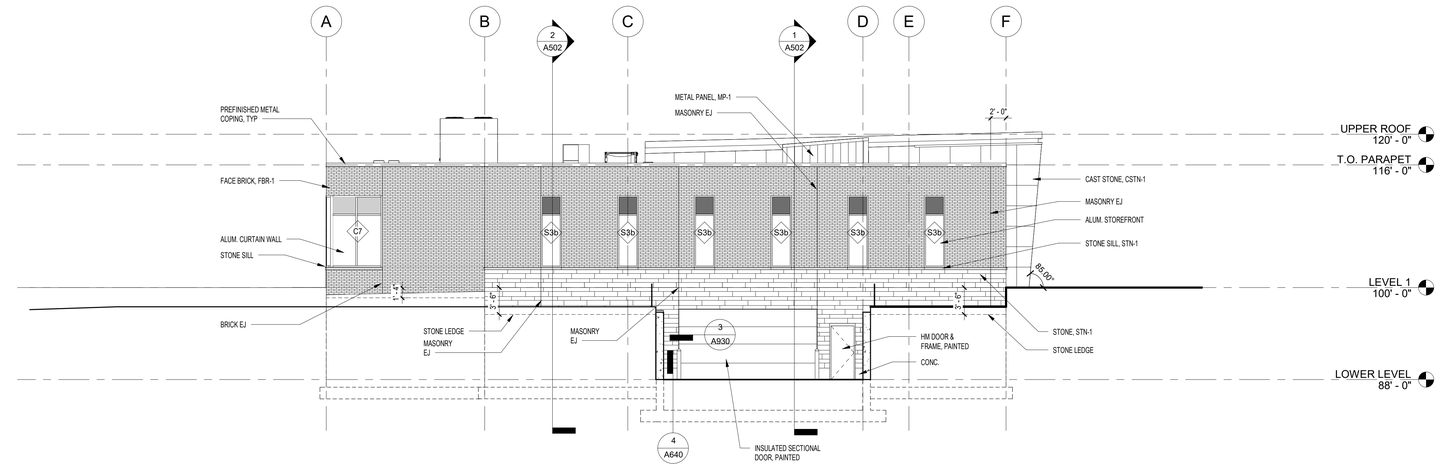
2/20/2020 9:46:28 AM



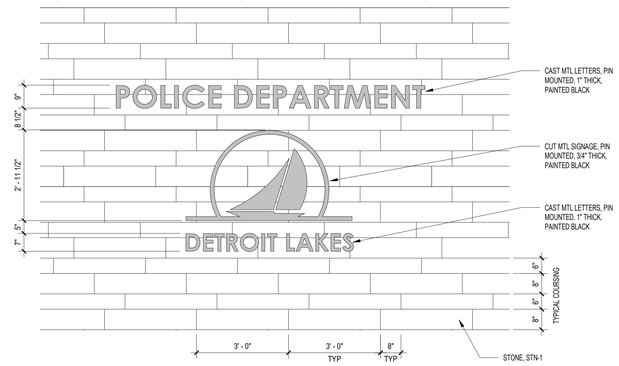
1 A401 EXTERIOR ELEVATION - NORTH
1/8" = 1'-0"



2 A401 EXTERIOR ELEVATION - WEST
1/8" = 1'-0"



3 A401 EXTERIOR ELEVATION - EAST
1/8" = 1'-0"



4 A401 ELEVATION - EXTERIOR BUILDING SIGNAGE
1/2" = 1'-0"

EXTERIOR ELEVATIONS GENERAL NOTES

1. DO NOT SCALE THE DRAWINGS. WHERE DIMENSIONS ARE NOT PROVIDED OR ARE UNCLEAR, REQUEST CLARIFICATION FROM THE ARCHITECT.
2. REFER TO CIVIL DRAWINGS FOR GRADE ELEVATION AROUND THE PERIMETER OF THE BUILDING.
3. REFER TO STRUCTURAL DRAWINGS FOR FOOTING DEPTHS AND TYPES.
4. REFER TO PLUMBING DRAWINGS FOR LOCATIONS OF HOSE BIBS, ROOF OVERFLOW DRAINS, ETC.
5. REFER TO ELECTRICAL DRAWINGS FOR EXTERIOR LIGHT FIXTURE TYPES AND LOCATIONS.
6. REFER TO ARCHITECTURAL FLOOR PLANS AND WALL SECTIONS FOR WALL TYPES.

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NOT FOR CONSTRUCTION

DRAWN BY	CTH
CHECKED BY	MJH
COMMISSION NUMBER	2106-02

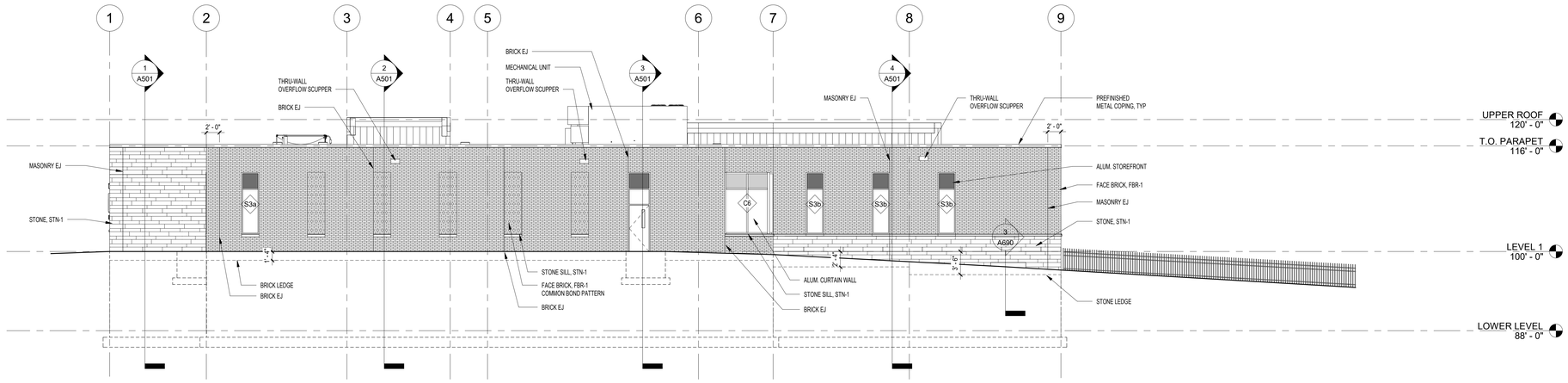
SHEET TITLE

EXTERIOR ELEVATIONS

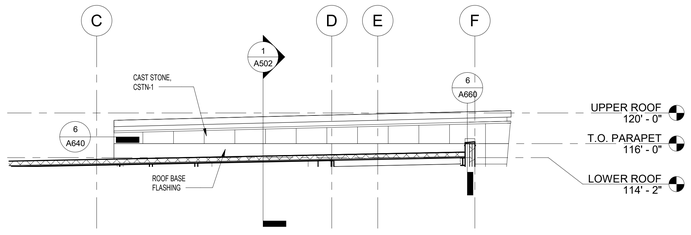
SHEET NUMBER

A401

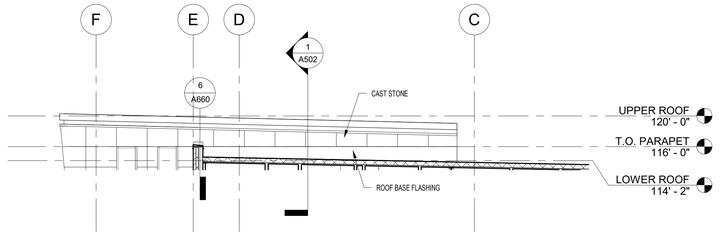
BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_AI_R19.rvt
2/20/2020 9:46:32 AM



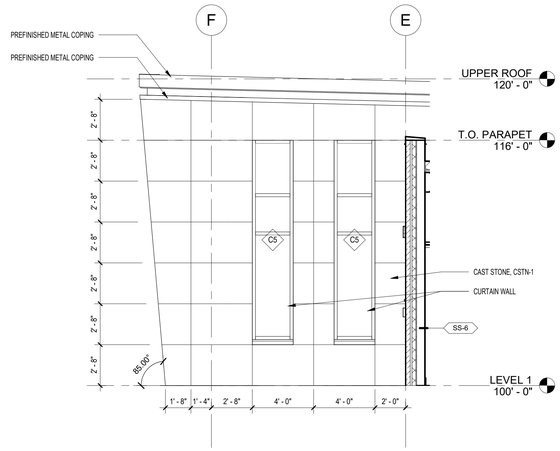
1 A402 EXTERIOR ELEVATION - SOUTH
1/8" = 1'-0"



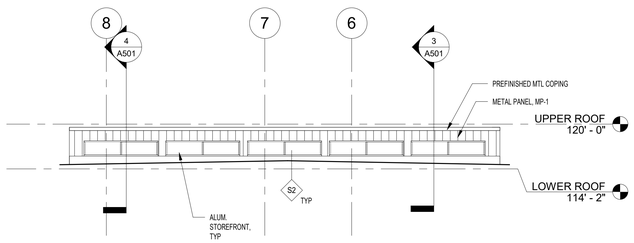
2 A402 ELEVATION - EAST LOBBY PARAPET
1/8" = 1'-0"



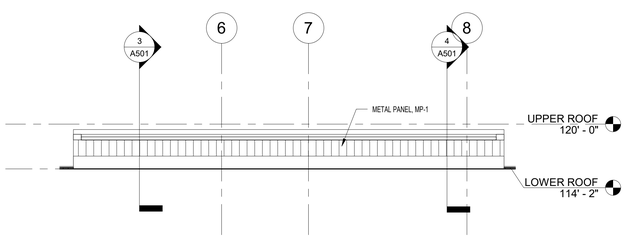
3 A402 ELEVATION - WEST LOBBY PARAPET
1/8" = 1'-0"



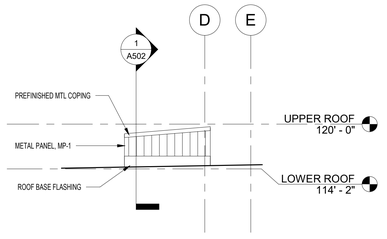
11 A402 ENLARGED ELEVATION
1/4" = 1'-0"



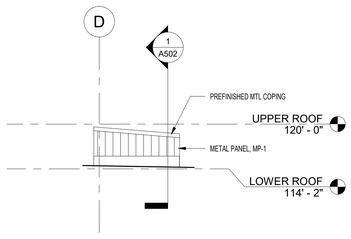
4 A402 ELEVATION - NORTH CLEARSTORY
1/8" = 1'-0"



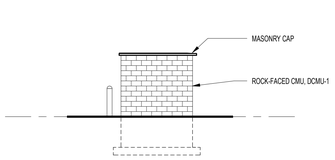
5 A402 ELEVATION - SOUTH CLEARSTORY
1/8" = 1'-0"



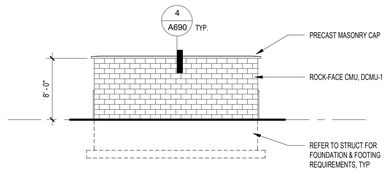
6 A402 ELEVATION - WEST CLEARSTORY
1/8" = 1'-0"



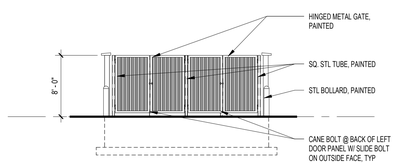
7 A402 ELEVATION - EAST CLEARSTORY
1/8" = 1'-0"



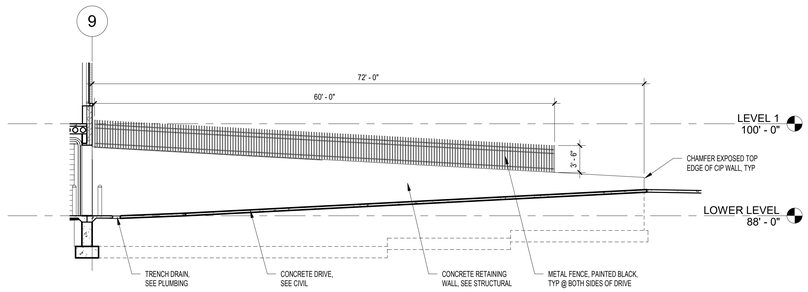
8 A402 ELEVATION - TRASH ENCLOSURE SIDE
1/8" = 1'-0"



9 A402 ELEVATION - TRASH ENCLOSURE BACK
1/8" = 1'-0"



10 A402 ELEVATION - TRASH ENCLOSURE - FRONT
1/8" = 1'-0"



12 A402 ELEVATION - RETAINING WALL
1/8" = 1'-0"

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DETROIT LAKES POLICE STATION

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CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	MJH
CHECKED BY	DHJ
COMMISSION NUMBER	2106-02

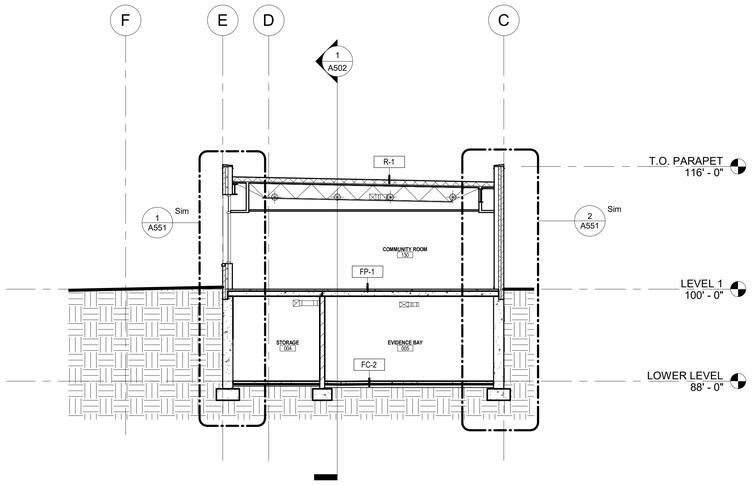
SHEET TITLE

EXTERIOR ELEVATIONS

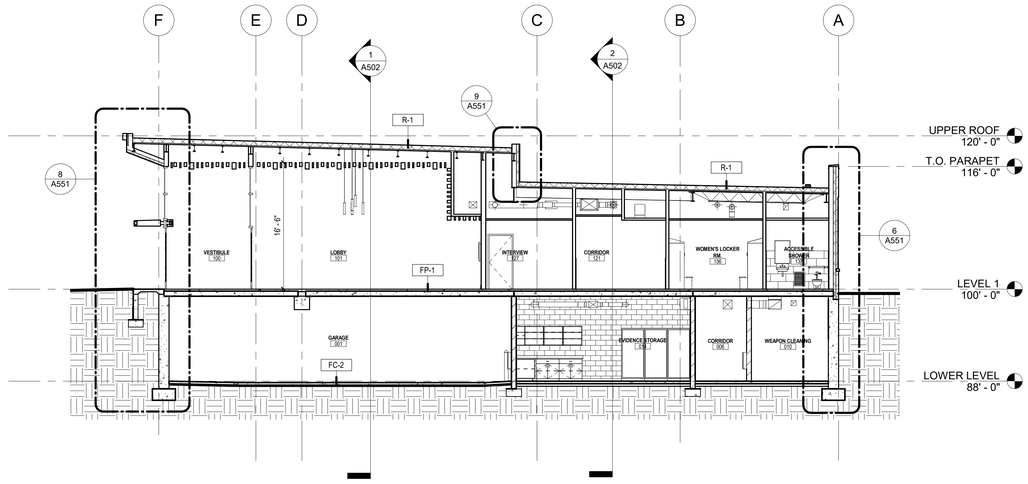
SHEET NUMBER

A402

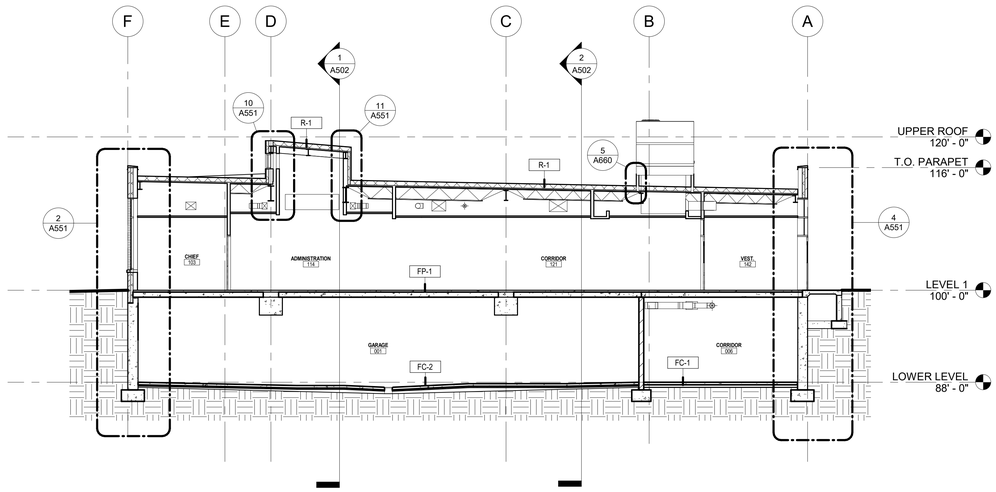
BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_A!_R19.rvt
2/20/2020 9:46:37 AM



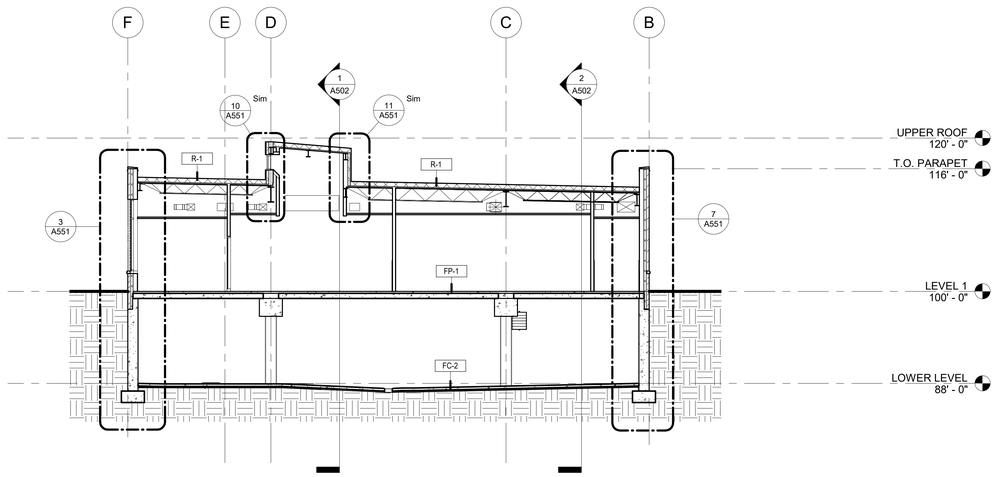
1 A501 BUILDING SECTION N-S - 1
1/8" = 1'-0"



2 A501 BUILDING SECTION N-S - 2
1/8" = 1'-0"



3 A501 BUILDING SECTION N-S - 3
1/8" = 1'-0"



4 A501 BUILDING SECTION N-S - 4
1/8" = 1'-0"

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COMMISSION NUMBER	2106-02

SHEET TITLE

BUILDING SECTIONS

SHEET NUMBER

A501

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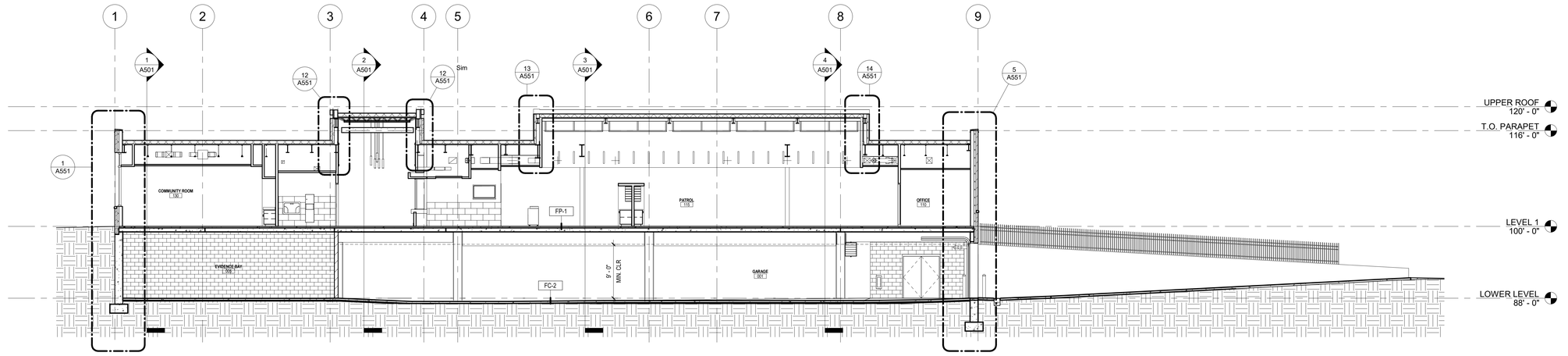

1 A502 BUILDING SECTION E-W - 1
1/8" = 1'-0"

2 A502 BUILDING SECTION E-W - 2
1/8" = 1'-0"

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SHEET TITLE

BUILDING SECTIONS

SHEET NUMBER

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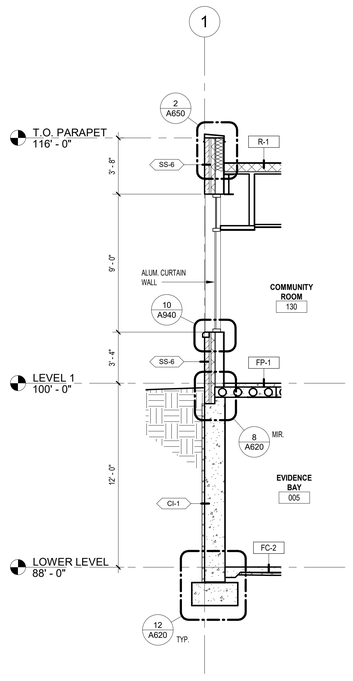
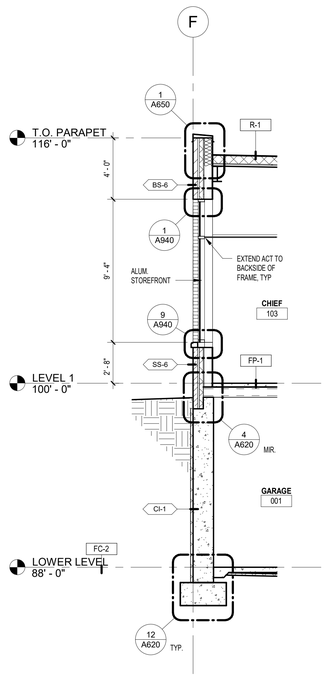
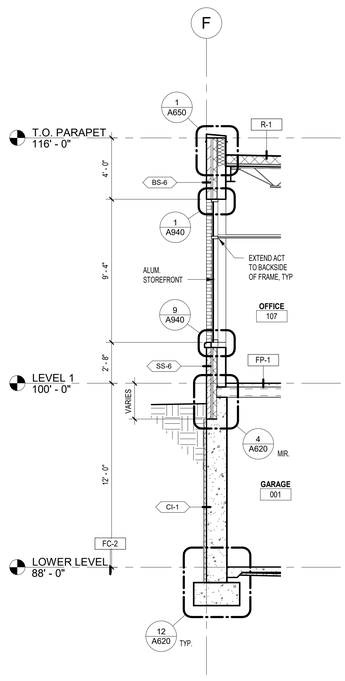


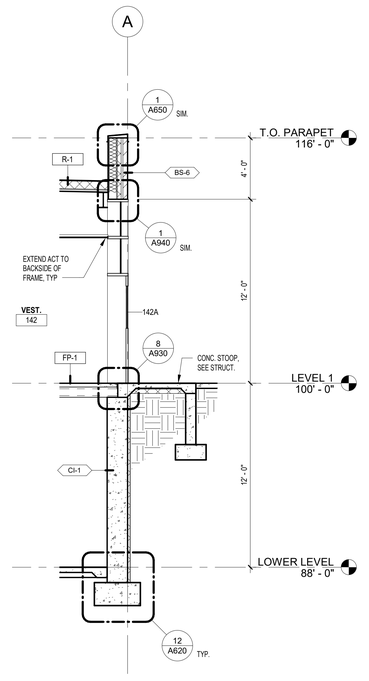
1 A551 WALL SECTION - 01
1/4" = 1'-0"



2 A551 WALL SECTION - 02
1/4" = 1'-0"



3 A551 WALL SECTION - 03
1/4" = 1'-0"



4 A551 WALL SECTION - 04
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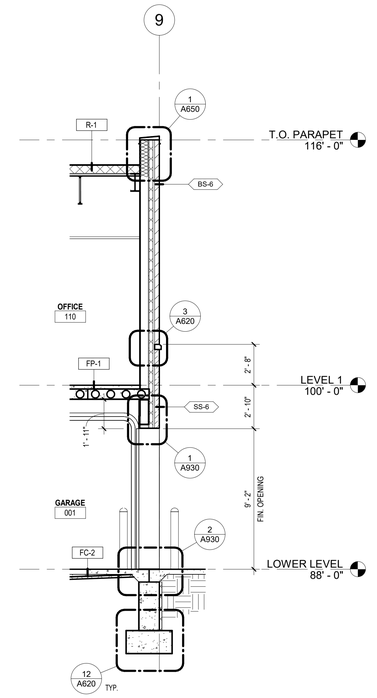

5 A551 WALL SECTION - 05
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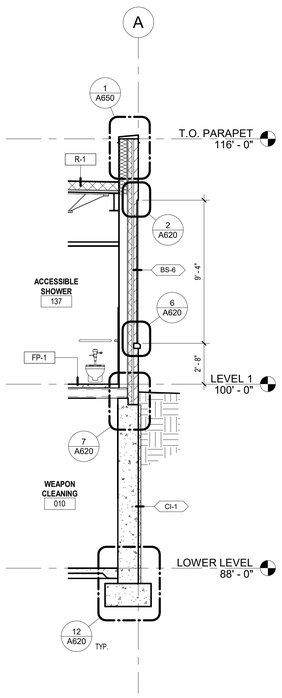
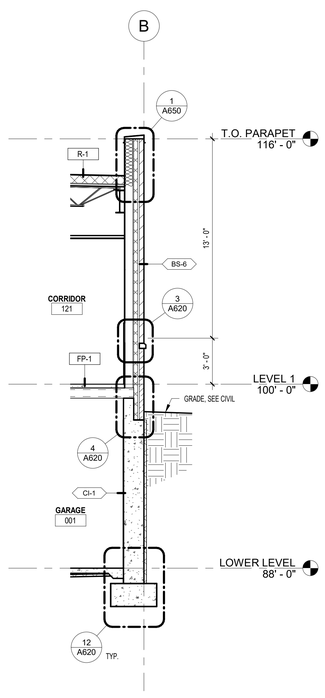
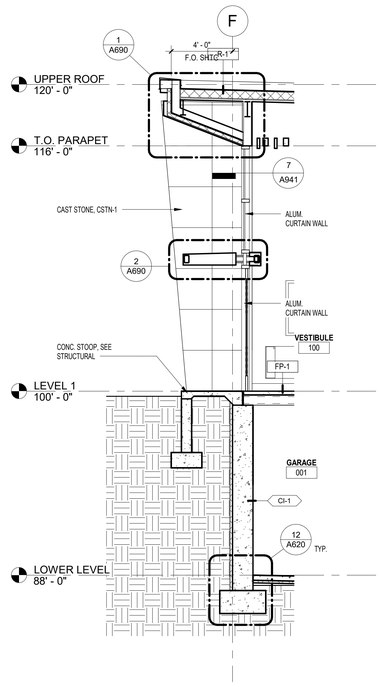


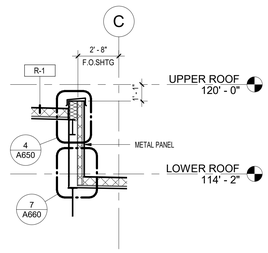
6 A551 WALL SECTION - 06
1/4" = 1'-0"



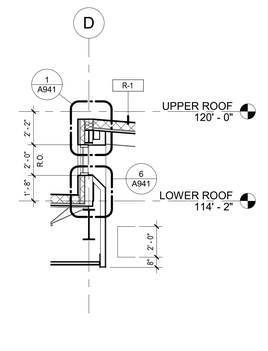
7 A551 WALL SECTION - 07
1/4" = 1'-0"



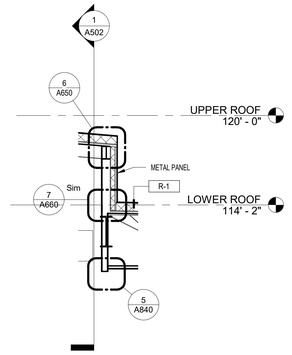
8 A551 WALL SECTION - 08
1/4" = 1'-0"



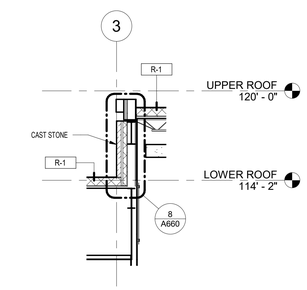
9 A551 WALL SECTION - LOBBY ROOF TRANSITION
1/4" = 1'-0"



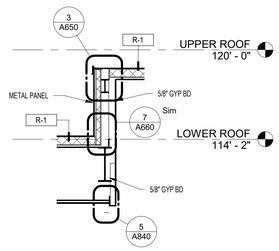
10 A551 WALL SECTION - CLERESTORY N.
1/4" = 1'-0"



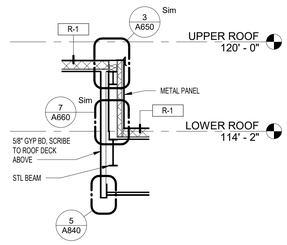
11 A551 WALL SECTION - CLERESTORY S.
1/4" = 1'-0"



12 A551 WALL SECTION - LOBBY ROOF PARAPET
1/4" = 1'-0"



13 A551 WALL SECTION - CLERESTORY W.
1/4" = 1'-0"



14 A551 WALL SECTION - CLERESTORY E.
1/4" = 1'-0"

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CHECKED BY	DHJ
COMMISSION NUMBER	2106-02

SHEET TITLE

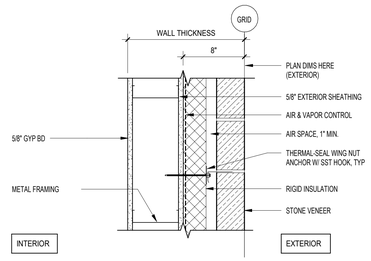
WALL SECTIONS

SHEET NUMBER

A551

BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_AI_R19.rvt
2/20/2020 9:46:46 AM

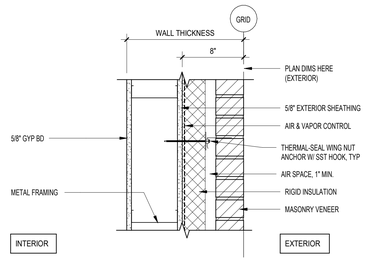
SS STONE VENEER W/ STEEL STUD BACK-UP



WALL TYPE	TOTAL HICK	EXTERIOR FINISH		INSULATION			AIR / VAPOR CONTROL	BACK-UP WALL		AVAILABLE FIRE RESISTANCE	COMMENT
		MATERIAL	THICK	TYPE	THICK	R		SHTG	STUDS		
SS-6	1'-3 1/4"	STONE VENEER	3 5/8"	INSUL-2B	3"		AWB-2A	XGYP-1	6" MTL	NA	

NOTES:
1. SEE ELEVATION DRAWINGS (A400 SERIES) FOR LOCATION AND TYPE OF MASONRY VENEER
2. SEAL ALL SEAMS AT AIR AND VAPOR CONTROL
3. PROVIDE MASONRY VENEER ANCHORS AS SPECIFIED

BS MASONRY VENEER W/ STEEL STUD BACK-UP



WALL TYPE	TOTAL HICK	EXTERIOR FINISH		INSULATION			AIR / VAPOR CONTROL	BACK-UP WALL		AVAILABLE FIRE RESISTANCE	COMMENT
		MATERIAL	THICK	TYPE	THICK	R		SHTG	STUDS		
BS-6	1'-3 1/4"	MASONRY VENEER	3 5/8"	INSUL-2B	3"		AWB-2A	XGYP-1	6" MTL	NA	

NOTES:
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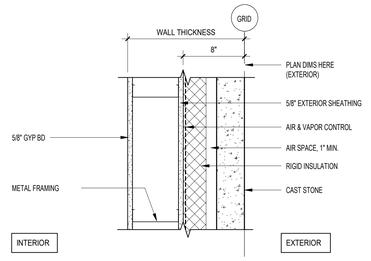
2. SEAL ALL SEAMS AT AIR AND VAPOR CONTROL
3. PROVIDE MASONRY VENEER ANCHORS AS SPECIFIED

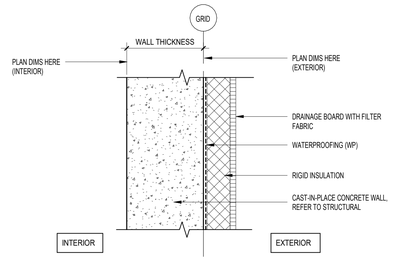
CS CAST STONE VENEER W/ STEEL STUD BACK-UP



WALL TYPE	TOTAL HICK	EXTERIOR FINISH		INSULATION			AIR / VAPOR CONTROL	BACK-UP WALL		AVAILABLE FIRE RESISTANCE	COMMENT
		MATERIAL	THICK	TYPE	THICK	R		SHTG	STUDS		
CS-6	1'-3 1/4"	CAST STONE	3 5/8"	INSUL-2B	3"		AWB-2A	XGYP-1	6" MTL	NA	

NOTES:
1. SEE ELEVATION DRAWINGS (A400 SERIES) FOR LOCATION AND TYPE OF MASONRY VENEER
2. SEAL ALL SEAMS AT AIR AND VAPOR CONTROL
3. PROVIDE MASONRY VENEER ANCHORS AS SPECIFIED

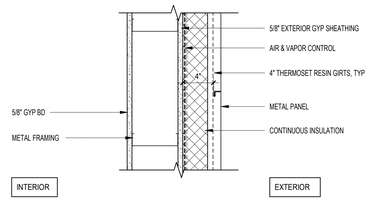
CI CIP CONCRETE WALL - INSULATED



WALL TYPE	NOMINAL WALL THICKNESS	MATERIAL	MOISTURE CONTROL	INSULATION			WATER-PROOFING	AVAILABLE FIRE RESISTANCE	COMMENT :
				TYPE	THICK	R (MIN)			
CI-1	1' - 4"	CAST-IN-PLACE CONCRETE	3/8"	INSUL-1B	2"	10	WP-1	NA	

NOTES:
1. SEE MANUFACTURER'S INSTALLATION REQUIRMENTS FOR WATERPROOFING

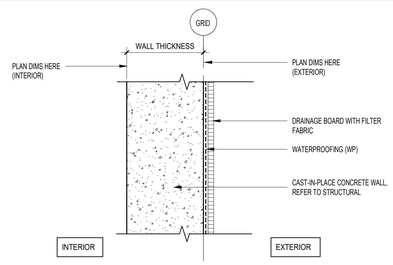
MS METAL PANEL W/ STEEL STUD BACK-UP



WALL TYPE	TOTAL THICK	EXTERIOR FINISH		INSULATION			AIR / VAPOR CONTROL	BACK-UP WALL		AVAILABLE FIRE RESISTANCE	COMMENT
		MATERIAL	THICK	TYPE	THICK	R		SHTG	STUDS		
MS-1	1'-0 1/4"	METAL PANEL	1"	INSUL-2B	3"	-	AWB-2A	XGYP-1	6" MTL	NA	

NOTES:

C CIP CONCRETE WALL

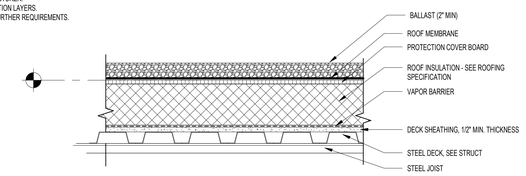


WALL TYPE	NOMINAL WALL THICKNESS	MATERIAL	MOISTURE CONTROL	INSULATION			WATER-PROOFING	AVAILABLE FIRE RESISTANCE	COMMENT :
				TYPE	THICK	R (MIN)			
C8	8"	CAST-IN-PLACE CONCRETE	3/8"	-	-	-	WP-1	NA	

NOTES:
1. SEE MANUFACTURER'S INSTALLATION REQUIRMENTS FOR WATERPROOFING

R-1 BALLASTED EPDM ROOF SYSTEM

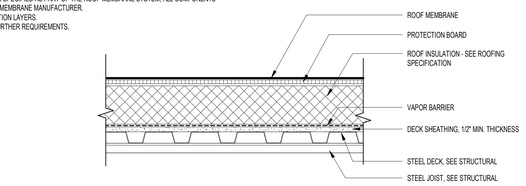
NOTES:
1. ROOF INSULATION SYSTEM IS SPECIFIED AS PART OF THE ROOF MEMBRANE SYSTEM, ALL COMPONENTS MUST BE APPROVED BY THE MEMBRANE MANUFACTURER.
2. STAGGER JOINTS AT INSULATION LAYERS.
3. SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS.



ROOF TYPE	ROOF SYSTEM				FIRE RATING	FIRE TEST	SOUND CONTROL	STRUCTURAL SYSTEM					COMMENTS
	TYPE	BALLAST	INSUL THICK	R-VALUE				TYPE	THICK	SHTG	FRAMING	INSUL	
R-1	BALLASTED EPDM	2" MIN.	5" MIN.	30 MIN.	SEE CODE PLAN	NA	NA	STEEL DECK	SEE STRUCT	NA	STEEL JOIST	NA	REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION

R-2 FULLY-ADHERED EPDM ROOF SYSTEM (SEE ALTERNATES)

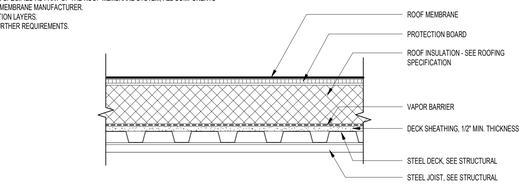
NOTES:
1. ROOF INSULATION SYSTEM IS SPECIFIED AS PART OF THE ROOF MEMBRANE SYSTEM, ALL COMPONENTS MUST BE APPROVED BY THE MEMBRANE MANUFACTURER.
2. STAGGER JOINTS AT INSULATION LAYERS.
3. SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS.



ROOF TYPE	ROOF SYSTEM				FIRE RATING	FIRE TEST	SOUND CONTROL	STRUCTURAL SYSTEM				COMMENTS
	TYPE	BALLAST	INSUL THICK	R-VALUE				TYPE	THICK	SHTG	FRAMING	
R-2	ADHERED EPDM	NA	5" MIN.	30 MIN.	NA	NA	NA	STEEL DECK	SEE STRUCT	NA	STEEL JOIST	REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION

R-3 TPO ROOF SYSTEM (SEE ALTERNATES)

NOTES:
1. ROOF INSULATION SYSTEM IS SPECIFIED AS PART OF THE ROOF MEMBRANE SYSTEM, ALL COMPONENTS MUST BE APPROVED BY THE MEMBRANE MANUFACTURER.
2. STAGGER JOINTS AT INSULATION LAYERS.
3. SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS.



ROOF TYPE	ROOF SYSTEM				FIRE RATING	FIRE TEST	SOUND CONTROL	STRUCTURAL SYSTEM				COMMENTS
	TYPE	BALLAST	INSUL THICK	R-VALUE				TYPE	THICK	SHTG	FRAMING	
R-3	TPO	NA	5" MIN.	30 MIN.	NA	NA	NA	STEEL DECK	SEE STRUCT	NA	STEEL JOIST	REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION

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CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	Author
CHECKED BY	Checker
COMMISSION NUMBER	2106-02

SHEET TITLE

CONSTRUCTION TYPES - EXTERIOR

SHEET NUMBER

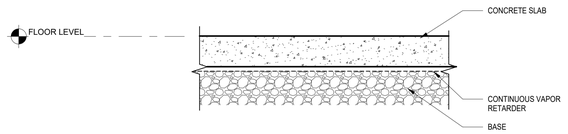
A601

CONSTRUCTION TYPES GENERAL NOTES

1. UNLESS NOTED OTHERWISE, ALL NON-RATED INTERIOR WALLS SHALL BE TYPE 'S4', EXTENDING UP TO UNDERSIDE OF FLOOR OR ROOF DECK ABOVE WITH MINERAL WOOL ACOUSTIC BATT INSULATION. SCRIBE GYPSUM BOARD TO IRREGULARITIES OF DECK ABOVE AND SEAL AROUND ALL PENETRATIONS WITH ACOUSTIC SEALANT.
2. REFER TO "GENERAL FLOOR PLAN NOTES" FOR MORE INFORMATION RELATED TO WALL CONSTRUCTION.
3. ASSEMBLY RATINGS NOTED ON WALL TYPE DESCRIPTIONS ARE ACHIEVABLE RATINGS AND MAY NOT BE REQUIRED FOR A PARTICULAR APPLICATION. REFER TO CODE SUMMARY AND CODE PLANS FOR LOCATIONS OF FIRE-RESISTIVE RATED WALL LOCATIONS.
4. AT WALLS SCHEDULED OR INDICATED TO RECEIVE WALL TILE, SUBSTITUTE TILE BACKER PANELS FOR GYPSUM BOARD. THICKNESS OF TILE BACKER PANELS SHALL BE EQUIVALENT TO ADJACENT SUBSTRATES TO AVOID ANY CHANGE IN THE WALL SURFACE PLANE.
5. PROVIDE IN-WALL BLOCKING AT STUD WALLS FOR WALL-MOUNTED ITEMS AND ACCESSORIES.
6. RECESSED WALL FIXTURES SUCH AS ELECTRICAL DEVICE BOXES AND OTHER ITEMS WHICH PENETRATE THE WALL SURFACE ON BOTH SIDES SHALL NOT BE LOCATED DIRECTLY BACK-TO-BACK IN THE SAME STUD CAVITY.

FC-1 CONCRETE SLAB ON GRADE

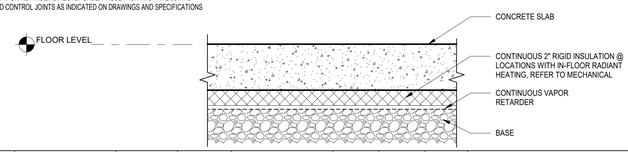
NOTES:
1. REFER TO STRUCTURE FOR STRUCTURAL SLABS
2. VERIFY CONCRETE THICKNESS AND REINFORCING WITH STRUCTURAL DRAWINGS
3. INSTALL VAPOR RETARDER DIRECTLY UNDER SLAB AND TAPE JOINTS
4. PROVIDED CONTROL JOINTS AS INDICATED ON DRAWINGS AND SPECIFICATIONS



FLOOR TYPE	CONCRETE		VAPOR RETARDER	GRANULAR FILL	TOPPING		FIRE RATING	FIRE TEST	SOUND CONTROL	STRUCTURAL SYSTEM				
	TYPE	THICK			TYPE	THICK				TYPE	THICK	SHTG	FRAMING	INSUL
FC-1	NA	4"	VR-3	VARIES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

FC-2 INSULATED CONCRETE SLAB ON GRADE (SEE ALTERNATES)

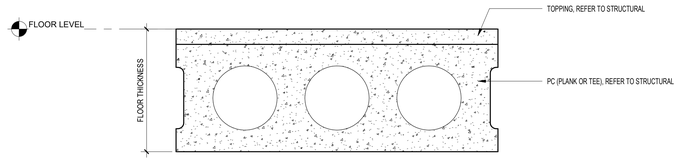
NOTES:
1. REFER TO STRUCTURE FOR STRUCTURAL SLABS
2. VERIFY CONCRETE THICKNESS AND REINFORCING WITH STRUCTURAL DRAWINGS
3. REFER TO MECHANICAL DRAWINGS FOR IN-FLOOR RADIANT HEAT LOCATIONS
4. INSTALL CONTINUOUS RIGID INSULATION UNDER SLABS AT LOCATIONS WITH IN-FLOOR RADIANT HEATING
5. INSTALL VAPOR RETARDER DIRECTLY UNDER INSULATION AND TAPE JOINTS
6. PROVIDED CONTROL JOINTS AS INDICATED ON DRAWINGS AND SPECIFICATIONS



FLOOR TYPE	CONCRETE		VAPOR RETARDER	GRANULAR FILL	TOPPING		FIRE RATING	FIRE TEST	SOUND CONTROL	STRUCTURAL SYSTEM				
	TYPE	THICK			TYPE	THICK				TYPE	THICK	SHTG	FRAMING	INSUL
FC-2	SEE STRUCT	SEE STRUCT	VR-3	VARIES	NA	NA	NA	NA	NA	NA	NA	NA	NA	2" INSUL-1G

FP-1 PRECAST

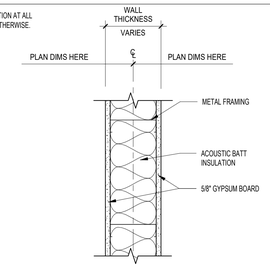
NOTES:
1. REFER TO STRUCTURAL DRAWINGS FOR PRECAST PROFILE & SIZE.
2. REFER TO STRUCTURAL DRAWINGS FOR THICKNESS OF TOPPING.



FLOOR TYPE	CONCRETE		VAPOR RETARDER	GRANULAR FILL	TOPPING		FIRE RATING	FIRE TEST	SOUND CONTROL	STRUCTURAL SYSTEM				
	TYPE	THICK			TYPE	THICK				TYPE	THICK	SHTG	FRAMING	INSUL
FP-1	SEE STRUCT	SEE STRUCT	NA	NA	SEE STRUCT	SEE STRUCT	NA	NA	NA	PC	SEE STRUCT	NA	NA	NA

S STEEL CONSTRUCTION PARTITION

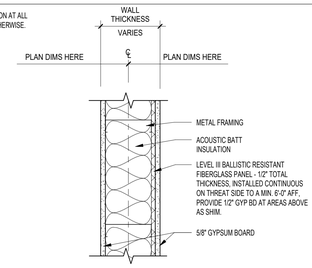
NOTE: PROVIDE ACOUSTIC BATT INSULATION AT ALL INTERIOR PARTITIONS UNLESS NOTED OTHERWISE.



WALL TYPE	THICK	STUD	SPACING	FIRE RATING	RESISTANCE RATING	STC		SOUND TEST	GYP BD #/LOCATION	COMMENT
						W/O INSUL	W/ INSUL			
S4	4 7/8"	3 5/8"	16" O.C.	NA	NA	NA	47	NA	1 LAYER / EA SIDE	
S6	7 1/4"	6"	16" O.C.	NA	NA	NA	47	NA	1 LAYER / EA SIDE	
S8	9 1/4"	8"	16" O.C.	NA	NA	NA	47	NA	1 LAYER / EA SIDE	

B STEEL CONSTRUCTION PARTITION

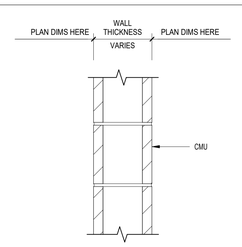
NOTE: PROVIDE ACOUSTIC BATT INSULATION AT ALL INTERIOR PARTITIONS UNLESS NOTED OTHERWISE.



WALL TYPE	THICK	STUD	SPACING	FIRE RATING	RESISTANCE RATING	STC		SOUND TEST	GYP BD #/LOCATION	COMMENT
						W/O INSUL	W/ INSUL			
B4	5 3/8"	3 5/8"	16" O.C.	NA	NA	NA	47	NA	1 LAYER / EA SIDE	
B6	7 3/4"	6"	16" O.C.	NA	NA	NA	47	NA	1 LAYER / EA SIDE	

M MASONRY PARTITION

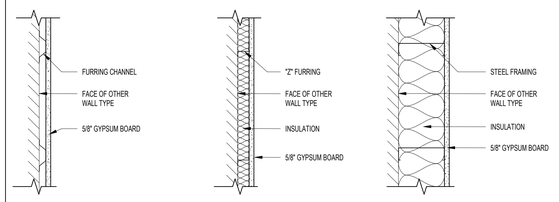
NOTE:
1. REFER TO STRUCTURAL FOR REINFORCING REQUIREMENTS.



WALL TYPE	DIMENSIONS		AVAILABLE FIRE RESISTANCE	ACOUSTICAL RATING	COMMENT
	ACTUAL	NOMINAL			
M4	3 5/8"	4"	NA	NA	
M6	5 5/8"	6"	NA	NA	
M8	7 5/8"	8"	NA	NA	
M10	9 5/8"	10"	NA	NA	
M12	11 5/8"	12"	NA	NA	

T METAL FURRING PARTITION

NOTE: PROVIDE ACOUSTIC BATT INSULATION AT ALL INTERIOR PARTITIONS UNLESS NOTED OTHERWISE



WALL TYPE	THICK	STUD	SPACING	FIRE RATING	RESISTANCE RATING	STC		SOUND TEST	GYP BD #/LOCATION	COMMENT
						W/O INSUL	W/ INSUL			
T0	1 1/2"	7/8"	16" O.C	NA	NA	NA	NA	NA	1 LAYER	
T1	2 1/4"	1 5/8"	16" O.C	NA	NA	NA	NA	NA	1 LAYER	
T2	3 1/8"	2 1/2"	16" O.C	NA	NA	NA	NA	NA	1 LAYER	
T4	4 1/4"	3 5/8"	16" O.C	NA	NA	NA	NA	NA	1 LAYER	

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PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION

CERTIFICATION

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DRAWN BY	MJH
CHECKED BY	DHJ
COMMISSION NUMBER	2106-02

SHEET TITLE

CONSTRUCTION TYPES - INTERIOR

SHEET NUMBER

A602

BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_AI_R19.rvt
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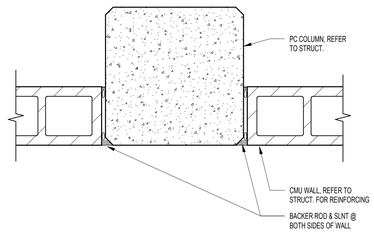
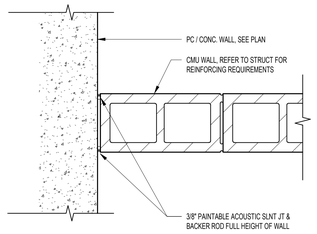
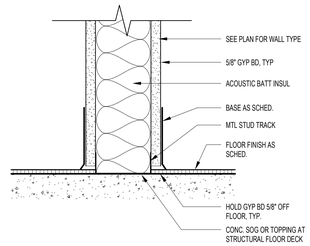


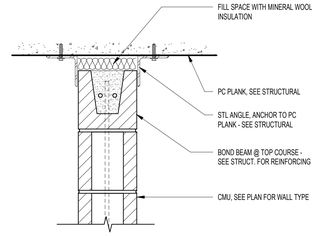
1 A603 DETAIL - CMU WALL @ PC COLUMN (TYP)
1 1/2" = 1'-0"



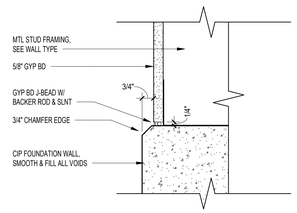
2 A603 DETAIL - CMU WALL @ CIP WALL (TYP)
1 1/2" = 1'-0"



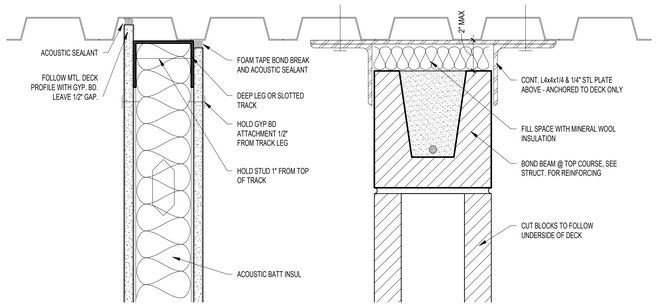
3 A603 DETAIL - METAL STUD PARTITION @ SOG
3" = 1'-0"



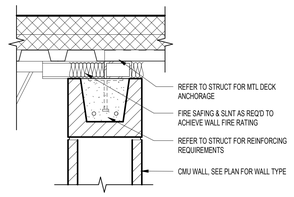
4 A603 DETAIL - NON-BEARING CMU WALL TO PLANK
1 1/2" = 1'-0"



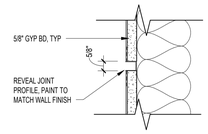
5 A603 GYP BD TRANSITION TO CIP WALL
3" = 1'-0"



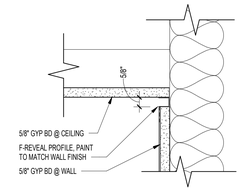
6 A603 NON-BEARING PARTITION AT MTL DECK
3" = 1'-0"



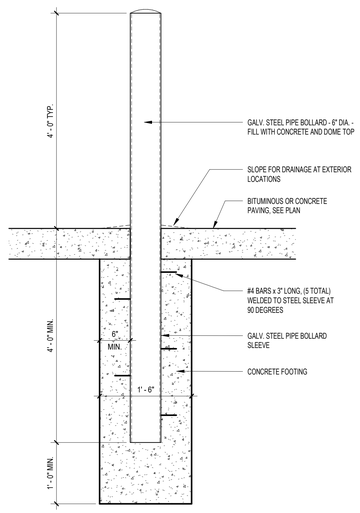
7 A603 CMU SHAFT WALL TO MTL DECK
1 1/2" = 1'-0"



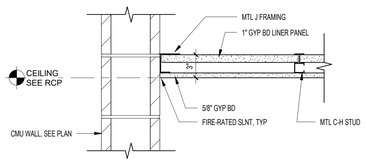
8 A603 GYP BD - WALL REVEAL
3" = 1'-0"



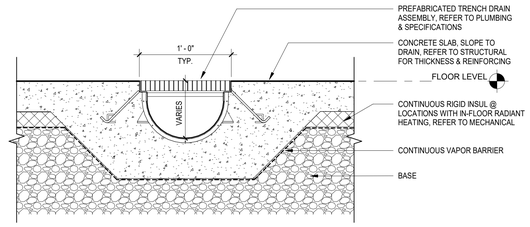
9 A603 GYP BD - WALL / CEILING REVEAL
3" = 1'-0"



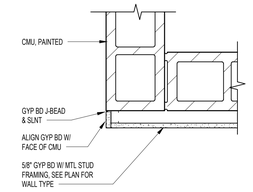
10 A603 DETAIL - CONC. FILLED STEEL BOLLARD (TYP)
1" = 1'-0"



11 A603 1-HR FIRE RATED HORIZONTAL ENCLOSURE
1 1/2" = 1'-0"



12 A603 TRENCH DRAIN @ SOG
1 1/2" = 1'-0"



13 A603 FURRING WALL TERMINATION @ CMU
1 1/2" = 1'-0"

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CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION

CERTIFICATION

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DRAWN BY	MJH
CHECKED BY	DHJ
COMMISSION NUMBER	2106-02

SHEET TITLE

CONSTRUCTION ASSEMBLY DETAILS

SHEET NUMBER

A603

BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_AI_R19.rvt
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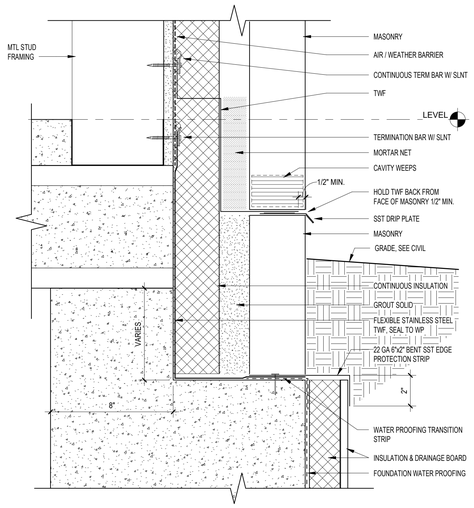
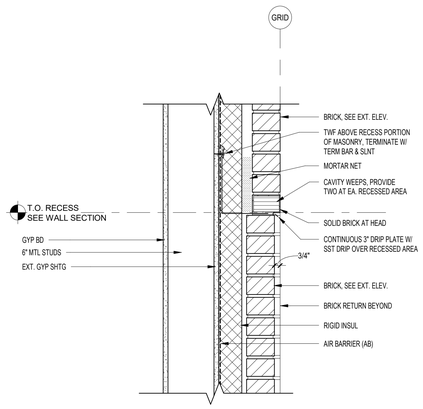
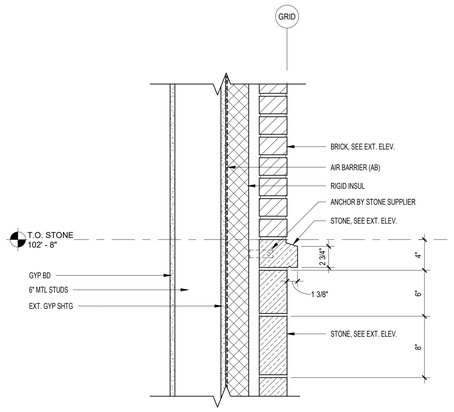


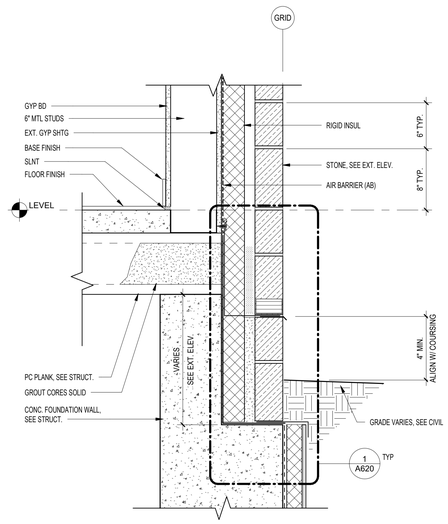
1 A620 TYPICAL WATER PROOFING TRANSITION AT GRADE
3" = 1'-0"



2 A620 DETAIL - HEAD @ RECESSED BRICK
1 1/2" = 1'-0"



3 A620 DETAIL - STONE TO BRICK TRANSITION
1 1/2" = 1'-0"



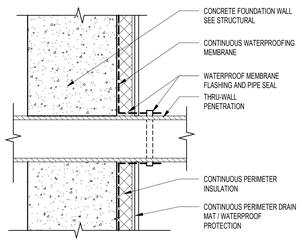
4 A620 BASE TRANSITION @ STONE EXTENDED LEDGE
1 1/2" = 1'-0"

5 A620 BASE TRANSITION @ STONE / CIP
1 1/2" = 1'-0"

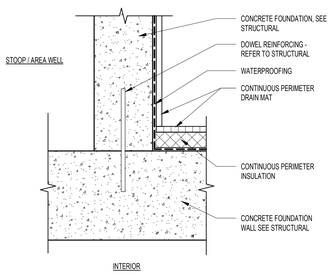
6 A620 DETAIL - SILL @ RECESSED BRICK
1 1/2" = 1'-0"

7 A620 BASE TRANSITION @ BRICK
1 1/2" = 1'-0"

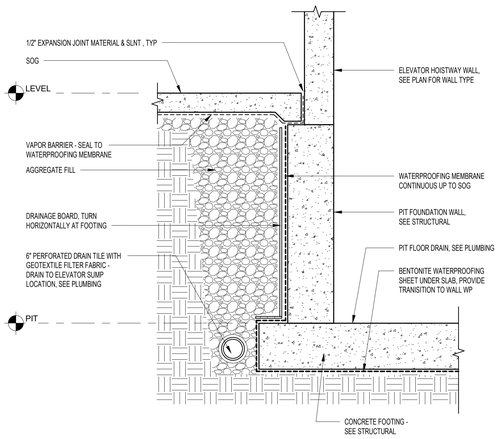
8 A620 BASE TRANSITION @ STONE
1 1/2" = 1'-0"



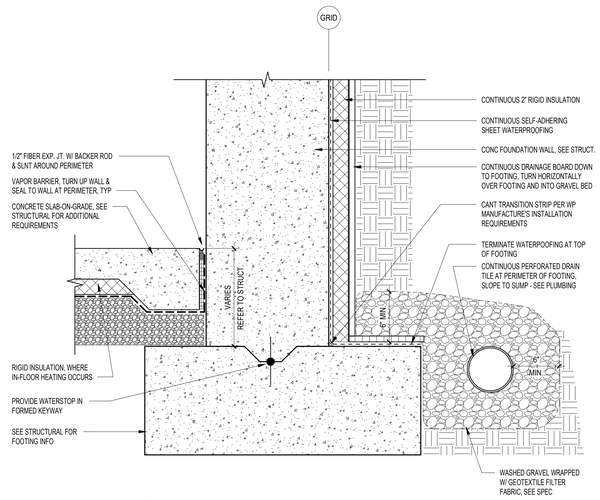
9 A620 TYPICAL FOUNDATION WALL PENETRATION
1 1/2" = 1'-0"



10 A620 TYPICAL PLAN DETAIL AT STOOP / AREA WELL
1 1/2" = 1'-0"



11 A620 ELEVATOR PIT WATERPROOFING (TYP)
3/4" = 1'-0"



12 A620 FOOTING & FOUNDATION (TYP)
1 1/2" = 1'-0"

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CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	MJH
CHECKED BY	DHJ
COMMISSION NUMBER	2106-02

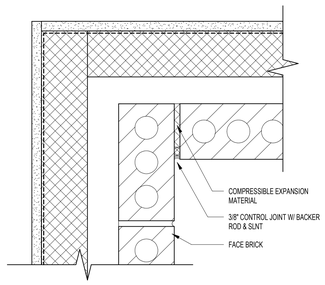
SHEET TITLE

DETAILS - BASE OF WALL

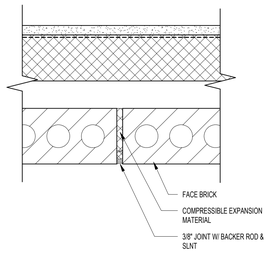
SHEET NUMBER

A620

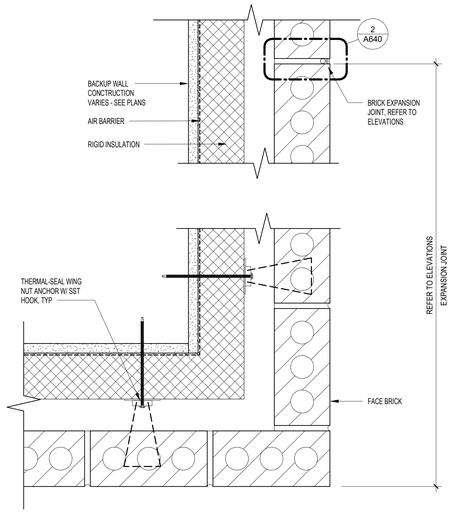
BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_A_R19.rvt
2/20/2020 9:46:52 AM



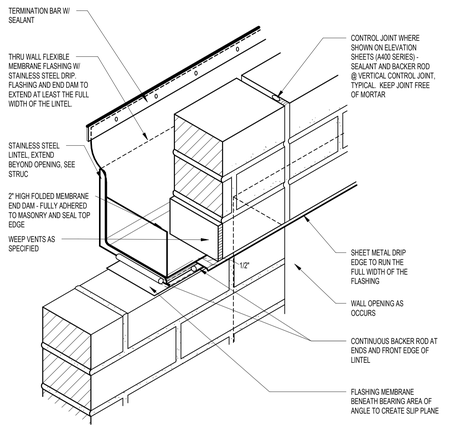
1 A640 BRICK INSIDE CORNER (TYP)
3" = 1'-0"



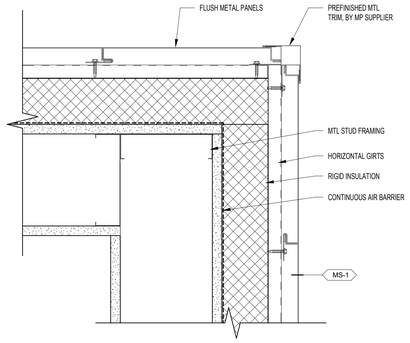
2 A640 BRICK EXPANSION JOINT (TYP)
3" = 1'-0"



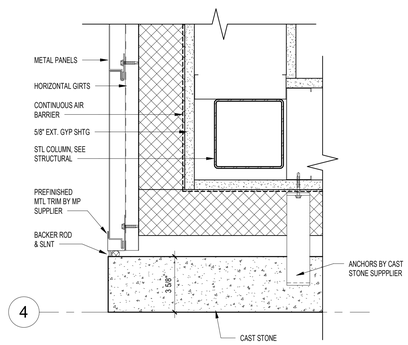
3 A640 BRICK OUTSIDE CORNER (TYP)
3" = 1'-0"



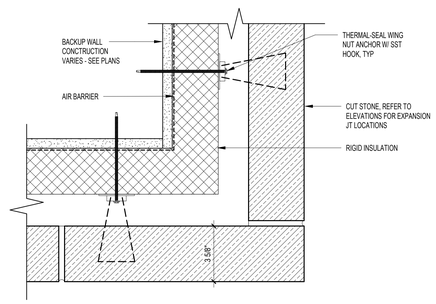
4 A640 BRICK VENEER AT CONTROL JOINT & LOOSE LINTEL (TYP)
3" = 1'-0"



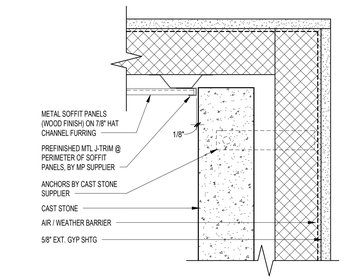
5 A640 METAL PANEL OUTSIDE CORNER (TYP)
3" = 1'-0"



6 A640 CAST STONE TO METAL PANEL TRANSITION
3" = 1'-0"



7 A640 STONE OUTSIDE CORNER (TYP)
3" = 1'-0"



8 A640 CAST STONE TO METAL SOFFIT PANELS
3" = 1'-0"

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PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION
	12/16/2019	DESIGN DEVELOPMENT

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	MJH
CHECKED BY	DHJ
COMMISSION NUMBER	2106-02

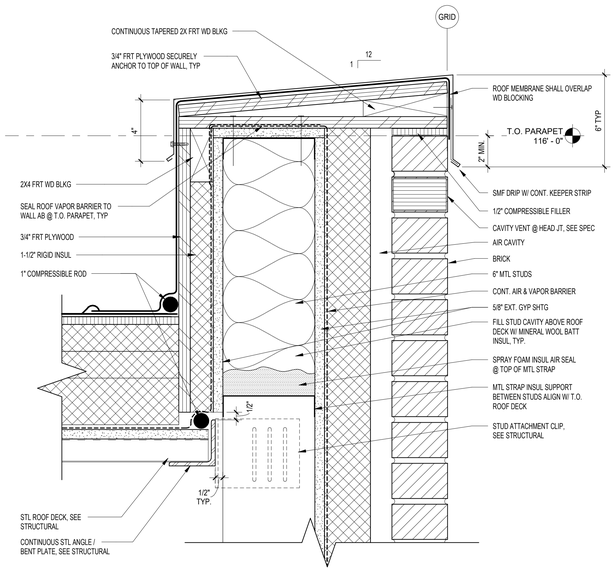
SHEET TITLE

DETAILS - MATERIAL TRANSITIONS

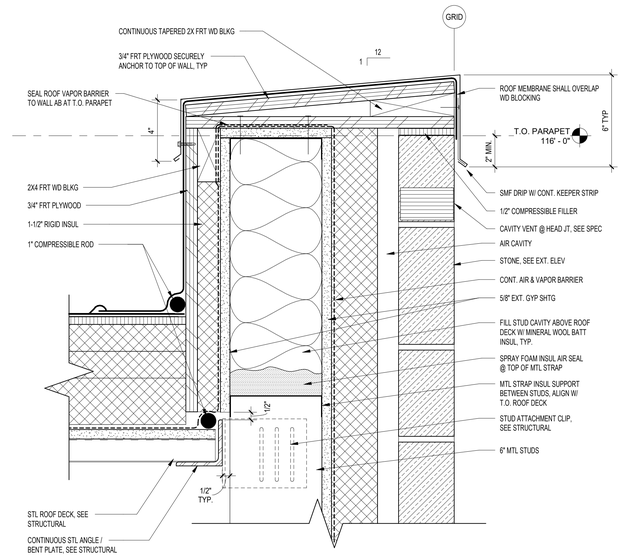
SHEET NUMBER

A640

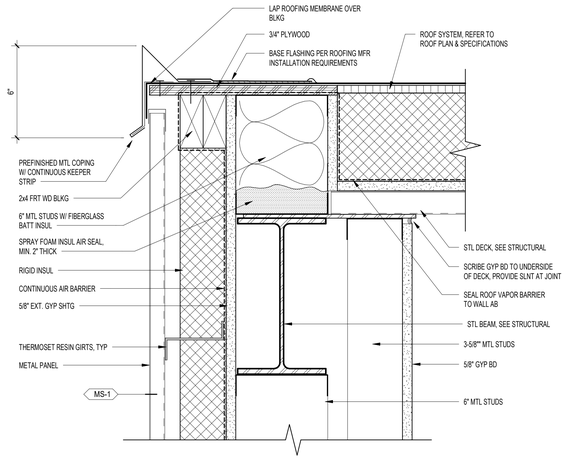
BIM 360:///2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_A!_R19.rvt
2/20/2020 9:46:53 AM



1 A650 ROOF PARAPET @ BRICK W/ MTL STUD BACKUP
3" = 1'-0"



2 A650 ROOF PARAPET @ STONE W/ MTL STUD BACKUP
3" = 1'-0"



3 A650 DETAIL - CLERESOTRY PARAPET
3" = 1'-0"

4 A650 DETAIL - PARAPET @ LOBBY ROOF
3" = 1'-0"

5 A650 DETAIL - THRU WALL SCUPPER @ LOBBY ROOF
3" = 1'-0"

6 A650 DETAIL - CLERESTORY ROOF EDGE
3" = 1'-0"

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SHEET TITLE

DETAILS - TOP OF WALL

SHEET NUMBER

A650

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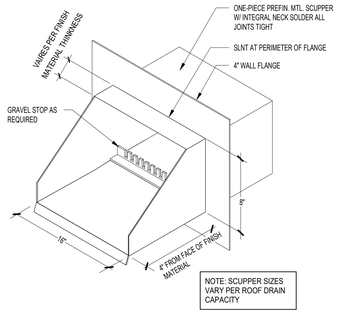
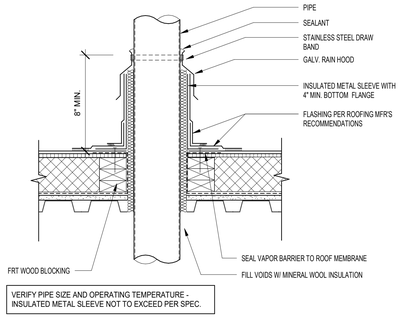
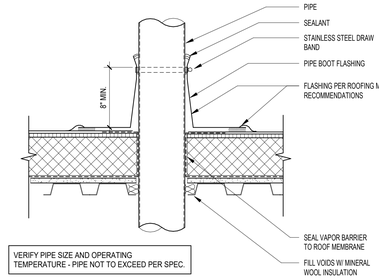


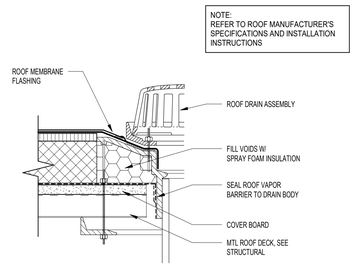
1 A660 OVERFLOW SCUPPER ISO
1 1/2" = 1'-0"



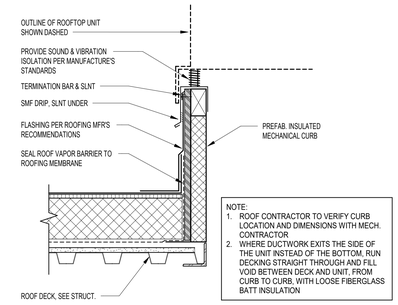
2 A660 TYPICAL HOT PIPE PENETRATION
1 1/2" = 1'-0"



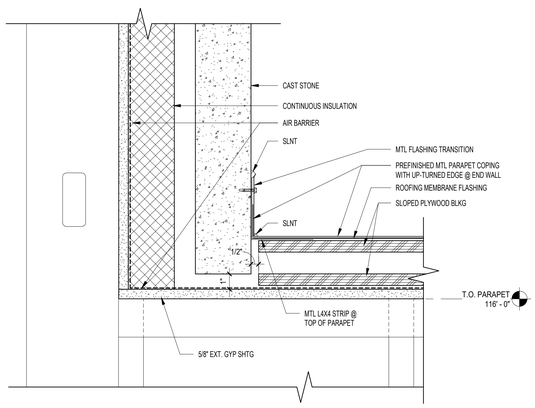
3 A660 TYPICAL COLD PIPE PENETRATION
1 1/2" = 1'-0"



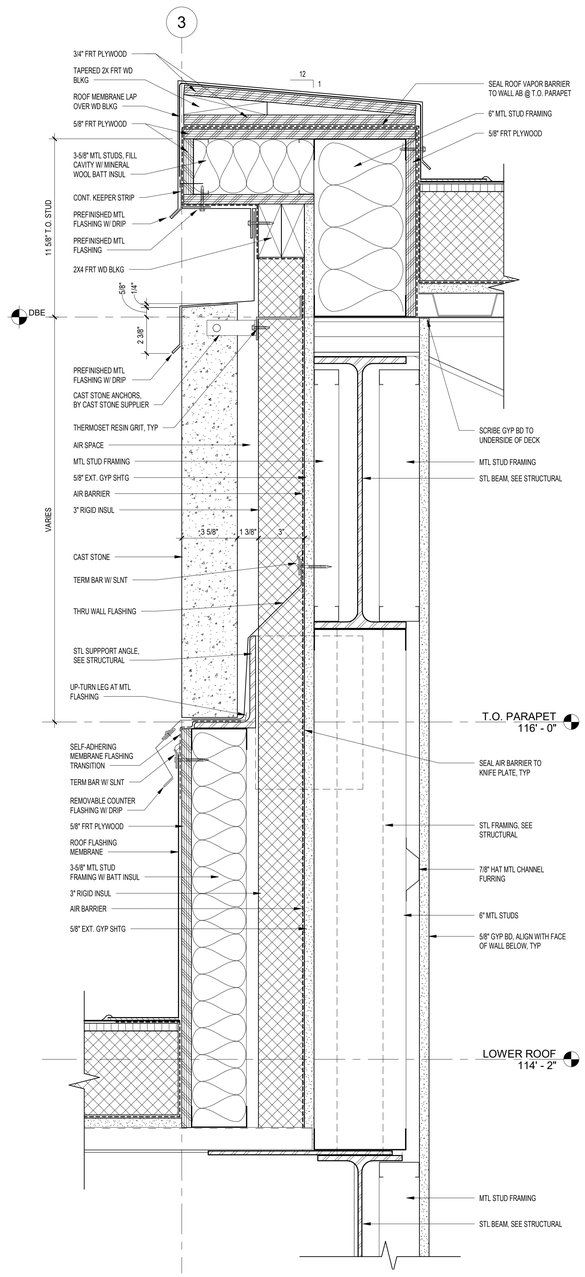
4 A660 TYPICAL ROOF DRAIN DETAIL
3" = 1'-0"



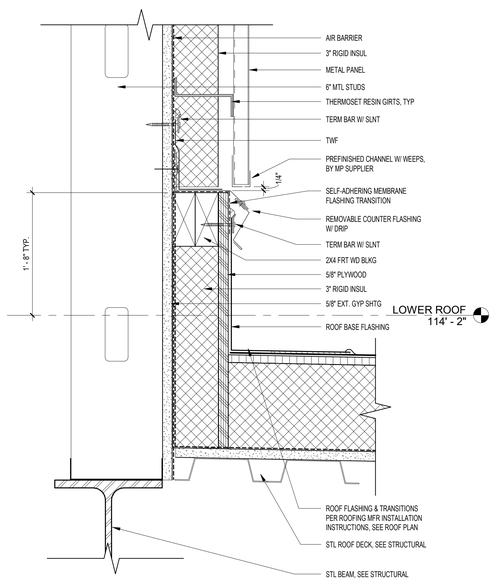
5 A660 MECHANICAL UNIT CURB
1 1/2" = 1'-0"



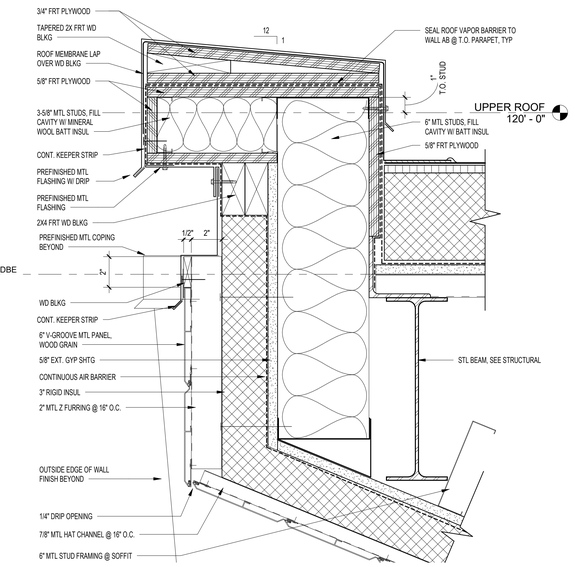
6 A660 PARAPET TO WALL TRANSITION
3" = 1'-0"



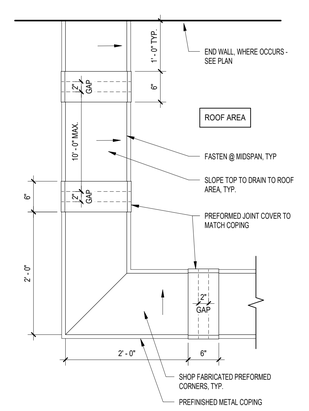
8 A660 DETAIL - ROOF TRANSITION @ CSTN
3" = 1'-0"



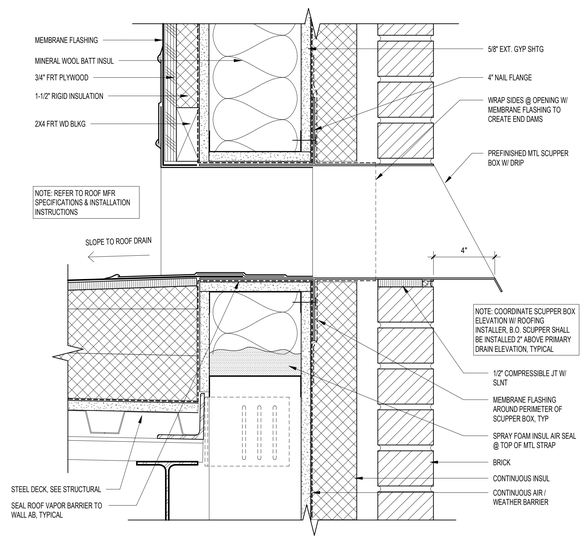
7 A660 DETAIL - ROOF TRANSITION @ METAL PANEL
3" = 1'-0"



9 A660 DETAIL - CANOPY EDGE
3" = 1'-0"



10 A660 COPING OUTSIDE CORNER (TYP)
1" = 1'-0"



11 A660 THRU WALL SCUPPER @ BRICK
3" = 1'-0"

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PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	MJH
CHECKED BY	DHJ
COMMISSION NUMBER	2106-02

SHEET TITLE

DETAILS - ROOF

SHEET NUMBER

A660

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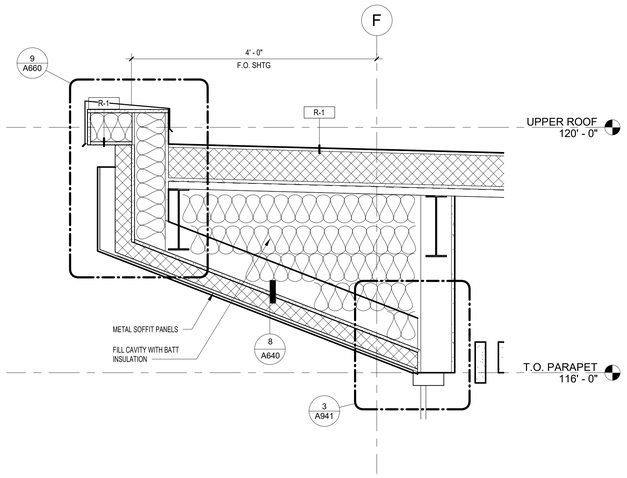
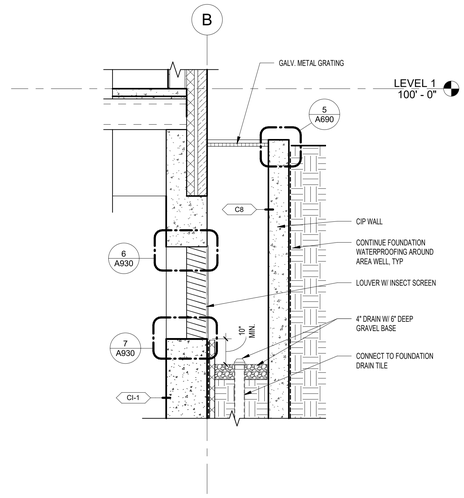
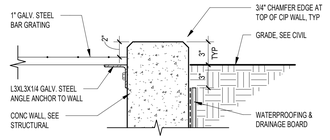
2/20/2020 9:46:57 AM



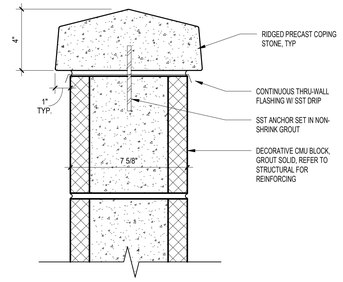
1 A690 DETAIL - CANOPY
1" = 1'-0"



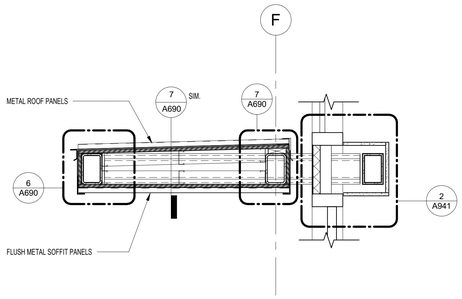
3 A690 SECTION @ AREA WELL
1/2" = 1'-0"



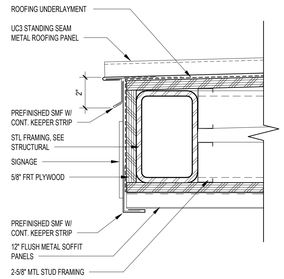
5 A690 DETAIL - TOP OF WALL @ AREA WELL
1 1/2" = 1'-0"



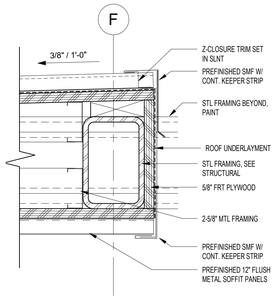
4 A690 TOP OF WALL - DECORATIVE CMU
3" = 1'-0"



2 A690 DETAIL - CANOPY @ VESTIBULE
1" = 1'-0"



6 A690 DETAIL - CANOPY DRIP EDGE
3" = 1'-0"



7 A690 DETAIL - CANOPY ROOF EDGE
3" = 1'-0"

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PROJECT TITLE

DETROIT LAKES
POLICE STATION

ISSUE #	DATE	DESCRIPTION

CERTIFICATION

NOT FOR CONSTRUCTION

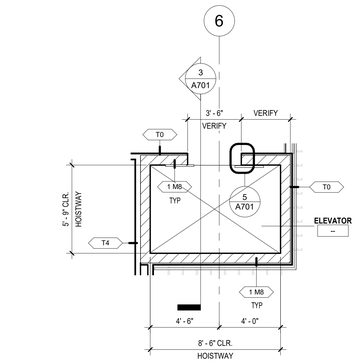
DRAWN BY	MJH
CHECKED BY	DHJ
COMMISSION NUMBER	2106-02

SHEET TITLE

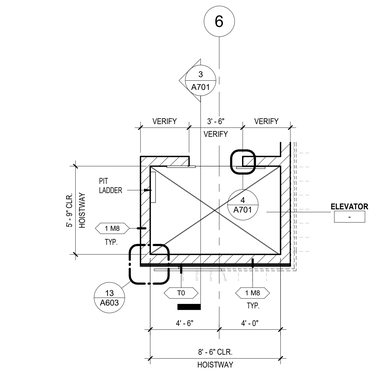
DETAILS
FEATURES

SHEET NUMBER

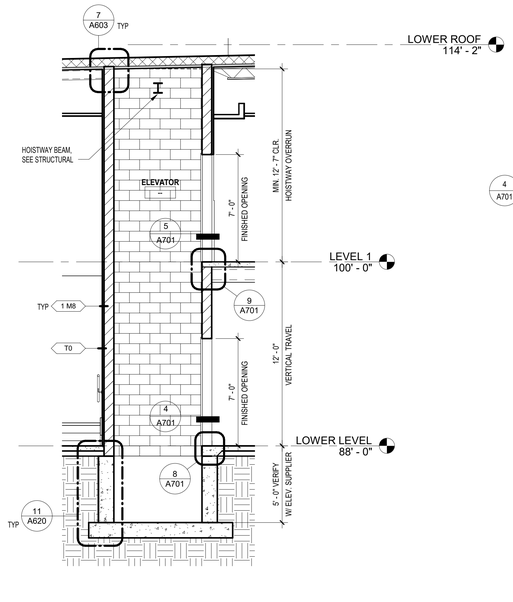
A690



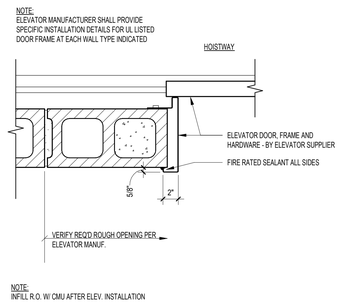
1 A701 LEVEL 1 - ELEVATOR PLAN
1/4" = 1'-0"



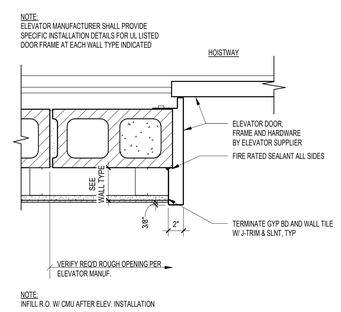
2 A701 LOWER LEVEL - ELEVATOR PLAN
1/4" = 1'-0"



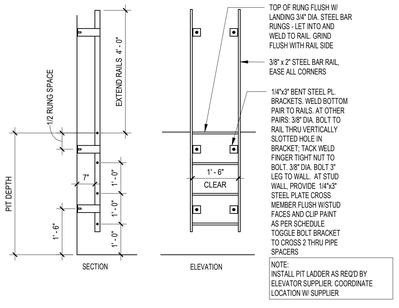
3 A701 SECTION - ELEVATOR SHAFT
1/4" = 1'-0"



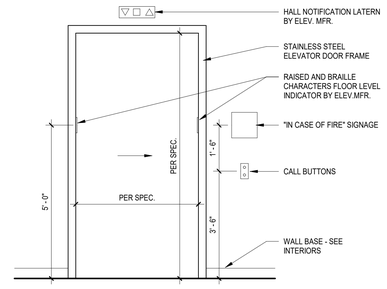
4 A701 DETAIL - ELEVATOR JAMB (HEAD SIM.)
1 1/2" = 1'-0"



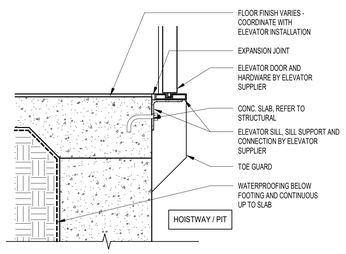
5 A701 DETAIL - ELEVATOR JAMB W/ TILE FINISH (HEAD SIM.)
1 1/2" = 1'-0"



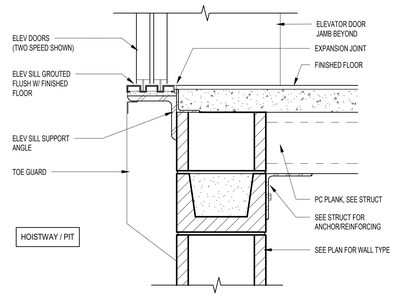
6 A701 ELEVATOR PIT ACCESS LADDER
1/2" = 1'-0"



7 A701 ELEVATOR DOOR ELEVATION
1/2" = 1'-0"



8 A701 ELEVATOR SILL @ CONCRETE SLAB
1 1/2" = 1'-0"



9 A701 ELEVATOR SILL @ STEEL DECK
1 1/2" = 1'-0"

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PROJECT TITLE

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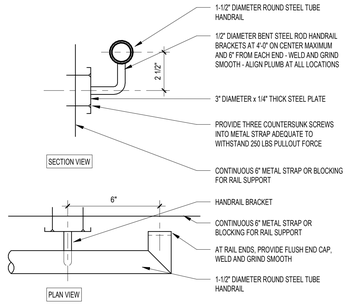
COMMISSION NUMBER	2106-02

SHEET TITLE

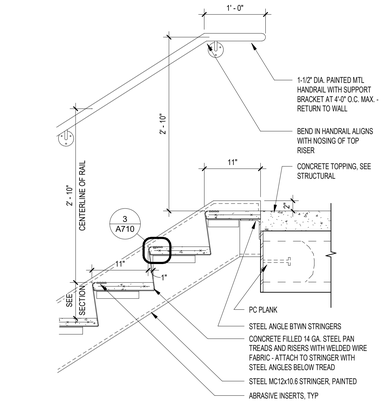
ELEVATOR PLANS, SECTIONS AND DETAILS

SHEET NUMBER

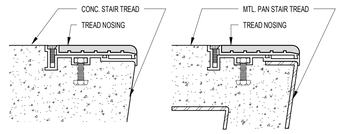
A701



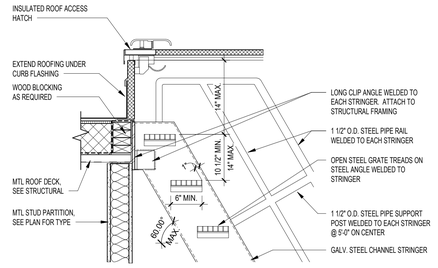
1 A710 HANDRAIL BRACKET
3" = 1'-0"



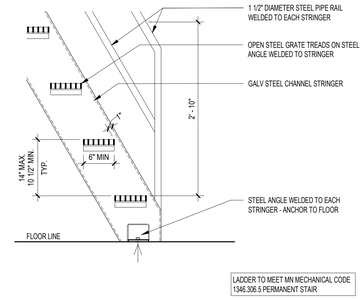
2 A710 STAIR HEAD PC PLANK
1" = 1'-0"



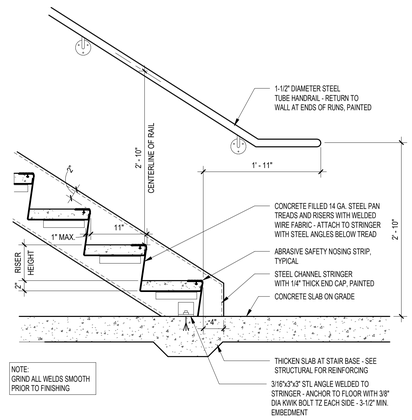
3 A710 STAIR NOSING - ABRASIVE INSERT
6" = 1'-0"



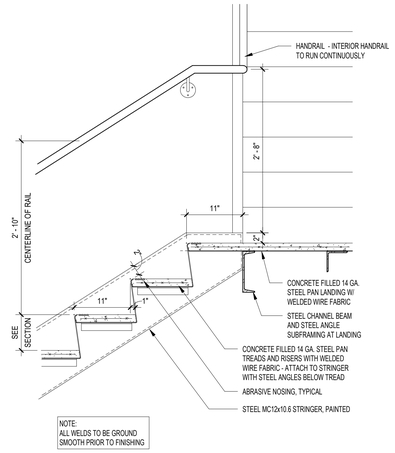
4 A710 ROOF HATCH AT STEEL ROOF DECK
1" = 1'-0"



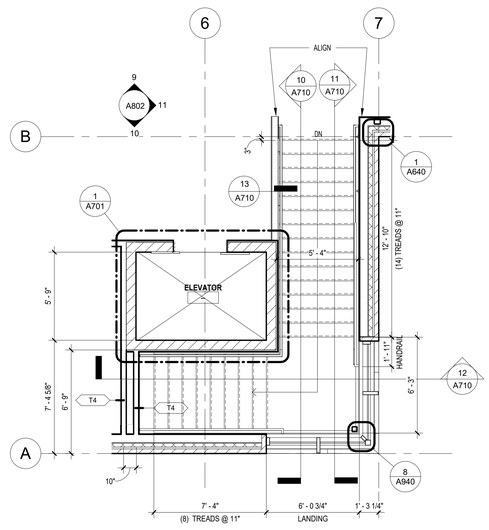
5 A710 ROOF ACCESS STAIR
1" = 1'-0"



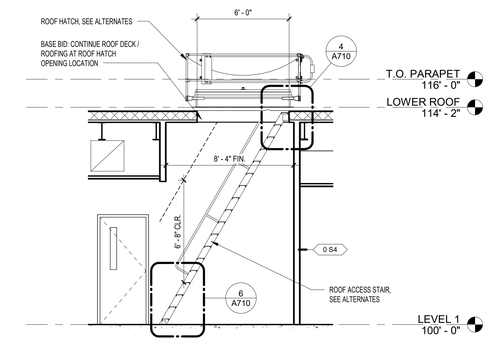
6 A710 STAIR LANDING AT SOG
1" = 1'-0"



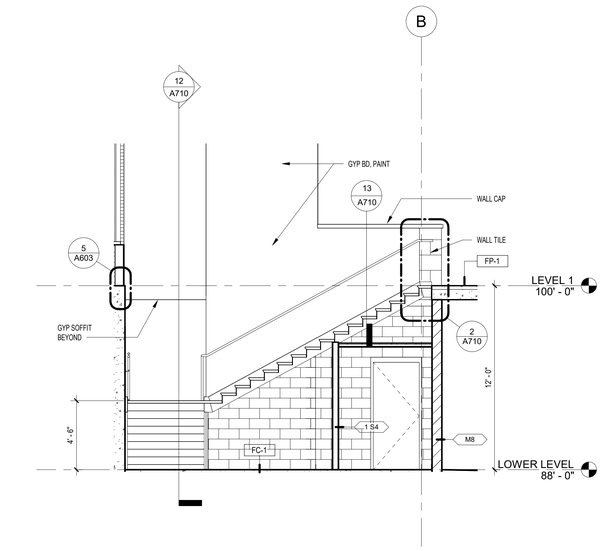
7 A710 STAIR HEAD AT INTERMEDIATE LANDING
1" = 1'-0"



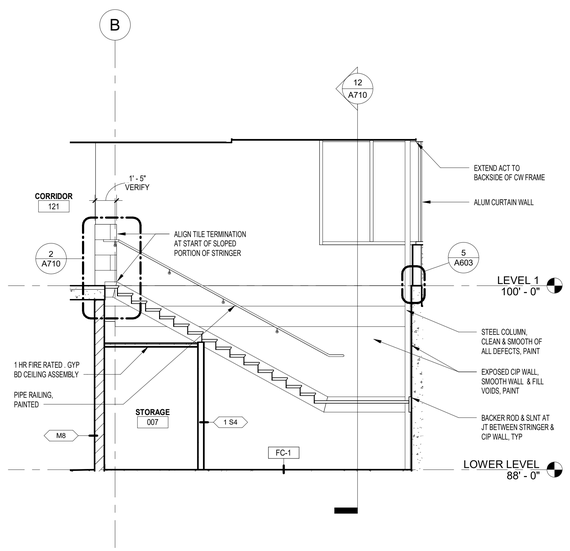
8 A710 LEVEL 1 - ELEVATOR / STAIR PLAN
1/4" = 1'-0"



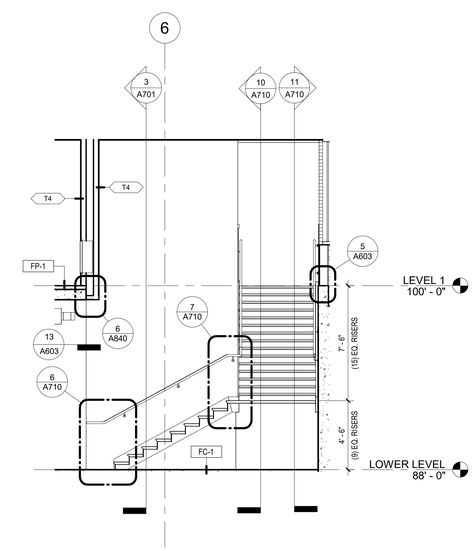
9 A710 SECTION @ ROOF ACCESS
1/4" = 1'-0"



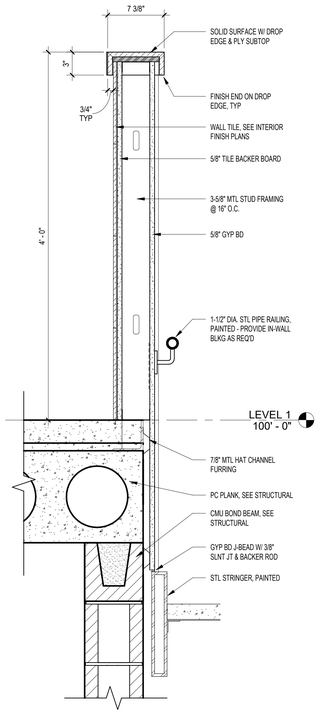
10 A710 SECTION @ STAIR
1/4" = 1'-0"



11 A710 SECTION @ STAIR
1/4" = 1'-0"



12 A710 SECTION @ STAIR
1/4" = 1'-0"



13 A710 EDGE OF PLANK @ STAIR
1 1/2" = 1'-0"

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CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	MJH
CHECKED BY	DHJ
COMMISSION NUMBER	2106-02

SHEET TITLE

STAIR PLANS, SECTIONS AND DETAILS

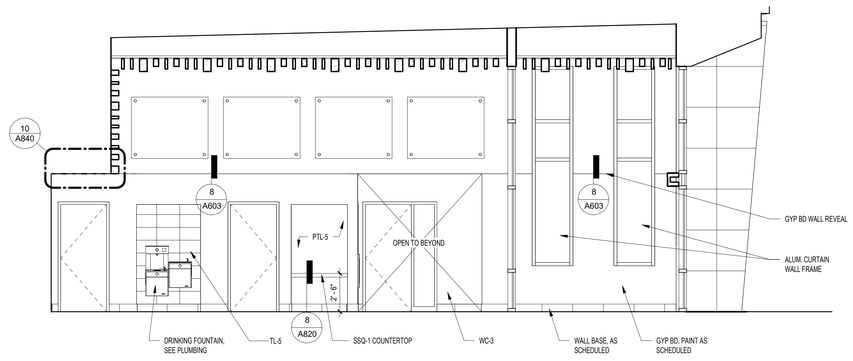
SHEET NUMBER

A710

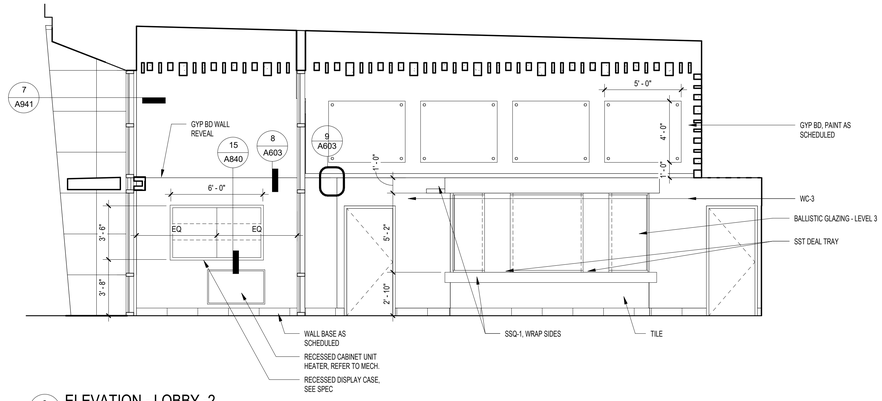
BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_AI_R19.rvt
2/20/2020 9:47:05 AM

GENERAL INTERIOR ELEVATION NOTES

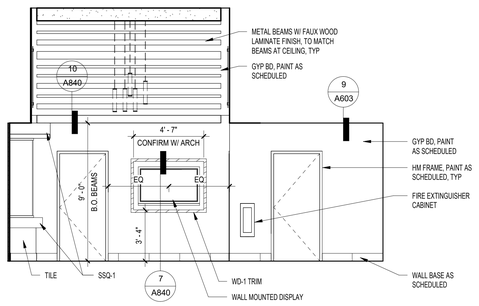
1. DO NOT SCALE DRAWINGS.
2. LOCATION OF DEVICES AND EQUIPMENT SHOWN ON DRAWINGS OF OTHER DISCIPLINES ARE SCHEMATIC AND GENERAL. SPECIFIC LOCATIONS AND GUIDELINES INDICATED ON THE ARCHITECTURAL DRAWINGS SHALL GOVERN THE LOCATION OF EXPOSED WORK OF ALL TRADES.
3. REFER TO SHEET G140 FOR TYPICAL MOUNTING HEIGHTS.
4. REFER TO INTERIOR FINISH SCHEDULE AND INTERIOR FINISH PLANS FOR ADDITIONAL INFORMATION.



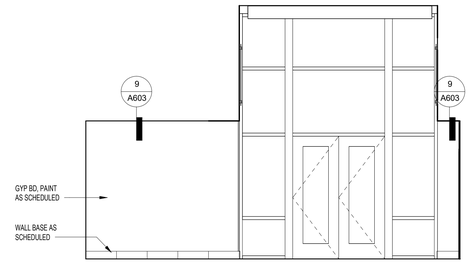
1 A801 ELEVATION - LOBBY - 4
1/4" = 1'-0"



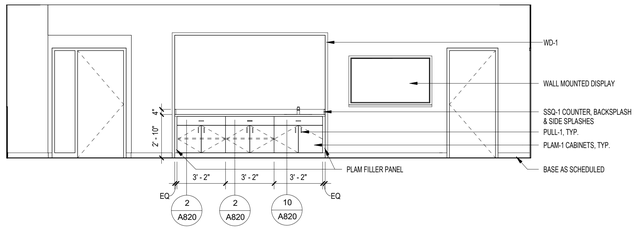
2 A801 ELEVATION - LOBBY -2
1/4" = 1'-0"



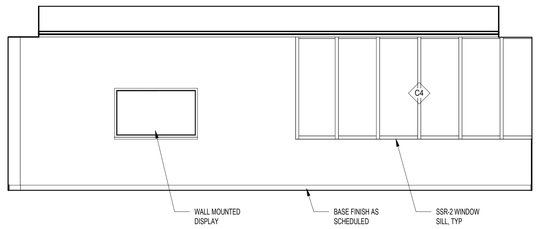
3 A801 ELEVATION - LOBBY - 3
1/4" = 1'-0"



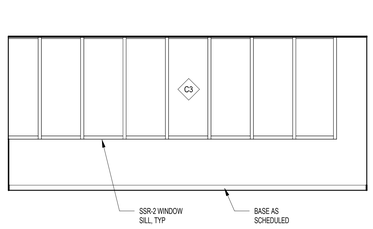
4 A801 ELEVATION - LOBBY -1
1/4" = 1'-0"



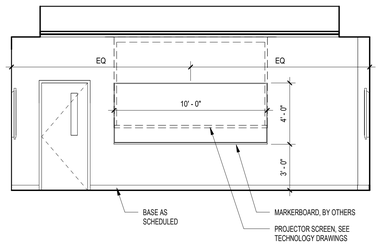
5 A801 ELEVATION - COMM. RM. - 2
1/4" = 1'-0"



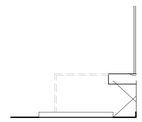
6 A801 ELEVATION - COMM. RM. - 4
1/4" = 1'-0"



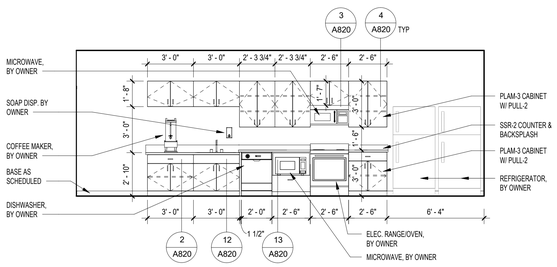
7 A801 ELEVATION - COMM. RM. - 1
1/4" = 1'-0"



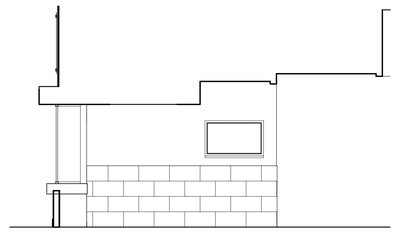
8 A801 ELEVATION - COMM. RM. - 3
1/4" = 1'-0"



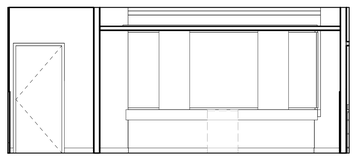
9 A801 ELEVATION - RECEPTION COUNTER
1/4" = 1'-0"



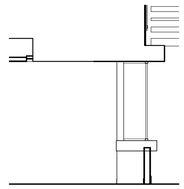
10 A801 ELEVATION - BREAK RM
1/4" = 1'-0"



11 A801 ELEVATION - RECORDS NORTH COUNTER
1/4" = 1'-0"



12 A801 ELEVATION - RECORDS COUNTER
1/4" = 1'-0"



13 A801 ELEVATION - RECORDS SOUTH COUNTER
1/4" = 1'-0"

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CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	MJH
CHECKED BY	DHJ
COMMISSION NUMBER	2106-02

SHEET TITLE

INTERIOR ELEVATIONS

SHEET NUMBER

A801

BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_AI_R19.rvt
2/20/2020 9:47:08 AM

GENERAL INTERIOR ELEVATION NOTES

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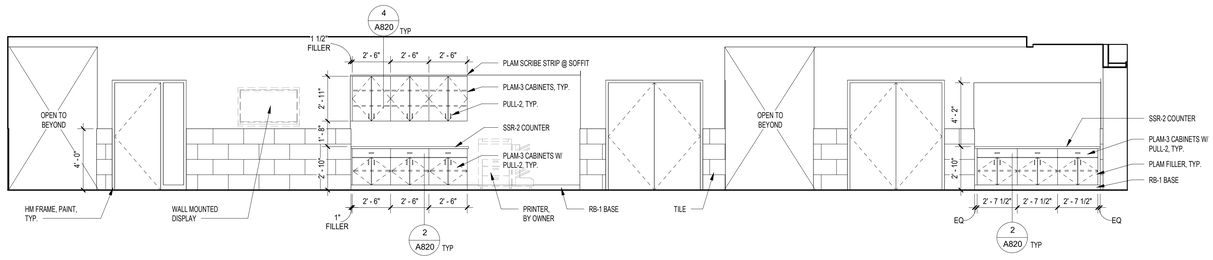
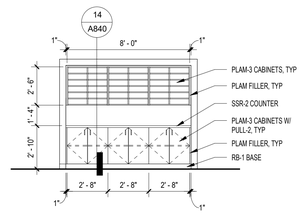
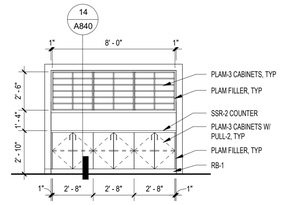


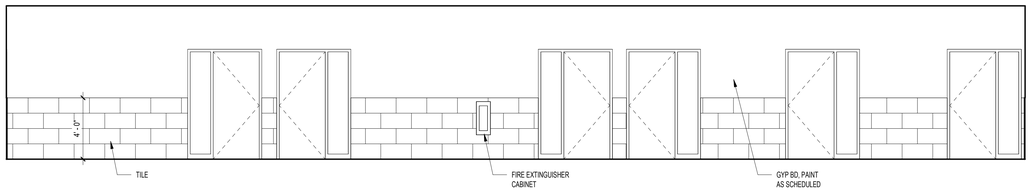
1 A802 ELEVATION - PATROL WORK COUNTER
1/4" = 1'-0"



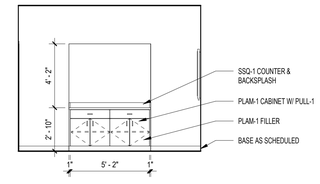
2 A802 ELEVATION - FORMS STORAGE
1/4" = 1'-0"



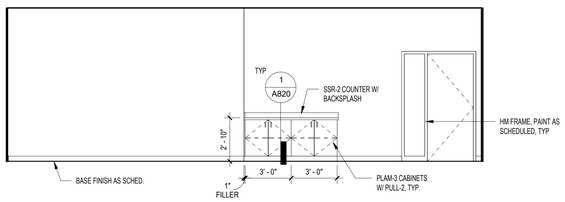
3 A802 ELEVATION - MAIL AREA
1/4" = 1'-0"



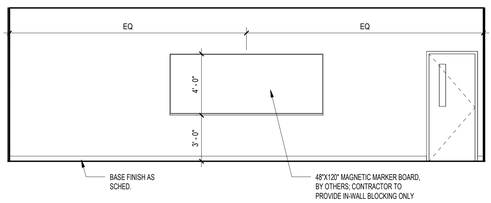
4 A802 ELEVATION - NORTH WALL OPEN OFFICE
1/4" = 1'-0"



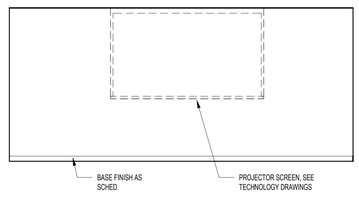
5 A802 ELEVATION - CONF 102
1/4" = 1'-0"



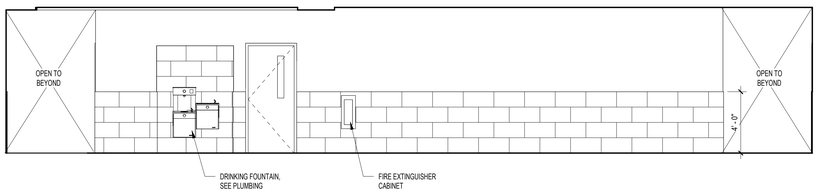
6 A802 ELEVATION - ROLL CALL - 1
1/4" = 1'-0"



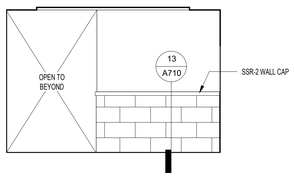
7 A802 ELEVATION - ROLL CALL - 3
1/4" = 1'-0"



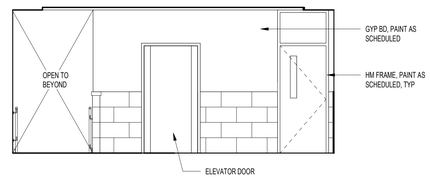
8 A802 ELEVATION - ROLL CALL - 4
1/4" = 1'-0"



9 A802 ELEVATION - CORRIDOR 121
1/4" = 1'-0"



11 A802 ELEVATION - STAIR PARTITION WALL
1/4" = 1'-0"



10 A802 ELEVATION - ELEVATOR LVL 1
1/4" = 1'-0"

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CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION
	12/16/2019	DESIGN DEVELOPMENT

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	MJH
CHECKED BY	DHJ
COMMISSION NUMBER	2106-02

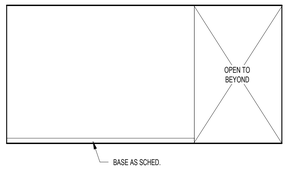
SHEET TITLE

INTERIOR ELEVATIONS

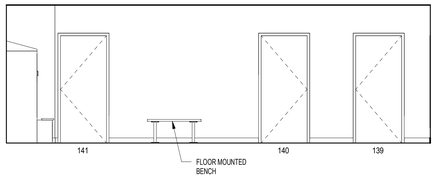
SHEET NUMBER

A802

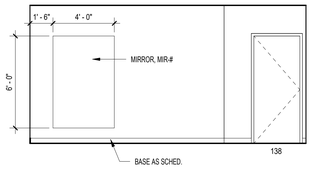
BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_AI_R19.rvt
2/20/2020 9:47:11 AM



1 A803 ELEVATION - MEN'S LOCKER -2
1/4" = 1'-0"



2 A803 ELEVATION - MEN'S LOCKER - 3
1/4" = 1'-0"



3 A803 ELEVATION - MEN'S LOCKER - 4
1/4" = 1'-0"

GENERAL INTERIOR ELEVATION NOTES

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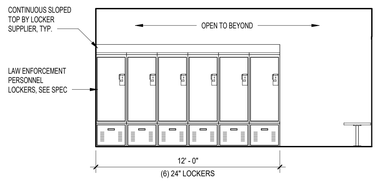
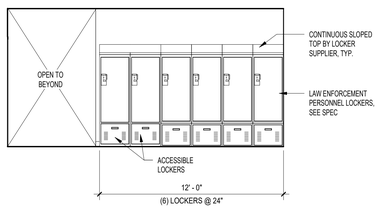
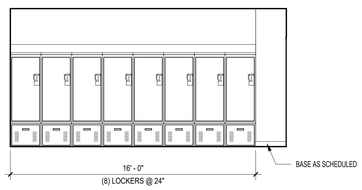


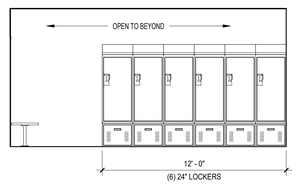
4 A803 ELEVATION - MEN'S LOCKER - 5
1/4" = 1'-0"



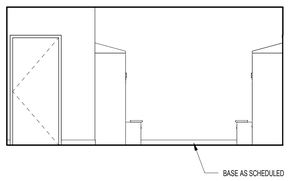
5 A803 ELEVATION - MEN'S LOCKER - 6
1/4" = 1'-0"



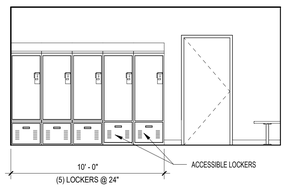
6 A803 ELEVATION - MEN'S LOCKER - 7
1/4" = 1'-0"



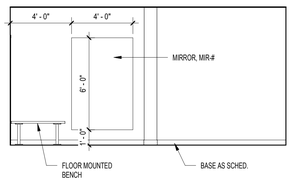
7 A803 ELEVATION - MEN'S LOCKER - 8
1/4" = 1'-0"



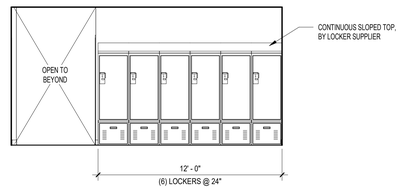
8 A803 ELEVATION - WOMEN'S LOCKER - 2
1/4" = 1'-0"



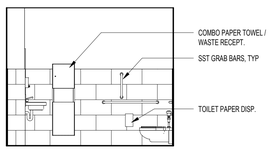
9 A803 ELEVATION - WOMEN'S LOCKER - 3
1/4" = 1'-0"



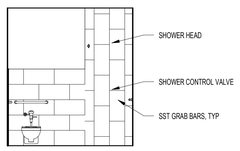
10 A803 ELEVATION - WOMEN'S LOCKER - 4
1/4" = 1'-0"



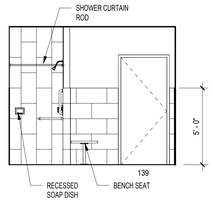
11 A803 ELEVATION - WOMEN'S LOCKER - 5
1/4" = 1'-0"



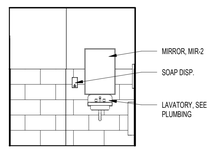
12 A803 ELEVATION - SHOWER 139 - 1
1/4" = 1'-0"



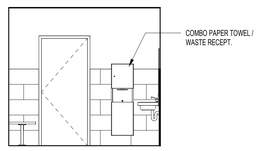
13 A803 ELEVATION - SHOWER 139 - 2
1/4" = 1'-0"



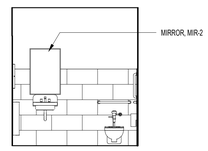
14 A803 ELEVATION - SHOWER 139 - 3
1/4" = 1'-0"



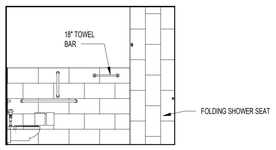
15 A803 ELEVATION - SHOWER 139 - 4
1/4" = 1'-0"



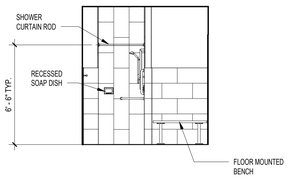
16 A803 ELEVATION - SHOWER 137 - 1
1/4" = 1'-0"



17 A803 ELEVATION - SHOWER 137 - 2
1/4" = 1'-0"



18 A803 ELEVATION - SHOWER 137 - 3
1/4" = 1'-0"



19 A803 ELEVATION - SHOWER 137 - 4
1/4" = 1'-0"

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CONSULTANTS

PROJECT TITLE

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CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	MJH
CHECKED BY	DHJ
COMMISSION NUMBER	2106-02

SHEET TITLE

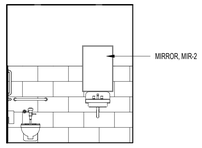
INTERIOR ELEVATIONS

SHEET NUMBER

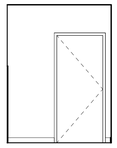
A803

GENERAL INTERIOR ELEVATION NOTES

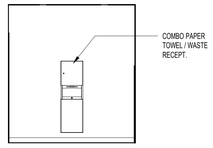
1. DO NOT SCALE DRAWINGS.
2. LOCATION OF DEVICES AND EQUIPMENT SHOWN ON DRAWINGS OF OTHER DISCIPLINES ARE SCHEMATIC AND GENERAL. SPECIFIC LOCATIONS AND GUIDELINES INDICATED ON THE ARCHITECTURAL DRAWINGS SHALL GOVERN THE LOCATION OF EXPOSED WORK OF ALL TRADES.
3. REFER TO SHEET G140 FOR TYPICAL MOUNTING HEIGHTS.
4. REFER TO INTERIOR FINISH SCHEDULE AND INTERIOR FINISH PLANS FOR ADDITIONAL INFORMATION.



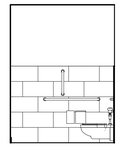
1 A804 ELEVATION - TOILET 119 - 1
1/4" = 1'-0"



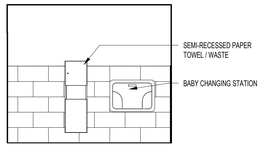
2 A804 ELEVATION - TOILET 119 - 2
1/4" = 1'-0"



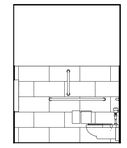
3 A804 ELEVATION - TOILET 119 - 3
1/4" = 1'-0"



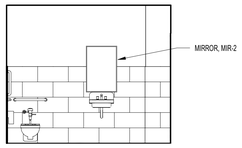
4 A804 ELEVATION - TOILET 119 - 4
1/4" = 1'-0"



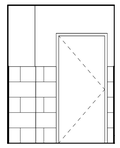
5 A804 ELEVATION - W. TOILET 133 - 1
1/4" = 1'-0"



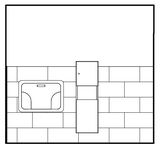
6 A804 ELEVATION - W. TOILET 133 - 2
1/4" = 1'-0"



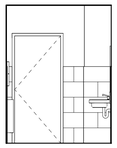
7 A804 ELEVATION - W. TOILET 133 - 3
1/4" = 1'-0"



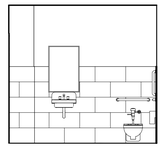
8 A804 ELEVATION - W. TOILET 133 - 4
1/4" = 1'-0"



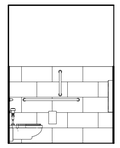
9 A804 ELEVATION - MEN 132 - 1
1/4" = 1'-0"



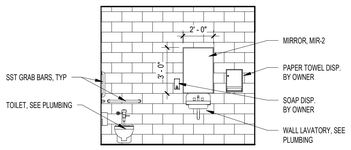
10 A804 ELEVATION - MEN 132 -2
1/4" = 1'-0"



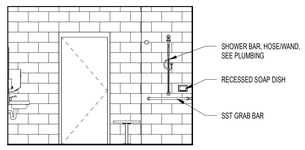
11 A804 ELEVATION - MEN 132 -3
1/4" = 1'-0"



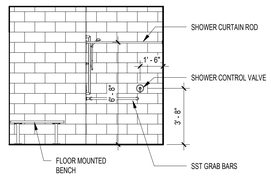
12 A804 ELEVATION - MEN 132 -4
1/4" = 1'-0"



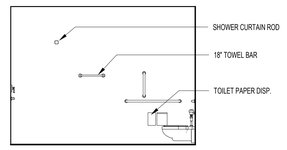
13 A804 ELEVATION - DECON TOILET - 1
1/4" = 1'-0"



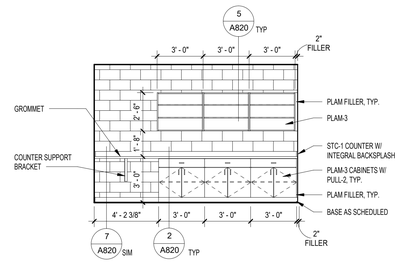
14 A804 ELEVATION - DECON TOILET - 2
1/4" = 1'-0"



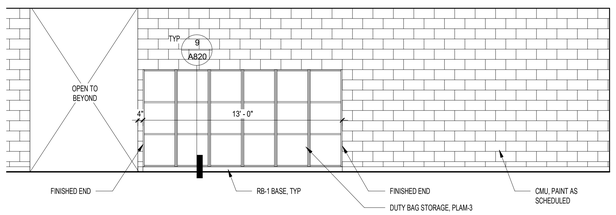
15 A804 ELEVATION - DECON TOILET - 3
1/4" = 1'-0"



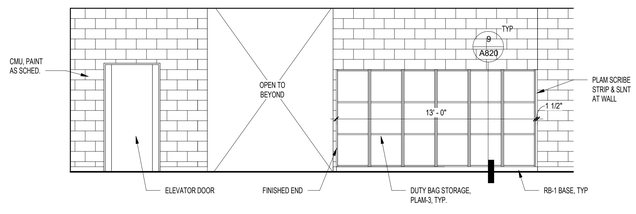
16 A804 ELEVATION - DECON TOILET - 4
1/4" = 1'-0"



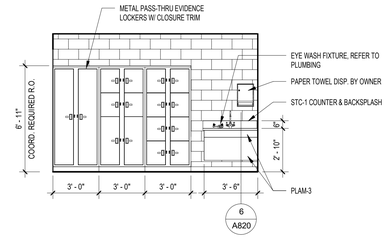
17 A804 ELEVATION - EVIDENCE INTAKE
1/4" = 1'-0"



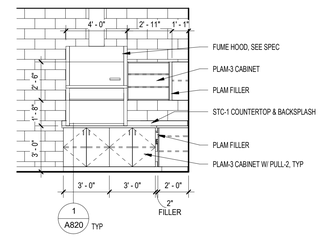
18 A804 ELEVATION - DUTY BAG STORAGE - 1
1/4" = 1'-0"



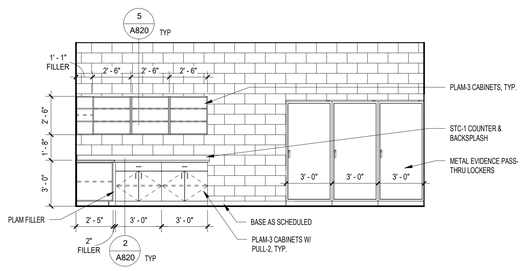
19 A804 ELEVATION - DUTY BAG STORAGE - 2
1/4" = 1'-0"



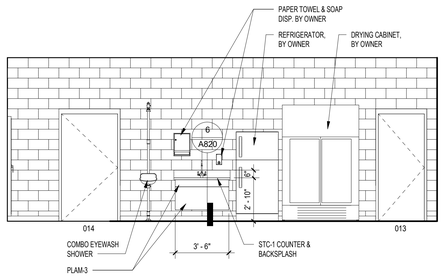
20 A804 ELEVATION - EVIDENCE PASS-THRU LOCKERS
1/4" = 1'-0"



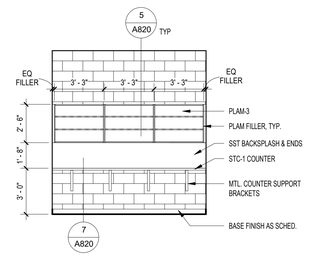
21 A804 ELEVATION - EVIDENCE STORAGE - 1
1/4" = 1'-0"



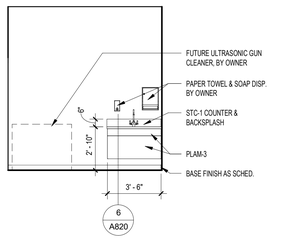
22 A804 ELEVATION - EVIDENCE STORAGE - 2
1/4" = 1'-0"



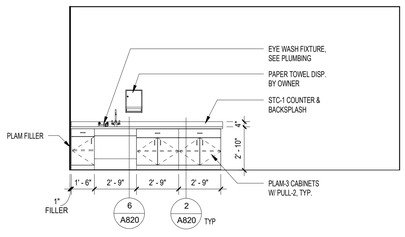
23 A804 ELEVATION - EVIDENCE STORAGE - 3
1/4" = 1'-0"



24 A804 ELEVATION - WEAPON CLEANING
1/4" = 1'-0"



25 A804 ELEVATION - WEAPON CLEANING SINK
1/4" = 1'-0"



26 A804 ELEVATION - EVIDENCE BAY
1/4" = 1'-0"

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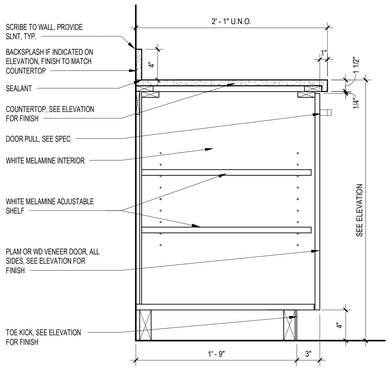
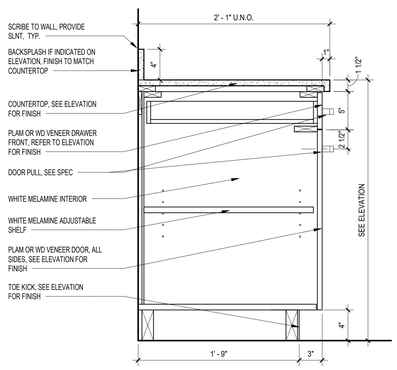
INTERIOR ELEVATIONS

SHEET NUMBER

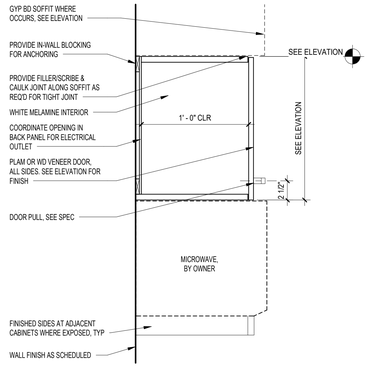
A804



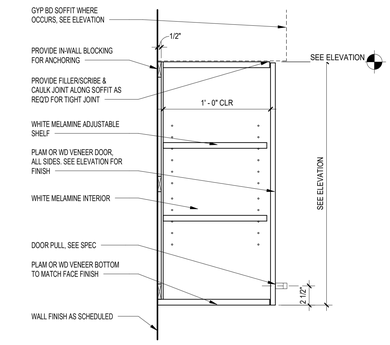
1 A820 BASE CABINET
1 1/2" = 1'-0"



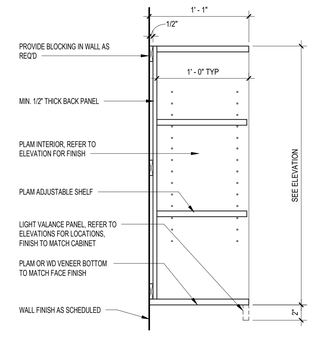
2 A820 BASE CABINET W/ DRAWER
1 1/2" = 1'-0"



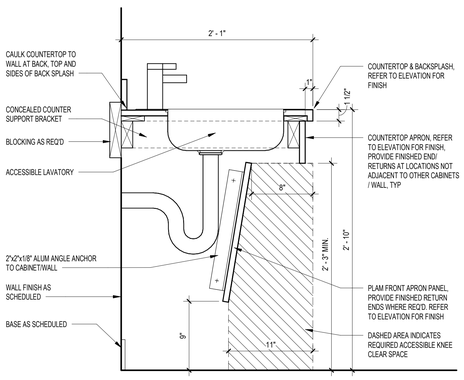
3 A820 MICROWAVE (ABOVE RANGE) CABINET SECTION
1 1/2" = 1'-0"



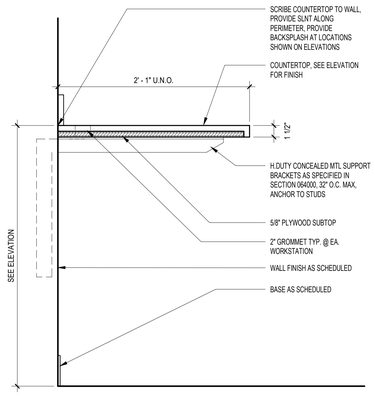
4 A820 UPPER CABINET SECTION
1 1/2" = 1'-0"



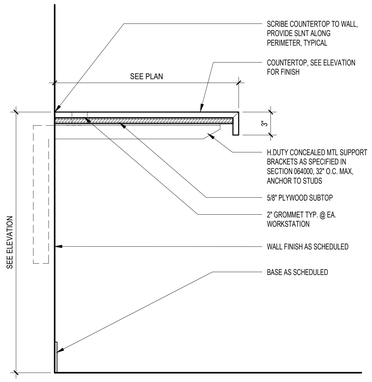
5 A820 UPPER CABINET SECTION - OPEN
1 1/2" = 1'-0"



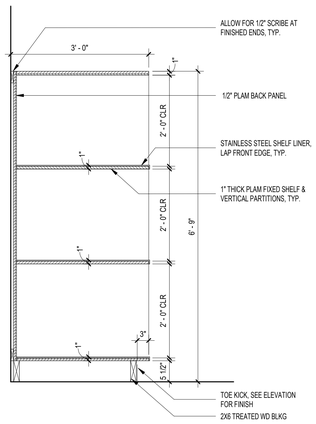
6 A820 ACCESSIBLE SINK APRON CABINET - FORWARD APPROACH
1 1/2" = 1'-0"



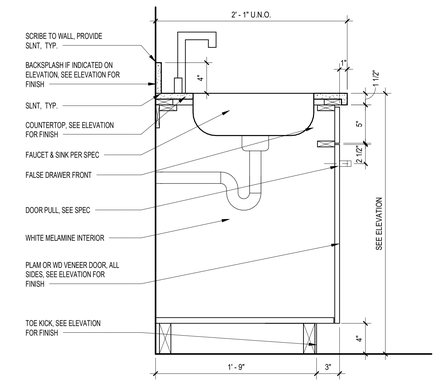
7 A820 COUNTER W/ WALL BRACKETS
1 1/2" = 1'-0"



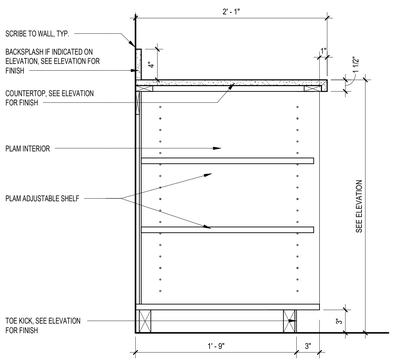
8 A820 COUNTER W/ WALL BRACKETS @ LOBBY
1 1/2" = 1'-0"



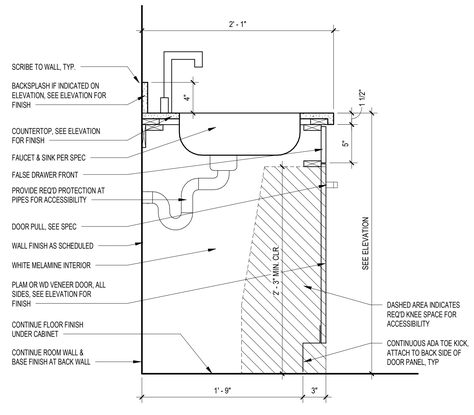
9 A820 DUTY BAG STORAGE
3/4" = 1'-0"



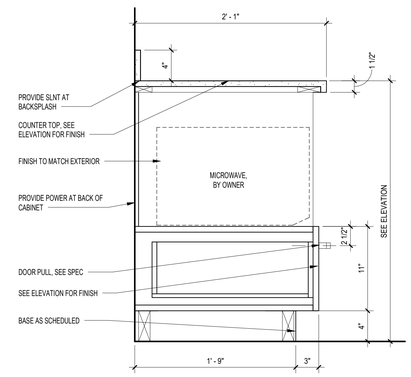
10 A820 SINK BASE CABINET
1 1/2" = 1'-0"



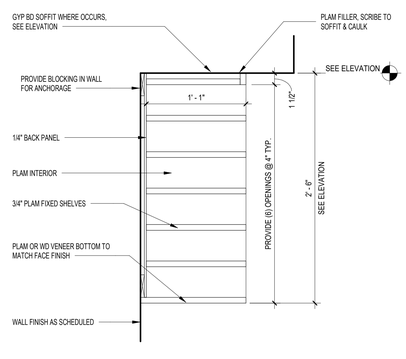
11 A820 BASE CABINET - OPEN
1 1/2" = 1'-0"



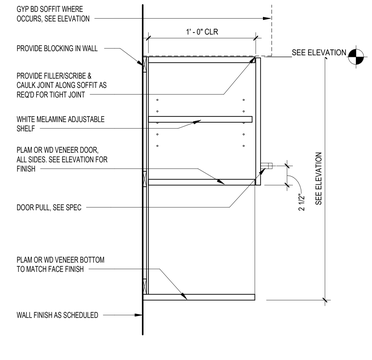
12 A820 ACCESSIBLE SINK BASE CABINET - FORWARD APPROACH
1 1/2" = 1'-0"



13 A820 BASE CABINET SECTION WITH MICROWAVE
1 1/2" = 1'-0"



14 A820 UPPER CABINET SECTION @ MAIL / FORM STORAGE
1 1/2" = 1'-0"



15 A820 UPPER CABINET SECTION @ RECORDS COUNTER
1 1/2" = 1'-0"

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CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	Author
CHECKED BY	MJH
COMMISSION NUMBER	2106-02

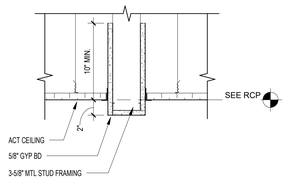
SHEET TITLE

MILLWORK SECTIONS

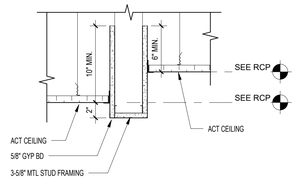
SHEET NUMBER

A820

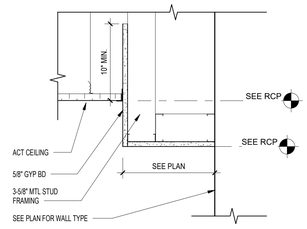
BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_AI_R19.rvt
2/20/2020 9:47:22 AM



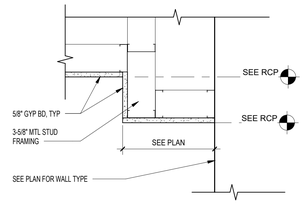
1 A840 ACT BULKHEAD DETAIL
1 1/2" = 1'-0"



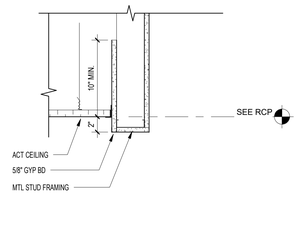
2 A840 ACT OFFSET BULKHEAD DETAIL
1 1/2" = 1'-0"



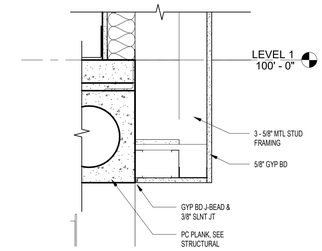
3 A840 ACT TO GYP-1 SOFFIT
1 1/2" = 1'-0"



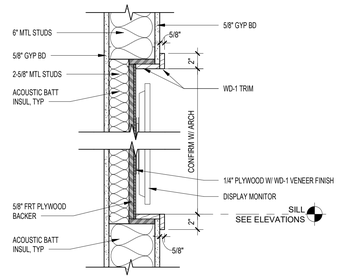
4 A840 GYP-1 SOFFIT DETAIL
1 1/2" = 1'-0"



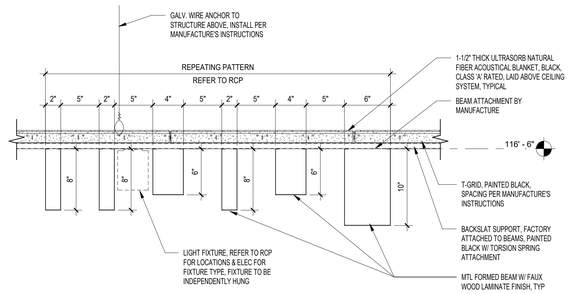
5 A840 ACT TO GYP-1 SOFFIT 2
1 1/2" = 1'-0"



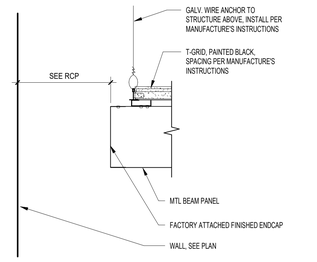
6 A840 DETAIL - PLANK EDGE @ STAIR OPENING
1 1/2" = 1'-0"



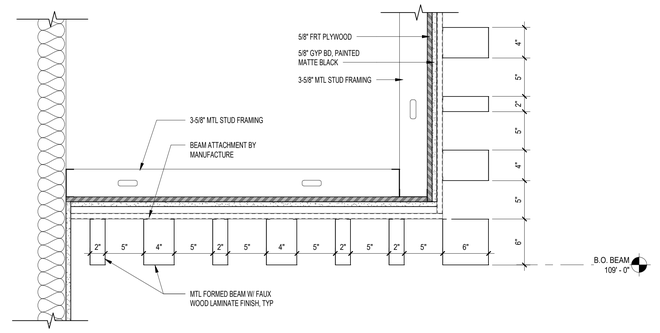
7 A840 RECESSED WALL MONITOR
1 1/2" = 1'-0"



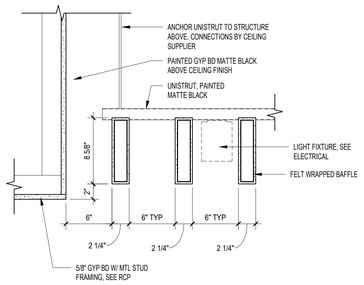
8 A840 DETAIL - SUSPENDED BEAM CEILING
1 1/2" = 1'-0"



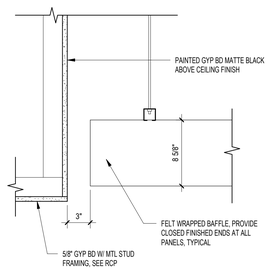
9 A840 DETAIL - BEAM ENDCAP
1 1/2" = 1'-0"



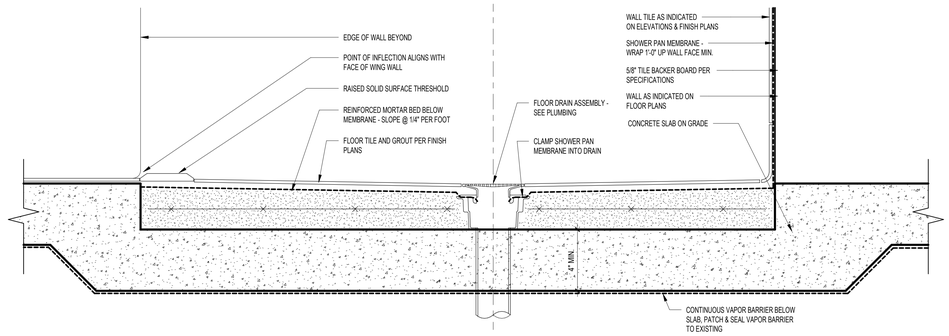
10 A840 DETAIL - BEAM CEILING TRANSITION AT SOFFIT
1 1/2" = 1'-0"



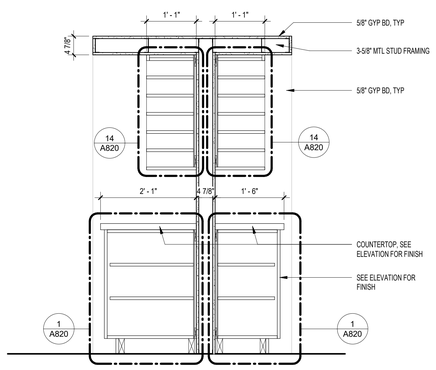
11 A840 BAFFLE CEILING TYPICAL DETAIL
1 1/2" = 1'-0"



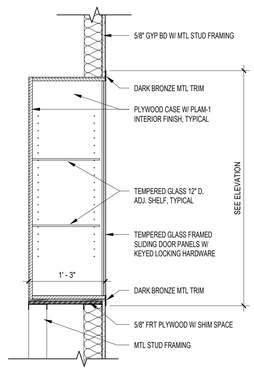
12 A840 BAFFLE CEILING TYPICAL END CONDITION
1 1/2" = 1'-0"



13 A840 SHOWER BASE DETAIL - TYPICAL
3" = 1'-0"



14 A840 SECTION @ MAIL / FORM COUNTER MILLWORK
3/4" = 1'-0"



15 A840 SECTION - RECESSED DISPLAY CASE
1" = 1'-0"

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DETROIT LAKES POLICE STATION

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DRAWN BY	CTH
CHECKED BY	BS
COMMISSION NUMBER	2106-02

SHEET TITLE

MISC. INTERIOR DETAILS

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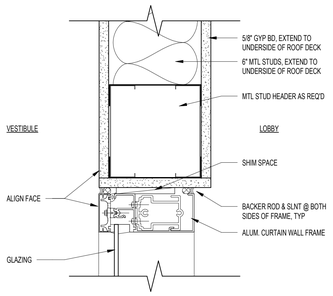
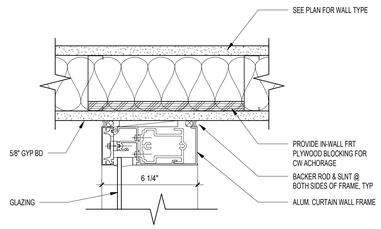
A840

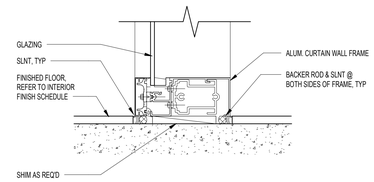
BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_AI_R19.rvt
2/20/2020 9:47:24 AM



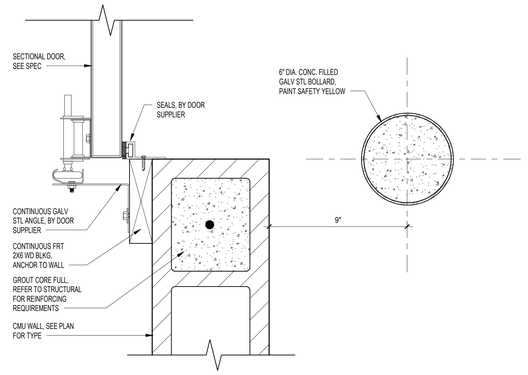
1 A850 CURTAIN WALL HEAD @ GYP BD
3" = 1'-0"



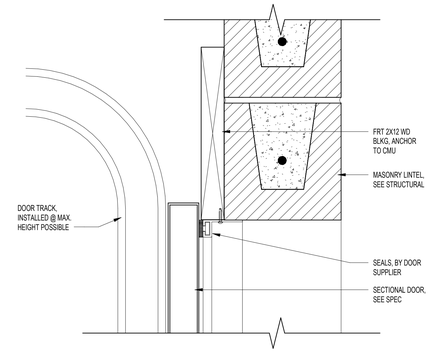
2 A850 CURTAIN WALL JAMB @ GYP BD
3" = 1'-0"



3 A850 CURTAIN WALL SILL @ FIN. FLOOR
3" = 1'-0"



4 A850 OH DOOR JAMB - INTERIOR
3" = 1'-0"



5 A850 OH DOOR HEAD - INTERIOR
3" = 1'-0"

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CONSULTANTS

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DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION

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CHECKED BY	Checker
COMMISSION NUMBER	2106-02

SHEET TITLE

INTERIOR SECTIONS AND DETAILS

SHEET NUMBER

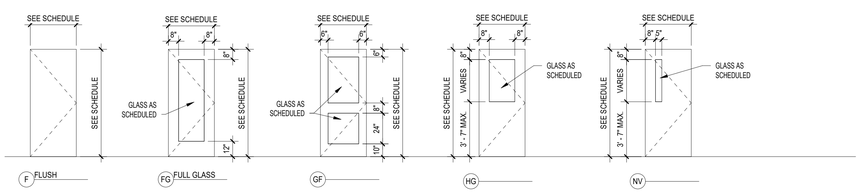
A850

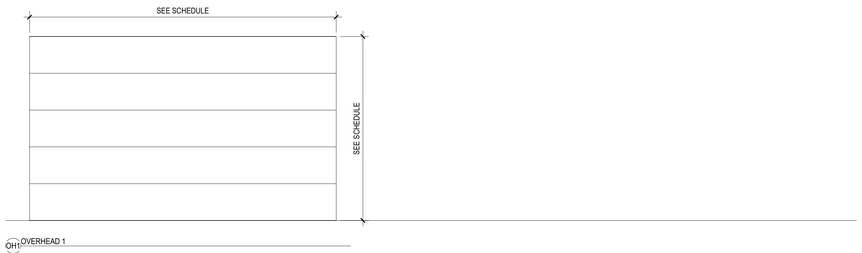
BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_AI_R19.rvt
2/20/2020 9:47:24 AM

OPENING SCHEDULE

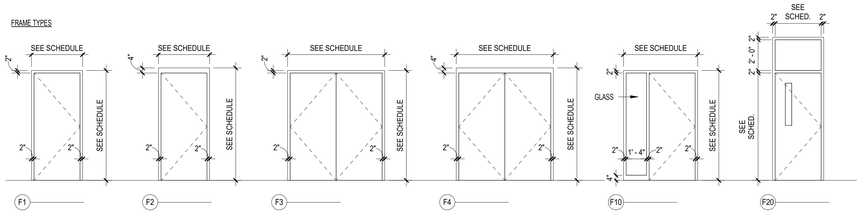
MARK	ROOM NAME	PANEL								FRAME				DETAILS			FIRE RATING	CARD READER	HARDWARE	COMMENTS
		TYPE	PANELS	WIDTH	HEIGHT	THICKNESS	MATERIAL	FINISH	GLASS	TYPE	DEPTH	MATERIAL	FINISH	HEAD	JAMB	SILL				
LOWER LEVEL																				
-	ELEVATOR																			
001A	GARAGE	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F2	1' - 5"			4/A830	9/A830	5/A830		X	9.02	
001B	GARAGE	OH1	-	16' - 0"	9' - 2"	0' - 2"	SEE SPEC	PT	SEE SPEC	-		STL		1/A830	3/A830	2/A830	-			INSULATED DOOR, LOOP DETECTION
003	MECHANICAL	F	PAIR	6' - 0"	7' - 0"	0' - 1 3/4"				F4	0' - 8"			4/A900	5/A900				4.20	
004	STORAGE	F	SINGLE	3' - 8"	7' - 0"	0' - 1 3/4"				F2	0' - 8"			4/A900	5/A900				4.00	
005A	EVIDENCE BAY	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F2	0' - 8"			4/A900	5/A900			X	9.01	
005B	EVIDENCE BAY	OH1		12' - 0"	9' - 0"	0' - 1 1/2"	SEE SPEC		--	-		STL		5/A851	4/A851	-	-			
006	CORRIDOR	NV	SINGLE	3' - 8"	7' - 0"	0' - 1 3/4"				F2	0' - 8"			4/A900	5/A900				6.02	
007	CORRIDOR	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F2	0' - 8"			4/A900	5/A900		45 MIN.		4.01	
008	CORRIDOR	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F2	0' - 8"			4/A900	5/A900				4.01	
009	DECON	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F2	0' - 8"			4/A900	5/A900				2.01	
010	WEAPON CLEANING	NV	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F2	0' - 8"			4/A900	5/A900				3.00	
011	ARMORY	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F2	0' - 8"			4/A900	5/A900			X	9.01	
012	CORRIDOR	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F2	0' - 8"			4/A900	5/A900				4.01	
013	EVIDENCE STORAGE	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F2	0' - 8"			4/A900	5/A900			X	9.04	DUAL CREDENTIAL
014	EVIDENCE STORAGE	F	SINGLE	3' - 8"	7' - 0"	0' - 1 3/4"				F2	0' - 8"			4/A900	5/A900			X	9.00	
015	HARD INTERVIEW	NV	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F2	0' - 8"			4/A900	5/A900				1.00	
LEVEL 1																				
-	ELEVATOR																			
100A	VESTIBULE	FG	PAIR	6' - 0"	8' - 0"	0' - 1 3/4"												X	9.20	ALUM. DOOR, POWERED DOOR OPERATOR
100B	VESTIBULE	FG	PAIR	6' - 0"	8' - 0"	0' - 1 3/4"												X	9.21	ALUM. DOOR, POWERED DOOR OPERATOR
102A	CONFERENCE	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F1	0' - 6 3/8"			1/A900	2/A900				3.00	
102B	CONFERENCE	NV	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F1	0' - 5 7/8"			1/A900	2/A900			X	9.01	
103	CHIEF	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F10	0' - 5 7/8"			1/A900	2/A900				3.01	
104	DEPUTY CHIEF	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F10	0' - 5 7/8"			1/A900	2/A900				3.01	
105	OFFICE	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F10	0' - 5 7/8"			1/A900	2/A900				3.01	
106	OFFICE	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F10	0' - 5 7/8"			1/A900	2/A900				3.01	
107	OFFICE	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F10	0' - 5 7/8"			1/A900	2/A900				3.01	
108	CONFERENCE	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F10	0' - 5 7/8"			1/A900	2/A900				3.02	
109	OFFICE	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F10	0' - 5 7/8"			1/A900	2/A900				3.01	
110	OFFICE	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F10	0' - 5 7/8"			1/A900	2/A900				3.01	
111	OFFICE	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F10	0' - 5 7/8"			1/A900	2/A900				3.01	
112	OFFICE	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F10	0' - 5 7/8"			1/A900	2/A900				3.01	
113	OFFICE	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F10	0' - 5 7/8"			1/A900	2/A900				3.01	
114	LOBBY	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F1	0' - 6 3/8"			1/A900	2/A900			X	9.01	
116	STORAGE	F	PAIR	6' - 0"	7' - 0"	0' - 1 3/4"				F3	0' - 5 7/8"			1/A900	2/A900				13.00	
117	STORAGE	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F1	0' - 5 7/8"			1/A900	2/A900				4.01	
118A	ROLL CALL	NV	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F1	0' - 5 7/8"			1/A900	2/A900				3.00	
118B	ROLL CALL	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F10	0' - 5 7/8"			1/A900	2/A900				3.00	
119	TOILET	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F1	0' - 5 7/8"			1/A900	2/A900				2.00	
120	JANITOR	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F1	0' - 5 7/8"			1/A900	2/A900				4.01	
122	STORAGE	F	PAIR	6' - 0"	7' - 0"	0' - 1 3/4"				F3	0' - 5 7/8"			1/A900	2/A900				4.20	
123	SERVER	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F1	0' - 5 7/8"			1/A900	2/A900			X	9.01	
124	STORAGE	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F1	0' - 5 7/8"			1/A900	2/A900				4.01	
125	INTERVIEW	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F1	0' - 8 1/4"			1/A900	2/A900				1.01	ACOUSTIC SEALS
126A	CORRIDOR	NV	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F1	0' - 5 7/8"			1/A900	2/A900			X	9.01	
126B	LOBBY	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F1	0' - 8 1/4"			1/A900	2/A900			X	9.03	
127	INTERVIEW	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F1	0' - 5 7/8"			1/A900	2/A900				1.01	ACOUSTIC SEALS
128	CORRIDOR	F	PAIR	6' - 4"	7' - 0"	0' - 1 3/4"				F3	0' - 5 7/8"			1/A900	2/A900				4.20	
129A	VESTIBULE	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				ALUM	1' - 4 1/4"								6.01	INSULATED DOOR, EXIT ONLY
129B	VESTIBULE	NV	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F1	0' - 5 7/8"			1/A900	2/A900			X	9.01	
129C	VESTIBULE	NV	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F1	0' - 5 7/8"			1/A900	2/A900				3.00	
130	COMMUNITY ROOM	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F10	0' - 5 7/8"			1/A900	2/A900			X	9.01	
131	JANITOR	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F1	0' - 5 7/8"			1/A900	2/A900				4.01	
132	MEN	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F1	0' - 5 7/8"			1/A900	2/A900				2.00	
133	WOMEN	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F1	0' - 5 7/8"			1/A900	2/A900				2.00	
134	STORAGE	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F1	0' - 5 7/8"			1/A900	2/A900				4.02	
135	BREAK ROOM	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F10	0' - 5 7/8"			1/A900	2/A900				11.01	
136	WOMEN'S LOCKER RM.	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F1	0' - 5 7/8"			1/A900	2/A900				11.00	
137	ACCESSIBLE SHOWER	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F1	0' - 5 7/8"			1/A900	2/A900				2.02	ROBE HOOK ON BACK OF DOOR
138	MEN'S LOCKER RM.	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F1	0' - 5 7/8"			1/A900	2/A900				11.00	
139	SHOWER	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F1	0' - 5 7/8"			1/A900	2/A900				2.02	ROBE HOOK ON BACK OF DOOR
140	ACCESSIBLE SHOWER	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F1	0' - 5 7/8"			1/A900	2/A900				2.02	ROBE HOOK ON BACK OF DOOR
141	ACCESSIBLE SHOWER	F	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F1	0' - 5 7/8"			1/A900	2/A900				2.02	ROBE HOOK ON BACK OF DOOR
142A	VEST.	NV	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				ALUM	1' - 4 1/4"							X	9.02	INSULATED DOOR
142B	VEST.	NV	SINGLE	3' - 0"	7' - 0"	0' - 1 3/4"				F20	0' - 5 7/8"			1/A900	2/A900				6.00	

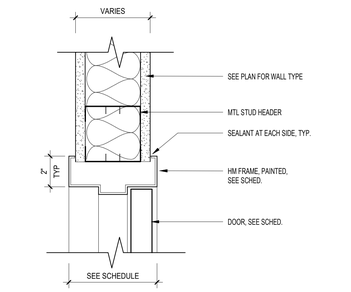
DOOR PANEL TYPES



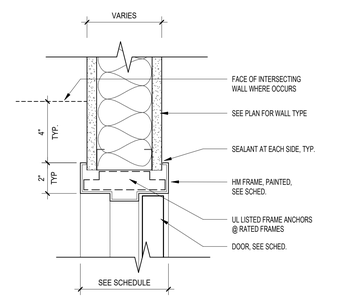


FRAME TYPES

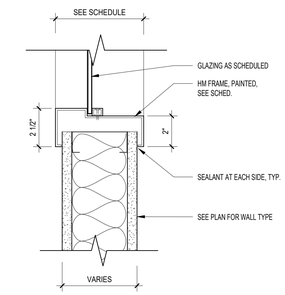




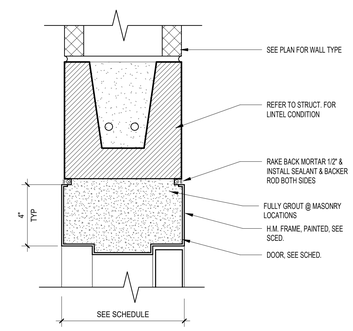
1 A900 H.M. FRAME HEAD @ GYP BD
3" = 1'-0"



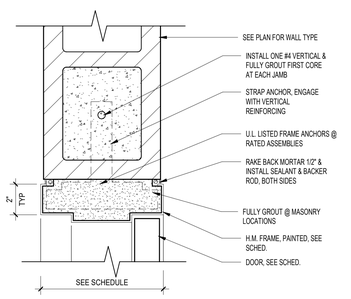
2 A900 H.M. FRAME JAMB @ GYP BD
3" = 1'-0"



3 A900 H.M. FRAME SILL @ GYP BD
3" = 1'-0"



4 A900 H.M. FRAME @ MASONRY WALL - HEAD
3" = 1'-0"



5 A900 H.M. FRAME @ MASONRY WALL - JAMB
3" = 1'-0"

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CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	MJH
CHECKED BY	DHJ
COMMISSION NUMBER	2106-02

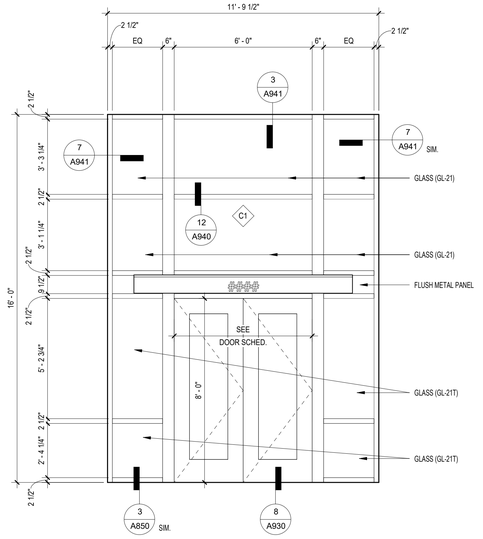
SHEET TITLE

OPENING SCHEDULE AND DETAILS

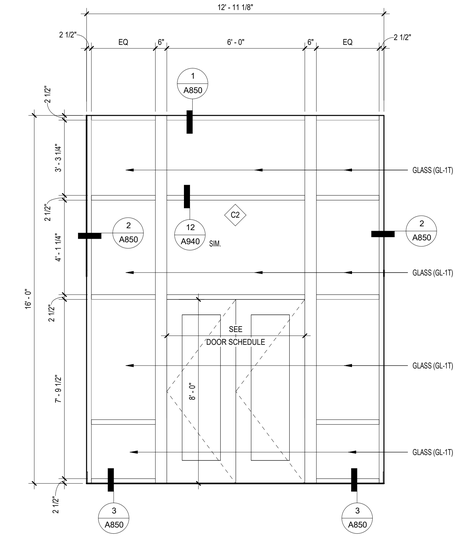
SHEET NUMBER

A900

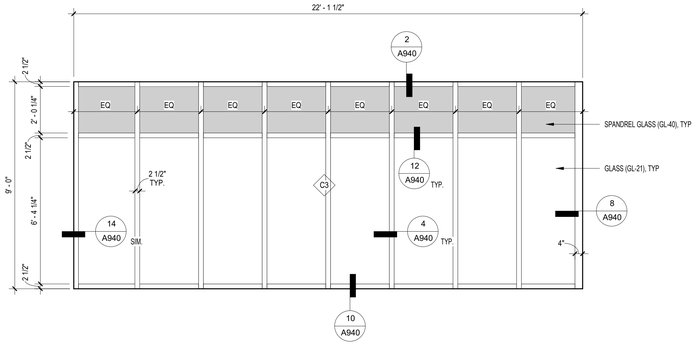
BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_AI_R19.rvt
2/20/2020 9:47:27 AM



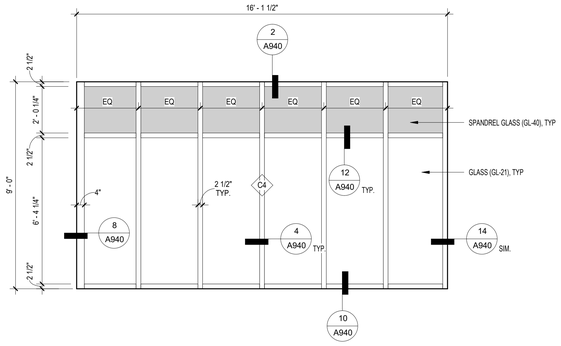
1 A920 CURTAIN WALL ELEVATION - TYPE C1
3/8" = 1'-0"



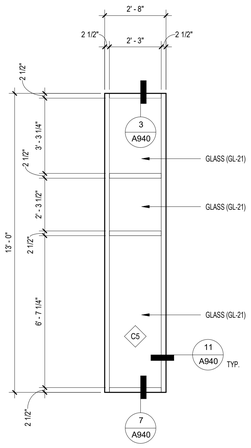
2 A920 CURTAIN WALL ELEVATION - TYPE C2
3/8" = 1'-0"



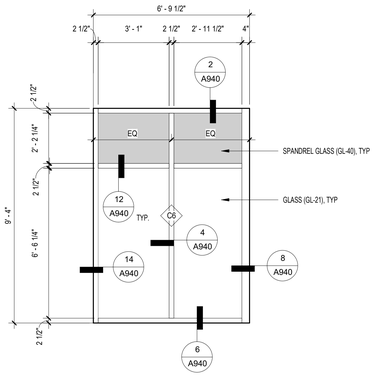
3 A920 CURTAIN WALL ELEVATION - TYPE C3
3/8" = 1'-0"



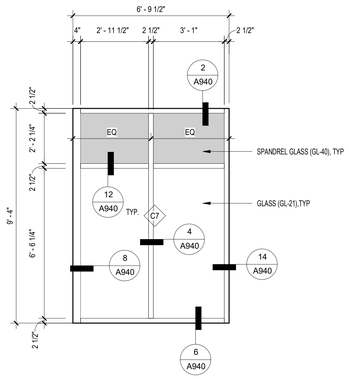
4 A920 CURTAIN WALL ELEVATION - TYPE C4
3/8" = 1'-0"



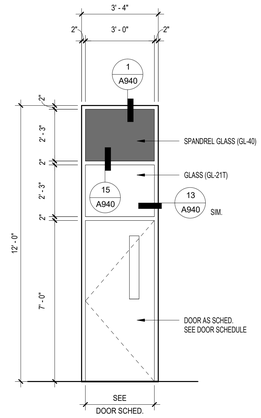
5 A920 CURTAIN WALL ELEVATION - TYPE C5
3/8" = 1'-0"



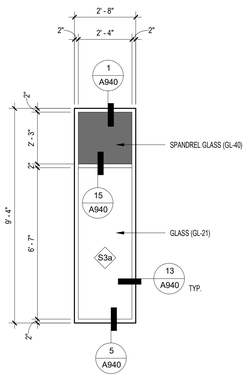
6 A920 CURTAIN WALL ELEVATION - C6
3/8" = 1'-0"



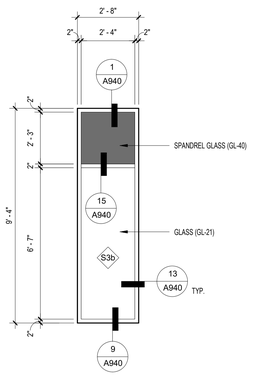
7 A920 CURTAIN WALL ELEVATION - TYPE C7
3/8" = 1'-0"



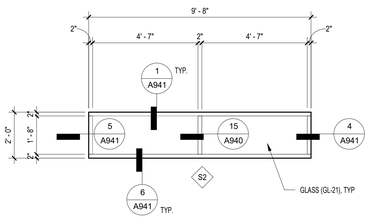
8 A920 STOREFRONT ELEVATION - TYPE S1
3/8" = 1'-0"



9 A920 STOREFRONT ELEVATION - TYPE S3a
3/8" = 1'-0"



10 A920 STOREFRONT ELEVATION - TYPE S3b
3/8" = 1'-0"



11 A920 STOREFRONT ELEVATION - TYPE S2
3/8" = 1'-0"

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CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION

CERTIFICATION

NOT FOR CONSTRUCTION

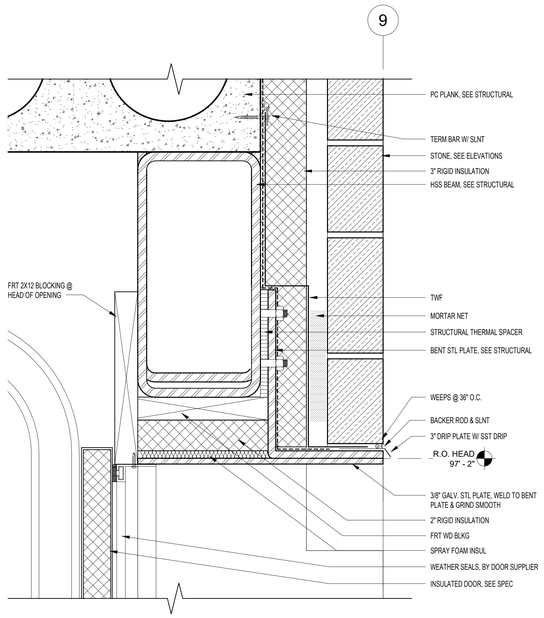
DRAWN BY	MJH
CHECKED BY	DHJ
COMMISSION NUMBER	2106-02

SHEET TITLE

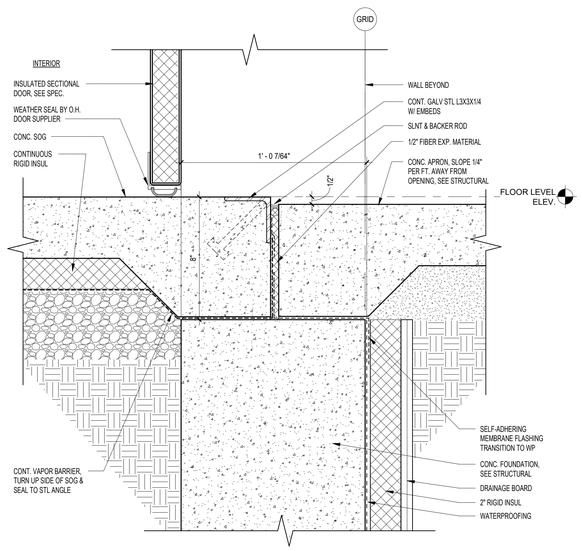
ALUMINUM FRAME TYPES

SHEET NUMBER

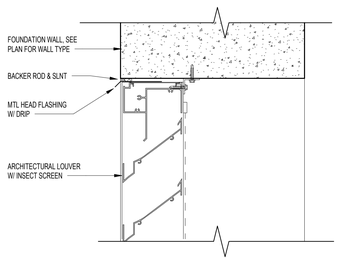
A920



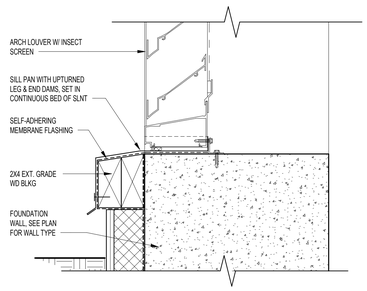
1 A930 DETAIL - SECTIONAL DOOR HEAD
3" = 1'-0"



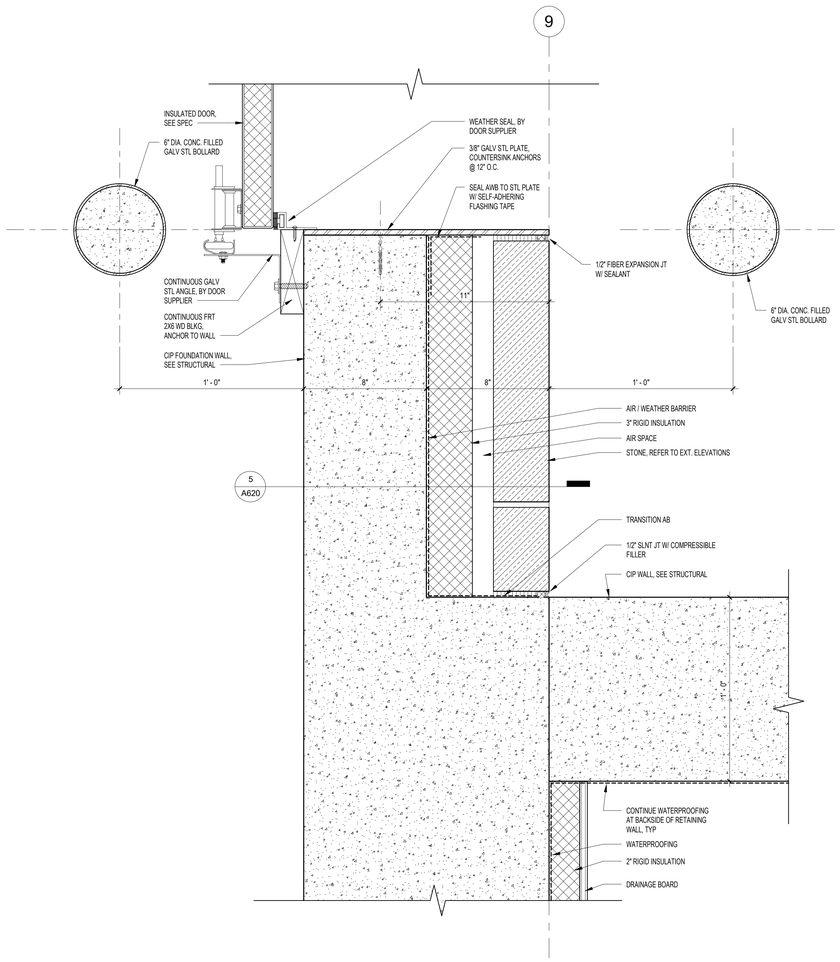
2 A930 DETAIL - SECTIONAL DOOR THRESHOLD
3" = 1'-0"



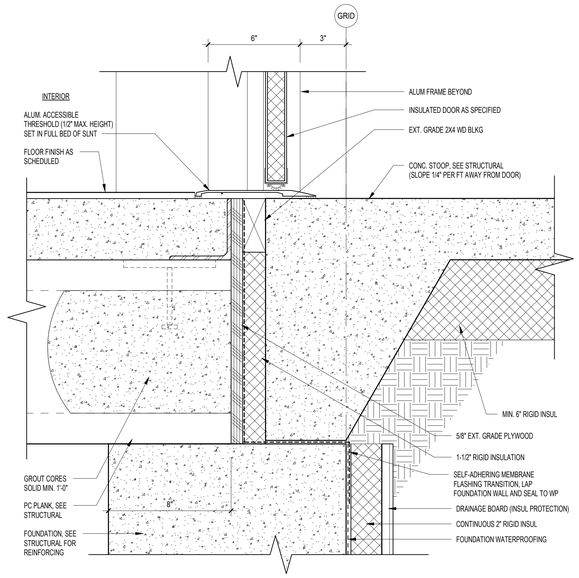
6 A930 ARCHITECTURAL LOUVER - HEAD
3" = 1'-0"



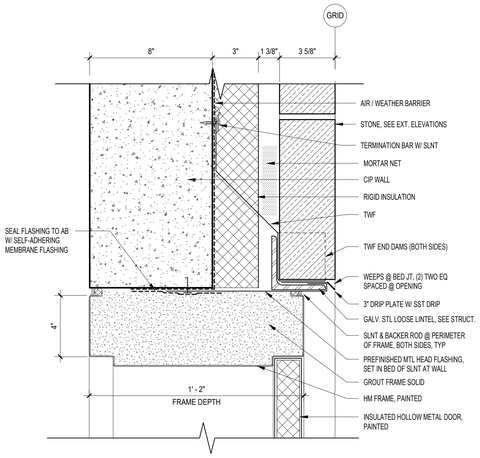
7 A930 ARCHITECTURAL LOUVER - SILL
3" = 1'-0"



3 A930 DETAIL - OH DOOR JAMB
3" = 1'-0"

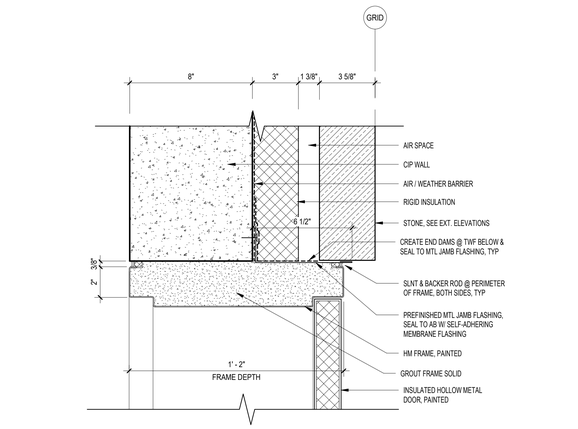


8 A930 DETAIL - ALUM THRESHOLD @ STOOP
3" = 1'-0"



4 A930 H.M. FRAME HEAD AT STONE
3" = 1'-0"

5 A930 H.M. FRAME THRESHOLD AT SOG
3" = 1'-0"



9 A930 H.M. FRAME JAMB AT STONE
3" = 1'-0"

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CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION
	12/16/2019	DESIGN DEVELOPMENT

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	MJH
CHECKED BY	DHJ
COMMISSION NUMBER	2106-02

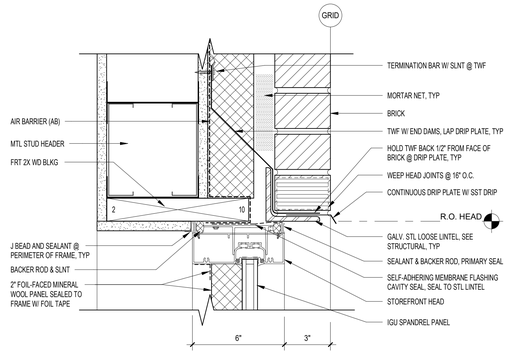
SHEET TITLE

EXTERIOR OPENING DETAILS

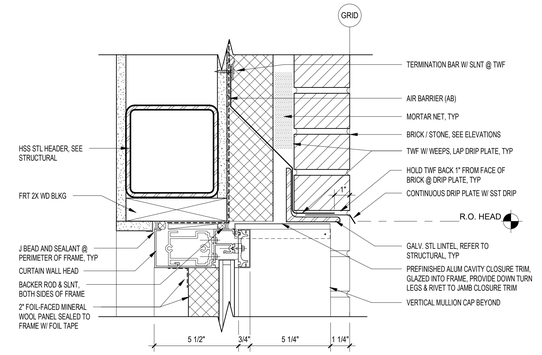
SHEET NUMBER

A930

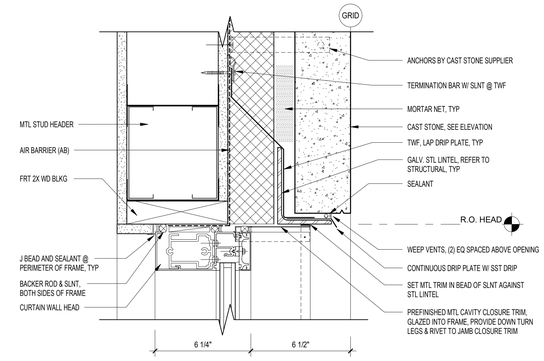
BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_A!_R19.rvt
2/20/2020 9:47:32 AM



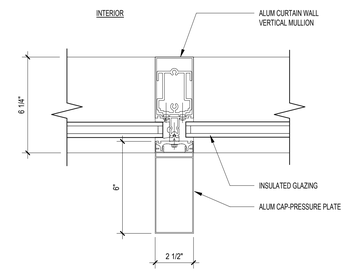
1 A940 STOREFRONT HEAD @ BRICK
3" = 1'-0"



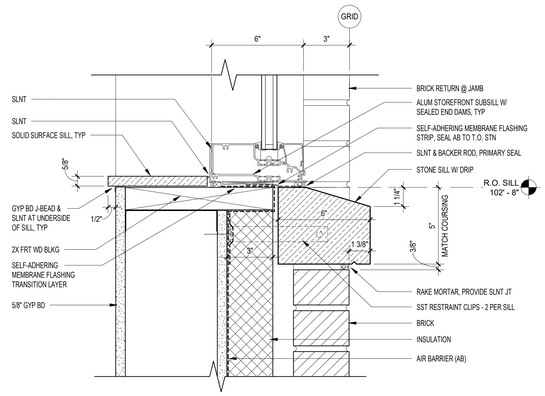
2 A940 CURTAIN WALL HEAD @ BRICK (STONE SIM.)
3" = 1'-0"



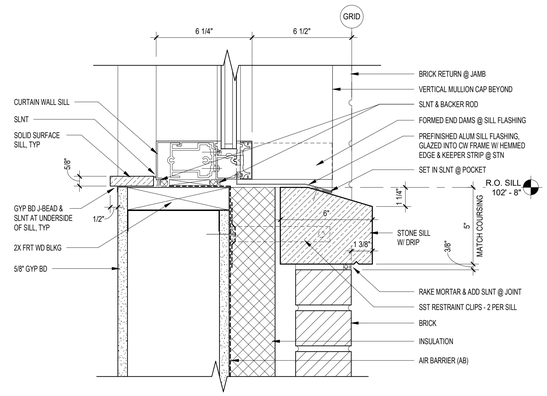
3 A940 CURTAIN WALL HEAD @ CAST STONE
3" = 1'-0"



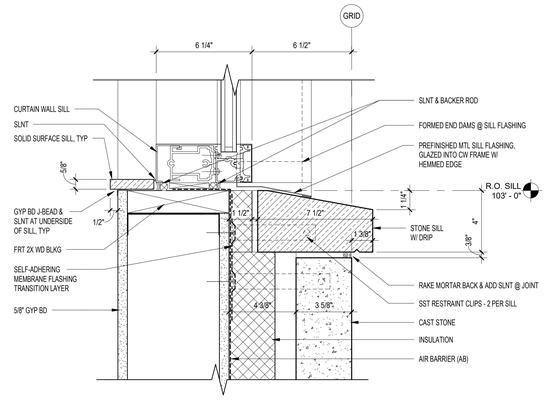
4 A940 CURTAIN WALL VERTICAL MULLION - DEEP CAP
3" = 1'-0"



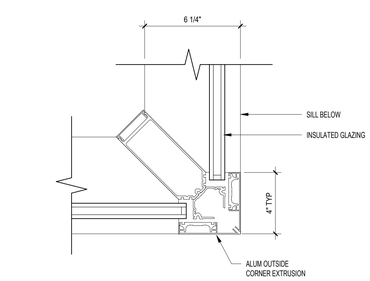
5 A940 STOREFRONT SILL @ BRICK
3" = 1'-0"



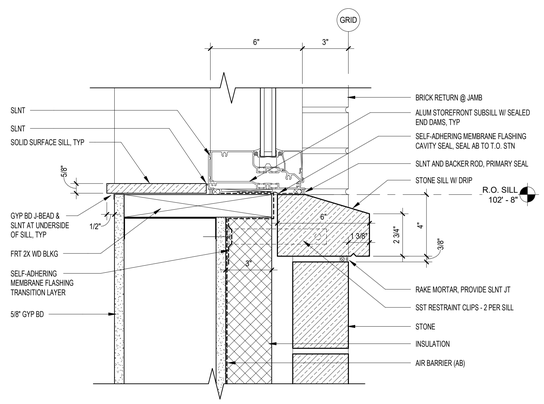
6 A940 CURTAIN WALL SILL @ BRICK
3" = 1'-0"



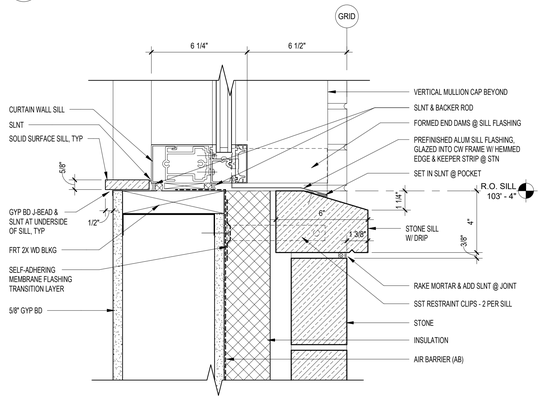
7 A940 CURTAIN WALL SILL @ CAST STONE
3" = 1'-0"



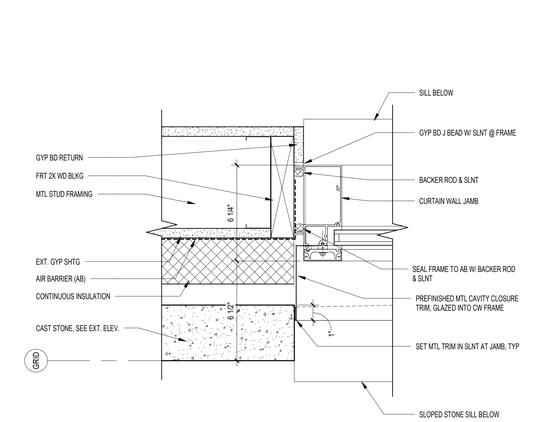
8 A940 CURTAIN WALL OUTSIDE CORNER
3" = 1'-0"



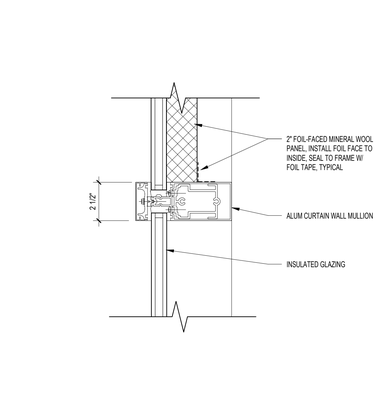
9 A940 STOREFRONT SILL @ STONE
3" = 1'-0"



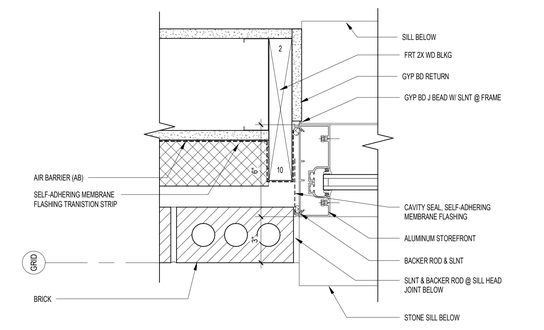
10 A940 CURTAIN WALL SILL @ STONE
3" = 1'-0"



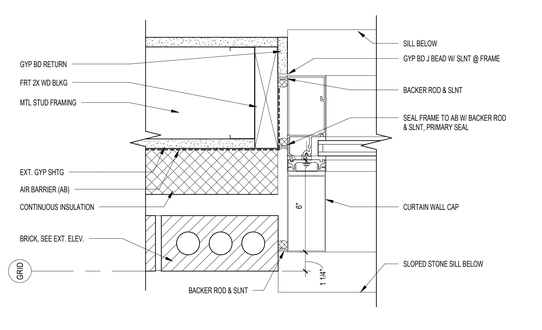
11 A940 CURTAIN WALL JAMB @ CAST STONE
3" = 1'-0"



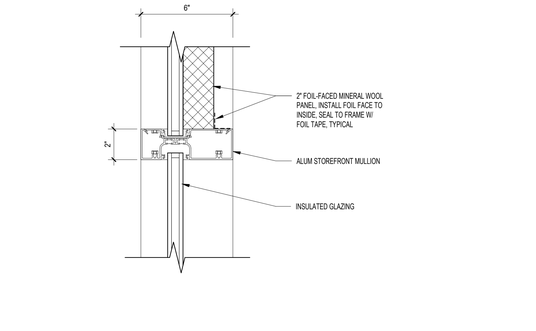
12 A940 CURTAIN WALL MULLION - STD CAP
3" = 1'-0"



13 A940 STOREFRONT JAMB @ BRICK
3" = 1'-0"



14 A940 CURTAIN WALL JAMB @ BRICK (STONE SIM.)
3" = 1'-0"



15 A940 DETAIL - STOREFRONT MULLION (TYP)
3" = 1'-0"

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CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION

CERTIFICATION

NOT FOR CONSTRUCTION

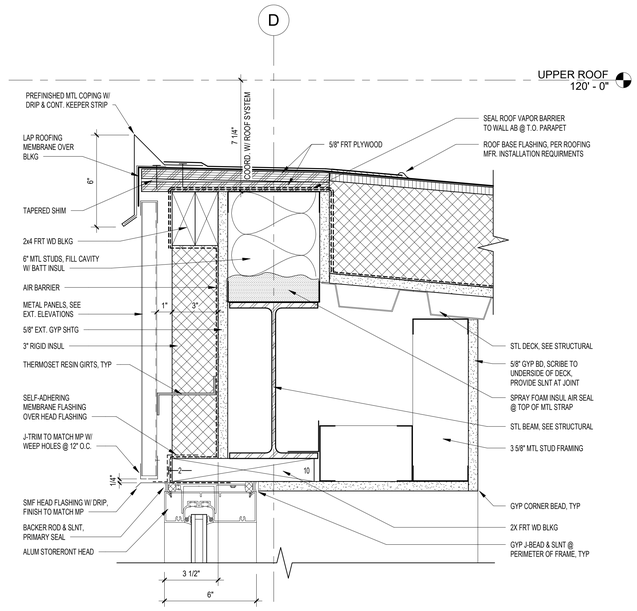
DRAWN BY	MJH
CHECKED BY	DHJ
COMMISSION NUMBER	2106-02

SHEET TITLE

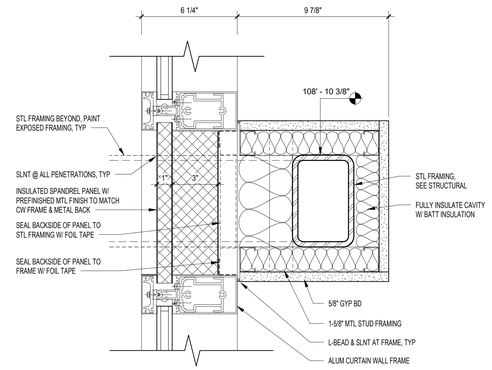
EXTERIOR STOREFRONT & CURTAIN WALL DETAILS

SHEET NUMBER

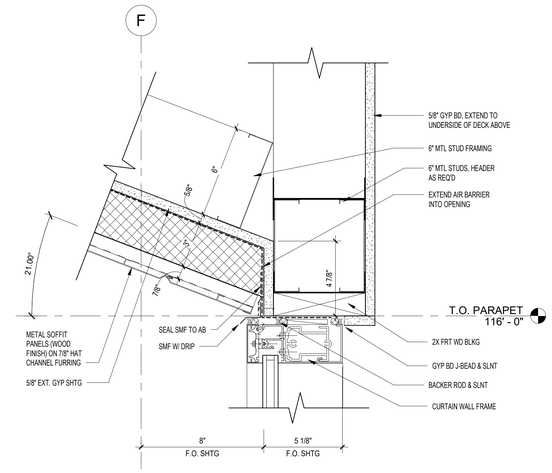
A940



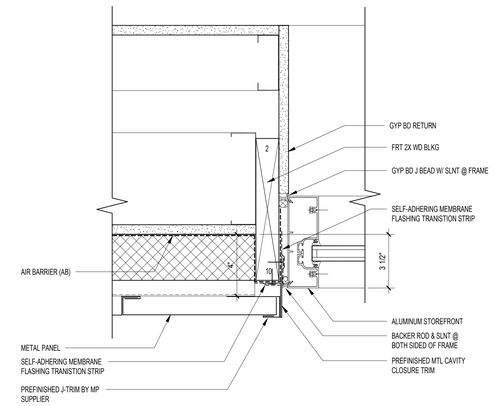
1 A941 DETAIL - CLERESTORY HEAD
3" = 1'-0"



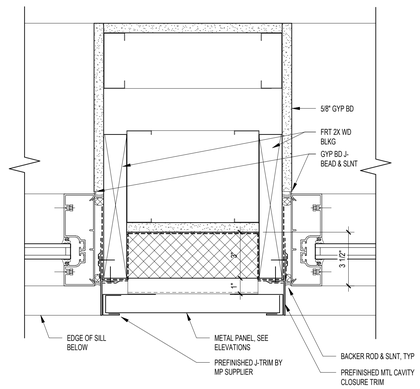
2 A941 DETAIL - STL FRAMING AT CW FRAME
3" = 1'-0"



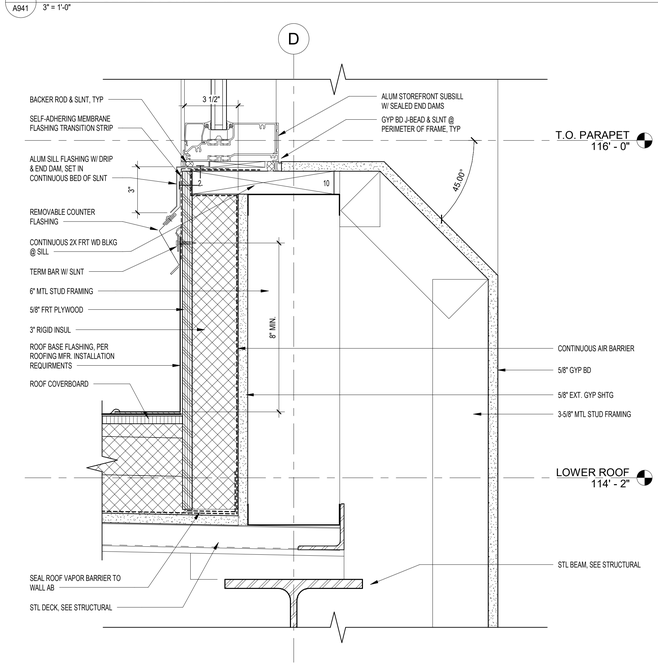
3 A941 DETAIL - CURTAIN WALL HEAD @ ENTRY
3" = 1'-0"



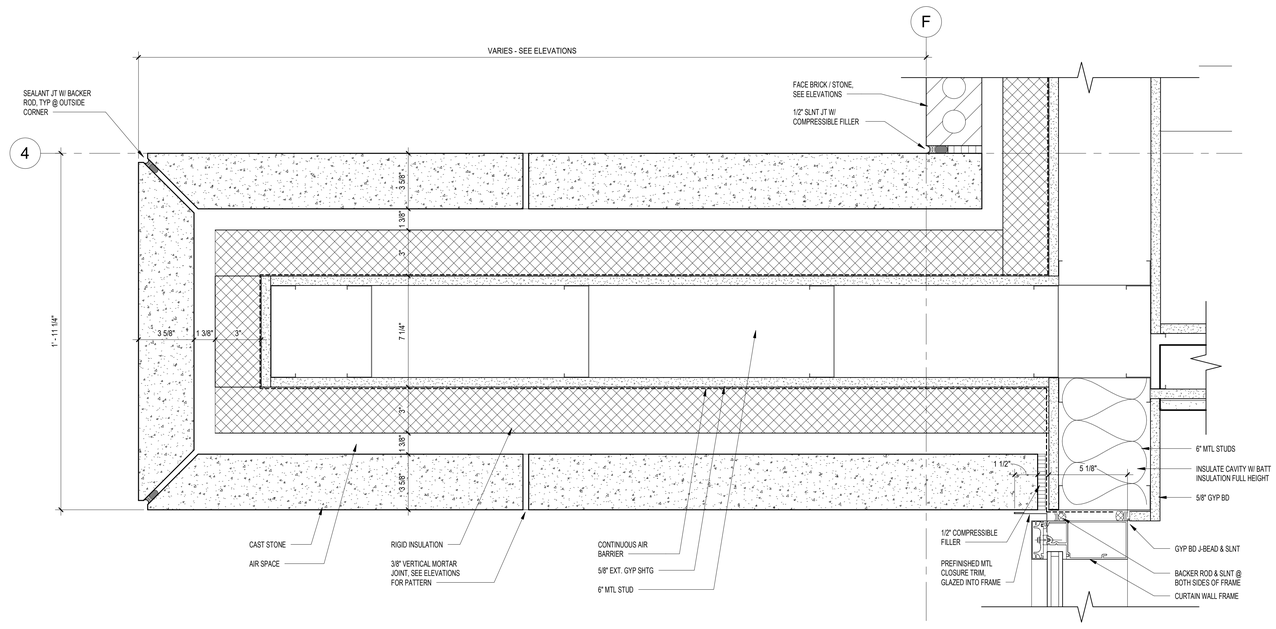
4 A941 STOREFRONT JAMB @ METAL PANEL
3" = 1'-0"



5 A941 DETAIL - CLERESTORY MULLION @ POST
3" = 1'-0"



6 A941 DETAIL - CLERESTORY SILL
3" = 1'-0"



7 A941 DETAIL - CURTAIN WALL JAMB @ ENTRY
3" = 1'-0"

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Minneapolis, MN
55401
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CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	MJH
CHECKED BY	DHJ
COMMISSION NUMBER	2106-02

SHEET TITLE

EXTERIOR STOREFRONT & CURTAIN WALL DETAILS

SHEET NUMBER

A941

BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_AI_R19.rvt
2/20/2020 9:47:37 AM

Material Identification List (Interior)

Project: Detroit Lakes PD

Basis of Design Materials for SPEC_CD
Project No. 2106-02
Last Updated: 2/19/2020

Mat ID	Spec Section	Description	Manufacturer / Product / Model / Finish	Project Application / Notes	Rep Contact:
ACT-1	09 5113	Acoustical Ceiling Panel	Manufacturer: Armstrong Tile Syle: Lyra Item # 8360PB Tile Edge Profile: Tegular Tile Size: 24"x24"x1" Tile Color: White Grid System: 15/16" Prelude Grid Color: White NRC: 0.95 / 190 AC	Typical Unless Noted Otherwise	
ACT-2	09 5113	Acoustical Ceiling Panel	Manufacturer: Armstrong Product: METALWORKS Blades, Classics Color: Effects Oak Size: Varies, see plans Edge: Caps both ends Installation: Prelude XL 15/16" or 360° painted suspension systems Perforations: M15 Acoustic: Up to 2.5 Fire Preformance: Class A Recycled content: 20%	Lobby & Vestibule	
ACT-3a	09 5113	Acoustical Ceiling Panel	Manufacturer: Armstrong Product: FELTWORKS Blades, Peaks & Valleys Color: Natural Thickness: 3/8" Length: 4' and 8', see plans Installation: Aluminum Suspension Bar and aircraft cables Acoustic: Up to 0.70 Sabins/SF Fire Preformance: Class A Recycled content: up to 50% post-consumer recycled PET fibers	Open office (Neutral) & Add Alt. Bid for Community Room (in lieu of ACT-1)	
ACT-3b	09 5113	Acoustical Ceiling Panel	Manufacturer: Armstrong Product: FELTWORKS Blades, Peaks & Valleys Color: Denim Thickness: 3/8" Length: 4' and 8', see plans Installation: Aluminum Suspension Bar and aircraft cables Acoustic: Up to 0.70 Sabins/SF Fire Preformance: Class A Recycled content: up to 50% post-consumer recycled PET fibers	Open office (Blue)	
ACT-3c	09 5113	Acoustical Ceiling Panel	Manufacturer: Armstrong Product: FELTWORKS Blades, Peaks & Valleys Color: Midnight Thickness: 3/8" Length: 4' and 8', see plans Installation: Aluminum Suspension Bar and aircraft cables Acoustic: Up to 0.70 Sabins/SF Fire Preformance: Class A Recycled content: up to 50% post-consumer recycled PET fibers	Open office (Black)	
ACT-3a	09 5113	Acoustical Ceiling Panel	Manufacturer: Turf Acoustics Product: Straight Baffle Color: TBD Size: Varies, see plans Depth: 11.5" Felt thickness: 9mm Installation: Gridlock Edge: Exposed Felt Acoustic: Up to 2.5 Fire Preformance: Class A Recycled content: 20%	Open Office Baffles	Tiffany Theis BeyonDesign 651.274.6884
ACT-3b	09 5113	Acoustical Ceiling Panel	Manufacturer: Turf Acoustics Product: Straight Baffle Color: TBD Size: Varies, see plans Depth: 11.5" Felt thickness: 9mm Installation: Gridlock Edge: Exposed Felt Acoustic: Up to 2.5 Fire Preformance: Class A Recycled content: 20%	Open Office Baffles	Tiffany Theis BeyonDesign 651.274.6885
ACT-3c	09 5113	Acoustical Ceiling Panel	Manufacturer: Turf Acoustics Product: Straight Baffle Color: TBD Size: Varies, see plans Depth: 11.5" Felt thickness: 9mm Installation: Gridlock Edge: Exposed Felt Acoustic: Up to 2.5 Fire Preformance: Class A Recycled content: 20%	Open Office Baffles	Tiffany Theis BeyonDesign 651.274.6886
ARWC-1	09 7226	Abuse Resistant Wall Covering	Manufacturer: Acrovyn	Base Bid for Wainscotting; see TL-2 for Add Alt.	Nikki Dahn Pierce Sales Inc 952.942.9710 ndahn@piercesalesinc.com
AWP-1	09 8436	Acoustical Wall Panel	Manufacturer: Armstrong Product: Tectum Size: See Interior Elevations Thickness: 1" Finish: Natural	Hard Interview	
CH-1	10 2800	Coat Hook	Manufacturer: Bobrick Product: Classic Robe hook #76717 Finish: Stainless Steel	Back of Office Doors	
CPT-1	09 6800	Carpet Tile	Manufacturer: Masland Contract Style: T502 Resonate Color: 50208 Azores Fiber Content: EarthSmart Refresh Fiber Size: 24" x 24" Installation: Ashlar	Open Office	Kristi Beeksma 612.590.3272 kristi.beeksma@atlas-masland.com
CPT-2a	09 6800	Carpet Tile	Manufacturer: Masland Contract Style: T7988 Rough Color: 89802 bumpy Fiber Content: 100% universal type 6, 6 Nylon Size: 12" x 36" Installation: Ashlar	Conference Rooms and Community room	Kristi Beeksma 612.590.3272 kristi.beeksma@atlas-masland.com
CPT-2b	09 6800	Carpet Tile	Manufacturer: Masland Contract Style: T7988 Rough Color: 89811 rocky Fiber Content: 100% universal type 6, 6 Nylon Size: 12" x 36" Installation: Ashlar	Conference Rooms and Community room - blue accent	Kristi Beeksma 612.590.3272 kristi.beeksma@atlas-masland.com
CPT-3	09 6800	Carpet Tile	Manufacturer: J+J Flooring Group Style: Foundry (1892) Wear Layer: Universal Fiver Polyester - applied pattern Color: 2084 co-op Size: 24" x 24" Backing: Polyester Felt Cushion Adhesive: PreFex Installation: Monolithic	Locker Rooms	Tony Hill 763.614.8896 tony.hill@jjflooringgroup.com
CPT-4	09 6800	Carpet Tile	Manufacturer: J+J Flooring Group Style: Umbra II (1819) Color: 2511 Surpass Fiber Type: Encore SD Nylon Size: 18" x 36" Backing: Nexus Modular Installation: Herringbone	Vestibules	Tony Hill 763.614.8896 tony.hill@jjflooringgroup.com
FRP-1	09 7733	Fiber Reinforced Plastic	Manufacturer: Marlite Color: To be selected from mfg's full color line of options Gauge: 0.090" Grade: Commercial Trim: Matching	Janitor Rooms	
ICON-1	03 3000	Interior Concrete Sealer	Sealed Concrete / Smooth Troweled Water-based cure and seal ASTM C1315	Back of House Areas	
ICON-2	03 3536	Polished Concrete Flooring	Aggregate Exposure Class: Medium, 1/8" Surface Cut Depth / Reflective Clarity Level: IPCI 3 / Sheen Level: High Sheen, 800 grit / With Concrete Densifier, Hardener / See SPEC		
LKR-1	10 5100	Lockers	MFG: Scranton Products Product: Tufftec Recreational Lockers Type: 3-Tier Color: Midnight Texture: Orange Peel	Locker Rooms	
MIR-1	08 8300	Mirror	4" Wood Framed Mirror, Finish: Painted to match PT-3, Safety Glass	Public Toilet Rooms	
PLAM-1	06 4000	Plastic Laminate	Manufacturer: Wilsonart HPL (Commerical Grade) Color: Match WD-1 Finish: Fine Velvet	Vertical, Wood Look	
PLAM-2	06 4000	Plastic Laminate	Manufacturer: Wilsonart HPL (Commerical Grade) Color: Match SSR-3 Finish: Fine Velvet	Horizontal	

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PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	Margaret Lafferty, CID
CHECKED BY	-
COMMISSION NUMBER	2106-02

SHEET TITLE

INTERIOR MATERIAL ID LIST

SHEET NUMBER

I050A

BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_AI_R19.rvt
2/19/2020 5:17:04 PM

Mat ID	Spec Section	Description	Manufacturer / Product / Model / Finish	Project Application / Notes	Rep Contact:
PLAM-3	06 4000	Plastic Laminate	Manufacturer: Wilsonart HPL (Commerical Grade) Color: Match TL-1 Finish: Fine Velvet	Vertical, Back of House	
PTL-1	09 9123	Interior Paint	Manufacturer: Sherwin Williams Color: SW7004 Snowbound	Ceiling	
PTL-2	09 9123	Interior Paint	Manufacturer: Sherwin Williams Color: SW7029 Agreeable Gray	Field (Light neutral)	
PTL-3	09 9123	Interior Paint	Manufacturer: Sherwin Williams Color: SW7045 Intellectual Grey	Medium Neutral	
PTL-4	09 9123	Interior Paint	Manufacturer: Sherwin Williams Color: SW7047 Porpoise	Accent (Dark Neutral)	
PTL-5	09 9123	Interior Paint	Manufacturer: Sherwin Williams Color: SW6229 Tempe Star	Accent (Blue)	
PTM-6	09 9123	Interior High Performance Paint	Manufacturer: Sherwin Williams Color: SW7048 Urbane Bronze	HM Doors/Frames & Metal Details	
PTM-7	09 9123	Interior High Performance Paint	Manufacturer: Sherwin Williams Color: SW7047 Porpoise	Interior Metal Railings (Dark Neutral)	
PTE-8	09 9123	Interior Epoxy Paint	Match PTL-1	Ceiling	
PTE-9	09 9123	Interior Epoxy Paint	Match PTL-2	Field	
PTE-10	09 9123	Interior Epoxy Paint	Match PTL-5	Blue	
PULL-1	06 4000	Decorative Pull	Manufacturer: Liberty Hardware Length: 5-1/16" Product: Steel Bar Pull Product # P01026-PC-C	Community Room	
PULL-2	06 4000	Decorative Pull	4" Wire Pull	Back of House	
RB-1	09 6500	Resilient Base	Manufacturer: Johnsonite Product: Traditional Rubber Base Color: Burnt Umber 63 Height: 4"	Straight base installed at carpet, Coved based installed at resilient flooring	Ivana Rosich 773.318.0630 ivana.rosich@johnsonite.com
RF-1	09 6500	Resilient Flooring	Manufacturer: Forbo Product: marmoleum solid Color: 3702/370235 liquid clay Size: Sheet, 105" x 79"/105" x 77" Thickness: 0.1"	Field (Light neutral)	
RF-2	09 6500	Resilient Flooring	Manufacturer: Forbo Product: marmoleum solid Color: 3358/335835 petrol Size: Sheet, 105" x 79"/105" x 77" Thickness: 0.1"	Accent (Blue)	
RF-3	09 6500	Static Control Flooring	Manufacturer: Forbo Product: Colorex SD Color: 150207 quartz Size: 24.4" x 24.4" Thickness: 0.8"	Server/Elec	
SSQ-1	06 6116	Solid Surfacing	Manufacturer: Caesarstone Color: Coastal Grey 6003 Profile: Square, 1/8" top and bottom radius Thickness: 3cm	Reception Desk - Transaction Top, Toilet Room C.Tops	Mallory Johnson 612.277.3389 mallory.johnson@caesarstoneus.com
SSR-2	06 6116	Solid Surfacing	Manufacturer: Corian Solid Surface Color: Hazelnut Thickness: 2cm Profile: Square, 1/8" top and bottom radius Available Slab Dimensions: 63"x120"	Interior Window Sills and backof house sink counters	Kim Brose (612) 362-4522 kim@hllmark.com
SSR-3	06 6116	Solid Surfacing - Threshold	Manufacturer: Corian Color: Group C Thickness: See detail in drawings Width: 2" Profile: Double bevel	Shower Floor Transition	Kim Brose (612) 362-4522 kim@hllmark.com
STC-1	12 3553	Stainless Steel Countertop	Finish: Matte Gauge: 1/16"	high use countertops	
TA-1	10 2800	Toilet Paper Dispenser	Manufacturer: American Specialties MODEL NO. 20030	Surface Mounted	
TA-2	10 2800	Sanitary Napkin Disposal	Manufacturer: American Specialties MODEL NO. 20852	Surface Mounted	
TA-3	10 2800	Soap Dispenser	Manufacturer: Bobrick Product: B-4112	Soap Dispenser	
TA-4	10 2800	Paper Towel Dispenser / Waste Receptacle	Manufacturer: American Specialties MODEL NO. 204692A-6	Semi-Recessed Paper Towel Dispenser	
TA-5	10 2800	Grab Bar, 18 inches	Manufacturer: American Specialties MODEL NO. B-530		
TA-6	10 2800	Grab Bar, 36 inches	Manufacturer: American Specialties MODEL NO. B-531		
TA-7	10 2800	Grab Bar, 42 inches	Manufacturer: American Specialties MODEL NO. B-532		
TA-X	10 2800	Grab Bar, L-shaped	ASI		Showers
TA-8	10 2800	Mop and Broom Holder	Manufacturer: American Specialties Product # 8215	Janitor Closets - Mop & Broom Holder	
TA-9	10 2800	Warm-Air Dryer	Manufacturer: Dyson Product: Airblade Model: AB-02 Finish: Silver, Touch-free infrared activation		
TA-10	10 2800	Baby Changing Station	Manufacturer: American Specialties MODEL NO. 9014	Public Restrooms	
TA-X	10 28	Curtain Rod	Extra-Heavy Duty Shower Curtain Rod Manufacturer: American Specialties MODEL NO. 1204		
TA-X	10 28	Soap Dish	Manufacturer: American Specialties MODEL NO. 0401		

Mat ID	Spec Section	Description	Manufacturer / Product / Model / Finish	Project Application / Notes	Rep Contact:
TA-X	10 28	Rob Hook	Manufacturer: American Specialties MODEL NO. 7340		
TA-X	10 2800	Mirror - Framed	Framed Mirror ASI MODEL NO. 0620		
TL-1	09 3000	Tile	Vendor: Kate-lo Tile & Stone Style: Arkistone Color: Dark Size: 12x24" Code: MC.AK.DRK.1224.MT Installation method: Grout size: Grout color:	General Floor	Jennifer Bohlinger 763.232.6531 jennifer@katelotile.com
TL-2	09 3000	Tile	Vendor: Kate-lo Tile & Stone Style: Emil America, Stone Talk Color: Martellata Grey Size: 12x24" Installation method: Grout size: Grout color:	Bathrooms & Add Alternate for Wainscott (see ARWC-1 for Wainscott base Bid)	Jennifer Bohlinger 763.232.6531 jennifer@katelotile.com
TL-3	09 3000	Tile	Vendor: Kate-lo Tile & Stone Manufacturer: Ergon Style: Woodtouch Color: Corda Size: To be selected from mfg's full line of size options Code: EOLX Installation method: Grout size: Grout color:	Accent (Wood look)	Jennifer Bohlinger 763.232.6531 jennifer@katelotile.com
TL-4	09 3000	Tile	Vendor: MN Tile and Stone Manufacturer: AKDO Style: Excalibur Armor Color: Gilded Code: AL2257-ARMR00	Accent (Metal)	Pat Bonne 651.717.5059 pbonne@mntile.com
TL-5	09 3000	Tile	Manufacturer: Iris Ceramica Style: My Wall Color: Ocean Size: 10"x18" Finish: Glossy Installation method: Stacked Grout size: Grout color:	Accent (Blue)	
TL-6	09 3000	Tile	Vendor: Daltile Series: Keystones Color: To be selected from manufacturers full line of colorways Size: 2"x2" mosaic Grout size: Grout color:	Shower Floor	Amie Moonan 612.616.1866 ami.moonan@daltile.com
TL-7a	09 3000	Tile	Manufacturer: Daltile Style: Festiva Color: To be selected from mfg's full line of color options Size: 3" x 6" Installation method: Grout size: Grout color:	Shower Walls, Field (light neutral)	Amie Moonan 612.616.1866 ami.moonan@daltile.com
TL-7b	09 3000	Tile	Manufacturer: Daltile Style: Festiva Color: QF66 TAHOE FOR COLOR Size: 3" x 6" Installation method: Grout size: Grout color:	Shower Walls, Accent (Blue)	Amie Moonan 612.616.1866 ami.moonan@daltile.com
TS-1	09 3000	Metal Transition	Manufacturer: Schluter Systems Profile: Dilex Product # AHK 1S 100 AE Finish: Satin anodized Aluminum	Cove	Jeremy Ghent 269.366.5859 jghent@schluter.com
TS-2	09 3000	Metal Transition	Manufacturer: Schluter Systems Profile: Jolly Product # AE 100 Finish: Satin anodized Aluminum	Wall	
TS-3	09 3000	Metal Transition	Manufacturer: Schluter Systems Profile: Schiene Product # AE 100 Finish: Satin anodized Aluminum	Floor	
TS-4	09 3000	Metal Transition	Manufacturer: Schluter Systems Profile: DESIGNLINE Product # DL 625 AE	Wall Tile Border	
TS-5	09 3000	Solid Surface Transition	Manufacturer: Corian Product: Threshold Transition Strip Color: Group C Size: Width 1.5" Tapered	Toilet Room Tile to Carpet Transition	
TS-6	09 6500	Vinyl Transition	Manufacturer: Johnsonite Slimline SLT-63-XX Color: Burnt Umber	Carpet to Resilient	Ivana Rosich 773.318.0630 ivana.rosich@johnsonite.com

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CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	JBK
CHECKED BY	MDL
COMMISSION NUMBER	2106-02

SHEET TITLE

INTERIOR MATERIAL ID LIST

SHEET NUMBER

I050B

BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_AI_R19.rvt
2/19/2020 5:17:05 PM

Mat ID	Spec Section	Description	Manufacturer / Product / Model / Finish	Project Application / Notes	Rep Contact:
TS-7	09 6500	Vinyl Transition	Manufacturer: Johnsonite Edge Guard EG-63-XX Color: Burnt Umber	Carpet to Concrete	Ivana Rosich 773.318.0630 ivana.rosich@johnsonite.com
TS-8	09 6500	Vinyl Transition	Manufacturer: Johnsonite Edge Guard EG-63-XX Color: Burnt Umber	Resilient to Concrete	Ivana Rosich 773.318.0630 ivana.rosich@johnsonite.com
WC-1	09 7200	Wallcovering	Manufacturer: Wolf Gordon Code: GOH 31709178 Collection: Foundry Color: Soot Content: 100% Vinyl Backing: Cotton Width/Weight: 52" / 35 oz per ly Hanging: Reverse Hang. Random Match Fire Rating: Class A; NFPA 286 Sustainability: Contains 10% pre-consumer recycled content	Roll-call & Open Office	Holly Thompson, Sales Representative, 612.791.3080, holly.thompson@wolfgordon.com
WC-2	09 7200	Wallcovering	Manufacturer: Wolf Gordon Code: GOH 31709211 Collection: Walthamstow Color: Graphite Content: 100% Vinyl Backing: Nonwoven Width/Weight: 54" / 20.3 oz per ly Repeat: 54"H x 25.25"V Hanging: Straight Hang. Random Match Fire Rating: Class A	Conference	Holly Thompson, Sales Representative, 612.791.3080, holly.thompson@wolfgordon.com
WC-3	09 7200	Wallcovering	Manufacturer: Wolf Gordon Code: GOH 31709213 Collection: Grove Color: Fawn Content: 100% Vinyl Backing: Cotton Osnaburg Width/Weight: 52" / 20 oz per ly Hanging: Reverse Hang. Random Match Fire Rating: Class A; NFPA 286	Lobby	Holly Thompson, Sales Representative, 612.791.3080, holly.thompson@wolfgordon.com
WCG-1	10 2600	Wall Corner Guard	Manufacturer: In Pro Corporation Type: Surface Mount Stainless Steel Corner Guards Legs: 1-1/2" Height: 4' No: 181124C-430 Gauge: 16 Installation: Cement-On Mounting Height: Top of wall base	Parking Level and Storage Rooms	
WCG-2	10 2600	Wall Corner Guard	Manufacturer: Acrovyn Product: Corner Guard Mounting: Surface Color: TBD	When in contact with PTL-2	Nikki Dahn Pierce Sales Inc 952.942.9710 ndahn@piercesalesinc.com
WCG-3	10 2600	Wall Corner Guard	Manufacturer: Acrovyn Product: Corner Guard Mounting: Surface Color: TBD	When in contact with PTL-3	Nikki Dahn Pierce Sales Inc 952.942.9710 ndahn@piercesalesinc.com
WCG-4	10 2600	Wall Corner Guard	Manufacturer: Acrovyn Product: Corner Guard Mounting: Surface Color: TBD	When in contact with PTL-4	Nikki Dahn Pierce Sales Inc 952.942.9710 ndahn@piercesalesinc.com
WCG-5	10 2600	Wall Corner Guard	Manufacturer: Acrovyn Product: Corner Guard Mounting: Surface Color: TBD	When in contact with PTL-5	Nikki Dahn Pierce Sales Inc 952.942.9710 ndahn@piercesalesinc.com
WD-1	08 4000	Solid Wood	Species: White Oak Cut: Rift Sawn Finish: Stained to Match Designer's sample	General Project Wood	
WT-1	12 2000	Roller Window Shade	Manufacturer: MechoSystems Product: Manual Window Shade Type: Mecho 5 Pocket Bracket with fascia Shade: Thermoveil 3000 Series Shade Pattern: Reversible Satin Weave Shade color: TBD Fascia color: TBD Chain color: TBD	Offices, Conference, Breakroom	
WT-2	12 2000	Roller Window Shade	Manufacturer: MechoSystems Product: Bottom-up Shade (Blackout + shade cloth) Bracket with fascia Shade: Thermoveil 3000 series Shade Pattern: Reversible Satin Weave Shade Color: TBD Fascia color: TBD	Community Room	

END OF SECTION

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COMMISSION NUMBER	2106-02

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INTERIOR MATERIAL ID LIST

SHEET NUMBER

I050C

BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_AI_R19.rvt
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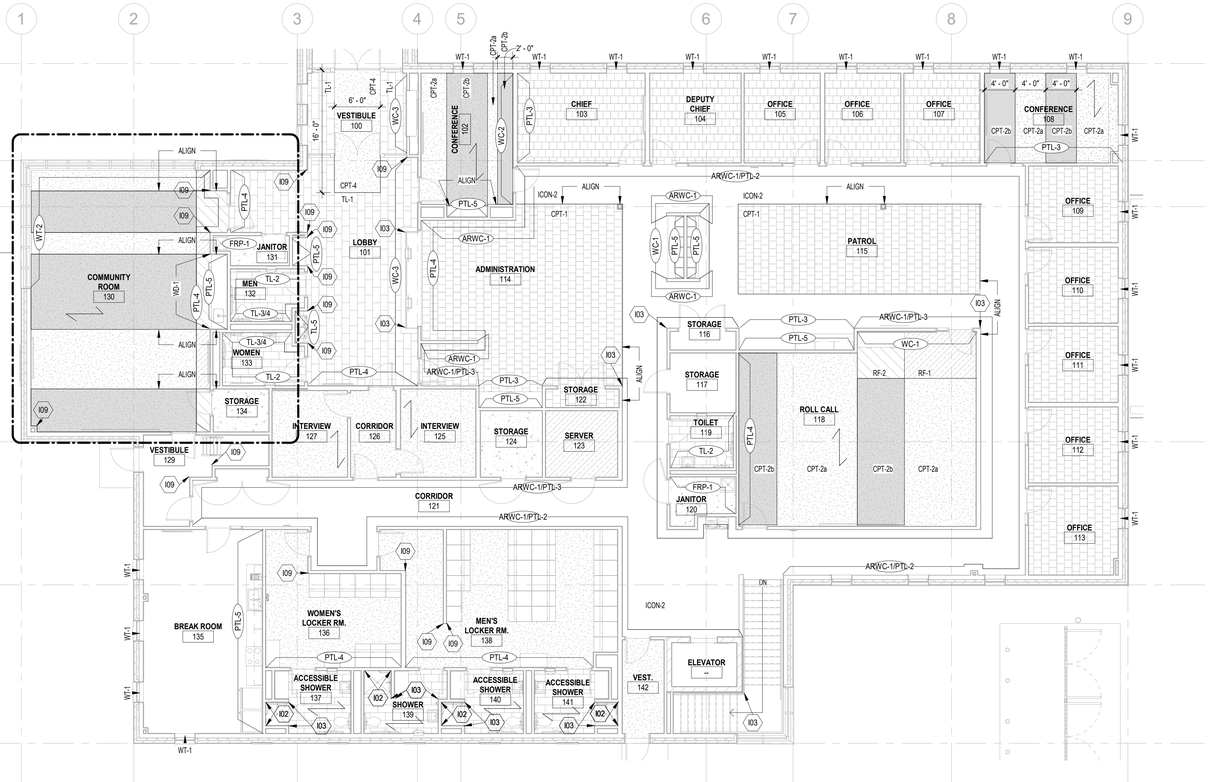
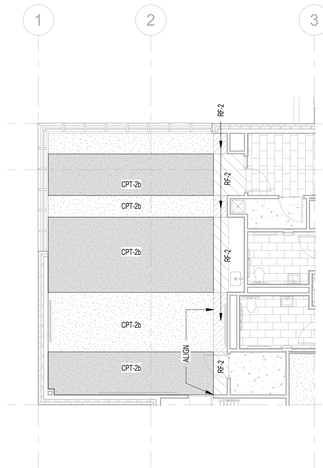
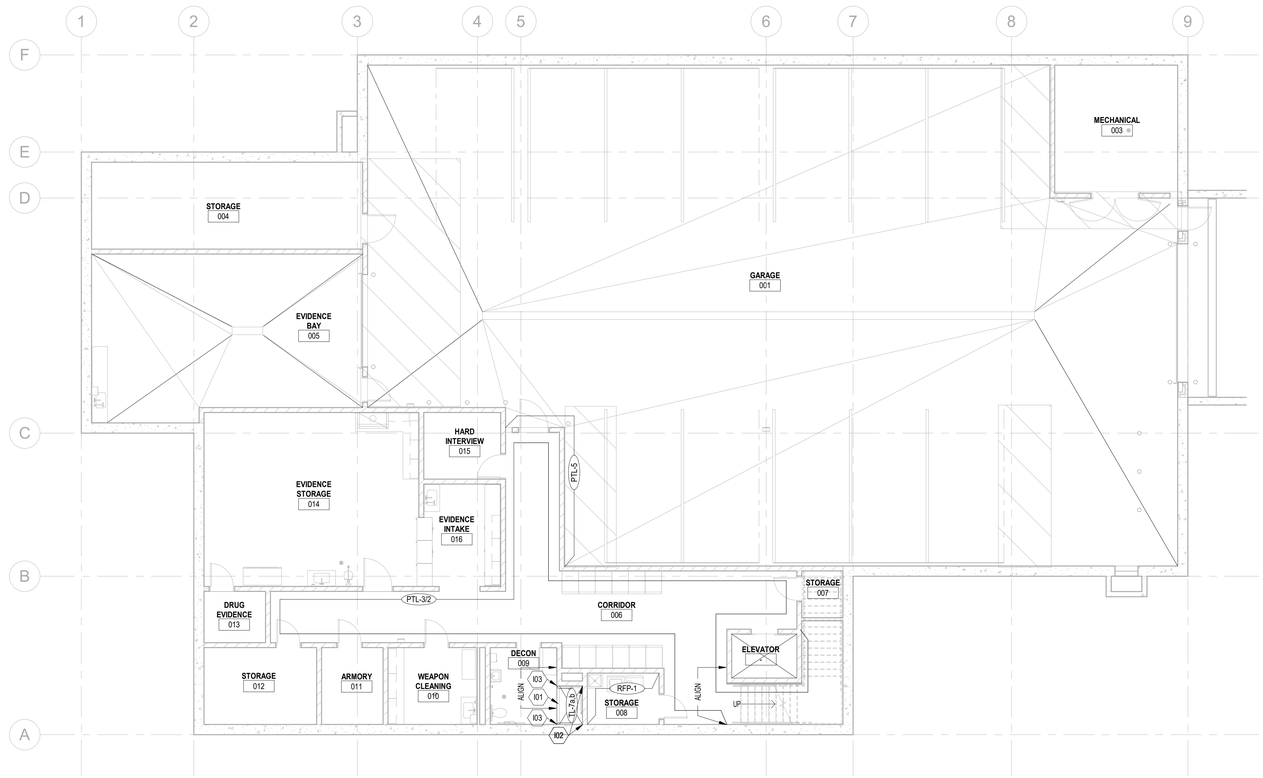


2 I101 LEVEL 1 - FINISH PLAN
1/8" = 1'-0"



3 I101 ENLARGED COMMUNITY ROOM FLOOR PATTERN PLAN
1/8" = 1'-0"



1 I101 LOWER LEVEL - FINISH PLAN
1/8" = 1'-0"

INTERIOR FINISH PLAN GENERAL NOTES

1. REFER TO SYMBOLS AND ABBREVATIONS ON SHEET G130 FOR FINISH KEY.
2. REFER TO REFLECTED CEILING PLANS IN A-SHEETS FOR CEILINGS.
3. REFER TO INTERIOR ELEVATIONS FOR ADDITIONAL MATERIAL CALL-OUTS.
4. REFER TO MATERIAL ID ON SHEET I050 FOR ADDITIONAL FINISH INFORMATION.
5. CONTRACTOR IS RESPONSIBLE FOR VERIFYING LEAD TIMES AND AVAILABILITY OF ALL MATERIAL SUCH THAT MATERIALS ARE ON SITE WHEN READY FOR INSTALLATION. THE RE-SELECTION OF MATERIAL BECAUSE OF LONG LEAD TIME WILL NOT BE PERMITTED.
6. CONTRACTOR TO PROVIDE FLOOR FINISH INSTALLATION PLAN TO DESIGNER FOR APPROVAL.
7. CONTRACTOR TO SUBMIT DRAW-DOWNS AND SAMPLES OF ALL FINISHES FOR APPROVAL PRIOR TO APPLICATION.
8. CONTRACTOR TO VERIFY EXTENTS OF FLOOR FINISHES PRIOR TO INSTALLATION AND COORDINATE WITH FLOOR CONTRACTOR(S). VERIFY AREAS OPEN UNDER COUNTERS. (EXAMPLE - SINK CABINETS WITH REMOVEABLE BASE. OPEN SPACES BETWEEN BASE CABINETS, ETC.)
9. GOODS SUPPLIED FROM MORE THAN ONE DYE LOT MUST NOT BE SEAMED ADJACENT TO ONE ANOTHER OR INSTALLED IN THE SAME AREA.
10. FLAME SPREAD RATINGS FOR ALL MATERIALS SHALL CONFORM TO APPLICABLE REGULATORY CODES.
11. ALL CARPET, WALL BASE AND INSTALLATION SHALL BE PROVIDED BY THE CONTRACTOR. ENTIRE SPACE SHALL BE FIELD MEASURED PRIOR TO ORDER PLACEMENT.
12. FLOOR SURFACE PREPARATION: CLEAN SURFACES TO BE COVERED. FILL AND SMOOTH ALL CRACKS, UNEVEN, AND/OR ROUGH SURFACES IN SUBSTRATE WHERE FLOOR COVERING IS TO BE INSTALLED, PRIOR TO INSTALLING FLOOR COVERING. LEVEL FLOOR IS DEFINED AS A FLOOR AREA NOT VARYING MORE THAN 1/4" WITHIN A 10'-0" RADIUS.
13. FLOORS THROUGHOUT TO RECEIVE FINISHES AS INDICATED, DIRECT - GLUE INSTALLATION, UNLESS NOTED OTHERWISE.
14. FINISH TRANSITIONS BETWEEN FLOOR FINISHES TO BE AT THE CENTER OF CLOSED DOORS, UNLESS NOTED OTHERWISE.
15. JOINTS IN BASE SHALL NOT OCCUR CLOSER THAN 6" FROM CORNER AND SHALL BE BUTTED TIGHTLY TOGETHER.
16. WALL SURFACE PREPARATION SHOULD BE PROPERLY PREPARED, SKIM COATED, SPACKLED, SANDED ETC. TO PROVIDE A SINGLE SMOOTH SURFACE READY FOR FINISHES.
17. "GENERAL" SURFACES TO BE PREPARED AS FOLLOWS: ALL NECESSARY FILLING OF NAIL HOLES, CRACKS AND BLEMISHES SHALL BE DONE BEFORE PRIMING. ALL KNOTS AND SAP SPOTS SHALL BE SHELLACKED BEFORE FINISHING WITH PAINT. ALL METAL SURFACES TO BE PAINTED SHALL BE WASHED WITH MINERAL SPIRITS TO REMOVE ALL OIL AND/OR GREASE. SAND OR WIRE BRUSH ALL RUST OR SCALED AREAS. GALVANIZED METAL SHALL BE TREATED WITH APPROVED PRE-TESTING SOLUTION. EXISTING SURFACES TO BE PAINTED SHALL BE THROUGHLY CLEANED. ONLY SMOOTH, UNBLEMISHED SURFACES WILL BE ACCEPTED. THE APPLICATION OF PAINT OR FINISH SHALL SIGNIFY ACCEPTANCE OF SURFACE TO BE FINISHED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FINISHED PRODUCT.
18. PAINT SHALL BE APPLIED AS FOLLOWS: ALL COATS SHALL BE DRY BEFORE APPLYING SUCCEEDING COATS, AND LIGHTLY BETWEEN COATS ON SMOOTH SURFACES TO ASSURE ADHESION OF SUBSEQUENT COATS. PAINT PRIOR TO FINAL INSTALLATION OF FIXTURES, PLATES, GRILLE COVERS, HARDWARE, ETC.
19. MATERIALS USED FOR PAINTING SHALL BE FIRST QUALITY MANUFACTURERS SUCH AS PRATT & LAMBERT, BENJAMIN MOORE, SHERWIN WILLIAMS, OR ICI. ALL PAINT SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION FOR THE SURFACE ON WHICH IT IS APPLIED.
20. ALL ELECTRICAL SWITCH, OUTLET AND DEVICE PLATES, SURFACE TRIM, HARDWARE, ETC. SHALL BE REMOVED BEFORE PAINTING. PROTECT AND REINSTALL ITEMS IN GOOD CONDITION WHEN PAINTING IS COMPLETE. REPLACE DAMAGED ITEMS.
21. TS-1 @ ALL INSIDE CORNERS OF SHOWERS.
22. TS-2 @ ALL EXPOSED WALL TILE EDGES
23. WCG-1 @ ALL GYP. BD. OUTSIDE CORNERS.
24. SSR-2 FOR WINDOW SILLS.
25. RB-1 USED ON ALL WALLS UNLESS NOTED OTHERWISE.
26. ALL WALLS TO RECEIVE PTL-2 UNLESS NOTED OTHERWISE.
27. FOR FLOOR TRANSITIONS, REFER TO MATERIAL ID ON SHEET I050.
28. ALL HOLLOW METAL DOORS & FRAMES TO BE PAINTED PTM-6 UNLESS NOTED OTHERWISE.
29. ALL ELECTRICAL/DATA DEVICES TO BE GRAY AND FACE PLATES TO BE STAINLESS STEEL.
30. ALL GYPSUM BOARD CEILINGS TO BE PAINTED PTL-1, UNLESS NOTED OTHERWISE. AT SHOWER ROOMS CEILINGS TO BE PTE-8.
31. ALL NON PUBLIC RESTROOMS WHERE WALL TILE DOES NOT OCCUR, USE TLB-1.
32. ALL WOOD DOORS TO BE WD-1 VENEER.

FLOOR FINISH KEY

- CPT-2a
- CPT-2b
- RF-1
- RF-2

KEYNOTES - FINISH PLAN

I01	(SSR-3) SHOWER FLOOR TRANSITION. SEE MAT-ID FOR ADD'L INFO.
I02	(TS-1) METAL COVE TRANSITION @ ALL INSIDE CORNERS OF SHOWERS. SEE MAT-ID FOR ADD'L INFO.
I03	(TS-2) METAL EDGE TRANSITION @ ALL OUTSIDE CORNERS AND EXPOSED EDGES OF WALL TILE. SEE MAT-ID FOR ADD'L INFO.
I09	(WCG-1) WALL CORNER GUARD. SEE MAT-ID FOR ADD'L INFO.

ROOM FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	BASE FINISH	CEILING FINISH	FLOOR FINISH	WALL FINISH	COMMENTS
-	ELEVATOR	SEE SPEC	SEE SPEC	CPT-4	SEE SPEC	
--	ELEVATOR	SEE SPEC	SEE SPEC	CPT-4	SEE SPEC	
001	GARAGE	NONE	NONE	ICON-1	PTL-2,5	
003	MECHANICAL	NONE	NONE	ICON-1	NONE	
004	STORAGE	NONE	NONE	ICON-1	PTL-2	
005	EVIDENCE BAY	NONE	NONE	ICON-1	PTL-2	
006	CORRIDOR	RB-1	PTL-1	ICON-1	PTL-2,3	
007	STORAGE	RB-1	PTL-1	ICON-1	PTL-2	
008	STORAGE	RB-1	NONE	ICON-1	PTL-2/FRP-1	FRP-1 TO BE INSTALLED TO THE HEIGHT OF (1) FULL 4'-0" SHEET ABOVE RB-1
009	DECON	TLB-1	PTE-8	ICON-1/TL-6/TS-3	TL-7a,b	TL-6 @ SHOWER ONLY, USE TS-3 TO TRANSITION FROM TILE TO CONCRETE
010	WEAPON CLEANING	RB-1	NONE	ICON-1	PTL-2	
011	ARMORY	NONE	NONE	ICON-1	PTL-2	
012	STORAGE	NONE	NONE	ICON-1	PTL-2	
013	DRUG EVIDENCE	NONE	PTL-1	ICON-1	PTL-2	
014	EVIDENCE STORAGE	RB-1	NONE	ICON-1	PTL-2	
015	HARD INTERVIEW	RB-1	ACT-3	ICON-1	PTL-2/AWP-1	
016	EVIDENCE INTAKE	RB-1	ACT-1	ICON-2	PTL-2	
100	VESTIBULE	TLB-1	ACT-2	TL-1	PTL-2/WC-3	
101	LOBBY	TLB-1	ACT-2/PTL-4	TL-1	PTL-2,4.5/WC-3/TL-5	
102	CONFERENCE	RB-1	ACT-1	CPT-2a,b	PTL-3/WC-2	
103	CHIEF	RB-1	ACT-1	CPT-1	PTL-2,3	
104	DEPUTY CHIEF	RB-1	ACT-1	CPT-1	PTL-2	
105	OFFICE	RB-1	ACT-1	CPT-1	PTL-2	
106	OFFICE	RB-1	ACT-1	CPT-1	PTL-2	
107	OFFICE	RB-1	ACT-1	CPT-1	PTL-2	
108	CONFERENCE	RB-1	ACT-1	CPT-2a,b	PTL-2,3	
109	OFFICE	RB-1	ACT-1	CPT-1	PTL-2	
110	OFFICE	RB-1	ACT-1	CPT-1	PTL-2	
111	OFFICE	RB-1	ACT-1	CPT-1	PTL-2	
112	OFFICE	RB-1	ACT-1	CPT-1	PTL-2	
113	OFFICE	RB-1	ACT-1	CPT-1	PTL-2	
114	ADMINISTRATION	RB-1	ACT-1/ACT-3a,b,c/PTL-1	CPT-1/TS-7	PTL-2,4/WC-1/ARWC-1	WAINSCOTTING UP TO 4'-0" AFF, PAINT OR WALLCOVERING TO CEILING, TL-2 W/ TS-1,2 IN LIEU OF ARWC-1 W/ RB-1 FOR ADD ALT.
115	PATROL	RB-1	PTL-1/PTL-5/ACT-3a,b,c	CPT-1/TS-7/ICON-2	PTL-2,4/WC-1/ARWC-1	WAINSCOTTING UP TO 4'-0" AFF, PAINT OR WALLCOVERING TO CEILING, TL-2 W/ TS-1,2 IN LIEU OF ARWC-1 W/ RB-1 FOR ADD ALT.
116	STORAGE	RB-1	PTL-1	ICON-2	PTL-2	
117	STORAGE	RB-1	PTL-1	ICON-1	PTL-2	
118	ROLL CALL	RB-1	ACT-1	CPT-2a,b/RF-1,2	PTL-2,4/WC-1	
119	TOILET	TLB-2/TS-1	PTL-1	TL-2	PTL-2/TL-2	
120	JANITOR	RB-1	PTL-1	ICON-1	PTL-2/FRP-1	FRP-1 TO BE INSTALLED TO THE HEIGHT OF (1) FULL 4'-0" SHEET ABOVE RB-1
121	CORRIDOR	RB-1	ACT-1/PTL-1	ICON-2	PTL-2/ARWC-1	WAINSCOTTING UP TO 4'-0" AFF, PAINT TO CEILING, TL-2 W/ TS-1,2 IN LIEU OF ARWC-1 W/ RB-1 FOR ADD ALT.
122	STORAGE	RB-1	PTL-1	CPT-1	PTL-2	
123	SERVER	RB-1	PTL-1	RF-3	PTL-2	
124	STORAGE	RB-1	ACT-1	ICON-1	PTL-2	
125	INTERVIEW	RB-1	ACT-1	CPT-2a	PTL-2	
126	CORRIDOR	RB-1	ACT-1	CPT-2a	PTL-2	
127	INTERVIEW	RB-1	ACT-1	CPT-2a	PTL-2	
128	ELEC.	RB-1	ACT-1	RF-3	PTL-2	
129	VESTIBULE	RB-1	ACT-1	ICON-2	PTL-2	
130	COMMUNITY ROOM	RB-1	PTL-1/ACT-1	CPT-2a,b/RF-1,2	PTL-2,4,5	WD-1 TRIM AROUND OPENING TO COUNTER; ACT-3a TO BE ADD ALT. IN LIEU OF ACT-1
131	JANITOR	RB-1	ACT-1	ICON-1	PTL-2/FRP-1	FRP-1 TO BE INSTALLED TO THE HEIGHT OF (1) FULL 4'-0" SHEET ABOVE RB-1
132	MEN	TS-1	PTL-1	TL-2	TL-2,3,4	
133	WOMEN	TS-1	PTL-1	TL-2	TL-2,3,4	
134	STORAGE	RB-1	ACT-1	ICON-1	PTL-2	TS-8 @ FLOOR TRANSITION FROM COMMUNITY ROOM
135	BREAK ROOM	RB-1	ACT-1	ICON-2	PTL-2,5	
136	WOMEN'S LOCKER RM.	RB-1	ACT-1	CPT-3	PTL-2,4	
137	ACCESSIBLE SHOWER	TS-1	PTE-8	TL-2,6	TL-7a,b	
138	MEN'S LOCKER RM.	RB-1	ACT-1	CPT-3	PTL-2,4	
139	SHOWER	TS-1	PTE-8	TL-2,6	TL-7a,b	
140	ACCESSIBLE SHOWER	TS-1	PTE-8	TL-2,6	TL-7a,b	
141	ACCESSIBLE SHOWER	TS-1	PTE-8	TL-2,6	TL-7a,b	
142	VEST.	TLB-1	ACT-1	CPT-4	PTL-2	

TRUE NORTH

BKV GROUP

Architecture
Interior Design
Landscape Architecture
Engineering

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CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	JBK
CHECKED BY	MDL
COMMISSION NUMBER	2106-02

SHEET TITLE

INTERIOR FINISH PLANS

SHEET NUMBER

I101

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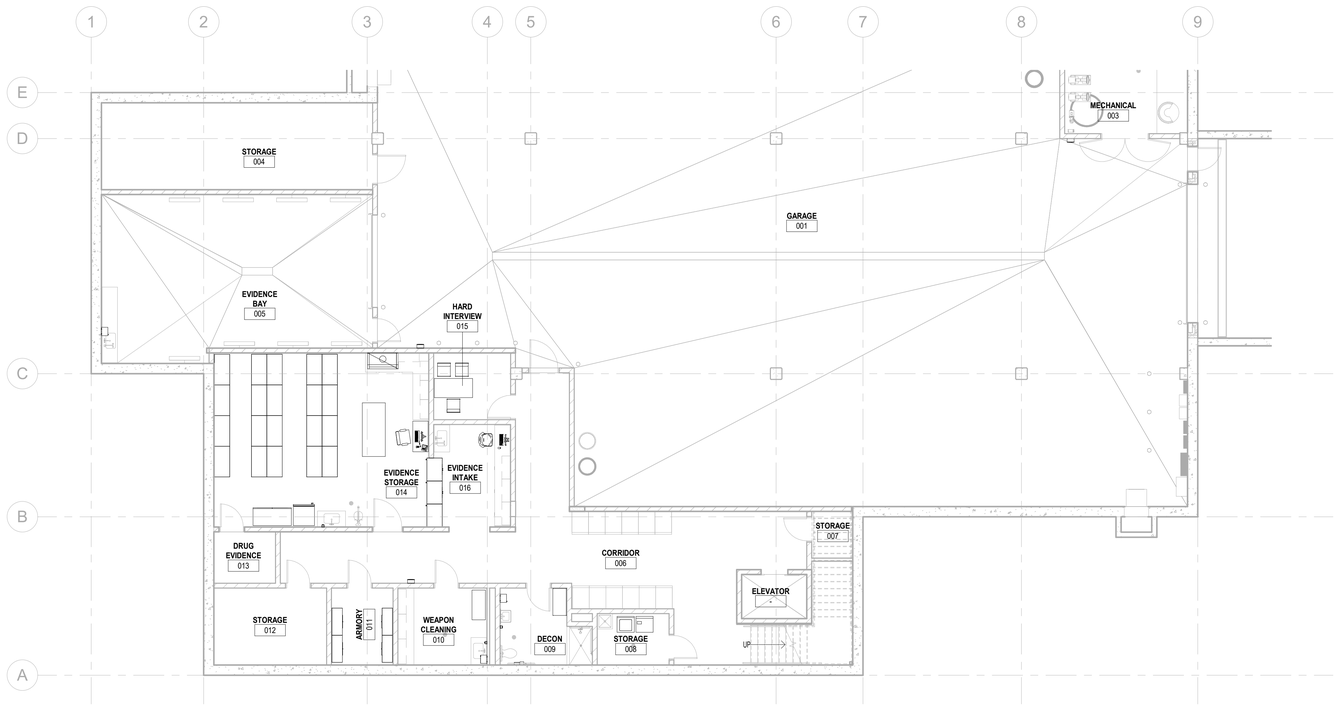
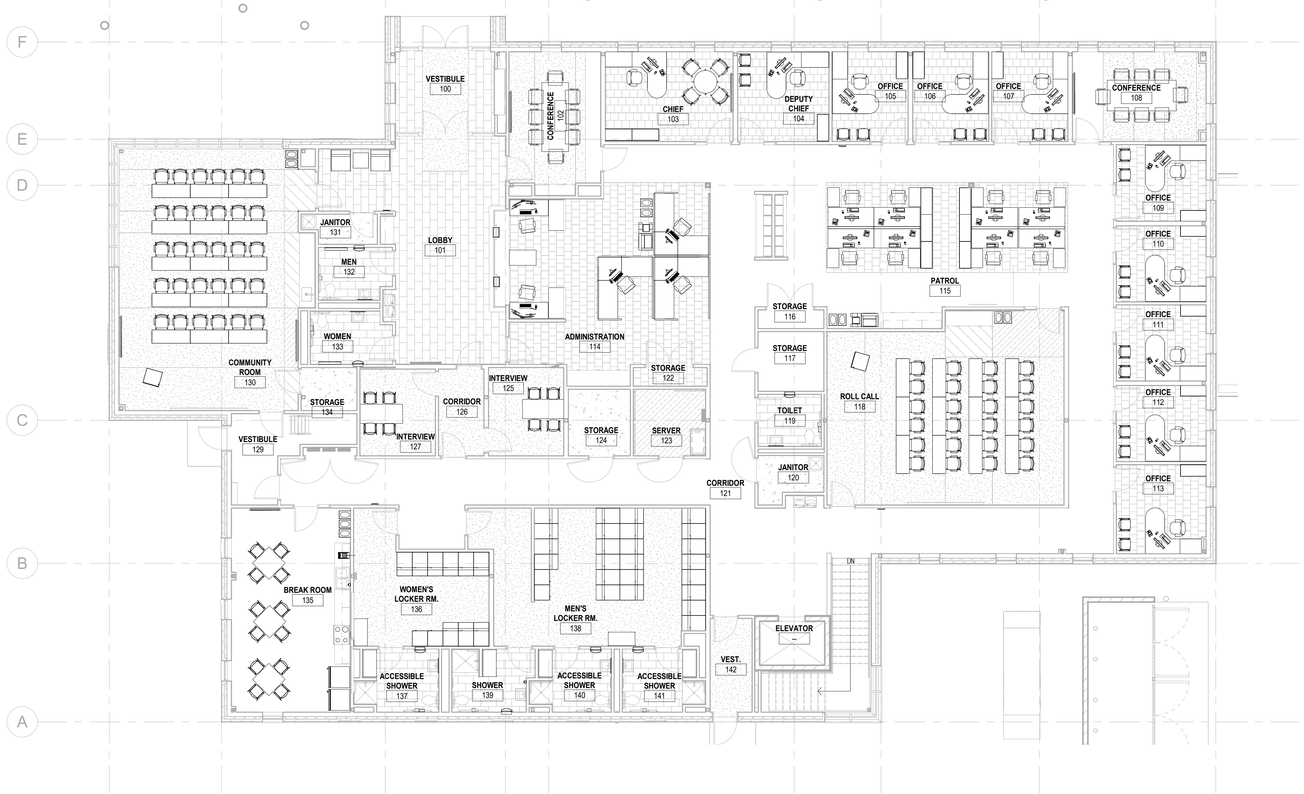


1 / I301 LOWER LEVEL FURNITURE PLAN - FOR REFERENCE ONLY
1/8" = 1'-0"



2 / I301 LEVEL 1 - FURNITURE PLAN - FOR REFERENCE ONLY
1/8" = 1'-0"

FURNITURE PLAN GENERAL NOTES

1. Type Notes Starting Here

KEYNOTES - FURNITURE PLAN

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A

ABV	ABOVE
ADDL	ADDITIONAL
ADDM	ADDENDUM
ADJ	ADJUSTABLE
ADJ	ADJACENT
AFF	ABOVE FINISH FLOOR
ALT	ALTERNATE
APPROX	APPROXIMATE(LY)
ARCH	ARCHITECT(URAL)

B

B/	BOTTOM (OF)
BD	BOARD
BEL	BELOW
BFE	BOTTOM OF FOOTING ELEVATION
BLK	BLOCK
BLKG	BLOCKING
BLW	BELOW
BM	BEAM(S)
BO	BOTTOM OF
BOF	BOTTOM OF FOOTING
BOS	BOTTOM OF STEEL
BOT	BOTTOM
BRG	BEARING
BRKT	BRACKET
BS	BOTH SIDES
BTWN	BETWEEN
BW	BOTH WAYS

C

C/C	CENTER TO CENTER
CEM	CEMENT
CTR	CENT(ER)(ERED)(TRAL)
CF	CUBIC FEET
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFMF	COLD FORMED METAL FLASHING
CIP	CAST IN PLACE
CJ	CONTROL JOINT(S)
CJP	COMPLETE JOINT PENETRATION
CL	CENTER LINE
CLR	CLEAR(ANCE)
CMU	CONCRETE MASONRY UNIT
CP-	CONCRETE PIER
COL	COLUMN
CONC	CONCRETE
CONN	CONNECT(ED)(ION)
CONST	CONSTRUCTION
CONST JT	CONSTRUCTION JOINT
CONT	CONTINU(E)(OUS)(ATION)
CONTR	CONTRACT(OR)
COORD	COORDINATE
CU	CUBIC
CU FT	CUBIC FEET
CU IN	CUBIC INCH(ES)
CU YD	CUBIC YARD

D

DBA	DEFORMED BAR ANCHOR
DBE	DECK BEARING ELEVATION
DEG	DEGREE(S)
DEMO	DEMO(LISH)(LITION)(LITION)
DTL	DETAIL
DIA (Ø)	DIAMETER
DIAG	DIAGONAL
DIF	DIFFEREN(CE)(TIAL)
DIM	DIMENSION
DIV	DIVI(DE)(DED)(DER)(SION)
DJ	DEFLECTION JOINT
DL	DEAD LOAD
DN	DOWN
DWG(S)	DRAWING(S)
DWL	DOWEL(REBAR)

E

EA	EACH
EJ	EXPANSION JOINT
EL	ELEVATION
EMBED	EMBEDMENT
EOS	EDGE OF SLAB
EQ	EQUAL
EQ SP	EQUALLY SPACED
ES	EACH SIDE
EW	EACH WAY (REBAR REINFORCING)
EXIST	EXISTING
EXP	EXPAN(D)(SION)
EXT	EXTERIOR

F

FD	FLOOR DRAIN
FDN	FOUNDATION
FP	FIREPROOF(ING)
FR	FRAME
FRMG	FRAMING
FS	FAR SIDE
FOS	FOOTING STEP
FTG	FOOTING

G

GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR

H

HD	HEAVY DUTY
HK	HOOK
HORIZ	HORIZONTAL
HSS	HOLLOW STRUCTURAL SECTION (STRUC SHAPE)
HT	HEIGHT

I

IF	INSIDE FACE
INFO	INFORMATION

J

JST	JOIST
JNT	JOINT

K

K	KIP (1000 POUNDS)
KLF	KIPS PER LINEAR FOOT
KSI	KIPS PER SQUARE INCH

L

LF	LINEAR FOOT, FEET
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOC	LOCATION(S)
LPT	LOW POINT
LTWT	LIGHTWEIGHT
LVL	LEVEL

M

MATL	MATERIAL
MAX	MAXIMUM
MTL	METAL
MEZZ	MEZZANINE
MIN	MINIMUM
MISC	MISCELLANEOUS
MP-	MASONRY PIER

N

NS	NEAR SIDE
NTS	NOT TO SCALE

O

OC	ON CENTER(S)
OCH	ON CENTER HORIZONTAL
OCV	ON CENTER VERTICAL
OD	OUTSIDE DIAMETER / DIMENSION
OF	OUTSIDE FACE
OPN'G	OPENING(S)
OPP	OPPOSITE

P

PCC	PRECAST CONCRETE
PCF	POUNDS PER CUBIC FOOT
PERF	PERFORATE(D)
PERIM	PERIMETER
PREFIN	PREFINISH(ED)
PIL	PILASTER
PL	PLATE
PLF	POUNDS PER LINEAL FOOT
PREFAB	PREFABRICATE(D)
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POST TENSION(ED)(ING)

Q

QTY	QUANTITY

R

R	RADIUS, RADII
RC	REINFORCED CONCRETE
RD	ROOF DRAIN
REINF	REINFORC(E)(ED)(ING)(EMENT)XP(D)
REQ('D)	REQUIRE(D)
REV	REVIS(E)(ED)(ION)
REV	REVERSE(D)
RTU	ROOF TOP UNITS

S

SCHED	SCHEDULE
SHT	SHEET
SHTG	SHEATHING
SIDL	SUPER IMPOSED DEAD LOAD
SIM	SIMILAR
SL	SNOW LOAD
SOG	SLAB ON GRADE
SPA	SPACE(S)
SQ	SQUARE
SQ(FT)	SQUARE FOOT/FEET
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STRUCT	STRUCTUR(E)(AL)

T

TBE	TOP OF BEAM ELEVATION
TPCE	TOP OF PILE CAP (caisson) ELEVATION
TDE	TOP OF DECK ELEVATION
TEMP	TEMPORARY
TFE	TOP OF FOOTING ELEVATION
THRD	THREAD(ED)
TJE	TOP OF JOIST ELEVATION
TLE	TOP OF LEDGE ELEVATION
TME	TOP OF MASONRY ELEVATION
TMPE	TOP OF MASONRY PIER ELEVATION
TOS	TOP OF STEEL ELEVATION
TCPE	TOP OF CONCRETE PIER ELEVATION
TPE	TOP OF PLANK ELEVATION
TPG	TOPPING
TRTD	TREATED
TS	TUBE STEEL
TSE	TOP OF SLAB ELEVATION
TWE	TOP OF WALL ELEVATION
TYP	TYPICAL

U

UNO	UNLESS NOTED OTHERWISE

V

VERT	VERTICAL

W

w/	WITH
w/o	WITHOUT
WF	WIDE FLANGE
WP	WORK(ING) POINT
WT	STRUCTURAL TEE (STRUCT SHAPE)
WGHT	WEIGHT
WWF	WELDED WIRE FABRIC

SYMBOLS

Symbol	Description
F12	COLUMN FOOTING MARK
WF12	CONTINUOUS WALL FOOTING MARK
CC1	CONCRETE COLUMN MARK
EP-1	EMBED / BEARING PLATE MARK
10	LINTEL / HEADER MARK
MP1 / CP1	MASONRY/ CONCRETE PIER MARK
SW1	SHEAR WALL MARK
SR1	STUD RAIL MARK
	ELEVATION CHANGE
	SPAN DIRECTION SYMBOL
	TOP BAR SLAB REINFORCING
	BOTTOM BAR SLAB REINFORCING
	DIMENSION LINES
	LIMIT LINE
	EXTENTS LINE
	BEAM SPICE
℄	CENTERLINE
w/P\d	WOOD POST MARK
SC1	STEEL COLUMN MARK
CW 12.5	WALL MARK
H1	HOLD DOWN MARK
RAMP	RAMP SLOPE ARROW

Hatch	Material
	DIMENSIONAL LUMBER
	CONCRETE
	PRECAST
	CONCRETE BLOCK / MASONRY
	BRICK
	STONE
	GROUT
	EARTH
	RIGID INSULATION
	LVL
	WOOD
	STEEL
	GRAVEL
	FIREPROOFING
	POST TENSION - TENDON PATH

I. DESIGN DATA
1. BUILDING CODE
1.1. INTERNATIONAL BUILDING CODE 2012 EDITION
1.2. MINNESOTA STATE BUILDING CODE 2015

2. DESIGN LOADS
2.1. WIND LOAD
ULTIMATE WIND SPEED, Vult, (3-SECOND GUST) = 120 MPH
NOMINAL DESIGN WIND SPEED, Vasd = 93 MPH
RISK CATEGORY = 4
EXPOSURE = B
INTERNAL PRESSURE COEFFICIENT, GCpi = ±0.18

THE WIND PRESSURE IN TERMS OF POUNDS PER SQUARE FOOT TO BE USED FOR THE DESIGN OF EXTERIOR COMPONENTS AND CLADDING MATERIALS SHALL BE INDICATED ON THE SHOP DRAWINGS SUBMITTED BY THE SUPPLIER AND CERTIFIED BY A REGISTERED ENGINEER IN THE STATE OF THE PROJECT.

2.2. ROOF LOADS
LIVE LOAD (LL) = 20 PSF
DEAD LOAD (DESIGN DL) = 20 PSF
NET UPLIFT FOR JOIST DESIGN = TBD

2.3. ROOF SNOW LOAD
GROUND SNOW LOAD, Pg = 60 PSF
FLAT-ROOF SNOW LOAD, Pf = 51 PSF
SNOW EXPOSURE FACTOR, Ce = 1.0
SNOW LOAD IMPORTANCE FACTOR, I = 1.20
THERMAL FACTOR, Ct = 1.0

2.4. FLOOR LOADS
LIVE LOAD (LL) = 100 PSF
DEAD LOAD (SUPERIMPOSED) = 10 PSF

2.6. STAIRS, CORRIDORS & LOBBIES
LIVE LOAD (LL) = 100 PSF

2.7. MECHANICAL EQUIPMENT ROOM
LIVE LOADS (LL) = 125 PSF

3. CURTAIN WALL DEFLECTION CRITERIA

3.1. THE STRUCTURAL FRAMING SUPPORTING CURTAIN WALL PANELS HAS BEEN DESIGNED FOR A MAXIMUM LIVE LOAD DEFLECTION OF 1/2 INCH. ADDITIONAL DEFLECTION DUE TO SELF WEIGHT OF THE CURTAIN WALL IS NOT INCLUDED IN THIS LIMIT

4. ALTERNATE DESIGNS

4.1 ALTERNATE STRUCTURAL SYSTEMS & DETAILS WILL ONLY BE CONSIDERED, PROVIDED THEY ARE SUBMITTED WITH CALCULATIONS CERTIFIED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT. THE CALCULATIONS MUST SHOW THE EQUIVALENCY OF THE ALTERNATE. ACCEPTANCE OF THE ALTERNATE BY THE STRUCTURAL ENGINEER OF RECORD MUST BE IN WRITING.

6. FUTURE EXPANSION: THIS PROJECT IS NOT DESIGNED FOR FUTURE EXPANSION.

7. FIELD MODIFICATION

7.1 WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER OF RECORD IS REQUIRED FOR ALL FIELD MODIFICATIONS TO THE STRUCTURAL SYSTEM INCLUDING, BUT NOT LIMITED TO, BEAM AND COLUMN CONNECTIONS, JOIST AND JOIST GIRDER CONNECTIONS, JOIST BRIDGING, CUTTING OR DRILLING THROUGH ANY STRUCTURAL ELEMENT, CUTTING OR THE RELOCATION OF PT. OR MILD STEEL REINFORCEMENT, EMBED PLATES AND BOLTS, TILT-UP AND PRECAST WALL CONNECTIONS, ETC.

8. DEFERRED SUBMITTALS

8.1 THE FOLLOWING ITEMS WILL BE SUBMITTED TO THE BUILDING OFFICIAL PER IBC SECTION 106.3.4.2:
PRECAST CONCRETE
STEEL OPEN-WEB JOISTS
STEEL DECKING
STAIRS
BUILDING FACADE, LIGHT GAUGE FRAMING
SITE RETAINING WALLS

II. SPECIAL INSPECTIONS
1. SPECIAL INSPECTIONS

1.1. SPECIAL INSPECTIONS ARE REQUIRED IN ACCORDANCE WITH LATEST EDITION IBC, SECTION 1704.
SEE SHEET S001 FOR THE STATEMENT OF SPECIAL INSPECTIONS AND THE SPECIFICATION SECTION 014000 FOR ADDITIONAL INFORMATION.

III. SITE WORK
1.1. GEOTECHNICAL REPORT

1.1. FOUNDATIONS, RETAINING & BASEMENT WALLS, FOUNDATION DRAINAGE, SLABS ON GRADE & OTHER ITEMS RELATED TO THE SOILS ARE DESIGNED BASED ON THE INFORMATION LISTED BELOW. PRIOR TO CONSTRUCTION A QUALIFIED SOILS ENGINEER FAMILIAR WITH THE SITE AND PROJECT MUST VERIFY THE SOILS ARE CAPABLE OF WITHSTANDING THE INDICATED BEARING PRESSURES.

1.2. .FOUNDATIONS, RETAINING & BASEMENT WALLS, FOUNDATION DRAINAGE, SLABS ON GRADE & OTHER ITEMS RELATED TO THE SOILS ARE DESIGNED & SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE RECOMMENDATIONS OF CHOSEN VALLEY TESTING INC. REPORT NO 15729.19.MNS DATED 10/30/2019.

1.5. DESIGN NET SOIL BEARING CAPACITY IS AS FOLLOWS:
SPREAD FOOTINGS = 3,000 PSF
STRIP FOOTINGS = 3,000 PSF

1.4. ALLOWABLE PASSIVE PRESSURE = 400 PCF

1.5. COEFFICIENT OF FRICTION = 0.50.

1.6. MINIMUM DEPTH FROM EXTERIOR GRADE TO BOTTOM OF BUILDING PERIMETER FOOTINGS SHALL BE 5'-0". ALL OPEN AIR FOUNDATIONS HAVE A MINIMUM OF 6'-0" FROST PROTECTION.

1.7. RESTRAINED FOUNDATION WALLS ARE DESIGNED FOR AN EQUIVALENT FLUID PRESSURE OF 55 PSF/FT CANTILEVERED RETAINING WALLS ARE DESIGNED FOR AN EQUIVALENT FLUID PRESSURE OF 35 PSF/FT BACKFILL MATERIALS & OPERATIONS SHALL BE AS RECOMMENDED IN THE SOILS REPORT.

1.9. SLABS ON GRADE ARE DESIGNED USING A MODULUS OF SUBGRADE REACTION OF 200 PCI

IV. CONCRETE
1. CONCRETE MATERIAL PROPERTIES
1.1. CONCRETE STRENGTH:

	f'c PSI
FOOTINGS, PIERS, GRADE BEAMS	4,000
FOUNDATION WALLS	4,000
INTERIOR SLAB ON GRADE	5,000
EXTERIOR SLAB ON GRADE	5,000
PRECAST TOPPING	5,000
BEAMS, STRUCTURAL SLABS, & COLUMNS	5,000
PRECAST MEMBERS	5,000 MIN

1.2. EXTERIOR CONCRETE SLABS EXPOSED TO FREEZE / THAW CYCLES SHALL HAVE AIR ENTRAINMENT OF 6 % ± 1% BY VOLUME.

1.3. CONCRETE MIX DESIGNS & SUPPORTIVE DATA

SUBMITTALS FOR APPROVAL ACCORDING TO ACI-318, SECTION 5.3, LATEST CODE ADOPTED EDITION.

IT IS RECOMMENDED THAT THE CONCRETE BE PLACED DIRECTLY FROM THE TRUCK CHUTE. DIFFERENT PLACING METHODS MAY REQUIRE MIX MODIFICATIONS.

LIGHTWEIGHT CONCRETE SHALL HAVE A MINIMUM DRY UNIT WEIGHT OF 106 PCF & A MAXIMUM DRY UNIT WEIGHT OF 116 PCF WITH AIR CONTENT OF 4% TO 7%.

SEE CORROSION PROTECTION SECTION FOR ADDITIONAL CONCRETE MIX DESIGN REQUIREMENTS.

2. REINFORCING MATERIAL PROPERTIES

2.1. REINFORCING PROPERTIES (INCH-POUND):

	Fy KSI	ASTM
ALL BARS UNLESS NOTED	60	A615
TIES & STIRRUPS	60	A615
WELDED WIRE FABRIC (SMOOTH)	65	A185
PRESTRESSING STRAND	270Fpu	A416
WELDABLE REBAR	60	A706

2.2. MECHANICAL SPLICES SHALL BE BAR-LOCK (ICC ER-5064) OR EQUAL WITH PRIOR WRITTEN APPROVAL FROM THE ENGINEER OF RECORD.

2.3. THREADED BAR INSERTS SHALL BE DAYTON / RICHMOND D-101A OR D-102A (ICC ER-4028) OR EQUAL WITH PRIOR WRITTEN APPROVAL FROM THE ENGINEER OF RECORD.

3. CORROSION PROTECTION

THE FOLLOWING REQUIREMENTS SHALL APPLY TO EXTERIOR RESIDENTIAL FLATWORK SUCH AS BALCONIES, PARKING STRUCTURES EXPOSED TO CHLORIDES FROM DEICING SLATS, DIRECT OR SPRAY SEAWATER, AND AS NOTED ON THE DRAWINGS:

3.1. CONCRETE MIX SHALL CONTAIN 6 % ± 1% BY VOLUME ENTRAINED AIR, 600 lbs OF CEMENT AND 75 lbs OF FLYASH PER CUBIC YARD, AND SHALL HAVE A MAXIMUM WATER/CEMENT RATIO OF 0.35.

3.2. FLY ASH SHALL BE USED IN CONCRETE MIXES FOR POST-TENSIONED CONCRETE SYSTEMS WITH CORROSIVE ENVIRONMENT.

3.3. ADDITIONAL CONCRETE COVER AS SPECIFIED UNDER THE CAST IN PLACE AND POST TENSIONED CONCRETE SECTIONS OF THE GENERAL NOTES.

3.5. REINFORCING STEEL SHALL BE EPOXY COATED EXCEPT GARAGE BASMENT WALL AND FOOTINGS. DOWELS EXTENDING INTO COLUMNS AND SLABS SHALL ALSO BE EPOXY COATED.

3.6. FERROUS METAL ACCESSORIES INCLUDING CHAIRS, SLAB BOLSTERS, TIE WIRES AND SUPPORT BARS SHALL BE PLASTIC OR EPOXY COATED OR GALVANIZED.

3.7. EMBEDDED ELECTRICAL CONDUITS AND BOXES SHALL BE PLASTIC OR APPROVED NON-CORRODING MATERIAL.

3.8. EMBEDDED ITEMS SUCH AS PLATES, ANGLES, HEADED STUDS, ANCHOR BOLTS STUD RAILS, ETC. SHALL BE EPOXY COATED OR GALVANIZED.
GALVANIZING SHALL CONFORM TO ASTM A123
EPOXY COATING SHALL CONFORM TO ASTM A775 FOR REINFORCING BARS
EPOXY COATING SHALL CONFORM TO ASTM A884 FOR WELDED WIRE FABRIC

4. CAST IN PLACE CONCRETE

4.1. CONCRETE SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH IBC CHAPTER 19 AND ACI-318, LATEST CODE ADOPTED EDITION.

4.2. REINFORCING SHALL BE DETAILED, FABRICATED & PLACED IN ACCORDANCE WITH CRSI "MANUAL OF STANDARD PRACTICE", LATEST EDITION.

4.3. CAST IN PLACE CONCRETE AND POST INSTALLED ANCHORS SHALL BE DESIGNED IN ACCORDANCE WITH ACI 318 AS MODIFIED BY THE APPLICABLE BUILDING CODE.

4.4. SPACING OF CONSTRUCTION OR CONTROL JOINTS IN WALLS EXPOSED TO VIEW SHALL NOT EXCEED 40 FEET.

4.5. SPACING OF CONTROL JOINTS IN SLABS ON GRADE SHALL ALIGN WITH COLUMN GRIDS AND NOT EXCEED THE FOLLOWING:
EXTERIOR SLABS = 24x SLAB THICKNESS
INTERIOR SLABS = 36x SLAB THICKNESS

4.6. SLEEVES EMBEDDED IN SLABS AND WALLS SHALL BE LOCATED CLEAR BETWEEN REINFORCING BARS AND SHALL MAINTAIN CLEAR SPACING EQUAL TO THE DIAMETER OF THE LARGEST SLEEVE IN ANY DIRECTION. SLEEVE GROUPS THAT DO NOT COMPLY WITH THE ABOVE REQUIREMENTS SHALL BE CONSIDERED AS AN OPENING.

4.7. UNO, PROVIDE EXTRA REINFORCING ON ALL SIDES OF ALL MISCELLANEOUS WALL AND SLAB OPENINGS EQUAL TO ONE HALF THE INTERRUPTED REINFORCING BARS EACH SIDE BUT NOT LESS THAN 2 - #5 FOR EACH LAYER OF REINFORCEMENT. EXTEND BARS CLASS 'B' LAP LENGTH BUT NOT LESS THAN 2 FEET BEYOND EDGE OF OPENINGS. PROVIDE 2 - #4x4'-0" DIAGONAL BARS AT EACH CORNER FOR EACH LAYER OF REINFORCEMENT.

4.8. PROVIDE A 3/4" CHAMFER ON ALL EXPOSED CORNERS OF CONCRETE.

4.9. PROVIDE ISOLATION JOINTS AROUND COLUMNS AT SLAB ON GRADE AREAS.

5.0. THE FOLLOWING MINIMUM CONCRETE COVER (INCHES) SHALL BE PROVIDED FOR REINFORCEMENT:

CONCRETE CAST AGAINST & PERMANENTLY EXPOSED TO EARTH		3
CONCRETE EXPOSED TO EARTH OR WEATHER:		
# 6 THRU # 18 BARS		2
# 5 & SMALLER BARS		1 1/2
CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:		
SLABS & WALLS:	#14 & #18 BARS	1 1/2
	#11 & SMALLER BARS	3/4
GARAGE SLABS:	#14 & #18 BARS	1 3/4
	#11 & SMALLER BARS	1
BEAMS & COLUMNS:		
PRIMARY REINFORCEMENT, TIES & STIRRUPS		1 1/2
CONCRETE EXPOSED TO CORROSIVE ENVIRONMENT:		
SLABS:		
	#6 THRU #18 BARS	2 1/4
	#5 & SMALLER BARS	1 3/4
	ALL BOTTOM BARS	1
BEAMS:		
	STIRRUPS	1 3/4
	PRIMARY REINFORCEMENT	2 1/4

IX. POST-INSTALLED ANCHORS INTO CONCRETE
1. POST-INSTALLED MECHANICAL ANCHORS INTO CONCRETE SHALL BE ICC-ES APPROVED FOR USE IN CRACKED CONCRETE. ANCHORS SHALL BE TESTED IN ACCORDANCE WITH ICC-ES AC193. PRE-APPROVED ANCHORS INCLUDE:

HILTI KWIK BOLT TZ	ICC-ES REPORT ESR-1917
HILTI HDA UNDERCUT ANCHOR	ICC-ES REPORT ESR-1546
HILTI KWIK-HUS-EZ SCREW ANCHOR	ICC-ER REPORT ESR-3027
SIMPSON STRONG-BOLT 2	ICC-ES REPORT ESR-3037
SIMPSON TITEN HD	ICC-ES REPORT ESR-2713
ITW RED HEAD TRUBOLT+	ICC-ES REPORT ESR-2427

2. POST-INSTALLED ADHESIVE ANCHORS INTO CONCRETE SHALL BE ICC-ES APPROVED FOR USE IN CRACKED CONCRETE. ANCHORS SHALL BE TESTED IN ACCORDANCE WITH ICC-ES AC308. PRE-APPROVED ANCHORS INCLUDE:

HILTI HIT-RE 500-SD	ICC-ES REPORT ESR-2322
HILTI HIT-HY150 MAX-SD	ICC-ES REPORT ESR-3013
SIMPSON SET-XP	ICC-ES REPORT ESR-2508

3. SEE THE STRUCTURAL DRAWINGS FOR SPECIFIC POST-INSTALLED ANCHOR REQUIREMENTS. SUBSTITUTIONS IN THE ABOVE LISTS SHALL BE SUBMITTED FOR REVIEW. SUBSTITUTIONS MUST HAVE PRIOR WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD BEFORE THEIR USE.

4. REFER TO THE MANUFACTURERS INFORMATION AND ICC-ES REPORTS FOR SPECIFIC INSTALLATION REQUIREMENTS & PROCEDURES.

5. SEE STATEMENT OF STRUCTURAL INSPECTIONS ON SHEET ~~S001~~ FOR ANCHOR INSPECTION REQUIREMENTS.

S002

V. PRECAST PRESTRESSED CONCRETE

1. PRECAST DETAILS SHOWN ON THE STRUCTURAL DRAWINGS ARE CONCEPTUAL ONLY. SEE THE PRECAST SHOP DRAWINGS FOR FINAL DETAILS.

1.1. THE PRECAST SUPPLIER SHALL SUBMIT SHOP DRAWINGS & DESIGN CALCULATIONS CERTIFIED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT FOR ALL ELEMENTS & MEMBERS FURNISHED BY THE PRECAST SUPPLIER.

1.2. THE PRECAST SUPPLIER SHALL PROVIDE ALL OPENINGS, BLOCK OUTS, INSERTS, ETC. REQUIRED IN THE PRECAST MEMBERS.

1.3. THE PRECAST SUPPLIER SHALL DESIGN, FURNISH & INSTALL ALL CONNECTIONS & HEADERS REQUIRED TO ATTACH & SUPPORT PRECAST MEMBERS, UNO

1.4. THE DESIGN OF ALL MEMBERS & ELEMENTS SHOWN ON THE DRAWINGS ARE FOR THE IN-PLACE COMPLETED BUILDING. ALL LOADING CRITERIA & VERIFICATION OF DESIGN FOR LOADING SUCH AS STRIPPING, HANDLING, TRANSPORTATION & ERECTION ARE THE SOLE RESPONSIBILITY OF THE PRECAST SUPPLIER.

1.5. ALL TEMPORARY SHORING PROVIDED BY THE PRECAST SUPPLIER SHALL BE DESIGNED, CERTIFIED AND COORDINATED WITH OTHER TRADES. THE DESIGN MUST INCLUDE TEMPORARY CONSTRUCTION LOADS AND BUILDING LIVE LOADS CAUSED BY THE DECKING BEING IN PLACE. THE TEMPORARY SHORING INCLUDES THE DESIGN & SHOP DRAWING APPROVAL BY THE PRECAST SUPPLIER OF THE CONNECTIONS OF TEMPORARY SHORES TO OTHER ELEMENTS, EVEN IF THE CONNECTION IS PROVIDED BY A COORDINATED TRADE SUCH AS STRUCTURAL STEEL OR CONCRETE SUPPLIER.

X. MASONRY
1. MASONRY MATERIAL PROPERTIES

MASONRY PROPERTIES:	NET AREA COMPRESSIVE STRENGTH (PSI)	REFERENCED STANDARD
HOLLOW MASONRY UNITS	3750	ASTM C90-N,I
DESIGN STRENGTH OF REINFORCED MASONRY ASSEMBLY	2500	
BRICK MASONRY (ASSY.)	1400	ASTM C216-SW
MORTAR TYPE:		
TYPE N (ABOVE GRADE NON-REINFORCED MASONRY)	750	ASTM C270
TYPE S (ABOVE GRADE REINFORCED MASONRY)	1800	ASTM C270
TYPE M (BELOW GRADE MASONRY)	2500	ASTM C270
GROUT COREFILL (MINIMUM)	2500	ASTM C476
REINFORCING BARS	60,000	ASTM A615
COLD DRAWN STEEL WIRE	70,000	ASTM A82

2. GENERAL MASONRY

2.1. DESIGN IS BASED ON VALUES AS PUBLISHED IN THE "BUILDING CODE REQUIREMENTS FOR CONCRETE MASONRY STRUCTURES" (ACI-530 / ASCE-5 / TMS-402), LATEST CODE ADOPTED EDITION.

2.2. THE COMPRESSIVE STRENGTH OF MASONRY SHALL BE BASED ON IBC 2105.2.2.1 "UNIT STRENGTH METHOD". PRISM TEST METHOD PER IBC 2105.2.2.2 MAY BE USED IF MASONRY DOES NOT MEET THE REQUIREMENTS OF IBC 2105.2.2.1.

2.3. JOINTING:
CONCRETE MASONRY WALLS SHALL HAVE CONTROL JOINTS AT A MAXIMUM OF 30'-0" UNO
PROVIDE 9 GA. HORIZONTAL JOINT REINFORCEMENT EVERY COURSE IN STACK BOND WALLS & EVERY OTHER COURSE IN RUNNING BOND WALLS.

2.4. PROVIDE STANDARD 90 DEGREE HOOK DOWELS BETWEEN FOUNDATIONS & WALLS EQUAL TO THE SIZE & SPACING OF THE VERTICAL REINFORCING UNO

2.5. BRICK TIES SHALL BE A MIN. OF 3/16" DIA. ADJUSTABLE RECTANGULAR WALL TIES AS MANUFACTURED BY DUR-O-WALL OR APPROVED EQUAL. PROVIDE ONE TIE FOR EACH 2.00 SQUARE FEET OF WALL AREA. TIE SPACING RECOMMENDATION IS 16" ON CENTER VERTICALLY & 18" ON CENTER HORIZONTALLY.

2.6. REINFORCEMENT TENSION OR COMPRESSION LAP SPLICES SHALL BE PER SCHEDULE SHOWN ON THE DRAWINGS.

2.7. PROVIDE CONTINUOUS BOND BEAM REINFORCEMENT WITH 2-#4 BARS, OR AS NOTED. DISCONTINUE BARS AT CONTROL JOINTS UNO

2.8. PROVIDE 8" CONCRETE MASONRY LINTEL WITH 2-#4 BARS ABOVE DOORS & WINDOWS UP TO 4'-0" WIDE. USE 16" CONCRETE MASONRY LINTEL WITH 2-#5 BARS TOP & BOTTOM UP TO 8'-0" WIDE UNO

2.9. ALL NON-BEARING MASONRY WALLS SHALL BE PROVIDED WITH VERTICAL SLIP CONNECTIONS AT THE TOP OF WALL UNO

3. BRICK VENEER WITH METAL STUD BACKUP

3.1. BRICK TIES SHALL BE DUR-O-WALL D/A 213 OR APPROVED EQUAL. PROVIDE ONE TIE FOR EACH 3.5 SQUARE FEET OF WALL AREA. THE RECOMMENDED SPACING IS 24 INCHES HORIZONTALLY AND 18 INCHES VERTICALLY. TIES SHALL HAVE A MINIMUM OF 2" EMBEDMENT INTO BED JOINT. MAXIMUM ECCENTRICITY IS 3/4".

3.2. SCREWS CONNECTING BRICK TIES TO STEEL STUD FRAMING SHALL BE #12 CORROSION RESISTANT SELF-DRILLING AND SELF-TAPPING. PROVIDE MINIMUM OF TWO SCREWS PER TIE.

3.3. BRICK VENEER MORTAR SHALL BE OF A LIME BASED MIX AND A MINIMUM OF TYPE "O" OR PRE-APPROVED EQUAL.

3.4. TIES SHALL BE PLACED AT A MAXIMUM DISTANCE OF 8" FROM ANY FREE EDGE.

3.5. SEE "LIGHT GAUGE METAL STUD FRAMING" SECTION FOR STUD BACKING SYSTEM.

XI. STEEL
1. STEEL MATERIAL PROPERTIES

STEEL PROPERTIES:	FY, PSI	ASTM
STRUCTURAL WIDE FLANGE SHAPE	50,000	A992
OTHER STRUCT. SHAPES & PLATE	36,000	A36
HIGH STRENGTH BOLTS, UNO	74,000	A325
ANCHOR RODS	36,000	F1554
WELDING ELECTRODES	E70XX	AWS D1.1,CH 5
DECK WELDING ELECTRODES	E60X OR E70XX	AWS D1.3,CH 1
STRUCTURAL PIPE	35,000	A53 GRADE B
RECTANGULAR & SQUARE HSS	50,000	A500 GRADE C
ROUND HSS	46,000	A500 GRADE B
HEADED STUDS,TYPE B (Fu = 65,000)	51,000	AWS D1.1,CH7

SEE ITEM B.13 BELOW FOR ADDITIONAL REQUIREMENTS FOR SEISMIC FORCE RESISTING SYSTEMS.

2. STRUCTURAL STEEL

2.1. STRUCTURAL STEEL DESIGN & CONSTRUCTION SHALL CONFORM TO IBC CHAPTER 22, SECTION 2201, AISC "LOAD & RESISTANCE FACTOR DESIGN SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" & AISC "CODE OF STANDARD PRACTICE" LATEST CODE ADOPTED EDITION, APPLY UNO.

2.2. STRUCTURAL STEEL SUPPLIER SHALL SUBMIT SHOP DRAWINGS AND CALCULATIONS CERTIFIED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT FOR ALL CAP PLATES, BEARING PLATES, BASE PLATES, STIFFENERS, SPLICES & CONNECTIONS DESIGNED BY THE SUPPLIER.

2.3. STRUCTURAL STEEL SUPPLIER SHALL FURNISH BOLTS AT COLUMNS AND ELSEWHERE FOR OSHA CONNECTIONS. BOLT HOLES IN BEAM TOP FLANGE SHALL BE MAXIMUM 9/16" DIA. FOR "K" SERIES JOISTS AND 13/16" DIA. FOR "LH" SERIES JOISTS.

2.4. BEAM CAMBERS SHALL BE VERIFIED IN THE FABRICATION SHOP BY AN INDEPENDENT TESTING AGENCY AND THE INSPECTION DOCUMENTATION SHALL BE PROVIDED TO THE STRUCTURAL ENGINEER OF RECORD FOR REVIEW.

2.5. THIS STRUCTURE IS A NON-SELF SUPPORTING STEEL FRAME REQUIRING INTERACTION WITH OTHER ELEMENTS TO PROVIDE THE REQUIRED STABILITY. THE STEEL ERECTOR SHALL PROVIDE TEMPORARY BRACING UNTIL FINAL STABILITY IS PROVIDED. AS A MINIMUM, TEMPORARY BRACING SHALL BE PROVIDED AT EACH GRID IN BOTH DIRECTIONS.

2.6. BOLTED CONNECTIONS SHALL BE ¾" DIA., A325 BEARING-TYPE WITH THREADS INCLUDED IN THE SHEAR PLANE. UNO, INSTALL BOLTS IN PROPERLY ALIGNED HOLES AND TIGHTEN USING ONE OF THE FOLLOWING METHODS: SNUG-TIGHT CONDITION, TURN-OF-THE-NUT METHOD, A DIRECT TENSION INDICATOR, OR CALIBRATED WRENCH AS DEFINED BY THE LATEST EDITION OF AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS".

4. WELDING REQUIREMENTS:

4.1. WELDERS MUST MEET CERTIFICATION REQUIREMENTS OF AWS D1.1 AND ALSO THE SUPPLEMENTAL WELDER QUALIFICATION FOR RESTRICTED ACCESS WELDING AS PRESCRIBED IN ANNEX C AWS D1.8

5. STEEL JOISTS

5.1. ALL STEEL JOISTS SHALL BE DESIGNED & CONSTRUCTED IN ACCORDANCE W/ IBC CHAPTER 22, SECTION 2206 – STEEL JOISTS UNO

5.2. STEEL JOISTS SUPPLIER SHALL FURNISH ALL BRACING, WALL ANCHORS, HEADERS & BOTTOM CHORD EXTENSIONS, ETC. AS NECESSARY TO PROVIDE A COMPLETE INSTALLATION.

5.3. THE JOIST SUPPLIER SHALL COORDINATE BRIDGING LOCATIONS WITH THE SPRINKLER CONTRACTOR, SUCH THAT THE BRIDGING IS LOCATED A MINIMUM OF 1'-0" CLEAR HORIZ. FROM THE CENTER LINES OF THE SPRINKLER HEADS OR 2'-0" CLEAR VERTICALLY BELOW THE SPRINKLER DEFLECTOR.

5.4. THE STEEL ERECTOR IS RESPONSIBLE FOR ADJUSTING HORIZONTAL AND DIAGONAL BRIDGING IF THERE IS A CONFLICT BETWEEN MECHANICAL DUCTS PARALLEL WITH JOISTS AS DIRECTED BY THE STRUCTURAL ENGINEER.

5.5. PLACEMENT OF MECHANICAL UNITS & HANGERS SUPPORTED BY ROOF OR FLOOR JOISTS IS SUBJECT TO THE PRIOR APPROVAL OF THE STRUCTURAL ENGINEER.

5.6. SHOP DRAWINGS:

THE JOIST MANUFACTURER SHALL BE RESPONSIBLE FOR AND SHALL SUBMIT SHOP DRAWINGS FOR REVIEW. A CERTIFIED LETTER STATING THAT ALL STANDARD JOISTS CONFORM TO THE LATEST EDITION OF SJI SPECIFICATIONS SHALL BE SUBMITTED.

CALCULATIONS FOR ALL JOIST GIRDERS & SPECIAL JOISTS CERTIFIED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT SHALL BE SUBMITTED FOR REVIEW.

5.7. DESIGN OF STEEL JOIST

ALL JOIST & GIRDER MEMBERS & ELEMENTS SHOWN ON THE DRAWINGS ARE FOR THE IN-PLACE COMPLETED BUILDING. ALL LOADING CRITERIA & VERIFICATION OF DESIGN FOR LOADING SUCH AS HANDLING, TRANSPORTATION & ERECTION ARE THE SOLE RESPONSIBILITY OF THE JOIST MANUFACTURER.

SPECIAL JOISTS & JOIST GIRDERS SHALL BE DESIGNED FOR THE LOADS INDICATED ON THE DRAWINGS.

JOIST MANUFACTURER SHALL DESIGN & PROVIDE SPECIAL JOIST SEATS WHEN THE SUPPORT BEARING WIDTH IS LESS THAN SJI REQUIREMENTS.

ALL JOISTS SHALL BE CAMBERED IN ACCORDANCE WITH SJI CRITERIA, UNO

5.8. STRUCTURAL STEEL AND JOIST SUPPLIERS SHALL PROVIDE ERECTION BOLTS AND JOIST BOTTOM CHORD EXTENSION AT COLUMNS AND ELSEWHERE PER BY OSHA REQUIREMENTS AND THE METHOD OF STEEL ERECTION.

MAXIMUM BOLT SIZE SHALL BE 1/2" DIA. WITH A 9/16" HOLE FOR "K" SERIES JOISTS AND 3/4" DIA. WITH A 13/16" HOLE FOR LH SERIES JOISTS. STRUCTURAL STEEL AND JOIST SUPPLIERS SHALL COORDINATE OSHA CONNECTION LOCATIONS.

6. STEEL DECK

6.1. ALL STEEL DECKS SHALL BE DESIGNED & CONSTRUCTED IN ACCORDANCE WITH IBC CHAPTER 22, SECTION 2205 – COLD-FORMED STEEL AND THE STEEL DECK INSTITUTE SPECIFICATIONS AND RECOMMENDATIONS, LATEST CODE ADOPTED EDITION UNO

6.2. PRE-APPROVED DECK MANUFACTURERS ARE VULCRAFT, WHEELING AND VERCO. OTHER METAL DECK MANUFACTURERS MAY BE APPROVED PROVIDING THAT THE DECK SPECIFICATIONS MEET OR EXCEED THE SPECIFICATIONS OF THE PRE-APPROVED MANUFACTURERS. METAL DECK SIZE, GAUGE AND TYPE ARE INDICATED ON THE DRAWINGS.

6.3. ROOF DECK SHALL BE PRIME PAINTED AND LAID OUT CONTINUOUS OVER THREE SPANS MINIMUM. YIELD STRESS SHALL BE 33,000 PSI MINIMUM. DECK SUPPLIER SHALL SUBMIT ICC REPORTS SHOWING ALLOWABLE DIAPHRAGM SHEAR VALUES. ERECT IN ACCORDANCE WITH THE REPORT TO MEET THE REQUIRED SHEAR SPECIFIED ON THE DRAWINGS. CONNECTION TO FRAMING MEMBERS SHALL NOT BE LESS THAN THAT SHOWN ON DRAWINGS.

6.4. MINIMUM REQUIREMENTS FOR ROOF DECK FASTENING SHALL BE 5/8" Ø PUDDLE WELDS USING THE WELD PATTERN SHOWN ON THE DRAWINGS AND #10 TEK SCREW SIDELAP FASTENERS PER FASTENING DETAILS SHOWN ON THE DRAWINGS OR PRE-APPROVED EQUAL.

6.5. STRUCTURAL SLAB FORM (METAL CENTERING) SHALL BE UNCOATED AT TOP, PRIME PAINTED AT BOTTOM, DESIGNED FOR THE SPANS AND SLAB DEAD LOADS AS SHOWN ON THE DRAWINGS & INSTALLED IN ACCORDANCE WITH SDI SPECIFICATIONS. LATEST EDITION AND MANUFACTURER'S REQUIREMENTS.

6.6. COMPOSITE METAL FLOOR DECK SHALL BE PHOSPHATIZED/PAINTED AT TOP, PRIME PAINTED AT BOTTOM AND LAID OUT FOR THREE SPANS WHERE POSSIBLE. THE COMPOSITE FLOOR SYSTEM SHALL BE CAPABLE OF SUPPORTING THE SUPERIMPOSED LOADS AS SHOWN ON THE DRAWINGS. THE STEEL DECK SHALL SUPPORT THE WEIGHT OF WET CONCRETE AND OTHER CONSTRUCTION LOADS AS AN UNSHORED FORM DECK. DECK FASTENING SHALL BE PER SDI & MANUFACTURER'S RECOMMENDATIONS BUT NOT LESS THAN THAT SHOWN ON THE DRAWINGS.

6.7. ALL METAL DECK TO BE SPRAY FIREPROOFED SHALL BE GALVANIZED, CLEANED & DEGREASED PRIOR TO SHIPPING. SEE ARCHITECTURAL DRAWINGS FOR EXTENT OF FIREPROOFING.

6.8. CONDUITS ARE NOT PERMITTED IN COMPOSITE SLABS WITHOUT AUTHORIZATION FROM THE STRUCTURAL ENGINEER.

XII. LIGHT GAUGE METAL STUD FRAMING

1. LIGHT GAUGE FRAMING SHALL BE DESIGNED & CONSTRUCTED IN ACCORDANCE WITH IBC CHAPTER 22, SECTION 2210 – COLD-FORMED STEEL LIGHT-FRAMED CONSTRUCTION.

2. STUD DESIGNATION & RELATED ACCESSORIES ON DRAWINGS ARE BASED ON SSMA (STEEL STUD MANUFACTURERS ASSOCIATION) STANDARD SHAPES. OTHER MANUFACTURERS SHALL FURNISH ELEMENTS OF EQUAL OR GREATER SECTION PROPERTIES, MATERIAL STRENGTHS & STIFFNESS.

Fy = 33,000 psi (STUDS = 43 MIL & THINNER)
Fy = 50,000 psi (STUDS = 54 MIL & THICKER)
Fy = 33,000 psi (TRACK)

2.1 STEEL THICKNESSES

MIN. (MILS)	REFERENCE GAUGE	MIN. DELIVERED(IN.)	DESIGN THICKNESS(IN.)	COLOR CODE*
33 MIL	20 GA	0.0329	0.0346	WHITE
43 MIL	18 GA	0.0428	0.0451	YELLOW
54 MIL	16 GA	0.0538	0.0566	GREEN
68 MIL	14 GA	0.0677	0.0713	ORANGE
97 MIL	12 GA	0.0966	0.1017	RED
118 MIL	10 GA	0.1180	0.1242	BLUE

*COLOR CODE PER ASTM C955

2.2. DRAWINGS REFLECT THE SSMA STANDARD MEMBER DESIGNATIONS.
DESIGNATION EXAMPLES:
STUDS:600S162-54 6 INCH WEB DEPTH, STUD OR JOIST, 1 5/8 INCH FLANGE WIDTH, 54 MIL THICKNESS
TRACKS: 800T125-43 8 INCH WEB DEPTH, TRACK, 1-1/4 INCH FLANGE WIDTH, 43 MIL THICKNESS

3. STUDS RESIST LATERAL LOADS ONLY & PROVIDE LATERAL STABILITY FOR EXTERIOR MATERIALS.

4. SEE ARCHITECTURAL DRAWINGS FOR INTERIOR NON-LOAD BEARING PARTITION FRAMING AND CONSTRUCTION.

5. THE INFORMATION SHOWN ON THE STRUCTURAL DRAWINGS IS ONLY CONCEPTUAL AND IS INTENDED TO EXPRESS MINIMUM LIGHT GAUGE METAL SYSTEM MATERIAL, DESIGN, AND CONSTRUCTION PERFORMANCE CRITERIA. THE LIGHT GAUGE METAL SYSTEM SUPPLIER SHALL PROVIDE AND SUBMIT FOR REVIEW THE FINAL STRUCTURAL ENGINEERING DESIGN WHICH INCLUDES DETAILED SHOP DRAWINGS AND CALCULATIONS OF THE MEMBER SIZES, GAUGE THICKNESS, SPACING, AND ALL CONNECTIONS. ALL SUBMITTALS MUST BE CERTIFIED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT.

6. PROVIDE A MINIMUM OF DOUBLE STUDS AT ALL WINDOW JAMBS UNO STITCH WELD STUDS TOGETHER AT 12" ON CENTER.

6.1. SCREW ALL STEEL SECTIONS AT WINDOW HEADS & SILLS TO JAMB STUDS WITH A MINIMUM OF ONE SCREW EACH SIDE EACH MEMBER.

6.2. ANCHOR EACH STUD TO RUNNERS WITH FOUR #10 SCREWS, TWO TOP AND TWO BOTTOM, WITH ONE SCREW IN EACH FLANGE UNO.

6.3. ALIGN RUNNER TRACK ACCURATELY & SECURE TO BASE & HEAD WITH FASTENERS AS SHOWN ON THE DRAWINGS OR EQUIVALENT OR AS NOTED IN THE MANUFACTURER'S STANDARD SPECIFICATION BUT FASTENER SPACING SHALL NOT EXCEED 24" ON CENTER.

SELF-DRILLING OR SELF-TAPPING MINIMUM #12-14 x1/2" SCREWS MAY BE USED IN LIEU OF WELDING FOR ASSEMBLING STEEL STUD WALLS.

CD QA REVIEW
2/26/20 - SAS

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CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION
1	12/16/2019	DESIGN DEVELOPMENT

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	JP
CHECKED BY	KO
COMMISSION NUMBER	2106-02

SHEET TITLE

STRUCTURAL NOTES

SHEET NUMBER

S001

BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_S_R19.rvt
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STATEMENT OF SPECIAL INSPECTIONS

The following notes and tables shall constitute the STATEMENT OF SPECIAL INSPECTIONS required in accordance with Section 1705 of the International Building Code.

The listed inspection requirements represent the minimum acceptable level of inspection.

Where the building code or local jurisdiction requires a greater level of inspection, those requirements take precedence. In the following tables,

- Tasks with a mark 'C' in the column labeled "freq." shall be inspected on a continuous, full time basis.
- Tasks with a mark 'P' shall be inspected on a periodic, or intermittent basis.
- Tasks with a mark in the 'N/A' column are not applicable to this project.

1705.1 General.
1705.2 Steel construction.
1705.3 Concrete construction.
1705.4 Masonry construction.
1705.5 Wood construction. NOT APPLICABLE
1705.6 Soils.
1705.7 Driven deep foundations.
1705.8 Cast-in-place deep foundations.
1705.9 Helical pile foundations. NOT APPLICABLE
1705.10 Special inspections for wind resistance. NOT APPLICABLE
1705.11 Special inspections for seismic resistance. NOT APPLICABLE
1705.12 Testing and qualification for seismic resistance. NOT APPLICABLE
1705.13 Sprayed fire-resistant materials.
1705.14 Mastic and intumescent fire-resistant coatings.
1705.15 Exterior insulation and finish systems (EIFS).
1705.16 Fire-resistant penetrations and joints.
1705.17 Special inspection for smoke control.

Key for Minimum Qualifications of Inspection Agents:

When the Registered Design Professional in Responsible Charge deems it appropriate that the individual performing a stipulated test or inspection have a specific certification or license as indicated below, such designation shall appear in the qualifications column on the following materials Schedules.

PE/SE Structural Engineer – a licensed SE or PE specializing in the design of building structures.
PE/GE Geotechnical Engineer – a licensed PE or GE specializing in soil mechanics and foundations.
EIT Engineer-In-Training – a graduate engineer who has passed the Fundamentals of Engineering examination.
SI IBC - A qualified person who shall demonstrate competence to the satisfaction of the Building Official and the Struct EOR.
American Concrete Institute (ACI) Certification
ACI-CFTT Concrete Field Testing Technician – Grade 1
ACI-CCI Concrete Construction Inspector
ACI-LTT Laboratory Testing Technician – Grades 1 & 2
ACI-STT Strength Testing Technician
American Welding Society (AWS) Certification
AWS-CWI Certified Welding Inspector
AWS/AISC-SSI Certified Structural Steel Inspector
American Society of Non-Destructive Testing (ASNT) Certification
ASNT Non-Destructive Testing Technician – Level II or III.
International Code Council (ICC) Certification
ICC-SMSI Structural Masonry Special Inspector
ICC-SWSI Structural Steel and Welding Special Inspector
ICC-PCSI Prestressed Concrete Special Inspector
- This Inspector must also have passed PTI Level 2 Post Tension Certification requirements.
ICC-RCSI Reinforced Concrete Special Inspector
National Institute for Certification in Engineering Technologies (NICET)
NICET-CT Concrete Technician – Levels I, II, III & IV
NICET-ST Soils Technician - Levels I, II, III & IV
NICET-GET Geotechnical Engineering Technician - Levels I, II, III & IV

STRUCTURAL OBSERVATIONS (REF. IBC 1704.5)

Item	Reference	Yes	No
1. Structural observations for seismic resistance required by building code?	IBC 1704.5.1		X
2. Structural observations for wind resistance required by building code?	IBC 1704.5.2		X

SOILS (REF. IBC 1705.6)

TABLE 1705.6 REQUIRED VERIFICATION AND INSPECTION OF SOILS

VERIFICATION AND INSPECTION TASK	Qualifications	CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity per the geotechnical report.	NICET-GET III SI IBC	—	X
2. Verify excavations are extended to proper depth and have reached proper material.	NICET-GET III SI IBC	—	X
3. Perform classification and testing of compacted fill materials.	NICET-ST II SI IBC	—	X
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.	NICET-GET III SI IBC	X	—
5. Prior to placement of compacted fill, observe subgrade and verify that site has been prepared properly.	NICET-GET III SI IBC	—	X

CONCRETE CONSTRUCTION (REF. IBC 1705.3)

TABLE 1705.3 REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION

VERIFICATION AND INSPECTION	Qualif.	CONTINUOUS	PERIODIC	REFERENCED STANDARD	IBC REFERENCE
1. Inspection of reinforcing steel, including prestressing tendons, and placement.	ACI-CCI ICC-RCSI	—	X	ACI 318: 3.5, 7.1-7.7	1910.4
2. Inspection of reinforcing steel welding in accordance with Table 1705.2.2, Item 2b.	AWS-CWI	—	—	AWS D1.4 ACI 318: 3.5.2	—
3. Inspection of anchors cast in concrete where allowable loads have been increased or where strength design is used.	ACI-CCI ICC-RCSI	—	X	ACI 318: 8.1.3, 21.2.8	1908.5, 1909.1
4. Inspection of anchors post-installed in hardened concrete members.	SI IBC	—	X	ACI 318: 3.8.6, 8.1.3, 21.2.8	1910.1
5. Verifying use of required design mix.	ACI-CCI ICC-RCSI	—	X	ACI 318: Ch. 4, 5.2-5.4	1904.2, 1910.2, 1910.3
6. At the time fresh concrete is sampled to fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	ACI-CFTT ACI-STT	X	—	ASTM C 172 ASTM C 31 ACI 318: 5.6, 5.8	1910.10
7. Inspection of concrete and shotcrete placement for proper application techniques.	ACI-CCI ICC-RCSI	X	—	ACI 318: 5.9, 5.10	1910.6, 1910.7, 1910.8
8. Inspection for maintenance of specified curing temperature and techniques.	ACI-CCI ICC-RCSI	—	X	ACI 318: 5.11-5.13	1910.9
9. Inspection of prestressed concrete:					
a. Application of prestressing forces.	ICC-PCSI	X		ACI 318: 18.20	
b. Grouting of bonded prestressing tendons in the SFRS.	ICC-PCSI	X		ACI 318: 18.18.4	
10. Erection of precast concrete members.	SI IBC	—	X	ACI 318: Ch. 16	—
11. Verification of in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs.	ACI-CFTT ACI-STT	—	X	ACI 318: 6.2	—
12. Inspect formwork for shape, location and dimensions of the concrete member being formed.	ACI-CCI ICC-RCSI	—	X	ACI 318: 6.1.1	—

MASONRY CONSTRUCTION (REF. IBC 1705.4)

	Special inspections and tests of masonry construction shall be performed in accordance with the Quality Assurance Program				
	requirements of TMS 402/ACI 530/ASCE 5 and TMS 602/ACI 530.1/ASCE 6.				
MASONRY LEVEL B QUALITY ASSURANCE					
	Masonry construction shall be inspected in accordance with TMS 602/ACI 530.1/ASCE 6 (Table 4) Quality Assurance Program requirements				
MINIMUM TESTS					
	Verification of slump flow and Visual Stability Index (VSI) as delivered to the project site in accordance				
	with TMS 602/ACI 530.1/ASCE 6 Specification Article 1.5 B.1.b.3 for self-consolidating grout.				
	Verification of f'm & f'aac in accordance with TMS 602/ACI 530.1/ASCE 6 Specification Article 1.4 B prior				
	to construction, except where specifically exempted by TMS 402/ACI 530/ASCE 5 Code.				
MINIMUM SPECIAL INSPECTION					
Inspection Task		Qualification	Frequency: Continuous	Frequency: Periodic	N/A
1. Verify compliance with the approved submittals.		ICC-SMSI		X	
2. As masonry construction begins, verify that the following are in compliance:					
	a. Proportions of site-prepared mortar	ICC-SMSI		X	
	b. Construction of mortar joints.	ICC-SMSI		X	
	c. Grade and size of prestressing tendons and anchorages.	ICC-SMSI			X
	d. Location of reinforcement, connectors, and prestressing tendons and anchorages.	ICC-SMSI		X	
	e. Prestressing technique.				X
	f. Properties of thin-bed mortar for AAC masonry.				X
3. Prior to grouting, verify that the following are in compliance:					
	a. Grout space.	ICC-SMSI		X	
	b. Grade, type, and size of reinforcement and anchor bolts, and prestressing tendons and anchorages.	ICC-SMSI		X	
	c. Placement of reinforcement, connectors, and prestressing tendons and anchorages.	ICC-SMSI		X	
	d. Proportions of site-prepared grout and prestressing grout for bonded tendons.	ICC-SMSI		X	
	e. Construction of mortar joints.	ICC-SMSI		X	
4. Verify during construction:					
	a. Size and location of structural elements.	ICC-SMSI		X	
	b. Type, size, and location of anchors, including other details of anchorage of masonry to structural members, frames, or other construction.	ICC-SMSI		X	
	c. Welding of reinforcement.	AWS-CWI			X
	d. Preparation, construction, and protection of masonry during cold weather (temperature below 40 degrees F) or hot weather (temperature above 90 degrees F).	ICC-SMSI		X	
	e. Application and measurement of prestressing force.	ICC-SMSI			X
	f. Placement of grout and prestressing grout for bonded tendons is in compliance.	ICC-SMSI	X		
5. Observe preparation of grout specimens, mortar specimens, and/or prisms.		ICC-SMSI		X	

CAST-IN-PLACE DEEP FOUNDATIONS (REF. IBC 1705.8)

TABLE 1705.8 REQUIRED VERIFICATION AND INSPECTION OF CAST-IN-PLACE DEEP FOUNDATION ELEMENTS

VERIFICATION AND INSPECTION TASK	Qualifications	CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED
1. Observe drilling operations and maintain complete and accurate records of each element.	NICET-GET III SI IBC	X	—
2. Verify placement locations and plumbness, confirm element diameters, bell diameter (if applicable), lengths, embedment into bedrock (if applicable) and adequate end-bearing strata capacity. Record concrete or grout volumes.	NICET-GET III SI IBC	X	—
3. For concrete elements, perform additional inspections in accordance with Section 1705.3.	NICET-GET III SI IBC	—	X

STEEL CONSTRUCTION (REF. IBC 1705.2)

STRUCTURAL STEEL FRAMING

Item	Qualif.	Scope	Reference	Freq.	N / A
1. Fabricator Certification/ Quality Control Procedures	AWS/AISC-SSI ICC-SWSI	Review shop fabrication and quality control procedures. If fabricator is exempt by meeting the approval requirements of IBC Section 1705.2, a certificate of compliance shall be submited to the building official stating that the work was performed in accordance with the approved construction documents.		P	
2. Material Certification	AWS/AISC-SSI ICC-SWSI	Review certified mill test reports and identification markings on wide-flange shapes, high-strength bolts, nuts and welding electrodes		P	
3. Open Web Steel Joists		Inspect installation, field welding and bridging of joists.		P	
4. Bolting	AWS/AISC-SSI ICC-SWSI	Inspect installation and tightening of high-strength bolts. Verify that splines have separated from tension control bolts. Verify proper tightening sequence.		P	
		Installation of bolts in slip-critical connections shall be monitored continuously except as allowed per IBC			X
5. Welding	AWS-CWI ASNT	Visually inspect all welds. Inspect pre-heat, post-heat and surface preparation between passes. Verify proper electrode use, CVN welds where required.	AWS D1.1 ASTM E-109	See scope at left	
		Verify size and length of fillet welds. Test 100% of all full or partial penetration welds exceeding 5/16", using Ultrasonic Testing. Test 25% of all full or partial penetration welds less than 5/16", using Magnetic Particle Testing, performed on root pass and on finished weld.			
		Continuous inspection required except for a) Single pass fillet welds <= 5/16" b) Floor and roof deck welds			
6. Shear Connectors	AWS-CWI ASNT	Visually inspect size, number positioning and welding of shear connectors. Sound test all shear connectors and bend test all questionable connectors.Randomly bend test 15% of shear connectors to 15 degrees from original axis.	AWS D1.1 Sections 7.7 & 7.8	P	
7. Structural Details	PE/SE	Inspect steel frame for compliance with structural drawings, including bracing, member configuration and connection details.		P	
9. Metal Deck	AWS-CWI	Inspect welding and side-lap fastening of metal roof and floor deck.		P	
Other:	_ _	_ _	_ _		X

COLD-FORMED STEEL FRAMING

Item	Qualif.	Scope	Reference	Freq.	N / A
1. Members and Materials	SI IBC	Verify conformance of member sizes, thickness, and material properties with the specifications and drawings.	AISI	P	
2. Connections and Details	SI IBC	Inspect welding, screw attachments, anchors, and other fasteners. Inspect framing details, bridging, and bracing for conformance with the drawings and specifications.	AISI	P	

SPECIAL CASES (REF. IBC 1705.1.1)

Item	Qualif.	Scope	Freq.	N / A
Anchors installed in hardened concrete or masonry		Inspect as required by IBC Section 1705.1.1, Item #3 and ICC Evaluation Service Report (ESR). The manufacturer shall provide inspection procedures to verify proper useage and installation.	C	

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CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION
1	12/16/2019	DESIGN DEVELOPMENT

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	JP
CHECKED BY	KO
COMMISSION NUMBER	2106-02

SHEET TITLE

SPECIAL INSPECTIONS

SHEET NUMBER

S002

CIP LAP SPLICE SCHEDULE FOR UNCOATED GRADE 60 BARS

NOTES:
1. THESE TABLES ARE BASED ON THE FOLLOWING ASSUMPTIONS:
   A. CLEAR SPACING OF BARS ≥d_b
      CLEAR COVER ≥d_b
      STIRRUPS OR TIES PROVIDED THROUGHOUT DEVELOPMENT LENGTH > CODE MIN
      OR
   B. CLEAR SPACING OF BARS ≥$2d_b$
      CLEAR COVER ≥d_b
2. FOR OTHER CASES, MULTIPLY LENGTHS SHOWN BY 1.5.
3. FOR TOP BAR SPLICES, MULTIPLY LENGTHS SHOWN BY 1.3.
   TOP BARS ARE SUCH THAT 12" OR MORE OF FRESH CONCRETE IS CAST BELOW THE SPLICE OR DEVELOPMENT LENGTH.
4. FOR LIGHTWEIGHT CONCRETE, MULTIPLY LENGTHS SHOWN BY 1.33.
5. FOR HIGHER GRADE STL MULTIPLY LENGTHS SHOWN BY A RATIO OF HIGH fy(KSI) OVER 60(KSI). ALL OTHERS FACTORS LISTED STILL APPLY.
6. WHEN BARS OF DIFFERENT SIZES ARE LAPPED, SPLICE LENGTH SHALL BE THE GREATER OF A CLASS 'A' LAP OF THE LARGER BAR OR CLASS 'B' LAP OF THE SMALLER BAR.

CLASS 'A' LAP SPLICE

BAR SIZE	fc(psi) 3000	3500	4000	5000	6000	7000	8000	10000
#3	1'-5"	1'-4"	1'-3"	1'-1"	1'-0"	1'-0"	1'-0"	1'-0"
#4	1'-10"	1'-9"	1'-7"	1'-5"	1'-4"	1'-3"	1'-3"	1'-3"
#5	2'-4"	2'-2"	2'-0"	1'-10"	1'-8"	1'-7"	1'-7"	1'-7"
#6	2'-9"	2'-7"	2'-5"	2'-2"	2'-0"	1'-11"	1'-11"	1'-11"
#7	4'-0"	3'-9"	3'-6"	3'-2"	2'-10"	2'-8"	2'-6"	2'-3"
#8	4'-7"	4'-3"	4'-0"	3'-7"	3'-3"	3'-0"	2'-10"	2'-6"
#9	5'-2"	4'-10"	4'-6"	4'-0"	3'-8"	3'-5"	3'-2"	2'-10"
#10	5'-10"	5'-5"	5'-1"	4'-6"	4'-2"	3'-10"	3'-7"	3'-3"
#11	6'-6"	6'-0"	5'-7"	5'-0"	4'-7"	4'-3"	4'-0"	3'-7"

CLASS 'B' LAP SPLICE

BAR SIZE	fc(psi) 3000	3500	4000	5000	6000	7000	8000	10000
#3	1'-10"	1'-8"	1'-7"	1'-5"	1'-4"	1'-2"	1'-2"	1'-0"
#4	2'-5"	2'-3"	2'-1"	1'-11"	1'-9"	1'-7"	1'-6"	1'-4"
#5	3'-0"	2'-9"	2'-7"	2'-4"	2'-2"	2'-0"	1'-10"	1'-8"
#6	3'-7"	3'-4"	3'-1"	2'-10"	2'-7"	2'-4"	2'-3"	2'-0"
#7	5'-3"	4'-10"	4'-6"	4'-1"	3'-9"	3'-5"	3'-3"	2'-11"
#8	6'-0"	5'-6"	5'-2"	4'-8"	4'-3"	3'-11"	3'-8"	3'-3"
#9	6'-9"	6'-3"	5'-10"	5'-3"	4'-9"	4'-5"	4'-2"	3'-8"
#10	7'-7"	7'-0"	6'-7"	5'-11"	5'-4"	5'-0"	4'-8"	4'-2"
#11	8'-5"	7'-9"	7'-3"	6'-6"	5'-11"	5'-6"	5'-2"	4'-7"

CMU REINFORCING LAP SCHEDULE

f'm = 2000 PSI

BAR	8" CMU CASE 1	8" CMU CASE 2	12" CMU CASE 1	12" CMU CASE 2	REMARKS
#3	14"	15"	14"	15"	-
#4	18"	25"	18"	25"	-
#5	22"	39"	22"	39"	-
#6	38"	54"	35"	54"	-
#7	-	-	40"	63"	-

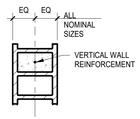
NOTE:
1. ALL BARS MUST BE IN FULLY GROUTED CELLS

CASE 1

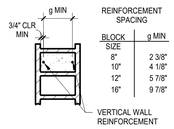
1 BAR PER CELL LOCATED IN THE CENTER OF THE CELL

CASE 2

ALL OTHER CONDITIONS, INCLUDING 2 BARS PER CELL & SINGLE BARS NOT LOCATED IN THE CENTER OF THE WALL



REINFORCEMENT CENTERED



REINFORCEMENT SPACING

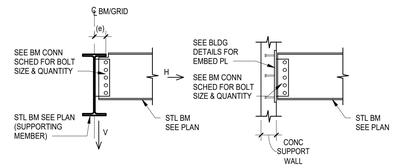
BLOCK SIZE	g MIN
8"	2 3/8"
10"	4 1/8"
12"	5 7/8"
16"	9 7/8"

REINFORCEMENT EACH FACE

BEAM CONNECTION SCHEDULE

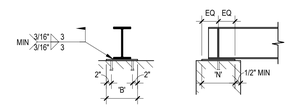
DOUBLE ANGLE REQUIRED AT BEAM TO COLUMN CONNECTION			SINGLE PLATE AND WT's	
BEAM SIZE	MIN ROWS OF BOLTS	MIN DESIGN SHEAR (V) KIPS (SERVICE LOADS)	MIN ROWS OF BOLTS	MIN DESIGN SHEAR (V) KIPS (SERVICE LOADS)
W8-W10	2	17	2	8
W12-W14	3	29	3	16
W16	3	35	4	26
W18	4	60	4	26
W21	4	70	5	36
W24	5	90	6	45
W27	6	100	7	55
W30	7	120	8	65
W33-W36	7	120	9	75

NOTES:
1. FABRICATOR TO DESIGN CONNECTION - # BOLTS, CONNECTOR PLATE/ANGLE, WELDS, CONFIGURATION BASED ON CRITERIA SHOWN IN TABLE & AISC REQUIREMENTS. DESIGN CALCULATIONS TO BE SIGNED BY ENGINEER LICENSED IN THE STATE THAT PROJECT EXISTS
2. MINIMUM CONNECTION SHOWN IN TABLES SHALL BE USED FOR DESIGN UNLESS END REACTIONS, SHOWN ON DRAWINGS, EXCEED MINIMUM DESIGN SHEAR. WHERE END REACTIONS ARE NOT SHOWN ON PLAN, USE MINIMUM DESIGN SHEARS LISTED ABOVE
3. PROPORTION ALL CONNECTION ELEMENTS, INCLUDING, BUT NOT LIMITED TO, BOLTS, WELDS, PLATES, TEES, ANGLES, BEAM WEBS AND COPES FOR MAXIMUM EFFECT OF THE DESIGN FORCES, INCLUDING V, H, AND THEIR ECCENTRICITIES (e). (SUPPORT HAS NOT BEEN DESIGNED FOR MOMENT DUE TO CONNECTION ECCENTRICITY.)
4. BOLT SIZE AND GRADE SHALL BE SELECTED FROM THE FOLLOWING:
   3/4" Ø A325, 7/8" Ø A325, 1" Ø A490, 1 1/8" Ø A490
5. BOLTED CONNECTIONS IN BEAMS WITH AXIAL FORCES, BEAM-TO-COLUMN CONNECTIONS AND BEAMS BRACING TRUSS CHORDS, SHALL BE SLIP CRITICAL USING TYPE "SC" BOLT VALUES

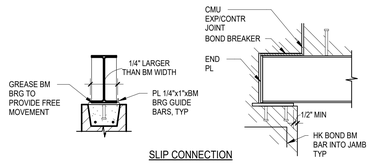


BEAM BEARING PLATE SCHEDULE

MARK	THICKNESS 'T'	WIDTH 'B'	LENGTH 'N'	STUDS	REMARKS
BP-1	1/2"	8"	6"	2-1/2"Ø x 0'-4"	-
BP-2	1/2"	8"	7"	2-1/2"Ø x 0'-4"	-
BP-3	3/4"	8"	8"	2-1/2"Ø x 0'-4"	-
BP-4	3/4"	10"	8"	2-1/2"Ø x 0'-4"	-
BP-5	1"	1'-0"	10"	2-1/2"Ø x 0'-4"	-
BP-6	1 1/4"	1'-4"	10"	2-1/2"Ø x 0'-4"	-



PERPENDICULAR TO WALL



SLIP CONNECTION

LINTEL WALL SCHEDULE

MARK	SHAPE	DESCRIPTION	BEARING	REMARKS
L-1		W8x10 w/ 3/8" x BOTTOM PL	BP-1	NOTE 1, 2, 3
L-2		W8x16 w/ 3/8" x BOTTOM PL	BP-2	NOTE 1, 2, 3
L-3		W8x24 w/ 3/8" x BOTTOM PL	BP-2	NOTE 1, 2, 3
L-4		Wx8 w/ 2-#5 BOT	8"	NOTE 1, 3, 5
L-5		Wx16 w/ 2-#5 T&B	8"	NOTE 1, 3, 5
L-6		Wx24 w/ 2-#5 T&B	8"	NOTE 1, 3, 4, 5
L-7		HSS8x6x5/16 w/ BRICK SUPPORT	ANGLE ATTACHED TO HSS COLUMN	NOTE 7

NOTES:
1. FOR LINTEL BEARING, SEE BRG PLATE SCHEDULE OR 27/S201
2. MAKE 3/8" PLATE 1" LESS THAN TOTAL WALL THICKNESS
3. GROUT FULL A MIN OF 2 COURSES BELOW ENTIRE LINTEL BEARING LENGTH UNLESS NOTED OTHERWISE ON FRAMING PLAN
4. CONTINUOUS SPAN LINTEL
5. MASONRY LINTELS TO BE SOLID GROUTED UNLESS NOTED OTHERWISE (UNO)
6. "N" IN DESCRIPTION REPRESENTS CIP/CMU WALL THICKNESS
7. SEE DETAIL 19/S303 FOR CONNECTION INFO

CONCRETE WALL SCHEDULE

f'm=4000psi

MARK	THICKNESS	VERT REINF. I.F.	VERT REINF. O.F.	VERT REINF. CENTER	HORIZ REINF. I.F.	HORIZ REINF. O.F.	HORIZ REINF. CENTER	DOWELS	REMARKS
CW8.5	8"	-	-	#5@12	-	-	#5@12	-	NOTE 1
CW12.5	12"	#5@12	#5@12	-	#5@12	#5@12	-	-	NOTE 1
CW12.6	12"	#6@16	#5@16	-	#4@16	#4@16	-	-	-

NOTES:
1. 2" COVER TO VERTICAL REINFORCEMENT

CMU WALL REINF SCHEDULE

f'm=2000psi

MARK	THICKNESS	OF	IF	CENTER	HORIZ	DOWELS	END REINF
MW8.5	8"	-	-	#5@24	-	-	4#5 BARS
MW8.5A	8"	-	#5@16	-	-	-	4#5 BARS
MW8.6	8"	-	-	#6@24	-	-	4#6 BARS
MW8.6A	8"	-	#6@16	-	-	-	4#6 BARS
MW12.5	12"	-	-	#5@24	-	-	4#5 BARS
MW12.5A	12"	-	#5@16	-	-	-	4#5 BARS
MW12.6	12"	-	-	#6@24	-	-	4#6 BARS
MW12.A	12"	-	#6@16	-	-	-	4#6 BARS

NOTES:
1. FOR CMU REINFORCING DETAILS SEE S201
2. ATTACH CMU WALL TO PRECAST OR CIP W/ REBAR DOWELS MATCHING SIZE AND SPACING OF CMU WALL
3. ALL NON-STRUCTURAL CMU WALLS SHOULD HAVE #4 AT 48" ON CENTER VERTICAL BARS
4. FOR CORNER REINFORCING DETAILS SEE S201. CORNER REINFORCEMENT TO MATCH TYPICAL WALL REINFORCEMENT SIZE
5. PLACE END REINFORCING IN LAST TWO CORES.

CONCRETE & MASONRY PIER SCHEDULE

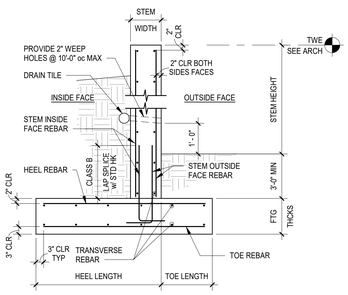
MARK	SIZE	VERTICAL REINF	TIES @ SPA	DOWELS	REMARKS
MP-1	24 x 24 CMU	4 - #6	#3@8" OC	-	-
MP-2	24 x 16 CMU	8 - #7	#3@8" OC	-	-
CP-1	24 x 16 CIP	12 - #7	#4@12" OC	-	-

BRICK LINTEL SCHEDULE

(UNMARKED)

SPAN	SIZE	BEARING
UP TO 5'-0"	L3 1/2 x 3 1/2 x 5/16"	4" MIN
5'-0" TO 8'-0"	L 6 x 3 1/2 x 3/8" LLV	6" MIN
8'-0" TO 11'-0"	L 7 x 4 x 3/8" LLV	8" MIN

NOTES:
1. THIS SCHEDULE IS FOR LOOSE LINTELS INDEPENDENT OF BACKUP MATERIALS
2. ALL EXTERIOR LOOSE LINTELS TO BE GALVANIZED



RETAINING WALL SCHEDULE

MARK	STEM HEIGHT	STEM THICKNESS	STEM INSIDE FACE REBAR	STEM OUTSIDE FACE REBAR	FOOTING THICKNESS	HEEL LENGTH	HEEL REBAR	TOE LENGTH	TOE REBAR	TRANSVERSE REBAR	COMMENTS
RW-1	5'-0" MAX	8"	#6 @ 16"	-	16"	3'-0"	#5 @ 16"	2'-0"	#5 @ 16"	#5 @ 16"	SEE NOTE 5
RW-2	10'-0" MAX	12"	#7 @ 8"	#5 @ 18"	30"	6'-0"	#5 @ 16"	4'-0"	#5 @ 16"	#4 @ 16" EF	SEE NOTE 5
RW-3	12'-0" MAX	16"	#7@8"	#5 @ 18"	30"	8'-0"	#6 @ 8"	4'-6"	#6 @ 8"	#5 @ 16" EF	SEE NOTE 5

NOTES:
1. FOR TYPICAL RETAINING WALL DETAIL, SEE SECTION THIS SHEET
2. F'c = 4000 PSI
3. FOOTING STEPS NOT TO EXCEED 2'-0"
4. LAP TRANSVERSE BARS, INCLUDING AT STEPS
5. CALCULATIONS USING 3000 PSF BEARING PRESSURE & 50 PCF FLUID PRESSURE

STRUCT - ISOLATED FOOTING SCHEDULE 3000 PSF

Mark	SIZE Width	SIZE Length	Depth	REINFORCING EW Bottom	REINFORCING EW Top	Comments
F4.5	4' - 6"	4' - 6"	1' - 6"	6-#5		
F5	5' - 0"	5' - 0"	1' - 0"	6-#5		
F5.5	5' - 6"	5' - 6"	1' - 3"	7-#5		
F6.5	6' - 6"	6' - 6"	1' - 3"	7-#6		
F7.5	7' - 6"	7' - 6"	1' - 6"	9-#6		
F8	8' - 0"	8' - 0"	1' - 9"	8-#7		
F8.5	8' - 6"	8' - 6"	1' - 9"	9-#7		
F9	9' - 0"	9' - 0"	1' - 9"	10-#7		

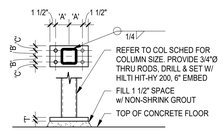
STRUCT - CONTINUOUS FOOTING SCHEDULE

Type Mark	Width	Foundation Thickness	Long Reinforcing	Trans Reinforcing
WF 2.0	2' - 0"	1' - 0"	2 - #5, CONT	-
WF 2.5	2' - 6"	1' - 6"	4 - #5, CONT	-
WF 3.0	3' - 0"	1' - 6"	4 - #5, CONT	-
WF 3.5	3' - 6"	1' - 6"	5-#5, CONT	#5 @ 8"oc
WF 5.0	5' - 0"	1' - 6"	4 - #5, CONT	#6 @ 16" = TOP & BOT MATS

STEEL COLUMN SCHEDULE

MARK	SIZE	BASE PLATE DIMENSIONS 'A'	'B'	'C'	'T'	REMARKS
C-1	HSS4x4x3/8	3 1/2"	1 1/4"	1 1/4"	1"	NOTE 1
C-2	HSS5x5x3/8	4"	1 3/4"	1 1/4"	1 1/8"	NOTE 1
C-3	HSS6x6x3/8	4 1/2"	2 1/4"	1 1/4"	1 1/4"	NOTE 1
C-4	HSS6x6x1/2	4 1/2"	2 1/4"	1 1/4"	1 1/2"	NOTE 1

NOTES:
1). SEE PIER SCHEDULE FOR PIER SIZES



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SHEET TITLE

SCHEDULES

SHEET NUMBER

S003

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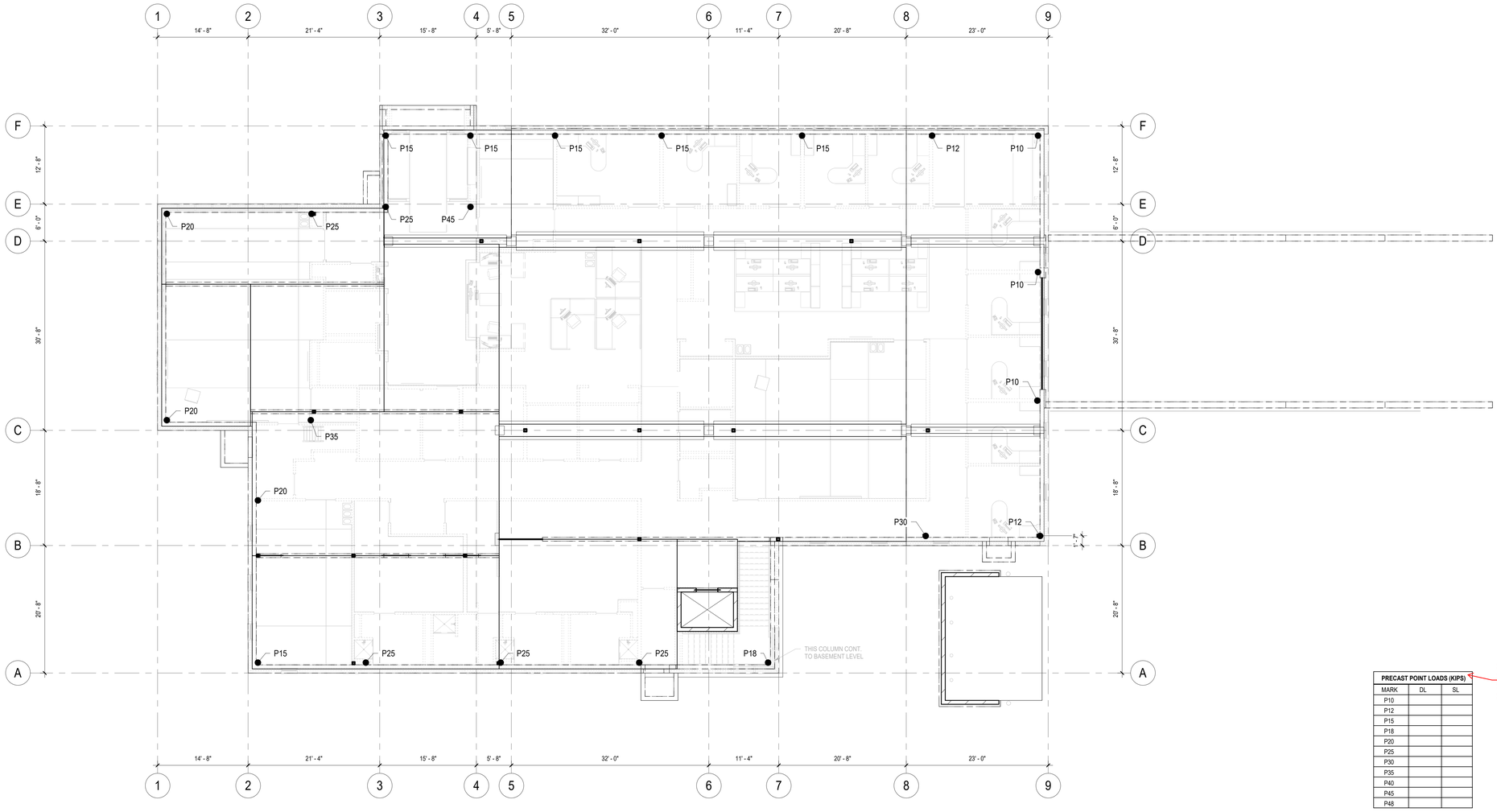

PRECAST POINT LOADS (KIPS)		
MARK	DL	SL
P10		
P12		
P15		
P18		
P20		
P25		
P30		
P35		
P40		
P45		
P48		

Complete table.

1 S005 PRECAST LOADING PLAN
1/8" = 1'-0"

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SHEET TITLE

PRECAST LOADING PLAN

SHEET NUMBER

S005

PLAN NORTH

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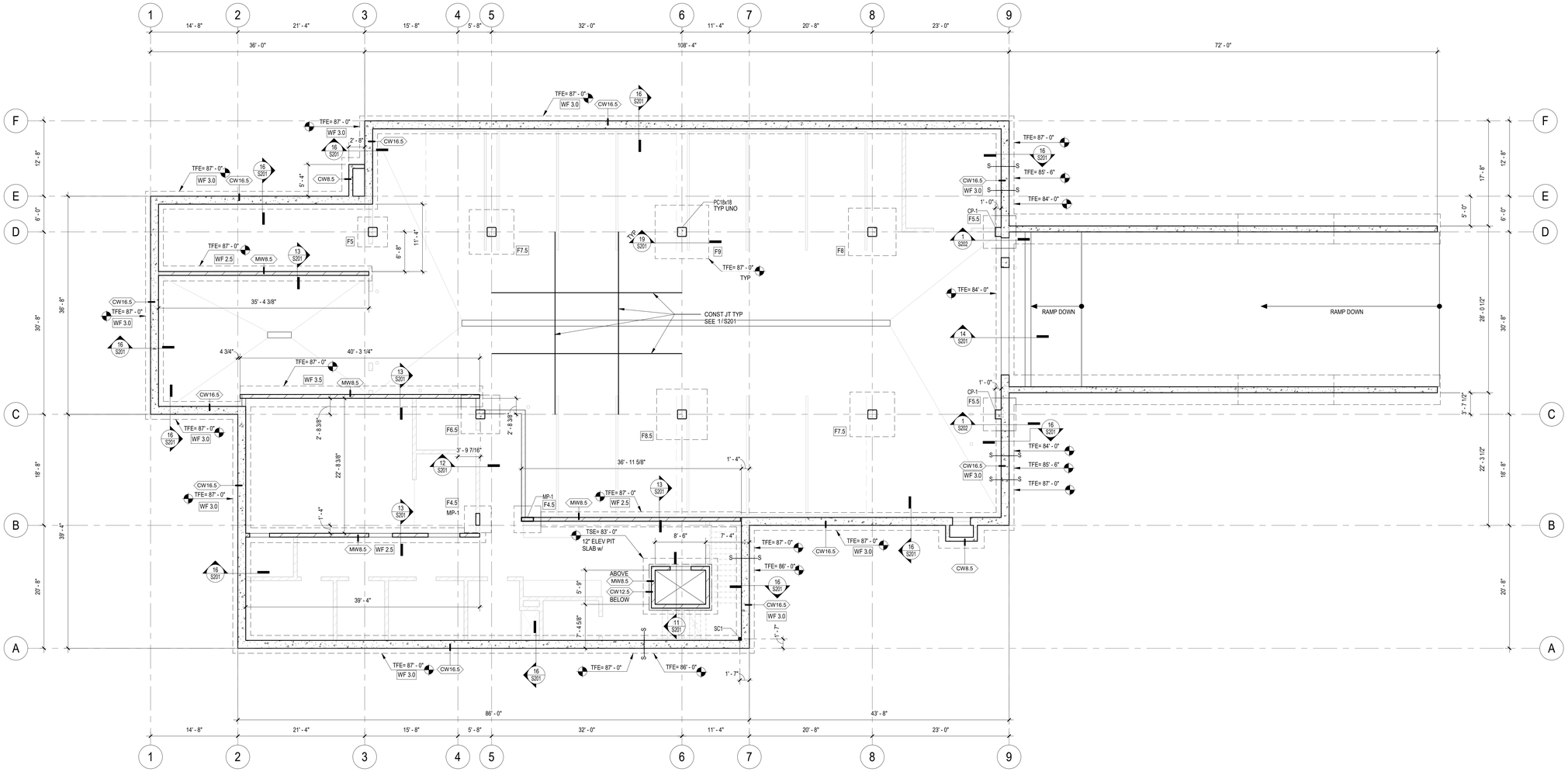
2/19/2020 9:46:10 AM

FOUNDATION PLAN NOTES

1. FOR GENERAL STRUCTURAL NOTES SEE S001
2. TSE = 809'-0" UNO. SEE ARCH
3. LEVEL 1 = XXX'-X" = XXX.XX' USGS
4. "P" INDICATES PIER MARK. SEE PIER SCHEDULE ON S003
5. "F" INDICATES FOOTING MARK. SEE FOOTING SCHEDULE ON S003
6. SLAB ON GRADE IS 4" CONCRETE SLAB, w/ 4#/CY OF MACRO FIBERS
7. FOR TYPICAL SOG CONTROL AND CONSTRUCTION JOINT DETAILS SEE 1/S201
8. FOR COLUMN ISOLATION DETAIL SEE 7/S201
9. FOR THICKENED SLAB DETAIL FOR NON-LOAD BEARING CMU WALLS SEE S201
10. VERIFY ALL DIMENSIONS FOR NON-BEARING CMU WALLS WITH ARCH DRAWINGS
11. "S————S" INDICATES FOOTING STEPS IN FOUNDATION. SEE DETAIL ON S201
12. SLEEVE PIPE PENETRATIONS THROUGH GRADE BEAMS OR FOUNDATION WALLS
13. "\\\\" INDICATES UTILITY, VERIFY LOCATIONS OF UNDERGROUND PIPING WITH ARCHITECTURAL
14. ALL INTERIOR CMU WALLS ARE MW8.5, UNO. SEE CMU WALL REINF SCHEDULE ON S003 FOR REINFORCEMENT
15. TYPICAL WALL FOOTING IS 2'-6" WIDE UNO. SEE FOOTING SCHEDULE ON S003 FOR REINFORCEMENT.
16. FOR FOUNDATION WALL CORNER BAR CONFIGURATION SEE DETAIL ON S201
17. DO NOT BACKFILL BEHIND BASEMENT WALLS UNTIL SUPPORTING FLOOR PRECAST & BASEMENT SLAB ARE IN PLACE AND CONCRETE AS REACHED A MINIMUM OF 70% OF DESIGN STRENGTH
18. LOADS INDICATED @ PILE CAPS ARE SERVICE LOADS
19. MICRO PILE DESIGN BY OTHERS
20. BACKFILL ON EXTERIOR SIDE OF CIP WALLS CANNOT BE PLACED PRIOR TO INSTALLATION OF LEVEL P2 SLAB-ON-GRADE AND THE COMPLETE PRECAST STRUCTURE UP TO AND INCLUDING LEVEL 1 FLOOR.



1 S099 LOWER LEVEL/FOUNDATIONPLAN
1/8" = 1'-0"

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FOUNDATION PLAN

SHEET NUMBER

S099

PLAN NORTH

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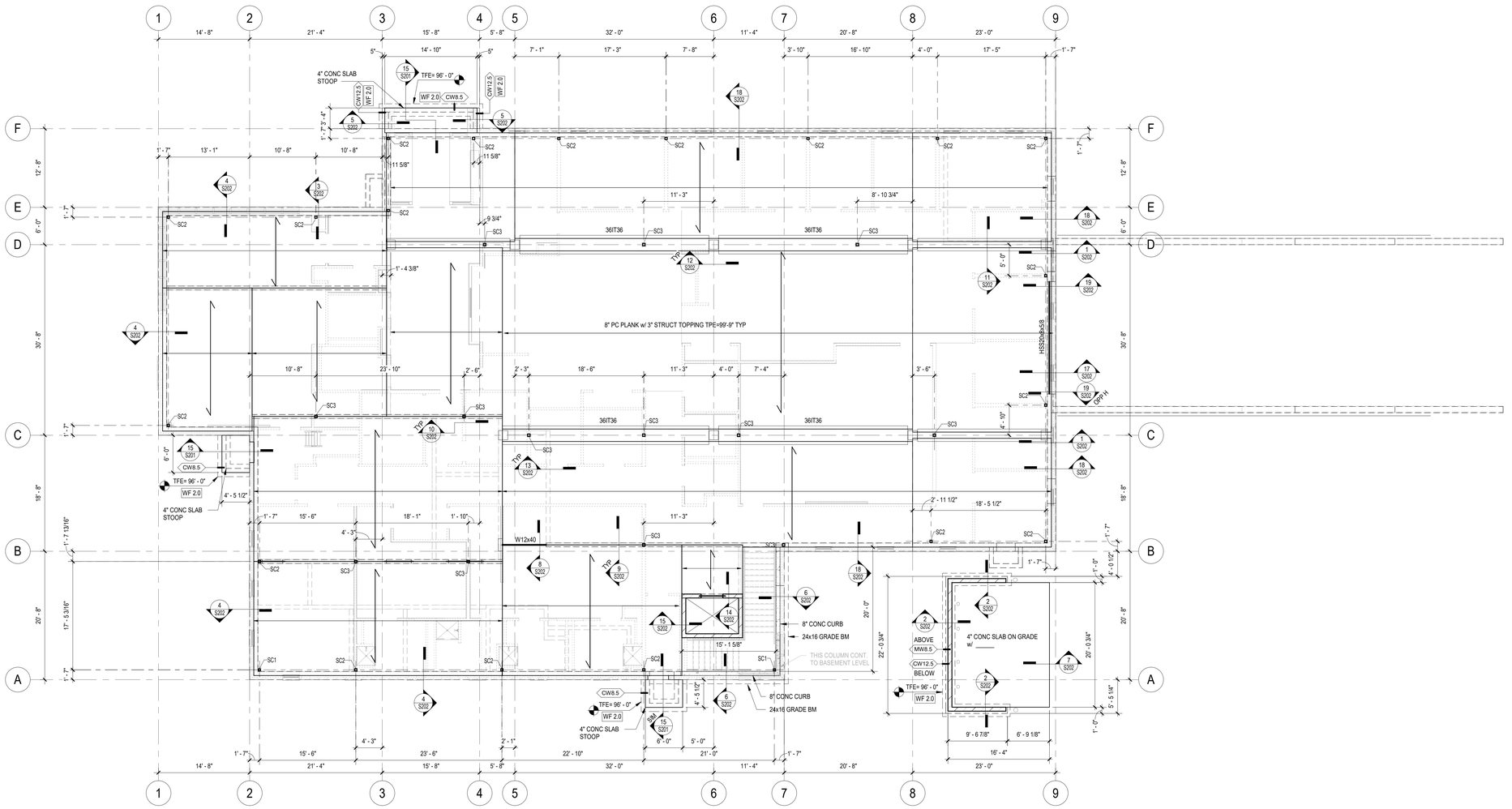
PRECAST PLAN NOTES

1. FOR GENERAL STRUCTURAL NOTES SEE S001
2. LEVEL 1 = XXX'-X" = XXX.XX' USGS
3. SEE S005A & S005B FOR LEVEL 1 PRECAST LOADING PLANS
4. SEE S006A & S006B FOR LEVEL 2 PRECAST LOADING PLANS
5. ALL PRECAST COLUMNS ARE 16"x16" UNO
6. UPLIFT FORCES (WIND) ACTING ON PRECAST PLANK FROM HOLDOWNS AT WOOD SHEAR WALLS SHALL NOT EXCEED 10K (SERVICE LOAD). SEE WOOD FRAMING FOR HOLDOWN / SHEAR WALL LOCATIONS
7. VERIFY OPENING SIZES AND LOCATIONS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.
8. PLANK STEPS ARE INDICATED ON PLANS (IF PRESENT). VERIFY EXTENT WITH ARCHITECTURAL DRAWINGS SHADED AREAS REPRESENT INFILL
9. FOR CONNECTION DETAIL OF STUD WALLS AND NON-LOAD BEARING WALLS TO CONCRETE PLANK SEE DETAILS ON S301
10. FOR NON-LOAD BEARING CMU WALL LOCATIONS AND THICKNESS SEE ARCHITECTURAL DRAWINGS
11. SEE S402 FOR STAIR AND ELEVATOR DETAIL
12. HEIGHT AT BOTTOM OF HAUNCH AT APPROXIMATELY 6'-0" AFF MIN. GC TO CONFIRM THIS IS ALLOWABLE BY LOCAL JURISDICTION.



1 S101 LEVEL 1 PLAN
1/8" = 1'-0"

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LEVEL 1 PLAN

SHEET NUMBER

S101

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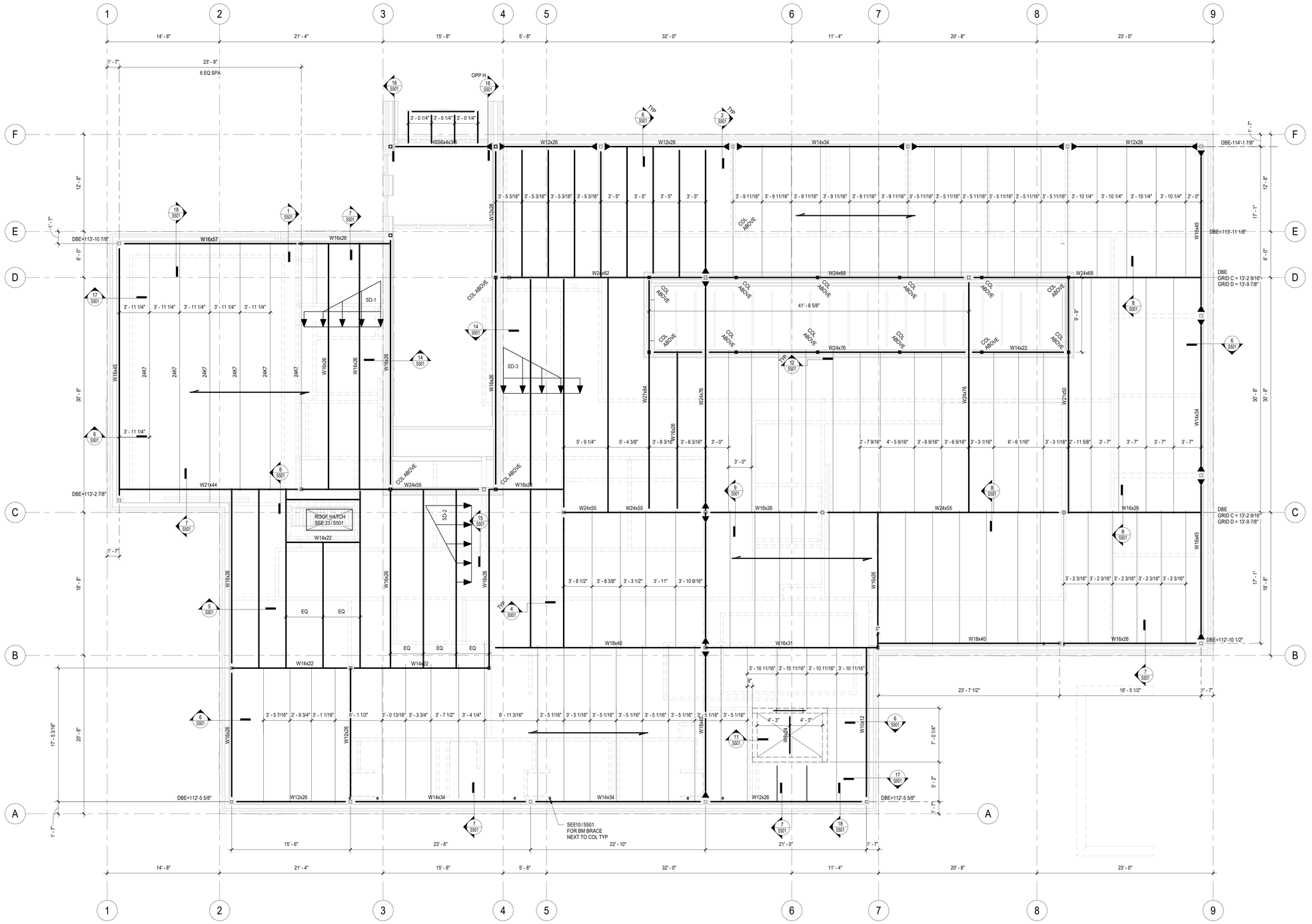


1 S102 LOW ROOF PLAN
3/16" = 1'-0"

STEEL FRAMING PLAN NOTES

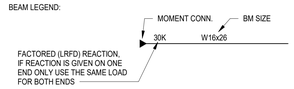
1). FOR GENERAL STRUCTURAL NOTES SEE SHEET S001.
2). FOR CONCRETE WALL SCHEDULE SEE S003.
3). FOR TYPICAL BEAM CONNECTION SCHEDULE SEE SHEET S003.
4). VERIFY NUMBER, SIZE & LOCATION OF ALL SLAB PENETRATIONS WITH ARCH & MEP DWGS
5). FOR ROOF DECK OPENING & MECHANICAL UNIT SUPPORT FRAMING SEE S301.
6). FOR STEEL JOIST REINFORCEMENT AT CONCENTRATED LOADS SEE S301.

7). (1) DENOTES EMBEDDED BEARING PLATE SEE SCHEDULE ON S003.

8). MARK THUS ——— INDICATES SPAN DIRECTION OF FLOOR & ROOF DECKING.

R1 - TYPICAL ROOF U.N.O.
ROOF TYPE IS METAL DECK ON STEEL BEAMS AND/OR JOISTS
1.5-B-20 GA. 5/8" DIAM. PUDDLE WELDS WITH 36/4
WELD PATTERN AT SUPPORTS & 4-#10 TEK SCREWS AT SIDE LAPS

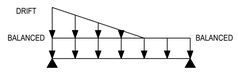
BEAM LEGEND:



SNOW DRIFT SCHEDULE

DESIGNATION	TOTAL LOAD		DRIFT WIDTH
	BALANCED	DRIFT	
SD-1	51 psf	42 psf	7'-9"
SD-2	51 psf	74 psf	13'-6"
SD-3	51 psf	69 psf	12'-7"
SD-4	51 psf	74 psf	13'-6"
SD-5	51 psf	47 psf	8'-7"
SD-6	51 psf	53 psf	9'-9"

NOTES:
1). TOTAL LOAD = BALANCED + DRIFT



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LOW ROOF PLAN

SHEET NUMBER

S102

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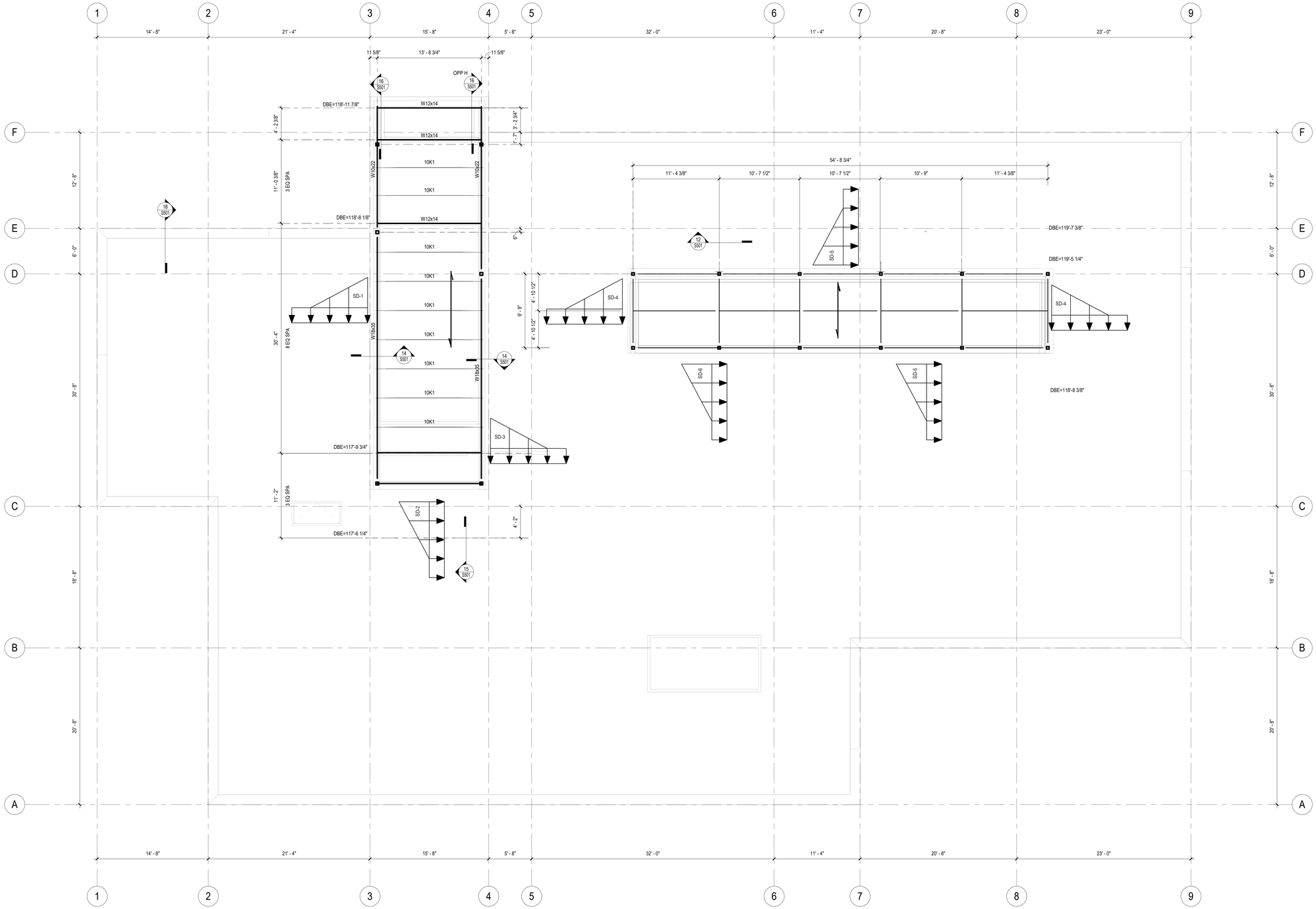

1 S103 UPPER ROOF
3/16" = 1'-0"

STEEL FRAMING PLAN NOTES

1). FOR GENERAL STRUCTURAL NOTES SEE SHEET S001.
2). FOR CONCRETE WALL SCHEDULE SEE S003.
3). FOR TYPICAL BEAM CONNECTION SCHEDULE SEE SHEET S003.
4). VERIFY NUMBER, SIZE & LOCATION OF ALL SLAB PENETRATIONS WITH ARCH & MEP DWGS
5). FOR ROOF DECK OPENING & MECHANICAL UNIT SUPPORT FRAMING SEE S301.
6). FOR STEEL JOIST REINFORCEMENT AT CONCENTRATED LOADS SEE S301.
7). (1) DENOTES EMBEDDED BEARING PLATE SEE SCHEDULE ON S003.
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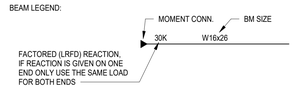
WELD PATTERN AT SUPPORTS & 4-#10 TEK SCREWS AT SIDE LAPS

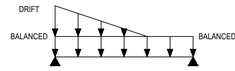
BEAM LEGEND:



SNOW DRIFT SCHEDULE

DESIGNATION	TOTAL LOAD		DRIFT WIDTH
	BALANCED	DRIFT	
SD-1	51 psf	42 psf	7'-9"
SD-2	51 psf	74 psf	13'-6"
SD-3	51 psf	69 psf	12'-7"
SD-4	51 psf	74 psf	13'-6"
SD-5	51 psf	47 psf	8'-7"
SD-6	51 psf	53 psf	9'-9"

NOTES:
1). TOTAL LOAD = BALANCED + DRIFT



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UPPER ROOF PLAN

SHEET NUMBER

S103

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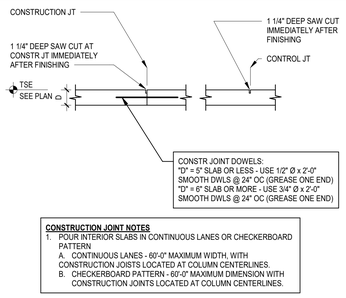
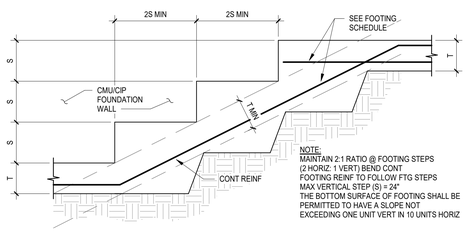
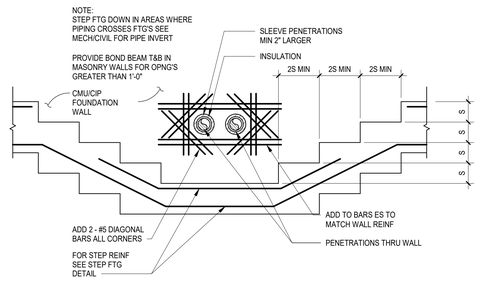


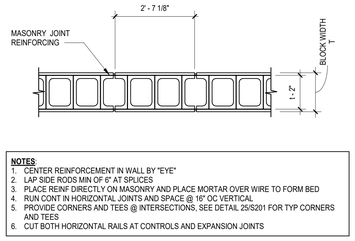
1 S201 SOG CONSTRUCTION & CONTROL JOINT
1/2" = 1'-0"



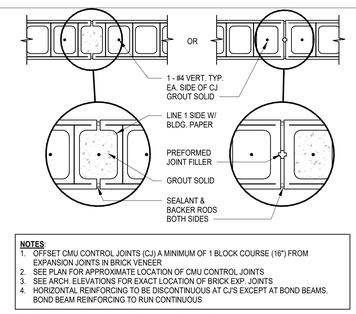
2 S201 TYPICAL REINFORCING FOR STEPPED FOOTING
1/2" = 1'-0"



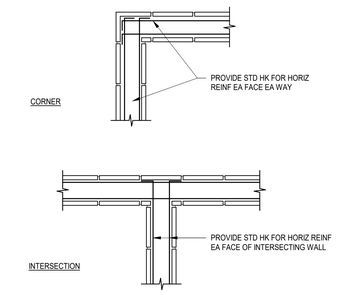
3 S201 FDN WALL PENETRATIONS
1/2" = 1'-0"



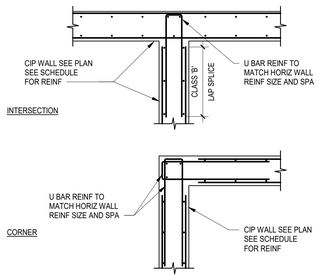
4 S201 MASONRY JOINT REINFORCING
1/2" = 1'-0"



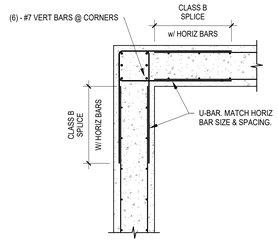
5 S201 CMU VERT. CONTROL JOINT
1/2" = 1'-0"



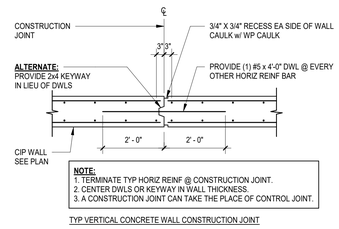
6 S201 BOND BEAM CORNER RFT
1/2" = 1'-0"



7 S201 CONCRETE WALL CORNER & TEE REINF
1/2" = 1'-0"

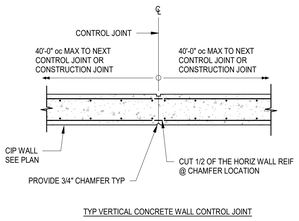


8 S201 CORNER SHEAR WALL REINFORCING
1/2" = 1'-0"

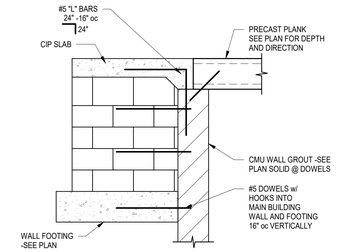


TYP VERTICAL CONCRETE WALL CONSTRUCTION JOINT

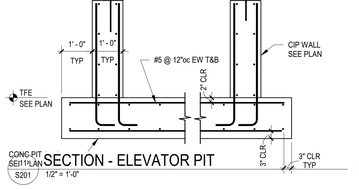
9 S201 TYP VERT CONC WALL CONST & CONTROL JOINT DET
1/2" = 1'-0"



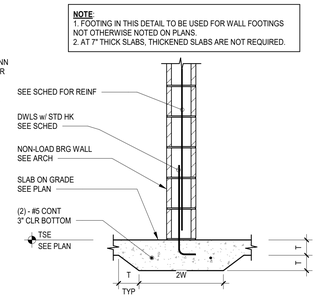
TYP VERTICAL CONCRETE WALL CONTROL JOINT



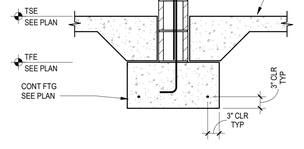
10 S201 SHALLOW FOUNDATION TO BLDG WALL
1/2" = 1'-0"



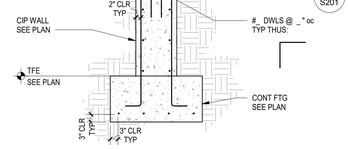
S201 SECTION - ELEVATOR PIT
1/2" = 1'-0"



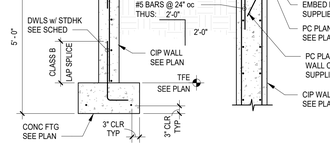
12 S201 NON-BEARING CMU WALL FOOTING
3/4" = 1'-0"



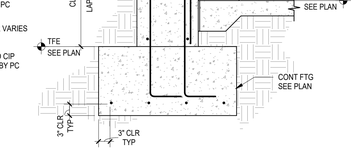
13 S201 BEARING CMU FOOTING
3/4" = 1'-0"



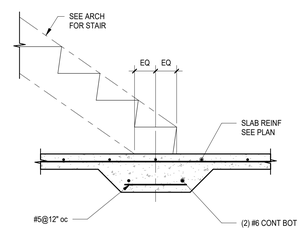
14 S201 SECTION AT GARAGE ENTERY
1/2" = 1'-0"



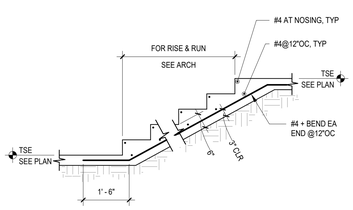
15 S201 SECTION AT STOOP
1/2" = 1'-0"



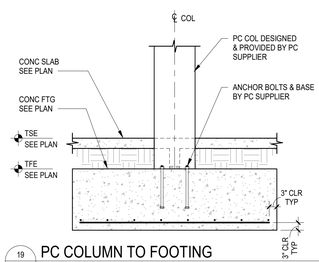
16 S201 FOUNDATION WALL TO FOOTING
3/4" = 1'-0"



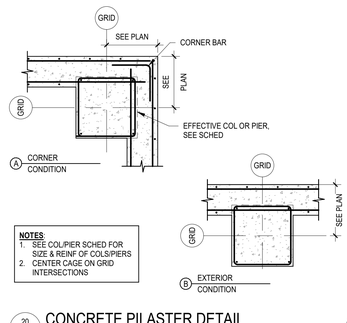
17 S201 THICKENED SOG AT STEEL STAIR
3/4" = 1'-0"



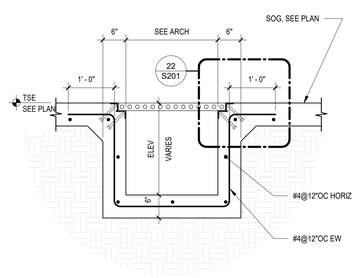
18 S201 STAIR SECTION
1/2" = 1'-0"



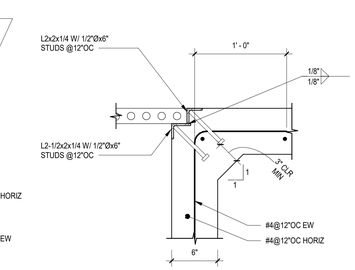
19 S201 PC COLUMN TO FOOTING
1/2" = 1'-0"



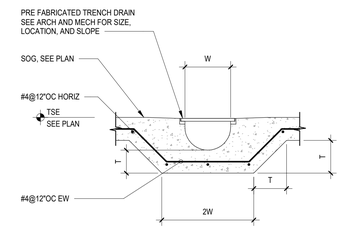
20 S201 CONCRETE PILASTER DETAIL
1/2" = 1'-0"



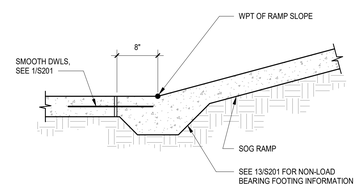
21 S201 TRENCH DRAIN SECTION
3/4" = 1'-0"



22 S201 ENLARGED TRENCH DRAIN DETAIL
1 1/2" = 1'-0"

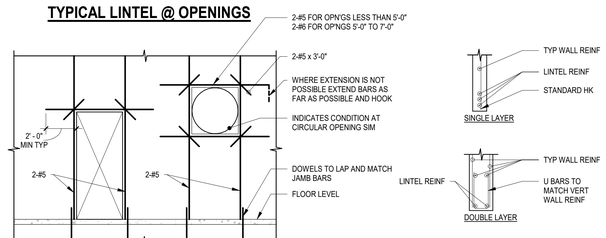


23 S201 TRENCH DRAIN SECTION (OPTIONAL)
3/4" = 1'-0"

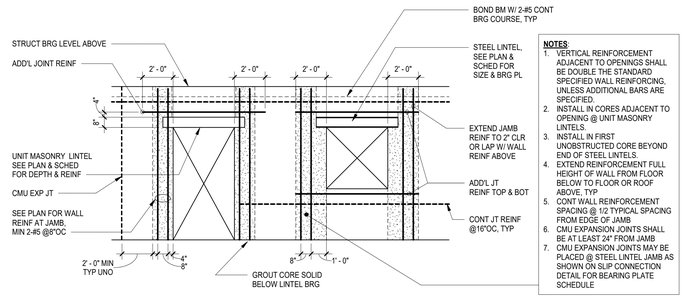


24 S201 SOG CONSTRUCTION JT @ START OF RAMP
1" = 1'-0"

TYPICAL LINTEL @ OPENINGS



25 S201 ADDITIONAL REINFORCING @ OPENINGS IN CIP WALL
1/4" = 1'-0"



26 S201 MASONRY WALL ELEVATION @ OPENINGS
1/4" = 1'-0"

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CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION
1	12/16/2019	DESIGN DEVELOPMENT

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	JP
CHECKED BY	KO
COMMISSION NUMBER	2106-02

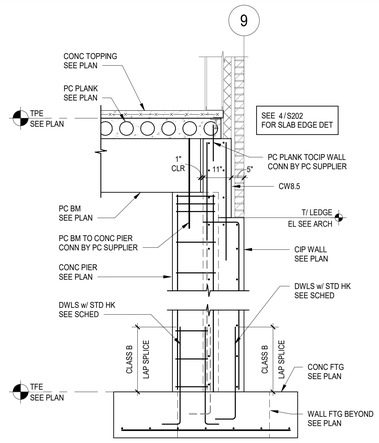
SHEET TITLE

FOUNDATION DETAILS

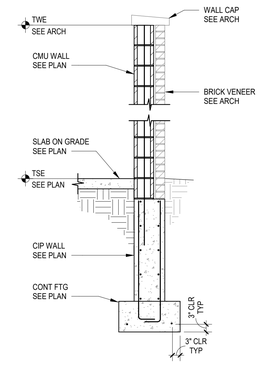
SHEET NUMBER

S201

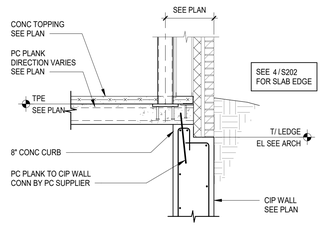
BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_S_R19.rvt
2/19/2020 9:46:18 AM



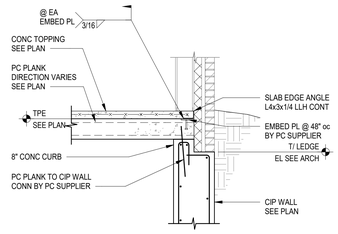
1 S202 SECTION AT CONC PIER AND PC BM
1/2" = 1'-0"



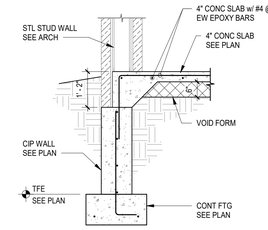
2 S202 WALL SECTION AT TRASH ENCLOUSE
1/2" = 1'-0"



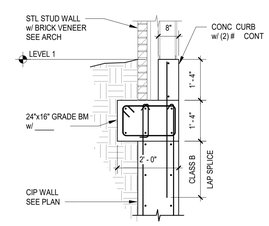
3 S202 HSS COLUMN AT SLAB EDGE
1/2" = 1'-0"



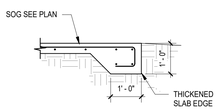
4 S202 SLAB EDGE DETAIL
1/2" = 1'-0"



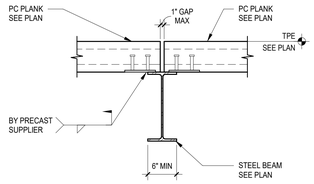
5 S202 STOOP WALL SECTION
1/2" = 1'-0"



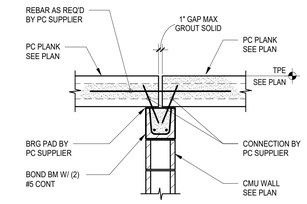
6 S202 SECTION AT GRADE BEAM
1/2" = 1'-0"



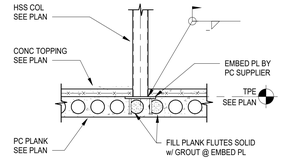
7 S202 THICKENED SLAB EDGE DETAIL
1/2" = 1'-0"



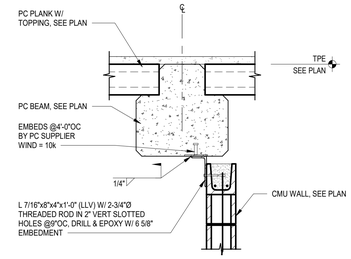
8 S202 PC PLANK AT STEEL BEAM
3/4" = 1'-0"



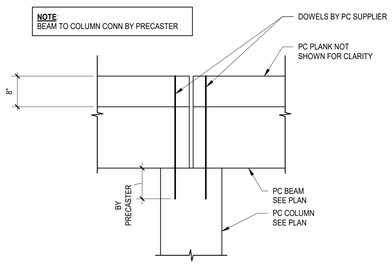
9 S202 PC PLANK AT CMU WALL
3/4" = 1'-0"



10 S202 STEEL COLUMN BASE DETAIL
1/2" = 1'-0"



11 S202 SECTION - CMU WALL TO BEAM
3/4" = 1'-0"



12 S202 SECTION - PC BEAM OVER PC COLUMN
3/4" = 1'-0"

13 S202 TYPICAL NON-BEARING CMU WALL TO PLANK
3/4" = 1'-0"

14 S202 PLANK BEARING AT CMU WALLS
3/4" = 1'-0"

15 S202 PC PLANK AT ELEVATOR CMU WALL
3/4" = 1'-0"

16 S202 SLAB EDGE DETAIL
3/4" = 1'-0"

17 S202 SECTION AT OVERHEAD DOOR
3/4" = 1'-0"

18 S202 BRICK LEDGE AT CIP WALL
1/2" = 1'-0"

19 S202 HSS LINTEL TO CIP WALL CONN
3/4" = 1'-0"

BKV GROUP

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Interior Design
Landscape Architecture
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CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION
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CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	JP
CHECKED BY	KO
COMMISSION NUMBER	2106-02

SHEET TITLE

FOUNDATION & PRECAST DETAILS & SECTIONS

SHEET NUMBER

S202

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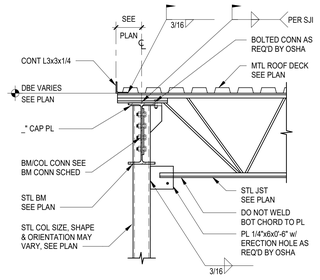
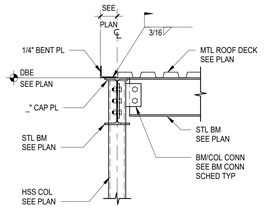
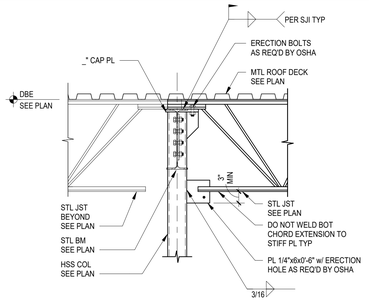
2/19/2020 9:46:20 AM



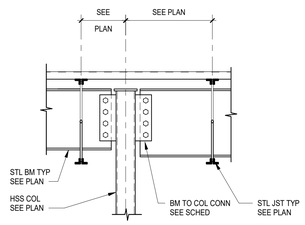
1 S501 EXTERIOR JST / BM TO COL
3/4" = 1'-0"



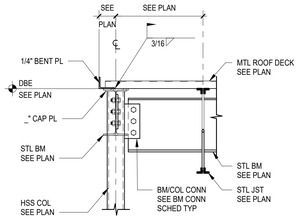
2 S501 BEAM TO COLUMN CONN
3/4" = 1'-0"



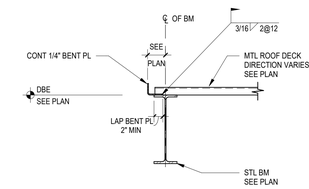
3 S501 INTERIOR JST / BM CONN TO COL
3/4" = 1'-0"



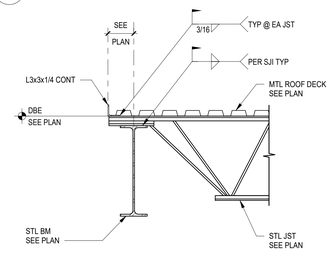
4 S501 SECTION AT BEAM /COLUMN CONNECTION
3/4" = 1'-0"



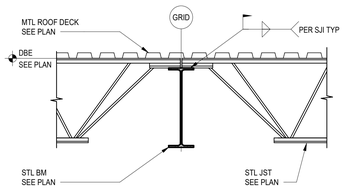
5 S501 SECTION AT COLUMN & BEAM CONN
3/4" = 1'-0"



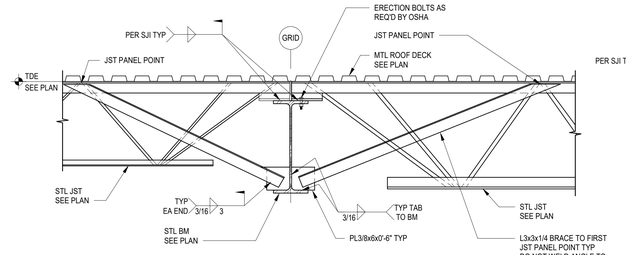
6 S501 TYPICAL ROOF DECK EDGE ALONG BEAM
3/4" = 1'-0"



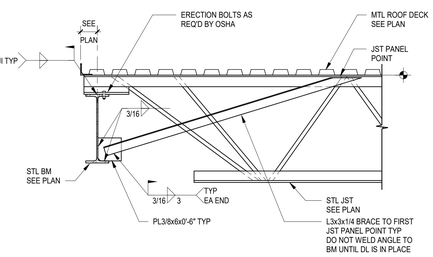
7 S501 EXTERIOR JST / BM CONN
3/4" = 1'-0"



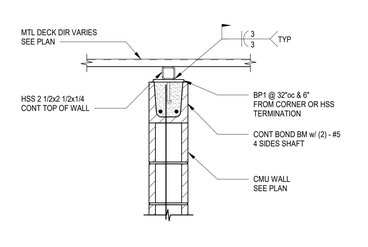
8 S501 INTERIOR JST / BM CONN
3/4" = 1'-0"



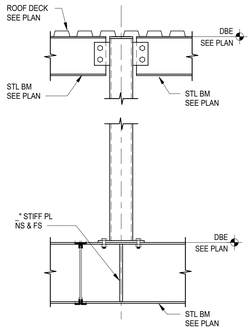
9 S501 BEAM BRACE AT JOIST NEXT TO INTERIOR COLUMN
3/4" = 1'-0"



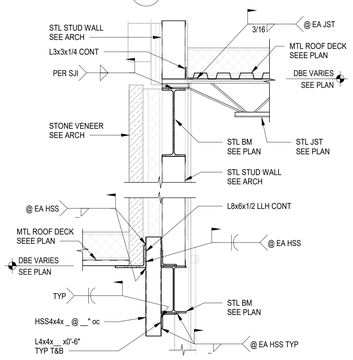
10 S501 BEAM BRACE AT JOIST NEXT TO EXTERIOR COLUMN
3/4" = 1'-0"



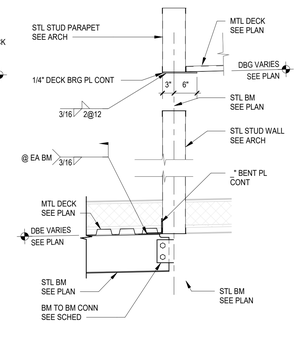
11 S501 DECK BEARING AT ELEVATOR SHAFT WALL
1" = 1'-0"



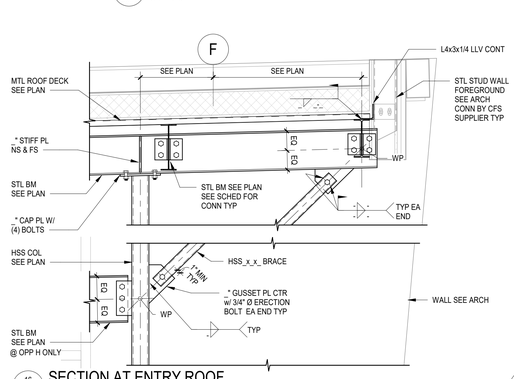
12 S501 SECTION AT CLERESTORY
3/4" = 1'-0"



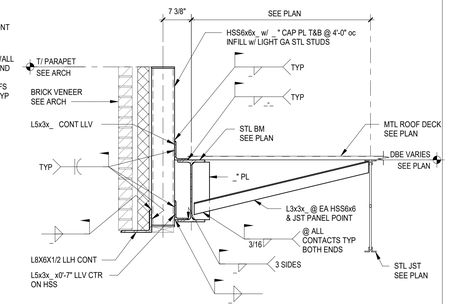
14 S501 SECTION AT ROOF
3/4" = 1'-0"



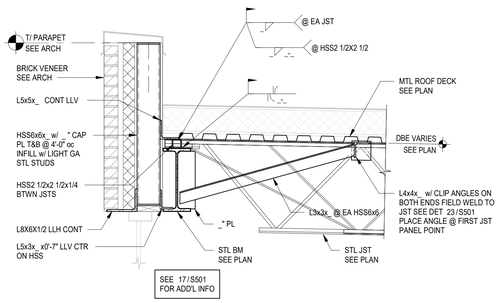
15 S501 SECTION AT ROOF
3/4" = 1'-0"



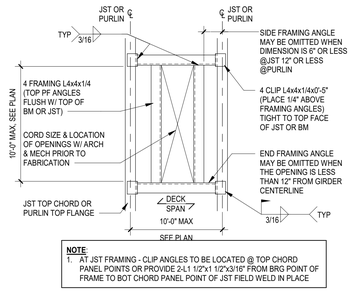
16 S501 SECTION AT ENTRY ROOF
3/4" = 1'-0"



17 S501 SECTION AT BRICK SHELF
3/4" = 1'-0"

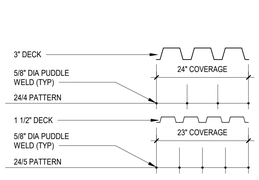


18 S501 SECTION AT BRICK SHELF
3/4" = 1'-0"

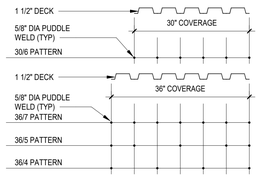


NOTE:
1. AT JST FRAMING - CLIP ANGLES TO BE LOCATED @ TOP CHORD PANEL POINTS OR PROVIDE 2-L1 1/2"x1 1/2"x3/16" FROM BRG POINT OF FRAME TO BOT CHORD PANEL POINT OF JST FIELD WELD IN PLACE

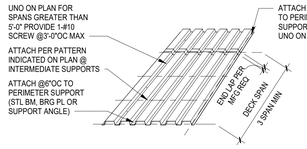
23 S501 ROOF OPENING SUPPORT
3/4" = 1'-0"



24 S501 METAL DECK WELD PATTERN
3/4" = 1'-0"

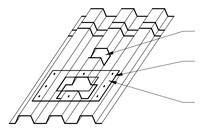


25 S501 TYPICAL 1 1/2" ROOF DECK WELDING
1/2" = 1'-0"



NOTES:
1. ALL PUDDLE WELDS ARE 5/8" DIA. WELD WASHERS SHALL BE USED WHEN WELDING STL ROOF DECK TO LESS THAN 22GA THICKNESS
2. DECK FASTENING REQ'MT SHALL NOT BE LESS THAN THE MFG'S RECOMMENDATIONS OR AS SHOWN ABOVE & ON PLANS.
3. WHERE WELDS ARE USED, ENSURE THAT WELDS @ DECK END LAPS ADEQUATELY PENETRATE BOTH LAYERS OF DECK

26 S501 TYPICAL ROOF DECK OPENING DETAIL
1/2" = 1'-0"



NOTES:
1. LESS THAN 6"Ø OPNG W/ONE RIB REMOVED - NO REINF REQ'D
2. 6"Ø TO LESS THAN 8"Ø OPNG IN DECK - PL 16GA (.045" MIN) EXTEND 6" MIN BEYOND EA SIDE OF OPNG
3. 8"Ø TO LESS THAN 13"Ø OPNG DECK - PL 16GA (.057" MIN) EXTEND 6" MIN BEYOND EA SIDE OF OPNG
4. ADD FRAME FOR OPNG GREATER THAN 13"Ø - SEE PLAN FOR FRAMING AROUND SLAB/DECK OPNG

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Interior Design
Landscape Architecture
Engineering

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CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION
1	12/16/2019	DESIGN DEVELOPMENT

CERTIFICATION

NOT FOR CONSTRUCTION

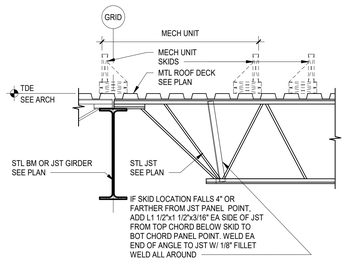
DRAWN BY	JP
CHECKED BY	KO
COMMISSION NUMBER	2106-02

SHEET TITLE

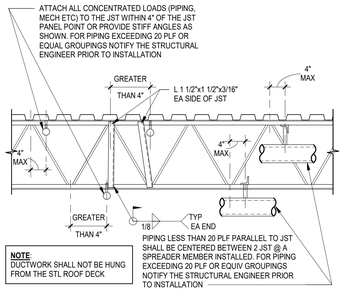
STEEL FRAMING DETAILS

SHEET NUMBER

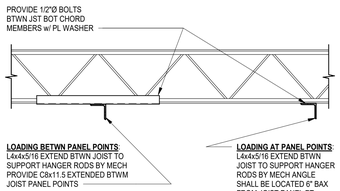
S501



1 S502 MECH UNIT BRG SECTION
3/4" = 1'-0"



2 S502 UTILITY HANGER FROM JST
3/4" = 1'-0"



3 S502 MECH EQUIP SUPPORT FRAMING
3/4" = 1'-0"

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PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION

CERTIFICATION

NOT FOR CONSTRUCTION

DRAWN BY	JP
CHECKED BY	KO
COMMISSION NUMBER	2106-02

SHEET TITLE

SECTIONS & DETAILS

SHEET NUMBER

S502

BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_S_R19.rvt
2/19/2020 9:46:24 AM

A

AC	AIR COMPRESSOR
A/C	AIR CONDITIONING
AD	AREA DRAIN
ADD	ADDENDUM
ADDL	ADDITIONAL
AFF	ABOVE FINISH FLOOR
AFMS	AIRFLOW MEASURING STATION
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
AMP	AMPHERE
AP	ACCESS PANEL
APD	AIR PRESSURE DROP
APPROX	APPROXIMATE(LY)
ARCH	ARCHITECT
AS	AIR SEPARATOR
ASI	ARCHITECT'S SUPPLIMENTAL INSTRUCTION
AVG	AVERAGE

B

B	BOILER
BEL	BELOW
BFE	BOTTOM OF FOOTING ELEVATION
BFP	BACKFLOW PREVENTER
BFV	BUTTERFLY VALVE
BG	BATHROOM GROUP
BHP	BREAK HORSEPOWER
BLDG	BUILDING
BM	BEAM
BMS	BUILDING MANAGEMENT SYSTEM
BSMT	BASEMENT
BO	BOTTOM OF
BOF	BOTTOM OF FOOTING
BOS	BOTTOM OF STEEL
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
BV	BALL VALVE
BWV	BACKWATER VALVE

C

CD	CONDENSATE DRAIN
CF	CUBIC FEET
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFRD	CONTROLLER FLOW ROOF DRAIN
CH	CHILLER
CIRC	CIRCULATING
CKT	CIRCUIT
CKV	CHECK VALVE
CO	CLEANOUT
COMB	COMBINATION
CONC	CONCRETE
COND	CONDENSATE
CONN	CONNECT(ED) (ION)
CONT	CONTINU(E) (OUS) (ATION)
CONTR	CONTRACTOR
CONST	CONSTRUCTION
COORD	COORDINATE
CORR	CORRIDOR
CT	COOLING TOWER
CTRL	CONTROL
CUH	CABINET UNIT HEATER
CW	COLD WATER

D

D	DEEP, DEPTH
dB	DECIBELS
DB	DRYBULB
DBL	DOUBLE
DDC	DIRECT DIGITAL CONTROL
DEG	DEGREE(S)
DEMO	DEMO(LISH)(LITION)(ition)
DEPT	DEPARTMENT
DET	DETAIL
DET	DETAIL
DIFF	DIFFUSER
DIA	DIAMETER
DIM	DIMENSION
DPS	DIFFERENTIAL PRESSURE SENSOR
DISC	DISCONNECT
DIV	DIVISION
DMPR	DAMPER
DN	DOWN
DOC	DOCUMENT(S)
DWG	DRAWING

E

EA	EACH
EXA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EL	ELEVATION
ELEC	ELECTRIC(AL)
ELEV	ELEVATOR
EMER	EMERGENCY
EMS	EMERGENCY MANAGEMENT SYSTEM
ENGR	ENGINEER
EQ	EQUAL
EQUIP	EQUIPMENT
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
EXIST	EXISTING
EXT	EXTERIOR

F

°F	FAHRENHEIT
F	FIRE PIPE
FCO	FLOOR CLEANOUT
FCU	FAN COIL UNIT
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FDPR	FIRE DAMPER
FDV	FIRE DEPARTMENT VALVE
FF	FINISHED FLOOR
FFE	FINISHED FLOOR ELEVATION
FLEX	FLEXIBLE
FLR	FLOOR
FLS	FLAMMABLE LIQUID SEPARATOR
FOIC	FURNISHED BY OWNER, INSTALLED BY CONTRACTOR
FOIO	FURNISHED BY OWNER, INSTALLED BY OWNER
FP	FIRE PROTECTION
FPM	FEET PER MINUTE
FSP	FIRE STANDPIPE
FPTH	FIRE PUMP TEST HEADER
FT(')	FOOT, FEET
FT²	SQUARE FEET
FTG	FOOTING
FTHD	FEET OF HEAD
FTR	FINNED TUBE RADIATION
FUT	FUTURE
F&T	FLOAT AND THERMOSTATIC TRAP

G

GA	GAUGE
GAL	GALLON(S)
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GRV	GRAVITY ROOF VENTILATOR
GWH	GAS WATER HEATER
GV	GATE VALVE
GYP	GYPSUM

H

H	HIGH, HEIGHT, HUMIDIFIER
HB	HOSE BIB
HP	HORSEPOWER
HPU	HEAT PUMP UNIT
HT	HEIGHT
HTG	HEATING
HTR	HEATER
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING
HX	HEAT EXCHANGER
HY	YARD HYDRANT
HYD	HYDRAULIC
HZ	HERTZ

I

ID	INSIDE DIAMETER / DIMENION
IN (")	INCH(ES)
INSUL	INSULA(E)(ED) (REFER TO MATERIAL ID)
INV	INVERT ELEVATION

K

K	KITCHEN SINK
KIT	KITCHEN
KW	KILOWATT
KWH	KILOWATT HOUR

L

L	LONG, LENGTH
LAT	LEAVING AIR TEMPERATURE
LAV	LAVATORY
LB(S)	POUND(S)
LF	LINEAL FOOT, FEET
LOC	LOCAT(E)(ION)
LVL	LEVEL
LWR	LEAVING WATER TEMPERATURE

M

MA	MIXED AIR
MAT	MIXED AIR TEMPERATURE
MATL	MATERIAL
MAU	MAKEUP AIR UNIT
MAX	MAXIMUM
MB	MOP BASIN
MBH	THOUSAND BTUH
MCC	MOTOR CONTROL CENTER
MD	MOTORIZED DAMPER
MECH	MECHANICAL
MED	MEDIUM
MEZZ	MEZZANINE
MFR(G)	MANUFACTUR(E) (ER) (ING)
MISC	MISCELLANEOUS
MIN	MINIMUM, MINUTE
MS	MOP SINK

N

N	NORTH
NA	NOT APPLICABLE
NC	NOISE CRITERIA, NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO (#)	NUMBER
N.O.	NORMALLY OPEN
NO2	NITROUS OXIDE
NTS	NOT TO SCALE

O

O	OXYGEN
OA	OUTSIDE AIR
OC	ON CENTER
OCH	ON CENTER HORIZONTAL
OCV	ON CENTER VERTICAL
OD	OUTSIDE DIAMETER
OFS	OVERFLOW SCUPPER
OH	OVERHEAD
OPT	OPTION
ORD	OVERFLOW ROOF DRAIN
OST	OVERFLOW STORM DRAIN

P

PACU	PACKAGED AIR CONDITIONING UNIT
PCC	PRECAST CONCRETE
PD	PUMPED DISCHARGE
PERIM	PERIMETER
PH	PHASE
PIV	POST INDICATOR VALVE
PL	PROPERTY LINE
PLBG	PLUMBING
PR	PROPOSAL REQUEST
PROJ	PROJECT
PRV	PRESSURE REDUCING VALVE (PLBG)
	POWER ROOF VENTILATOR (HVAC)
PSF	POUNDS PER SQ FT
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH, GAUGE
PVC	POLYVINYL CHLORIDE

Q

QTY	QUANTITY

R

R	RADIUS
RA	RETURN AIR
RAD	RADIAT(OR) (ION)
RD	ROOF DRAIN
REG	REGISTER
REQ(D)	REQUIRE(D)
REQM	REQUIRMENT
RET	RETURN
REV	REVISI(E) (ED) (ION)
RH	RELATIVE HUMIDITY
RM	ROOM
RPM	REVOLUTIONS PER MINUTE
RPZ	REDUCED PRESSURE BACKFLOW PREVENTOR
RTU	ROOFTOP UNIT
R&R	REMOVE AND REPLACE

S

S	SENSOR, SHOWER
SA	SUPPLY AIR
SAT	SOUND ATTENUATOR
SCHED	SCHEDULE
SD	SMOKE DAMPER
SDT	SMOKE DETECTOR
SF	SQUARE FEET
SFD	SMOKE FIRE DAMPER
SIM	SIMILAR
SK	SPECIALTY SINK
SOG	SLAB ON GRADE
SP	STATIC PRESSURE
SPKLR	SPRINKLER
SQ	SQUARE
SS	STAINLESS STEEL
	SANITARY SEWER
STD	STANDARD
STRN	STRAINER
STRUC	STRUCTURAL
SV	STACK VENT

T

T	THERMOSTAT, TUB / TUB SHOWER
TC	TEMPERATURE CONTROL
TCC	TEMPERATURE CONTROL CONTRACTOR
TD	TEMPERATURE DIFFERENCE
TEMP	TEMPERATURE
TMV	THERMOSTATIC MIXING VALVE
TOS	TOP OF STEEL
TS	TAMPER SWITCH
TYP	TYPICAL

U

U	URINAL
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE

V

V	VENT PIPE
VAC	VACUUM
VAL	VALVE
VAV	VARIABLE AIR VOLUME
VB	VACUUM BREAKER
VF	VENTILATION FAN
VIF	VERIFY IN FIELD
VOL	VOLUME
VSD	VARIABLE SPEED DRIVE
VTR	VENT THRU ROOF

SYMBOLS

~	APPROXIMATE(LY)
@	AT
&	AND
∠	ANGLE
℄	CENTERLINE
Ø	DIAMETER
#	NUMBER
/	PER
⊥	PERPENDICULAR
Φ	PHASE
±	PLUS OR MINUS

REFERENCE SYMBOLS

REFERENCE SYMBOLS INDICATE THAT ADDITIONAL INFORMATION CONCERNING THE PART OF THE WORK REFERENCED MAY BE FOUND AT THE LOCATION INDICATED BY THE SYMBOL AND AS DESCRIBED BELOW.

DETAIL CALLOUT:
- INDICATES DETAIL CALLOUT NUMBER
- INDICATES SHEET WHERE DETAIL CALLOUT IS DRAWN

DETAIL:
- INDICATES AREA OF DETAIL CUT PARALLEL TO VIEW

DETAIL PLAN OR ELEVATION:
- INDICATES AREA OF ENLARGED PLAN OR ENLARGED ELEVATION

DETAIL CALLOUT:
- INDICATES DETAIL NUMBER
- INDICATES SHEET WHERE DETAIL IS DRAWN
- INDICATES AREA OF DETAIL CUT PERPENDICULAR TO VIEW

BUILDING SECTION:
- INDICATES BUILDING SECTION NUMBER
- INDICATES SHEET WHERE BUILDING SECTION IS DRAWN

WALL SECTION:
- INDICATES WALL SECTION NUMBER
- INDICATES SHEET WHERE WALL SECTION IS DRAWN

EXTERIOR ELEVATION:
- INDICATES EXTERIOR ELEVATION NUMBER
- INDICATES SHEET WHERE EXTERIOR ELEVATION IS DRAWN

INTERIOR ELEVATION (SINGLE):
- INDICATES INTERIOR ELEVATION NUMBER
- INDICATES SHEET WHERE INTERIOR ELEVATION IS DRAWN

INTERIOR ELEVATION (MULTIPLE):
- INDICATES INTERIOR ELEVATION NUMBER
- INDICATES SHEET WHERE INTERIOR ELEVATION IS DRAWN

NEW GRID LINES:

EXISTING GRID LINES:

REVISION:
- REVISION NUMBER - SEE REVISION HISTORY ON TITLE BLOCK OF EACH SHEET

REVISION CLOUD:
- REVISION NUMBER - SEE REVISION HISTORY ON TITLE BLOCK OF EACH SHEET

KEYNOTE:
- SEE CORRESPONDING NUMBERED KEY NOTE ON SHEET WHERE REFERENCE OCCURS

ELEVATION LEVEL:
- INDICATES FLOOR LEVEL
- INDICATES FLOOR LEVEL ELEVATION

EXISTING WALL TO REMAIN

EXISTING WALL TO BE REMOVED

MECHANICAL SYMBOLS

SYMBOL - DOUBLE LINE	SYMBOL - SINGLE LINE	DESCRIPTION
#	SAME AS DOUBLE LINE	PLAN I.D. NUMBER
SUPPLY AIR / RETURN AIR / EXHAUST AIR	SAME AS DOUBLE LINE	AIR FLOW ARROW
		SUPPLY AIR DUCT TURNING UP AND DOWN
		RETURN AIR DUCT TURNING UP AND DOWN
		EXHAUST AIR DUCT TURNING UP AND DOWN
	WxH Ø	ROUND AND RECTANGULAR DUCT TRANSITION
		FLEXIBLE CONNECTION
		ONE SIDED DUCT EXPANSION OR CONTRACTION
		TWO SIDED DUCT EXPANSION OR CONTRACTION
		FLEXIBLE DUCT
A.P. / A.P.	A.P. / A.P.	ACCESS PANEL
		ROUND DUCT OFF-SET UP OR DOWN
		ROUND DUCT ELBOW DOWN
		ROUND DUCT ELBOW UP
B M	B M	VOLUME DAMPER BACKDRAFT DAMPER MOTORIZED DAMPER
R F S FS	R F S FS	RADIANT CEILING FIRE DAMPER FIRE DAMPER SMOKE DAMPER FIRE / SMOKE DAMPER
12x6 16x6 20x6 12x6	20x6 16x6 12x6	PROPORTIONAL SPLIT-SUPPLY (SIZED ON PERCENTAGE OF AIR FLOW)
		BRANCH TAKE-OFF
		CONICAL SPIN-IN DUCT FITTING
		SECURITY BARS
		DUCT WITH LINING
		SQUARE ELBOW WITH TURNING VANES
		FULL SWEEP ELBOW (1.5 RADIUS)
VAV-#	VAV-#	VARIABLE AIR VOLUME BOX W/ HYDRONIC HTG COIL
VAV-#	VAV-#	VARIABLE AIR VOLUME BOX
H	H	HUMIDIFIER DISPERSION TUBE IN DUCT
	SAME AS DOUBLE LINE	POWER AND GRAVITY VENT, EXHAUST
	SAME AS DOUBLE LINE	POWER AND GRAVITY VENT, INTAKE
SUPPLY RETURN EXHAUST	SAME AS DOUBLE LINE	CEILING AIR TERMINAL DEVICE SUPPLY, RETURN AND EXHAUST AIR DIFFUSERS, REGISTERS AND GRILLES
	SAME AS DOUBLE LINE	CEILING AIR TERMINAL DEVICE LINEAR DIFFUSER

MECHANICAL KEY

HEATING & COOLING RISER DESIGNATIONS

- H / # — HEATING WATER RISER
- C / # — COOLING WATER RISER
- H/C / # — HEATING & COOLING RISER
- DE / # — DRYER EXHAUST RISER

REGISTER, GRILLE OR DIFFUSER

- S4.9a / 500 — STYLE ON SCHEDULE; SIZE (IN) DIFFUSER NECK
- FACE SIZE (IN) REGISTER & GRILLE
- R1.24x12 / 500 — LENGTH OF LINEAR DIFFUSER; SIZE (IN) DIFFUSER NECK
- SS.4'.12ø / 500 — CFM

FINNED TUBE RADATION - PROVIDE WALL TO WALL COVER, UNO

- C-7.6-V-R-RB — RETURN BEND IN COVER (IF NOTED) SIZE RETURN PER PIPE SIZE SCHEDULE, UNO
- RETURN IN COVER (IF NOTED)
- CIRCUIT VALVES IN COVER (IF NOTED)
- MBH - PROVIDE REQ'D FINNED LENGTHS
- STYLE ON SCHEDULE

MECHANICAL AND PLUMBING SYMBOLS

ABBR	SYMBOL	DESCRIPTION	ABBR	SYMBOL	DESCRIPTION
CWS	CWS	CHILLED WATER SUPPLY	CW	CW	COLD WATER
CWR	CWR	CHILLED WATER RETURN	HW	HW	HOT WATER (120° F)
CD	CD	CONDENSATE DRAINAGE	HW	140°HW	HOT WATER (140°F)
PCD	PCD	PUMPED CONDENSATE DRAINAGE	CHW	CHW	CIRCULATION HOT WATER (120°F)
CS	CS	CONDENSER WATER SUPPLY	CHW	140° CHW	CIRCULATION HOT WATER (140°F)
CR	CR	CONDENSER WATER RETURN	NPCW	NPCW	NON-POTABLE COLD WATER
HWS	HWS	HOT WATER HEATING SUPPLY	NPHW	NPHW	NOT-POTABLE HOT WATER
HWR	HWR	HOT WATER HEATING RETURN	SCW	SCW	SOFTENED COLD WATER
SMS	SMS	SNOW MELTING SYSTEM SUPPLY			
SMR	SMR	SNOW MELTING SYSTEM RETURN	F	F	FIRE PROTECTION PIPING
LPS	LPS	LOW PRESSURE STEAM SUPPLY			
LPR	LPR	LOW PRESSURE STEAM RETURN	A	A	COMPRESSED AIR
MPS	MPS	MEDIUM PRESSURE STEAM SUPPLY	G	G	GAS PIPING (NATURAL GAS)
MPR	MPR	MEDIUM PRESSURE STEAM RETURN	LP	LP	LIQUIDIED PROPANE
HPS	HPS	HIGH PRESSURE STEAM SUPPLE	O	O	OXYGEN PIPING
HPR	HPR	HIGH PRESSURE STEAM RETURN	VAC	VAC	VACUUM LINE
PC	PC	PUMPED STEAM CONDENSATE			
				T	THERMOSTAT
RL	RL	REFRIGERANT LIQUID LINE		S	SENSOR
RS	RS	REFRIGERANT SUCTION LINE		CO	CARBON MONOXIDE SENSOR
RG	RG	REFRIGERANT HOT GAS LINE		NO2	NITROGEN DIOXODE SENSOR
				P	PRESSURE CONTROLLER
FO	FO	FUEL OIL GENERAL PIPING			PRESSURE GAUGE
FOS	FOS	FUEL OIL SUPPLY			THERMOSTATIC CONTROLLER
FOR	FOR	FUEL OIL RETURN			THERMOMETER
FOV	FOV	FUEL OIL TANK VENT	DPS	DP	DIFFERENTIAL PRESSURE SENSOR
G	G	GAS PIPING			
LP	LP	LIQUIFIED PROPANE	RD		ROOF DRAIN
			ORD		OVERFLOW ROOF DRAIN
AW	AW	ACID RESISTANT WASTE ABOVE GROUND	AD		AREA DRAIN
AW	AW	ACID RESISTANT WASTE UNDERGROUND	FD		FLOOR DRAIN
AV	AV	ACID RESISDENT VENT	HD		HOPPER DRAIN
FW	FW	FLAMMABLE WASTE ABOVE GROUND	CO		END OF PIPE CLEANOUT
FW	FW	FLAMMABLE WASTE UNDERGROUND	FCO		FLOOR CLEANOUT
FV	FV	FLAMMABLE WASTE VENT	WCO		WALL CLEANOUT
GW	GW	GREASE WASTE ABOVE ABOVE GROUND			BOILER DRAIN
GW	GW	GREASE WASTE UNDERGROUND	HB		HOSE BIBB
GV	GV	GREASE WASTE VENT	HY		WALL HYDRANT
ST	ST	STORM DRAINAGE ABOVE GROUND			FLOW ARROW
ST	ST	STORM DRAINAGE UNDERGROUND			PIPE BREAK
OST	OST	OVERFLOW STORM DRAINAGE			PIPE DOWN
W	W	SOIL OR WASTE ABOVE GROUND			PIPE END CAP
W	W	SOIL OR WASTE UNDERGROUND			PIPE REDUCER
PW	PW	PUMPED SOIL OR WASTE ABOVE GROUND			PIPE UP
V	V	SANITARY VENT			TEE DOWN
					TEE UP
BAL. V		BALANCING VALVE			UNION
BFP	BFP	BACKFLOW PREVENTER			CONNECT TO EXISTING
BWV	BWV	BACK WATER VALVE			
BV		BALL VALVE			
BFV		BUTTERFLY VALVE			
CKV		CHECK VALVE			
		CIRCUIT SETTER - FLOW VENTURI			
		GAS COCK			
		GAS REGULATOR			
GV		GATE VALVE			
	M	METER			
PRV	PRV	PRESSURE REDUCING VALVE			
		PUMP			
RPZ		REDUCED PRESSURE ZONE VALVE			
		RELEIF VALVE			
		SHUTOFF VALVE			
	S	SOLENOID VALVE			
STRN		STRAINER & STRAINER W/ SHUTOFF			
		STEAM TRAP			
	T	THERMOSTATIC MIXING VALVE			
		VALVE IN VERTICAL PIPE			
		2-WAY, 2-POSITION CONTROL VALVE			
		3-WAY, 3-POSITION CONTROL VALVE			
	M	2-WAY, MODULATING CONTROL VALVE			
	M	3-WAY, MODULATING CONTROL VALVE			
FDC		FIRE DEPARTMENT CONNECTION			
FPTH		FIRE PUMP TEST HEADER			

SHEET NOTES

A. THE PURPOSE OF THIS SHEET IS TO ILLUSTRATE AND DEFINE TYPICAL GRAPHICS SYMBOLS AND SYSTEMS OF GRAPHIC SYMBOLS WHICH MAY OCCUR ON THE MECHANICAL DRAWINGS.
B. THE ILLUSTRATION OF A SYMBOL OR SYSTEM OF SYMBOLS ON THIS SHEET DOES NOT NECESSARILY INDICATE THAT THE BUILDING ITEM OR SYSTEM DESCRIBED BY THE SYMBOL IS USED AS PART OF THE WORK OF THIS PROJECT. REFER TO THE PLANS, ELEVATIONS, SECTIONS, SCHEDULES, DETAILS, AND SPECIFICATIONS TO DETERMINE THE SCOPE OF THE WORK.
C. SYMBOLS ARE NOT DRAWN TO SCALE. TO DETERMINE ACTUAL SIZES OF ELEMENTS REPRESENTED BY SYMBOLS, REFER TO THE SPECIFICATIONS AND OTHER DRAWINGS AS MAY APPLY.
D. FOR INFORMATION REGARDING SYMBOLS WHICH ARE USED AS ABBREVIATIONS, REFER TO THE MECHANICAL ABBREVIATIONS SHOWN ON THIS SHEET.
E. CERTAIN SYMBOLS MAY INCORPORATE SPECIAL ABBREVIATIONS AS PART OF THE SYMBOL. SUCH ABBREVIATIONS ARE AS DEFINED ON THIS SHEET.

MECHANICAL SHEET INDEX

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CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION
	12/16/2019	DESIGN DEVELOPMENT

CERTIFICATION

DRAWN BY	Author
CHECKED BY	Checker
COMMISSION NUMBER	2106-02

SHEET TITLE

MECHANICAL COVERSHEET

SHEET NUMBER

M001

BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_MEP_R19.rvt
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MECHANICAL GENERAL NOTES

1. CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH THE MECHANICAL AND PLUMBING DRAWINGS AND SPECIFICATIONS. NEITHER THE DRAWINGS NOR THE SPECIFICATIONS SHALL BE COMPLETE WITHOUT THE OTHER.
2. GENERAL NOTES, SYMBOLS LIST, AND DETAILS ARE APPLICABLE TO ALL DRAWINGS OF THIS SECTION.
3. DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. IT IS NOT THE INTENT TO SPECIFY OR SHOW EVERY OFFSET, FITTING, OR COMPONENT NECESSARY; HOWEVER, CONTRACT DOCUMENTS REQUIRE COMPONENTS AND MATERIALS WHETHER OR NOT INDICATED OR SPECIFICALLY SPECIFIED TO COMPLETE THE SYSTEMS BEING INSTALLED, TESTED AND MADE OPERATIONAL.
4. CONTRACTORS SHALL REFER TO ARCHITECTURAL AND ALL OTHER DISCIPLINES DRAWINGS FOR DIMENSIONS AND OTHER GENERAL INFORMATION NECESSARY TO COMPLETE THE WORK.
5. THE DOCUMENTS AND SPECIFICATIONS SHALL GOVERN WHERE THEY EXCEED CODE REQUIREMENTS.
6. PERFORM WORK, PROVIDE MATERIALS AND EQUIPMENT FOR COMPLETE AND FULLY FUNCTIONAL SYSTEMS SHOWN, SPECIFIED, AND DESCRIBED ON DRAWINGS. COMPLETELY COORDINATE WORK OF THIS CONTRACT WITH WORK OF OTHER CONTRACTORS. REMOVE ALL DEBRIS CAUSED BY THIS CONTRACTOR'S WORK DAILY.
7. ALL MATERIALS, EQUIPMENT, AND METHODS OF INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, REGULATIONS, CODES, ORDINANCES, AND LAWS OF LOCAL, STATE, AND OTHER AUTHORITIES HAVING LAWFUL JURISDICTION.
8. ADDRESS QUESTIONS REGARDING DRAWINGS TO ENGINEER IN WRITING BEFORE AWARD OF CONTRACT; OTHERWISE, ENGINEER'S INTERPRETATION OF MEANING AND INTENT OF DRAWINGS SHALL BE FINAL.
9. EACH CONTRACTOR SHALL GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY FEES AND BACK CHARGES, AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES HAVING JURISDICTION FOR THIS WORK.
10. WORK SHALL BE EXECUTED IN A WORKMANLIKE MANNER AND SHALL PRESENT A NEAT, RECTILINEAR APPEARANCE WHEN COMPLETED. PIPES, DUCTWORK, EQUIPMENT, AND ACCESSORIES SHALL BE INSTALLED AS TIGHT TO STRUCTURE AS POSSIBLE. MAINTAIN MAXIMUM HEAD ROOM AT ALL TIMES. DO NOT RUN PIPES AND DUCTWORK EXPOSED UNLESS SHOWN AND NOTED TO BE EXPOSED ON DRAWINGS.
11. EACH CONTRACTOR IS RESPONSIBLE FOR CUTTING AND PATCHING REQUIRED FOR THE INSTALLATION OF ITS NEW WORK. CUTTING AND PATCHING SHALL BE COMPLETED IN A NEAT AND WORKMANLIKE MANNER. PATCHING MATERIALS SHALL MATCH EXISTING MATERIALS TO THE GREATEST EXTENT POSSIBLE. PROVIDE TOUCH-UP TO MATCH EXISTING SURROUNDING AREAS OF CUTTING AND PATCHING WORK.
12. PRIOR TO COMMENCING WORK, CONTRACTOR SHALL SUBMIT A COPY OF SHOP DRAWINGS AND EQUIPMENT DATA FOR MATERIALS AND EQUIPMENT TO THE ENGINEER FOR REVIEW AND APPROVAL. MATERIALS AND EQUIPMENT SHALL NOT BE INSTALLED BEFORE SHOP DRAWINGS ARE REVIEWED AND APPROVED. AT LEAST TEN WORKING DAYS, EXCLUSIVE OF TRANSMITTAL TIME, FOR SUBMITTAL REVIEW SHALL BE ALLOWED FOR ENGINEER'S REVIEW.
13. DEVIATION FROM CONTRACT DOCUMENTS, OR PROPOSED SUBSTITUTION OF MATERIALS, OR EQUIPMENT FOR THOSE SPECIFIED SHALL BE REQUESTED IN A SEPARATE LETTER IN ACCORDANCE WITH SPECIFICATIONS PRIOR TO BID.
14. MATERIALS AND EQUIPMENT SHALL BE LISTED BY UNDERWRITERS LABORATORIES (UL) AND APPROVED BY ASME AND AGA FOR INTENDED SERVICE.
15. AS WORK PROGRESSES, MAINTAIN AND MARK-UP A COMPLETE SET OF PRINTS OF CONTRACT DRAWINGS AT JOB SITE FOR THE DURATION OF THE CONTRACT. WORK COMPLETED AND ALL CHANGES FROM ORIGINAL CONTRACT DRAWINGS SHALL BE RECORDED CLEARLY AND ACCURATELY, INCLUDING WORK INSTALLED AS A MODIFICATION OR ADDITION TO THE ORIGINAL DESIGN. TURN OVER THE FINAL SET OF "AS BUILT" DRAWINGS TO OWNER AT THE CONCLUSION OF CONSTRUCTION. PROVIDE A COPY OF THE "AS BUILT" DRAWINGS TO THE ENGINEER OF RECORD.
16. GUARANTEE WORK OF THIS CONTRACTOR IN WRITING FOR ONE YEAR FROM THE DATE OF OWNER'S ACCEPTANCE OF CERTIFICATE OF SUBSTANTIAL COMPLETION, PROMPTLY, COMPLETELY REPAIR OR REPLACE DEFECTIVE MATERIALS, EQUIPMENT, WORKMANSHIP AND INSTALLATIONS THAT DEVELOP DEFECTS WITHIN THIS PERIOD. PROMPTLY AND TO OWNERS SATISFACTION, CORRECT DAMAGE CAUSED IN MAKING NECESSARY REPAIRS AND REPLACEMENT UNDER GUARANTEE AT NO ADDITIONAL COST TO OWNER. SUBMIT WRITTEN GUARANTEE TO ARCHITECT AND OWNER BEFORE FINAL PAYMENT. STATEMENT OF GUARANTEE REQUIREMENTS SHALL NOT BE INTERRUPTED TO LIMIT OWNER'S RIGHTS UNDER LAW AND THIS CONTRACT.
17. EACH RESPECTIVE CONTRACTOR SHALL COORDINATE PROPER ACCESS TO EQUIPMENT THAT REQUIRES INSPECTION, REPLACEMENT, OR REPAIR. ACCESS PANELS SHALL BE A MINIMUM OF 12" x 12" AND SHALL BE SUPPLIED AND INSTALLED BY GENERAL CONTRACTOR. ALL LOCATIONS SHALL BE CONFIRMED WITH ARCHITECT.
18. CONTRACTORS SHALL FIRE STOP ALL PENETRATIONS THROUGH HORIZONTAL ASSEMBLIES, FIRE RATED WALLS OR PARTITIONS WITH UL RATED ASSEMBLIES WITH AN EQUAL UL RATED FIRE STOP. CONTRACTORS SHALL COORDINATE WITH GENERAL CONTRACTOR TO MAINTAIN CONSISTENT PRODUCT USAGE.
19. DO NOT SUPPORT EQUIPMENT FROM CEILINGS. ALL SUPPORT SHALL COME FROM BUILDING STRUCTURE.
20. PRODUCTS SUBMITTED AND APPROVED FOR USE THAT NECESSITATE CHANGES TO THE WORK OF OTHER TRADES OF CONTRACT SHALL BE COORDINATED AND ARRANGED BY THE CONTRACTOR WITHOUT ADDITIONAL COST TO THE OWNER.
21. CONTRACTOR SHALL COORDINATE ITS RESPECTIVE CEILING MOUNTED EQUIPMENT WITH OTHER TRADE CONTRACTORS PRIOR TO INSTALLATION TO AVOID CONFLICTS.
22. PRIOR TO ACCEPTANCE OF THE FACILITY, EACH RESPECTIVE CONTRACTOR SHALL ASSURE THAT ALL SYSTEMS SHALL BE TESTED, BALANCED, AND ARE OPERATED AS A DEMONSTRATION TO THE OWNER, OR THE OWNER'S REPRESENTATIVE, THAT THE INSTALLATION AND PERFORMANCE OF THESE SYSTEMS AND/OR PARTS CONFORM TO THE DESIGN INTENT.

HVAC GENERAL NOTES

1. DUCTWORK SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH THE LATEST ISSUES OF SMACNA STANDARDS.
2. SUPPORT EQUIPMENT, PIPING, AND DUCTWORK FROM BUILDING STRUCTURE TO PROVIDE A VIBRATION FREE INSTALLATION.
3. PROVIDE PROPER ACCESS TO MATERIALS AND EQUIPMENT THAT REQUIRE INSPECTION, REPLACEMENT, REPAIR, OR SERVICE; SUCH AS, COILS, DAMPERS, HEATERS, VALVES, ETC. IF PROPER ACCESS CANNOT BE PROVIDED, CONFER WITH THE ENGINEER AS TO THE BEST METHOD OF APPROACH FOR MINIMIZING EFFECT OF REDUCED ACCESS WHICH MAY RESULT.
4. MAINTAIN MAXIMUM HEADROOM AT ALL TIMES. DO NOT RUN PIPES EXPOSED UNLESS SHOWN EXPOSED ON DRAWINGS. RUN DUCTS AND PIPING CONCEALED, UNLESS SPECIFIED OTHERWISE. ALL DUCTWORK SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO WALL AND UNDERSIDE OF JOISTS. COORDINATE ELEVATIONS AND LOCATIONS WITH WORK OF OTHER CONTRACTORS.
5. WHEN SHOWN OR REQUIRED, RELOCATE EXISTING OBSTRUCTIONS TO INSTALL NEW EQUIPMENT OR MATERIALS.
6. DIFFUSER SIZES SHOWN ARE NECK SIZES. REGISTER AND GRILLE SIZES ARE NOMINAL.
7. THOROUGHLY CLEAN ALL NEW DUCTWORK AFTER INSTALLATION.
8. INSULATION SHALL NOT BE INSTALLED UNTIL AFTER ALL DUCT AND PIPE TESTING PROCEDURES HAVE BEEN COMPLETED.
9. PROVIDE NEOPRENE IMPREGNATED CANVAS FLEXIBLE CONNECTION BETWEEN DUCTWORK AND ANY RECIPROCATING OR ROTATING EQUIPMENT.
10. PROVIDE AN OPERATION AND MAINTENANCE MANUAL TO THE BUILDING OWNER PRIOR TO BUILDING TURNOVER.
11. ALL VARIABLE FREQUENCY DRIVES FURNISHED UNDER DIVISION 21-23 SHALL BE MANUFACTURERED BY THE SAME MANUFACTURER; THE GENERAL CONTRACTOR SHALL BE RESPONSBILE FOR ENSURING COMPLIANCE.
12. THERMOSTATS SHALL BE MOUNTED AT 48" A.F.F. THERMOSTATIC SENSORS AND GAS SENSORS SHALL BE MOUNTED AT 60" A.F.F.

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PROJECT TITLE

DETROIT LAKES
POLICE STATION

ISSUE #	DATE	DESCRIPTION
	12/16/2019	DESIGN DEVELOPMENT

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DRAWN BY	Author
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SHEET TITLE

MECHANICAL
NOTE SHEET

SHEET NUMBER

M002

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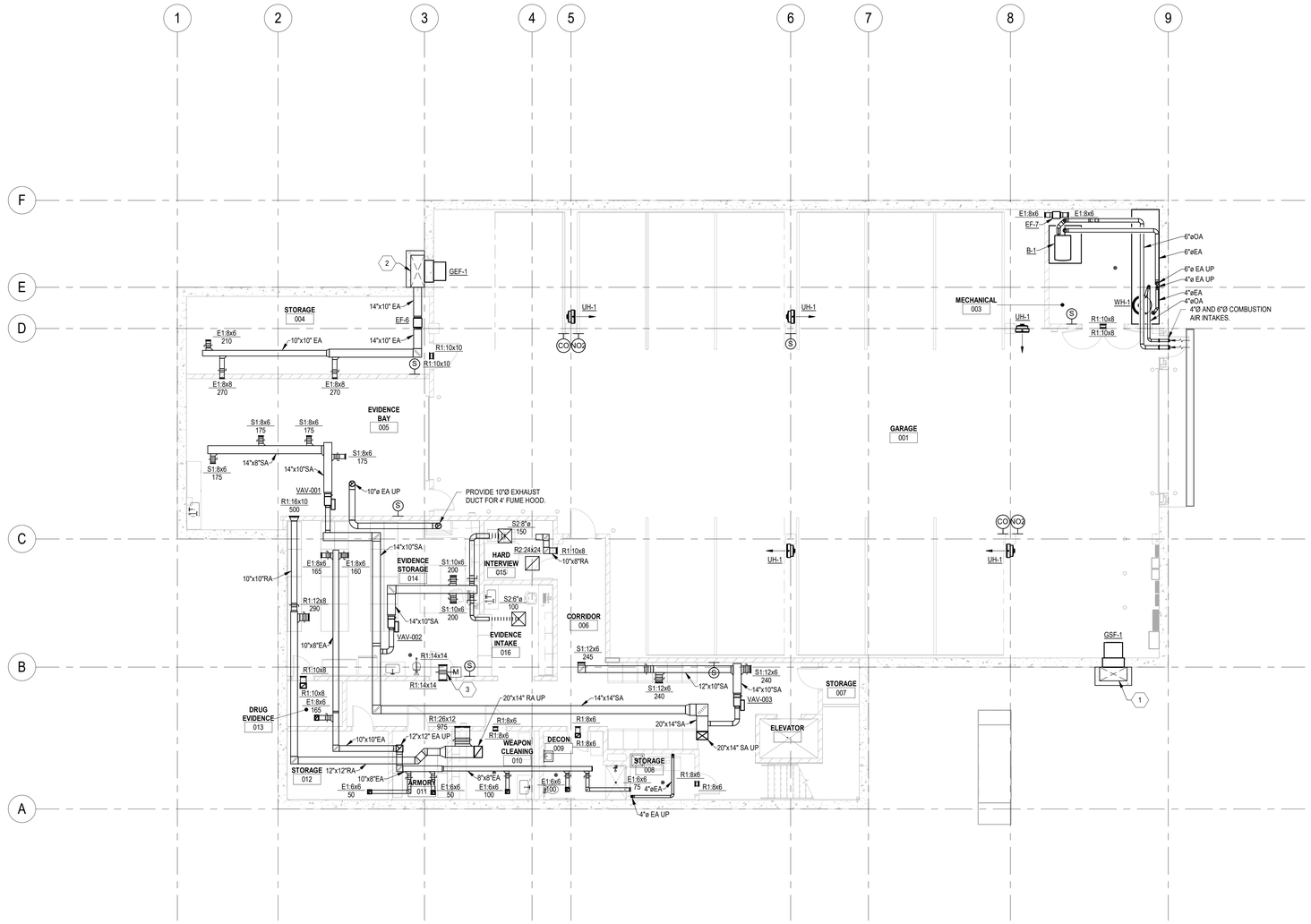
KEYNOTES

1 48"x24" GARAGE INTAKE AIR AREA WELL SUCTION THROUGH GRATING.
2 56"x24" GARAGE EXHAUST AIR AREA WELL DISCHARGE THROUGH GRATING.
3 INTERLOCK MOTORIZED DAMPER WITH FUME HOOD OPERATION.



1 M100 LOWER LEVEL MECHANICAL PLAN
1/8" = 1'-0"

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SHEET TITLE

LOWER LEVEL MECHANICAL PLAN

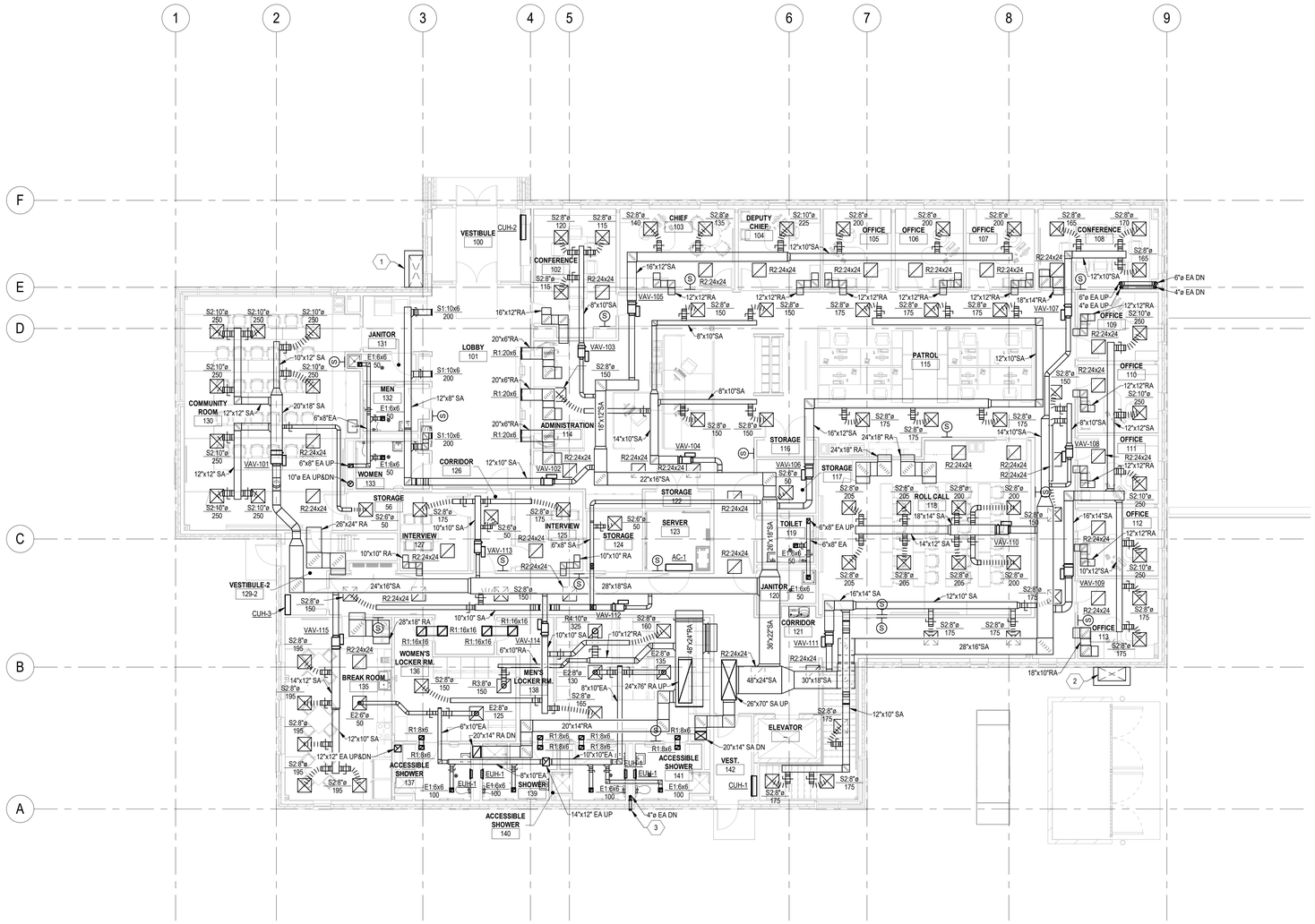
SHEET NUMBER

M100

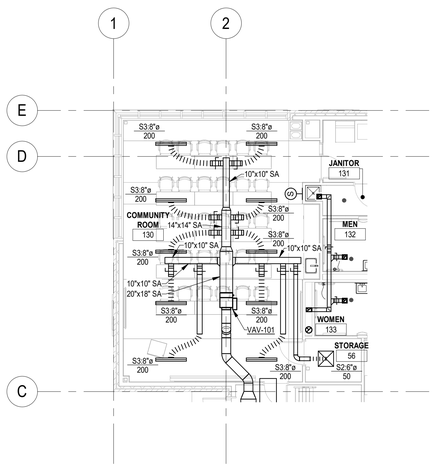
TRUE NORTH PLAN NORTH

KEYNOTES

1 56"x24" GARAGE EXHAUST AIR AREA WELL DISCHARGE THROUGH GRATING.
2 48"x24" GARAGE INTAKE AIR AREA WELL SUCTION THROUGH GRATING.
3 PROVIDE 4"Ø DRYER EXHAUST OUTLET WITH BACKDRAFT DAMPER.



1 LEVEL 1 MECHANICAL PLAN
M101 1/8" = 1'-0"



2 COMMUNITY ROOM AREA - ADD ALTERNATE
M101 1/8" = 1'-0"

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LEVEL 1 MECHANICAL PLAN

SHEET NUMBER

M101

TRUE NORTH PLAN NORTH

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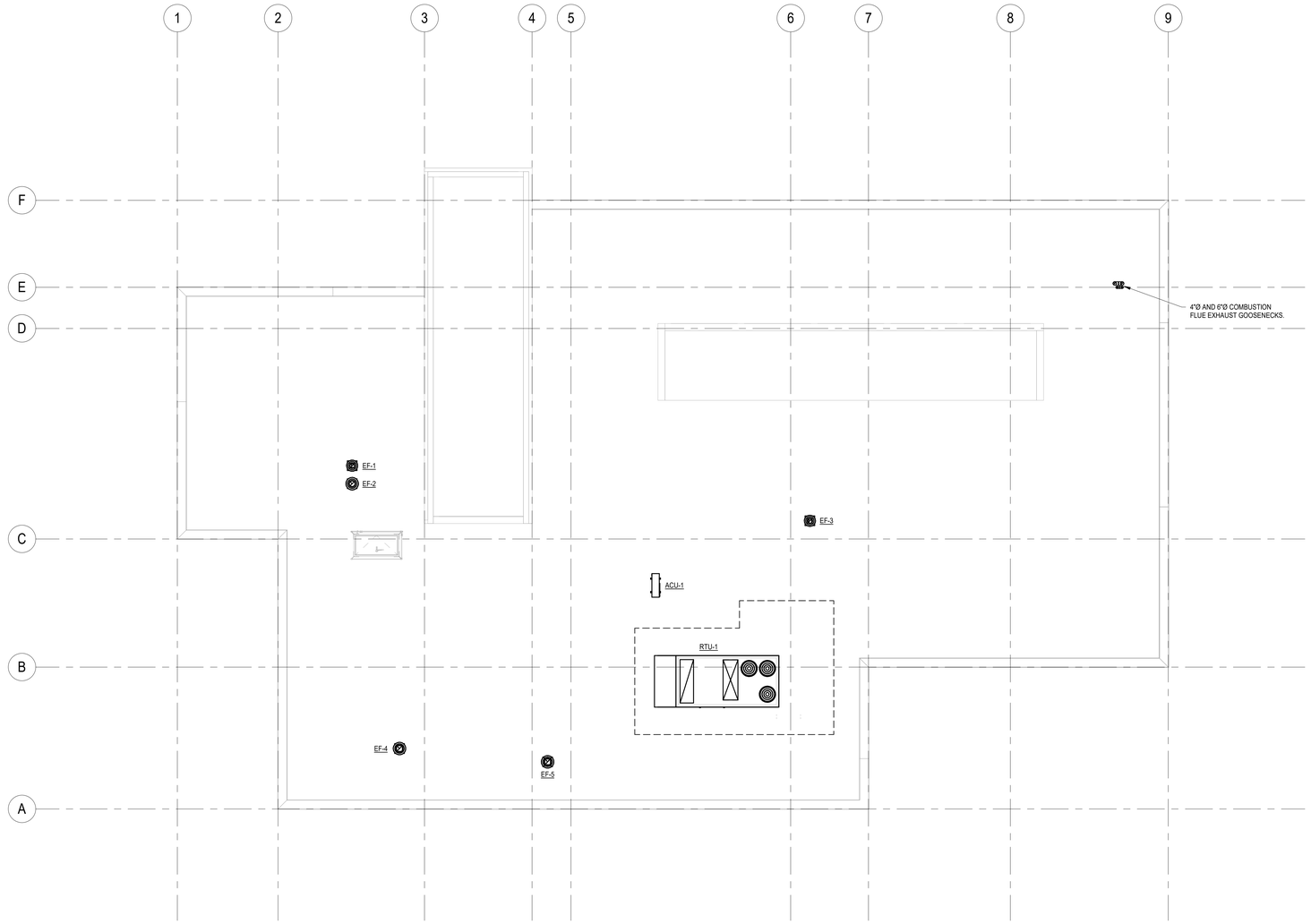
KEYNOTES



1 / M141 ROOF LEVEL MECHANICAL PLAN
1/8" = 1'-0"

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SHEET TITLE

ROOF LEVEL MECHANICAL PLAN

SHEET NUMBER

M141

TRUE NORTH PLAN NORTH

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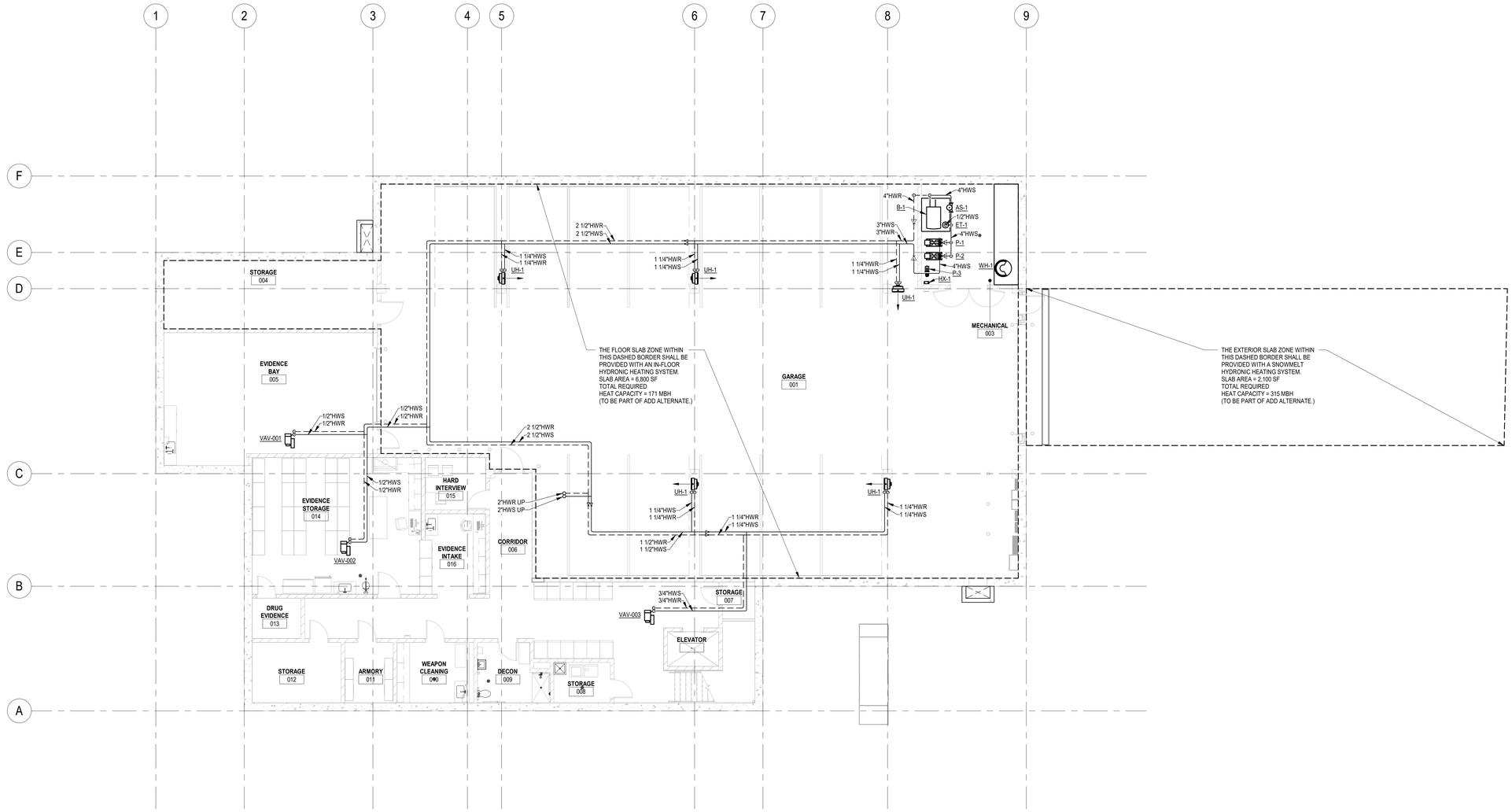

1 / M200 LOWER LEVEL HYDRONIC PLAN
1/8" = 1'-0"

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SHEET TITLE

LOWER LEVEL HYDRONIC PLAN

SHEET NUMBER

M200

TRUE NORTH PLAN NORTH

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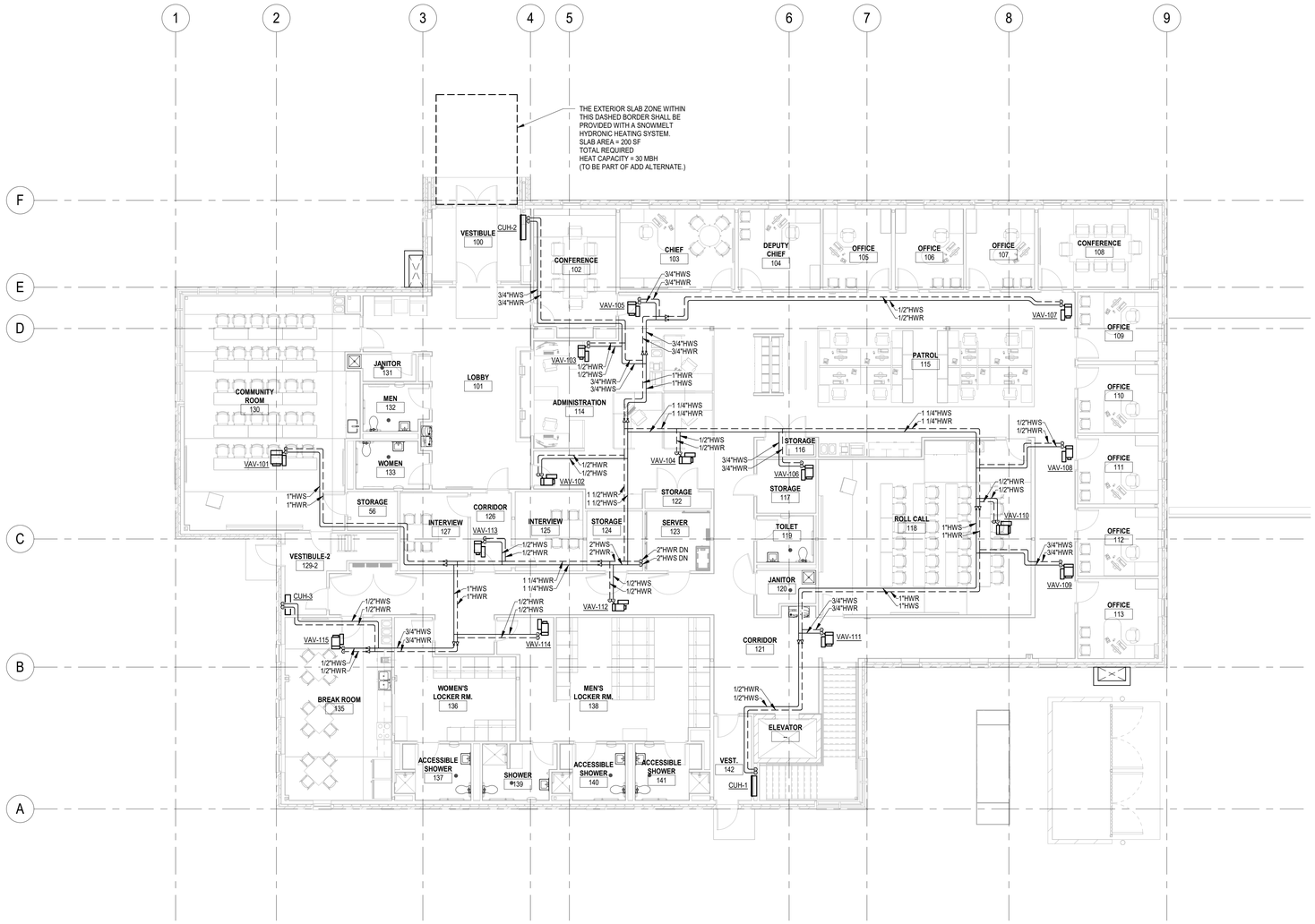

1 M201 LEVEL 1 HYDRONIC PLAN
1/8" = 1'-0"

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SHEET TITLE

LEVEL 1 HYDRONIC PLAN

SHEET NUMBER

M201

TRUE NORTH PLAN NORTH

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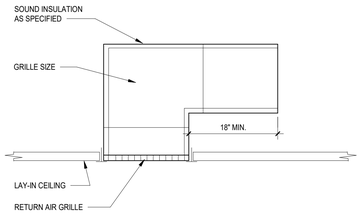
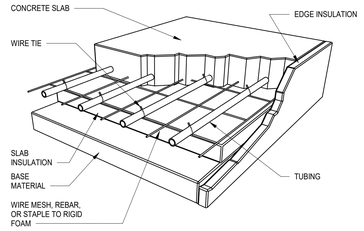


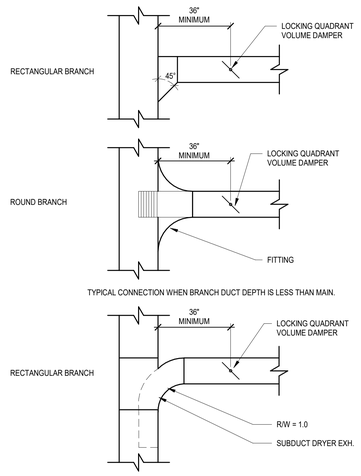
OPTIONAL NOTE:

THIS DETAIL IS TYPICAL FOR ALL RETURN AIR GRILLES LOCATIONS UNLESS OTHERWISE NOTED ON DRAWINGS.

1 RETURN RELIEF GRILLE DETAIL
M701 No Scale



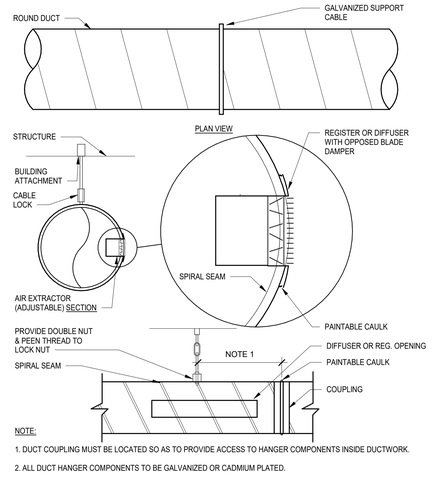
2 CONCRETE ON GRADE WITH UNDERSLAB INSULATION DETAIL
M701 No Scale



TYPICAL CONNECTION WHEN BRANCH DUCT DEPTH IS LESS THAN MAIN.

TYPICAL CONNECTION WHEN BRANCH DUCT DEPTH IS THE SAME AS THE MAIN

3 TYPICAL BRANCH DUCT TAKE-OFF DETAILS
M701 No Scale



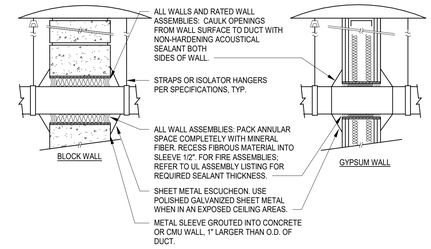
NOTE:

1. DUCT COUPLING MUST BE LOCATED SO AS TO PROVIDE ACCESS TO HANGER COMPONENTS INSIDE DUCTWORK.

2. ALL DUCT HANGER COMPONENTS TO BE GALVANIZED OR CADMIUM PLATED.

3. CUT REGISTER/DIFFUSER OPENING IN DUCT SPIRAL LOCKSEAM TO REMAIN UNCUT THROUGH OPENING.

4 SUPPLY AIR DUCT SUPPORT AND DIFFUSER MOUNTING DETAIL
M701 No Scale



NOTE:

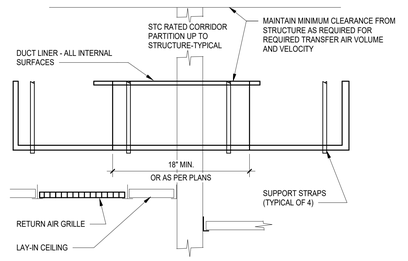
1. WALL PENETRATION REQUIREMENTS APPLY FOR ALL NON-RATED WALLS AND PARTITIONS AND FIRE/SMOKE RATED ASSEMBLIES. REFER TO CODE PLAN FOR FIRE AND SMOKE ASSEMBLIES.

2. NO MULTIPLE DUCT PENETRATIONS ALLOWED. PACK AND CAULK EVERY DUCT INDIVIDUALLY.

3. PROVIDE SEPARATE METAL SLEEVES AT DOUBLE STUD CONSTRUCTION OR WHERE ACOUSTIC STUD WALLS ARE CONSTRUCTED ADJACENT TO CMU WALLS. METAL SLEEVE IS NOT PERMITTED TO BRIDGE LINE OF ACOUSTIC ISOLATION.

4. WHERE THE WALL ASSEMBLY IS FIRE AND OR SMOKE RATED, THE FILL MATERIAL ,CAULK, AND INSTALLATION SHALL COMPLY WITH THE ASSOCIATED ASSEMBLY UL LISTING.

5 DUCT WALL PENETRATION DETAIL (ALL WALL PENETRATIONS)
M701 No Scale



TYPICAL TRANSFER AIR DUCT SIZING:

TRANS AIR QUANT	DUCT DEPTH	DUCT LENGTH
200 CFM	8"	12"
500 CFM	8"	18"
1000 CFM	14"	24"
1500 CFM	20"	24"
2000 CFM	20"	36"

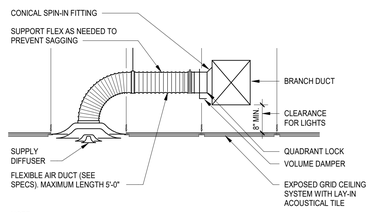
COORDINATE DUCT SIZES WITH AVAILABLE CEILING CLEARANCES AND OTHER FIELD CONDITIONS.

NOTE:

1. TYPICAL FOR ALL ENCLOSED RETURN AIR AREAS WHERE WALLS EXTEND TO DECK AS NOTED AND SHOWN ARCHITECTURAL PLANS AND WALL DETAILS. PROVIDE UNLESS OTHERWISE INDICATED.

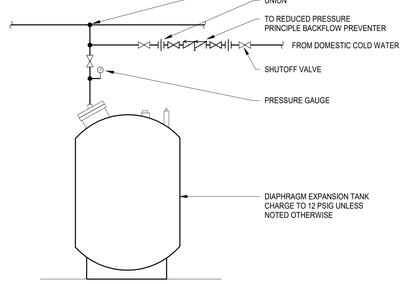
2. MAINTAIN MAXIUM 350FPM - 500FPM TRANSFER AIR VELOCITY FOR TRANSFER AIR DUCT SIZES. REFER TO VENTILATION SCHEDULE AND/OR MECHANICAL PLANS FOR TRANSFER AIR QUANTITIES.

6 TRANSFER DUCT DETAIL
M701 No Scale

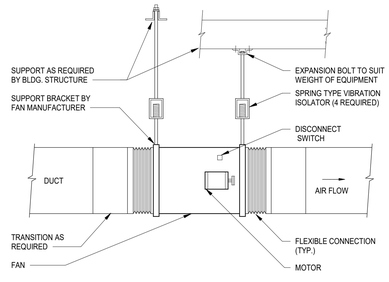


NOTE:
PROVIDE NYLON BANDS FOR CONNECTING FLEXIBLE AIR DUCT TO DIFFUSER AND BRANCH DUCT. SPLICES IN FLEXIBLE AIR DUCT SHALL NOT BE ACCEPTED

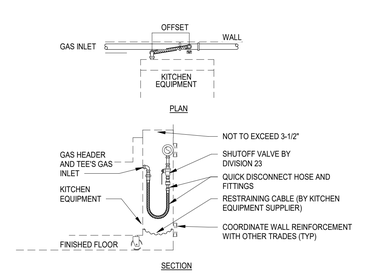
7 DUCT TO DIFFUSER CONNECTION DETAIL
M701 No Scale



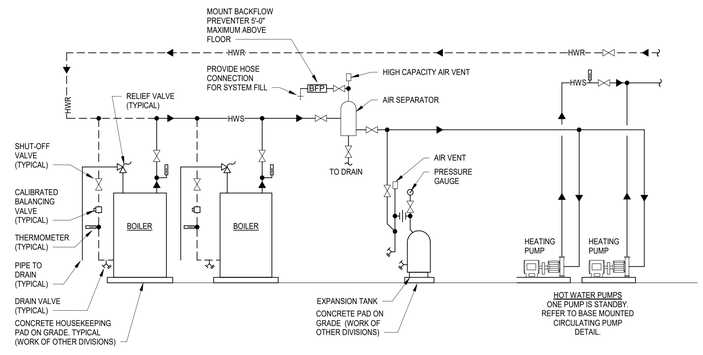
8 BLADDER EXPANSION TANK DETAIL
M701 No Scale



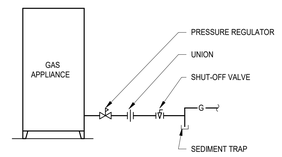
9 IN-LINE FAN MOUNTING DETAIL
M701 No Scale



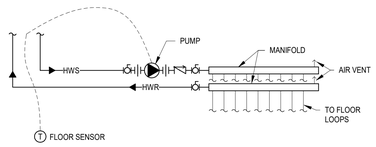
10 GAS EQUIPMENT QUICK DISCONNECT DETAIL
M701 No Scale



11 HEATING SYSTEM FLOW DIAGRAM
M701 No Scale



13 GAS BRANCH PIPE CONNECTION DETAIL
M701 No Scale



14 INFLOOR HEATING PIPING DETAIL
M701 No Scale

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MECHANICAL DETAILS

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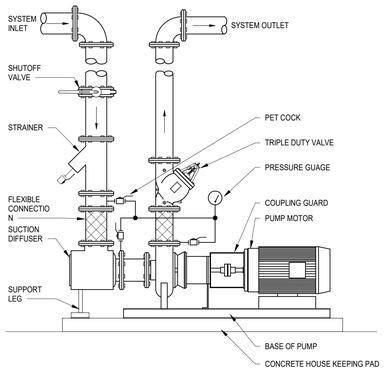
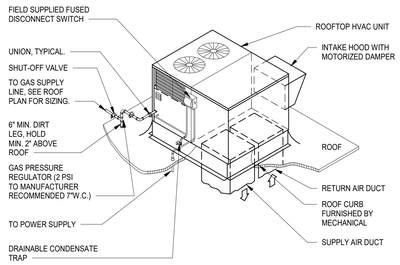
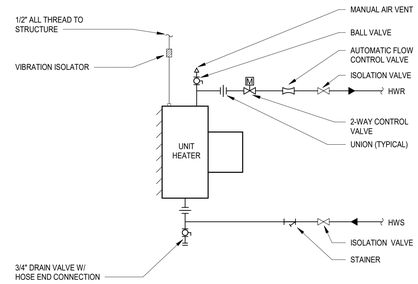


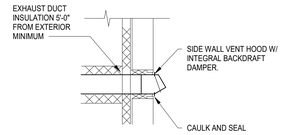
1 M702 BASE MOUNTED PUMP PIPING DETAIL
No Scale



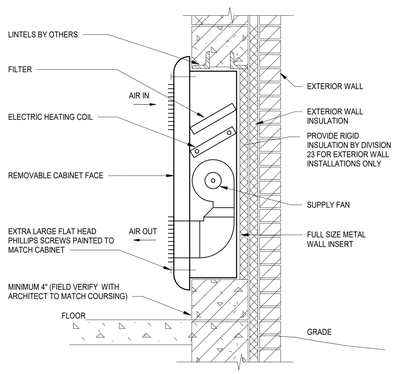
2 M702 GAS FIRED ROOFTOP UTILITY DETAIL
No Scale



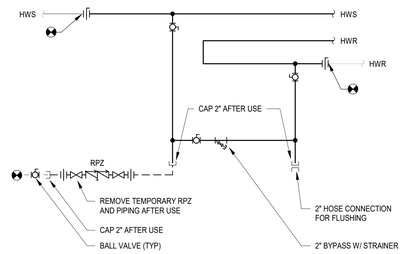
3 M702 HORIZONTAL HOT WATER UNIT HEATER DETAIL
No Scale



4 M702 TOILET/DRYER VENT EXHAUST VENT SIDE WALL DETAIL
No Scale



5 M702 CABINET UNIT HEATER INSTALLATION DETAIL
No Scale



NOTE: APPLY THIS DETAIL TO CONNECTIONS TO HWS & HWR

6 M702 HYDRONIC SYSTEM FILLING & FLUSHING DETAIL
No Scale

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PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION
	12/16/2019	DESIGN DEVELOPMENT

CERTIFICATION

DRAWN BY	Author
CHECKED BY	Checker
COMMISSION NUMBER	2106-02

SHEET TITLE

MECHANICAL DETAILS

SHEET NUMBER

M702

RTU-1 - OUTSIDE AIR VENTILATION SCHEDULE

VAV BOX SERVING ZONE	ROOM	Az NET OCCUPIABLE FLOOR AREA (SF)	Rp PEOPLE OUTDOOR AIR FLOW RATE (CFM/PERSON)	Ra AREA OUTDOOR AIR FLOW RATE (CFM/SF)	DEFAULT OCCUPANT DENSITY (#/1000SF)	DEFAULT ZONE POPULATION	Pz ACTUAL ZONE POPULATION	Vbz BREATHING ZONE OUTDOOR AIRFLOW (CFM)	Ez ZONE AIR DISTRIBUTION EFFECTIVENESS	Vpz SUPPLY AIR DESIGN (CFM)	Voz ZONE OUTDOOR AIRFLOW (CFM)	Zp (Voz/Vpz) OUTDOOR AIR FRACTION
LOWER LEVEL												
VAV-001	005 - EVIDENCE BAY	715	5	0.06	5	4	4	63	0.8	700	79	0.113
VAV-002	014 - EVIDENCE STORAGE	650	5	0.06	5	4	4	59	0.8	350	74	0.211
	013 - DRUG EVIDENCE	55	0	0.06	0	0	0	3	0.8	50	5	0.100
	015 - HARD INTERVIEW	95	5	0.06	50	5	5	31	0.8	150	39	0.260
	016 - EVIDENCE INTAKE	130	5	0.06	5	1	1	13	0.8	100	16	0.160
VAV-003	012 - STORAGE	165	0	0.06	0	0	0	10	0.8	50	13	0.260
	011 - ARMORY	80	0	0.06	0	0	0	5	0.8	50	6	0.120
	010 - WEAPON CLEANING	110	5	0.06	5	1	1	12	0.8	125	15	0.120
	008 - STORAGE	70	0	0.06	0	0	0	4	0.8	50	6	0.120
	007 - STORAGE	40	0	0.06	0	0	0	2	0.8	50	3	0.060
	006 - CORRIDOR	910	0	0.06	0	0	0	55	0.8	400	69	0.173
LEVEL 1												
VAV-101	130 - COMMUNITY ROOM	850	10	0.12	35	30	30	402	0.8	2,000	503	0.252
	56 - STORAGE	80	0	0.06	0	0	0	5	0.8	50	6	0.120
VAV-102	101 - LOBBY	495	5	0.06	10	5	5	55	0.8	600	69	0.115
VAV-103	102 - CONFERENCE	225	5	0.06	50	12	12	74	0.8	350	92	0.263
VAV-104	114 - ADMIN - (SINGLE...	435	5	0.06	5	3	3	41	0.8	275	52	0.189
	114 - ADMIN - (DOUBLE...	435	5	0.06	5	3	3	41	0.8	475	52	0.109
VAV-105	103 - CHIEF	200	5	0.06	5	1	1	17	0.8	275	22	0.080
	104 - DEPUTY CHIEF	145	5	0.06	5	1	1	14	0.8	225	18	0.080
VAV-106	115 - PATROL	895	5	0.06	5	5	5	79	0.8	1,050	99	0.094
	105 - OFFICE	120	5	0.06	5	1	1	12	0.8	200	16	0.080
	106 - OFFICE	120	5	0.06	5	1	1	12	0.8	200	16	0.080
	107 - OFFICE	120	5	0.06	5	1	1	12	0.8	200	16	0.080
VAV-110	118 - ROLL CALL	745	10	0.12	35	27	27	359	0.8	1,625	450	0.277
VAV-107	108 - CONFERENCE	210	5	0.06	50	11	11	68	0.8	500	85	0.170
VAV-108	121A - CORRIDOR	320	0	0.06	0	0	0	19	0.8	300	24	0.080
VAV-109	109 - OFFICE	120	5	0.06	5	1	1	12	0.8	250	16	0.064
	110 - OFFICE	120	5	0.06	5	1	1	12	0.8	250	16	0.064
	111 - OFFICE	120	5	0.06	5	1	1	12	0.8	250	16	0.064
	112 - OFFICE	120	5	0.06	5	1	1	12	0.8	250	16	0.064
	113 - OFFICE	140	5	0.06	5	1	1	13	0.8	350	17	0.049
VAV-111	121B - CORRIDOR	600	0	0.06	0	0	0	36	0.8	1,050	45	0.043
VAV-112	121C - CORRIDOR	510	0	0.06	0	0	0	31	0.8	300	39	0.130
	117 - STORAGE	70	0	0.06	0	0	0	4	0.8	50	6	0.120
	124 - STORAGE	95	0	0.06	0	0	0	6	0.8	50	8	0.160
VAV-113	125 - INTERVIEW	115	5	0.06	50	6	6	37	0.8	175	47	0.269
	126 - CORRIDOR	70	0	0.06	0	0	0	4	0.8	50	6	0.120
	127 - INTERVIEW	115	5	0.06	50	6	6	37	0.8	175	47	0.269
VAV-114	138 - MENS LOCKER RM	525	5	0.06	5	3	3	47	0.8	325	59	0.182
	136 - WOMENS LOCKER RM	245	5	0.06	5	2	2	25	0.8	150	31	0.207
VAV-115	135 - BREAK ROOM	420	5	0.06	30	13	13	90	0.8	975	113	0.116

TOTAL REQUIRED OUTDOOR AIR (CFM)	2,965	Ev
UNIT TOTAL SUPPLY AIR (CFM)	10,700	0.88
PERCENTAGE OF OUTDOOR AIR	28%	

11,800

NOTES:
1. VENTILATION RATES BASED ON ASHRAE STANDARD 62.1-2010.
2. SYSTEM EFFICIENCY (Ev) DETERMINED USING TABLE 6-3.

GARAGE VENTILATION SCHEDULE

BUILDING LOCATION	ROOM	Az NET OCCUPIABLE FLOOR AREA (SF)	AREA EXHAUST AIR FLOW RATE (CFM/SF)	ZONE EXHAUST AIRFLOW (CFM)	OUTDOOR AIRFLOW PROVIDED (CFM)	EXHAUST AIRFLOW PROVIDED (CFM)
LOWER LEVEL						
	001 - GARAGE	6,390	0.75	4,793	4,800	4,800
		6,390		TOTAL	4,800	4,800

NOTES:
1. VENTILATION RATES BASED ON ASHRAE STANDARD 62.1-2010.

GRILLES, REGISTERS, AND DIFFUSERS SCHEDULE - COMMERCIAL

TAG	TYPE	MANUFACTURER	MODEL	MATERIAL	FINISH	FACE SIZE		NECK SIZE			NOTES
						LENGTH	WIDTH	DIAMETER	LENGTH	WIDTH	
E1	EXHAUST	TITUS	350RS	STEEL	WHITE	6"	6"	-	6"	6"	1,2
E1	EXHAUST	TITUS	350RS	STEEL	WHITE	6"	8"	-	8"	6"	1,2
E1	EXHAUST	TITUS	350RS	STEEL	WHITE	8"	8"	-	8"	8"	1,2
E2	EXHAUST	TITUS	TMS	STEEL	WHITE	24"	24"	6"	-	-	1,2
E2	EXHAUST	TITUS	TMS	STEEL	WHITE	24"	24"	8"	-	-	1,2
R1	RETURN	TITUS	350RS	STEEL	WHITE	6"	8"	-	8"	6"	1,2
R1	RETURN	TITUS	350RS	STEEL	WHITE	6"	20"	-	8"	6"	1,2
R1	RETURN	TITUS	350RS	STEEL	WHITE	8"	10"	-	-	-	1,2
R1	RETURN	TITUS	350RS	STEEL	WHITE	8"	12"	-	12"	8"	1,2
R1	RETURN	TITUS	350RS	STEEL	WHITE	10"	10"	-	10"	10"	1,2
R1	RETURN	TITUS	350RS	STEEL	WHITE	10"	16"	-	16"	10"	1,2
R1	RETURN	TITUS	350RS	STEEL	WHITE	12"	26"	-	26"	12"	1,2
R1	RETURN	TITUS	350RS	STEEL	WHITE	14"	14"	-	14"	14"	1,2
R1	RETURN	TITUS	350RS	STEEL	WHITE	16"	16"	-	16"	16"	1,2
R2	RETURN	TITUS	PAR	STEEL	WHITE	24"	24"	-	22"	22"	1,2
R3	RETURN	TITUS	TMS	STEEL	WHITE	24"	24"	8"	-	-	1,2
R4	RETURN	TITUS	TMS	STEEL	WHITE	24"	24"	10"	-	-	1,2
S1	SUPPLY	TITUS	350RS	STEEL	WHITE	6"	8"	-	6"	8"	1,2
S1	SUPPLY	TITUS	350RS	STEEL	WHITE	6"	10"	-	6"	10"	1,2
S1	SUPPLY	TITUS	350RS	STEEL	WHITE	6"	12"	-	6"	12"	1,2
S2	SUPPLY	TITUS	TMS	STEEL	WHITE	24"	24"	6"	-	-	1,2
S2	SUPPLY	TITUS	TMS	STEEL	WHITE	24"	24"	8"	-	-	1,2
S2	SUPPLY	TITUS	TMS	STEEL	WHITE	24"	24"	10"	-	-	1,2
S3	SUPPLY	TITUS	FL-10	ALUMINUM	WHITE	48"	4"	8"	-	-	1,2,3,4

NOTES:
1. ALL BRANCH DUCTS TO DIFFUSERS, GRILLES, AND REGISTERS SHALL MATCH THE NECK SIZE UNLESS OTHERWISE NOTED.
2. ALL BRANCH DUCTS TO DIFFUSERS, GRILLES, AND REGISTERS SHALL BE PROVIDED WITH A VOLUME DAMPER UNLESS OTHERWISE NOTED.
3. PROVIDE WITH MANUFACTURER'S INSULATED PLENUM BOX AND PATTERN CONTROLLER.
4. DIFFUSER TYPE TO BE INCLUDED WITH ADD ALTERNATE.

AIR SEPARATOR SCHEDULE

TAG	NO.	SERVES	MANUFACTURER	MODEL	FLUID DATA				NOTES
					INLET	OUTLET	GPM	PD	
AS	1	BUILDING HEATING WATER	BELL & GOSSETT	R-3F	4"	4"	150.0	0.30	

EXPANSION TANK SCHEDULE

TAG	NO.	SERVES	MANUFACTURER	MODEL	TANK VOLUME		OPERATING TEMPERATURE		WEIGHT	NOTES
					TOTAL	ACCEPTANCE	FILL (oF)	MAX (oF)		
ET	1	BUILDING HEATING WATER	BELL & GOSSETT	D-15V	8	2	130	150	110	

HEAT EXCHANGER SCHEDULE

TAG	NO.	LOCATION	SERVES	MANUFACTURER	MODEL	EXCHANGER TYPE	OPERATING MODE	PRIMARY FLUID					SECONDARY FLUID					NOTES
								GPM	EFT	LFT	FLUID	PD	GPM	EFT	LFT	FLUID	PD	
HX	1		SNOWMELT SYSTEM	BELL & GOSSETT	BP410-70	BRAZED PLATE		30.0	180.0	160.0	WATER		0.0	120	90.0	50% GLYCOL		1

NOTES:
1. TO BE INCLUDED WITH ADD ALTERNATE.

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DETROIT LAKES POLICE STATION

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DRAWN BY	Author
CHECKED BY	Checker
COMMISSION NUMBER	2106-02

SHEET TITLE

MECHANICAL SCHEDULES

SHEET NUMBER

M801

BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_MEP_R19.rvt
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VAV ROOFTOP UNIT SCHEDULE

TAG	NO.	MANUFACTURER	MODEL	OPERATING WEIGHT (LBS)	AIR DATA: SUPPLY FAN TOTAL CFM	MIN OA CFM	TSP (INWG)	ESP (INWG)	MOTOR RPM	MOTOR BHP	MOTOR HP	HEATING DATA: TYPE	GAS INPUT (MBH)	CAPACITY (MBH)	EAT DB (oF)	LAT DB (oF)	COOLING DATA: TYPE	TOTAL (MBH)	SENSIBLE (MBH)	EAT DB (oF)	EAT WB (oF)	LAT DB (oF)	LAT WB (oF)	EFFICIENCY: EER	IEER	ELECTRICAL: FLA	MCA	MOCP	VOLTS	PHASE	HZ	PANEL	CIRCUIT: NUMBER	WIRE SIZE	CONTROLLED BY	DISCONNECT: SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	STARTER: SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	NOTES
RTU	1	TRANE	YCD420BE	4850	10700	3000	2.99	1.90	1760	9.86	15	NATURAL GAS	350	280	45.0	69.6	DX COIL	353	286	79.7	64.4	55.9	53.4	10.3	12.6	178.1	192.1	225	208	3	60				DIV 23	MFG	MFG	-		BY MTR	MFG	MFG	VFD		-	1,2,3,4,5,6,7,8

NOTES:
1. PROVIDE WITH (2) 1-HP POWERED EXHAUST FANS FOR 0-100% EXHAUST WITH STRATITRAC CONTROL.
2. PROVIDE WITH 0-100% ECONOMIZER WITH DIFFERENTIAL ENTHALPY CONTROL.
3. PROVIDE WITH STANDARD ROOF CURB.
4. PROVIDE WITH 4" MERV 14 FILTERS.
5. PROVIDE SUPPLY FAN WITH VFD.
6. PROVIDE WITH LOW LEAK ECONOMIZER DAMPER.
7. PROVIDE WITH HIGH-AMP 65KA SCCR.
8. PROVIDE WITH MANUFACTURER'S STANDARD CONTROLS.

BOILER SCHEDULE

TAG	NO.	SERVES	MANUFACTURER	MODEL	FUEL	GAS INPUT (MBH)	CAPACITY (MBH)	AHRI EFFICIENCY	EFT (oF)	LFT (oF)	FLOW (GPM)	PD (FT-H2O)	CONNECTION SIZES: FLUE GAS	FLUID	INLET	OUTLET	WEIGHT (LBS)	ELECTRICAL: FLA	MOCP	VOLTS	PHASE	HZ	ELECTRICAL: PANEL	CIRCUIT: NUMBER	WIRE SIZE	CONTROLLED BY	DISCONNECT: SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	STARTER: SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATIONS	NOTES
B	1	BUILDING HEATING WATER	AERCO	BMK 1500	NATURAL GAS	1500	1395	95.0	130	150	150	6.92	1 1/2"	4"	6"	6"	1410	16.0	20	120	1	60			1/2"C, (2)#12 & (1)#12G	DIV 23	DIV 26	DIV 26	NFS	20 A	BY EQUIP	MFR	MFR	-	-	BY MTR	1

NOTES:
1. PROVIDE WITH MANUFACTURER'S STANDARD CONTROLS.

FAN SCHEDULE

TAG	NO.	SERVES	MANUFACTURER	MODEL	FAN DATA: TYPE	DRIVE	CFM	ESP (INWG)	SONES	RPM	WEIGHT (LBS)	ELECTRICAL: HP	VOLTS	PHASE	HZ	ELECTRICAL: PANEL	CIRCUIT: NUMBER	WIRE SIZE	CONTROLLED BY	DISCONNECT: SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	STARTER: SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	NOTES
EF	1	LEVEL 1 BATHROOMS	GREENHECK	G-070-VG	CENTRIFUGAL DOWNBLAST	DIRECT	150	0.30	3.1	1725	20	0.067	115	1	60				DIV 23	DIV 26	NFS		BY EQUIP	MFR	MFR	-	-	BY MTR	1,4
EF	2	FUME HOOD	GREENHECK	G-080-VG	CENTRIFUGAL DOWNBLAST	DIRECT	400	0.30	8	1725	30	0.1	115	1	60				DIV 23	DIV 26	NFS		BY EQUIP	MFR	MFR	-	-	BY MTR	1,4
EF	3	LEVEL 1 BATHROOMS	GREENHECK	G-060-VG	CENTRIFUGAL DOWNBLAST	DIRECT	100	0.30	3.7	1725	20	0.067	115	1	60				DIV 23	DIV 26	NFS		BY EQUIP	MFR	MFR	-	-	BY MTR	1,4
EF	4	LOWER LEVEL	GREENHECK	G-095-VG	CENTRIFUGAL DOWNBLAST	DIRECT	865	0.30	9.2	1725	30	0.167	115	1	60				DIV 23	DIV 26	NFS		BY EQUIP	MFR	MFR	-	-	BY MTR	1,4
EF	5	LEVEL 1 LOCKER ROOMS	GREENHECK	G-095-VG	CENTRIFUGAL DOWNBLAST	DIRECT	840	0.30	8.9	1725	30	0.167	115	1	60				DIV 23	DIV 26	NFS		BY EQUIP	MFR	MFR	-	-	BY MTR	1,4
EF	6	005 - EVIDENCE BAY	GREENHECK	SQ-95-VG	CENTRIFUGAL INLINE	DIRECT	750	0.30	9.6	1725	50	0.167	115	1	60				DIV 23	DIV 26	NFS		BY EQUIP	MFR	MFR	-	-	BY MTR	4
EF	7	003 - MECHANICAL	GREENHECK	SQ-70-VG	CENTRIFUGAL INLINE	DIRECT	165	0.25	4.1	1725	35	0.067	115	1	60				DIV 23	DIV 26	NFS		BY EQUIP	MFR	MFR	-	-	BY MTR	4
GEF	1	001 - GARAGE	GREENHECK	AER-E24C-320-VG	PROPELLER	DIRECT	4800	0.40	22	1525	180	1	115	1	60				DIV 23	DIV 26	NFS		BY EQUIP	MFR	MFR	-	-	BY MTR	2,3,4
GSF	1	001 - GARAGE	GREENHECK	AER-S24C-320-VG	PROPELLER	DIRECT	4800	0.40	22	1525	180	1	115	1	60				DIV 23	DIV 26	NFS		BY EQUIP	MFR	MFR	-	-	BY MTR	2,3,4

NOTES:
1. PROVIDE WITH STANDARD ROOF CURB.
2. PROVIDE WITH VFD.
3. FAN OPERATION SHALL BE TIED TO THE CO AND NO2 GAS DETECTION SENSOR ARRAY IN THE GARAGE.
4. PROVIDE WITH MANUFACTURER'S STANDARD CONTROLS.

PUMP SCHEDULE

TAG	NO.	SERVES	MANUFACTURER	MODEL	PUMP DATA: TYPE	GPM	FT. HD.	BHP	MIN EFF	RPM	CONNECTIONS: SUCTION	DISCHARGE	WEIGHT (LBS)	ELECTRICAL: HP	VOLTS	PHASE	HZ	PANEL	CIRCUIT: NUMBER	WIRE SIZE	CONTROLLED BY	DISCONNECT: SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	STARTER: SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	NOTES
P	1	BUILDING HEATING WATER	BELL & GOSSETT	BG-E1510-1P5BC-SS-184T-S	BASE MOUNTED END SUCTION	150.0	70.0	4.59	62.1	1800	2"	1 1/2"	225	5	208	1	60				DIV 23	DIV 23	DIV 26	SS		BY EQUIP	MFR	MFR	-	-	BY MTR	1,2
P	2	BUILDING HEATING WATER	BELL & GOSSETT	BG-E1510-1P5BC-SS-184T-S	BASE MOUNTED END SUCTION	150.0	70.0	4.59	62.1	1800	2"	1 1/2"	225	5	208	1	60				DIV 23	DIV 23	DIV 26	SS		BY EQUIP	MFR	MFR	-	-	BY MTR	1,2
P	3	SNOWMELT SYSTEM HX	BELL & GOSSETT	e-60 1.5x1.5x6.25	INLINE PUMP	30.0	35.0	0.49	45.0	1800	1 1/2"	1 1/2"		1.5	208	1	60				DIV 23	DIV 23	DIV 26	SS		BY EQUIP	MFR	MFR	-	-	BY MTR	1,2,3

NOTES:
1. PROVIDE WITH VFD.
2. PROVIDE WITH MANUFACTURER'S STANDARD CONTROLS.
3. TO BE INCLUDED WITH ADD ALTERNATE.

AIR CONDITIONING UNIT SCHEDULE

TAG	NO.	SERVES	MANUFACTURER	MODEL	TYPE	WEIGHT (LBS)	FAN DATA: SA CFM	ESP (INWG)	HP	COOLING DATA: NOMINAL CAP (TONS)	TOTAL CAP (MBH)	EA DB (oF)	EA WB (oF)	ELECTRICAL: FLA	MCA	MOCP	VOLTS	PHASE	HZ	PANEL	CIRCUIT: NUMBER	WIRE SIZE	CONTROLLED BY	DISCONNECT: SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	STARTER: SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	NOTES
AC	1	SERVER ROOM	MITSUBISHI	PKA-A36KA7	WALL MOUNTED	50	920	-	0.075	3	36	80	67	0.6	1.0	30	208	1	60															1

NOTES:
1. PROVIDE WITH MANUFACTURER'S STANDARD CONTROLS.

CONDENSING UNIT SCHEDULE

TAG	NO.	SERVES	MANUFACTURER	MODEL	WEIGHT (LBS)	COOLING DATA: NOMINAL CAP (TONS)	TOTAL CAP (MBH)	SUMMER OA DB (oF)	EER	SEER	TOTAL REFRIGERANT CHARGE (LBS)	ELECTRICAL: FLA	MCA	MOCP	VOLTS	PHASE	HZ	PANEL	CIRCUIT: NUMBER	WIRE SIZE	CONTROLLED BY	DISCONNECT: SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	STARTER: SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	NOTES
ACU	1	SERVER ROOM	MITSUBISHI	PUY-A36NKA7	215	3	36	95	10.8	18.8	10.4	22	25	40	208	1	60																1

NOTES:
1. PROVIDE WITH MANUFACTURER'S STANDARD CONTROLS.

UNIT HEATER SCHEDULE

TAG	NO.	SERVES	MANUFACTURER	MODEL	MOUNTING	FUEL	CFM	HEATING COIL DATA: OUTPUT (MBH)	GPM	WPD (FT-H2O)	MOTOR RPM	ELECTRICAL: HP	WATTS	FLA	VOLTS	PHASE	HZ	ELECTRICAL: PANEL	CIRCUIT: NUMBER	WIRE SIZE	CONTROLLED BY	DISCONNECT: SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	STARTER: SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	NOTES
CUH	1	LEVEL 1 VESTIBULES	STERLING	RW-1120-02	WALL MOUNTED	HOT WATER	230	16.4	1.6	0.24	1050	0.067	-	0.8	115	1	60			1/2"C, 2#14 & 1#14 G	DIV 23	DIV 23	DIV 26	NFS	20A	BY MTR	MFG	MFG	-	-	-	1,2
CUH	2	100 - VESTIBULE	STERLING	RW-1120-03	WALL MOUNTED	HOT WATER	335	22.8	2.3	0.39	1050	0.067	-	0.8	115	1	60			1/2"C, 2#14 & 1#14 G	DIV 23	DIV 23	DIV 26	NFS	20A	BY MTR	MFG	MFG	-	-	-	1,2
CUH	3	LEVEL 1 VESTIBULES	STERLING	F-1000-02	WALL MOUNTED	HOT WATER	230	16.4	1.6	0.24	1050	0.067	-	0.8	115	1	60			1/2"C, 2#14 & 1#14 G	DIV 23	DIV 23	DIV 26	NFS	20A	BY MTR	MFG	MFG	-	-	-	1,2
EUH	1	LEVEL 1 BATHROOMS	MARKEL	E3321TD-RP	WALL MOUNTED	ELECTRIC	175	2.6	-	-	600	-	750	6.3	120	1	60				DIV 23	DIV 23	DIV 26	NFS		BY HTR	MFG	MFG	-		-	1,2
UH	1	001 - GARAGE	STERLING	HS-132	CEILING HUNG	HOT WATER	2000	95.8	9.6	0.41	1140	0.34	-	4.5	115	1	60															1,2

NOTES:
1. PROVIDE WITH MANUFACTURER'S STANDARD CONTROLS.
2. CUSTOM COLOR TO BE SELECTED BY ARCHITECT.

VAV BOX SCHEDULE

TAG	NO.	MANUFACTURER	MODEL	TYPE	SERVES	INLET DIAMETER	AIRFLOW DATA: MAX CFM	MIN CFM	REHEAT COIL DATA: EAT (oF)	LAT (oF)	ROWS	GPM	EFT (oF)	LFT (oF)	ELECTRICAL DATA: MOTOR CIRCUIT MOCP	VOLTS	PHASE	NOTES
VAV	001	TITUS	DESV	HOT WATER REHEAT	005 - EVIDENCE BAY	8"	700	210	55.0	93.0	2	0.9	150.0	130.0	15	24	1	1
VAV	002	TITUS	DESV	HOT WATER REHEAT	014 - EVIDENCE STORAGE	8"	650	195	55.0	91.0	2	0.8	150.0	130.0	15	24	1	1
VAV	003	TITUS	DESV	HOT WATER REHEAT	006 - CORRIDOR	8"	725	475	55.0	97.0	2	2.2	150.0	130.0	15	24	1	1
VAV	101	TITUS	DESV	HOT WATER REHEAT	130 - COMMUNITY ROOM	14"	2050	820	55.0	98.0	2	3.9	150.0	130.0	15	24	1	1
VAV	102	TITUS	DESV	HOT WATER REHEAT	101 - LOBBY	8"	600	300	55.0	97.0	2	1.4	150.0	130.0	15	24	1	1
VAV	103	TITUS	DESV	HOT WATER REHEAT	102 - CONFERENCE	6"	350	140	55.0	97.0	2	0.6	150.0	130.0	15	24	1	1
VAV	104	TITUS	DESV	HOT WATER REHEAT	114 - ADMINISTRATION	8"	750	375	55.0	96.0	2	1.7	150.0	130.0	15	24	1	1
VAV	105	TITUS	DESV	HOT WATER REHEAT	103 - CHIEF, 104 - DEPUTY CHIEF, & 105-107 OFFICE	10"	1100	495	55.0	98.0	2	2.3	150.0	130.0	15	24	1	1
VAV	106	TITUS	DESV	HOT WATER REHEAT	115 - PATROL	10"	1050	525	55.0	97.0	2	2.4	150.0	130.0	15	24	1	1
VAV	107	TITUS	DESV	HOT WATER REHEAT	108 - CONFERENCE	8"	500	250	55.0	96.0	2	1.1	150.0	130.0	15	24	1	1
VAV	108	TITUS	DESV	HOT WATER REHEAT	121 - CORRIDOR	6"	300	135	55.0	98.0	2	0.6	150.0	130.0	15	24	1	1
VAV	109	TITUS	DESV	HOT WATER REHEAT	109-113 - OFFICE	12"	1350	540	55.0	98.0	2	2.5	150.0	130.0	15	24	1	1
VAV	110	TITUS	DESV	HOT WATER REHEAT	118 - ROLL CALL	12"	1625	490	55.0	84.0	2	1.6	150.0	130.0	15	24	1	1
VAV	111	TITUS	DESV	HOT WATER REHEAT	121 - CORRIDOR	10"	1050	525	55.0	97.0	2	2.4	150.0	130.0	15	24	1	1
VAV	112	TITUS	DESV	HOT WATER REHEAT	121 - CORRIDOR	6"	400	200	55.0	97.0	2	0.9	150.0	130.0	15	24	1	1
VAV	113	TITUS	DESV	HOT WATER REHEAT	125 - INTERVIEW & 127 - INTERVIEW	6"	400	120	55.0	91.0	2	0.5	150.0	130.0	15	24	1	1
VAV	114	TITUS	DESV	HOT WATER REHEAT	136 - LOCKER ROOM & 138 - LOCKER ROOM	8"	475	215	55.0	96.0	2	1.0	150.0	130.0	15	24	1	1
VAV	115	TITUS	DESV	HOT WATER REHEAT	135 - BREAK ROOM	10"	975	390	55.0	96.0	2	1.7	150.0	130.0	15	24	1	1

NOTES:
1. PROVIDE WITH MANUFACTURER'S STANDARD CONTROLS.

BKV GROUP
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Landscape Architecture
Engineering

Boarman
Kroos
Vogel
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CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION
	12/16/2019	DESIGN DEVELOPMENT

CERTIFICATION

DRAWN BY	Author
CHECKED BY	Checker
COMMISSION NUMBER	2106-02

SHEET TITLE

MECHANICAL AND ELECTRICAL SCHEDULES

SHEET NUMBER

ME801

SUMP PUMP SCHEDULE

TAG	NO.	LOCATION	SERVES	MANUFACTURER	MODEL	PUMP DATA			CONNECTIONS		BASIN			ELECTRICAL								CIRCUIT			DISCONNECT						STARTER					
						GPM	RPM	FT. HD.	SUCTION	DISCHARGE	DIAMETER	DEPTH	CAPACITY (GAL)	HP	WATTS	FLA	MCA	MOCP	VOLTS	PHASE	PANEL	NUMBER	WIRE SIZE	CONTROLLED BY	SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	NOTES
SP	1		ELEVATOR DRAIN	WEIL	1413	50	1750	25.0	4"	2"	24"	96"	188	0	0	0.0	0.0	0	208	1				DIV 23	DIV 23	DIV 26	NFS		BY MTR	DIV 23	DIV 26	NEMA		BY MTR	
SP	2		ELEVATOR DRAIN TILE	WEIL	1413	50	1750	25.0	4"	2"	24"	96"	188	0	0	0.0	0.0	0	208	1				DIV 23	DIV 23	DIV 26	NFS		BY MTR	DIV 23	DIV 26	NEMA		BY MTR	
SP	3		PARKING ENTRANCE TRENCH DRAIN	WEIL	1603	0	1750	20.0	6"	3"	48"	60"	469	1.5	0	11.0	0.0	0	208	1				DIV 23	DIV 23	DIV 26	NFS		BY MTR	DIV 23	DIV 26	NEMA		BY MTR	
SP	4		PARKING ENTRANCE TRENCH DRAIN	WEIL	1603	90	1750	20.0	6"	3"	48"	60"	469	1.5	0	11.0	0.0	0	208	1				DIV 23	DIV 23	DIV 26	NFS		BY MTR	DIV 23	DIV 26	NEMA		BY MTR	
SP	5		LOWER LEVEL WASTE	WEIL	2516	45	3450	20.0	4"	2"	24"	66"	129	5	0	16.5	0.0	0	208	1															
SP	6		LOWER LEVEL WASTE	WEIL	2516	45	3450	20.0	4"	2"	24"	66"	129	5	0	16.5	0.0	0	208	1															

WATER SOFTENER SCHEDULE

TAG	NO.	LOCATION	SERVES	MANUFACTURER	MODEL	CAPACITY GR/TANK	SERVICE FLOW (GPM)			PRESSURE LOSS		BACKWASH FLOW (GPM)	INLET SIZE	DRAIN SIZE	SALT (LBS)	ELECTRICAL								CIRCUIT			DISCONNECT						STARTER					NOTES
							MINIMUM	CONTINUOUS	PEAK	CONTINUOUS	PEAK					HP	WATTS	FLA	MCA	MOCP	VOLTS	PHASE	PANEL	NUMBER	BRANCH CIRCUIT	CONTROLLED BY	SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	INSTALLED BY	SUPPLIED BY	TYPE	SIZE	LOCATION	
WS	1			WATER CONTROL CORP	LF-90-TWIN-ECC	180000	58	80	110	15	25	5	2"	3/4"	670	0	0	3.5	0.0	0	120	1				DIV 23	DIV 26	DIV 26	MMS		BY MTR	MFG	MFG	-	-	-	POWER REQUIREMENTS ARE FOR EACH OF THE 4 CONTROLLERS.

DOMESTIC PUMP SCHEDULE

TAG	NO.	LOCATION	SERVES	MANUFACTURER	MODEL	GPM	HEAD	RPM	CONNECTION SIZES		ELECTRICAL									CIRCUIT			DISCONNECT					STARTER					NOTES
									DISCHARGE	SUCTION	HP	WATTS	FLA	MCA	MOCP	VOLTS	PHASE	PANEL	NUMBER	WIRE SIZE	CONTROLLED BY	SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	
CP	1	003 - MECHANICAL	CIRCULATING HOT WATER	BELL & GOSSETT	PL-30	5.0	20.00	2650	1"	1"	0.833	0	0.0	0.0	20	120	1			1/2"C, (2)#12 & (1)#12G	DIV 22	DIV 22	DIV 26	SS	20 A	BY EQUIP	MFR	MFR	-	-	BY MTR	

DOMESTIC WATER HEATER SCHEDULE

TAG	NO.	LOCATION	SERVES	MANUFACTURER	MODEL	TOTAL VOLUME	FUEL	RECOVERY (GPH)	INLET TEMP	HW TEMP	KW	GAS INPUT (MBH)	AHRI EFFICIENCY	NUMBER OF ELEMENTS	CONNECTION SIZES				ELECTRICAL									CIRCUIT			DISCONNECT						STARTER						
															GAS	FLUID	FLUE INLET	FLUE OUTLET	HP	WATTS	FLA	MCA	MOCP	VOLTS	PHASE	PANEL	NUMBER	WIRE SIZE	CONTROLLED BY	SUPPLIED	INSTALLED	TYPE	SIZE	LOCATION	SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	WEIGHT	NOTES
WH	1			A.O. SMITH	BTH-300A	130	NATURAL GAS	388	50.0	140.0		300	96.0		1 1/2"	1 1/2"	4"	4"	0	0	5.0	5.0	20	120	1			1/2"C, (2)#12 & (1)#12G	DIV 22	DIV 22	DIV 26	NFS	20 A	BY EQUIP	MFR	MFR	-	-	BY HTR	1941	

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ME802

BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_MEP_R19.rvt
2/19/2020 1:54:19 PM

A

AC	AIR COMPRESSOR
A/C	AIR CONDITIONING
AD	AREA DRAIN
ADD	ADDENDUM
ADDL	ADDITIONAL
AFF	ABOVE FINISH FLOOR
AFMS	AIRFLOW MEASURING STATION
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
AMP	AMPHERE
AP	ACCESS PANEL
APD	AIR PRESSURE DROP
APPROX	APPROXIMATE(LY)
ARCH	ARCHITECT
AS	AIR SEPARATOR
ASI	ARCHITECT'S SUPPLIMENTAL INSTRUCTION
AVG	AVERAGE

B

B	BOILER
BEL	BELOW
BFE	BOTTOM OF FOOTING ELEVATION
BFP	BACKFLOW PREVENTER
BFV	BUTTERFLY VALVE
BG	BATHROOM GROUP
BHP	BREAK HORSEPOWER
BLDG	BUILDING
BM	BEAM
BMS	BUILDING MANAGEMENT SYSTEM
BSMT	BASEMENT
BO	BOTTOM OF
BOF	BOTTOM OF FOOTING
BOS	BOTTOM OF STEEL
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
BV	BALL VALVE
BWV	BACKWATER VALVE

C

CD	CONDENSATE DRAIN
CF	CUBIC FEET
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFRD	CONTROLLER FLOW ROOF DRAIN
CH	CHILLER
CIRC	CIRCULATING
CKT	CIRCUIT
CKV	CHECK VALVE
CO	CLEANOUT
COMB	COMBINATION
CONC	CONCRETE
COND	CONDENSATE
CONN	CONNECT(ED) (ION)
CONT	CONTINU(E) (OUS) (ATION)
CONTR	CONTRACTOR
CONST	CONSTRUCTION
COORD	COORDINATE
CORR	CORRIDOR
CT	COOLING TOWER
CTRL	CONTROL
CUH	CABINET UNIT HEATER
CW	COLD WATER

D

D	DEEP, DEPTH
dB	DECIBELS
DB	DRYBULB
DBL	DOUBLE
DDC	DIRECT DIGITAL CONTROL
DEG	DEGREE(S)
DEMO	DEMO(LISH)(LITION)(lition)
DEPT	DEPARTMENT
DET	DETAIL
DET	DETAIL
DIFF	DIFFUSER
DIA	DIAMETER
DIM	DIMENSION
DPS	DIFFERENTIAL PRESSURE SENSOR
DISC	DISCONNECT
DIV	DIVISION
DMPR	DAMPER
DN	DOWN
DOC	DOCUMENT(S)
DWG	DRAWING

E

EA	EACH
EXA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EL	ELEVATION
ELEC	ELECTRIC(AL)
ELEV	ELEVATOR
EMER	EMERGENCY
EMS	EMERGENCY MANAGEMENT SYSTEM
ENGR	ENGINEER
EQ	EQUAL
EQUIP	EQUIPMENT
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
EXIST	EXISTING
EXT	EXTERIOR

F

°F	FAHRENHEIT
F	FIRE PIPE
FCO	FLOOR CLEANOUT
FCU	FAN COIL UNIT
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FDPR	FIRE DAMPER
FDV	FIRE DEPARTMENT VALVE
FF	FINISHED FLOOR
FFE	FINISHED FLOOR ELEVATION
FLEX	FLEXIBLE
FLR	FLOOR
FLS	FLAMMABLE LIQUID SEPARATOR
FOIC	FURNISHED BY OWNER, INSTALLED BY CONTRACTOR
FOIO	FURNISHED BY OWNER, INSTALLED BY OWNER
FP	FIRE PROTECTION
FPM	FEET PER MINUTE
FSP	FIRE STANDPIPE
FPTH	FIRE PUMP TEST HEADER
FT(')	FOOT, FEET
FT²	SQUARE FEET
FTG	FOOTING
FTHD	FEET OF HEAD
FTR	FINNED TUBE RADIATION
FUT	FUTURE
F&T	FLOAT AND THERMOSTATIC TRAP

G

GA	GAUGE
GAL	GALLON(S)
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GRV	GRAVITY ROOF VENTILATOR
GWH	GAS WATER HEATER
GV	GATE VALVE
GYP	GYPSUM

H

H	HIGH, HEIGHT, HUMIDIFIER
HB	HOSE BIB
HP	HORSEPOWER
HPU	HEAT PUMP UNIT
HT	HEIGHT
HTG	HEATING
HTR	HEATER
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING
HX	HEAT EXCHANGER
HY	YARD HYDRANT
HYD	HYDRAULIC
HZ	HERTZ

I

ID	INSIDE DIAMETER / DIMENSION
IN (")	INCH(ES)
INSUL	INSULA(E)(ED) (REFER TO MATERIAL ID)
INV	INVERT ELEVATION

K

K	KITCHEN SINK
KIT	KITCHEN
KW	KILOWATT
KWH	KILOWATT HOUR

L

L	LONG, LENGTH
LAT	LEAVING AIR TEMPERATURE
LAV	LAVATORY
LB(S)	POUND(S)
LF	LINEAL FOOT, FEET
LOC	LOCAT(E)(ION)
LVL	LEVEL
LWR	LEAVING WATER TEMPERATURE

M

MA	MIXED AIR
MAT	MIXED AIR TEMPERATURE
MATL	MATERIAL
MAU	MAKEUP AIR UNIT
MAX	MAXIMUM
MB	MOP BASIN
MBH	THOUSAND BTUH
MCC	MOTOR CONTROL CENTER
MD	MOTORIZED DAMPER
MECH	MECHANICAL
MED	MEDIUM
MEZZ	MEZZANINE
MFR(G)	MANUFACTUR(E) (ER) (ING)
MISC	MISCELLANEOUS
MIN	MINIMUM, MINUTE
MS	MOP SINK

N

N	NORTH
NA	NOT APPLICABLE
NC	NOISE CRITERIA, NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO (#)	NUMBER
N.O.	NORMALLY OPEN
NO2	NITROUS OXIDE
NTS	NOT TO SCALE

O

O	OXYGEN
OA	OUTSIDE AIR
OC	ON CENTER
OCH	ON CENTER HORIZONTAL
OCV	ON CENTER VERTICAL
OD	OUTSIDE DIAMETER
OFS	OVERFLOW SCUPPER
OH	OVERHEAD
OPT	OPTION
ORD	OVERFLOW ROOF DRAIN
OST	OVERFLOW STORM DRAIN

P

PACU	PACKAGED AIR CONDITIONING UNIT
PCC	PRECAST CONCRETE
PD	PUMPED DISCHARGE
PERIM	PERIMETER
PH	PHASE
PIV	POST INDICATOR VALVE
PL	PROPERTY LINE
PLBG	PLUMBING
PR	PROPOSAL REQUEST
PROJ	PROJECT
PRV	PRESSURE REDUCING VALVE (PLBG)
	POWER ROOF VENTILATOR (HVAC)
PSF	POUNDS PER SQ FT
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH, GAUGE
PVC	POLYVINYL CHLORIDE

Q

QTY	QUANTITY

R

R	RADIUS
RA	RETURN AIR
RAD	RADIAT(OR) (ION)
RD	ROOF DRAIN
REG	REGISTER
REQ(D)	REQUIRE(D)
REQM	REQUIRMENT
RET	RETURN
REV	REVIS(E) (ED) (ION)
RH	RELATIVE HUMIDITY
RM	ROOM
Rn	Radon
RPM	REVOLUTIONS PER MINUTE
RPZ	REDUCED PRESSURE BACKFLOW PREVENTOR
RTU	ROOFTOP UNIT
R&R	REMOVE AND REPLACE

S

S	SENSOR, SHOWER
SA	SUPPLY AIR
SAT	SOUND ATTENUATOR
SCHED	SCHEDULE
SD	SMOKE DAMPER
SDT	SMOKE DETECTOR
SF	SQUARE FEET
SFD	SMOKE FIRE DAMPER
SIM	SIMILAR
SK	SPECIALTY SINK
SOG	SLAB ON GRADE
SP	STATIC PRESSURE
SPKLR	SPRINKLER
SQ	SQUARE
SS	STAINLESS STEEL, SANITARY SEWER
STD	STANDARD
STRN	STRAINER
STRUC	STRUCTURAL
SV	STACK VENT

T

T	THERMOSTAT, TUB / TUB SHOWER
TC	TEMPERATURE CONTROL
TCC	TEMPERATURE CONTROL CONTRACTOR
TD	TEMPERATURE DIFFERENCE
TEMP	TEMPERATURE
TMV	THERMOSTATIC MIXING VALVE
TOS	TOP OF STEEL
TS	TAMPER SWITCH
TYP	TYPICAL

U

U	URINAL
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE

V

V	VENT PIPE
VAC	VACUUM
VAL	VALVE
VAV	VARIABLE AIR VOLUME
VB	VACUUM BREAKER
VF	VENTILATION FAN
VIF	VERIFY IN FIELD
VOL	VOLUME
VSD	VARIABLE SPEED DRIVE
VTR	VENT THRU ROOF

SYMBOLS

~	APPROXIMATE(LY)
@	AT
&	AND
∟	ANGLE
℄	CENTERLINE
Ø	DIAMETER
#	NUMBER
/	PER
⊥	PERPENDICULAR
Φ	PHASE
±	PLUS OR MINUS

REFERENCE SYMBOLS

REFERENCE SYMBOLS INDICATE THAT ADDITIONAL INFORMATION CONCERNING THE PART OF THE WORK REFERENCED MAY BE FOUND AT THE LOCATION INDICATED BY THE SYMBOL AND AS DESCRIBED BELOW.

DETAIL CALLOUT:
?
?
INDICATES DETAIL CALLOUT NUMBER
INDICATES SHEET WHERE DETAIL CALLOUT IS DRAWN

DETAIL:
?
?
INDICATES AREA OF DETAIL CUT PARALLEL TO VIEW

DETAIL PLAN OR ELEVATION:
?
?
INDICATES AREA OF ENLARGED PLAN OR ENLARGED ELEVATION

DETAIL CALLOUT:
INDICATES DETAIL NUMBER
1
A101
INDICATES SHEET WHERE DETAIL IS DRAWN
INDICATES AREA OF DETAIL CUT PERPENDICULAR TO VIEW

BUILDING SECTION:
INDICATES BUILDING SECTION NUMBER
1
A101
INDICATES SHEET WHERE BUILDING SECTION IS DRAWN

WALL SECTION:
INDICATES WALL SECTION NUMBER
1
A101
INDICATES SHEET WHERE WALL SECTION IS DRAWN

EXTERIOR ELEVATION:
INDICATES EXTERIOR ELEVATION NUMBER
?
?
INDICATES SHEET WHERE EXTERIOR ELEVATION IS DRAWN

INTERIOR ELEVATION (SINGLE):
1
INDICATES INTERIOR ELEVATION NUMBER
A101
INDICATES SHEET WHERE INTERIOR ELEVATION IS DRAWN

INTERIOR ELEVATION (MULTIPLE):
?
INDICATES INTERIOR ELEVATION NUMBER
? ? ?
?
INDICATES SHEET WHERE INTERIOR ELEVATION IS DRAWN

NEW GRID LINES:
?
?

EXISTING GRID LINES:
?
?

REVISION:
?
REVISION NUMBER - SEE REVISION HISTORY ON TITLE BLOCK OF EACH SHEET

REVISION CLOUD:
?
REVISION NUMBER - SEE REVISION HISTORY ON TITLE BLOCK OF EACH SHEET

KEYNOTE:
?
SEE CORRESPONDING NUMBERED KEY NOTE ON SHEET WHERE REFERENCE OCCURS

ELEVATION LEVEL:
INDICATES FLOOR LEVEL
INDICATES FLOOR LEVEL ELEVATION

EXISTING WALL TO REMAIN

EXISTING WALL TO BE REMOVED

PLUMBING GENERAL NOTES

1. PLUMBING INFORMATION IS NOT LIMITED TO THE PLUMBING DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NEW CONDITIONS AND OBSTACLES.
2. WATER PIPING SHALL NOT BE ROUTED IN OUTSIDE WALLS OR ON THE EXTERIOR SIDE OF THE BUILDING INSULATION ENVELOPE.
3. ALL CW, HW, AND CHW PIPING, VALVES, ETC. SHALL BE INSULATED. INSULATION SHALL BE INSTALLED BY AN INSULATING CONTRACTOR.
4. ANY AND ALL ALTERATIONS TO THE SYSTEM SHALL BE SUBMITTED TO THE ENGINEER IN WRITING PRIOR TO ANY CHANGES. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CHANGES MADE WITHOUT ENGINEER'S APPROVAL.
5. FOR PIPE SIZES TO INDIVIDUAL PLUMBING FIXTURES, SEE THE PLUMBING FIXTURE SCHEDULE INDICATED ON SHEET P801.
6. ALL SHUTOFF VALVES SHALL BE ACCESSIBLE. DO NOT LOCATE ANY VALVES ABOVE DUCTWORK, ELECTRICAL CONDUIT, CABLE TRAYS, OR PIPING THAT WOULD MAKE THE VALVES INACCESSIBLE OR UNABLE TO VISUALLY SEE THE VALVE LOCATION. LOCATE THE BRANCH SHUTOFF VALVES AS CLOSE AS POSSIBLE TO THE BRANCH CONNECTION TO THE MAIN SERVICE WHILE MAINTAINING VALVE ACCESSIBILITY.
7. PROVIDE ADDITIONAL PIPE LABELS AS REQUIRED ON THE DOMESTIC WATER AND SANITARY SERVICES WHERE PIPING IS LOCATED ABOVE DUCTWORK, ELECTRICAL CONDUIT, OTHER PIPING, OR CABLE TRAYS.
8. ALL COLD AND HOT WATER PIPING TO BE A MINIMUM OF 1/2 INCH UNLESS OTHERWISE NOTED. ALL MINIMUM PIPE SERVICES SHALL BE EXTENDED TO EACH PLUMBING FIXTURE AS REQUIRED.
9. DRAINTILE PIPING SYSTEM BY GENERAL CONTRACTOR.
10. WHEN SAW CUTTING FLOORS FOR PIPING TRENCHES, CONTRACTOR SHALL PROVIDE BACKFILL FREE OF DISCARDED CONSTRUCTION MATERIAL AND DEBRIS. LOOSE EARTH FREE OF ROCKS, BROKEN CONCRETE, AND FROZEN CHUNKS SHALL BE USED AS BACKFILL MATERIAL. BACKFILL MATERIAL SHALL BE PLACED IN THE TRENCH IN 6 INCH LIFTS, TAMPED BETWEEN LIFTS, UNTIL THE CROWN OF THE PIPE IS COVERED BY 12 INCHES OF TAMPED EARTH, OR ACCORDING TO STATE AND LOCAL CODES.
11. ALL VARIABLE FREQUENCY DRIVES FURNISHED UNDER DIVISION 21-23 SHALL BE MANUFACTURERED BY THE SAME MANUFACTURER; THE GENERAL CONTRACTOR SHALL BE RESPONSBILE FOR ENSURING COMPLIANCE.

FIRE SPRINKLER GENERAL NOTES

1. THE INSTALLATION OF SPRINKLER SYSTEMS SHALL BE PERFORMED BY A LICENSED AND EXPERIENCED CONTRACTOR REGULARLY ENGAGED IN THIS TYPE OF WORK.
2. PRIOR TO INSTALLATION OF SPINKLER SYSTEMS THE CONTRACTOR SHALL COORDINATE WORK WITH THE GENERAL CONTRACTOR AND WITH THE OTHER TRADES TO AVOID INTERFERENCES AND DELAYS. NOTIFY THE ENGINEER OF ANY MAJOR CONFLICTS THAT CANNOT BE RESOLVED THROUGH NORMAL FIELD COORDINATION WITH OTHER TRADES.
3. THIS CONTRACTOR SHALL REMOVE AND RELOCATE ALL EQUIPMENT AND PIPING WHICH INTERFERES WITH THE WORK OF OTHER TRADES AT THIS CONTRACTOR'S SOLE EXPENSE IF THIS CONTRACTOR'S WORK IS NOT COORDINATED PRIOR TO THE BEGINNING OF WORK.
4. THE INSTALLATION OF SPRINKLER SYSTEMS SHALL BE IN ACCORDANCE WITH NFPA STANDARD 13, NFPA STANDARD 25, STATE, AND LOCAL CODES.
5. THIS CONTRACTOR SHALL PROVIDE A COMPLETE FIRE PROTECTION SYSTEM, COMPLIANT WITH LOCAL CODES AND AUTHORITY HAVING JURISDICTION, INCLUDING PERMITS, INSPECTIONS, AND ALL COSTS.
6. AVOID EXPOSED SPRINKLER PIPING IN FINISHED AREAS, EVEN IF IT MEANS A LONGER RUN.
7. ALL STICKERS AND LABELS SHALL BE REMOVED FROM EXPOSED PIPING BEFORE THE COMPLETION OF ALL WORK.
8. UPON COMPLETION OF THE INSTALLATION, THE SYSTEM WILL BE HYDROSTATICALLY TESTED AND FLUSHED, AS SPECIFIED IN NFPA STANDARD 13, AND MEET THE REQUIREMENTS OF THE LOCAL ADMINISTRATIVE AUTHORITY HAVING JURISDICTION.
9. ALL VARIABLE FREQUENCY DRIVES FURNISHED UNDER DIVISION 21-23 SHALL BE MANUFACTURERED BY THE SAME MANUFACTURER; THE GENERAL CONTRACTOR SHALL BE RESPONSBILE FOR ENSURING COMPLIANCE.

DOMESTIC, WASTE & VENT RISER DESIGNATIONS	
D-#	DRAINAGE WASTE & VENT RISER
W-#	DOMESTIC WATER RISER

PLUMBING AND FIRE PROTECTION SYMBOLS

ABBR	SYMBOL	DESCRIPTION
CW		COLD WATER
HW		HOT WATER (120° F)
HW	140°HW	HOT WATER (140°F)
CHW		CIRCULATION HOT WATER (120°F)
CHW	140° CHW	CIRCULATION HOT WATER (140°F)
NPCW	NPCW	NON-POTABLE COLD WATER
NPHW	NPHW	NOT-POTABLE HOT WATER
SCW	SCW	SOFTENED COLD WATER
AW	AW	ACID RESISTANT WASTE ABOVE GROUND
AW	AW	ACID RESISTANT WASTE UNDERGROUND
AV	AV	ACID RESISDENT VENT
FW	FW	FLAMMABLE WASTE ABOVE GROUND
FW	FW	FLAMMABLE WASTE UNDERGROUND
FV	FV	FLAMMABLE WASTE VENT
GW	GW	GREASE WASTE ABOVE ABOVE GROUND
GW	GW	GREASE WASTE UNDERGROUND
GV	GV	GREASE WASTE VENT
ST	ST	STORM DRAINAGE ABOVE GROUND
ST	ST	STORM DRAINAGE UNDERGROUND
OST	OST	OVERFLOW STORM DRAINAGE
W	W	SOIL OR WASTE ABOVE GROUND
W	W	SOIL OR WASTE UNDERGROUND
PW	PW	PUMPED SOIL OR WASTE ABOVE GROUND
V	V	SANITARY VENT
F	F	FIRE PROTECTION PIPING
A	A	COMPRESSED AIR
G	G	GAS PIPING (NATURAL GAS)
LP	LP	LIQUIDIED PROPANE
O	O	OXYGEN PIPING
VAC	VAC	VACUUM LINE
0W30	0W30	MOTOR OIL 0W30
5W30	5W30	MOTOR OIL 5W30
5W30D	5W30D	MOTOR OIL 5W30D
10W30	10W30	MOTOR OIL 10W30
ATF	ATF	AUTOMATIC TRANSMISSION FLUID
HYD	HYD	HYDRAULIC FLUID
BAL. V		BALANCING VALVE
BFP	BFP	BACKFLOW REVENTER
BWV	BWV	BACK WATER VALVE
BV		BALL VALVE
BFV		BUTTERFLY VALVE
CKV		CHECK VALVE
		GAS COCK
		GAS REGULATOR
GV		GATE VALVE
	M	METER
		PRESSURE RELEIF VALVE
PRV	PRV	PRESSURE REDUCING VALVE
		PUMP
RPZ		REDUCED PRESSURE ZONE VALVE
		SHUTOFF VALVE
STRN		STRAINER & STRAINER W/ SHUTOFF
		THERMOMETER
	T	THERMOSTATIC MIXING VALVE
		VALVE IN VERTICAL PIPE
FDC		FIRE DEPARTMENT CONNECTION
FPTH		FIRE PUMP TEST HEADER

ABBR	SYMBOL	DESCRIPTION
RD		ROOF DRAIN
ORD		OVERFLOW ROOF DRAIN
AD		AREA DRAIN
FD		FLOOR DRAIN
HD		HOPPER DRAIN
CO		END OF PIPE CLEANOUT
FCO		FLOOR CLEANOUT
WCO		WALL CLEANOUT
		BOILER DRAIN
HB		HOSE BIBB
HY		WALL HYDRANT
		FLOW ARROW
		PIPE BREAK
		PIPE DOWN
		PIPE END CAP
		PIPE REDUCER
		PIPE UP
		TEE DOWN
		TEE UP
		UNION
		CONNECT TO EXISTING

SHEET NOTES

A. THE PURPOSE OF THIS SHEET IS TO ILLUSTRATE AND DEFINE TYPICAL GRAPHICS SYMBOLS AND SYSTEMS OF GRAPHIC SYMBOLS WHICH MAY OCCUR ON THE PLUMBING DRAWINGS.
B. THE ILLUSTRATION OF A SYMBOL OR SYSTEM OF SYMBOLS ON THIS SHEET DOES NOT NECESSARILY INDICATE THAT THE BUILDING ITEM OR SYSTEM DESCRIBED BY THE SYMBOL IS USED AS PART OF THE WORK OF THIS PROJECT. REFER TO THE PLANS, ELEVATIONS, SECTIONS, SCHEDULES, DETAILS, AND SPECIFICATIONS TO DETERMINE THE SCOPE OF THE WORK.
C. SYMBOLS ARE NOT DRAWN TO SCALE. TO DETERMINE ACTUAL SIZES OF ELEMENTS REPRESENTED BY SYMBOLS, REFER TO THE SPECIFICATIONS AND OTHER DRAWINGS AS MAY APPLY.
D. FOR INFORMATION REGARDING SYMBOLS WHICH ARE USED AS ABBREVIATIONS, REFER TO THE PLUMBING ABBREVIATIONS SHOWN ON THIS SHEET.
E. CERTAIN SYMBOLS MAY INCORPORATE SPECIAL ABBREVIATIONS AS PART OF THE SYMBOL. SUCH ABBREVIATIONS ARE AS DEFINED ON THIS SHEET.

PLUMBING SHEET INDEX

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	02/19/2020	PLUMBING PLAN REVIEW

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PLUMBING SYMBOLS, ABBREVIATIONS & NOTES

SHEET NUMBER

P001

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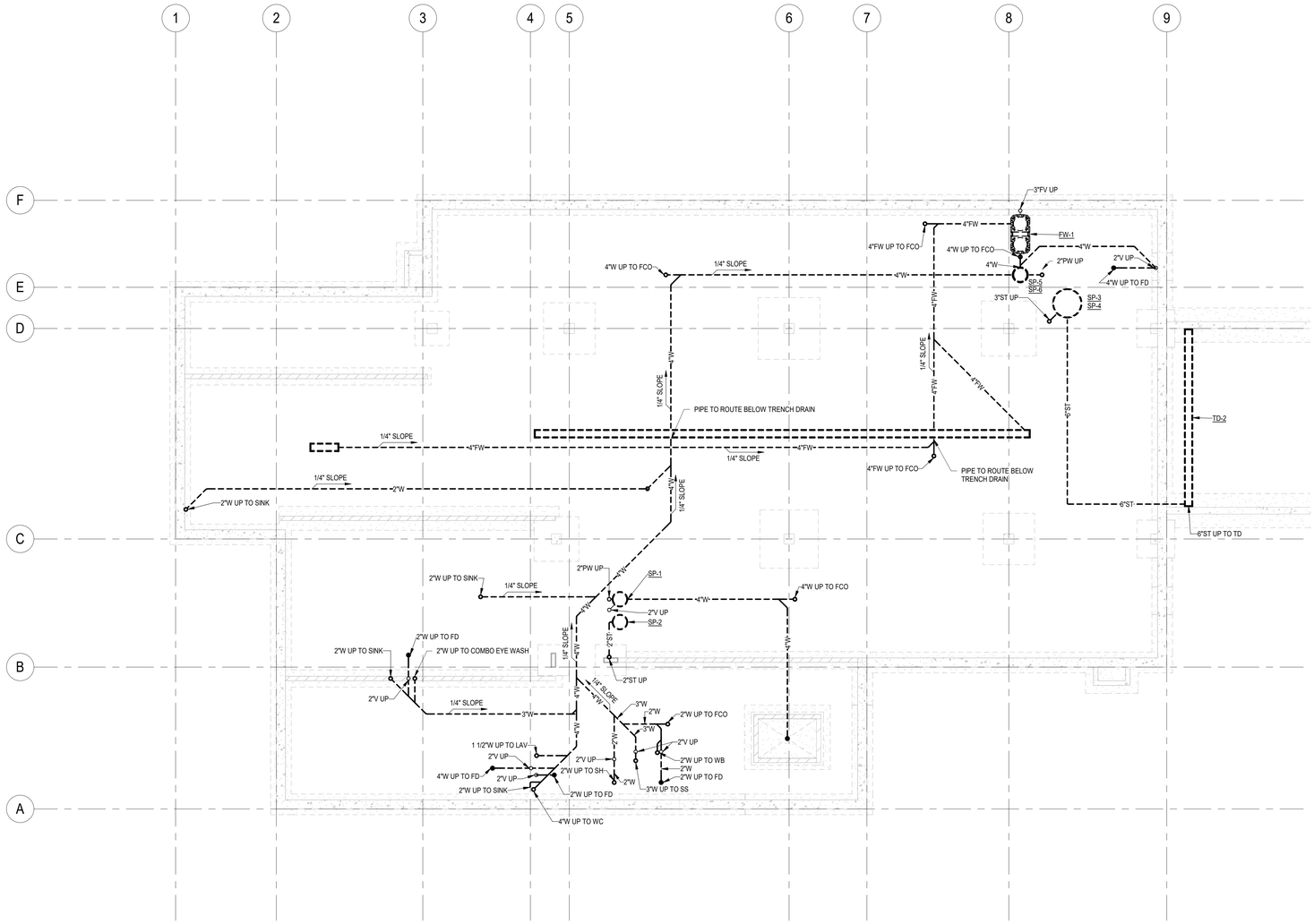
PLUMBING GENERAL NOTES



1 / P081 UNDERGROUND PLUMBING PLAN
1/8" = 1'-0"

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UNDERGROUND PLUMBING PLAN

SHEET NUMBER

P081

TRUE NORTH PLAN NORTH

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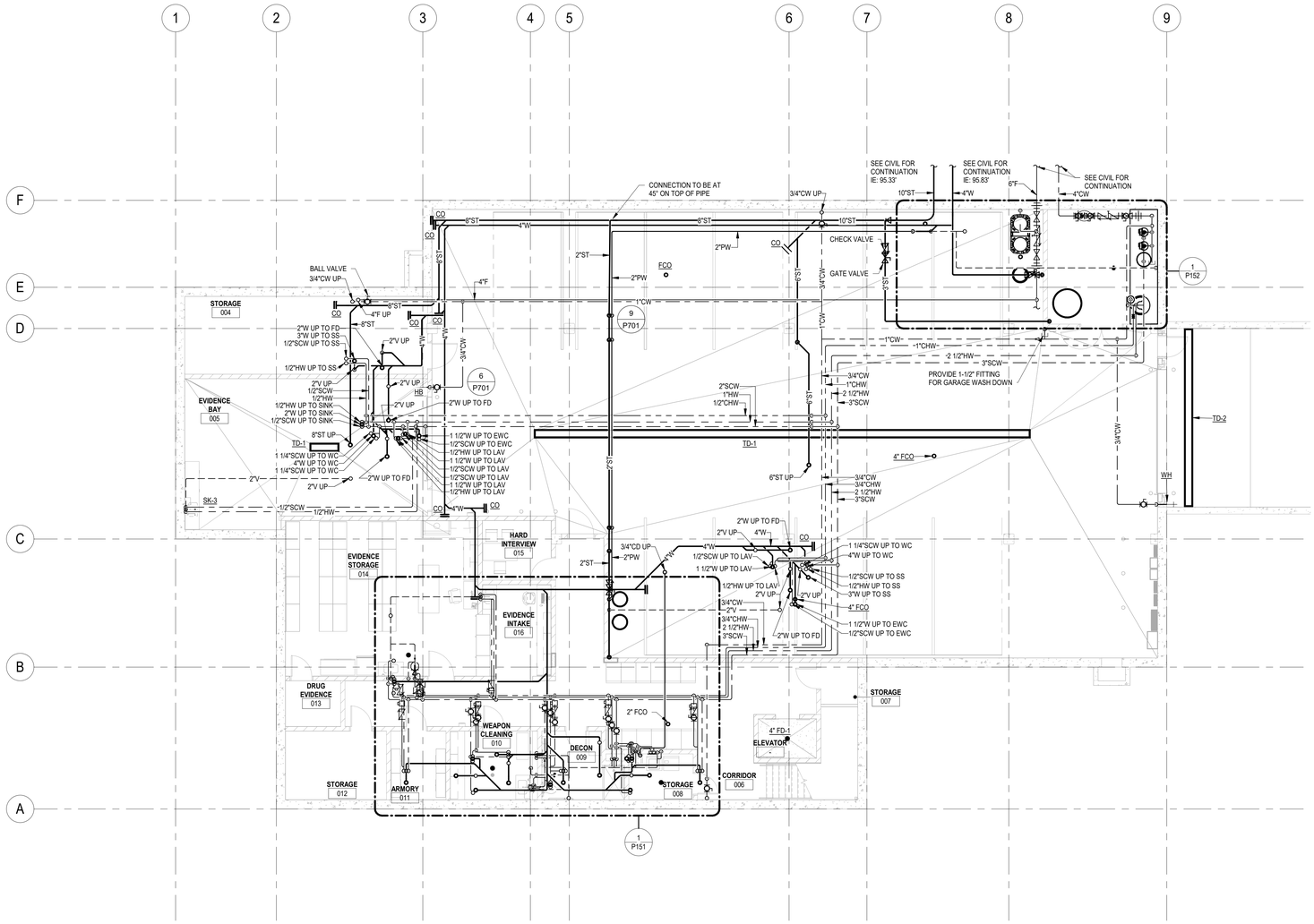

1 P100 LOWER LEVEL PLUMBING PLAN
1/8" = 1'-0"

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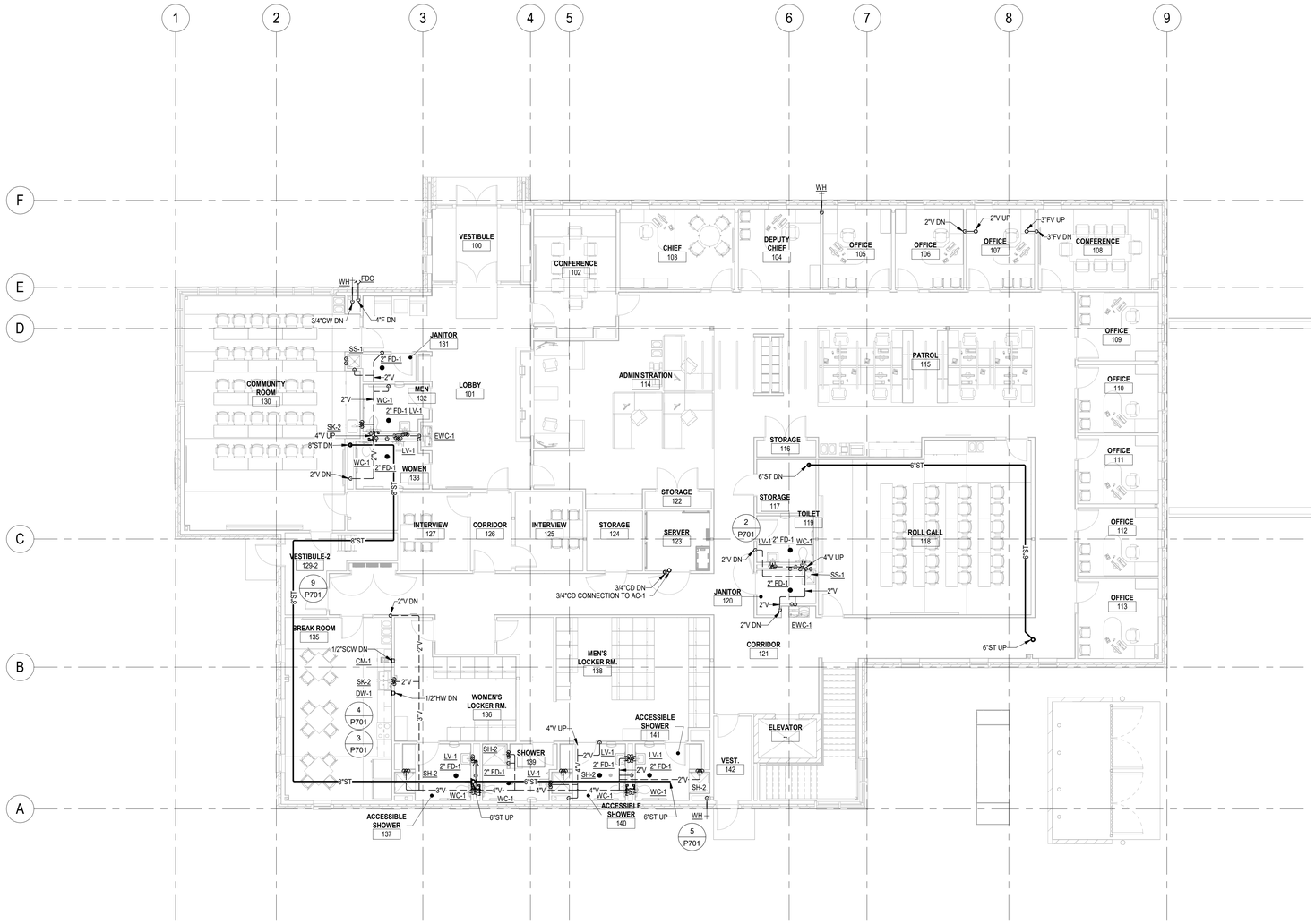
LOWER LEVEL PLUMBING PLAN

SHEET NUMBER

P100

TRUE NORTH PLAN NORTH

PLUMBING GENERAL NOTES



1 P101 LEVEL 1 PLUMBING PLAN
1/8" = 1'-0"

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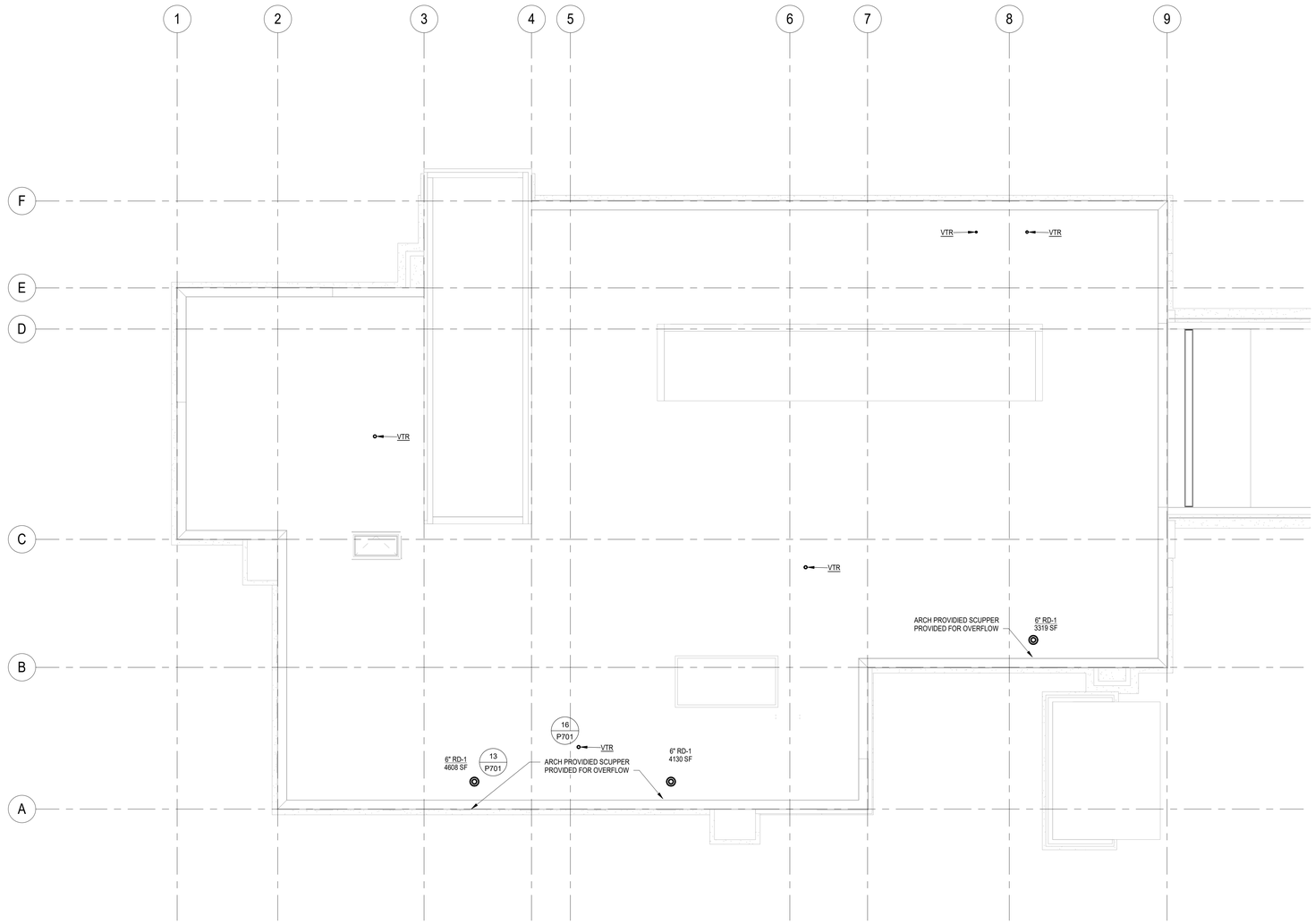
LEVEL 1 PLUMBING PLAN

SHEET NUMBER

P101

TRUE NORTH PLAN NORTH



1 / P141 ROOF LEVEL PLUMBING PLAN
1/8" = 1'-0"

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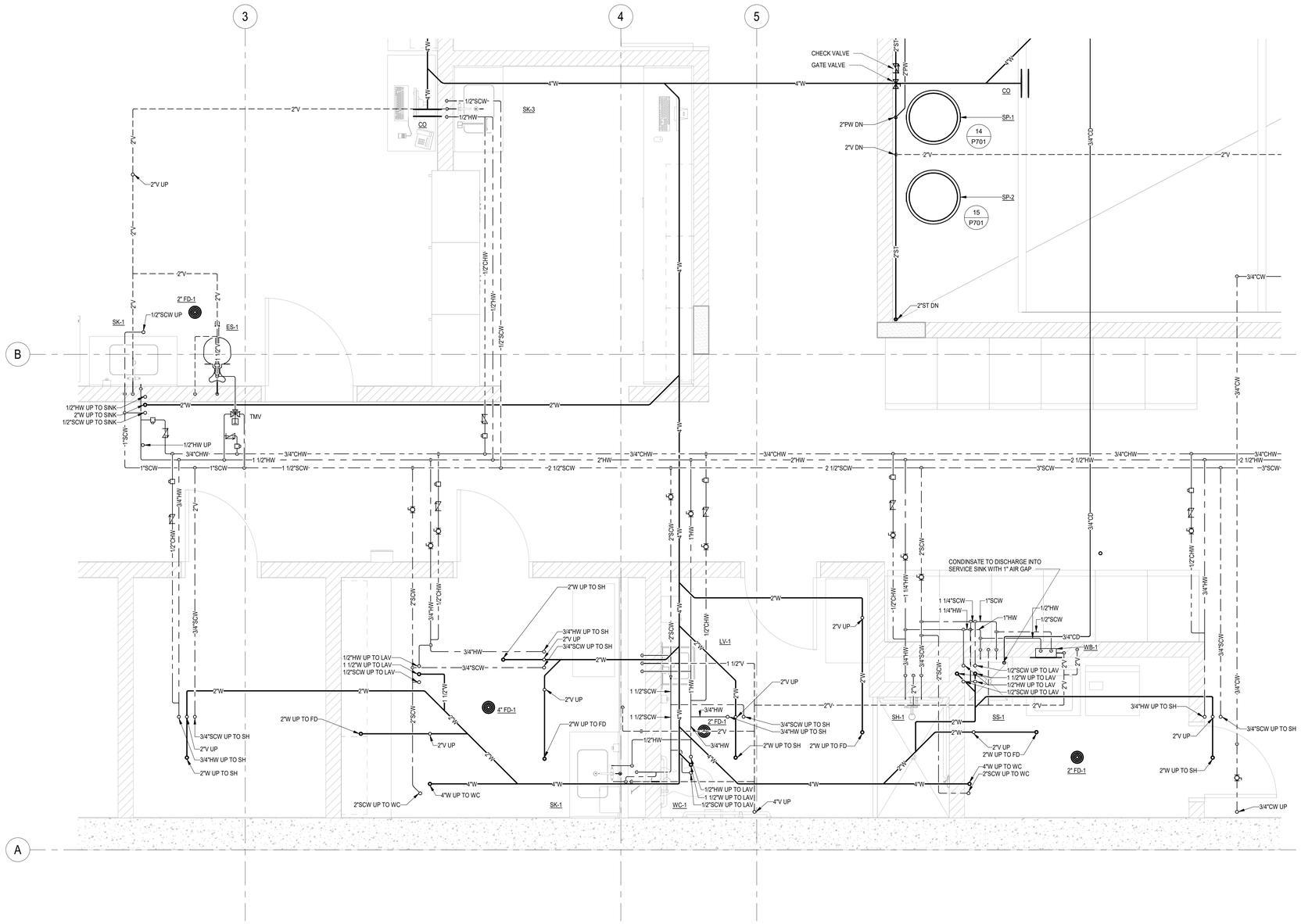
ROOF LEVEL
PLUMBING PLAN

SHEET NUMBER

P141

TRUE NORTH PLAN NORTH



1 / P151 EVIDENCE AREA ENLARGED PLUMBING

1/2" = 1'-0"

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ENLARGED PLUMBING PLANS

SHEET NUMBER

P151

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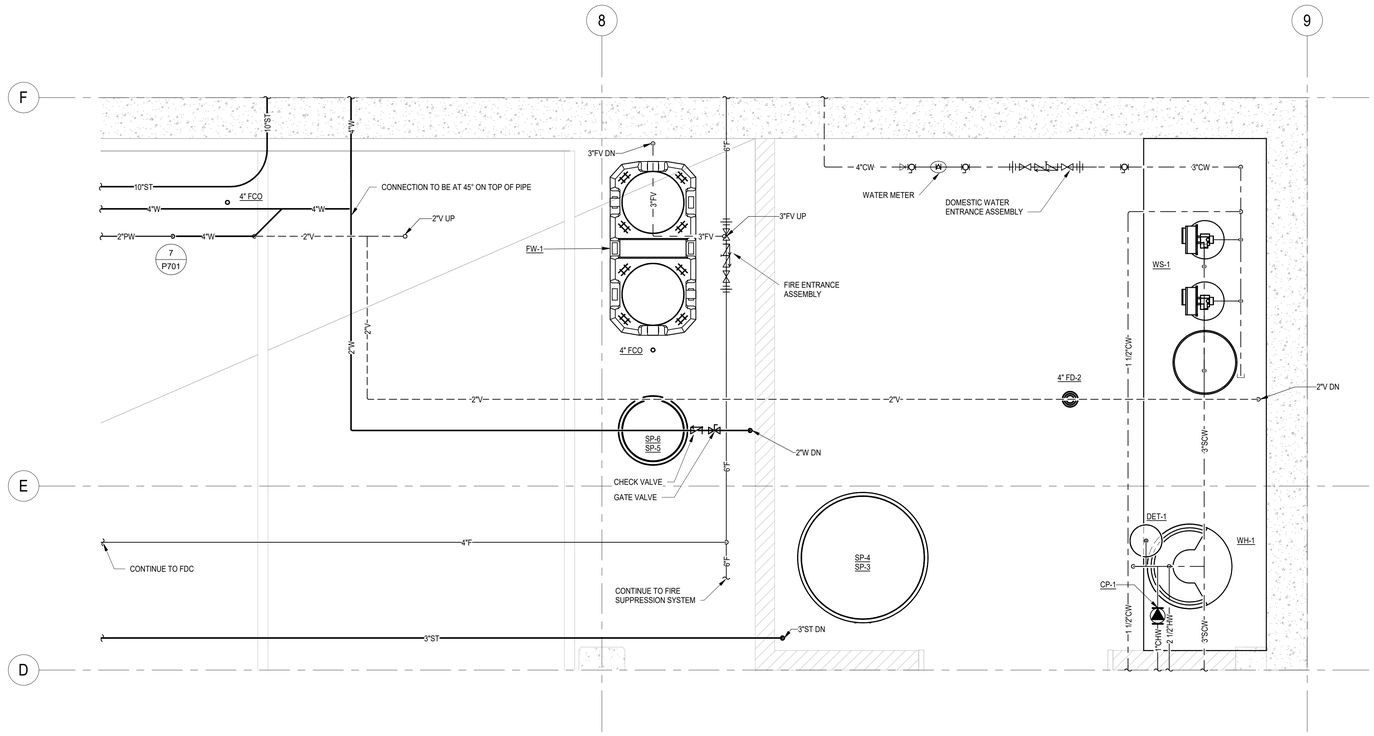

1 P152 MECHANICAL ROOM ENLARGED PLAN
1/2" = 1'-0"

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ENLARGED PLUMBING PLANS

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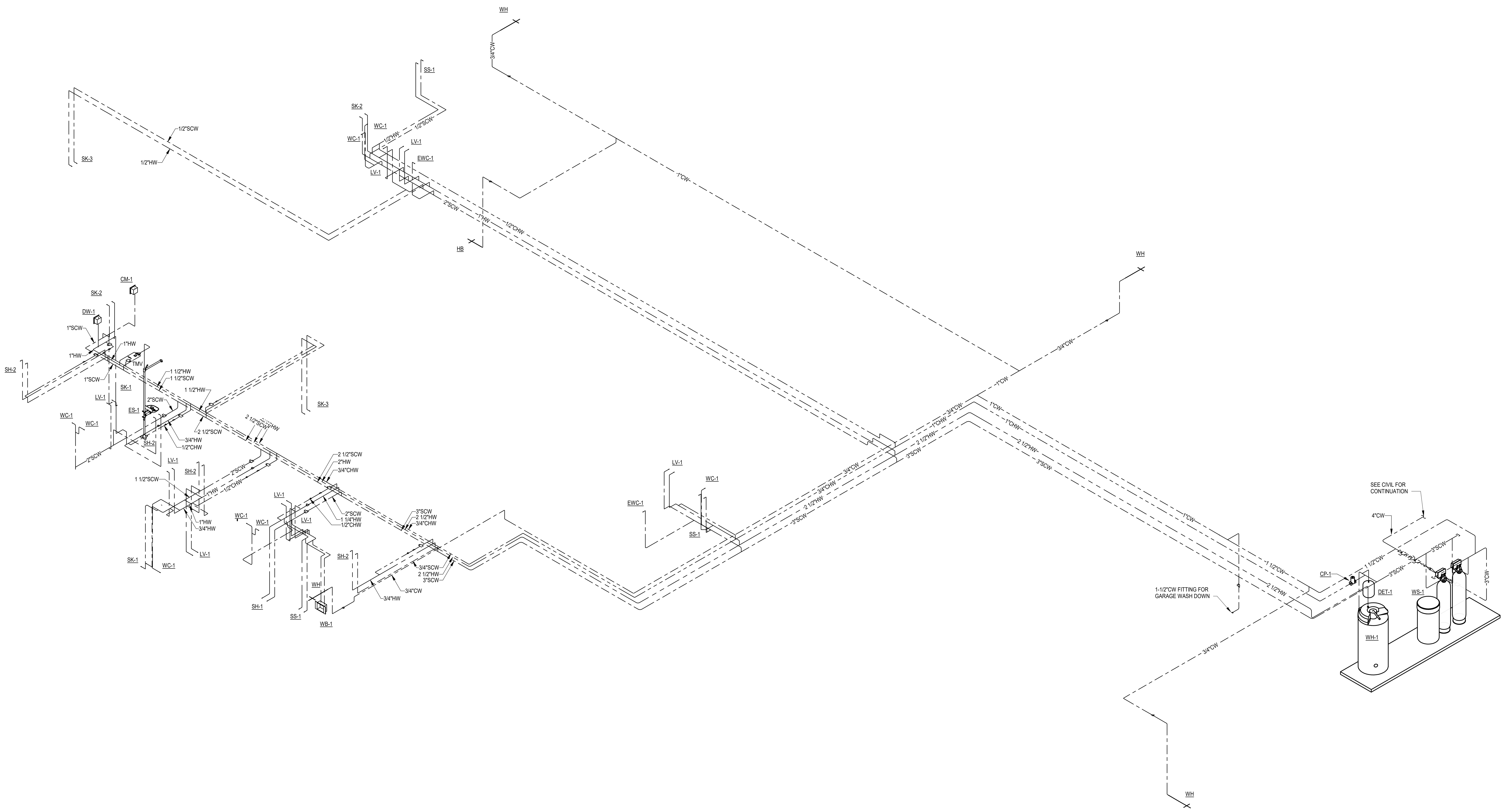

1 P601 DOMESTIC RISER DIAGRAM

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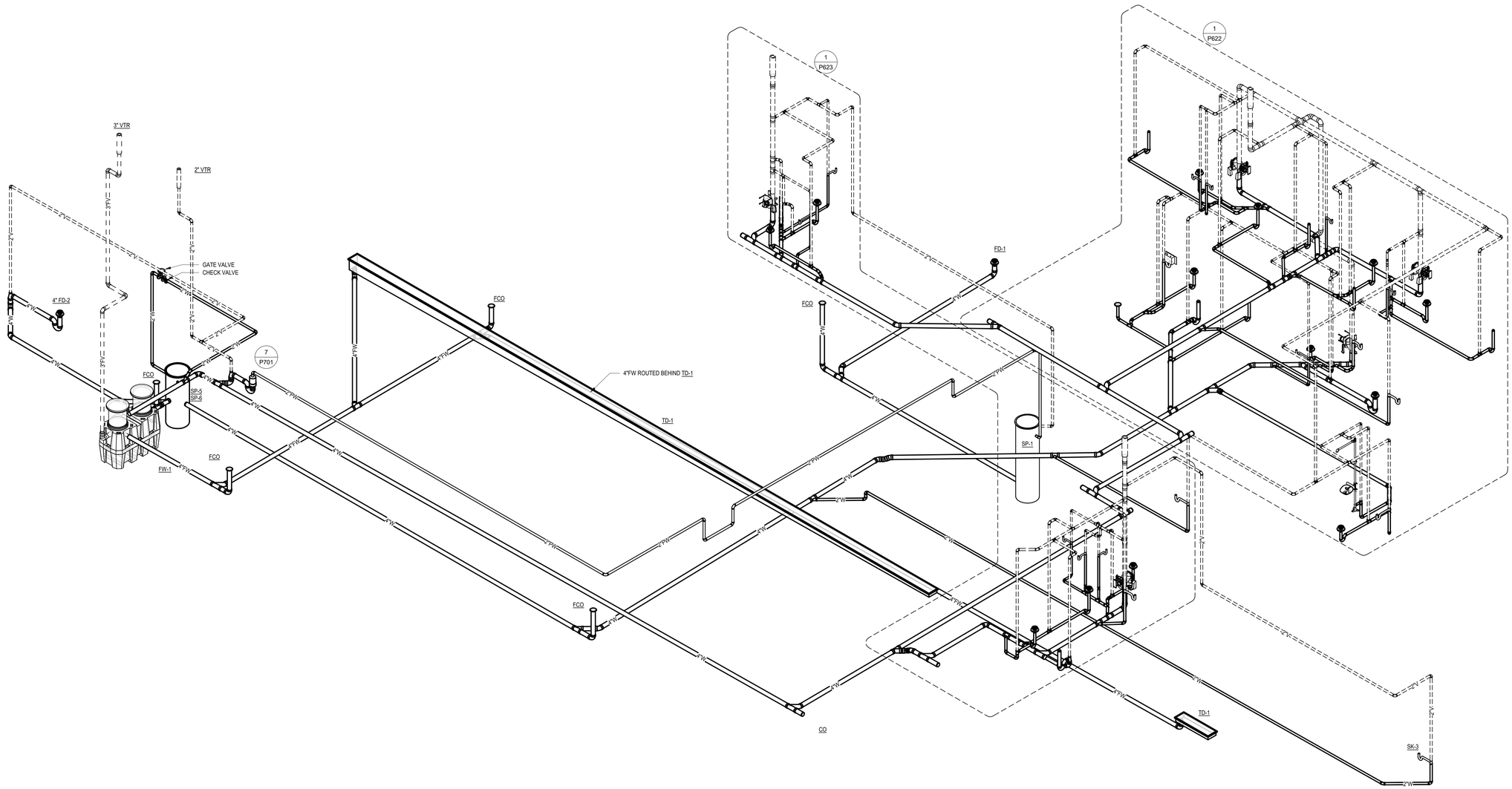
DOMESTIC
WATER SUPPLY
RISER DIAGRAMS

SHEET NUMBER

P601



1 P621 WASTE AND VENT RISER DIAGRAM

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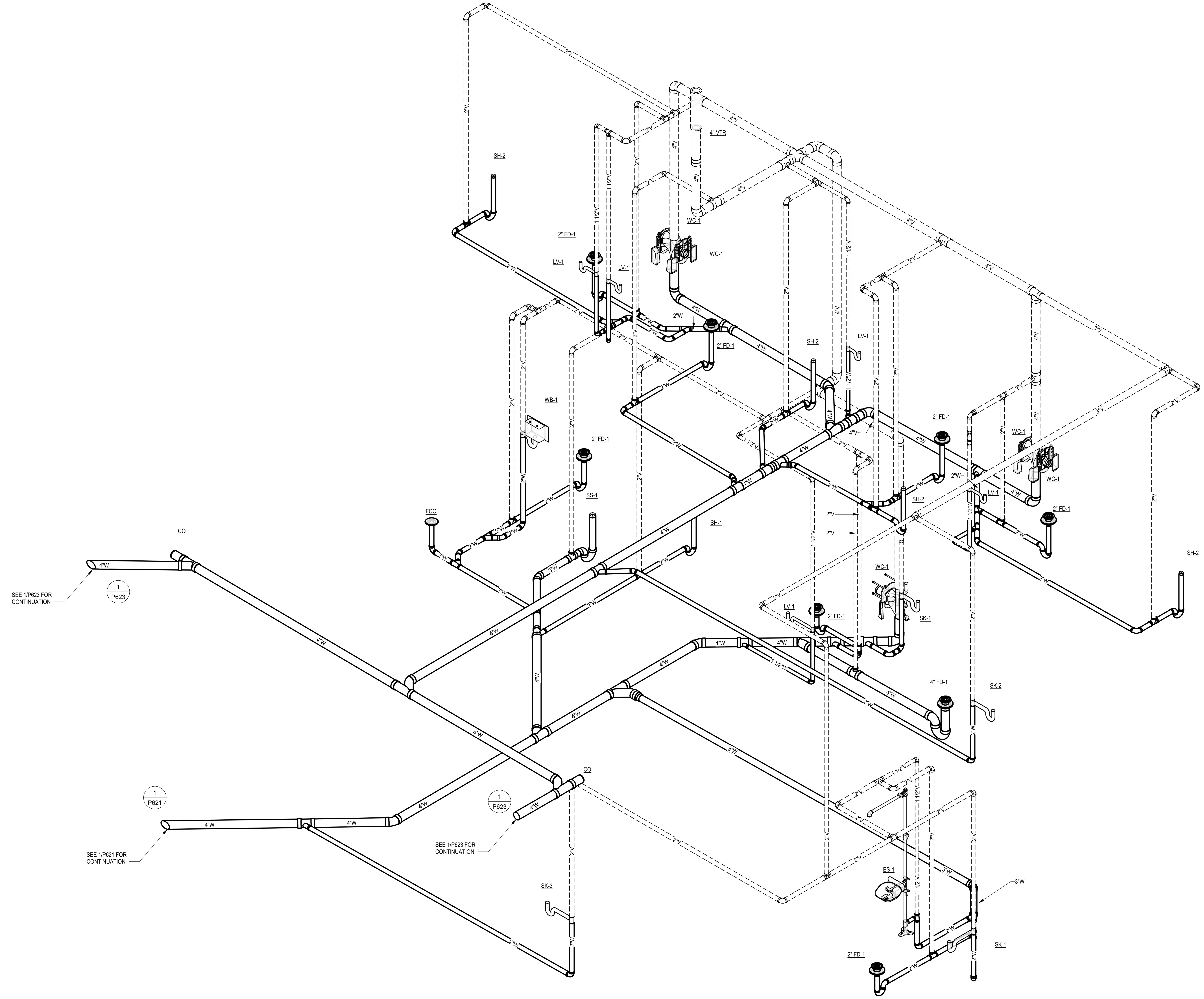
DOMESTIC WASTE AND VENT RISER DIAGRAMS

SHEET NUMBER

P621



1 P622 SHOWER AREA WASTE AND VENT RISER DIAGRAM

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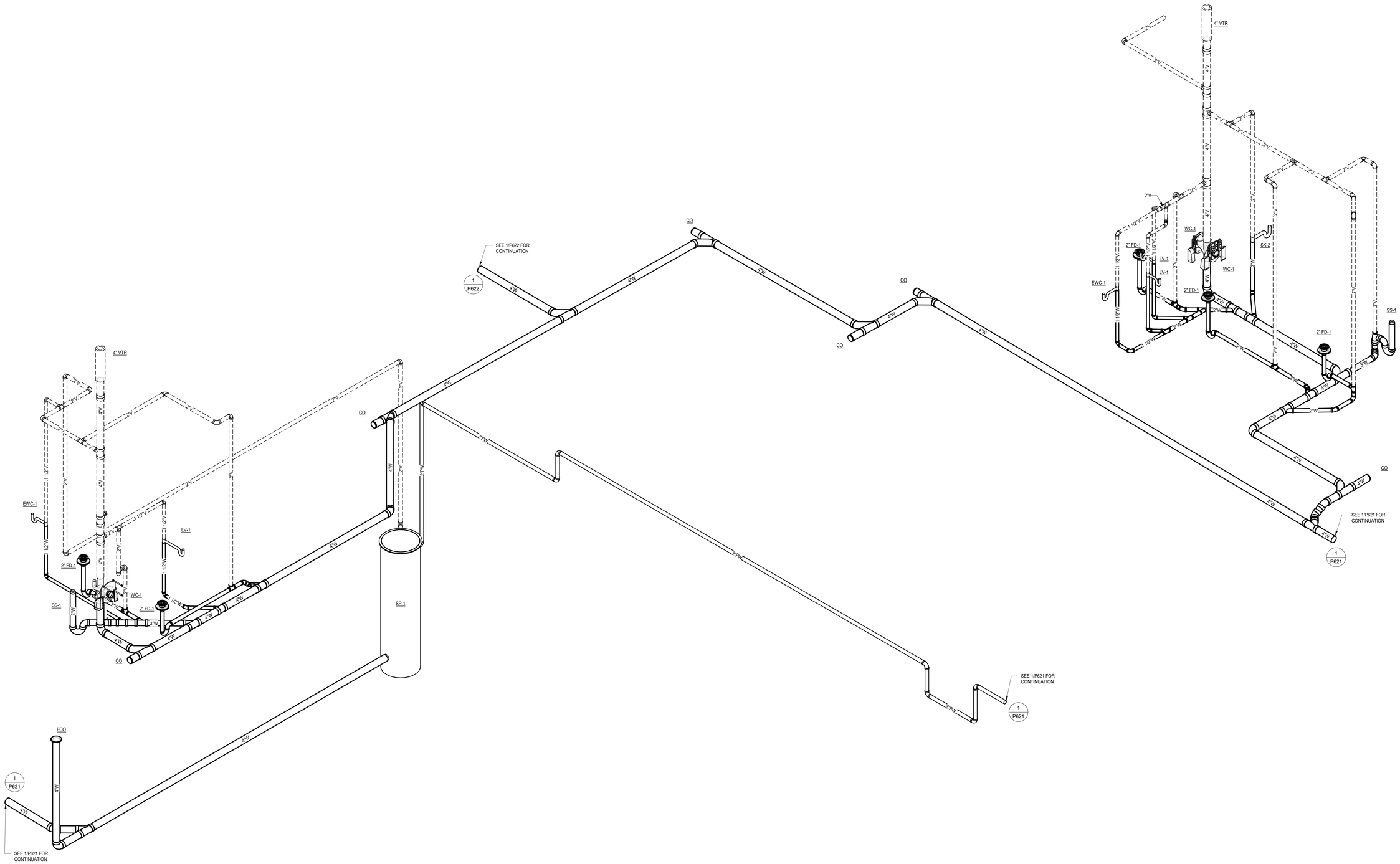
DOMESTIC WASTE AND VENT RISER DIAGRAMS

SHEET NUMBER

P622



1 P623 BATHROOM AREA WASTE AND VENT RISER DIAGRAM

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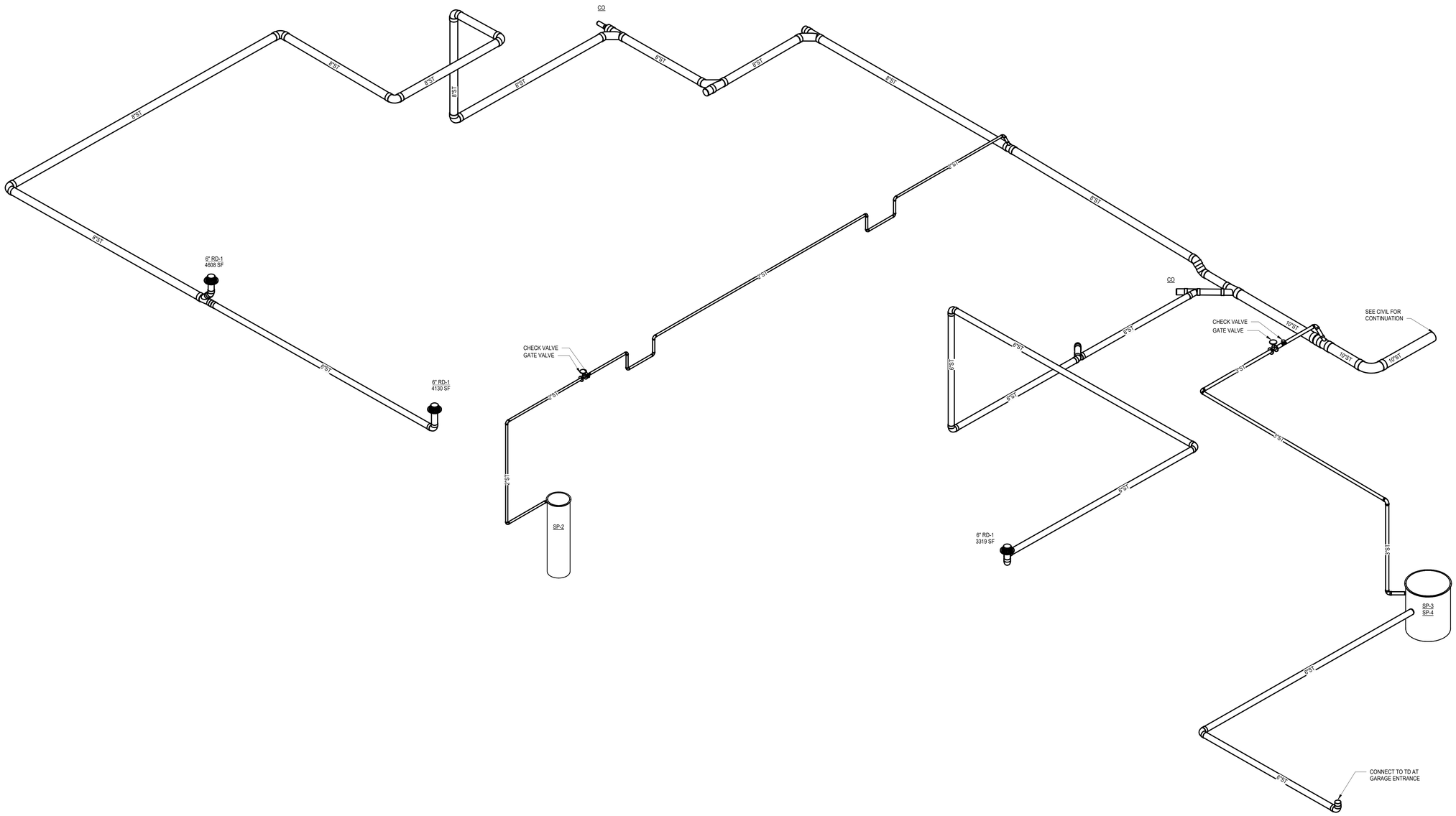

1 P671 STORM RISER DIAGRAM

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SHEET TITLE

STORM WATER
RISER DIAGRAMS

SHEET NUMBER

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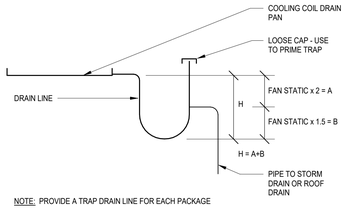
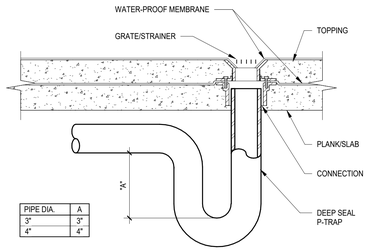
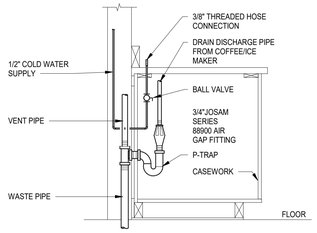


NOTE: PROVIDE A TRAP DRAIN LINE FOR EACH PACKAGE

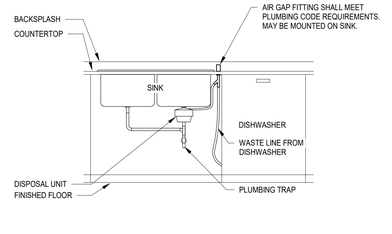
1 P701 ROOFTOP UNIT COND DRAINAGE PIPING
1/8" = 1'-0"



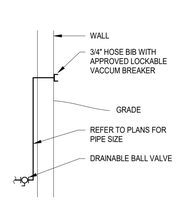
2 P701 FLOOR DRAIN DETAIL
1/8" = 1'-0"



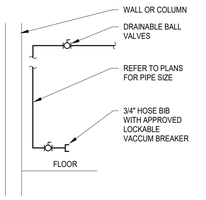
3 P701 COFFEE/ICE MAKER SUPPLY AND DRAIN
1/8" = 1'-0"



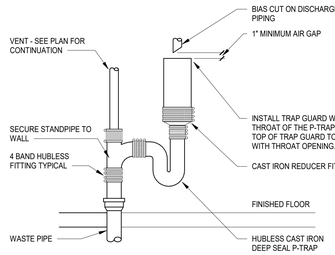
4 P701 DISHWASHER AIR GAP FITTING DETAIL
1/8" = 1'-0"



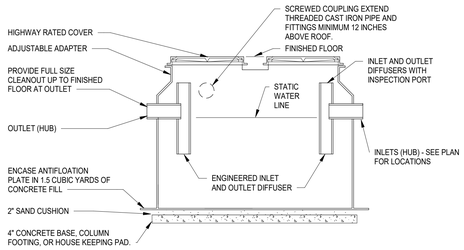
5 P701 EXTERIOR HOSE BIBB DETAIL
3/32" = 1'-0"



6 P701 INTERIOR HOSE BIBB DETAIL
3/32" = 1'-0"



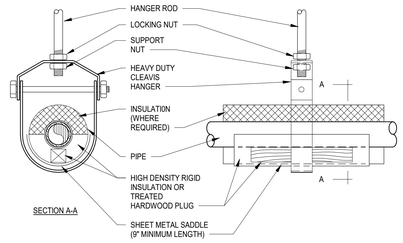
7 P701 OPEN FIXTURE WASTE DETAIL
3/32" = 1'-0"



NOTE:

PROTECT ALL METAL SURFACES INSIDE AND OUTSIDE WITH AN APPROVED CORROSION RESISTANT COATING.

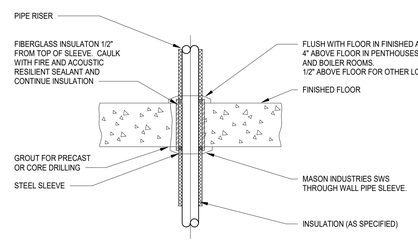
8 P701 FLAMMABLE LIQUIDS SEPARATOR DETAIL
1/8" = 1'-0"



SECTION A-A

PIPE SIZE	1/2"	75"	1"	1.25"	1.5"	2"	2.5"	3"	4"	5"	6"	8"
PLUG LENGTH	6"	6"	6"	6"	6"	6"	6"	9"	9"	9"	9"	9"
SADDLE LENGTH	9"	9"	9"	9"	9"	9"	9"	9"	9"	9"	9"	12"
SADDLE GAUGE	16"	16"	16"	16"	16"	16"	16"	16"	16"	16"	12"	12"

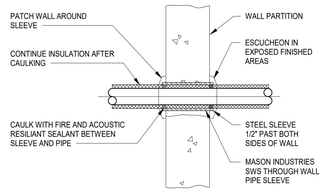
9 P701 PIPE HANGER AND SUPPORT DETAIL
1/8" = 1'-0"



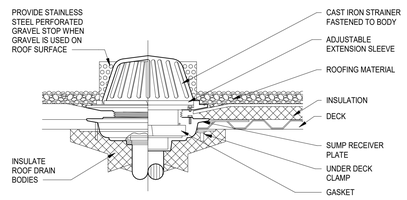
NOTE:

SLEEVE SIZE FOR UNINSULATED PIPE. USE 1/2" INSULATION COLUMN AND PROVIDE 1/2" INSULATION IN SLEEVE AND CAULK.

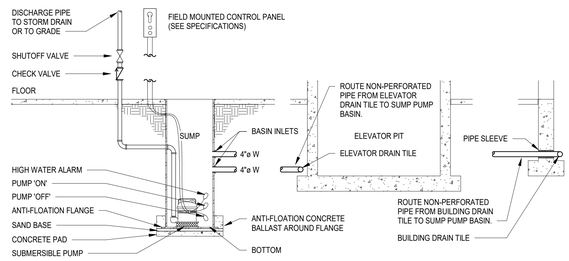
10 P701 PIPE SLEEVE DETAIL
1/8" = 1'-0"



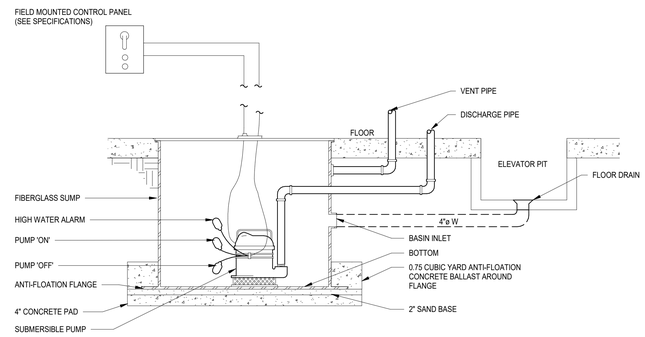
RISER SIZE	SLEEVE SIZE FOR INSULATED PIPE — INSULATION THICKNESS					
	1/2"	3/4"	1"	1-1/2"	2"	2-1/2"
3/4"	2"	2-1/2"	3"	4"	5"	6"
1"	2-1/2"	3"	4"	5"	6"	8"
1-1/4"	2-1/2"	3"	4"	5"	6"	8"
1-1/2"	3"	4"	4"	5"	6"	8
2"	4"	4"	5"	6"	8"	8"
2-1/2"	4"	5"	5"	6"	8"	8"
3"	5"	5"	6"	8"	10"	10"
4"	6"	6"	8"	8"	10"	10"
5"	8"	8"	8"	10"	10"	12"
6"	8"	8"	10"	10"	12"	12"
8"	10"	10"	12"	12"	14"	14"
10"	12"	12"	14"	14"	16"	16"
12"	14"	14"	16"	16"	18"	18"



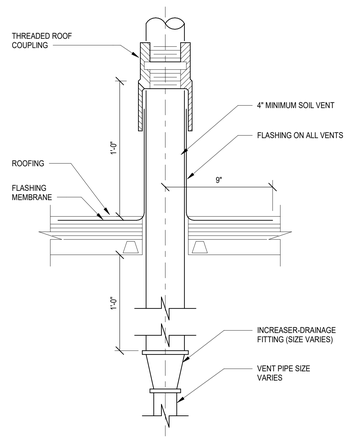
13 P701 ROOF DRAIN DETAIL
1/8" = 1'-0"



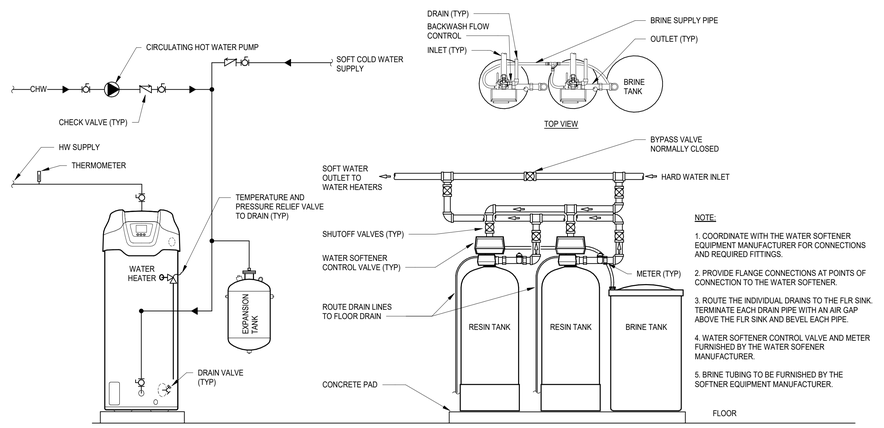
14 P701 DRAIN TILE SUMP PUMP DETAIL
1/4" = 1'-0"



15 P701 ELEVATOR SUMP PUMP DETAIL
1/8" = 1'-0"



16 P701 PLUMBING VENT THRU ROOF DETAIL
12" = 1'-0"



NOTE:

1. COORDINATE WITH THE WATER SOFTENER EQUIPMENT MANUFACTURER FOR CONNECTIONS AND REQUIRED FITTINGS.
2. PROVIDE FLANGE CONNECTIONS AT POINTS OF CONNECTION TO THE WATER SOFTENER.
3. ROUTE THE INDIVIDUAL DRAINS TO THE FLR SINK. TERMINATE EACH DRAIN PIPE WITH AN AIR GAP ABOVE THE FLR SINK AND BEVEL EACH PIPE.
4. WATER SOFTENER CONTROL VALVE AND METER FURNISHED BY THE WATER SOFENER MANUFACTURER.
5. BRINE TUBING TO BE FURNISHED BY THE SOFTNER EQUIPMENT MANUFACTURER.

17 P701 GAS WATER HEATER AND WATER SOFTENER PIPING DIAGRAM
1/8" = 1'-0"

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EOE

CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION
	12/16/2019	DESIGN DEVELOPMENT
	02/19/2020	PLUMBING PLAN REVIEW

CERTIFICATION

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota

Alex Sawka
53200 — License Number
02/19/2020 — Date

DRAWN BY	AEH
CHECKED BY	AMS
COMMISSION NUMBER	2106-02

SHEET TITLE

PLUMBING DETAILS

SHEET NUMBER

P701

BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_MEP_R19.rvt
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PLUMBING FIXTURE SCHEDULE

FIXTURE NO.	FIXTURE TYPE	LOCATION	NOTES	MOUNTING HEIGHT	NOTE NUMBER	ROUGH-IN SIZES			
						WASTE	VENT	CW	HW
ES-1	EMERGENCY SHOWER	SEE PLANS	SHOWER: BRADLEY MODEL S19314BF STANDARD SHOWERHEAD IS 3.1" DIAMETER HIGHLY VISIBLE YELLOW IMPACT-RESISTANT PLASTIC. SPINTEC DRENCH SHOWERHEAD FEATURES INTEGRAL 22 GPM FLOW CONTROL AT 30 PSI. EYE WASH: HALO EYE/FACE WASH SYSTEM INCLUDES AN INTEGRAL 5.1 GPM FLOW CONTROL, PROVIDING WATER AT A SAFE VELOCITY WHILE MAINTAINING ITS EFFECTIVENESS PROTECTIVE FLIP OPEN DUST COVERS THAT OPEN WHEN THE PRODUCT IS ACTIVATED BY TYPE 304 STAINLESS STEEL PUSH HANDLE. SAFE, STEADY WATER FLOW UNDER VARYING WATER SUPPLY CONDITIONS FROM 30–90 PSI IS ASSURED BY INTEGRAL FLOW CONTROL IN THE SPRAYHEAD ASSEMBLY. SPRAYHEADS MADE FROM AN IMPACT RESISTANT ABS PLASTIC. BOWL IS CONSTRUCTED OF TYPE 304 CORROSION-RESISTANT STAINLESS STEEL. STRAINER: INTEGRAL. ACCESSORIES: UNIVERSAL IDENTIFICATION SIGN AND INSPECTION TAG.	FLOOR MOUNTED		1 1/2"	0"	0"	0"
WC-1	WATER CLOSET	SEE PLANS	FIXTURE: AMERICAN STANDARD AFWALL MODEL 2257.101.020, WHITE, ELONGATED BOWL, 1-1/2" INLET SPUD, 1.28 GPF FLUSHOMETER, WALL HUNG VALVE: AMERICAN STANDARD 6065.121.002, 1.28 GPF FLUSH VALVE, BATTERY POWERED. SENSOR ACTIVATED. SEAT: BEMIS MODEL 295SSCT-000, COMMERCIAL HEAVY DUTY, WHITE, ELONGATED, OPEN-FRONT WITHOUT COVER. CARRIER: WADE 311-NLA/NRA CARRIER. HORIZONTAL WATER CLOSET CARRIER WITH FLOOR MOUNTED FLOOR SUPPORT, READ ANCHOR, 11" ABS COUPLING, AND ADJUSTABLE FACEPLATE. 4" OUTLET LEFT/RIGHT HAND. BOLT CAPS.	WALL MOUNTED		4"	4"	1 1/4"	0"
EWC-1	ELECTRIC WATER COOLER	SEE PLANS	FIXTURE: ELKAY MODEL EZSTL8WSLK, BI-LEVEL ADA COOLER, 8 GPH CHILLING CAPACITY, BOTTLE FILLER, ADA, WALL MOUNT.	WALL MOUNTED		1 1/2"	1 1/2"	1/2"	
LV-1	LAVATORY	SEE PLANS	FIXTURE: AMERICAN STANDARD BOULEVARD MODEL 0610.000, 20-1/4"x16", UNDERMOUNT LAVATORY, WHITE VITREOUS CHINA. ADA COMPLIANT. FAUCET: SLOAN MODEL EAF-250-BAT-SF-0.5GPM-AER-IR-IQ-FCT OPTIMA FAUCET, CHROME PLATED, INFRARED SENSOR FOR ACTIVATION. ADA COMPLIANT. BATTERY POWERED. ACCESSORIES: DEARBORN BRASS MODEL P9702B P-TRAP, ACCOR P05-LP SUPPLY, PROVIDE LAV GUARD.	WALL MOUNTED		1 1/2"	1 1/2"	1/2"	1/2"
SS-1	SERVICE SINK	SEE PLANS	FIXTURE: MUSTEE MODEL 62M, DURSTONE MOP SERVICE BASIN, 24" X 24"X8-1/4" BASIN WITH 12" HIGH WALL GUARDS. FAUCET: DELTA 2870-AC FAUCET, CHROME FINISH, NO.369 HANDLES, 8" CENTERS, VACUUM BREAKER, 3/4" HOSE OUTLET, PAIL HOOK, INTEGRAL STOPS. STRAINER:REMOVABLE STAINLESS STEEL STRAINER PLATE. ACCESSORIES: MUSTEE HOSE AND HOSE HOLDER MODEL 65.700, MOP HANGER MODEL 65.600, BUMPER GUARDS MODEL 62.401 21-1	FLOOR MOUNTED		3"	2"	1/2"	1/2"
SK-1	SPECIALTY SINK	SEE PLANS	FIXTURE: PREFORMED SINK IN CASEWORK 18 GAUGE, TYPE 304 STAINLESS STEEL, UNDERMOUNT SINGLE BOWL SINK, 23-1/2"x18-1/4"x5-3/8". FAUCET:ZURN MODEL Z82681-XL, LABORATORY FAUCET – DOUBLE, 1.5 GPM STRAINER:KEENEY 1432SS BASKET STRAINER, ACCOR P05-LP SUPPLY, DEARBORN BRASS P9702T P-TRAP.			2"	2"	1/2"	1/2"
SK-2	SPECIALTY SINK	SEE PLANS	FIXTURE: ELKAY ELUHAD311855PD 18 GAUGE, TYPE 304 STAINLESS STEEL, UNDERMOUNT DOUBLE BOWL SINK WITH PERFECT DRAIN, 30-3/4"x18-1/2"x5-3/8". FAUCET:DELTA MODEL 4140-DST, LEVER HANDLE, PULL-OUT SPOUT, POLISHED CHROME. 1.5 GPM. STRAINER:KEENEY 1432SS BASKET STRAINER, ACCOR P05-LP SUPPLY, DEARBORN BRASS P9702T P-TRAP.	UNDERMOUNT		2"	2"	1/2"	1/2"
SK-3	SPECIALTY SINK	SEE PLANS	FIXTURE: PREFORMED SINK IN CASEWORK 18 GAUGE, TYPE 304 STAINLESS STEEL, UNDERMOUNT SINGLE BOWL SINK, 23-1/2"x18-1/4"x5-3/8". FAUCET:ZURN MODEL Z82681-XL, LABORATORY FAUCET – DOUBLE, 1.5 GPM STRAINER:KEENEY 1432SS BASKET STRAINER, ACCOR P05-LP SUPPLY, DEARBORN BRASS P9702T P-TRAP. ACCESSORIES:RUARDIAN GBF1849 DECK MOUNTED EYE WASH			2"	2"	1/2"	1/2"
SH-1	SHOWER	SEE PLANS	FIXTURE: TILE SURROUNDING BY OTHERS. FAUCET: DELTA MODEL MONITOR T13220-H2OT WITH DELTA MODEL RP54752 SHOWER HEAD, POLISHED CHROME FINISH. 1.5 GPM. DRAIN: MODEL OATEY 42097. 2IN PVC SOLVENT WELD SHOWER DRAIN W/ STAINLESS STEEL STRAINER. ACCESSORIES: DELTA PRESSURE BALANCE VALVE MODEL R10000-UNWS.	FLOOR MOUNTED		2"	2"	3/4"	3/4"
SH-2	SHOWER	SEE PLANS	FIXTURE: TILE SURROUNDING BY OTHERS. FAUCET: DELTA MODEL MONITOR T13220-H2OT WITH DELTA MODEL RP54752 SHOWER HEAD, POLISHED CHROME FINISH. 1.5 GPM. DRAIN: MODEL OATEY 42097. 2IN PVC SOLVENT WELD SHOWER DRAIN W/ STAINLESS STEEL STRAINER. ACCESSORIES: DELTA PRESSURE BALANCE VALVE MODEL R10000-UNWS.	FLOOR MOUNTED		2"	2"	3/4"	3/4"
CM-1	COFFEE MAKER	SEE PLANS	FIXTURE: OATEY ¼" TURN BRASS BALL VALVE. REFER TO PLUMBING SPECIFICATION FOR APPROVED PIPE TYPES. ACCESSORIES:APPROVED BACKFLOW PREVENTER.			0"	0"	1/2"	0"
DW-1	DISHWASHER	SEE PLANS	FIXTURE: OATEY ½" TURN BRASS BALL VALVE. REFER TO PLUMBING SPECIFICATION FOR APPROVED PIPE TYPES. ACCESSORIES:APPROVED BACKFLOW PREVENTER.			0"	0"	0"	1/2"
WB-1	WASHER WALL BOX			WALL MOUNTED		2"	2"	1/2"	1/2"
HB	INTERIOR HOSE BIBB		FIXTURE: WOODFORD MODEL 26, HOSE BIBB. BACKFLOW PROTECTED, CHROME, UNION ELBOW WITH ¾" PIPE THREAD INLET. INCLUDE INTERIOR DRAINABLE SHUT-OFF.	WALL MOUNTED		0"	0"	3/4"	0"
WH	WALL HYDRANT		FIXTURE: WOODFORD MODEL B67, WALL HYDRANT. LOCKING BOX-TYPE ENCLOSURE. BACKFLOW PROTECTED, FREEZELESS, CHROME, UNION ELBOW WITH ¾" PIPE THREAD INLET. INCLUDE INTERIOR DRAINABLE SHUT-OFF.	WALL MOUNTED		0"	0"	3/4"	0"

DOMESTIC EXPANSION TANK SCHEDULE

TAG	NO.	LOCATION	SERVES	MANUFACTURER	MODEL	TANK VOLUME		OPERATING PRESSURE		OPERATING TEMPERATURE		WEIGHT	NOTES
						TOTAL	ACCEPT.	FILL	RELIEF	FILL	MAX		
DET	1	003 - MECHANICAL	WATER HEATER	WATTS	PLT-20	8.5	3.4	60.00	150.00	55.0	200.0	15	

FLOOR AND ROOF DRAINAGE SCHEDULE

TAG	LOCATION	MANUFACTURER	MODEL	DRAIN				STRAINER				NOTES
				BODY		OUTLET		SIZE				
				MATERIAL	SHAPE	SIZE	LOCATION	DIAMETER	WIDTH	MATERIAL	FINISH	
FD-1	SEE PLANS	JOSAM	30002-A	CAST IRON	ROUND	2"	BOTTOM	6"	0"	NICKEL BRONZE	SATIN	
FD-1	SEE PLANS	JOSAM	30004-A	CAST IRON	ROUND	4"	BOTTOM	6"	0"	NICKEL BRONZE	SATIN	
FD-2	SEE PLANS	JOSAM	30004-A	CAST IRON	ROUND	4"	BOTTOM	6"	0"	NICKEL BRONZE	SATIN	DEEP SEAL TRAP
RD-1	ROOF	JOSAM	21500	CAST IRON	ROUND	6"	BOTTOM	15"	0"	CAST IRON	STD	
TD-1	GARAGE	DURA TRENCH	DTPF10-HDBP15ZSA/12B24DI	CAST IRON	ROUND	4"	BOTTOM		1' - 0"	FIBER REINFORCED POLYMER		
TD-2	GARAGE RAMP	DURA TRENCH	DTPF10-HDBP15ZSA/12B24DI	CAST IRON	ROUND	6"	BOTTOM		1' - 0"	FIBER REINFORCED POLYMER		

LIQUID SEPARATOR SCHEDULE

TAG	SERVES	LOCATION	MANUFACTURER	MODEL	MOUNTING	MAX FLOW GPM	LIQUID CAPACITY GAL.	OIL CAPACITY GAL.	SAND CAPACITY GAL.	BODY DIMENSIONS			CONNECTION SIZES			WEIGHT	NOTES
										LENGTH	WIDTH	HEIGHT	INLET	OUTLET	VENT		
FW-1	GARAGE DRAINS	GARAGE	STRIEM	OS-100	IN-FLOOR	100.0	275.0	147.5	105.0	68"	33 1/2"	70 3/8"	4"	4"	3"	230	

THERMOSTATIC MIXING VALVE SCHEDULE

TAG	NO.	LOCATION	SERVES	TYPE	NOTES	NOTE NUMBER	CONNECTIONS		
							CW	HW	TW
TMV		CORRIDOR 006	ES-1	1.00"	FIXTURE: POWERS HYDROGAURD XP SERIES EMERGENCY TEMPERING VALVE WITH COLD WATER BYPASS, MODEL ETV200, 20 GPM AND 10 PSI PRESSURE DROP		3/4"	3/4"	1"

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CONSULTANTS

PROJECT TITLE

DETROIT LAKES
POLICE STATION

ISSUE #	DATE	DESCRIPTION
	12/16/2019	DESIGN DEVELOPMENT
	02/19/2020	PLUMBING PLAN REVIEW

CERTIFICATION

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota

Alex Sawka
53200 — License Number
02/19/2020 — Date

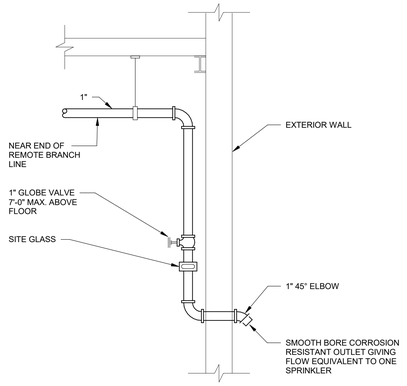
DRAWN BY	AEH
CHECKED BY	AMS
COMMISSION NUMBER	2106-02

SHEET TITLE

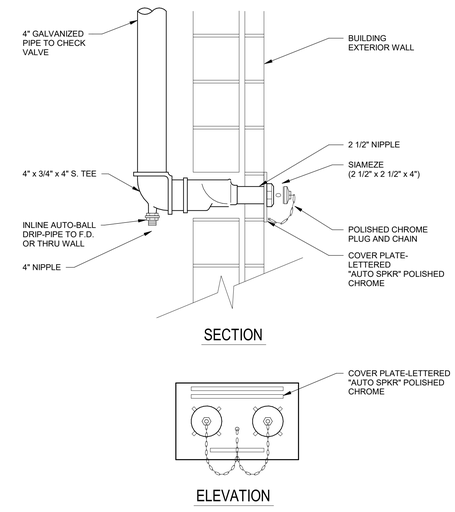
PLUMBING
SCHEDULES

SHEET NUMBER

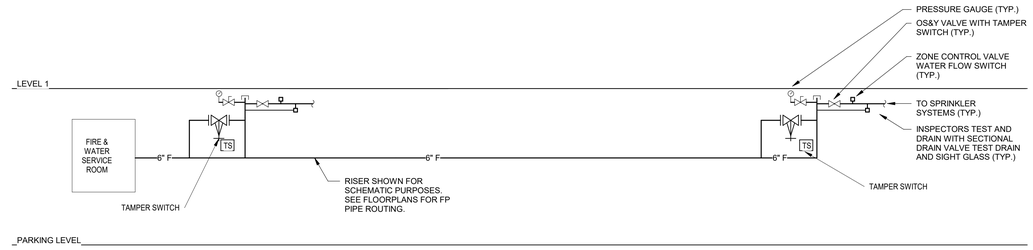
P801



4 P951 INSPECTORS TEST CONNECTION
12" = 1'-0"



2 P951 FIRE DEPARTMENT CONNECTION DETAIL
12" = 1'-0"



5 P951 FIRE PROTECTION RISER DIAGRAM
1/8" = 1'-0"

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PROJECT TITLE

DETROIT LAKES POLICE STATION

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DRAWN BY	AEH
CHECKED BY	AMS
COMMISSION NUMBER	2106-02

SHEET TITLE

FIRE PROTECTION RISER DIAGRAM

SHEET NUMBER

P951

BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_MEP_R19.rvt

2/20/2020 9:00:00 AM

A

- A — AMPERE
- AC — ABOVE COUNTER
- AF — AMPERE FRAME
- AFD — ADJUSTABLE FREQUENCY DRIVE
- AFF — ABOVE FINISHED FLOOR
- AFG — ABOVE FINISHED GRADE
- ANUN — ANNUNCIATION
- ARCH — ARCHITECT/ARCHITECTURAL
- AT — AMPERE TRIP
- ATS — AUTOMATIC TRANSFER SWITCH
- AUTO — AUTOMATIC
- AUX. CON. — AUXILIARY CONTACTS
- ASD — ADJUSTABLE SPEED DRIVES

B

- BFC — BELOW FINISHED CEILING
- BFG — BELOW FINISHED GRADE

C

- C — CONDUIT
- CAB — CABINET
- CB — CIRCUIT BREAKER
- CCT,CKT — CIRCUIT
- CLG — CEILING
- CMT — CONDUIT EMPTY
- COMB — COMBINATION
- CONN — CONNECT(ION)(OR)
- CONTR — CONTRACTOR
- COORD — COORDINATE
- CORR — CORRIDOR
- CT — CURRENT TRANSFORMER

D

- DBLS — DOUBLE LUGS
- DC — DIRECT CURRENT
- DET — DETAIL
- DGP — DATA GATHERING PANEL
- DIST — DISTRIBUTION
- DIV — DIVISION
- DM — DOOR MONITOR
- DN — DOWN
- DW — DISHWASHER
- DWG — DRAWING

E

- EA — EACH
- ELEC — ELECTRICAL
- EM — EMERGENCY
- EO — ELECTRICAL OUTLET
- EPO — EMERGENCY POWER OFF
- EQ — EQUAL
- EQUIP — EQUIPMENT
- EXIST — EXISTING
- EP — EXPLOSION PROOF
- EWC — ELECTRIC WATER COOLER

F

- F — FUSED
- FA — FIRE ALARM
- FDR — FEEDER
- FLA — FULL LOAD AMPS
- FIN — FINISHED
- FLR — FLOOR
- FUT — FUTURE
- FIXT — FIXTURE-LTG
- FRZ — FREEZER
- FVNR — FULL VOLTAGE NON REVERSING

G

- G, GND — GROUND
- GFI — GROUND FAULT INTERRUPTER

H

- HP — HORSEPOWER
- HTG — HEATING
- HTR — HEATER
- HZ — HERTZ

I

- IC — INTERRUPTING CAPACITY
- ICE — ICE MACHINE
- I/C — INTERCOM
- IG — ISOLATED GROUND

J

- J, JB — JUNCTION BOX

K

- KW — KILOWATTS
- KA, KVA — KILOVOLT AMPERE
- KAIC — KILOAMPERE INTERRUPTING CAPACITY
- KO — KNOCK OUT(S)

L

- LA — LIGHTING ARRESTOR
- LOC — LOCATION
- LTG — LIGHTING, LIGHT OR LIGHTS
- LTFC — LIQUID TIGHT FLEXIBLE CONDUIT

M

- MAN — MANUAL
- MAX — MAXIMUM
- MCA — MINIMUM CIRCUIT AMPACITY
- MCCB — MAIN CIRCUIT BREAKER
- MOCP — MAXIMUM OVERCURRENT PROTECTION
- MECH — MECHANICAL
- MIN — MINIMUM
- MFR — MANUFACTURER
- MH — MAN HOLE
- MLO — MAIN LUGS ONLY
- MSB — MAIN SWITCHBOARD
- MSS — MOTOR CONTROLLER
- MT — EMPTY
- MTD — MOUNTED
- MTS — MANUAL TRANSFER SWITCH
- MW — MICROWAVE

N

- N.C. — NORMALLY CLOSED
- NEC — NATIONAL ELECTRICAL CODE
- NF — NON FUSED
- NL — NIGHT LIGHT
- N.O. — NORMALLY OPEN

O

- OC — ON CENTER
- OPER — OPERATE(D)

P

- PH — PHASE
- P — POLE
- PB — PUSH BUTTON
- PF — POWER FACTOR
- PH — PHASE
- PL — PILOT LIGHT
- PNL — PANEL
- PT — POTENTIAL TRANSFORMER
- PTR — PRINTER
- PUB — PULL BOX
- PVC — POLYVINYL CHLORIDE
- PWR — POWER

R

- REC — RECEPTACLE
- REF — REFRIGERATOR
- RM — ROOM
- REQD — REQUIRED
- R — REMOVE
- RL — REMOVE AND RELOCATE
- RNG — RANGE

S

- SHT — SHEET
- SPC — SPACE
- SPEC — SPECIFICATION
- SPR — SPARE
- SQ — SQUARE
- SSW — SAFETY SWITCH
- STR — STARTER
- SURF — SURFACE
- SW — SWITCH
- SWBD — SWITCHBOARD

T

- TC — TIME CLOCK
- TEL — TELEPHONE
- TERM — TERMINAL
- TR — TAMPER RESISTANT
- TV — TELEVISION
- TYP — TYPICAL

U

- UC — UNDERCABINET
- UFD — UNDER FLOOR DUCT
- UG — UNDERGROUND
- UH — UNIT HEATER

V

- V — VOLTS
- VA — VOLT AMPERE
- VEND — VENDING MACHINE
- VFD — VARIABLE FREQUENCY DRIVE
- VM — VOLT METER
- VSD — VARIABLE SPEED DRIVE

W

- W — WATTS
- W/ — WITH
- W/D — WASHER / DRYER
- W/O — WITHOUT
- WD — WARMER DRAWER
- WM — WATT METER
- WP — WEATHERPROOF

X

- XFMR — TRANSFORMER

Z

- Z — IMPEDANCE

SYMBOLS

- ~ — APPROXIMATE(LY)
- @ — AT
- & — AND
- ∟ — ANGLE
- ℄ — CENTERLINE
- Φ Ø — DIAMETER
- # — NUMBER
- / — PER
- ⊥ — PERPENDICULAR
- ± — PLUS OR MINUS

REFERENCE SYMBOLS

REFERENCE SYMBOLS INDICATE THAT ADDITIONAL INFORMATION CONCERNING THE PART OF THE WORK REFERENCED MAY BE FOUND AT THE LOCATION INDICATED BY THE SYMBOL AND AS DESCRIBED BELOW.

DETAIL CALLOUT: INDICATES DETAIL CALLOUT NUMBER; INDICATES SHEET WHERE DETAIL CALLOUT IS DRAWN

DETAIL: INDICATES AREA OF DETAIL CUT PARALLEL TO VIEW

DETAIL PLAN OR ELEVATION: INDICATES AREA OF ENLARGED PLAN OR ENLARGED ELEVATION

DETAIL CALLOUT: INDICATES DETAIL NUMBER; INDICATES SHEET WHERE DETAIL IS DRAWN; INDICATES AREA OF DETAIL CUT PERPENDICULAR TO VIEW

BUILDING SECTION: INDICATES BUILDING SECTION NUMBER; INDICATES SHEET WHERE BUILDING SECTION IS DRAWN

WALL SECTION: INDICATES WALL SECTION NUMBER; INDICATES SHEET WHERE WALL SECTION IS DRAWN

EXTERIOR ELEVATION: INDICATES EXTERIOR ELEVATION NUMBER; INDICATES SHEET WHERE EXTERIOR ELEVATION IS DRAWN

INTERIOR ELEVATION (SINGLE): INDICATES INTERIOR ELEVATION NUMBER; INDICATES SHEET WHERE INTERIOR ELEVATION IS DRAWN

INTERIOR ELEVATION (MULTIPLE): INDICATES INTERIOR ELEVATION NUMBER; INDICATES SHEET WHERE INTERIOR ELEVATION IS DRAWN

NEW GRID LINES:

EXISTING GRID LINES:

REVISION: REVISION NUMBER - SEE REVISION HISTORY ON TITLE BLOCK OF EACH SHEET

REVISION CLOUD: REVISION NUMBER - SEE REVISION HISTORY ON TITLE BLOCK OF EACH SHEET

KEYNOTE: SEE CORRESPONDING NUMBERED KEY NOTE ON SHEET WHERE REFERENCE OCCURS

ELEVATION LEVEL: INDICATES FLOOR LEVEL; INDICATES FLOOR LEVEL ELEVATION

EXISTING WALL TO REMAIN

EXISTING WALL TO BE REMOVED

ELECTRICAL GENERAL NOTES

-General

1. IN MECHANICAL EQUIPMENT ROOMS, CONDUIT FOR LIGHTING FIXTURES MAY BE RUN EXPOSED.
2. REFER TO ARCHITECTURAL ELEVATIONS AND REFLECTED CEILING PLAN FOR EXACT LOCATION OF LIGHTING FIXTURES AND DEVICES.
3. INTERRUPTING RATINGS NOTED IN SCHEDULES SHALL APPLY TO ENTIRE PANELBOARD AND/OR SWITCHBOARD. ALL EQUIPMENT COMPRISING PANELS AND/OR SWITCHBOARDS SHALL BE FULLY RATED FOR SHORT CIRCUIT CURRENT NOTED.
4. LETTER THUS: "A" - INDICATES TYPE OF LIGHTING FIXTURES. REFER TO LIGHTING FIXTURE TYPES AS NOTED ON THE LIGHTING FIXTURE SCHEDULE.
5. INSTALL 4-3/4" EMPTY CONDUITS FROM EVERY FLUSH MOUNTED PANELBOARD CABINET AND TERMINATE ABOVE SUSPENDED CEILING AREA FOR FUTURE USE.
6. PROVIDE ENGRAVED NAMEPLATES ON SWITCHBOARDS, PANELBOARDS, DISCONNECT SWITCHES, MOTOR CONTROL CENTERS, TRANSFORMERS, ETC., INDICATING EQUIPMENT DESIGNATION (OR DESIGNATION OF EQUIPMENT SERVED) AND VOLTAGE.
7. ANY ELECTRICAL BOX THAT BECOMES ABANDONED DURING THE COURSE OF THE PROJECT SHALL HAVE A BLANK COVERPLATE.
8. ADJUST MOUNTING HEIGHTS OF ALL OUTLETS IF REQUIRED SO AS NOT TO INTERFERE WITH RADIATION. VERIFY CHANGES WITH ENGINEER.
9. VERIFY LOCATION OF ALL FLOOR OUTLETS WITH ARCHITECT PRIOR TO ROUGH-IN.
10. DATA TELEPHONE AND TELEVISION CONDUIT SHALL BE MINIMUM 3/4 INCH UNLESS OTHERWISE NOTED ON DRAWINGS.
11. MOUNT MANUAL FIRE ALARM STATIONS AT 42" ON THE HORIZONTAL CENTER LINE OF THE ADJACENT SWITCH.
12. WHERE OTHER ELECTRICAL DEVICES ARE LOCATED ADJACENT TO LIGHT SWITCHES, MOUNT ALL DEVICES AT THE SAME CENTER LINE ELEVATION.
13. DO NOT SCALE DRAWINGS. VERIFY DIMENSIONS IN FIELD PRIOR TO COMMENCEMENT OF WORK.
14. FINAL CONNECTIONS TO EQUIPMENT SHALL BE PER MANUFACTURER'S APPROVED WIRING DIAGRAMS, DETAILS, AND INSTRUCTIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE MATERIALS AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED.
15. PROVIDE WITH SHOP DRAWINGS SUBMITTAL, 1/4" SCALE LAYOUT DRAWINGS OF ROOMS WITH ELECTRICAL SWITCHGEAR AND TRANSFORMERS. LAYOUTS SHALL SHOW LOCATIONS OF AND SHALL BE COORDINATED WITH MECHANICAL EQUIPMENT AND EQUIPMENT SHALL BE DRAWN TO SCALE.
16. ALL EMPTY RACEWAY SYSTEMS SHALL HAVE A PULLWIRE OR EQUAL AND SHALL BE INDENTIFIED AT ALL JUNCTION, PULL, AND TERMINATION POINTS, USING PERMANENT METALLIC TAGS. TAG SHALL INDICATE INTENDED USE OF CONDUIT, ORIGINATION AND TERMINATION POINTS OF EACH INDIVIDUAL CONDUIT.
17. IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO ESTABLISH A STANDARD OF QUALITY. THE ENGINEER RESERVES THE RIGHT TO APPROVE METHODS AND MATERIALS NOT REFLECTED HEREIN.
18. EXAMINATION OF BIDDING DOCUMENTS.
19. EACH BIDDER SHALL EXAMINE THE BIDDING DOCUMENTS CAREFULLY AND, NOT LATER THAN SEVEN DAYS PRIOR TO THE DATE OF RECEIPT OF BIDS, SHALL MAKE WRITTEN REQUEST TO THE ARCHITECT FOR INTERPRETATION OR CORRECTION OF ANY DISCREPANCIES, AMBIGUITY, INCONSISTENCY, OR ERROR THEREIN WHICH HE MAY DISCOVER. ANY INTERPRETATION OR CORRECTION WILL BE ISSUED AS AN ADDENDUM BY THE ARCHITECT. ONLY A WRITTEN INTERPRETATION OR CORRECTION BY ADDENDUM SHALL BE BINDING. NO BIDDER SHALL RELY UPON INTERPRETATIONS OR CORRECTIONS GIVEN BY ANY OTHER METHOD. IF DISCREPANCIES, AMBIGUITY, INCONSISTENCY, OR ERROR ARE NOT COVERED BY ADDENDUM OR WRITTEN DIRECTIVE CONTRACTOR SHALL INCLUDE IN HIS BID, LABOR, MATERIALS, AND METHODS OF CONSTRUCTION RESULTING IN HIGHER COST. AFTER AWARD OF CONTRACT, NO ALLOWANCE OR EXTRA COMPENSATION WILL BE MADE IN BEHALF OF THE CONTRACTOR DUE TO HIS FAILURE TO MAKE THE WRITTEN REQUESTS AS DESCRIBED ABOVE.
20. THE PERSON SUBMITTING THE REQUEST WILL BE RESPONSIBLE FOR ITS PROMPT DELIVERY. FAILURE TO SO REQUEST CLARIFICATION OF ANY INADEQUACY, OMISSION, OR CONFLICT WILL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY. THE SIGNING OF THE CONTRACT WILL BE CONSIDERED AS IMPLICITLY DENOTING THAT THE CONTRACTOR HAS A THOROUGH COMPREHENSION OF THE FULL INTENT AND SCOPE OF THE WORKING DRAWINGS AND SPECIFICATIONS.
21. CONTRACTOR SHALL REVIEW ARCHITECTURAL, STRUCTURAL, AND MECHANICAL DRAWINGS AND SHALL PROVIDE LIGHTS, SWITCHES, RECEPTACLES, TELEPHONE OUTLETS, EQUIPMENT CONNECTIONS, ETC., AND ASSOCIATED CIRCUITING IN AREAS, EVEN IF SUCH AREAS ARE NOT SHOWN ON ELECTRICAL DRAWINGS. LAYOUTS, FIXTURE TYPES, QUANTITIES, AND SPACINGS SHALL BE IN ACCORDANCE WITH SIMILAR AREAS ON THIS PROJECT. CONTRACTOR SHALL INCLUDE COSTS FOR THE ABOVE IN HIS BID. IN ADDITION, CONTRACTOR SHALL PROVIDE CONTRACTOR SHALL VISIT SITE PRIOR TO BID AND VERIFY THAT CONDITIONS ARE AS INDICATED.
22. CONTRACTOR SHALL INCLUDE IN HIS BID, COSTS REQUIRED TO MAKE HIS WORK MEET EXISTING CONDITIONS.
23. WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER TO THE SATISFACTION OF THE ARCHITECT.
24. WORK, MATERIALS AND EQUIPMENT SHALL CONFORM TO THE LATEST EDITIONS OF LOCAL, STATE, AND NATIONAL CODES AND ORDINANCES. 25.PROVIDE PERMITS AND INSPECTIONS REQUIRED.
25. PROVIDE PERMITS AND INSPECTIONS REQUIRED.
26. GUARANTEE THE INSTALLATION AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP WHICH MAY OCCUR UNDER NORMAL USAGE FOR A PERIOD OF ONE YEAR AFTER OWNER'S ACCEPTANCE. DEFECTS SHALL BE PROMPTLY REMEDIED WITHOUT COST TO THE OWNER.
27. VERIFY THAT EXACT LOCATION OF EQUIPMENT TO BE FURNISHED BY OTHERS PRIOR TO ROUGH-IN.
28. SYSTEMS SHALL BE TESTED FOR PROPER OPERATION. IF TESTS SHOW THAT WORK IS DEFECTIVE, CONTRACTOR SHALL MAKE CORRECTIONS NECESSARY AT NO COST TO OWNER.
29. PROVIDE EXTERIOR PULL BOXES AND HANDHOLES AS REQUIRED TO COMPLETE WORK INDICATED. SPLICES IN EXTERIOR PULL BOXES AND HANDHOLES SHALL BE MADE WATERPROOF USING "SCOTCHCAST" SPLICE KIT OR APPROVED EQUAL. SEAL ENDS OF CONDUITS AND DUCTS WITH "DUCTSEAL OR APPROVED EQUAL.
30. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING EQUIPMENT WHICH IS DAMAGED DUE TO INCORRECT FIELD WIRING OR FACTORY WIRING IN EQUIPMENT PROVIDED BY THIS CONTRACTOR.
31. CONTRACTOR'S FAILURE TO ORDER OR RELEASE ORDER FOR MATERIALS AND/OR EQUIPMENT WILL NOT BE ACCEPTED AS A REASON TO SUBSTITUTE ALTERNATE MATERIALS, EQUIPMENT, OR INSTALLATION METHODS.
32. SYSTEMS SHALL BE COMPLETE, OPERABLE, AND READY FOR CONTINUOUS OPERATION. LIGHTS, SWITCHES, RECEPTACLES, MOTORS, ETC. SHALL BE CONNECTED AND OPERABLE.
33. RECEPTACLES WHICH ARE SHOWN WALL MOUNTED ON THE ELECTRICAL DRAWINGS ON WALLS WHICH, ON THE ARCHITECTURAL DRAWINGS AND ELEVATIONS ARE SHOWN AS GLASS OR PARTITIONS, SHALL BE FLUSH FLOOR DUPLEX RECEPTACLES MOUNTED ADJACENT TO BASE OR WALLS.
34. VERIFY EXACT LOCATIONS OF EXISTING AND NEW UNDERGROUND UTILITIES, PIPING, AND RACEWAY SYSTEMS PRIOR TO TRENCHING. PROVIDE NECESSARY TRENCHING, BACKFILL, EXCAVATION, SUPPORTS, SERVICE FEEDERS (CONDUIT AND/OR WIRE), PULLBOXES, TRANSFORMER PADS, SAWCUTTING AND PATCHING, CONCRETE/PAVING, ETC. REQUIRED. BACKFILL TRENCHES TO AND PATCH TO MATCH EXISTING. CONTRACTOR SHALL OBTAIN AND VERIFY EXACT UTILITY COMPANY DRAWINGS AND REQUIREMENTS.
35. ELECTRICAL FLOOR MOUNTED DISTRIBUTION EQUIPMENT SHALL BE BOLTED TO 4" HIGH CONCRETE HOUSEKEEPING PADS. CONCRETE PADS BY THIS CONTRACTOR. 35.ELECTRICAL FLOOR MOUNTED DISTRIBUTION EQUIPMENT SHALL BE BOLTED TO 4" HIGH CONCRETE HOUSEKEEPING PADS. CONCRETE PADS BY THIS CONTRACTOR.
36. PANEL DIRECTORIES SHALL BE REMOVABLE. SUBMIT PROPOSED SCHEDULE OF DIRECTORIES TO OWNER FOR APPROVAL. ROOM NAMES AND NUMBERS SHALL BE AS DIRECTED BY OWNER. DIRECTORIES SHALL BE TYPED AND INSTALLED UNDER CLEAR PLASTIC COVERS.
37. PROVIDE SELF ADHESIVE IDENTIFICATION INSIDE COVER OF EACH FUSABLE SWITCH, INDICATING SIZE AND TYPE OF FUSES PROVIDED.
38. PROVIDE ONE (1) SET OF THREE (3) SPARE FUSES FOR EACH SIZE AND TYPE PROVIDED ON THIS PROJECT. INSTALL FUSES IN A HINGED DOOR, SHEET METAL STORAGE CABINET EQUIPPED WITH CLIPS OR CUBICLES, EACH MARKED WITH THE SIZE AND TYPE FUSE STORED THEREIN. PROVIDE NAMEPLATE "SPARE FUSES". INSTALL IN LOCATION(S) AS DIRECTED BY OWNER.
39. ALL WIRING SHALL BE INSTALLED IN LISTED METALLIC RACEWAYS. RACEWAYS IN SLAB-ON-GRADE OR BELOW GRADE SHALL BE SCHEDULE 40 PVC. TRANSITIONS FROM BELOW TO ABOVE GRADE SHALL BE WITH RIGID STEEL ELBOWS WITH PVC JACKET OR PROVIDED EQUAL PROTECTION. EMT FITTINGS SHALL BE MALLEABLE IRON OR STEEL. CONNECTORS SHALL BE INSULATED THROAT TYPE.
40. ALL BRANCH CIRCUIT AND FEEDER CONDUITS SHALL HAVE A CODE SIZED COPPER GROUNDING CONDUCTOR. INCREASE CONDUIT SIZE AS REQUIRED.
41. FIRE ALARM, SOUND, TELEPHONE, COMPUTER, AND SIMILAR SYSTEMS CONDUITS LARGER THAT SHALL HAVE LONG RADIUS SWEEPS (12 TIMES THE DIAMETER).

-General

42. CONDUITS PENETRATING THRU ROOF SHALL BE CONSTRUCTED IN CONFORMANCE WITH "BUILT-UP BITUMINOUS ROOFING" SECTION 07510 AND SHEET METAL FLASHING AND TRIM" SECTION 07620.
43. FINAL CONNECTIONS TO MOTORS, TRANSFORMERS, AND OTHER VIBRATING EQUIPMENT SHALL BE WITH LIQUIDTIGHT FLEX METAL CONDUIT AND FITTINGS. DO NOT SECURE CONDUITS, DISCONNECTS, OR DEVICES TO DUCTWORK OR MECHANICAL EQUIPMENT.
44. ALL ELECTRICAL SYSTEMS COMPONENTS SHALL BE LISTED OR LABELED BY UL OR OTHER RECOGNIZED TESTING FACILITY.
45. PULLBOXES, CABINETS, ETC. MOUNTED ON THE EXTERIOR AT GRADE LEVEL, SHALL BE WEATHERPROOF TYPE WITH HINGED LOCKABLE COVERS SECURED WITH TAMPERPROOF SCREWS.
46. ALL WEATHERPROOF DEVICES AND COVERPLATES SHALL BE U.L. LISTED "WEATHERPROOF WHILE IN USE". "WEATHERPROOF" COVERS ARE ACCEPTABLE, PER NEC, ONLY WHERE DEVICES ARE ATTENDED WHILE IN USE OR WHEN INSTALLED IN DAMP LOCATIONS. ALL WHILE IN USE COVERS SHALL BE CAST ALUMINUM AND LOCKABLE. THE J-BOX FOR THE RECEPTACLE SHALL BE RECESSED WHERE POSSIBLE. ALL GARAGE GENERAL PURPOSE RECEPTACLES SHALL HAVE A LOCKABLE, WHILE IN USE COVER.
47. PROVIDE CONNECTION FROM FIRE/SMOKE DAMPERS TO FIRE ALARM CONTROL PANEL. PROVIDE 120V POWER TO EACH F/S DAMPER. CLOSE F/S DAMPERS AND SHUT DOWN RELATED SUPPLY AND RETURN FANS ON SMOKE DETECTION. CAUSE GENERAL FIRE ALARM.
48. PROVIDE A JUNCTION BOX(ES) FOR POWER TO MOTOR DAMPERS AND VAV BOXES AS REQUIRED. TRANSFORMERS AND LOW VOLTAGE WIRING BY MECHANICAL CONTRACTOR. PROVIDE DEDICATED 120V CIRCUIT(S). COORDINATE LOCATIONS WITH MECHANICAL AND TEMPERATURE CONTROLS CONTRACTOR. GYP BOARD CEILING AREA JUNCTION BOXES TO BE LOCATED AT ARCHITECTURAL ACCESS PANELS, ABOVE CEILING.
49. ELECTRICAL BOXES ON THE OPPOSITE SIDES OF THE WALL SHOULD BE IN SEPARATE STUD CAVITIES, SPACED AT LEAST ONE STUD SPACING APART, AND SEALED WITH ACOUSTICAL CAULK. IN UNIT-TO-UNIT WALLS, THE BOXES SHOULD BE COVERED WITH MOLDABLE PUTTY PADS, SUCH AS SHOULD BE SEALED WITH AN ACOUSTICAL CAULK. SEE SOUND CONTROL AT UNIT SEPARATION WALLS DETAIL FOR MORE INFORMATION.
50. HEAT TRACE TO BE PROVIDED BY MECHANICAL CONTRACTOR AT ALL EXPOSED PIPING ON BASEMENT LEVEL THROUGH SECOND FLOOR. COORDINATE WITH MECHANICAL CONTRACTOR ON EXACT LOCATIONS AND LENGTHS.PROVIDE 120V CONNECTION FROM NEAREST NORMAL POWER PANEL.
51. PROVIDE A RECESSED RECEPTACLE AND TV OUTLET FOR ALL WALL MOUNTED TV'S.
52. PROVIDE A CONNECTION TO THE FIRE ALARM SYSTEM FOR ALL MAGNETIC DOOR HOLD OPENS. DOOR HOLDS SHALL RELEASE UPON FIRE ALARM.

-Lighting

1. FIXTURES INDICATED AS BEING ON EMERGENCY OR NIGHT LIGHT CIRCUITS SHALL BE PROVIDED WITH SELF-CONTAINED BATTERY POWERED INVERTER UNIT FOR DIRECT MOUNTING IN FIXTURE. PROVIDE UNIT WITH FULLY AUTOMATIC TWO RATE CHARGER, NICKEL CADMIUM BATTERY, AC "ON" PILOT LIGHT, AND TEST SWITCH. DESIGN AND WIRE UNIT TO AUTOMATICALLY TRANSFER TO BATTERY SUPPLY UPON LOSS OF NORMAL AC POWER AND TO OPERATE LINEAR FLUORESCENT LAMP WITH MINIMUM OUTPUT OF 1000 LUMENS FOR MINIMUM 1-1/2 HOURS.
2. RECESSED LIGHT FIXTURES INSTALLED IN GYP BOARD OR PLASTER CEILINGS SHALL HAVE PLASTER FRAMES INSTALLED PRIOR TO CEILING MATERIAL.
3. RECESSED FIXTURES INSTALLED INDOORS SHALL BE THERMALLY PROTECTED.
4. VERIFY TYPE OF CEILING CONSTRUCTION FOR PROPER MOUNTING OF ALL RECESSED LIGHT FIXTURES. INSTALLATION OF LIGHT FIXTURES SHALL COMPLY WITH ALL INTERNATIONAL BUILDING CODE REQUIREMENTS.
5. ALL LIGHTING FIXTURES LOCATED SO AS TO DISRUPT A FIRE RATED CEILING ARE TO BE ENCLOSED OR SURROUNDED IN A FIRE PROTECTION MATERIAL AND FIBER BOARD. PROTECTION MATERIAL IS TO BE INSTALLED AS PER THE FIRE RESISTANCE INDEX. VERIFY WITH ARCHITECTURAL DRAWINGS THE HOUR RATINGS AND TYPE OF CEILINGS TO BE USED.
6. RECESSED LIGHTING FIXTURES INSTALLED INTO METAL SUSPENDED CEILING SYSTEMS FOR LAY-IN TILES AND PANELS SHALL BE INSTALLED AND SUPPORTED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE ASTM C635 AND C636
7. FIXTURES INSTALLED IN "LIGHT-DUTY CEILING SYSTEMS" SHALL HAVE SEPARATE SUPPORTING MEMBERS. FIXTURES INSTALLED IN "INTERMEDIATE-DUTY AND HEAVY-DUTY CEILING SYSTEMS" SHALL HAVE SEPARATE SUPPORTING MEMBERS WHEN THE WEIGHT OF THE FIXTURES EXCEEDS THE DEFLECTION AND ROTATION REQUIREMENTS OF ASTM C636 2.7.2,3 & 4.

-Motors

1. VERIFY LOCATION OF ALL MOTORS AND EQUIPMENT BEFORE ROUGH-IN. SEE MECHANICAL DRAWINGS FOR LOCATION OF MECHANICAL EQUIPMENT. PROVIDE SERVICE TO AND CONNECT EQUIPMENT AS REQUIRED.
2. ELECTRICAL CONTRACTOR SHALL PROVIDE CONTROLS, INTERLOCKS, ACCESSORIES, ETC., IN MOTOR CONTROL STARTERS AS REQUIRED BY THE TEMPERATURE CONTROL CONTRACTOR. STARTERS SHALL CONTAIN 120V CONTROL TRANSFORMER, PILOT LIGHT, AND PUSHBUTTONS OR SELECTOR SWITCH AS REQUIRED, IN ADDITION TO OTHER ITEMS (AUXILIARY CONTACTS, DOOR SWITCHES, RELAYS, ETC.) REQUIRED. SUBMIT ELEMENTARY CONTROL DIAGRAMS FOR APPROVAL. SUBMITTALS SHALL INCLUDE INDICATION OF PRIOR REVIEW AND ACCEPTANCE BY TEMPERATURE CONTROL CONTRACTOR. REFER TO DIVISION 15 DRAWINGS AND TEMPERATURE CONTROL DIAGRAMS FOR ADDITIONAL CONDUIT, WIRE, RELAYS, TRANSFORMERS, CONNECTIONS, ETC. REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM.

-Fire Alarm System

1. CONTRACTOR SHALL PROVIDE DEVICES, CONDUIT, WIRES, AND CABLE AS DIRECTED BY EQUIPMENT MANUFACTURER. MATERIALS, EQUIPMENT, AND WORKMANSHIP SHALL MEET PREVAILING CODES. THE SYSTEM SHALL BE COMPLETE AND OPERABLE IN EVERY RESPECT.

-Communication / Low Voltage

1. BOXES FOR TELEPHONE, TV, DATA, WIRING DEVICES, ETC. SHALL BE MINIMUM TWO GANG WITH SINGLE GANG MUD RING.
2. SOUND SYSTEM. CONTRACTOR SHALL PROVIDE ALL CONDUIT, J-BOXES FOR SOUND SYSTEM COMPLETE RACEWAY SYSTEM. CONDUIT SHALL BE A MINIMUM OF UNLESS NOTED. SOUND SYSTEM CONTRACTOR SHALL FURNISH AND INSTALL SPEAKER WIRE, VOLUME CONTROLS, MICROPHONES, AMPLIFIERS, SPLITTERS, ETC. REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM.
3. TELEVISION SYSTEM. CONTRACTOR SHALL PROVIDE ALL CONDUIT, AND J-BOXES (MINIMUM TWO-GANG) FOR A COMPLETE RACEWAY SYSTEM. CONDUIT SHALL BE A MINIMUM OF 3/4" UNLESS NOTED. TELEVISION SYSTEM CONTRACTOR SHALL FURNISH AND INSTALL TV OUTLETS, CABLE, AMPLIFIERS, SPLITTERS, ETC. REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM.
4. SECURITY SYSTEM. CONTRACTOR SHALL PROVIDE ALL CONDUIT, AND J-BOXES (MINIMUM TWO-GANG) FOR A COMPLETE RACEWAY SYSTEM. CONDUIT SHALL BE A MINIMUM OF 3/4" UNLESS NOTED. SECURITY SYSTEM CONTRACTOR SHALL FURNISH AND INSTALL SECURITY PANELS, RECORDING EQUIPMENT, CAMERAS, WIRE, SECURITY DEVICES, ETC. REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM.
5. ELECTRONIC ACCESS SYSTEM. CONTRACTOR SHALL PROVIDE ALL CONDUIT, AND J-BOXES (MINIMUM TWO-GANG) FOR A COMPLETE RACEWAY SYSTEM. CONDUIT SHALL BE A MINIMUM OF 3/4" UNLESS NOTED. ELECTRONIC ACCESS SYSTEM CONTRACTOR SHALL FURNISH AND INSTALL PHONE ENTRY SYSTEM, CARD READERS, ELECTRIC STRIKE CONNECTIONS AND FOBS, ETC. REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM.
6. ALL 3/4" PLYWOOD BACKBOARDS SHALL BE FIRE RATED.
7. PROVIDE CABLE TRAY AT ALL BACKBOARDS AND ASSOCIATED ELEC/COMM ROOMS TO MANAGE THE CABLE COMING INTO EACH ROOM. PROVIDE CABLE TRAY AND/OR CONDUIT THROUGHOUT THE CORRIDORS TO MANAGE THE CABLE FEEDING THE TENANT UNITS. SIZE CABLE TRAY PER MANUFACTURER'S RECOMMENDATIONS FOR THE QUANTITY OF CABLE AT EACH LOCATION. COORDINATE LOCATION OF CABLE TRAY WITH MECHANICAL DUCTWORK AND PIPING.

ELECTRICAL SYMBOLS

LIGHTING

SYMBOL	DESCRIPTION	MTG HGT
	RECESSED LUMINAIRE / INDIRECT	RECESSED
	RECESSED DOWNLIGHT	-
	RECESSED WALL WASH (ARROW INDICATES DIRECTION)	-
	SURFACE LUMINAIRE / INDIRECT	SURFACE / COVE
	SURFACE DOWNLIGHT	-
	SURFACE WALL WASH (ARROW INDICATES DIRECTION)	-
	WALL LUMINAIRE	WALL
	RECESSED WALL LUMINAIRE	-
	SURFACE WALL LUMINAIRE	SURFACE / SUSPEND
	INDUSTRIAL STRIP LUMINAIRE	-
PX	DECORATIVE PENDANT	-
	TRACK LIGHTING *INDICATES NUMBER OF HEADS, REFER TO LUMINAIRE SCHEDULE. *OUTLET BOXES SHALL BE WITH, OR ADJACENT TO, ALL FIXTURES WHERE REQUIRED BY CODE OR NEC. FOR APPROVED WIRING METHODS.	SURFACE / SUSPEND / WALL
	UNDER CABINET LUMINAIRE	UNDER CABINET
	EXTERIOR POLE LUMINAIRE	POLE
	HID WALL	WALL
	BOLLARD	GRADE
	POST TOP	POLE
	3 BLADE FAN	CEILING
	4 BLADE FAN	CEILING
	5 BLADE FAN	CEILING

EGRESS LIGHTING

SYMBOL	DESCRIPTION	MTG HGT
	TWO-LAMP BATTERY PACK	WALL
	TWO-LAMP REMOTE HEAD	WALL
	SINGLE-FACE, WALL EXIT SIGN WITH ARROW	WALL
	SINGLE-FACE, CEILING EXIT SIGN WITH ARROW	CEILING
	DOUBLE-FACE, WALL EXIT SIGN WITH ARROW	WALL
	DOUBLE-FACE, CEILING EXIT SIGN WITH ARROW	CEILING

LUMINAIRE TAGGING

MASTER OR SATELLITE — M — A3 / 22/LL1B / aba

- FIXTURE TYPE: SINGLE LETTER-INTERIOR; DOUBLE LETTER-EXTERIOR
- CIRCUIT NUMBER/PANEL
- SWITCHING: u- UNSWITCHED; NL- NIGHTLIGHT

- NORMAL POWER
- NIGHT LIGHT ON NORMAL POWER
- EMERGENCY POWER

OCCUPANCY SENSOR TAGGING

X-R / a:
- TECHNOLOGY TYPE: U=ULTRASONIC; P=PASSOVE INFRARED
- R=W/ LOW VOLTAGE RELAY
- SWITCHING

NOTE: CEILING MOUNTED OCCUPANCY SENSORS ARE NOT LOCATED ON PLANS. REFER TO CEILING OCCUPANCY SENSOR SCHEDULE ON EACH SHEET FOR REQUIREMENTS. MANUFACTURER TO PROVIDE QUANTITY AND LOCATION OF SENSORS AS REQUIRED TO COVER SPACE.

ELECTRICAL SYMBOL NOTES

1. THESE SYMBOLS ARE A STANDARD LIST. NOT ALL SYMBOLS MAY APPEAR ON THESE DRAWINGS.
2. INSTALL EQUIPMENT AT THE MOUNTING HEIGHT INDICATED BELOW, UNLESS NOTED OTHERWISE ON DRAWINGS. MOUNTING HEIGHTS INDICATED ON ARCHITECTURAL WALL ELEVATIONS TAKE PRECEDENCE OVER MOUNTING HEIGHTS LISTED BELOW. MOUNTING HEIGHTS ARE TO CENTER OF DEVICE FROM FINISHED FLOOR.

MOTOR SYMBOLOGY

XXX / XX — MOTOR IDENTIFICATION

PANELBOARD SYMBOLOGY

LRA1 — *TYPE, *BUILDING, LEVEL*

*TYPE=	*BUILDING=	*LEVEL
Legally Required	A	0
Life Safety	B	1
Power	C	
ELevator		
Distribution		

HOMERUN CIRCUITING SYMBOLOGY

- NEUTRAL WIRE
- CONDUCTOR WIRE(S) (SHOWN ON HOMERUN ONLY)
- LL2A — PANELBOARD IDENTIFICATION
- 2,4,6 — CIRCUIT NUMBER(S)
- HOME RUN

POWER

SYMBOL	DESCRIPTION	MTG HGT
	RECEPTACLE NOTATIONS IG = ISOLATED GROUND GFI = GROUND FAULT INTERRUPTER TR = TAMPER RESISTANT WP = WEATHERPROOF (BLANK) = STANDARD	
	SINGLE-POLE RECEPTACLE - WALL MOUNT	18"
	DUPLEX RECEPTACLE - WALL MOUNT	18"
AC	ABOVE COUNTER DUPLEX RECEPTABLE - WALL MOUNT	ABOVE COUNTER
a	SWITCH DUPLEX RECEPTACLE - WALL MOUNT	18"
	QUAD RECEPTACLE - WALL MOUNT	18"
	SPECIAL PURPOSE RECEPTACLE - WALL MOUNT	18"
	GROUND RECEPTACLE - WALL MOUNT	18"
	SINGLE-POLE RECEPTACLE - CEILING MOUNT	CLG
	DUPLEX RECEPTACLE - CEILING MOUNT	CLG
	QUAD RECEPTACLE - CEILING MOUNT	CLG
	SPECIAL RECEPTACLE - CEILING MOUNT	CLG
	FLOOR BOX / POKE-THROUGH - REFER TO FLOOR BLOX AND POKE-THROUGH SCHEDULE	FLR
	DUPLEX RECEPTACLE - FLOOR MOUNT	FLR
	QUAD RECEPTACLE - FLOOR MOUNT	FLR
	SPECIAL RECEPTACLE - FLOOR MOUNT	FLR
	EMERGENCY DUPLEX RECEPTACLE - CEILING MOUNT	CLG
	EMERGENCY DUPLEX RECEPTACLE - WALL MOUNT	18"
	EMERGENCY 4-PLEX RECEPTACLE - WALL MOUNT	18"
	DUPLEX RECEPTACLE - UNDERCABINET	**
	QUAD RECEPTACLE - UNDERCABINET	**
	SPECIAL PURPOSE RECEPTACLE - UNDERCABINET	**
	SWITCHED RECEPTACLE - UNDERCABINET	**
	DUPLEX DATA RECEPTACLE - UNDERCABINET	**
	JUNCTION BOX - UNDERCABINET	**
	JUNCTION BOX - WALL MOUNT	18"
	JUNCTION BOX - CEILING MOUNT	CLG
	BRANCH CIRCUIT PANELBOARD - FLUSH MOUNT (46" TO THE HIGHEST BREAKER)	46"
	BRANCH CIRCUIT PANELBOARD - WALL MOUNT (46" TO THE HIGHEST BREAKER)	46"
SPC	SPARE FUSE CABINET	
	POWER DISTRIBUTION PANELBOARD OR SWITCHBOARD	
T	TRANSFORMER	60"
MSS $	MOTOR STARTER SWITCH	
	DISCOUNT SWITCH	
	MOTOR STARTER	
	DISCONNECT / MOTOR STARTER	
VFD	VARIABLE FREQUENCY DRIVE	
CUH-1	MOTOR / EQUIPMENT - REFER TO SCHEDULE	
	MULTI-OUTLET ASSEMBLY	
	RACEWAY INSTALLED CONCEALED IN WALL, CEILING, OR SLAB	
	RACEWAY INSTALLED EXPOSED	
	RACEWAY INSTALLED BELOW SLAB OR GRADE	
	RACEWAY SEAL	
B C	RACEWAY (C)-CAPPED (B)-BUSHED	
	RACEWAY (CONDUIT) DOWN	
	RACEWAY (CONDUIT) UP	
	EMERGENCY POWER OFF	
	OVERHEAD DOOR CONTROLLER	

SWITCHING

SWITCHING NOTATIONS
3 = THREE WAY SWITCH
4 = FOUR WAY SWITCH
D = DOOR SWITCH
E = EMERGENCY SWITCH
K = KEYED SWITCH
L = LOW VOLTAGE SWITCH
MC = MOMENTARY CONTACT SWITCH
P = PILOT SWITCH
T = TIMER
WP = WEATHERPROOF SWITCH

SYMBOL	DESCRIPTION	MTG HGT
a $	SINGLE-GANG SWITCH (LIGHT GROUP a)	46"
a b $$	TWO-GANG SWITCH (LIGHT GROUP a,b)	46"
a b c $$$	THREE-GANG SWITCH (LIGHT GROUP a,b,c)	46"
a b c d $$$$	FOUR-GANG SWITCH (LIGHT GROUP a,b,c,d)	46"
D	DIMMER SWITCH	46"
C	CONTRATOR - WALL SWITCH	**
C	CONTRACTOR - CEILING MOUNT	CLG
O	OCCUPANCY SENSOR - WALL MOUNT	**
O	OCCUPANCY SENSOR - CEILING MOUNT	CLG
P	PHOTOCELL - WALL MOUNT	**
P	PHOTOCELL - CEILING MOUNT	CLG
R	RELAY - WALL MOUNT	**
R	RELAY - CEILING MOUNT	CLG
	PUSH BUTTON - WALL MOUNT	**
P	HANDICAPPED DOOR PUSH PLATE	48"
$	TWO-GANG DEVICE ON COMMON PLATE (PROVIDE BARRIER IF 277V AND 120V ARE COMBINED)	48"
$	PUSH BUTTON LIGHTING CONTROL SWITCH - SEE SPECIFICATION 20943 NETWORK LIGHTING CONTROLS	48"

SIGNAL

SYMBOL	DESCRIPTION	MTG HGT
	VOICE OUTLET / AC	18" / 46"
	DATA OUTLET / AC	18" / 46"
	VOICE / DATA OUTLET / AC	18" / 46"
TV	TV / DATA OUTLET	18"
TV	TV / VOICE OUTLET	18"
TV	TV / VOICE / DATA	18"
	INTERCOM OUTLET	46"
T	WALL TELEPHONE OUTLET	46"
TV	TV OUTLET	**
TV	TV OUTLET CEILING	CLG
	VOICE FLOOR BOX OUTLET	FLR
	DATA FLOOR BOX OUTLET	FLR
	VOICE / DATA FLOOR BOX OUTLET	FLR
	CEILING MOUNTED DATA, VOICE AND VOICE / DATA OUTLET	CLG
S	SPEAKER	CLG
S	WALL SPEAKER	96" OR 8" BFC
C	CLOCK	96" OR 8" BFC
C T	TIME CLOCK	**
B	BELL	**
B	BUZZER	**
CH	CHIME	**
	CHIME LIGHT CEILING	CLG
CH	CHIME LIGHT WALL	**
	CABLE TRAY	**
V	VOLUME CONTROL	**

FIRE ALARM

SYMBOL	DESCRIPTION	MTG HGT
F	FIRE ALARM PULL STATION	42"
F	FIRE ALARM AUDIO DEVICE	86"
F	FIRE ALARM VISUAL DEVICE	86"
F	FIRE ALARM VISUAL DEVICE	CLG
F	FIRE ALARM AUDIO / VISUAL DEVICE	86"
F	FIRE ALARM AUDIO / VISUAL DEVICE	CLG
S	FIRE ALARM SPEAKER DEVICE	86"
S	FIRE ALARM SPEAKER / VISUAL DEVICE	86"
S	SMOKE DETECTOR - CEILING MOUNT	CLG
H	HEAT DETECTOR - CEILING MOUNT	CLG
CC	CARBON MONOXIDE DETECTOR	CLG
SC	DUAL SMOKE / CO DETECTOR	CLG
S	SMOKE DETECTOR W/ VISUAL DEVICE	CLG
H	DUCT HEAT DETECTOR	
S	DUCT SMOKE DETECTOR	
H	MEGNETIC DOOR HOLD FLOOR	
H	MEGNETIC DOOR HOLD	
FAAP	FIRE ALARM ANNUNCIATOR PANEL	
FACP	FIRE ALARM CONTROL PANEL	
FS	FLOW SWITCH	
TS	TAMPER SWITCH	
D	SMOKE DAMPER	
S FA	FIRE ALARM SPEAKER	
M	MONITOR MODULE	

SECURITY

SYMBOL	DESCRIPTION	MTG HGT
	CCTV CAMERA - WALL MOUNT	**
	CCTV - CEILING MOUNT	CLG
CR	CARD READER	46"
D	DOOR CONTACT	**
E	ELECTRIC STRIKE	**
G	GLASS BREAK	**
K	KEY PAD	**
M	MOTION SENSOR	**
M	MOTION SENSOR - WALL MOUNT	96" OR 8" BFC
S	SIREN - WALL MOUNT	**
S	SIREN - CEILING MOUNT	CLG
W	WIRELESS ASSET PROTECTION DEVICE	

20A CIRCUITS CONDUCTORS SHALL BE SIZED AS FOLLOWS:

120V CCT LENGTH	277V CCT LENGTH	AWG
<75'	<75'	12
75'-120'	75'-280'	10
120'-200'	280'-480'	8
>200'	>480'	6

SHEET NOTES

A. THE PURPOSE OF THIS SHEET IS TO ILLUSTRATE AND DEFINE TYPICAL GRAPHICS SYMBOLS AND SYSTEMS OF GRAPHIC SYMBOLS WHICH MAY OCCUR ON THE ELECTRICAL DRAWINGS.
B. THE ILLUSTRATION OF A SYMBOL OR SYSTEM OF SYMBOLS ON THIS SHEET DOES NOT NECESSARILY INDICATE THAT THE BUILDING ITEM OR SYSTEM DESCRIBED BY THE SYMBOL IS USED AS PART OF THE WORK OF THIS PROJECT. REFER TO THE PLANS, ELEVATIONS, SECTIONS, SCHEDULES, DETAILS, AND SPECIFICATIONS TO DETERMINE THE SCOPE OF THE WORK.
C. SYMBOLS ARE NOT DRAWN TO SCALE. TO DETERMINE ACTUAL SIZES OF ELEMENTS REPRESENTED BY SYMBOLS, REFER TO THE SPECIFICATIONS AND OTHER DRAWINGS AS MAY APPLY.
D. FOR INFORMATION REGARDING SYMBOLS WHICH ARE USED AS ABBREVIATIONS, REFER TO THE ELECTRICAL ABBREVIATIONS SHOWN ON THIS SHEET.
E. CERTAIN SYMBOLS MAY INCORPORATE SPECIAL ABBREVIATIONS AS PART OF THE SYMBOL. SUCH ABBREVIATIONS ARE AS DEFINED ON THIS SHEET.

ELECTRICAL SHEET INDEX

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SHEET TITLE

ELECTRICAL COVERSHEET

SHEET NUMBER

E001

ELECTRICAL SITE PLAN GENERAL NOTES

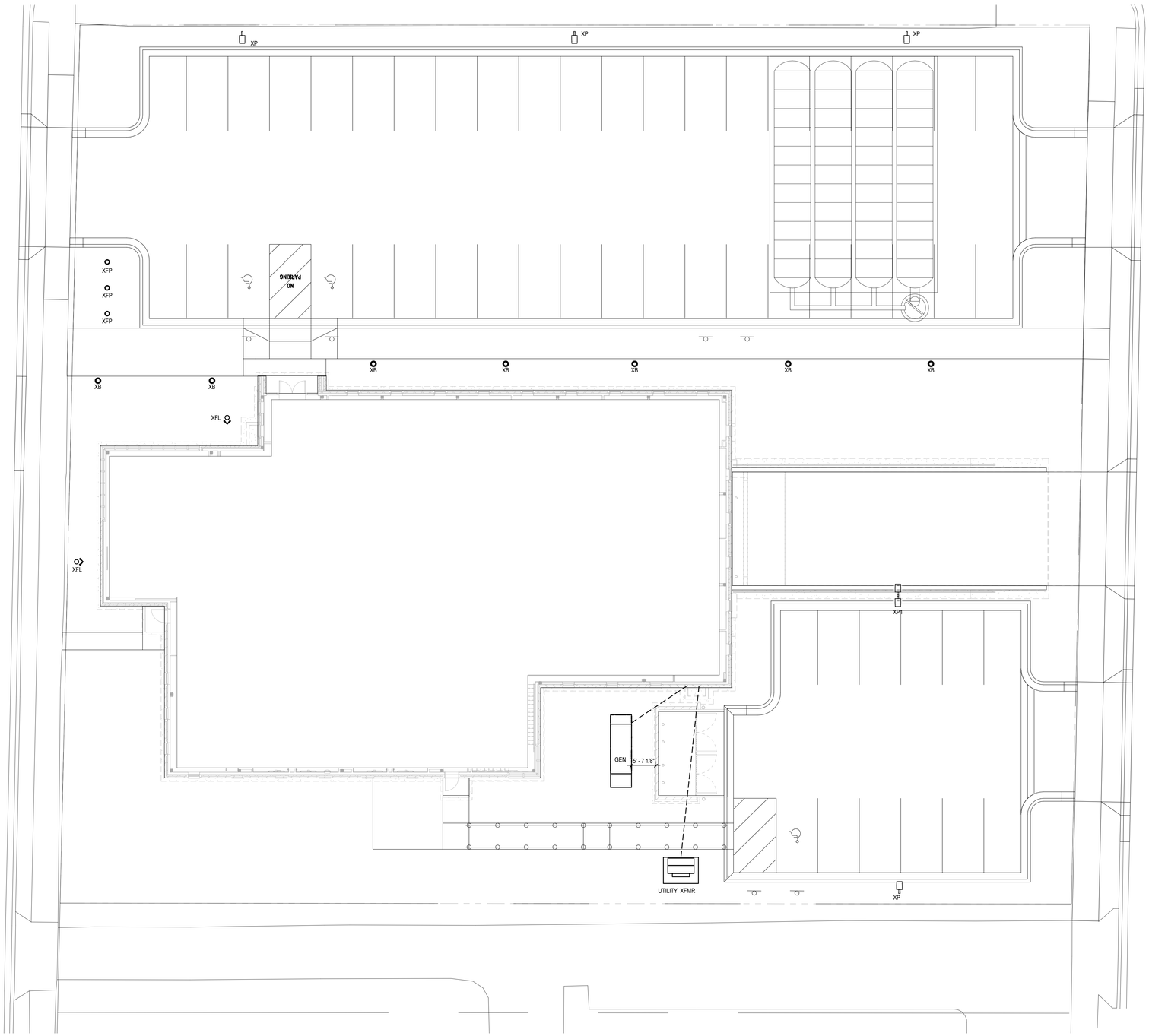
A PROVIDE ALL COORDINATION AND SCHEDULING FOR NEW ELECTRICAL PAD MOUNT SERVICE INSTALLATION. VERIFY EXACT LOCATION AND ROUTING OF SERVICE ENTRANCE CONDUITS WITH ENGINEER AND GENERAL CONTRACTOR PRIOR TO INSTALLATION.

B PROVIDE ALL COORDINATION AND SCHEDULING WITH TELEPHONE/DATA/TELEVISION SERVICE PROVIDERS FOR SERVICE INSTALLATION. VERIFY EXACT LOCATION AND ROUTING OF ENTRANCE CONDUITS WITH ENGINEER AND GENERAL CONTRACTOR PRIOR TO INSTALLATION.

C PROVIDE LOCKABLE ENCLOSURE FOR ALL EQUIPMENT CONTAINING DISCONNECTING DEVICES WITHIN REACH OF PUBLIC.

D CONNECT ALL LIGHTING IN THIS AREA TO PANEL P-0B UNLESS NOTED OTHERWISE.

E CONNECT ALL RECEPTACLES AND OTHER LOADS IN THIS AREA TO PANEL P0B UNLESS NOTED OTHERWISE.



1 E010 SITE PLAN - ELECTRICAL
3/32" = 1'-0"

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SITE PLAN

SHEET NUMBER

E010

TRUE NORTH PLAN NORTH

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2/20/2020 9:00:02 AM

ELECTRICAL PARKING GARAGE PLAN GENERAL NOTES

A ALL RECEPTACLES ON THIS PLAN SHALL BE WEATHER PROOF GFI TYPE AND MOUNTED AT 48" AFF. STAIRWELL RECEPTACLES SHALL BE MOUNTED AT STANDARD HEIGHT.

B ALL EXIT SIGNS AND EGRESS LIGHTING TO BE CONNECTED TO NEAREST EMERGENCY/LIFE SAFETY PANEL AHEAD OF ANY SWITCHING.

C PROVIDE CONDUIT FOR ALL LOW-VOLTAGE WIRING, INCLUDING BUT NOT LIMITED TO FIRE ALARM, SECURITY CAMERAS, CARD READERS AND DATA LINES AS REQUIRED BY CODE AND/OR LOCAL AUTHORITY HAVING JURISDICTION.

D PROVIDE CONDUIT WHERE REQUIRED BY CODE TO EACH J-BOX LABELED CO FROM CARBON MONOXIDE CONTROLLER. PROVIDE ELECTRICAL CONNECTION TO CONTROLLER AS REQUIRED. SEE MECHANICAL PLANS FOR EXACT LOCATION AND QUANTITY.

E PROVIDE LOCKABLE ENCLOSURE FOR ALL EQUIPMENT CONTAINING DISCONNECTING DEVICES WITHIN REACH OF TENANT.

F OFFSET DEVICES MOUNTED ON EXTERIOR WALLS SO AS TO AVOID POTENTIAL WATER PENETRATION. PROVIDE UNISTRUT OR SIMILAR AS REQUIRED. COORDINATE SOLUTION WITH ARCHITECT PRIOR TO INSTALLATION.

G PROVIDE FIRE ALARM MONITOR MODULE FOR GARAGE SPACE FREEZE DETECTOR. COORDINATE WITH FIRE SPRINKLER CONTRACTOR.

H REFER TO OCCUPANCY SENSOR SCHEDULE ON SHEET E500 FOR SENSOR DESIGNATIONS.

I PROVIDE TAMPER SWITCHES, FLOW SWITCHES AND MONITOR MODULES AS REQUIRED FOR SPRINKLER SYSTEM. COORDINATE EXACT QUANTITIES AND LOCATIONS WITH SPRINKLER SYSTEM CONTRACTOR.

J PROVIDE 120V CONNECTION FOR MOTORIZED DAMPERS FROM LEGALLY REQUIRED PANEL. PROVIDE A FIRE MONITOR MODULE FOR MONITORING THE POSITION OF THE DAMPER UTILIZING THE N-SWITCH. PROVIDE A CONTROL MODULE AND A 120V RELAY TO CONTROL THE POSITION OF THE DAMPER.

K FIRE ALARM SYSTEM DESIGN TO BE BY FIRE ALARM SUBCONTRACTOR.

L CIRCUIT LIGHTING IN THIS AREA TO PANEL "LS-1" UNLESS NOTED OTHERWISE.

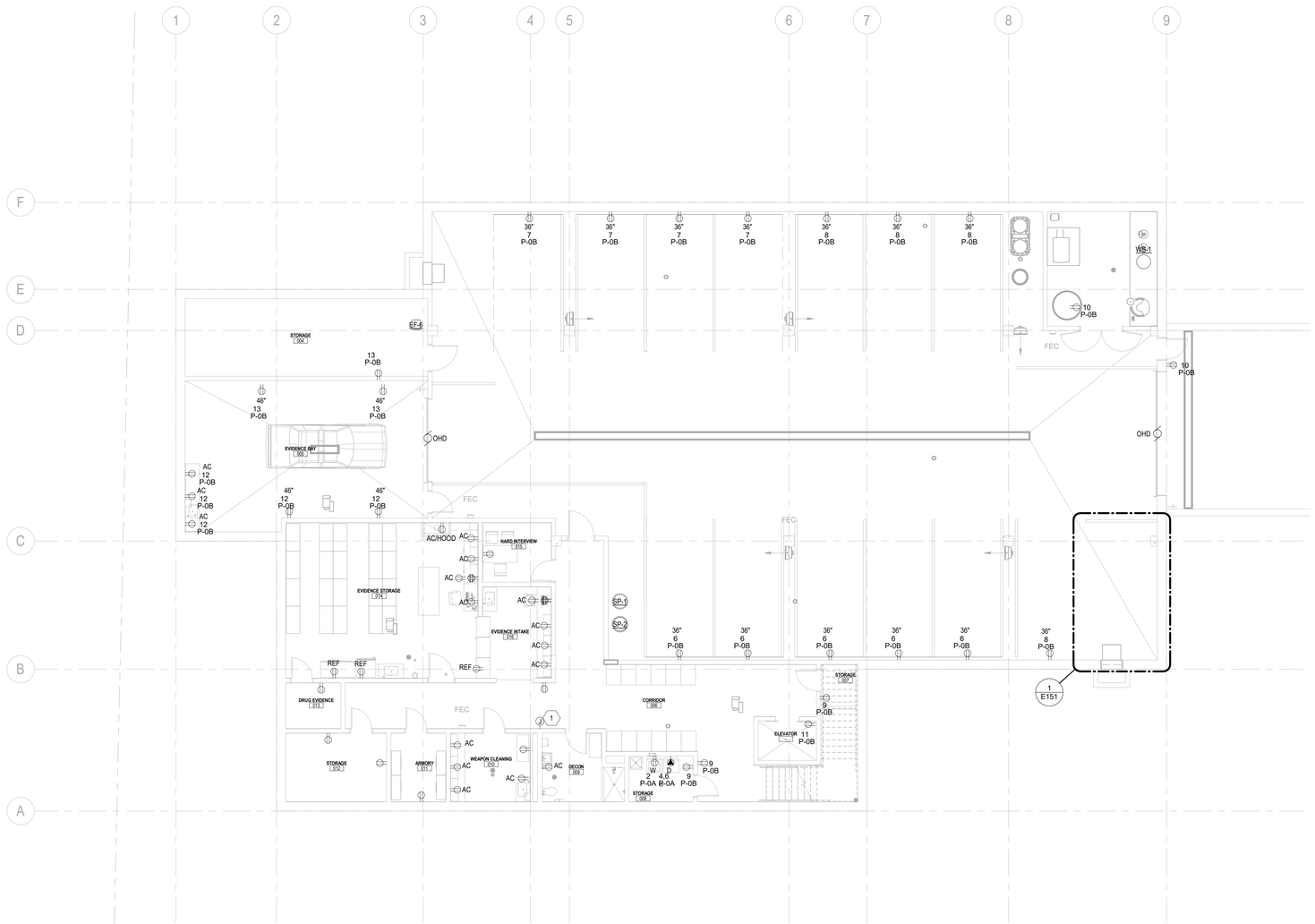
M MAINTAIN 8'-2" CLEARANCE REQUIREMENT IN THE DRIVE AISLES AND HANDICAP VAN STALLS AND 7'-0" CLEARANCE ELSEWHERE. COORDINATE WITH ARCHITECTURAL CODE PLAN AND STARUCTURAL PLANS.

N REFER TO ARCHITECTURAL, MECHANICAL AND PLUMBING PLANS AND SPECIFICATIONS FOR EQUIPMENT, DEVICE AND APPLIANCE POWER REQUIREMENTS. EQUIPMENT AND DEVICES SHOWN ON ELECTRICAL PLANS ARE FOR REFERENCE ONLY. VERIFY EXACT REQUIREMENTS, LOCATIONS AND QUANTITIES.
CIRCUIT RECEPTACLES IN THIS AREA TO PANEL P1 UNLESS NOTED OTHERWISE.

O ALL 125V, SINGLE-PHASE, 15A AND 20A RECEPTACLES INSTALLED IN DWELLING UNITS IN THE FLOWING LOCATIONS SHALL HAVE GROUND-FAULT CIRCUIT INTERRUPTER PROTECTION FOR PERSONNEL: BATHROOMS, GARAGES, BELOW GRADE LEVEL NOT INTENDED AS HABITABLE ROOMS, OUTDOORS, CRAWL SPACES AT OR BELOW GRADE LEVEL, UNFINISHED BASEMENTS, KITCHENS RECEPTACLES INSTALLED TO SERVE THE COUNTERTOP SURFACES, RECEPTACLES WITHIN (6 FT) OF THE OUTSIDE EDGE OF THE SINK, RECEPTACLES INSTALLED WITHIN (6 FT) OF THE OUTSIDE EDGE OF THE BATHTUB OR SHOWER STALL, AND LAUNDRY AREAS. THE GROUND-FAULT CIRCUIT-INTERRUPTER SHALL BE INSTALLED IN A READILY ACCESSIBLE LOCATION.

P ALL 125V, SINGLE PHASE, 15A AND 20A RECEPTACLES INSTALLED IN OTHER THAN DWELLING UNITS IN THE FOLLOWING LOCATIONS SHALL HAVE GROUND-FAULT CIRCUIT INTERRUPTER PROTECTION FOR PERSONNEL: BATHROOMS, KITCHENS, ROOFTOPS, OUTDOORS, RECEPTACLES INSTALLED WITHIN (6 FT) OF THE OUTSIDE EDGE OF THE SINK, INDOOR WET LOCATIONS, LOCKER ROOMS WITH ASSOCIATED SHOWERING FACILITIES AND GARAGES. THE GROUND-FAULT CIRCUIT-INTERRUPTER SHALL BE INSTALLED IN A READILY ACCESSIBLE LOCATION.

Q ALL 120V, SINGLE-PHASE, 15 A AND 20A BRANCH CIRCUITS SUPPLYING OUTLETS OR DEVICES INSTALLED IN DWELLING UNIT KITCHENS, FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS, BEDROOMS, SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS, LAUNDRY AREAS, OR SIMILAR ROOMS OR AREAS SHALL BE PROVIDED WITH ARC-FAULT CIRCUIT-INTERRUPTER PROTECTION. THE ARC-FAULT CIRCUIT INTERRUPTER SHALL BE INSTALLED IN A READILY ACCESSIBLE LOCATION.



2 E100 LOWER LEVEL ELECTRICAL PLAN
1/8" = 1'-0"

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LOWER LEVEL ELECTRICAL PLAN

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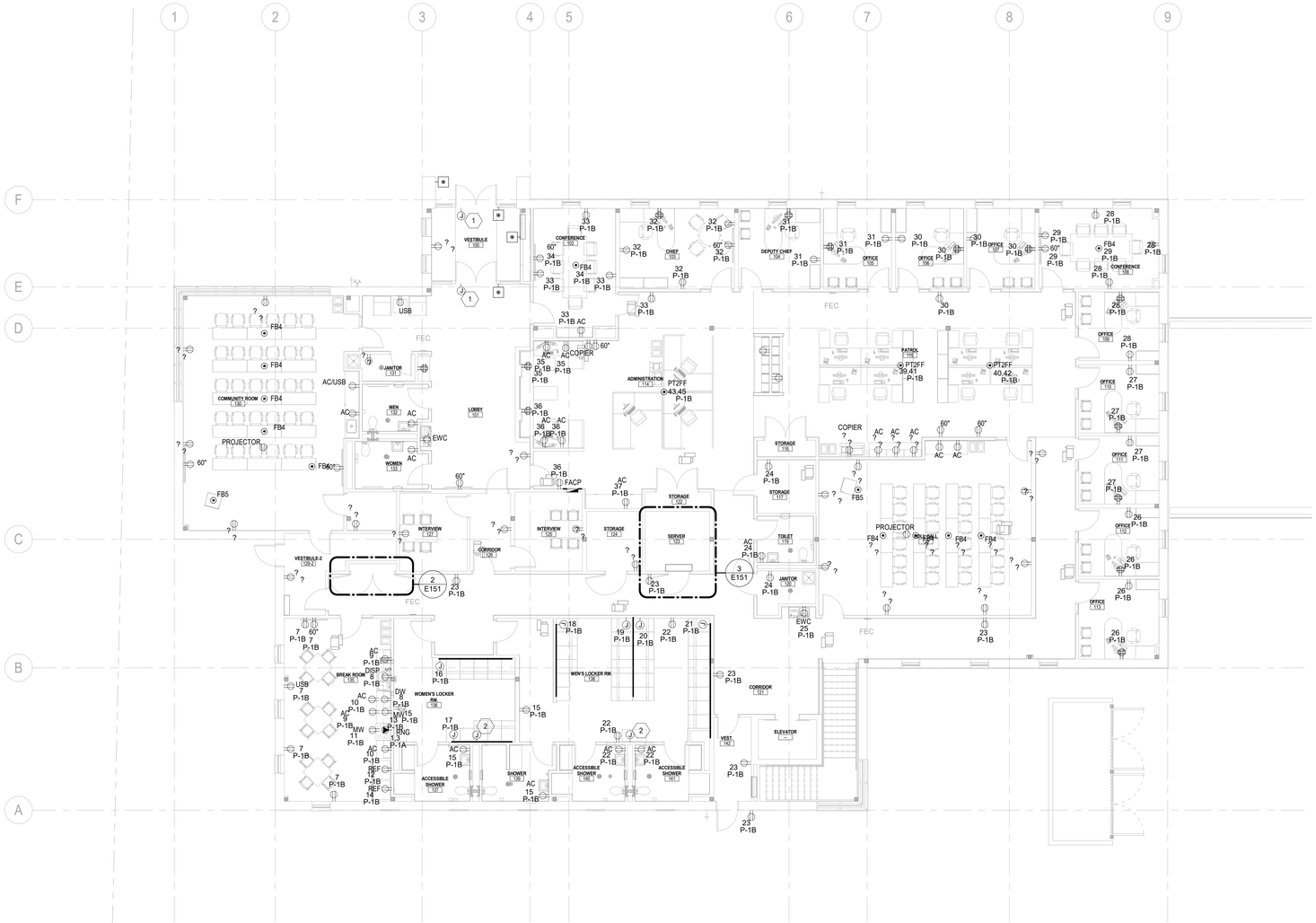

ELECTRICAL FLOOR PLAN GENERAL NOTES

A CIRCUIT ALL EXIT SIGNS AND EGRESS LIGHTING TO NEAREST EMERGENCY/LIFE SAFETY PANEL AHEAD OF ANY SWITCHING.

B ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN FIRE RATINGS OF ALL PENETRATIONS THROUGH WALL, FLOOR AND/OR CEILING AS REQUIRED BY CODE. PROVIDE FIRE RATED ENCLOSURES FOR RECESSED FIXTURES AND DEVICES INCLUDING BUT NOT LIMITED TO DOWN LIGHTS, SPEAKERS, POKE-THRU FLOOR BOXES, ETC.

C PROVIDE CONDUIT FOR ALL EXPOSED LOW-VOLTAGE WIRING, INCLUDING BUT NOT LIMITED TO FIRE ALARM, SECURITY CAMERAS, DOOR ACCESS CONTROLS AND DATA LINES AS REQUIRED BY CODE AND/OR LOCAL AUTHORITY HAVING JURISDICTION.

D PROVIDE 120V CONNECTION FOR MOTORIZED DAMPERS FROM LEGALLY REQUIRED PANEL. SEE MECHANICAL PLANS FOR EXACT QUANTITIES AND LOCATIONS. PROVIDE A FIRE ALARM MONITOR MODULE FOR MONITORING THE POSITION OF THE DAMPER UTILIZING THE N-SWITCH. PROVIDE A CONTROL MODULE AND A 120V RELAY TO CONTROL THE POSITION OF THE DAMPER.

E COORDINATE EXACT LOCATION OF BUILDING MOUNTED EXTERIOR LIGHTING WITH ARCHITECTURAL ELEVATION PLANS.

F FIRE ALARM SYSTEM TO BE DESIGNED BY FIRE ALARM SUBCONTRACTOR. DEVICES IF PRESENT ARE SHOWN FOR COORDINATION PURPOSES ONLY - SEE SPEC 288000.

G LOCAL SECURITY/ACCESS CONTROL REQUIRED AT ALL WALKOUT UNITS ON FIRST FLOOR AND COURTYARDS. SEE FLOOR PLAN AND COURTYARD PLANS FOR QUANTITIES.

H REFER TO ARCHITECTURAL, MECHANICAL AND PLUMBING PLANS AND SPECIFICATIONS FOR EQUIPMENT, DEVICES AND APPLIANCE POWER REQUIREMENTS. EQUIPMENT AND DEVICES SHOWN ON PLANS ARE FOR REFERENCE ONLY - VERIFY LOCATION AND QUANTITIES.

I COORDINATE EXACT LOCATION OF CORRIDOR PENDANT MOUNTED UNIT ENTRY LIGHT WITH ARCHITECTURAL ELEVATION PLAN, SEE ARCHITECTURAL SHEET I202 FOR MORE INFORMATION.

J SEE MECHANICAL & PLUMBING EQUIPMENT COORDINATION SHEETS ME801 & ME802 FOR EQUIPMENT POWER AND CONTROL REQUIREMENTS.

K ALL 125V, SINGLE PHASE, 15A AND 20A RECEPTACLES INSTALLED IN DWELLING UNITS IN THE FLOWING LOCATIONS SHALL HAVE GROUND FAULT CIRCUIT INTERRUPTER PROTECTION FOR PERSONNEL: BATHROOMS, GARAGES, BELOW GRADE LEVEL NOT INTENDED AS HABITABLE ROOMS, OUTDOORS, CRAWL SPACES AT OR BELOW GRADE LEVEL, UNFINISHED BASEMENTS, KITCHEN RECEPTACLES INSTALLED TO SERVE THE COUNTERTOP SURFACES, RECEPTACLES WITHIN (6 FT) OF THE OUTSIDE EDGE OF THE SINK, RECEPTACLES INSTALLED WITHIN (6 FT) OF THE OUTSIDE EDGE OF THE BATHTUB OR SHOWER STALL, AND LAUNDRY AREAS. THE GROUND FAULT CIRCUIT INTERRUPTER SHALL BE INSTALLED IN A READILY ACCESSIBLE LOCATION.

L ALL 125V, SINGLE PHASE, 15A AND 20A RECEPTACLES INSTALLED IN OTHER THAN DWELLING UNITS IN THE FOLLOWING LOCATIONS SHALL HAVE GROUND-FAULT CIRCUIT INTERRUPTER PROTECTION FOR PERSONNEL: BATHROOMS, KITCHENS, ROOFTOPS, OUTDOORS, RECEPTACLES INSTALLED WITHIN (6 FT) OF THE OUTSIDE EDGE OF THE SINK, INDOOR WET LOCATIONS, LOCKER ROOMS WITH ASSOCIATED SHOWERING FACILITIES AND GARAGES. THE GROUND FAULT CIRCUIT INTERRUPTER SHALL BE INSTALLED IN A READILY ACCESSIBLE LOCATION.

M ALL 120V, SINGLE PHASE, 15 A AND 20A BRANCH CIRCUITS SUPPLYING OUTLETS OR DEVICES INSTALLED IN DWELLING UNIT KITCHENS, FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS, BEDROOMS, SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS, LAUNDRY AREAS, OR SIMILAR ROOMS OR AREAS SHALL BE PROVIDED WITH ARC FAULT CIRCUIT INTERRUPTER PROTECTION. THE ARC FAULT CIRCUIT INTERRUPTER SHALL BE INSTALLED IN A READILY ACCESSIBLE LOCATION.

KEYNOTES

1 PROVIDE POWER AND CONTROL WIRING AND CONNECTION FOR AUTOMATIC DOOR OPENER; DOOR OPENER SHALL BE MOUNTED AT 36" AFF.

2 PROVIDE 120V POWER FOR AUTOMATIC FLUSH TRANSFORMERS. COORDINATE EXACT LOCATION, QUANTITY, AND REQUIREMENTS WITH PLUMBING INSTALLER IN FIELD.

2 E101 LEVEL 1 ELECTRICAL PLAN
1/8" = 1'-0"

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LEVEL 1 ELECTRICAL PLAN

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E101

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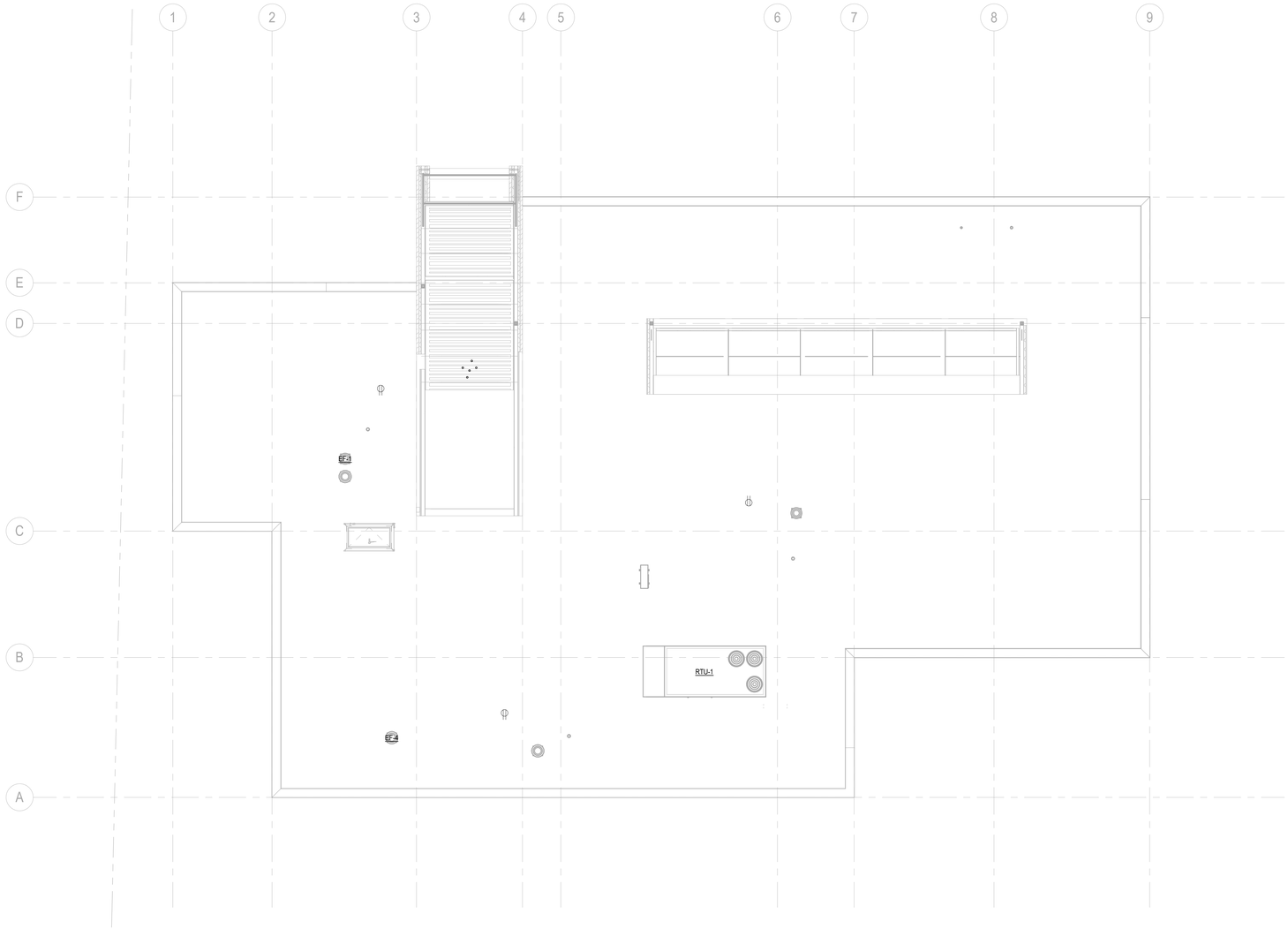
2/20/2020 9:00:06 AM

ELECTRICAL ROOF PLAN GENERAL NOTES

A PROVIDE WEATHER PROOF GFI RECEPTACLES WITHIN 25'-0" OF ROOFTOP EQUIPMENT. RECEPTACLES TO BE INSTALLED IN ROOF CURB OF EQUIPMENT.

B RECEPTACLES ON THIS LEVEL ARE TO BE WIRED TO PANEL XX UNLESS NOTED OTHERWISE.



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ROOF ELECTRICAL PLAN

SHEET NUMBER

E141

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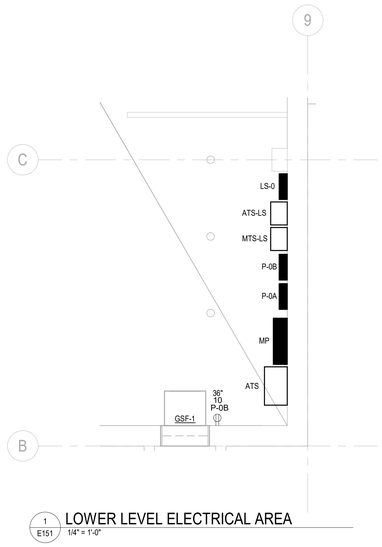
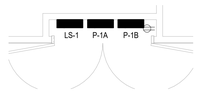
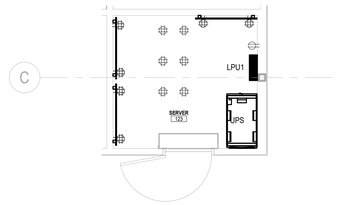


1 E151 LOWER LEVEL ELECTRICAL AREA
1/4" = 1'-0"



2 E151 LEVEL 1 ELECTRICAL CLOSET
1/4" = 1'-0"



3 E151 LEVEL 1 SERVER ROOM
1/4" = 1'-0"

ELECTRICAL FLOOR PLAN GENERAL NOTES

A CIRCUIT ALL EXIT SIGNS AND EGRESS LIGHTING TO NEAREST EMERGENCY/LIFE SAFETY PANEL AHEAD OF ANY SWITCHING.

B ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN FIRE RATINGS OF ALL PENETRATIONS THROUGH WALL, FLOOR AND/OR CEILING AS REQUIRED BY CODE. PROVIDE FIRE RATED ENCLOSURES FOR RECESSED FIXTURES AND DEVICES INCLUDING BUT NOT LIMITED TO DOWN LIGHTS, SPEAKERS, POKE-THRU FLOOR BOXES, ETC.

C PROVIDE CONDUIT FOR ALL EXPOSED LOW-VOLTAGE WIRING, INCLUDING BUT NOT LIMITED TO FIRE ALARM, SECURITY CAMERAS, DOOR ACCESS CONTROLS AND DATA LINES AS REQUIRED BY CODE AND/OR LOCAL AUTHORITY HAVING JURISDICTION.

D PROVIDE 120V CONNECTION FOR MOTORIZED DAMPERS FROM LEGALLY REQUIRED PANEL. SEE MECHANICAL PLANS FOR EXACT QUANTITIES AND LOCATIONS. PROVIDE A FIRE ALARM MONITOR MODULE FOR MONITORING THE POSITION OF THE DAMPER UTILIZING THE N-SWITCH. PROVIDE A CONTROL MODULE AND A 120V RELAY TO CONTROL THE POSITION OF THE DAMPER.

E COORDINATE EXACT LOCATION OF BUILDING MOUNTED EXTERIOR LIGHTING WITH ARCHITECTURAL ELEVATION PLANS.

F FIRE ALARM SYSTEM TO BE DESIGNED BY FIRE ALARM SUBCONTRACTOR. DEVICES IF PRESENT ARE SHOWN FOR COORDINATION PURPOSES ONLY - SEE SPEC 288000.

G LOCAL SECURITY/ACCESS CONTROL REQUIRED AT ALL WALKOUT UNITS ON FIRST FLOOR AND COURTYARDS. SEE FLOOR PLAN AND COURTYARD PLANS FOR QUANTITIES.

H REFER TO ARCHITECTURAL, MECHANICAL AND PLUMBING PLANS AND SPECIFICATIONS FOR EQUIPMENT, DEVICES AND APPLIANCE POWER REQUIREMENTS. EQUIPMENT AND DEVICES SHOWN ON PLANS ARE FOR REFERENCE ONLY - VERIFY LOCATION AND QUANTITIES.

I COORDINATE EXACT LOCATION OF CORRIDOR PENDANT MOUNTED UNIT ENTRY LIGHT WITH ARCHITECTURAL ELEVATION PLAN, SEE ARCHITECTURAL SHEET I202 FOR MORE INFORMATION.

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K ALL 125V, SINGLE PHASE, 15A AND 20A RECEPTACLES INSTALLED IN DWELLING UNITS IN THE FLOWING LOCATIONS SHALL HAVE GROUND FAULT CIRCUIT INTERRUPTER PROTECTION FOR PERSONNEL: BATHROOMS, GARAGES, BELOW GRADE LEVEL NOT INTENDED AS HABITABLE ROOMS, OUTDOORS, CRAWL SPACES AT OR BELOW GRADE LEVEL, UNFINISHED BASEMENTS, KITCHEN RECEPTACLES INSTALLED TO SERVE THE COUNTERTOP SURFACES, RECEPTACLES WITHIN (6 FT) OF THE OUTSIDE EDGE OF THE SINK, RECEPTACLES INSTALLED WITHIN (6 FT) OF THE OUTSIDE EDGE OF THE BATHTUB OR SHOWER STALL, AND LAUNDRY AREAS. THE GROUND FAULT CIRCUIT INTERRUPTER SHALL BE INSTALLED IN A READILY ACCESSIBLE LOCATION.

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BKV GROUP
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Interior Design
Landscape Architecture
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Telephone: 612.339.3752
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EOE

CONSULTANTS

PROJECT TITLE

DETROIT LAKES
POLICE STATION

ISSUE #	DATE	DESCRIPTION
	12/16/2019	DESIGN DEVELOPMENT

CERTIFICATION

DRAWN BY	GMS
CHECKED BY	Checker
COMMISSION NUMBER	2106-02

SHEET TITLE

ENLARGED
ELECTRICAL
ROOM PLANS

SHEET NUMBER

E151

BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_MEP_R19.rvt
2/20/2020 9:00:07 AM

ELECTRICAL FLOOR PLAN GENERAL NOTES

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KEYNOTES

1 / E300 LOWER LEVEL
1/8" = 1'-0"

BKV GROUP
Architecture
Interior Design
Landscape Architecture
Engineering

Boarman
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Inc.

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CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION
	12/16/2019	DESIGN DEVELOPMENT

CERTIFICATION

DRAWN BY	GMS
CHECKED BY	Checker
COMMISSION NUMBER	2106-02

SHEET TITLE

LOWER LEVEL LIGHTING PLAN

SHEET NUMBER

E300

TRUE NORTH PLAN NORTH

BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_MEP_R19.rvt
2/20/2020 9:00:07 AM

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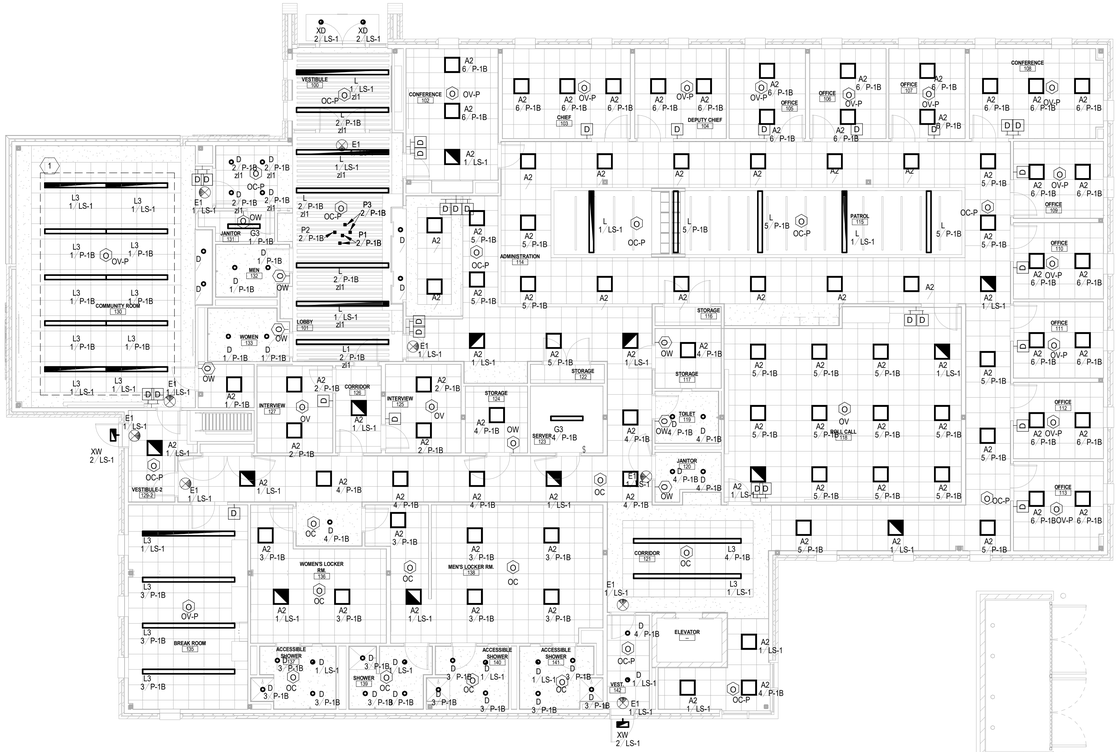
KEYNOTES

1 ADD ALTERNATE: CHANGE LUMINAIRES TYPE L3 TO TYPE L IN THIS AREA.



1 Level 1 Electrical RCP
E301 1/8" = 1'-0"

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EOE

CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION
	12/16/2019	DESIGN DEVELOPMENT

CERTIFICATION

DRAWN BY	GMS
CHECKED BY	Checker
COMMISSION NUMBER	2106-02

SHEET TITLE

LEVEL 1
LIGHTING PLAN

SHEET NUMBER

E301

TRUE NORTH PLAN NORTH

BIM 360:///2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_MEP_R19.rvt
2/20/2020 9:00:08 AM

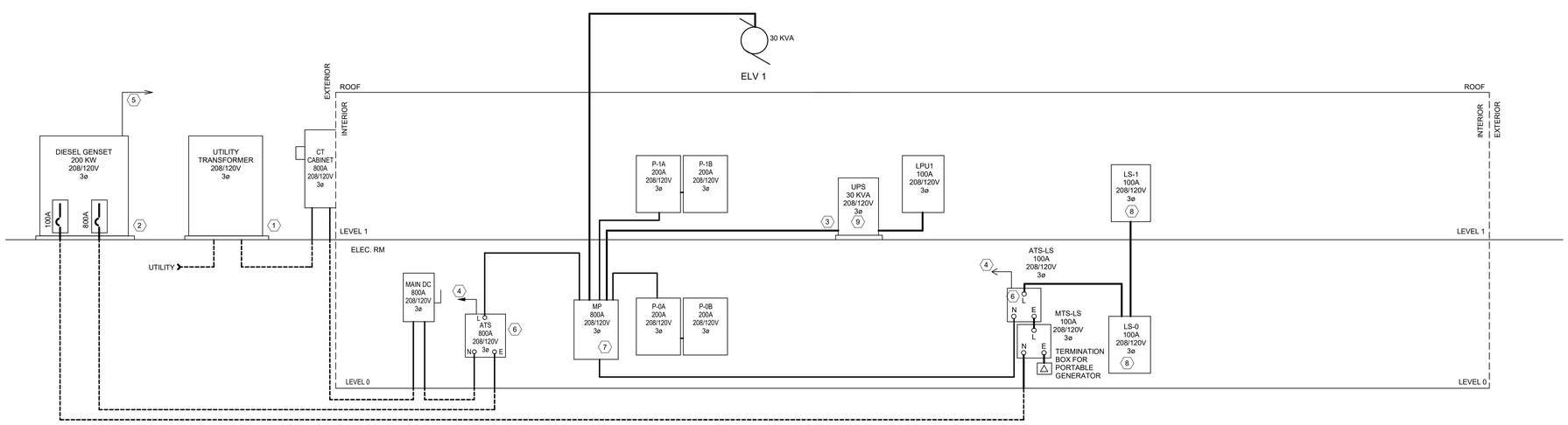
3Ø FEEDER SCHEDULE				
	COPPER		ALUMINUM	
MARK (AMPACITY)	FEEDER 3W (NO NEUTRAL) PH-GND-C	FEEDER 4W (W/ NEUTRAL) PH-GND-C	FEEDER 3W (NO NEUTRAL) PH-GND-C	FEEDER 4W (W/ NEUTRAL) PH-GND-C
20	12-12-1/2"	12-12-1/2"	NOT ALLOWED	NOT ALLOWED
30	10-10-3/4"	10-10-3/4"	NOT ALLOWED	NOT ALLOWED
40	8-10-3/4"	8-8-3/4"	NOT ALLOWED	NOT ALLOWED
50	6-10-1"	6-8-1"	NOT ALLOWED	NOT ALLOWED
60	4-8-1 1/4"	4-8-1 1/4"	NOT ALLOWED	NOT ALLOWED
80	3-8-1 1/4"	3-8-1 1/4"	NOT ALLOWED	NOT ALLOWED
100	3-8-1 1/4"	3-8-1 1/4"	1-6-1 1/2"	1-6-1 1/2"
125	1-6-1 1/2"	1-6-1 1/2"	2/0-4-1 1/2"	2/0-4-2"
150	1/0-6-1 1/2"	1/0-6-2"	3/0-4-2"	3/0-4-2"
175	2/0-6-1 1/2"	2/0-6-2"	4/0-4-2"	4/0-4-2 1/2"
200	3/0-6-2"	3/0-6-2"	250KCMIL-4-2 1/2"	250KCMIL-4-2 1/2"
225	4/0-4-2"	4/0-4-2 1/2"	300KCMIL-2-2 1/2"	300KCMIL-2-3"
250	250KCMIL-4-2 1/2"	250KCMIL-4-2 1/2"	400KCMIL-2-3"	400KCMIL-2-3"
300	350KCMIL-4-2 1/2"	350KCMIL-4-3"	500KCMIL-2-3"	500KCMIL-2-3 1/2"
400	500KCMIL-3-3"	500KCMIL-3-3 1/2"	(2) 250KCMIL-1-2 1/2"	(2) 250KCMIL-1-3"
500	(2) 250KCMIL-2-2 1/2"	(2) 250KCMIL-2-3"	(2) 400KCMIL-1/0-3"	(2) 400KCMIL-1/0-3 1/2"
600	(2) 350KCMIL-1-3"	(2) 350KCMIL-1-3"	(2) 500KCMIL-2/0-3"	(2) 500KCMIL-2/0-3 1/2"
800	(2) 500MCKIL-1/0-3"	(2) 500MCKIL-1/0-3 1/2"	(3) 500KCMIL-3/0-3"	(3) 500KCMIL-3/0-3 1/2"
1000	(3) 400KCMIL-2/0-3"	(3) 400KCMIL-2/0-3 1/2"	(3) 600KCMIL-4/0-3 1/2"	(3) 600KCMIL-4/0-3 1/2"
1200	(4) 350KCMIL-3/0-3"	(4) 350KCMIL-3/0-3"	(4) 500KCMIL-250KCMIL-3 1/2"	(4) 500KCMIL-250KCMIL-3 1/2"
1600	(5) 400KCMIL-4/0-3"	(5) 400KCMIL-4/0-3 1/2"	(5) 600KCMIL-350KCMIL-3 1/2"	(5) 600KCMIL-350KCMIL-3 1/2"
2000	(5) 600KCMIL-250KCMIL-4"	(5) 600KCMIL-250KCMIL-3 1/2"	(6) 600KCMIL-450KCMIL-4"	(6) 600KCMIL-450KCMIL-3 1/2"
2500	(6) 600KCMIL-350KCMIL-4"	(6) 600KCMIL-350KCMIL-3 1/2"	(8) 500KCMIL-500KCMIL-4"	(8) 500KCMIL-500KCMIL-3 1/2"
3000	(8) 500KCMIL-400KCMIL-3 1/2"	(8) 500KCMIL-400KCMIL-3 1/2"	(10) 500KCMIL-500KCMIL-4"	(10) 500KCMIL-500KCMIL-3 1/2"

ELECTRICAL RISER GENERAL NOTES

A EMT USED FOR PURPOSES OF SIZING CONDIT. CONTRACTOR TO VERIFY PROPER SIZE OF CONDUIT IF DIFFERENT THAN EMT. CONDUIT NEEDE ONLY WHEN REQUIRED BY NEC.
B SEE DETAIL 4/E6000 AND SPECIFICATIONS FOR GROUNDING REQUIREMENTS.
C ROCK MAY BE PRESENT UNDER SLAB. COORDINATE ANY UNDER SLAB TRENCHING REQUIRED FOR ELECTRICAL LINES WITH GENERAL CONTRACTOR.

KEY NOTES:

1. PROVIDE CONCRETE TRANSFORMER PAD PER UTILITY COMPANY REQUIREMENTS. COORDINATE WITH UTILITY COMPANY TO ANY WORK.
2. PROVIDE REINFORCED 4" THICK CONCRETE PAD FOR GENERATOR. COORDINATE WITH GENERATOR SUPPLIER AND STRUCTURAL ENGINEER.
3. PROVIDE 4" THICK CONCRETE EQUIPMENT PAD.
4. 1" C WITH CABLING AS REQUIRED BY MANUFACTURER TO GENERATOR FOR CONTROL
5. PROVIDE TWO (2) 20A/1P CIRCUITS FROM PANEL P-0 FOR BATTERY CHARGER AND JACKET HEATER. INSTALLED IN 1" CONDUIT.
6. AUTOMATIC TRANSFER SWITCH, NEMA 1 ENCLOSED 208/120V,3P,4W.
7. PROVIDE SPD INTEGRAL TO THE SWITCHGEAR.
8. PROVIDE SPD FOR EACH LIFE SAFETY PANELS AND ATS.
9. PROVIDE UPS WITH AN EXTERNAL MAINTENANCE BYPASS SWITCH.



1 / E401 ELECTRICAL RISER DIAGRAM
NOT TO SCALE

BKV GROUP
Architecture
Interior Design
Landscape Architecture
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CONSULTANTS

PROJECT TITLE

DETROIT LAKES POLICE STATION

KEY PLAN

ISSUE #	DATE	DESCRIPTION
	12/16/2019	DESIGN DEVELOPMENT

NOT FOR CONSTRUCTION

CERTIFICATION

License Number Date

DATE	-
DRAWN BY	GMS
CHECKED BY	CSK
COMMISSION NUMBER	2106-02

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ELECTRICAL RISER DIAGRAM

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BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_MEP_R19.rvt
2/20/2020 9:00:09 AM

LUMINAIRE FIXTURE SCHEDULE (INTERIOR)

ID	FIXTURE TYPE	MOUNTING	VOLTS	FIXTURE LAMP QUANTITY	FIXTURE WATTAGE	FIXTURE LAMP TYPE	CONTROL MEDIA (LENS, LOUVERS, ETC)	FIXTURE DESCRIPTION TYPE	MANUFACTURER SERIAL NUMBER	NOTES
A2	2' X 2' TROFFER	RECESSED - LAY IN	120 V	1	30 W	LED 3500K	CURVED SMOOTH DIFFUSER	3300 LUMENS, 0-10V DIMMING	LITHONIA 2BLT2-33L-ADSM-EZ1-LP835 OR APPROVED EQUAL	
D	6" LED DOWNLIGHT	RECESSED	120 V	1	23 W	LED 3500K	OPEN APERTURE	2000 LUMENS, 0-10V DIMMING	GOTHAM EVO-35/20-6AR-MD-LSS-MVOLT OR APPROVED EQUAL	
D4	6" CYLINDRICAL DOWNLIGHT	SUSPENDED	120 V	1	23 W	LED 3500K	WHITE TRIM, OPEN APERTURE	2000 LUMENS, 0-10V DIMMING, MATTE WHITE FINISH	GOTHAM EVO-CYL-30/20-6AR-MD-LSS-MVOLT-EZ1-FCM-DWHG	
E1	EXIT SIGN - SINGLE SIDE	UNIVERSAL	120 V	1	1 W	LED	RED OPTICAL DIFFUSER	MATTE BLACK, CAST ALUMINUM HOUSING, STENCIL FACE LETTERS, INVISIBLE CHEVRON ARROW KNOCKOUTS, VANDAL-RESISTANT SHIELD.	LITHONIA LE-S-1-R OR APPROVED EQUAL	
G1	4' STRIP LIGHT	SURFACE - WALL	120 V	1	28 W	LED 3500K	LINEAR REFRACTOR	4' LED STRIP LIGHT. 3000 LUMENS. 0-10V DIMMING	LITHONIA WL4-30L-MVOLT-EZ1-LP835	
G3	4' STRIP LIGHT	SURFACE - CEILING	120 V	1	28 W	LED 3500K	LINEAR REFRACTOR	4' LED STRIP. 3000 LUMENS. 0-10V DIMMING	LITHONIA WL4-30L-MVOLT-EZ1-LP835	
G6	2' X 2' TROFFER	RECESSED - LAY IN	120 V	1	30 W	LED 3500K	CURVED SMOOTH DIFFUSER	3300 LUMENS, 0-10V DIMMING	KENALL RMCD-4-TG-0/0-45L40K-DCC-1-120-1-B-1	
L	LINEAR SUSPENDED DOWNLIGHT	SUSPENDED IN LINE WITH CEILING BAFFLES	120 V	1	24 W	LED 3500K	ACRYLIC LENS, BATWING DISTRIBUTION.	625 LUMENS PER FOOT, 1.7"W. 0-10V DIMMING. 24 W PER 4' SECTION. BLACK FINISH	FOCAL POINT FNRS-FL60-750LF-35K-1C-UNV-LD1-G-C-BK	
L1	LINEAR SURFACE DOWNLIGHT	SURFACE - CEILING	120 V	1	24 W	LED 3500K	ACRYLIC LENS, BATWING DISTRIBUTION.	625 LUMENS PER FOOT, 1.7"W. 0-10V DIMMING. 24 W PER 4' SECTION. BLACK FINISH	FOCAL POINT FNRS-FL60-750LF-35K-1C-UNV-LD1-M-BK	
L3	LINEAR LED	RECESSED	120 V	1	19 W	LED 3500K	FLUSH ACRYLIC LENS	550 LUMENS PER FOOT, 3"W, 0-10V DIMMING	PHILIPS TRUGROOVE 39S1-L-B-G-Q-S-1-1	
LB	LOW BAY PARKING GARAGE LIGHT	SURFACE OR PENDANT TBD	120 V	1	54 W	LED 4000K	TYPE V DISTRIBUTION	5500 LUMENS, 0-10V DIMMING	PHILIPS GARDCO SVPG-168L-1200-NW-5-UNV-DD	
P1	CYLINDRICAL PENDANT	PENDANT	120 V	1	21 W	LED 3500K	HIGH-IMPACT ACRYLIC CYLINDER	6"W, 27"H CYLINDRICAL DOWNLIGHT, 5395 LUMENS, 6'-0" STEM, WHITE FINISH	LUMINIS CL622-L168W65-120-WHT-STM6'-0"-K35	
P2	CYLINDRICAL PENDANT	PENDANT	120 V	1	21 W	LED 3500K	HIGH-IMPACT ACRYLIC CYLINDER	6"W, 27"H CYLINDRICAL DOWNLIGHT, 5395 LUMENS, 6'-6" STEM, WHITE FINISH	LUMINIS CL622-L168W65-120-WHT-STM6'-6"-K35	
P3	CYLINDRICAL PENDANT	PENDANT	120 V	1	21 W	LED 3500K	HIGH-IMPACT ACRYLIC CYLINDER	6"W, 27"H CYLINDRICAL DOWNLIGHT, 5395 LUMENS, 7'-0" STEM, WHITE FINISH	LUMINIS CL622-L168W65-120-WHT-STM7'-0"-K35	

LUMINAIRE FIXTURE SCHEDULE (EXTERIOR)

ID	FIXTURE TYPE	MOUNTING	VOLTS	FIXTURE LAMP QUANTITY	FIXTURE WATTAGE	FIXTURE LAMP TYPE	CONTROL MEDIA (LENS, LOUVERS, ETC)	FIXTURE DESCRIPTION TYPE	MANUFACTURER SERIAL NUMBER	NOTES
XB	BOLLARD AREA LIGHT	GRADE MTD	120 V	1	20 W	LED 4000K	TYPE III DISTRIBUTION	1000 LUMENS. FINISH TBD	RAB BLED20Y	
XD	6" LED DOWNLIGHT	RECESSED	120 V	1	23 W	LED 4000K	OPEN APERTURE	2000 LUMENS, 0-10V DIMMING	GOTHAM EVO-30/20-6AR-MD-LSS-MVOLT OR APPROVED EQUAL	
XFL	EXTERIOR FLOOD LIGHT	GRADE	120 V	1	13 W	LED 4000K	FLOOD OPTIC	1300 LUMENS. BLACK FINISH	RAB HBLED13NB	
XFP	FLAG POLE DOWNLIGHT	FLAG POLE	120 V	1	6 W	LED 5000K	OPEN APERTURE	2000 LUMENS, HALYARD TYPE TBD, FINISH TBD	EAGLE MOUNTAIN STARGAZER MODEL#: SG-5K-150	
XP	POLE LIGHT	POLE - SINGLE HEAD	120 V	1	131 W	LED 4000K	TYPE II DISTRIBUTION	25' MOUNTING HEIGHT. SQUARE POLE. 0-10V DIMMING. FINISH TBD	LITHONIA DSX1 LED 60C 700 40K T2M MVOLT SPA DMG	
XP1	POLE LIGHT	POLE - DUAL HEAD	120 V	2	131 W	LED 4000K	TYPE II DISTRIBUTION	25' MOUNTING HEIGHT. SQUARE POLE. 0-10V DIMMING. FINISH TBD	LITHONIA DSX1 LED 60C 700 40K T2M MVOLT SPA DMG	
XW	EXTERIOR WALL PACK	SURFACE - WALL	120 V	1	48 W	LED 4000K	TYPE III DISTRIBUTION	4000 LUMENS. 0-10V DIMMING	LITHONIA WSR LED 2 SR3 MVOLT DMG	

LIGHTING CONTROL SCHEDULE

ZONE CONTROL	ZONE DESCRIPTION	LIGHT SOURCE	DIMMING	TIME OF DAY CONTROL	PHOTOCELL ON	PHOTOCELL OFF	EMERGENCY OVERRIDE	LCP NAME	NOTES
zt1	LOBBY & VESTIBULE	LED	Yes	Yes	No	No	Yes	LCP-1	AFTER HOURS, DIM TO 50%, RESUME 100% WITH OCC SENSOR INPUT
zx1	SITE POLE LIGHTS	LED	No	Yes	Yes	Yes	Yes	LCP-1	
zx2	LOBBY & VESTIBULE	LED	No	Yes	Yes	Yes	Yes	LCP-1	

LIGHTING CONTROL SEQUENCE OF OPERATIONS

ROOM TYPE	CONTROL INTERFACE	SEQUENCE 1	SEQUENCE 2	SEQUENCE 3	NOTES
PERIMETER OFFICES	LOCAL	PHOTOCELL DETERMINES PRESET MAXIMUM FC LEVEL	MANUAL 100% OF FC PRESET ON WITH DIMMING	MANUAL OR VACANCY SENSOR OFF.	
STORAGE AND UTILITY ROOMS	LOCAL	MANUAL ON	MANUAL OR VACANCY OFF	--	
BATHROOMS/SHOWER	LOCAL	MANUAL ON	MANUAL OR VACANCY OFF	--	
INNER OFFICES	LOCAL	MANUAL ON WITH DIMMING	MANUAL OR VACANCY OFF	--	
PERIMETER CONFERENCE ROOMS	LOCAL	PHOTOCELL DETERMINES PRESET MAXIMUM FC LEVEL	MANUAL 100% OF FC PRESET ON WITH DIMMING	MANUAL OR VACANCY SENSOR OFF.	
INNER CONFERENCE ROOMS	LOCAL	MANUAL ON WITH DIMMING	MANUAL OR VACANCY OFF	--	
STAIRWELLS	LOCAL	INTEGRAL OCCUPANCY SENSOR ON	INTEGRAL OCCUPANCY SENSOR DIM TO 10% WHEN UNOCCUPIED	--	
VESTIBULES, SOUND LOCKS	LOCAL	OCCUPANCY SENSOR FULL ON	OCCUPANCY SENSOR DIM TO 50% WHEN UNOCCUPIED	--	
EXTERIOR	LCP	ASTRONOMIC TIMECLOCK OR PHOTOCELL ON	POLE FIXTURES TO OCC SENSOR DIM TO 50%	ASTRONOMIC TIME CLOCK OR PHOTOCELL OFF	
CORRIDORS	LCP	TIMECLOCK RELAY ON (DAYLIGHT HARVESTING FOR PERIMETER)	TIMECLOCK RELAY OFF	OCCUPANCY SENSOR CONTROL AFTER HOURS	1
OPEN OFFICES	LCP	TIMECLOCK RELAY ON (DAYLIGHT HARVESTING FOR PERIMETER) WITH MANUAL DIMMING	TIMECLOCK RELAY OFF	OCCUPANCY SENSOR CONTROL AFTER HOURS	1

OCCUPANCY SENSOR SCHEDULE

TYPE	MANUFACTURER MODEL NUMBER	TECHNOLOGY	MOUNTING	DIMMING	ON	OFF	VOLTAGE TYPE	NOTES
OC	ACUITY, CRESTRON, DOUGLAS, LUTRON, OR EQUIVALENT	DUAL	CEILING	YES	AUTO	AUTO	LOW VOLTAGE	
OC-P	ACUITY, CRESTRON, DOUGLAS, LUTRON, OR EQUIVALENT	DUAL	CEILING	DAYLIGHT HARVESTING	AUTO	AUTO	LOW VOLTAGE	W/ PHOTOCELL
OV	ACUITY, CRESTRON, DOUGLAS, LUTRON, OR EQUIVALENT	DUAL	CEILING	NO	MANUAL	AUTO	LOW VOLTAGE	
OV-P	ACUITY, CRESTRON, DOUGLAS, LUTRON, OR EQUIVALENT	DUAL	CEILING	DAYLIGHT HARVESTING	MANUAL	AUTO	LOW VOLTAGE	W/ PHOTOCELL
OW	ACUITY, CRESTRON, DOUGLAS, LUTRON, OR EQUIVALENT	DUAL	WALL	NO	INTEGRAL BUTTON	AUTO	LOW VOLTAGE	

ELECTRICAL - MOTOR SCHEDULE

LOAD INFORMATION		LOAD INFORMATION							DISCONNECT					STARTER					
TAG	LOCATION	FLA	MCA	VOLTS	PHASE	PANEL	BRANCH CIRCUIT SIZE	CONTROLLED BY	SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	NOTES
OHD		0 A	0 A	120 V	1														
OHD		0 A	0 A	120 V	1														

FLOORBOX SCHEDULE

TYPE	GENERAL DESCRIPTION	POWER DESCRIPTION	COMMUNICATIONS DESCRIPTION	MANUFACTURER MODEL
FB4	8 GANG FLOORBOX. RECESSED ACTIVATIONS. ON-GRADE RATED. BLACK FINISH.	4 DUPLEX RECEPTACLES.	PROVIDE (2) 2" CONDUIT TO ABOVE ACCESSIBLE CEILING SPACE.	WIREMOLD RFB8S-OG
FB5	10 GANG FLOORBOX. RECESSED ACTIVATIONS. ON-GRADE RATED. BLACK FINISH.	4 DUPLEX RECEPTACLES.	PROVIDE (2) 2" CONDUIT TO ABOVE ACCESSIBLE CEILING SPACE.	WIREMOLD RFB10S-OG
PT2FF	6" POKE-THRU FURNITURE FEED. BLACK FINISH.	3/4" FEED. CONTRACTOR TO PROVIDE ALL REQUIRED INTERCONNECTION BETWEEN PARTITIONS OF MODULAR FURNITURE AND FURNISH AND INSTALL RECEPTACLES AND DEVICES IN FURNITURE PANELS.	PROVIDE (1) 2" CONDUIT TO ABOVE ACCESSIBLE CEILING SPACE. CONTRACTOR TO FURNISH AND INSTALL ALL DATA DEVICES IN MODULAR FURNITURE PANELS	WIREMOLD EVOLUTION 6" FURNITURE FEED

BKV GROUP
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Minneapolis, MN 55401
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EOE

CONSULTANTS

PROJECT TITLE

DETROIT LAKES
POLICE STATION

ISSUE #	DATE	DESCRIPTION
	12/16/2019	DESIGN DEVELOPMENT

CERTIFICATION

DRAWN BY	GMS
CHECKED BY	Checker
COMMISSION NUMBER	2106-02

SHEET TITLE

ELECTRICAL
SCHEDULES

SHEET NUMBER

E501

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PROJECT TITLE

DETROIT LAKES
POLICE STATION

ISSUE #	DATE	DESCRIPTION

CERTIFICATION

DRAWN BY	GMS
CHECKED BY	Checker
COMMISSION NUMBER	2106.02

SHEET TITLE

ELECTRICAL
SCHEDULES

SHEET NUMBER

E502

BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_MEP_R19.rvt
2/20/2020 9:00:09 AM

Branch Panel: MP

Location: GARAGE 001
Supply From:
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type:
Mains Rating: 1200 A
MCB Rating:

Notes:

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1										2
3										4
5										6
7										8
9										10
11										12
13										14
15										16
17										18
19										20
21										22
23										24
25										26
27										28
29										30
31										32
33										34
35										36
37										38
39										40
41										42
43										44
45										46
47										48
49										50
51										52
53										54
55										56
57										58
59										60
61										62
63										64
65										66
67										68
69										70
71										72
73										74
75										76
77										78
79										80
81										82
83										84
		Total Load:		0 VA	0 VA	0 VA				
		Total Amps:		0 A	0 A	0 A				

Legend:

Load Classification	Connected Load (VA)	Demand Factor	Estimated Demand (VA)	Panel Totals	
				Total Conn. Load:	0 VA
				Total Est. Demand:	0 VA
				Total Conn.:	0 A
				Total Est. Demand:	0 A

Notes:

Branch Panel: P-0A

Location: GARAGE 001
Supply From:
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type:
Mains Rating: 100 A
MCB Rating:

Notes:

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	P-0B	20 A	3	304...	180 VA		1	20 A	REC - WASHER - STORAGE 91	2
3	--	--	--		1483...	180 VA	2	30 A	REC - DRYER - STORAGE 91	4
5	--	--	--			2294...	180...	--	--	6
7										8
9										10
11										12
13										14
15										16
17										18
19										20
21										22
23										24
25										26
27										28
29										30
31										32
33										34
35										36
37										38
39										40
41										42
43										44
45										46
47										48
49										50
51										52
53										54
55										56
57										58
59										60
61										62
63										64
65										66
67										68
69										70
71										72
73										74
75										76
77										78
79										80
81										82
83										84
85										86
87										88
89										90
		Total Load:		3226 VA	1663 VA	2474 VA				
		Total Amps:		28 A	14 A	22 A				

Legend:

Load Classification	Connected Load (VA)	Demand Factor	Estimated Demand (VA)	Panel Totals	
E-RCPT-NONDWELL	5580 VA	100.00%	5580 VA		
E-LGT-INT-NONDWELL	1783 VA	125.00%	2229 VA	**Total Conn. Load:**	7363 VA
				Total Est. Demand:	7809 VA
				Total Conn.:	20 A
				Total Est. Demand:	22 A

Notes:

Branch Panel: P-0B

Location: GARAGE 001
Supply From: P-0A
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type:
Mains Rating: 100 A
MCB Rating:

Notes:

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	LTG - EVIDENCE BAY 67	20 A	1	494...	572 VA		1	20 A	LTG - GARAGE 68	2
3	LTG - ELEVATOR PIT	20 A	1		56 VA	347 VA	1	20 A	LTG - CORRIDOR 73	4
5	LTG - EVIDENCE STORAGE, EV. INTAKE,...	20 A	1			314 VA	900...	1	20 A	REC - GARAGE 68	6
7	REC - GARAGE 68	20 A	1	720...	720 VA		1	20 A	REC - GARAGE 68	8
9	REC - STORAGE 91	20 A	1		540 VA	540 VA	1	20 A	REC - MECHANICAL 57	10
11	REC - ELEVATOR -	20 A	1			180 VA	900...	1	20 A	REC - EVIDENCE BAY 67	12
13	REC - EVIDENCE BAY 67	20 A	1	540...						14
15										16
17										18
19										20
21										22
23										24
25										26
27										28
29										30
31										32
33										34
35										36
37										38
39										40
41										42
43										44
45										46
47										48
49										50
51										52
53										54
55										56
57										58
59										60
61										62
63										64
65										66
67										68
69										70
71										72
73										74
75										76
77										78
79										80
81										82
83										84
		Total Load:		3046 VA	1483 VA	2294 VA				
		Total Amps:		26 A	12 A	20 A				

Legend:

Load Classification	Connected Load (VA)	Demand Factor	Estimated Demand (VA)	Panel Totals	
E-RCPT-NONDWELL	5040 VA	100.00%	5040 VA		
E-LGT-INT-NONDWELL	1783 VA	125.00%	2229 VA	**Total Conn. Load:**	6823 VA
				Total Est. Demand:	7269 VA
				Total Conn.:	19 A
				Total Est. Demand:	20 A

Notes:

Branch Panel: P-1A

Location: ELEC. 128
Supply From:
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type:
Mains Rating: 100 A
MCB Rating:

Notes:

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	REC - RNG BREAK ROOM 84	20 A	2	180...						2
3	--	--	--		180 VA					4
5										6
7										8
9										10
11										12
13										14
15										16
17										18
19										20
21										22
23										24
25										26
27										28
29										30
31										32
33										34
35										36
37										38
39										40
41										42
43										44
45										46
47										48
49										50
51										52
53										54
55										56
57										58
59										60
61										62
63										64
65										66
67										68
69										70
71										72
73										74
75										76
77										78
79										80
81										82
83										84
		Total Load:		9047 VA	12398 VA	11022 VA				
		Total Amps:		75 A	106 A	94 A				

Legend:

Load Classification	Connected Load (VA)	Demand Factor	Estimated Demand (VA)	Panel Totals	
E-RCPT-NONDWEL	5940 VA	100.00%	5940 VA		
B-RECEPT-NON-DWELL	360 VA	100.00%	360 VA	**Total Conn. Load:**	32467 VA
E-RCPT-NONDWELL	23040 VA	50.00%	11520 VA	**Total Est. Demand:**	21729 VA
E-LGT-INT-NONDWELL	3127 VA	125.00%	3909 VA	**Total Conn.:**	90 A
				Total Est. Demand:	60 A

Notes:

Branch Panel: P-1B

Location: ELEC. 128
Supply From: P-1A
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type:
Mains Rating: 100 A
MCB Rating:

Notes:

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	LTG - LEVEL 1	20 A	1	264...	413 VA		1	20 A	E-LGT-INT-NONDWELL LOBBY 29	2
3	LTG - LEVEL 1	20 A	1			543 VA	425 VA		1	20 A	LTG - CORRIDOR	4
5	LTG - LEVEL 1	20 A	1				702 VA	780...	1	20 A	LTG - LEVEL 1	6
7	E-RCPT-NONDWELL BREAK ROOM 84	20 A	1	900...	360 VA				1	20 A	DISP/DISHWASHER - BREAK ROOM 84	8
9	REC - BREAK ROOM 84	20 A	1			360 VA	360 VA		1	20 A	REC - BREAK ROOM 84	10
11	REC - MW BREAK ROOM 84	20 A	1				180 VA	180...	1	20 A	REC - REF BREAK ROOM 84	12
13	REC - MW BREAK ROOM 84	20 A	1	180...	180 VA				1	20 A	REC - REF BREAK ROOM 84	14
15	REC - LOCKER ROOMS 97	20 A	1			720 VA	1080...		1	20 A	REC - LOCKERS - WOMEN 97	16
17	REC - LOCKERS - WOMEN 97	20 A	1				900 VA	108...	1	20 A	REC - LOCKERS - MEN 98	18
19	REC - LOCKERS - MEN 98	20 A	1	108...	1080...				1	20 A	REC - LOCKERS - MEN 98	20
21	REC - LOCKERS - MEN 98	20 A	1			1620...	720 VA		1	20 A	REC - MENS LOCKER 98	22
23	REC - CORRIDOR 101	20 A	1				1080...	540...	1	20 A	REC - TOILET 47	24
25	REC - EWC - CORRIDOR 101	20 A	1	180...	1080...				1	20 A	REC - OFFICE 15, 17	26
27	E-RCPT-NONDWELL OFFICE 16, 18	20 A	1			1080...	1080...		1	20 A	E-RCPT-NONDWELL OFFICE 14	28
29	E-RCPT-NONDWELL	20 A	1				540 VA	126...	1	20 A	REC - OFFICE 12	30
31	REC - OFFICE 9, 10	20 A	1	108...	1080...				1	20 A	REC - CHIEF 8	32
33	REC - CONFERENCE 7	20 A	1			900 VA	360 VA		1	20 A	REC - CONFERENCE 7	34
35	REC - RECORDS 99	20 A	1				720 VA	900...	1	20 A	REC - RECORDS 99	36
37	REC - COPIER - RECORDS 99	20 A	1	180...								38
39	REC - PATROL 100	20 A	2			1080...	1080...		2	20 A	REC - PATROL 100	40
41	--	--	--					1080...	108...	--	--	42
43	REC - ADMINISTRATION 114	20 A	2	810...								44
45	--	--	--			810 VA						46
47												48
49												50
51												52
53												54
55												56
57												58
59												60
61												62
63												64
65												66
67												68
69												70
71												72
73												74
75												76
77												78
79												80
81												82
83												84
		Total Load:		8867 VA	12218 VA	11022 VA				
		Total Amps:		74 A	105 A	95 A				

Legend:

Load Classification	Connected Load (VA)	Demand Factor	Estimated Demand (VA)	Panel Totals	
E-RCPT-NONDWEL	5940 VA	100.00%	5940 VA		
B-RECEPT-NON-DWELL	360 VA	100.00%	360 VA	**Total Conn. Load:**	32107 VA
E-RCPT-NONDWELL	22680 VA	50.00%	11340 VA	**Total Est. Demand:**	21549 VA
E-LGT-INT-NONDWELL	3127 VA	125.00%	3909 VA	**Total Conn.:**	89 A
				Total Est. Demand:	60 A

Notes:

Branch Panel: LPU1

Location: SERVER 123
Supply From:
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type:
Mains Rating: 100 A
MCB Rating:

Notes:

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1										2
3										4
5										6
7										8
9										10
11										12
13										14
15										16
17										18
19										20
21										22
23										24
25										26
27										28
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31										32
33										34
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43										44
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51										52
53										54
55										56
57										58
59										60
61										62
63										64
65										66
67										68
69										70
71										72
73										74
75										76
77										78
79										80
81										82
83										84
		Total Load:		0 VA	0 VA	0 VA				
		Total Amps:		0 A	0 A	0 A				

Legend:

Load Classification	Connected Load (VA)	Demand Factor	Estimated Demand (VA)	Panel Totals	
				Total Conn. Load:	0 VA
				Total Est. Demand:	0 VA
				Total Conn.:	0 A
				Total Est. Demand:	0 A

Notes:

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EOE

CONSULTANTS

PROJECT TITLE

DETROIT LAKES
POLICE STATION

ISSUE #	DATE	DESCRIPTION
	12/16/2019	DESIGN DEVELOPMENT

CERTIFICATION

DRAWN BY	GMS
CHECKED BY	Checker
COMMISSION NUMBER	2106-02

SHEET TITLE

ELECTRICAL
PANEL
SCHEDULES

SHEET NUMBER

E521

BIM 360://2106-02 Detroit Lakes Police Station/2106-02_Detroit_Lakes_Police_Station_MEP_R19.rvt
2/20/2020 9:00:10 AM

Branch Panel: LS-0

Location: GARAGE 001
Supply From:
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type:
Mains Rating: 100 A
MCB Rating:

Notes:

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	LTG - LEVEL 0	20 A	1	307...						2
3										4
5										6
7										8
9										10
11										12
13										14
15										16
17										18
19										20
21										22
23										24
25										26
27										28
29										30
31										32
33										34
35										36
37										38
39										40
41										42
43										44
45										46
47										48
49										50
51										52
53										54
55										56
57										58
59										60
61										62
63										64
65										66
67										68
69										70
71										72
73										74
75										76
77										78
79										80
81										82
83										84
			Total Load:	307 VA	0 VA	0 VA				
			Total Amps:	3 A	0 A	0 A				

Legend:

Load Classification	Connected Load (VA)	Demand Factor	Estimated Demand (VA)	Panel Totals	
E-LGT-INT-NONDWELL	307 VA	125.00%	384 VA		
				Total Conn. Load:	307 VA
				Total Est. Demand:	384 VA
				Total Conn.:	1 A
				Total Est. Demand:	1 A

Notes:

Branch Panel: LS-1

Location: ELEC. 128
Supply From:
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type:
Mains Rating: 100 A
MCB Rating:

Notes:

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	LTG - LEVEL 1	20 A	1	806...	142 VA		1	20 A	LTG - EXT	2
3	E-LGT-EXT-NONDWELL	20 A	1		96 VA					4
5										6
7										8
9										10
11										12
13										14
15										16
17										18
19										20
21										22
23										24
25										26
27										28
29										30
31										32
33										34
35										36
37										38
39										40
41										42
43										44
45										46
47										48
49										50
51										52
53										54
55										56
57										58
59										60
61										62
63										64
65										66
67										68
69										70
71										72
73										74
75										76
77										78
79										80
81										82
83										84
			Total Load:	948 VA	96 VA	0 VA				
			Total Amps:	8 A	1 A	0 A				

Legend:

Load Classification	Connected Load (VA)	Demand Factor	Estimated Demand (VA)	Panel Totals	
E-LGT-INT-NONDWELL	806 VA	125.00%	1008 VA		
E-LGT-EXT-NONDWELL	238 VA	100.00%	238 VA	**Total Conn. Load:**	1044 VA
				Total Est. Demand:	1246 VA
				Total Conn.:	3 A
				Total Est. Demand:	3 A

Notes:

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Architecture
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EOE

CONSULTANTS

PROJECT TITLE

DETROIT LAKES
POLICE STATION

ISSUE #	DATE	DESCRIPTION
	12/16/2019	DESIGN DEVELOPMENT

CERTIFICATION

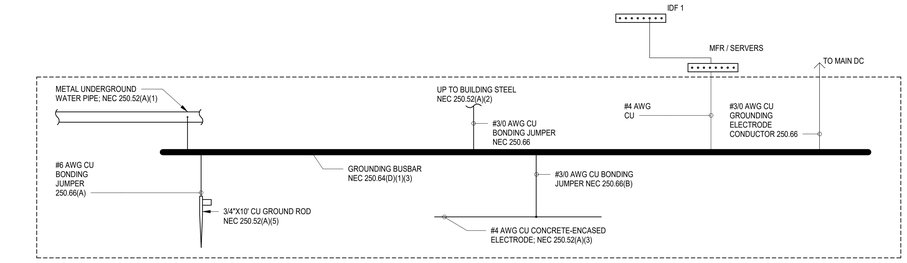
DRAWN BY	GMS
CHECKED BY	Checker
COMMISSION NUMBER	2106-02

SHEET TITLE

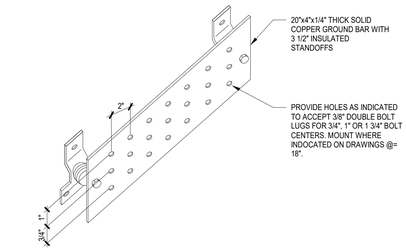
ELECTRICAL
PANEL
SCHEDULES

SHEET NUMBER

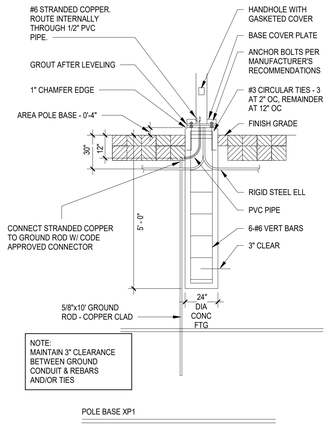
E522

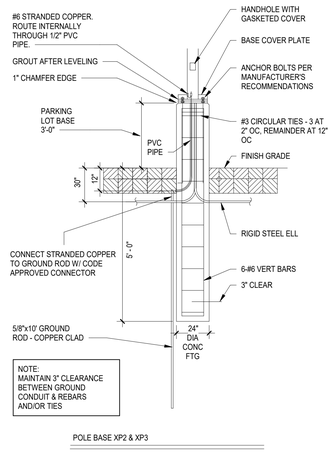


1 E601 ELECTRICAL GROUNDING RISER DETAIL
1/8" = 1'-0"

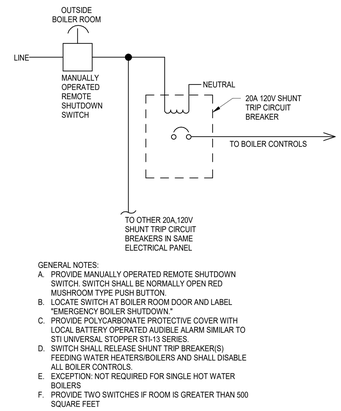


2 E601 GROUND BAR - LARGE
1/8" = 1'-0"





3 E601 LIGHT POLE BASE DETAIL
1/2" = 1'-0"



GENERAL NOTES:
A. PROVIDE MANUALLY OPERATED REMOTE SHUTDOWN SWITCH. SWITCH SHALL BE NORMALLY OPEN RED MUSHROOM TYPE PUSH BUTTON.
B. LOCATE SWITCH AT BOILER ROOM DOOR AND LABEL "EMERGENCY BOILER SHUTDOWN."
C. PROVIDE POLYCARBONATE PROTECTIVE COVER WITH LOCAL BATTERY OPERATED AUDIBLE ALARM SIMILAR TO STI UNIVERSAL STOPPER STI-13 SERIES.
D. SWITCH SHALL RELEASE SHUNT TRIP BREAKER(S) FEEDING WATER HEATERS/BOILERS AND SHALL DISABLE ALL BOILER CONTROLS.
E. EXCEPTION: NOT REQUIRED FOR SINGLE HOT WATER BOILERS
F. PROVIDE TWO SWITCHES IF ROOM IS GREATER THAN 500 SQUARE FEET

4 E601 BOILER / WATER HEATER REMOTE SHUTOFF DETAIL
1/8" = 1'-0"

BKV GROUP
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PROJECT TITLE

DETROIT LAKES POLICE STATION

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CERTIFICATION

DRAWN BY	GMS
CHECKED BY	Checker
COMMISSION NUMBER	2106-02

SHEET TITLE

ELECTRICAL DETAILS

SHEET NUMBER

E601

VAV ROOFTOP UNIT SCHEDULE

TAG	NO.	MANUFACTURER	MODEL	OPERATING WEIGHT (LBS)	AIR DATA: SUPPLY FAN: TOTAL CFM	MIN OA CFM	TSP (INWG)	ESP (INWG)	MOTOR: RPM	MOTOR: BHP	MOTOR: HP	HEATING DATA: TYPE	GAS INPUT (MBH)	CAPACITY (MBH)	EAT DB (oF)	LAT DB (oF)	COOLING DATA: TYPE	TOTAL (MBH)	SENSIBLE (MBH)	EAT DB (oF)	EAT WB (oF)	LAT DB (oF)	LAT WB (oF)	EFFICIENCY: EER	IEER	ELECTRICAL: FLA	MCA	MOCP	VOLTS	PHASE	HZ	PANEL	CIRCUIT: NUMBER	CIRCUIT: WIRE SIZE	CONTROLLED BY	DISCONNECT: SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	STARTER: SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	NOTES
RTU	1	TRANE	YCD420BE	4850	10700	3000	2.99	1.90	1760	9.86	15	NATURAL GAS	350	280	45.0	69.6	DX COIL	353	286	79.7	64.4	55.9	53.4	10.3	12.6	178.1	192.1	225	208	3	60				DIV 23	MFG	MFG	-		BY MTR	MFG	MFG	VFD		-	1,2,3,4,5,6,7,8

NOTES:
1. PROVIDE WITH (2) 1-HP POWERED EXHAUST FANS FOR 0-100% EXHAUST WITH STRATITRAC CONTROL.
2. PROVIDE WITH 0-100% ECONOMIZER WITH DIFFERENTIAL ENTHALPY CONTROL.
3. PROVIDE WITH STANDARD ROOF CURB.
4. PROVIDE WITH 4" MERV 14 FILTERS.
5. PROVIDE SUPPLY FAN WITH VFD.
6. PROVIDE WITH LOW LEAK ECONOMIZER DAMPER.
7. PROVIDE WITH HIGH-AMP 65KA SCCR.
8. PROVIDE WITH MANUFACTURER'S STANDARD CONTROLS.

BOILER SCHEDULE

TAG	NO.	SERVES	MANUFACTURER	MODEL	FUEL	GAS INPUT (MBH)	CAPACITY (MBH)	AHRI EFFICIENCY	EFT (oF)	LFT (oF)	FLOW (GPM)	PD (FT-H2O)	CONNECTION SIZES: FLUE: GAS	FLUE: FLUID	INLET	OUTLET	WEIGHT (LBS)	ELECTRICAL: FLA	MOCP	VOLTS	PHASE	HZ	PANEL	CIRCUIT: NUMBER	CIRCUIT: WIRE SIZE	CONTROLLED BY	DISCONNECT: SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	STARTER: SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATIONS	NOTES
B	1	BUILDING HEATING WATER	AERCO	BMK 1500	NATURAL GAS	1500	1395	95.0	130	150	150	6.92	1 1/2"	4"	6"	6"	1410	16.0	20	120	1	60			1/2"C, (2)#12 & (1)#12G	DIV 23	DIV 26	DIV 26	NFS	20 A	BY EQUIP	MFR	MFR	-	-	BY MTR	1

NOTES:
1. PROVIDE WITH MANUFACTURER'S STANDARD CONTROLS.

FAN SCHEDULE

TAG	NO.	SERVES	MANUFACTURER	MODEL	FAN DATA: TYPE	DRIVE	CFM	ESP (INWG)	SONES	RPM	WEIGHT (LBS)	ELECTRICAL: HP	VOLTS	PHASE	HZ	PANEL	CIRCUIT: NUMBER	CIRCUIT: WIRE SIZE	CONTROLLED BY	DISCONNECT: SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	STARTER: SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	NOTES
EF	1	LEVEL 1 BATHROOMS	GREENHECK	G-070-VG	CENTRIFUGAL DOWNBLAST	DIRECT	150	0.30	3.1	1725	20	0.067	115	1	60				DIV 23	DIV 26	NFS		BY EQUIP	MFR	MFR	-	-	BY MTR	1,4
EF	2	FUME HOOD	GREENHECK	G-080-VG	CENTRIFUGAL DOWNBLAST	DIRECT	400	0.30	8	1725	30	0.1	115	1	60				DIV 23	DIV 26	NFS		BY EQUIP	MFR	MFR	-	-	BY MTR	1,4
EF	3	LEVEL 1 BATHROOMS	GREENHECK	G-060-VG	CENTRIFUGAL DOWNBLAST	DIRECT	100	0.30	3.7	1725	20	0.067	115	1	60				DIV 23	DIV 26	NFS		BY EQUIP	MFR	MFR	-	-	BY MTR	1,4
EF	4	LOWER LEVEL	GREENHECK	G-095-VG	CENTRIFUGAL DOWNBLAST	DIRECT	865	0.30	9.2	1725	30	0.167	115	1	60				DIV 23	DIV 26	NFS		BY EQUIP	MFR	MFR	-	-	BY MTR	1,4
EF	5	LEVEL 1 LOCKER ROOMS	GREENHECK	G-095-VG	CENTRIFUGAL DOWNBLAST	DIRECT	840	0.30	8.9	1725	30	0.167	115	1	60				DIV 23	DIV 26	NFS		BY EQUIP	MFR	MFR	-	-	BY MTR	1,4
EF	6	005 - EVIDENCE BAY	GREENHECK	SQ-95-VG	CENTRIFUGAL INLINE	DIRECT	750	0.30	9.6	1725	50	0.167	115	1	60				DIV 23	DIV 26	NFS		BY EQUIP	MFR	MFR	-	-	BY MTR	4
EF	7	003 - MECHANICAL	GREENHECK	SQ-70-VG	CENTRIFUGAL INLINE	DIRECT	165	0.25	4.1	1725	35	0.067	115	1	60				DIV 23	DIV 26	NFS		BY EQUIP	MFR	MFR	-	-	BY MTR	4
GEF	1	001 - GARAGE	GREENHECK	AER-E24C-320-VG	PROPELLER	DIRECT	4800	0.40	22	1525	180	1	115	1	60				DIV 23	DIV 26	NFS		BY EQUIP	MFR	MFR	-	-	BY MTR	2,3,4
GSF	1	001 - GARAGE	GREENHECK	AER-S24C-320-VG	PROPELLER	DIRECT	4800	0.40	22	1525	180	1	115	1	60				DIV 23	DIV 26	NFS		BY EQUIP	MFR	MFR	-	-	BY MTR	2,3,4

NOTES:
1. PROVIDE WITH STANDARD ROOF CURB.
2. PROVIDE WITH VFD.
3. FAN OPERATION SHALL BE TIED TO THE CO AND NO2 GAS DETECTION SENSOR ARRAY IN THE GARAGE.
4. PROVIDE WITH MANUFACTURER'S STANDARD CONTROLS.

PUMP SCHEDULE

TAG	NO.	SERVES	MANUFACTURER	MODEL	PUMP DATA: TYPE	GPM	FT. HD.	BHP	MIN EFF.	RPM	CONNECTIONS: SUCTION	DISCHARGE	WEIGHT (LBS)	ELECTRICAL: HP	VOLTS	PHASE	HZ	PANEL	CIRCUIT: NUMBER	CIRCUIT: WIRE SIZE	CONTROLLED BY	DISCONNECT: SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	STARTER: SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	NOTES
P	1	BUILDING HEATING WATER	BELL & GOSSETT	BG-E1510-1P5BC-SS-184T-S	BASE MOUNTED END SUCTION	150.0	70.0	4.59	62.1	1800	2"	1 1/2"	225	5	208	1	60				DIV 23	DIV 23	DIV 26	SS		BY EQUIP	MFR	MFR	-	-	BY MTR	1,2
P	2	BUILDING HEATING WATER	BELL & GOSSETT	BG-E1510-1P5BC-SS-184T-S	BASE MOUNTED END SUCTION	150.0	70.0	4.59	62.1	1800	2"	1 1/2"	225	5	208	1	60				DIV 23	DIV 23	DIV 26	SS		BY EQUIP	MFR	MFR	-	-	BY MTR	1,2
P	3	SNOWMELT SYSTEM HX	BELL & GOSSETT	e-60 1.5x1.5x6.25	INLINE PUMP	30.0	35.0	0.49	45.0	1800	1 1/2"	1 1/2"		1.5	208	1	60				DIV 23	DIV 23	DIV 26	SS		BY EQUIP	MFR	MFR	-	-	BY MTR	1,2,3

NOTES:
1. PROVIDE WITH VFD.
2. PROVIDE WITH MANUFACTURER'S STANDARD CONTROLS.
3. TO BE INCLUDED WITH ADD ALTERNATE.

AIR CONDITIONING UNIT SCHEDULE

TAG	NO.	SERVES	MANUFACTURER	MODEL	TYPE	WEIGHT (LBS)	FAN DATA: SA CFM	ESP (INWG)	HP	COOLING DATA: NOMINAL CAP (TONS)	TOTAL CAP (MBH)	EA DB (oF)	EA WB (oF)	ELECTRICAL: FLA	MCA	MOCP	VOLTS	PHASE	HZ	PANEL	CIRCUIT: NUMBER	CIRCUIT: WIRE SIZE	CONTROLLED BY	DISCONNECT: SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	STARTER: SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	NOTES
AC	1	SERVER ROOM	MITSUBISHI	PKA-A36KA7	WALL MOUNTED	50	920	-	0.075	3	36	80	67	0.6	1.0	30	208	1	60															1

NOTES:
1. PROVIDE WITH MANUFACTURER'S STANDARD CONTROLS.

CONDENSING UNIT SCHEDULE

TAG	NO.	SERVES	MANUFACTURER	MODEL	WEIGHT (LBS)	COOLING DATA: NOMINAL CAP (TONS)	TOTAL CAP (MBH)	SUMMER DA DB (oF)	EER	SEER	TOTAL REFRIGERANT CHARGE (LBS)	ELECTRICAL: FLA	MCA	MOCP	VOLTS	PHASE	HZ	PANEL	CIRCUIT: NUMBER	CIRCUIT: WIRE SIZE	CONTROLLED BY	DISCONNECT: SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	STARTER: SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	NOTES
ACU	1	SERVER ROOM	MITSUBISHI	PUY-A36NKA7	215	3	36	95	10.8	18.8	10.4	22	25	40	208	1	60															1

NOTES:
1. PROVIDE WITH MANUFACTURER'S STANDARD CONTROLS.

UNIT HEATER SCHEDULE

TAG	NO.	SERVES	MANUFACTURER	MODEL	MOUNTING	FUEL	CFM	HEATING COIL DATA: OUTPUT (MBH)	GPM	WPD (FT-H2O)	MOTOR RPM	ELECTRICAL: HP	WATTS	FLA	VOLTS	PHASE	HZ	PANEL	CIRCUIT: NUMBER	CIRCUIT: WIRE SIZE	CONTROLLED BY	DISCONNECT: SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	STARTER: SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	NOTES
CUH	1	LEVEL 1 VESTIBULES	STERLING	RW-1120-02	WALL MOUNTED	HOT WATER	230	16.4	1.6	0.24	1050	0.067	-	0.8	115	1	60			1/2"C, 2#14 & 1#14 G	DIV 23	DIV 23	DIV 26	NFS	20A	BY MTR	MFG	MFG	-	-	-	1,2
CUH	2	100 - VESTIBULE	STERLING	RW-1120-03	WALL MOUNTED	HOT WATER	335	22.8	2.3	0.39	1050	0.067	-	0.8	115	1	60			1/2"C, 2#14 & 1#14 G	DIV 23	DIV 23	DIV 26	NFS	20A	BY MTR	MFG	MFG	-	-	-	1,2
CUH	3	LEVEL 1 VESTIBULES	STERLING	F-1000-02	WALL MOUNTED	HOT WATER	230	16.4	1.6	0.24	1050	0.067	-	0.8	115	1	60			1/2"C, 2#14 & 1#14 G	DIV 23	DIV 23	DIV 26	NFS	20A	BY MTR	MFG	MFG	-	-	-	1,2
EUH	1	LEVEL 1 BATHROOMS	MARKEL	E3321TD-RP	WALL MOUNTED	ELECTRIC	175	2.6	-	-	600	-	750	6.3	120	1	60				DIV 23	DIV 23	DIV 26	NFS		BY HTR	MFG	MFG	-		-	1,2
UH	1	001 - GARAGE	STERLING	HS-132	CEILING HUNG	HOT WATER	2000	95.8	9.6	0.41	1140	0.34	-	4.5	115	1	60															1,2

NOTES:
1. PROVIDE WITH MANUFACTURER'S STANDARD CONTROLS.
2. CUSTOM COLOR TO BE SELECTED BY ARCHITECT.

VAV BOX SCHEDULE

TAG	NO.	MANUFACTURER	MODEL	TYPE	SERVES	INLET: DIAMETER	AIRFLOW DATA: MAX CFM	MIN CFM	REHEAT COIL DATA: EAT (oF)	LAT (oF)	ROWS	GPM	EFT (oF)	LFT (oF)	ELECTRICAL DATA: MOTOR CIRCUIT: MOCP	VOLTS	PHASE	NOTES
VAV	001	TITUS	DESV	HOT WATER REHEAT	005 - EVIDENCE BAY	8"	700	210	55.0	93.0	2	0.9	150.0	130.0	15	24	1	1
VAV	002	TITUS	DESV	HOT WATER REHEAT	014 - EVIDENCE STORAGE	8"	650	195	55.0	91.0	2	0.8	150.0	130.0	15	24	1	1
VAV	003	TITUS	DESV	HOT WATER REHEAT	006 - CORRIDOR	8"	725	475	55.0	97.0	2	2.2	150.0	130.0	15	24	1	1
VAV	101	TITUS	DESV	HOT WATER REHEAT	130 - COMMUNITY ROOM	14"	2050	820	55.0	98.0	2	3.9	150.0	130.0	15	24	1	1
VAV	102	TITUS	DESV	HOT WATER REHEAT	101 - LOBBY	8"	600	300	55.0	97.0	2	1.4	150.0	130.0	15	24	1	1
VAV	103	TITUS	DESV	HOT WATER REHEAT	102 - CONFERENCE	6"	350	140	55.0	97.0	2	0.6	150.0	130.0	15	24	1	1
VAV	104	TITUS	DESV	HOT WATER REHEAT	114 - ADMINISTRATION	8"	750	375	55.0	96.0	2	1.7	150.0	130.0	15	24	1	1
VAV	105	TITUS	DESV	HOT WATER REHEAT	103 - CHIEF, 104 - DEPUTY CHIEF, & 105-107 OFFICE	10"	1100	495	55.0	98.0	2	2.3	150.0	130.0	15	24	1	1
VAV	106	TITUS	DESV	HOT WATER REHEAT	115 - PATROL	10"	1050	525	55.0	97.0	2	2.4	150.0	130.0	15	24	1	1
VAV	107	TITUS	DESV	HOT WATER REHEAT	108 - CONFERENCE	8"	500	250	55.0	96.0	2	1.1	150.0	130.0	15	24	1	1
VAV	108	TITUS	DESV	HOT WATER REHEAT	121 - CORRIDOR	6"	300	135	55.0	98.0	2	0.6	150.0	130.0	15	24	1	1
VAV	109	TITUS	DESV	HOT WATER REHEAT	109-113 - OFFICE	12"	1350	540	55.0	98.0	2	2.5	150.0	130.0	15	24	1	1
VAV	110	TITUS	DESV	HOT WATER REHEAT	118 - ROLL CALL	12"	1625	490	55.0	84.0	2	1.6	150.0	130.0	15	24	1	1
VAV	111	TITUS	DESV	HOT WATER REHEAT	121 - CORRIDOR	10"	1050	525	55.0	97.0	2	2.4	150.0	130.0	15	24	1	1
VAV	112	TITUS	DESV	HOT WATER REHEAT	121 - CORRIDOR	6"	400	200	55.0	97.0	2	0.9	150.0	130.0	15	24	1	1
VAV	113	TITUS	DESV	HOT WATER REHEAT	125 - INTERVIEW & 127 - INTERVIEW	6"	400	120	55.0	91.0	2	0.5	150.0	130.0	15	24	1	1
VAV	114	TITUS	DESV	HOT WATER REHEAT	136 - LOCKER ROOM & 138 - LOCKER ROOM	8"	475	215	55.0	96.0	2	1.0	150.0	130.0	15	24	1	1
VAV	115	TITUS	DESV	HOT WATER REHEAT	135 - BREAK ROOM	10"	975	390	55.0	96.0	2	1.7	150.0	130.0	15	24	1	1

NOTES:
1. PROVIDE WITH MANUFACTURER'S STANDARD CONTROLS.

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PROJECT TITLE

DETROIT LAKES POLICE STATION

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	12/16/2019	DESIGN DEVELOPMENT

CERTIFICATION

DRAWN BY	Author
CHECKED BY	Checker
COMMISSION NUMBER	2106-02

SHEET TITLE

MECHANICAL AND ELECTRICAL SCHEDULES

SHEET NUMBER

ME801

SUMP PUMP SCHEDULE

TAG	NO.	LOCATION	SERVES	MANUFACTURER	MODEL	PUMP DATA			CONNECTIONS		BASIN			ELECTRICAL								CIRCUIT			DISCONNECT						STARTER					
						GPM	RPM	FT. HD.	SUCTION	DISCHARGE	DIAMETER	DEPTH	CAPACITY (GAL)	HP	WATTS	FLA	MCA	MOCP	VOLTS	PHASE	PANEL	NUMBER	WIRE SIZE	CONTROLLED BY	SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	NOTES
SP	1		ELEVATOR DRAIN	WEIL	1413	50	1750	25.0	4"	2"	24"	96"	188	0	0	0.0	0.0	0	208	1				DIV 23	DIV 23	DIV 26	NFS		BY MTR	DIV 23	DIV 26	NEMA		BY MTR	
SP	2		ELEVATOR DRAIN TILE	WEIL	1413	50	1750	25.0	4"	2"	24"	96"	188	0	0	0.0	0.0	0	208	1				DIV 23	DIV 23	DIV 26	NFS		BY MTR	DIV 23	DIV 26	NEMA		BY MTR	
SP	3		PARKING ENTRANCE TRENCH DRAIN	WEIL	1603	0	1750	20.0	6"	3"	48"	60"	469	1.5	0	11.0	0.0	0	208	1				DIV 23	DIV 23	DIV 26	NFS		BY MTR	DIV 23	DIV 26	NEMA		BY MTR	
SP	4		PARKING ENTRANCE TRENCH DRAIN	WEIL	1603	90	1750	20.0	6"	3"	48"	60"	469	1.5	0	11.0	0.0	0	208	1				DIV 23	DIV 23	DIV 26	NFS		BY MTR	DIV 23	DIV 26	NEMA		BY MTR	
SP	5		LOWER LEVEL WASTE	WEIL	2516	45	3450	20.0	4"	2"	24"	66"	129	5	0	16.5	0.0	0	208	1															
SP	6		LOWER LEVEL WASTE	WEIL	2516	45	3450	20.0	4"	2"	24"	66"	129	5	0	16.5	0.0	0	208	1															

WATER SOFTENER SCHEDULE

TAG	NO.	LOCATION	SERVES	MANUFACTURER	MODEL	CAPACITY GR/TANK	SERVICE FLOW (GPM)			PRESSURE LOSS		BACKWASH FLOW (GPM)	INLET SIZE	DRAIN SIZE	SALT (LBS)	ELECTRICAL									CIRCUIT			DISCONNECT						STARTER					NOTES
							MINIMUM	CONTINUOUS	PEAK	CONTINUOUS	PEAK					HP	WATTS	FLA	MCA	MOCP	VOLTS	PHASE	PANEL	NUMBER	BRANCH CIRCUIT	CONTROLLED BY	SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	INSTALLED BY	SUPPLIED BY	TYPE	SIZE	LOCATION	
WS	1			WATER CONTROL CORP	LF-90-TWIN-ECC	180000	58	80	110	15	25	5	2"	3/4"	670	0	0	3.5	0.0	0	120	1				DIV 23	DIV 26	DIV 26	MMS		BY MTR	MFG	MFG	-	-	-	POWER REQUIREMENTS ARE FOR EACH OF THE 4 CONTROLLERS.

DOMESTIC PUMP SCHEDULE

TAG	NO.	LOCATION	SERVES	MANUFACTURER	MODEL	GPM	HEAD	RPM	CONNECTION SIZES		ELECTRICAL									CIRCUIT			DISCONNECT					STARTER					NOTES
									DISCHARGE	SUCTION	HP	WATTS	FLA	MCA	MOCP	VOLTS	PHASE	PANEL	NUMBER	WIRE SIZE	CONTROLLED BY	SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	
CP	1	003 - MECHANICAL	CIRCULATING HOT WATER	BELL & GOSSETT	PL-30	5.0	20.00	2650	1"	1"	0.833	0	0.0	0.0	20	120	1			1/2"C, (2)#12 & (1)#12G	DIV 22	DIV 22	DIV 26	SS	20 A	BY EQUIP	MFR	MFR	-	-	BY MTR	

DOMESTIC WATER HEATER SCHEDULE

TAG	NO.	LOCATION	SERVES	MANUFACTURER	MODEL	TOTAL VOLUME	FUEL	RECOVERY (GPH)	INLET TEMP	HW TEMP	KW	GAS INPUT (MBH)	AHRI EFFICIENCY	NUMBER OF ELEMENTS	CONNECTION SIZES				ELECTRICAL									CIRCUIT			DISCONNECT						STARTER						
															GAS	FLUID	FLUE INLET	FLUE OUTLET	HP	WATTS	FLA	MCA	MOCP	VOLTS	PHASE	PANEL	NUMBER	WIRE SIZE	CONTROLLED BY	SUPPLIED	INSTALLED	TYPE	SIZE	LOCATION	SUPPLIED BY	INSTALLED BY	TYPE	SIZE	LOCATION	WEIGHT	NOTES
WH	1			A.O. SMITH	BTH-300A	130	NATURAL GAS	388	50.0	140.0		300	96.0		1 1/2"	1 1/2"	4"	4"	0	0	5.0	5.0	20	120	1			1/2"C, (2)#12 & (1)#12G	DIV 22	DIV 22	DIV 26	NFS	20 A	BY EQUIP	MFR	MFR	-	-	BY HTR	1941	

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PROJECT TITLE

DETROIT LAKES POLICE STATION

ISSUE #	DATE	DESCRIPTION
	12/16/2019	DESIGN DEVELOPMENT

CERTIFICATION

DRAWN BY	Author
CHECKED BY	Checker
COMMISSION NUMBER	2106-02

SHEET TITLE

MECHANICAL AND ELECTRICAL SCHEDULES

SHEET NUMBER

ME802

AUDIO/VISUAL MULTIMEDIA LEGEND

SYMBOL	DESCRIPTION
A## V##	WALL AV ROUGH-IN DETAIL
A## V##	CEILING AV ROUGH-IN DETAIL
A## V##	FLOOR AV ROUGH-IN DETAIL
PJ PJ	MULTIMEDIA PROJECTOR
FP# FP#	MULTIMEDIA FLAT PANEL DISPLAY
S S	LOUD SPEAKER, CEILING MOUNTED - # INDICATES TYPE
CP#	CONTROL PANEL

PREMISE SECURITY LEGEND

SYMBOL	DESCRIPTION
CR	CARD READER
CR K	DUAL AUTHENTICATION CARD READER WITH KEYPAD
KP	KEYPAD
IC	INTERCOM (1 DATA CABLE)
PB	PANIC/DURESS BUTTON
LD	LOCK DOWN BUTTON
MD	MOTION DETECTOR
GB	GLASS BREAK SENSOR
BM	BIOMETRIC READER
RX	REQUEST TO EXIT - SURFACE
RX	REQUEST TO EXIT - INTEGRATED
DC	DOOR CONTACT / MONITOR
ES EL EH	ELECTRIFIED STRIKE - ELECTRIFIED LATCH - ELECTRIFIED HARDWARE (REFER TO SCHEDULES)
DB	DOORBELL
C C	STANDARD IP SURVEILLANCE CAMERA, (1) CABLE
C C	180° IP SURVEILLANCE CAMERA, (1) CABLE
C	360° IP SURVEILLANCE CAMERA, (1) CABLE

STRUCTURED CABLING LEGEND

SYMBOL	DESCRIPTION
#	TELECOMMUNICATIONS OUTLET, # =NUMBER OF DATA CABLE(S)/JACK(S)
#/#	TELECOMMUNICATIONS OUTLET, #/# = NUMBER OF VOICE CABLE(S)/JACK(S) AND NUMBER OF DATA CABLE(S)/JACK(S)
#	TELECOMMUNICATIONS OUTLET, # =NUMBER OF VOICE/DATA CABLE(S)/JACK(S), SURFACE MOUNT
#/#	TELECOMMUNICATIONS OUTLET, #/# = NUMBER OF VOICE CABLE(S)/JACK(S) AND NUMBER OF DATA CABLE(S)/JACK(S), SURFACE MOUNT
W	WALL MOUNT PHONE (1 CABLE/JACK)
W	WALL MOUNT PHONE, SURFACE MOUNT (1 CABLE/JACK)
#	FLOOR MOUNTED OUTLET, # =NUMBER OF VOICE/DATA CABLE(S)/JACK(S) (FLOOR BOX BY E.C.)
#/#	FLOOR MOUNTED OUTLET, #/# = NUMBER OF VOICE CABLE(S)/JACK(S) AND NUMBER OF DATA CABLE(S)/JACK(S) (FLOOR BOX BY E.C.)
#	CEILING MOUNTED DATA OUTLET, # =NUMBER OF VOICE/DATA CABLE(S)/JACK(S)
AP#	CEILING MOUNTED OUTLET FOR WIRELESS ACCESS POINT #=NUMBER OF CABLE(S)/JACK(S)
AP#	WALL MOUNTED OUTLET FOR WIRELESS ACCESS POINT #=NUMBER OF CABLE(S)/JACK(S)
	CABLING SLEEVE(S)
	TYPICAL LADDER RACK
	TYPICAL CABLE TRAY, BASKET STYLE

GENERAL ANNOTATION LEGEND

SYMBOL	DESCRIPTION
MER	MAIN EQUIPMENT ROOM
TR	TELECOMMUNICATION ROOM
MDF	MAIN DISTRIBUTION FRAME
IDF	INTERMEDIATE DISTRIBUTION FRAME
ETR	EXISTING TO REMAIN
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AC	ABOVE COUNTER
EC	ELECTRICAL CONTRACTOR
UNO	UNLESS NOTED OTHERWISE

TECHNOLOGY SYMBOLS LEGEND

NOT ALL SYMBOLS ARE USED

- AV WALL ROUGH-IN WITH DATA
- KEYNOTE
- Proposed Camera Direction
- SURVEILLANCE CAMERA
- Camera Schedule Number (Floor #-Camera #)
- Camera (N)ew, (E)xisting Rough-in, (D)emo
- Proposed Camera Direction
- PTZ CAMERA
- PTZ
- Proposed Camera Direction
- FIXED SURVEILLANCE CAMERA
- 360°/MULTI-SENSOR FIXED SURVEILLANCE CAMERA OR FISHEYE LENS CAMERA
- Approximate view of lens
- Lens View Angle
- 360°/MULTI-SENSOR FIXED SURVEILLANCE CAMERA OR FISHEYE LENS CAMERA
- Lens size
- MICROPHONE WITH AUDIO LINKED TO CAMERA
- MICROPHONE WITH AUDIO LINKED TO CAMERA
- SYMBOL TAG
- (#) = DIFFERENT TYPES OF CARD READERS:
  - M = MULLION
  - W = WIRELESS (Proprietary)
  - Wi = Wi-Fi (802.11)
  - POE = POWER OVER ETHERNET
- TOP = DETAIL NUMBER
- DETAIL REFERENCE
- BOTTOM = SHEET NUMBER
- NORTH ARROW
- SHEET NUMBER
- SECTION MARKER
- DETAIL NUMBER
- DIRECTION OF ELEVATION
- ELEVATION MARKER
- SHEET NUMBER
- DETAIL NUMBER
- DIRECTION OF ELEVATION
- SHEET NUMBER
- DIRECTION OF ELEVATION
- DETAIL NUMBER
- BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS DRAWING ADJUST SCALES ACCORDINGLY

TECHNOLOGY SHEET INDEX

SHEET NUMBER	SHEET NAME
T000	TECHNOLOGY - INDEX SHEET
T010	TECHNOLOGY - SITE PLAN
T100	TECHNOLOGY - LOWER LEVEL
T101	TECHNOLOGY - LEVEL1
T400	TECHNOLOGY - ENLARGEMENTS
T500	TECHNOLOGY DETAILS
T501	TECHNOLOGY DETAILS
T502	TECHNOLOGY DETAILS
T503	TECHNOLOGY DETAILS

TECHNOLOGY - GENERAL NOTES

1. EACH KEYNOTE MAY NOT BE UTILIZED ON EVERY SHEET.
2. ALL CONDUIT MEASUREMENTS REFER TO STANDARD CONDUIT TRADE SIZES.
3. ALL CABLES SHALL BE CONCEALED.
4. EACH CONTRACTOR SHALL PROVIDE AND INSTALL ALL NECESSARY SLEEVES, WHETHER OR NOT SPECIFICALLY NOTED ON PROJECT DRAWINGS. ALL SLEEVES SHALL BE 1-1/4" UNLESS NOTED OTHERWISE ON THE DRAWINGS. CABLE FILL PERCENTAGE SHALL COMPLY WITH NEC.
5. DEVICE LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL REVIEW CONDITIONS AND COORDINATE WITH OTHER TRADES AS NECESSARY FOR EXACT PLACEMENT.

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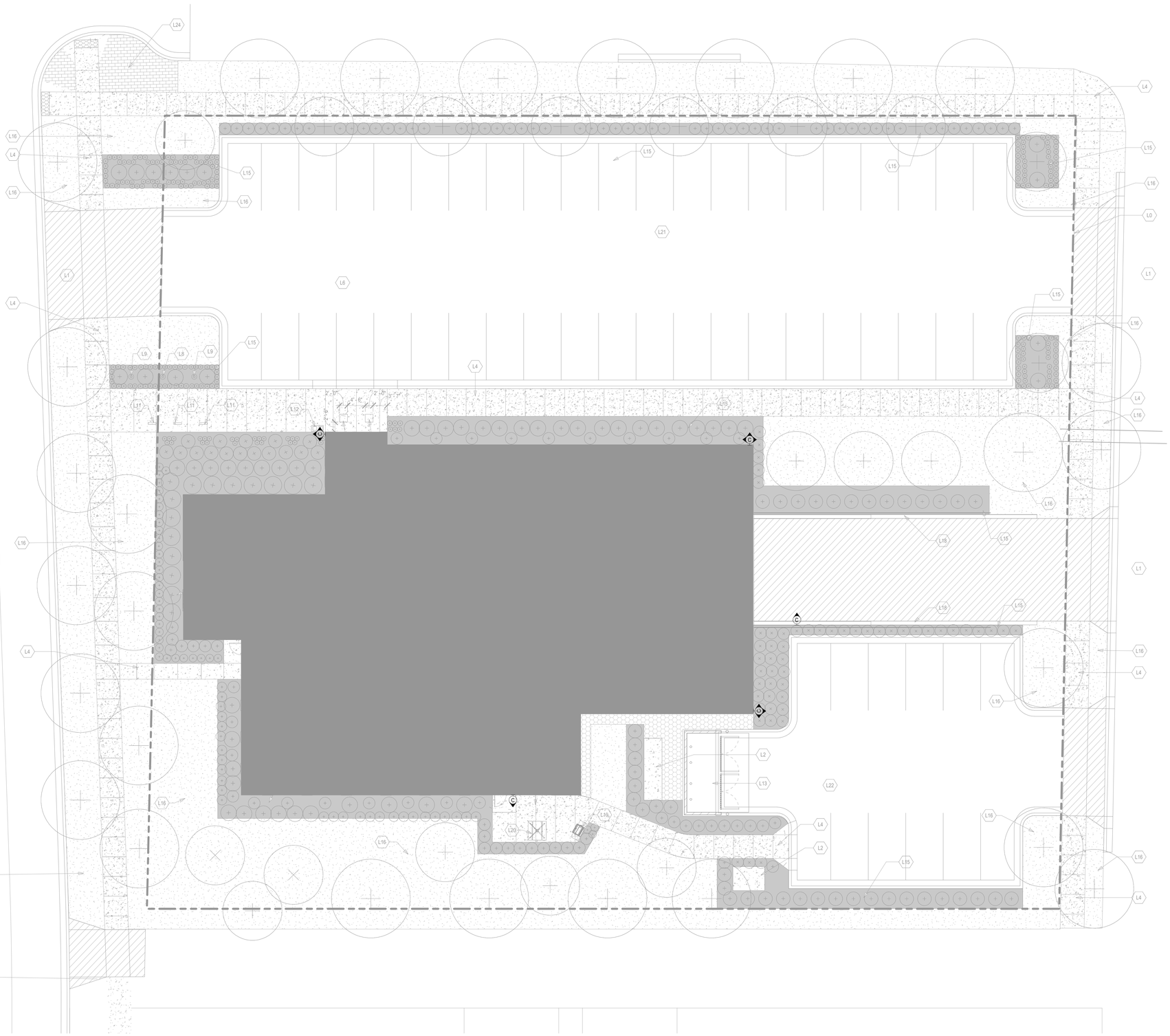
COMMISSION NUMBER	2106-02

SHEET TITLE

TECHNOLOGY - INDEX SHEET

SHEET NUMBER

T000



1 SITE PLAN
SCALE: 3/32" = 1'-0"

TRUE NORTH PLAN NORTH

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SHEET TITLE

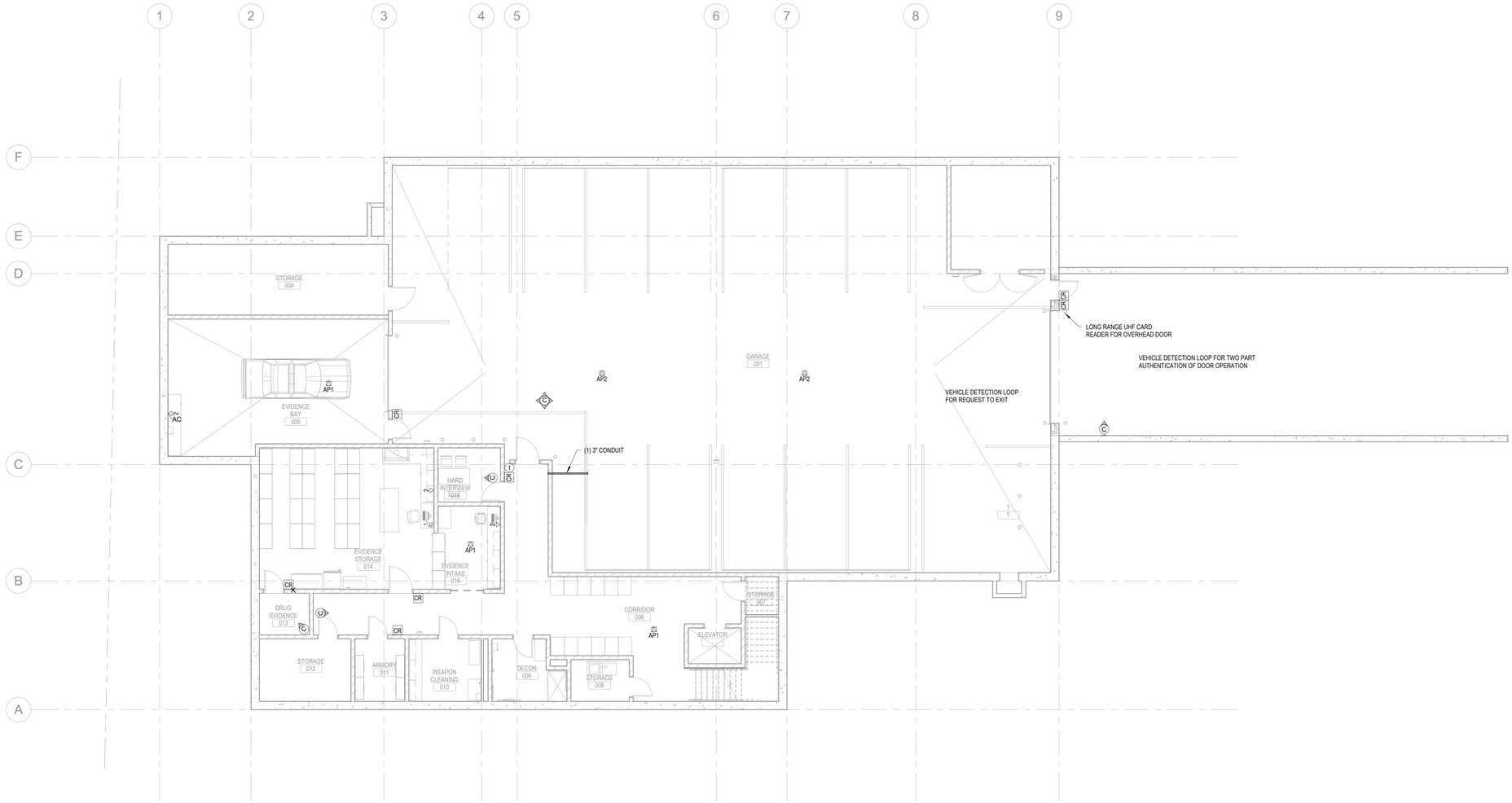
TECHNOLOGY - SITE PLAN

SHEET NUMBER

T010

TECHNOLOGY KEYNOTES

1. CARD READER AND CAMERA FOR INTERVIEW ROOM CAPTURE
2. DISPLAY FOR LIVE SURVEILLANCE FEEDS



1 LOWER LEVEL
SCALE: 1/8" = 1'-0"

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SHEET TITLE

TECHNOLOGY - LOWER LEVEL

SHEET NUMBER

T100

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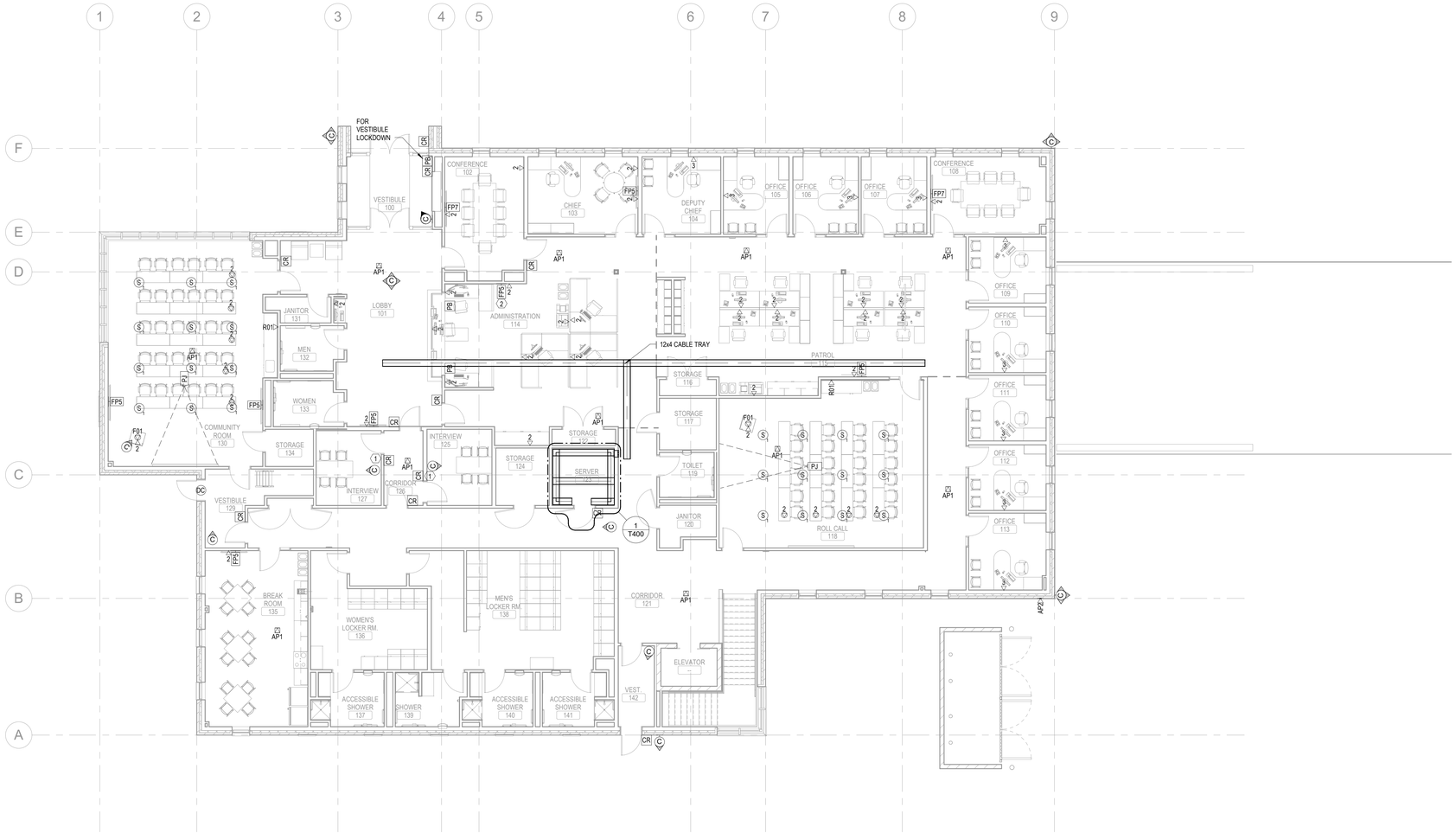
TECHNOLOGY KEYNOTES

1. CARD READER AND CAMERA FOR INTERVIEW ROOM CAPTURE
2. DISPLAY FOR LIVE SURVEILLANCE FEEDS



1 LEVEL 1
SCALE: 1/8" = 1'-0"

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SHEET TITLE

TECHNOLOGY - LEVEL1

SHEET NUMBER

T101

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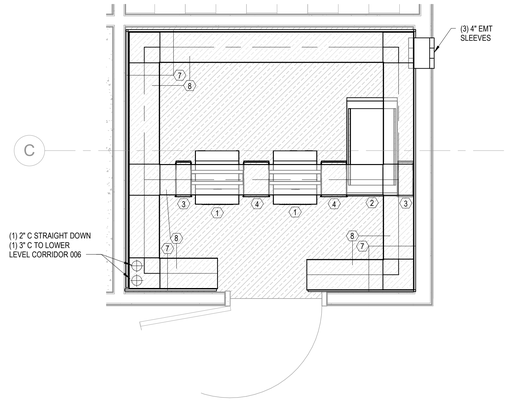

1 ENLARGEMENT - SERVER ROOM 123
SCALE: 1/2" = 1'-0"

ENLARGEMENT KEYNOTES

1. 2-POST RACK, SECURED TO FLOOR WITH EXPANSION ANCHORS, FIRST RACK SHALL BE 6" FROM WALL, IF VERTICAL WIRE PRESENT BETWEEN RACK AND WALL THEN VERTICAL WIRE MANAGER ATTACHED TO WALL SIDE OF RACK SHALL BE 6" FROM WALL. (TYPICAL)
2. 4-POST RACK, SECURED TO FLOOR WITH EXPANSION ANCHORS, FIRST RACK SHALL BE 6" FROM WALL, IF VERTICAL WIRE PRESENT BETWEEN RACK AND WALL THEN VERTICAL WIRE MANAGER ATTACHED TO WALL SIDE OF RACK SHALL BE 6" FROM WALL. (TYPICAL)
3. 6" VERTICAL WIRE MANAGER SECURED TO SIDE OF RACK (TYPICAL)
4. 10" VERTICAL WIRE MANAGER SECURED TO SIDE OF RACK (TYPICAL)
5. GROUND BUS BAR, MOUNTED 6' AFF, ELECTRON PLATED AND PREDRILLED TO ACCEPT STANDARD TWO-HOLE LUGS.
6. 18"x2" LADDER RACK SECURED TO TOP OF RACK WITH LADDER RACK MOUNTING PLATE AND BOLTED TO WALL, WITH WATER FALLS INTO VERTICAL WIRE MANAGERS (TYPICAL)
7. 12"x4" CABLE TRAY (BASKET STYLE) WITH 6" CLEARANCE FROM WALL (TYPICAL)
8. 3/4" FIRED RATED PLYWOOD SECURED TO WALL AT 22" AFF. IF THE PLYWOOD IS PAINTED, THE PAINT SHALL BE FIRE RETARDANT PAINT ON BOTH SIDES AND THE RATING STAMP ON THE PLYWOOD SHALL BE EXPOSED.
9. (4) 4" CONDUIT SLEEVES STUBBED UP 4", FROM FLOOR BELOW, WITH UL-LISTED 2-HOUR RATED RE-ENTERABLE FIRE STOP SYSTEM.
10. (4) 4" CONDUIT SLEEVES STUBBED UP TO FLOOR ABOVE, WITH UL-LISTED 2-HOUR RATED RE-ENTERABLE FIRE STOP SYSTEM.
11. FIRESTOP SLEEVES, STI EZPATH OR HILTI SPEED SLEEVES.
12. SPACE RESERVED FOR TELEPHONE TERMINAL BLOCKS OR FRAME.
13. SPACE RESERVED FOR SECURITY PANELS.

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SHEET TITLE

TECHNOLOGY - ENLARGEMENTS

SHEET NUMBER

T400

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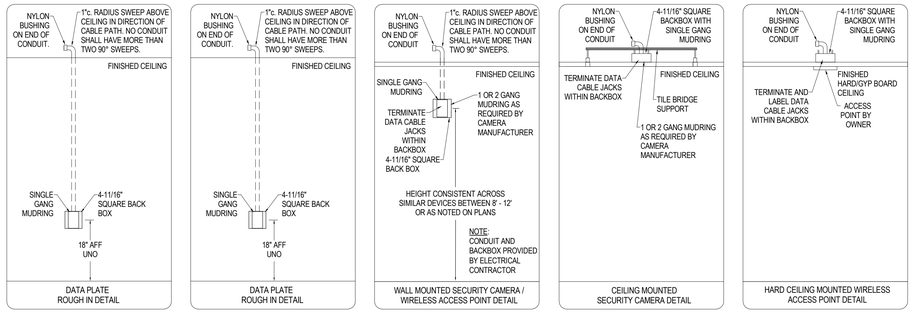
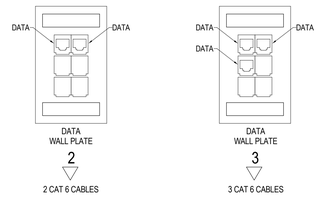


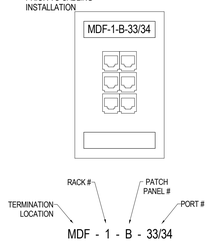
GENERAL NOTE

1. FACE PLATE DETAIL FOR OUTLET CONFIGURATION PURPOSES ONLY. CONTRACTOR TO SELECT TYPE OF FACE PLATE TO MATCH CONNECTIVITY HARDWARE, FLOOR BOX AND/OR MODULAR FURNITURE OPENING.

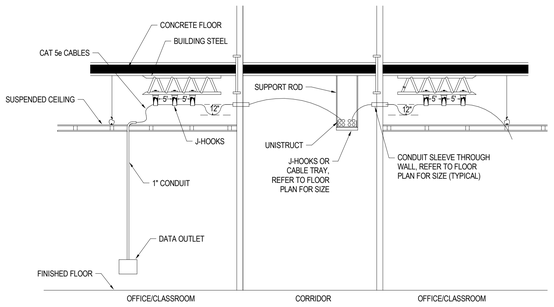


1 DATA ROUGH-IN DETAILS
SCALE: NS

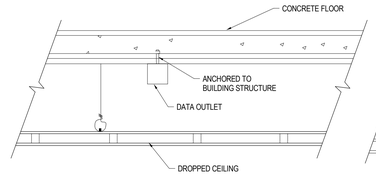
GENERAL NOTE
CONTRACTOR SHALL VERIFY EXACT LABELING SCHEME WITH OWNER PRIOR TO CABLING INSTALLATION



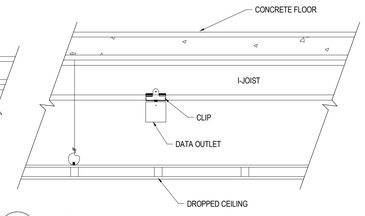
2 PLATE LABELING DETAIL
SCALE: NTS



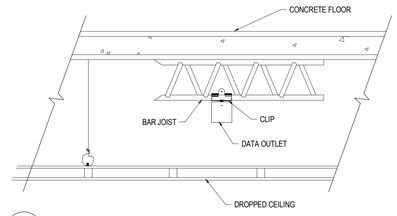
3 CABLE PATHWAY DETAIL
SCALE: NS



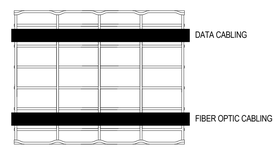
4 DROPPED CEILING MOUNTING DETAIL
SCALE: NS



5 I-JOIST MOUNTING DETAIL
SCALE: NS



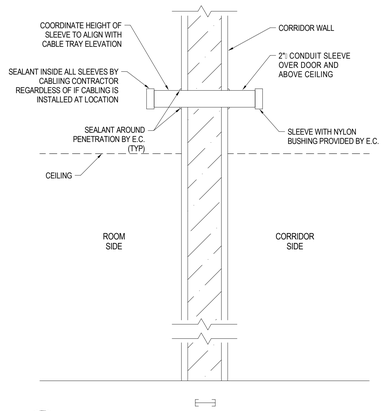
6 BAR JOIST MOUNTING DETAIL
SCALE: NS



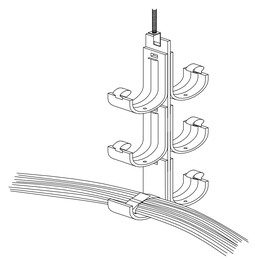
NOTES:
RF DISTRIBUTION SHOULD ROUTE ALONG PERIMETER WALLS. DO NOT INSTALL IN CABLE TRAY.

BASKET TRAY PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR IN ALL AREAS EXCEPT IDFS AND MDF SPACES

7 CABLE TRAY LAYOUT
SCALE: NTS



8 TYPICAL CABLING SLEEVE
SCALE: NTS



9 TYPICAL J-HOOK DETAIL
SCALE: NTS

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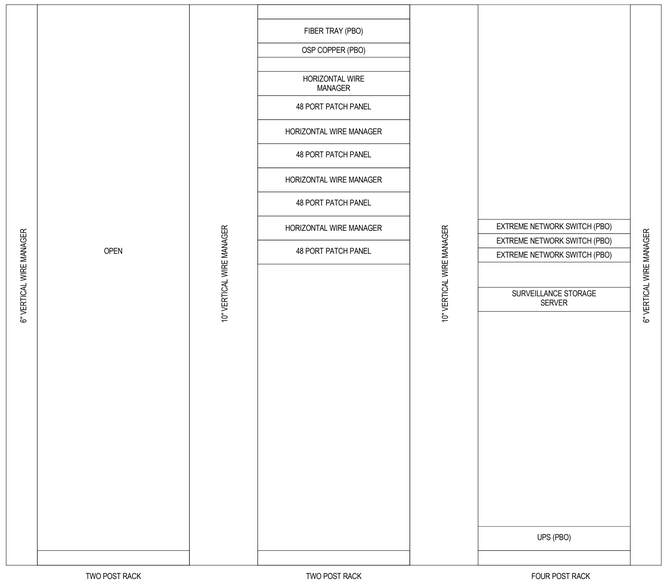
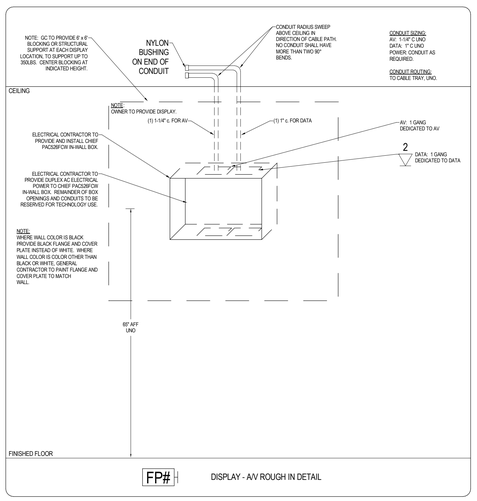
TECHNOLOGY DETAILS

SHEET NUMBER

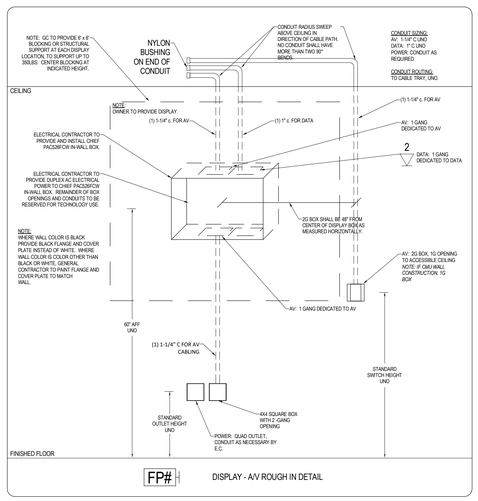
T500



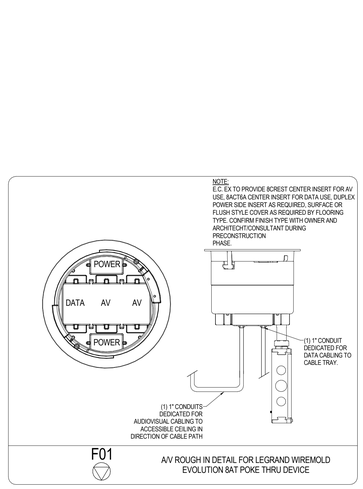
1 RACK ELEVATION DETAILS
SCALE: NS



2 SIGNAGE/BREAKROOM/HALLWAY WALL MOUNT DISPLAY - A/V ROUGH-IN DETAIL
SCALE: NTS TYPE = CHIEF MANUFACTURING PAC521P



3 CONFERENCE/OFFICE WALL MOUNT DISPLAY - A/V ROUGH-IN DETAIL
SCALE: NTS TYPE = CHIEF MANUFACTURING PAC521P



4 FLOOR BOX DETAIL
SCALE: NS

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PROJECT TITLE

DETROIT LAKES POLICE STATION

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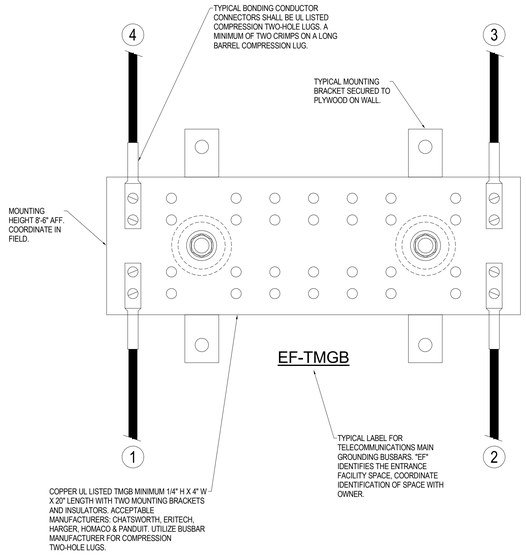


GROUNDING & BONDING GENERAL NOTES

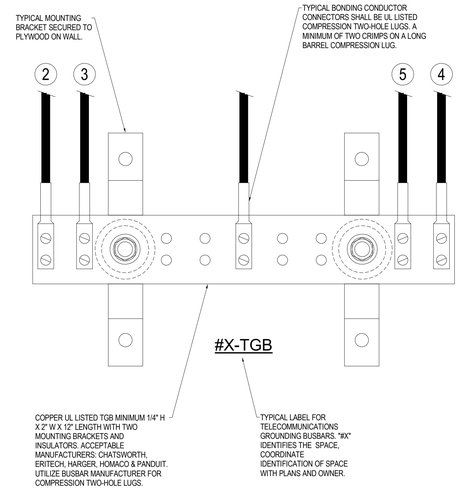
1. ALL TELECOM GROUNDING WORK SHALL BE PROVIDED AND INSTALLED BY STRUCTURED CABLING CONTRACTOR.
2. BONDING CONDUNCTORS SHALL BE #3/0 AWG COLOR GREEN INSULATED COPPERT CONDUCTOR OR SIZED PER "BONDING CONDUCTOR SIZING CHART" (ANSI J-STD-607-B) IN PATHWAY
3. FASTENING BONDING CONNECTOR TWO-HOLE LUGS TO ALL BUSBARS SHALL BE CLEANED AND APPLY A COPPER ANTI-OXIDANT TO THE CONTACT AREA OF BOTH THE CONNECTOR LUG AND THE BUSBAR.
4. BONDING CONDUCTORS AND BUSBAR SHALL BE LABELED WITH IDNETIFICATION IN ACCORDANCE WITH THE REQUIREMENTS OF ANSI/TIA/EIA-606-B.
5. BONDING CONDUCTORS SHALL BE LABELED WITH IDENTIFICATION LABEL NOTED BELOW AND SECURED WITH CABLE TIE TO EACH CONDUCTOR. (ANSI J-STD-607-B) "IF THIS CONNECTOR OR CABLE IS LOOSE OR MUST BE REMOVED, PLEASE CALL THE BUILDING TELECOMMUNICATIONS MANAGER".
6. STRUCTURED CABLING CONTRACTOR SHALL PERFORM CONTINUITY TESTING MEASUREMENTS OF THE GROUNDING RESISTANCE TO NOT EXCEED 0.1 OHM BETWEEN:
   - A. THE TMGB AND THE NEAREST GROUNDING ELECTRODE.
   - B. THE TGB AND THE NEAREST GROUNDING ELECTRODE.
   - C. EACH TGB AND THE PATHWAY(S), RACK(S), CABINETS(S) AND APPLICABLE EQUIPMENT.

GROUNDING & BONDING RISER DETAIL NOTES

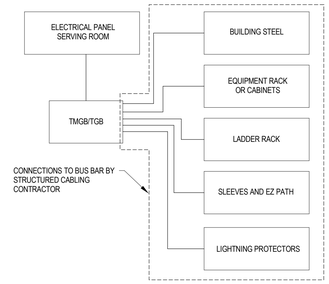
1. BONDING CONDUCTOR FOR TELECOMMUNICATIONS (BCT) TO BUILDING GROUNDING ELECTRODE. BCT SHALL NOT BE SMALLER THEN THE TBB.
2. BCT TO NEAREST BUILDING STEEL STRUCTURE. IF APPLICABLE UTILIZED EXOTHERMIC WELDING CONNECTION TO BUILDING STEEL.
3. TELECOMMUNICATIONS BONDING BACKBONE (TBB) FOR GROUNDING EQUALIZER (GE), IF APPLICABLE.
4. TYPICAL TBB(S) THAT INTERCONNECTS ALL TGB(S) WITH THE TMGB.
5. BCT TO TELECOMMUNICATIONS CABLE RUNWAYS(S), RACK(S), CABINET(S) AND APPLICABLE EQUIPMENT. DAISY CHAINING OF BCT AT RELAY RACKS IS NOT ACCEPTABLE. EACH RACK IS TO HAVE A BCT TO A COMPRESSION LUG TAP TO DEDICATED HOMERUN ACT BACK TO THE TGB. SEE DETAILS.

BONDING CONDUCTOR SIZING CHART

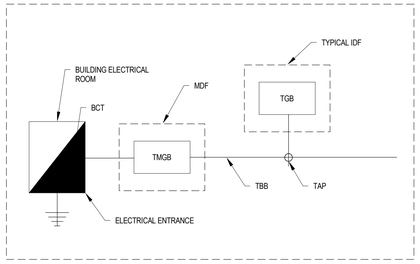
LENGTH (FEET)	SIZE (AWG)
LESS THAN (<) 13'	#6
14' - 20'	#4
21' - 26'	#3
27' - 33'	#2
34' - 41'	#1
42' - 52'	#1/0
53' - 66'	#2/0
GREATER THAN (>) 66'	#3/0



1 GROUNDING AND BONDING DETAIL
SCALE: NS

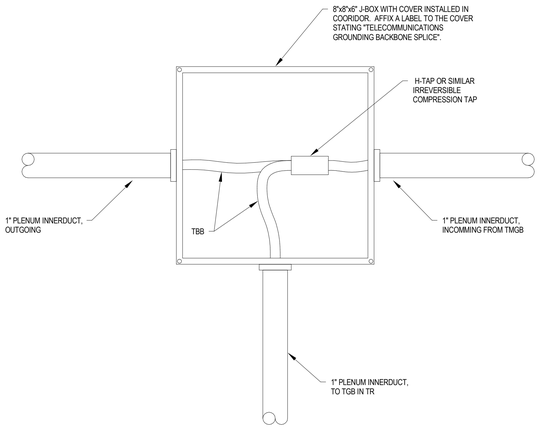


2 TELECOM ROOM BONDING DIAGRAM
SCALE: NS

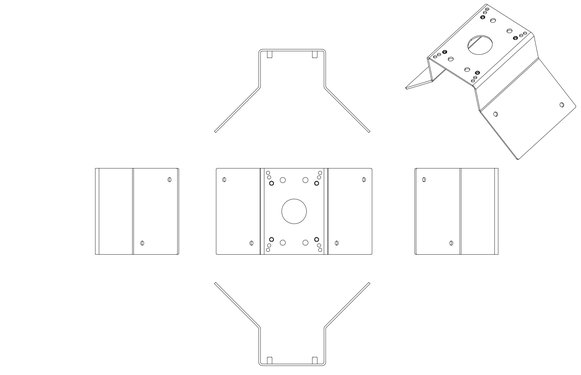


NOTES:
TMGB = Telecommunications main grounding busbar
TGB = Telecommunications main grounding busbar
TBB = Telecommunications bonding backbone
BCT = Bonding conductor for telecommunications
TAP = Conductor connects into a main feeder line
MDF = main distribution frame
IDF = Independent distribution frame

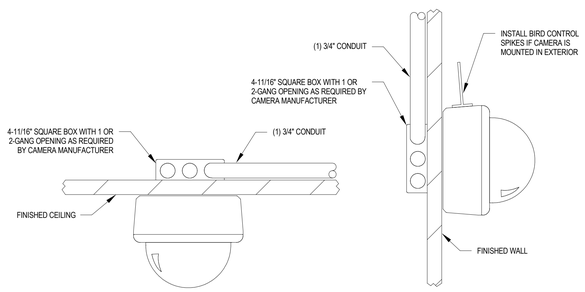
3 TYPICAL GROUNDING FLOW DIAGRAM
SCALE: NS



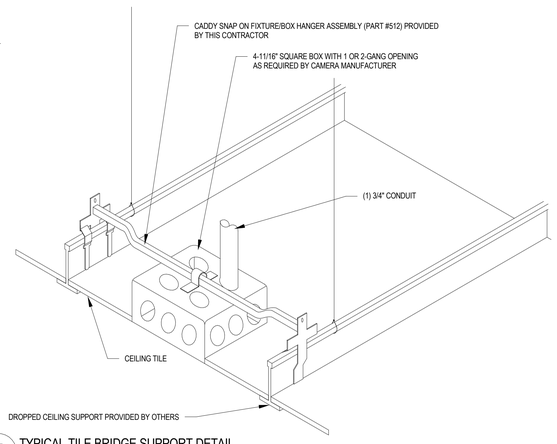
4 TELECOM BONDING BACKBONE SPLICE DETAIL
SCALE: NS



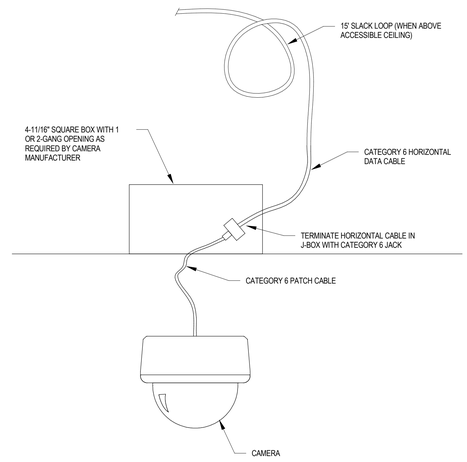
5 CAMERA CORNER MOUNT BRACKET DETAIL
SCALE: NTS



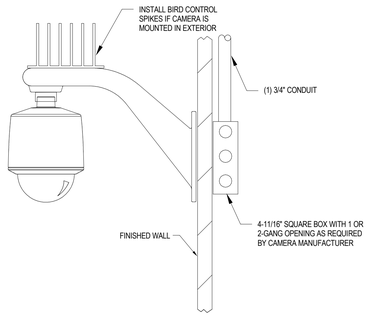
6 HARD CEILING OR WALL MOUNTED CAMERA DETAIL
SCALE: NTS



7 TYPICAL TILE BRIDGE SUPPORT DETAIL
SCALE: NTS



8 TYPICAL CAMERA INSTALLATION SECTION DETAIL
SCALE: NS



9 TYPICAL FINISHED WALL FLUSH CAMERA MOUNT
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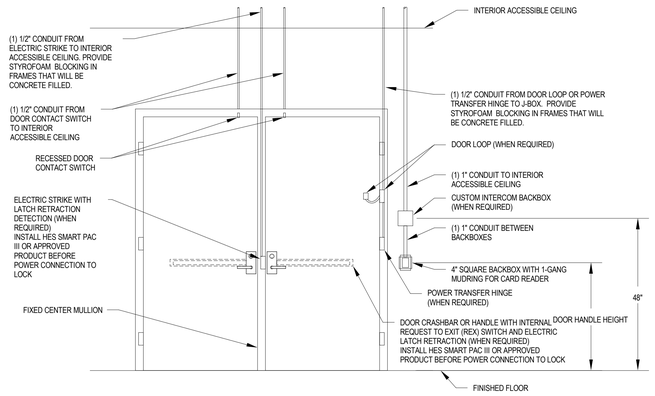
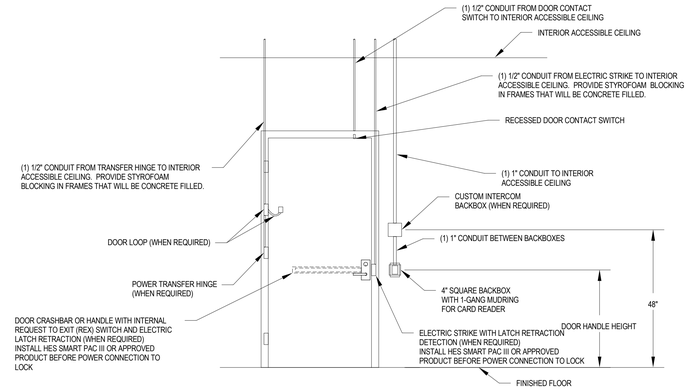


1 FIXED CENTER MULLION UNIVERSAL DOUBLE DOOR ROUGH-IN DETAIL NEW CONSTRUCTION
SCALE: NTS



2 TYPICAL UNIVERSAL SINGLE DOOR ROUGH-IN DETAIL NEW CONSTRUCTION
SCALE: NTS

3 TYPICAL UNIVERSAL SINGLE DOOR DC ROUGH-IN DETAIL
SCALE: NTS

4 TYPICAL UNIVERSAL OVERHEAD DOOR DC ROUGH-IN DETAIL
SCALE: NTS

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