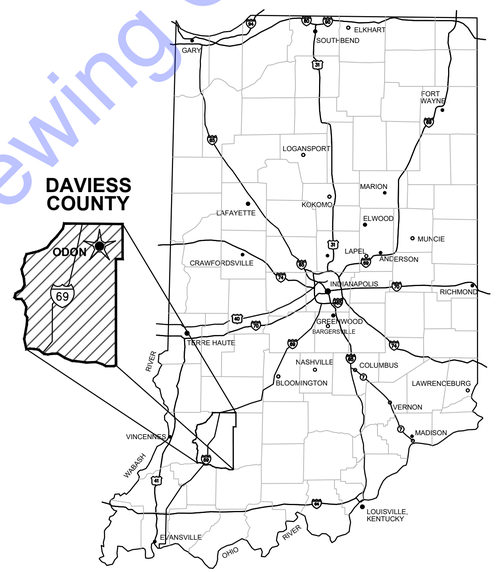
SET NO.

TOWN OF ODON
DAVIESS COUNTY, INDIANA

WATER UTILITIES IMPROVEMENTS PROJECT
DIVISION "A" - WATER TREATMENT PLANT IMPROVEMENTS
APRIL 2025

TOWN COUNCIL

SUSIE ROACH.....PRESIDENT
BJ SANDERS.....VICE PRESIDENT
DOUG BENJAMIN.....MEMBER
MANDY WILZ.....CLERK-TREASURER



GENERAL LOCATION MAP

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QA/QC BY : ALAN W. LEISTNER, P.E. — DATE : 04/22/2025

CERTIFIED BY : AARON R. ROHNER, P.E.
INDIANA P.E. No. 12000723 — DATE : 04/22/2025

AARON R. ROHNER — REGISTERED — No. 12000723 — STATE OF INDIANA — PROFESSIONAL ENGINEER

CONTRACT NO. : W21115

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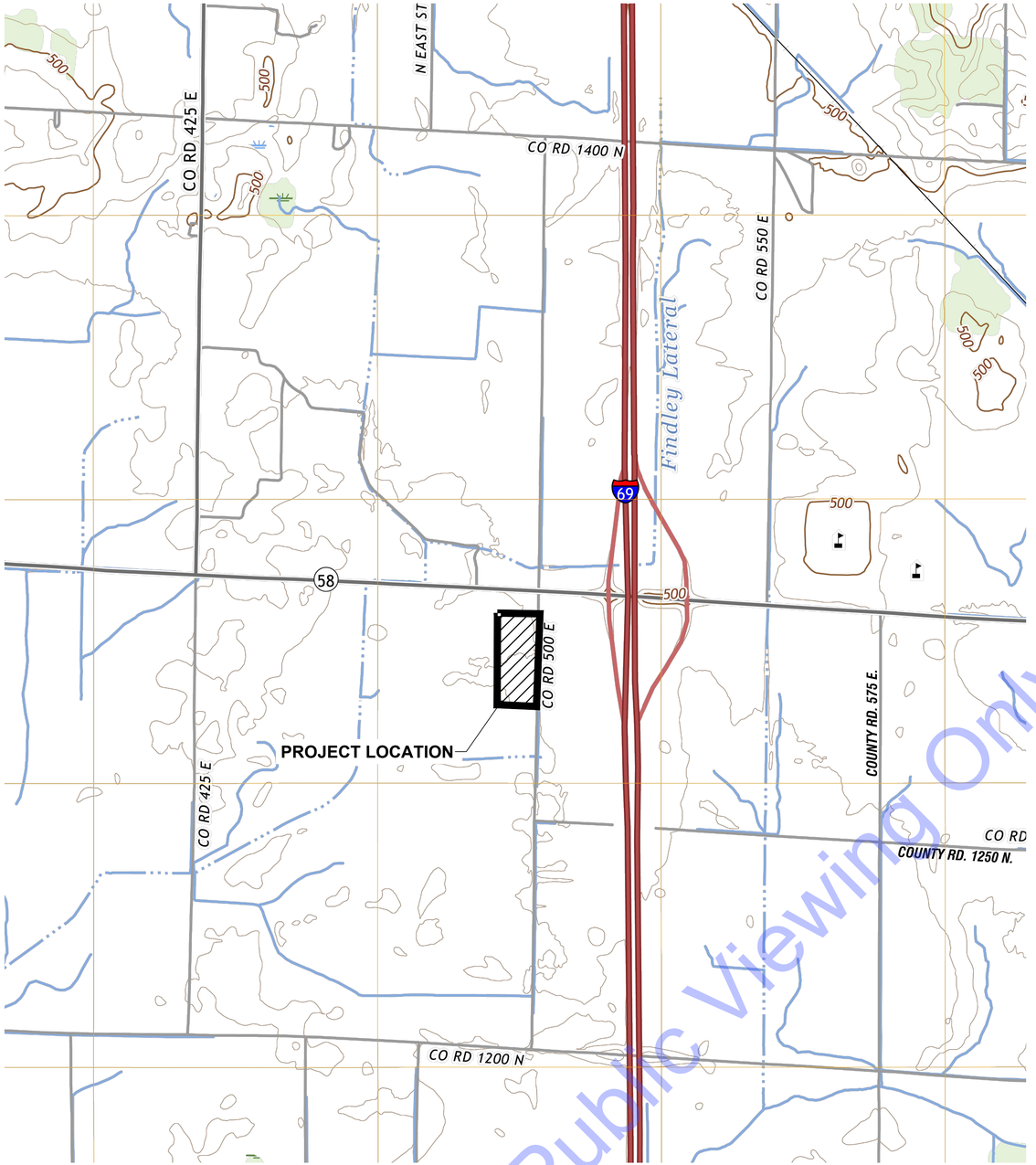

VICINITY MAP

SCALE: 1"=800'-0"

0 800' 1600'

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REGISTERED
No 12000723
STATE OF INDIANA
PROFESSIONAL ENGINEER

Signature 01/30/2024 Date

TOWN OF ODON
DAVIESS COUNTY, INDIANA

WATER UTILITY
IMPROVEMENTS PROJECT
DIVISION "A" - WTP
IMPROVEMENTS

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No.	Submittal / Revision	By	Date
1	UPDATE SHEET INDEX	AR	4/2025

Designed By:	Drawn By:	Checked By:
ARR	DMJ	AWL
Issue Date: 04/22/2025	Project No: W21115	Scale: AS SHOWN

VICINITY MAP AND DRAWING INDEX

Drawing No: **G2**

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GENERAL ABBREVIATIONS

A	AIR
AB	ANCHOR BOLT
AFF	ABOVE FINISH FLOOR
ALT	ALTERNATE
ALUM	ALUMINUM
@	AT
APP.	APPARENT
ATT	AERATION TANK TRANSFER
AUTO	AUTOMATIC
AVG	AVERAGE
B	BAFFLE
BLDG	BUILDING
BM	BENCH MARK
BOT	BOTTOM
BRG	BEARING
CFM	CUBIC FEET PER MINUTE
CL	CENTERLINE
CO	CLEAN OUT
COL/C	COLUMN
CONC	CONCRETE
COP	COPPER
CJ	CONSTRUCTION JOINT
CW	COLD WATER
CY	CUBIC YARD
D	DRAIN
DEC	DECANT
DIA	DIAMETER
DIM	DIMENSION
DI	DUCTILE IRON PIPE
DL	DEAD LOAD
DSPT	DOWN SPOUT
DWG	DRAWING
E	ELECTRICAL CONDUIT
EA	EACH
EF	EACH FACE
EFFL	EFFLUENT
EL	ELEVATION
EW	EACH WAY
EX	EXISTING
EXF	EXHAUST FAN
EXP JP	EXPANSION JOINT
F	FILTER
FCAR	FLANGED COUPLING ADAPTER, RESTRAINED
FD	FLOOR DRAIN
FDN	FOUNDATION
FH	FIRE HYDRANT
FLD	FILTRATE DRAIN
FLG	FLANGE
FL	FLUSHING LINE
FLR	FLOOR
FM	FORCE MAIN
FRP	FIBER REINFORCED PLASTIC
FT	FEET OR FOOT
FTG	FOOTING
FW	FINISHED WATER
G	GAS
GALV	GALVANIZED
GEN	GENERAL
GRD	GROUND OR GRADE
HB	HOSE BIBB
HORIZ	HORIZONTAL
HP	HORSEPOWER
HW	HOT WATER
ID	INSIDE DIAMETER
IJ	ISOLATION JOINT
INV	INVERT
IP	IRON PIN
LAV	LAVATORY
LB	POUND
LL	LIVE LOAD
LLV	LONG LEG VERTICAL
LTG	LIGHTING
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MGD	MILLIONS GALLONS PER DAY
MH	MANHOLE
MIN	MINIMUM, MINUTE
MJ	MECHANICAL JOINT
NC	NORMALLY CLOSED
NG	NATURAL GAS
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NO.	NUMBER
NPW	NON-POTABLE WATER
OC	ON CENTER
OD	OUTSIDE DIAMETER
OPG	OPENING
OPP	OPPOSITE
PB	PULL BOX
PE	POLYETHYLENE EXP. JT. MATERIAL
P/L	PROPERTY LINE
POJ	PUSH ON JOINT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
PW	POTABLE WATER
R	RECIRCULATION
RAD	RADIUS
RAS	RETURN ACTIVATED SLUDGE
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
REINF	REINFORCING
REQ'D	REQUIRED
R/W (ROW)	RIGHT-OF-WAY
SAN	SANITARY
SAS	SANITARY SEWER
SCH	SCHEDULE
SECT	SECTION
SF	SQUARE FEET
SHT	SHEET
SL	SAMPLE LINE
SOS	STORM SEWER
SP	STOP PLATE
SQ	SQUARE
STD	STANDARD
S STL, SS	STAINLESS STEEL
STL	STEEL
SUP	SUPERNATANT
SY	SQUARE YARD
TOS	TOP OF SLAB
TOW	TOP OF WALL
TW	TERTIARY WATER
TYP	TYPICAL
V	VACUUM OR VALVE
VAR	VARIES
VERT	VERTICAL
W	WEIR
W/	WITH
W/O	WITHOUT
WAS	WASTE ACTIVATED SLUDGE
WC	WATER CLOSET
WH	WATER HEATER
WL	WATER LINE
WWF	WELDED WIRE FABRIC
YH	YARD HYDRANT

GENERAL NOTES

1. ALL PROPERTY AND RIGHT-OF-WAY LINES INFORMATION SHOWN IN DRAWING SET ARE APPARENT AND SHALL NOT BE DEEMED EXACT LOCATIONS, UNLESS OTHERWISE NOTED. INFORMATION WAS OBTAINED VIA "INDIANA ON-LINE" GIS WEBSITE.
2. EXISTING UTILITY INFORMATION SHOWN IN DRAWING SET, MEETS "ASCE 36-02" QUALITY LEVEL **"C"**, UNLESS OTHERWISE NOTED.

   UTILITY COORDINATION AND PROJECT DEPICTION OF EXISTING SUBSURFACE UTILITY DATA:

   UTILITY QUALITY LEVEL DESCRIPTIONS:

   UTILITY QUALITY LEVEL A - PRECISE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES OBTAINED BY THE ACTUAL EXPOSURE (OR VERIFICATIONS OF PREVIOUSLY EXPOSED AND SURVEYED UTILITIES) AND SUBSEQUENT MEASUREMENT OF SUBSURFACE UTILITIES, USUALLY AT A SPECIFIC POINT. ACCURACY OF LOCATION MATCHES PROJECT SURVEY TOLERANCE.

   UTILITY QUALITY LEVEL B - INFORMATION OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION SUBSURFACE UTILITIES. THE RELIABILITY OF THIS INFORMATION IS SURVEYED TO PROJECT CONTROL AND SUBJECT TO ACCURACY LEVELS OF THE GEOPHYSICAL TOLERANCE DEFINED BY THE PROJECT.

   UTILITY QUALITY LEVEL C - INFORMATION OBTAINED BY SURVEYING AND PLOTTING VISIBLE ABOVE GROUND UTILITY FEATURES AND CORRELATING QUALITY LEVEL "D" INFORMATION.

   UTILITY QUALITY LEVEL D - INFORMATION DERIVED FROM EXISTING RECORDS OR VERBAL RECOLLECTIONS.
3. NORTHING AND EASTING COORDINATES SHOWN ON ALL MANHOLE, INLETS, ETC. ARE SHOWN FROM CENTER OF STRUCTURE NOT CASTING, UNLESS OTHERWISE NOTED.

GENERAL SCHEMATIC LEGEND

- QUICK DISCONNECT
- FLANGED SPOOL SECTION
- PRV — PRESSURE REDUCER VALVE
- FLANGED COUPLING ADAPTER
- BALL CHECK VALVE
- M — MOTOR ACTUATOR
- FLEXIBLE CONNECTION
- SCR — FLANGE FILLER & S.S. MESH SCREEN
- W V90 — 90° V-NOTCH WEIR
- M — MAGNETIC FLOW METER
- ULTRASONIC SENSOR
- PUMP
- NEW PIPING AND EQUIPMENT
- EXISTING PIPING AND EQUIPMENT
- FUTURE PIPING AND EQUIPMENT
- BOOSTER PUMP
- ARV — AIR RELIEF VALVE
- FM — FLOW METER
- GV — GATE VALVE
- FCV — FLOW CONTROL VALVE
- VALVE
- ECCENTRIC PLUG VALVE
- CHECK VALVE
- INCREASER / REDUCER
- BV — BUTTERFLY VALVE
- PIPE THROUGH FLOOR / WALL
- BALL VALVE
- BLIND FLANGE OR PLUG
- HOSE BIBB
- STOP PLATE
- W — WEIR

HATCHING SYMBOLS

- CMU WALL (PLAN VIEW) / GRANULAR BACKFILL (PROFILE VIEW)
- DEMOLITION (CONTRACTOR SHALL REFER TO DETAILED SPECIFICATIONS)
- GROUT
- CONCRETE
- STEEL
- COMPACTED GRANULAR BACKFILL OR COMPACTED FOUNDATION
- ABANDONED IN PLACE

DRAWING SET LEGEND

- EXOHT — EXISTING OVERHEAD TELEPHONE LINE
- EXG — EXISTING GAS LINE AND VALVE
- EXW — EXISTING WATER LINE AND VALVE
- EXF/O — EXISTING FIBER OPTIC LINE
- EXOHE — EXISTING OVERHEAD ELECTRIC LINE
- EXBE — EXISTING BURIED ELECTRIC
- NPW — EXISTING NON-POTABLE WATER LINE
- POT — EXISTING POTABLE WATER LINE
- EXBT — EXISTING BURIED TELEPHONE LINE
- X — EXISTING FENCE
- APP. R/W — APPARENT RIGHT-OF-WAY
- APP. P/L — APPARENT PROPERTY LINE
- EDGE OF ROAD
- EDGE OF ROAD WITH CURB
- 785 — EXISTING MAJOR CONTOUR LINE
- EXISTING MINOR CONTOUR LINE
- W — **NEW WATER LINE**
- 785 — **PROPOSED MAJOR CONTOUR LINE**
- 784 — **PROPOSED MINOR CONTOUR LINE**
- MONUMENT
- CONTROL POINT
- FLAG POLE
- POST
- STUMP
- BUSH / HEDGE
- DECIDUOUS TREE
- CONIFEROUS TREE
- SIGN
- LARGE ROCK
- UTILITY LOCATE FLAG
- GAS METER
- GAS LINE MARKER
- POWER/LIGHT POLE
- EM — ELECTRIC METER
- GUY WIRE
- ELECTRIC PANEL
- TPED — TEL/TV PEDESTAL
- W — WATER METER
- VALVE
- FIRE HYDRANT
- FLUSH HYDRANT
- WALL SPIGOT
- EXISTING PIPE PLUG
- EXISTING STORM MANHOLE/INLET
- EXISTING SANITARY MH
- TOP OF PIPE
- CURB INLET
- STORM INLET SQUARE
- STORM INLET ROUND
- **NEW VALVE**
- **NEW FIRE HYDRANT**
- **NEW FLUSH HYDRANT**
- **NEW WET SADDLE AND VALVE BODY**
- **NEW PLUG**
- **NEW LINE STOP**
- **NEW SANITARY MH**

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Signature — 01/30/2024 Date

TOWN OF ODON
DAVIESS COUNTY, INDIANA

WATER UTILITY
IMPROVEMENTS PROJECT

DIVISION "A" - WTP
IMPROVEMENTS

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No.	Submittal / Revision	By	Date

Designed By:	Drawn By:	Checked By:
ARR	DMJ	AWL
Issue Date: 04/22/2025	**Project No:** W21115	**Scale:** AS SHOWN

GENERAL NOTES, ABBREVIATIONS, AND SYMBOLS

Drawing No: **G3**

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SURVEY CONTROL PLAN

SCALE: 1"=60'-0"

0 60' 120'

CONTROL POINT INFORMATION			
IDENTIFIER	**NORTHING**	**EASTING**	**DESCRIPTION**
CP-10	1309768.18	2955342.58	5/8" IRON PIN W/ CAP
CP-11	1309594.83	2954915.44	5/8" IRON PIN W/ CAP
CP-12	1309392.65	2955320.92	5/8" IRON PIN W/ CAP

Project coordinates are based on the following:
HORIZONTAL-US State plane coordinates: NAD83 *(North American Datum)* Indiana West Zone (1302)
VERTICAL- USGS 1988 NAVD (North American Vertical Datum)-per GPS observations (Not verified by physical location of published USGS monuments)

SHEET NOTES:

1. CONTRACTOR SHALL VERIFY CONTROL POINT ELEVATIONS AGAINST A BENCHMARK (TBM) PRIOR TO USE IN THE EVENT THE CONTROL POINT HAS BEEN DISTURBED SUBSEQUENT TO THE SITE SURVEY BEING COMPLETED.

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SURVEY DATA

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G4
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EX. PRESSURE GAUGE
EX. 6"
NEW 6"
NEW 8"
8" BYPASS
EX. WELL #1
250 GPM
EX. 6"
EX. PRESSURE GAUGE
8"
EX. WELL #4
275 GPM
EX. RELIEF VALVE
NEW TREATMENT UNIT
8"
8"
8"
COMPOUND GAUGE
(SUCTION SIDE, TYP.)
PRESSURE GAUGE
(DISCHARGE SIDE, TYP.)
6"
3"
1.5"
6"
NEW HIGH
SERVICE PUMPS
NEW PRESSURE GAUGE
NEW 6"
NEW 6"
NEW 8"
NEW WELL #5
250 GPM
TO
SAMPLE
FAUCET
8"
6"
6"
3"
1.5"
6"
6"
6"
3"
1.5"
6"
FLOW METER
RELIEF VALVE
FM
PRV
6"
TO DISTRIBUTION
EX. BACKWASH
DRAIN LINE
IMPROVED BACKWASH SUMP
NEW V-NOTCH AND
ULTRASONIC TRANSMITTER
2"
NEW BACKFLOW
PREVENTER
EXISTING
BACKWASH
TANK
1"
1"
EX. CHLORINE INJECTORS
NEW TRU-UNION
BALL VALVE (TYP.)
NEW VACUUM
SOLENOID VALVE
(TYP.)
FM
FLOW METER
EX.DECANT LINE
¼" CHEMICAL TUBING INSIDE
1 ½" PVC CARRIER PIPE
NEW SOLENOID
VALVE (TYP.)
2"
2"
PRECHLORINE
INJECTION
POSTCHLORINE
INJECTION
TO SAMPLE
FAUCET AND
BUILDING
NEW LIQUID DOSING PUMPS
⅜"
⅜"
30 GAL CHEMICAL DRUM
EX. SCALES
EX. VENT MODULE
⅜"
⅜"
NEW ROTAMETER (TYP.)
IMPROVED LIQUID CHEMICAL DOSING SYSTEM
IMPROVED GAS CHLORINE SYSTEM
ROUTE TO
OUTSIDE
BUILDING
EX. 150 LB. CL2 CYLINDERS
WITH AUTOSWITCHOVER
REGULATORS ON SCALES

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PROCESS FLOW SCHEMATIC

Drawing No:
G5
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SECTION A: BASIC PLAN ELEMENTS

A1: INDEX OF THE LOCATION OF REQUIRED PLAN ELEMENTS IN THE CONSTRUCTION PLAN:

THIS DOCUMENT REPRESENTS THE PLAN INDEX. THE CONTENT IS ORGANIZED AROUND THE INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT CONSTRUCTION STORMWATER GENERAL PERMIT CONSTRUCTION/STORMWATER POLLUTION PREVENTION PLAN DEVELOPMENT GUIDANCE. DETAILS ARE SPECIFIC TO THE TOWN OF ODON WATER UTILITY IMPROVEMENTS PROJECT - DIVISIONS A AND B.

A2: A VICINITY MAP DEPICTING THE PROJECT SITE LOCATION IN RELATIONSHIP TO RECOGNIZABLE LOCAL LANDMARKS, TOWNS, AND MAJOR ROADS:

THIS INFORMATION HAS BEEN INCLUDED AND IS SHOWN IN THE PLANS. A USGS SITE MAP ILLUSTRATING THE APPROXIMATE EXTENT OF THE PROJECT IS ALSO SHOWN IN THE PLANS. ALL CONSTRUCTION WILL TAKE PLACE IN EXISTING RIGHT OF WAYS, UTILITY EASEMENTS, OR LAND OWNED BY THE TOWN OF ODON.

A3: NARRATIVE OF THE NATURE AND PURPOSE OF THE PROJECT:

THE TOWN OF ODON OWNS AND OPERATES A WATER TREATMENT UNIT AND DISTRIBUTION SYSTEM. SPECIFIC COMPONENTS AT THE WATER TREATMENT PLANT (WTP) ARE NEARING THE END OF ITS USEFUL LIFE. SOME OF THE EXISITNG WATER SUPPLY WELLS ARE IN NEED OF REPLACEMENT. ADDITIONAL WATER SUPPLY AND TREATMENT CAPACITY IS NEEDED FOR THE 20-YEAR PLANNING PERIOD. ADDITIONALLY, ONLY THE UPPER THIRD OF THE STANDPIPE IS USABLE STORAGE, WHICH IS LESS THAN THE AVERAGE DAILY DEMAND IN THE SYSTEM. SOME OF THE TOWN'S RESIDENTS ALSO EXPERIENCE LOW WATER PRESSURE WITHIN THE SYSTEM.

THE DIVISION A IMPROVEMENTS CONSIST OF EXPANDING THE EXISTING TREATMENT PLANT BUILDING TO ACCOMMODATE A NEW PACKAGED FILTRATION UNIT (PFU) INCLUDING NEW HIGH SERVICE PUMPS AND ASSOCIATED CONTROLS. INCLUDED WITHIN THE DIVISION A IMPROVEMENTS IS THE NEW WELL INSTALLED IN THE NORTHERN PORTION OF THE EXISTING WELLFIELD. THE INTENT IS TO PRODUCE A NEW SOURCE OF WATER SUPPPLY. TWO EXISTING WELLS WILL ALSO BE REHABILITATED. THE DIVISION B IMPROVEMENTS INVOLVE THE INSTALLATION OF A NEW 400,000-GALLON GROUND TANK AT A NEW SITE NEAR THE EXISTING STANDPIPE, WITH A NEW 8-INCH WATER MAIN AS A FEED TO THE TANK. A BOOSTER PUMP STATION WILL ALSO BE ADDED AT THE LOCATION OF THE TANK SITE.

THE PROPOSED PROJECT IS SHOWN IN THE PLAN SHEETS. THE GENERAL LOCATION OF THE PROJECT IS SHOWN ON A USGS TOPOGRAPHIC MAP IN THE PLANS.

A4: LATITUDE AND LONGITUDE TO THE NEAREST FIFTEEN (15) SECONDS:

THIS APPROXIMATE LATITUDE AND LONGITUDE FOR THE PROJECT SITE IS 38.843295, -86.074743. THE POINT MARKS THE LOCATION OF DIVISION A, WHICH IS AT THE EXISTING WTP AND IS ALSO THE LOCATION OF THE WELLHOUSES.

A5: LEGAL DESCRIPTION OF THE PROJECT SITE:

THE TOWN OF ODON IS LOCATED IN MADISON TOWNSHIP, DAVIESS COUNTY, INDIANA. THE PROJECT IS LOCATED IN SECTIONS 19, 20, 21, 28, 29, AND 30 OF TOWNSHIP 5N AND RANGE 5W.

A6: 11X 17-INCH PLAT SHOWING BUILDING LOT NUMBERS/BOUNDARIES AND ROAD LAYOUT/NAMES:

ALL LOT BOUNDARIES AND ROAD NAMES ARE SHOWN ON THE PLANS. ALL CONSTRUCTION WILL TAKE PLACE IN EXISTING RIGHT OF WAYS, UTILITY EASEMENTS, OR LAND OWNED BY OR TO BE PROCURED BY THE TOWN. A USGS MAP ILLUSTRATING THE APPROXIMATE EXTENT OF THE PROJECT IS SHOWN IN THE PLANS.

A7: BOUNDARIES OF THE ONE HUNDRED (100) YEAR FLOODPLAINS, FLOODWAY FRINGES, AND FLOODWAYS:

THE FLOODPLAINS, FLOODWAY FRINGES, AND FLOODWAYS LOCATED WITHIN THE PROJECT AREA ARE SHOWN IN EXHIBIT #1. AS SHOWN, THERE ARE NO FLOODPLAINS LOCATED WITHIN PROJECT AREAS.

A8: LAND USE OF ALL ADJACENT PROPERTIES:

LAND USE AT THE PROJECT SITES AND THE SURROUNDING AREAS IS SHOWN IN EXHIBIT #2. LAND USE IN THE SURROUNDING PROJECT AREAS IS PRIMARILY CULTIVATED CROPS, SOME DECIDUOUS FOREST, DEVELOPETED (LOW INTENSITY) AND DEVELOPED (OPEN SPACE). SEEN WITHIN THE EXHIBIT, DIVISION A IMPROVEMENTS WILL PRIMARILY TAKE PLACE ON LAND USE ASSOCIATE WITH PASTURE AND HAY.

A9: IDENTIFICATION OF A U.S. EPA APPROVED OR ESTABLISHED TMDL:

THE PROJECT AREA IS LOCATED WITHIN THREE (3) BASINS: SMOTHERS CREEK - KANE DITCH (05120202050110), FIRST CREEK - ROCKY BRAND (05120202050070), AND NORTH FORK PRAIRIE CREEK - HEADWATERS (05120202080010) AND SMOTHERS CREEK CUTOFF (05120202050012). THE ROCKY BRAND IS PART OF THE FIRST CREEK WATERSHED AS PART OF THE E COLI TMDL. THE HEADWATERS IS WITHIN THE PRAIRIE CREEK WATERSHED AS PART OF THE E COLI TMDL.

A10: NAME(S) OF THE RECEIVING WATER(S):

THE RECEIVING WATER BODIES INCLUDE: SMOTHERS CREEK, FIRST CREEK, AND NORTH FORK PRAIRIE CREEK. THE TOWN OF ODON OWNS AND OPERATED THE STORM SEWER SYSTEM IN THE PROJECT AREA.

A11: IDENTIFICATION OF DISCHARGES TO A WATER ON THE CURRENT 303(D) LIST OF IMPAORED WATERS AND THE POLLUTANT FOR WHICH IS IMPAIRED:

SMOTHERS CREEK IS ON THE CURRENT 303(D) LIST OF IMPAIRED WATERS FOR PCBS. FIRST CREEK IS ON THE CURRENT 303(D) LIST OF IMPAIRED WATERS FOR E. COLI AND BIOLOGICAL INTEGRITY. PRAIRIE CREEK IS ON THE CURRENT 303(D) LIST OF IMPAIRED WATERS FOR E. COLI AND BIOLOGICAL INTEGRITY.

A12: SOILS MAP OF THE PREDOMINATE SOIL TYPES:

THE SOILS MAP FOR THIS PROECT IS SHOWN IN EXHIBIT #3. THE SOILS IN THE PROJECT AREA CONSIST MAINLY OF "AY" "ARYSHIRE FINE SANDY LOAM", "LY" "LYLES LOAM", "PRA" "PRINCETON FINE SANDY LOAM," WHICH HAS SLOPES OF 0 TO 2 PERCENT AND "PRB2" "PRINCETON FINE SANDY LOAM," WHICH HAS SLOPES OF 2 TO 6 PERCENT AND IS ERODED.

CONSTRUCTION PROJECTS ARE NOT EXPECTED TO HAVE ANY DETRIMENTAL, LONG-TERM IMPACTS ON THE SOILS. SHORT TERM IMPACTS WILL RELATE ONLY TO EXCAVATION ACTIVITIES FOR THE PROPOSED SYSTEM IMPROVEMENTS AND WILL BE MINIMAL. THESE IMPACTS CAN BE MITIGATED USING APPROPRIATE TECHNIQUES FOR EROSION CONTROL AND SURFACE RESTORATION DURING AND AFTER CONSTRUCTION.

SEASONAL WETNESS IS LIKELY TO BE THE MAIN LIMITATION OF THE SOILS IN THE CONSTRUCTION AREA. FOR THIS PROJECT, CONSTRUCTION PROBLEMS ASSOCIATED WITH WET SOILS WILL BE BEST OVERCOME BY COMPLETING OPEN EXCAVATION WORK DURING FAVORABLE CONDITIONS AND COORDINATING WORK ACTIVITIES BASED UPON WEATHER AND SOIL CONDITIONS. UNDER SEVERE SOIL WETNESS CONDITIONS, QUICKLIME MAY BE USED TO HELP DRY WET SOILS FOR SITE ACCESS PURPOSES AND TO REDUCE DOWNTIME

A13: IDENTIFICATION AND LOCATION OF ALL KNOWN WETLANDS, LAKES, AND WATER COURSES ON OR ADJACENT TO THE PROJECT SITE (CONSTRUCTION PLAN, EXISTING LAYOUT):

ALL WETLANDS, LAKES, AND WATER COURSES LOCATED WITHIN AND NEARBY THE PROJECT AREA HAVE BEEN IDENTIFIED AND ARE SHOWN IN EXHIBIT #4 AND #5. THE MAJOR WATERWAYS IN THIS PROJECT AREA ARE SMOTHERS CREEK, FIRST CREEK, AND NORTH FORK PRAIRIE CREEK. STORMWATER DERIVED FLOW WILL GENERALLY DRAIN INTO THESE WATERBODY'S. THERE ARE NO WETLANDS WITHIN THE PROJECT AREA.

A14: IDENTIFICATION OF ANY OTHER STATE OR FEDERAL WATER QUALITY PERMITS OR AUTHORIZATIONS THAT ARE REQUIRED FOR CONSTRUCTION ACTIVITIES:

NO STATE OR FEDERAL WATER QUALITY PERMITS ARE REQUIRED FOR THIS PROJECT.

A15: IDENTIFICATION AND DELINEATION OF EXISTING VEGETATIVE COVER, INCLUDING NATURAL BUFFERS:

LAND USE AT THE PROJECT SITE AND SURROUNDING AREAS IS SHOWN IN EXHIBIT #2. LAND USE IN THE PROJECT SITE IS PRIMARILY PASTURE AND HAY, WITH SURROUNDING AREAS CONSISTING OF CULTIVATED CROPS, SOME DECIDUOUS FOREST, DEVELOPEMTN (LOW INTENSITY) AND DEVELOPED (OPEN SPACE). THIS PROJECT INVOLVES THE INSTALLATION OF WATER UTILITY FACILITIES ON ROAD RIGHT OF WAYS, UTILITY EASEMENTS, AND TOWN OWNED PROPERTY. PROPER TECHNIQUES FOR EROSION CONTROL AND SURFACE RESTORATION, INCLUDING STABILIZATION WITH APPROPRIATE VEGETATIVE COVER, WILL BE IN ACCORDANCE WITH THE SPECIFICATIONS IN DS-09 "TEMPORARY EROSION AND SEDIMENT CONTROL" AND WM-24 "SEEDING AND SODDING," BOTH UNDER SEPARATE ATTACHMENT. THE PROJECT WILL NOT IMPACT ANY NATURAL BUFFERS.

A16: EXISTING SITE TOPOGRAPHY AT AN INTERVAL APPROPRIATE TO SHOW DETAILED DRAINAGE PATTERNS:

A USGS TOPOGRAPHIC MAP IS SHOWN IN THE PLANS. MORE DETAILED CONTOUR LINES ARE ALSO SHOWN ON INDIVIDUAL PLAN SHEETS TO INDICATE DRAINAGE PATTERNS WITHIN THE CONSTRUCTION LIMITS.

A17: LOCATION(S) WHERE RUN-OFF ENTERS THE PROJECT SITE:

A USGS TOPOGRAPHIC MAP IS SHOWN IN THE PLANS. MORE DETAILED CONTOUR LINES ARE ALSO SHOWN ON INDIVIDUAL PLANS SHEETS TO INDICATE DRAINAGE PATTERNS WITHIN THE CONSTRUCTION LIMITS.

A18: LOCATION(S) WHERE RUN-OFF DISCHARGES FROM THE PROJECT SITE PRIOR TO LAND DISTURBANCE:

A USGS TOPOGRAPHIC MAP IS SHOWN IN THE PLANS. MORE DETAILED CONTOUR LINES ARE ALSO SHOWN ON INDIVIDUAL PLAN SHEETS TO INDICATE DRAINAGE PATTERNS WITHIN THE CONSTRUCTION LIMITS.

A19: LOCATION OF ALL EXISTING STRUCTURES ON THE PROJECT SITE:

THE LOCATION OF ALL EXISTING STRUCTURES ON THE PROJECT SITES CAN BE SEEN IN THE PLANS.

A20: EXISTING PERMANENT RETENTION OR DETENTION FACILITIES, INCLUDING MANMADE WETLANDS, DESIGNED FOR THE PURPOSE OF STORMWATER MANAGEMENT:

THERE ARE NO PERMANENT DETENTION OR RETENTION FACILITIES DESIGNED FOR STORMWATER MANAGEMENT IN THE PROJECT AREAS.

A21: LOCATIONS WHERE STORMWATER MAY BE DIRECTLY DISCHARGED INTO GROUND WATER, SUCH AS ABANDONED WELLS, SINKHOLES, OR KARST FEATURES:

THERE ARE NO ABANDONED WELLS, SINKHOLES, OR KARST FEATURES LOCATED WITHIN THE PROJECT AREA.

A22: SIZE OF THE PROJECT AREA EXPRESSED IN ACRES:

THE TOTAL PROJECT AREA IS APPROXIMATELY 50 ACRES. WITH 11 ACRES BEING DIVISION A AND APPROXIMATELY 39 ACRES FOR DIVISION B.

A23: TOTAL EXPECTED LAND DISTURBANCE EXPRESSED IN ACRES:

THE TOTAL EXPECTED LAND DISTURBANCE FOR THE PROJECT IS APPROXIMATELY 11 ACRES FOR DIVISION A IMPROVEMENTS AND 39 ACRES FOR DIVISION B.

A24: PROPOSED FINAL TOPOGRAPHY:

THE INDIVIDUAL PLAN SHEETS SHOW PROPOSED SITE TOPOGRAPHY AND DRAINAGE PATTERNS.

A25: LOCATIONS AND APPROXIMATE BOUNDARIES OF ALL DISTURBED AREAS:

THE PLANS SHOW THE LOCATIONS AND BOUNDARIES OF ALL DISTURBED AREAS/CONSTRUCTION LIMITS.

A26: LOCATIONS, SIZE, AND DIMENSIONS OF ALL STORMWATER DRAINAGE SYSTEMS SUCH AS CULVERTS, STORMWATER SEWER, AND CONVEYANCE CHANNEL:

THE EXISTING AND PROPOSED STORMWATER DRAINAGE SYSTEMS ARE SHOWN ON THE PLANS. ALL EXISTING STORMWATER SYSTEMS WILL BE PROTECTED AND MAINTAINED DURING CONSTRUCTION. IF DURING CONSTRUCTION ANY DAMAGE IS DONE TO AN EXISTING STORMWATER SYSTEM, DAMAGED STRUCTURES WILL BE EITHER REPAIRED OR REPLACED TO EQUAL OR BETTER CONDITION THAN EXISTING.

A27: LOCATIONS OF SPECIFIC POINTS WHERE STORMWATER AND NON-STORMWATER DISCHARGES WILL LEAVE THE PROJECT SITE:

LOCATIONS WHERE STORMWATER AND NON-STORMWATER DISCHARGES WILL LEAVE THE PROJECT SITE CAN BE SEEN ON THE PLANS.

A28: LOCATION OF ALL PROPOSED SITE IMPROVEMENTS, INCLUDING ROADS, UTILITIES, LOT DELINEATION AND IDENTIFICATION,PROPOSED STRUCTURES, AND COMMON AREAS:

LOCATIONS OF ALL PROPOSED SITE IMPROVEMENTS, INCLUDING PROPOSED UTILITIES, STRUCTURES, AND LOT BOUNDARIES, ARE SHOWN ON THE PLANS. NO OFF-SITE CONSTRUCTION IS ANTICIPATED FOR THIS PROJECT.

A29: LOCATIONS OF ALL ON-SITE AND OFF-SITE SOIL STOCKPILES AND BORROW AREAS:

LOCATIONS OF STOCKPILES ARE SHOWN IN THE PLANS. STOCKPILES LEFT INACTIVE FOR SEVEN (7) DAYS OR MORE SHALL BE STABILIZED WITH TEMPORARY SEED AND SURROUNDED BY SILT FENCE OR OTHER PERIMETER CONTROLS ALL STOCKPILES AND BORROW AREAS, IF REQUIRED FOR THE PROJECT, WILL BE LOCATED ON-SITE AND THE CONTRACTOR WILL BE REQUIRED TO OBTAIN A PERMIT OR RELEASE FOR PROPER DISPOSAL OF EXCAVATED MATERIALS.

A30: CONSTRUCTION SUPPORT ACTIVITIES THAT ARE EXPECTED TO BE PART OF THE PROJECT:

STAGING AREAS, MATERIAL STORAGE, AND CONCRETE WASHOUT AREA LOCATIONS ARE SHOWN ON THE PLANS.

A31: LOCATION OF ANY IN-STREAM ACTIVITIES THAT ARE PLANNED FOR THE PROJECT INCLUDING, BUT NOT LIMITED TO, STREAM CROSSINGS AND PUMP AROUNDS:

SECTION B: STORMWATER POLLUTION PREVENTION - CONSTRUCTION

STORMWATER POLLUTION PREVENTION MEASURES SHALL BE IN ACCORDANCE WITH THE LOCAL REGULATORY AUTHORITY AND THE APPLICABLE MS4 STORMWATER QUALITY STANDARDS.

B1: DESCRIPTION OF THE POTENTIAL POLLUTANT GENERATING SOURCES AND POLLUTANTS, INCLUDING ALL POTENTIAL NON-STORMWATER DISCHARGES:

OPERATION	POTENTIAL POLLUTANTS
CLEARING, GRADING, EXCAVATING	SEDIMENT, DEBRIS
SOIL STOCKPILES	SEDIMENT
DEWATERING OPERATIONS	SEDIMENT
PAVING REPAIR	SEDIMENT, DEBRIS
VEHICLE FUELING, MAINTENANCE	OIL, GREASE, FUEL
GENERAL CONSTRUCTION ACTIVITY	TRASH, SANITATION CHEMICALS
PAVEMENT RESTORATION	BITUMINOUS DEBRIS

EXCAVATION, STOCKPILING:

STOCKPILE MANAGEMENT PROCEDURES AND PRACTICES WILL BE IMPLEMENTED TO MINIMIZE OR ELIMINATE THE DISCHARGE OF STOCKPILED MATERIAL (SOIL, TOPSOIL, BASE MATERIAL) FROM ENTERING DRAINAGE SYSTEMS OR SURFACE WATERS.

FOR ANY STOCKPILES OR LAND CLEARING DEBRIS COMPOSED, IN WHOLE OR IN PART, OF SEDIMENT OR SOIL, THE CONTRACTOR WILL BE REQUIRED TO COMPLY WITH THE FOLLOWING REQUIREMENTS:

1. LOCATE PILES WITHIN THE DESIGNATED LIMITS OF DISTURBANCE.
2. PROTECT FROM CONTACT WITH STORMWATER USING A TEMPORARY PERIMETER SEDIMENT BARRIER.
3. WHERE PRACTICABLE, PROVIDE COVER OR APPROPRIATE TEMPORARY VEGETATIVE OR STRUCTURAL STABILIZATION TO AVOID DIRECT CONTACT WITH PRECIPITATION OR TO MINIMIZE THE DISCHARGE OF SEDIMENTS.
4. NEVER HOSE DOWN OR SWEEP SOIL OR SEDIMENT ACCUMULATED ON PAVEMENT OR OTHER IMPERVIOUS SURFACES INTO ANY STORMWATER CONVEYANCE, STORM DRAIN INLET, OR SURFACE WATER.
5. TO THE MAXIMUM EXTENT PRACTICABLE, CONTAIN AND SECURELY PROTECT STOCKPILES FROM WIND.

DEWATERING:

EQUIPMENT OPERATORS ARE PROHIBITED FROM DISCHARGING GROUNDWATER OR ACCUMULATED STORMWATER THAT IS REMOVED FROM EXCAVATIONS, TRENCHES, VAULTS, OR OTHER SIMILAR POINTS OF ACCUMULATION, UNLESS SUCH WATERS ARE FIRST EFFECTIVELY MANAGED BY APPROPRIATE CONTROL MEASURES.

EXAMPLES OF APPROPRIATE CONTROL MEASURES INCLUDE TEMPORARY SEDIMENT BASINS OR SEDIMENT TRAPS, SEDIMENT SOCKS, DEWATERING TANKS AND BAGS, OR FILTRATION SYSTEMS (E.G., BAG OR SAND FILTERS) THAT ARE DESIGNED TO REMOVE SEDIMENT. UNCONTAMINATED, NON-TURBID DEWATERING WATER CAN BE DISCHARGED WITHOUT BEING ROUTED TO A CONTROL.

AT A MINIMUM, THE FOLLOWING DISCHARGE REQUIREMENTS MUST BE MET FOR DEWATERING ACTIVITIES:

1. ALLOW NO DISCHARGE OF VISIBLE SEDIMENT OR SOLIDS.
2. AT ALL POINTS WHERE DEWATERING WATER IS DISCHARGED, UTILIZE VELOCITY DISSIPATION DEVICES.
3. DEWATERING PRACTICES MUST INVOLVE THE IMPLEMENTATION OF APPROPRIATE CONTROL MEASURES AS APPLICABLE (I.E., CONTAINMENT AREAS FOR DEWATERING EARTH MATERIALS, PORTABLE SEDIMENT TANKS AND BAGS, PUMPING SETTLING BASINS, AND PUMP INTAKE PROTECTION).

VEHICLE FUELING:

VEHICLE FUELING SHALL NOT TAKE PLACE WITHIN REGULATED DRAIN AREAS WETLANDS OR BUFFER ZONE AREAS, OR WITHIN 50-FEET OF THE STORM DRAIN SYSTEM. DESIGNATED AREAS SHALL BE DEPICTED ON THE PLANS OR SHALL BE APPROVED BY THE SITE OWNER.

VEHICLE MAINTENANCE AND WASHING SHALL OCCUR OFF-SITE, OR IN DESIGNATED AREAS DEPICTED ON THE PLANS OR APPROVED OF BY THE SITE OWNER. MAINTENANCE OR WASHING AREAS SHALL NOT BE WITHIN REGULATED WETLANDS OR BUFFER ZONE AREAS, OR WITHIN 50-FEET OF THE STORM DRAIN SYSTEM. MAINTENANCE AREAS SHALL BE CLEARLY DESIGNATED, AND BARRIERS SHALL BE USED AROUND THE PERIMETER OF THE MAINTENANCE AREA TO PREVENT STORMWATER CONTAMINATION.

CONSTRUCTION VEHICLES SHALL BE INSPECTED FREQUENTLY FOR LEAKS. REPAIRS SHALL TAKE PLACE IMMEDIATELY. DISPOSAL OF ALL USED OIL, ANTIFREEZE, SOLVENTS, AND OTHER AUTOMOTIVE-RELATED CHEMICALS SHALL BE ACCORDING TO APPLICABLE REGULATIONS; AT NO TIME SHALL ANY MATERIAL BE WASHED DOWN THE STORM DRAIN OR INTO ANY ENVIRONMENTALLY SENSITIVE AREA.

AFTER THE SWPPP IS IMPLEMENTED, ALL DISTURBED AREAS WILL BE INSPECTED AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS THROUGH THE ADMINISTRATION OF A SELF-MONITORING PROGRAM (SMP). THE PURPOSE OF THE SMP REPORTS, WHICH ARE TO BE COMPLETED BY A TRAINED INDIVIDUAL, IS TO ASSESS PERFORMANCE OF POLLUTANT CONTROL MEASURES. BASED ON THESE INSPECTIONS, IT WILL BE DETERMINED IF ADDITIONAL MEASURES ARE NECESSARY TO PREVENT POLLUTANTS FROM LEAVING THE SITE. THE CONTRACTOR WILL BE REQUIRED TO REPAIR, MODIFY, MAINTAIN, OR TAKE ADDITIONAL STEPS AS NECESSARY TO ACHIEVE EFFECTIVE POLLUTANT CONTROL. REFER ALSO TO DS-09, "TEMPORARY EROSION CONTROL" WHICH IS INCLUDED AS A PART OF THE CONSTRUCTION SPECIFICATIONS AND CONTRACT DOCUMENTS FOR THE PROJECT AND IS LOCATED UNDER SEPARATE ATTACHMENT.

B2: STABLE CONSTRUCTION ENTRANCE LOCATIONS AND SPECIFICATIONS:

STABLE CONSTRUCTION ENTRANCE LOCATIONS ARE SHOWN ON THE PLANS. UPON COMPLETION OF CONSTRUCTION ALL SURFACES SHALL BE RESTORED TO MATCH PRE-CONSTRUCTION CONDITIONS. LOCATIONS WHERE VEHICLES ENTER AND EXIT THE SITE WILL BE INSPECTED FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING. AT THE END OF CONSTRUCTION, THE CONTRACTOR SHALL RESTORE EXISTING SURFACES ACTING AS CONSTRUCTION ENTRANCES/EXITS TO PRE-CONSTRUCTION CONDITIONS. REFER ALSO TO DS-09, "TEMPORARY EROSION AND SEDIMENT CONTROL" FOR STABLE CONSTRUCTION ENTRANCE REQUIREMENTS (UNDER SEPARATE ATTACHMENT).

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REGISTERED
No 12000723
STATE OF INDIANA
PROFESSIONAL ENGINEER

Signature 01/30/2024 Date

TOWN OF ODON
DAVIESS COUNTY, INDIANA

WATER UTILITY
IMPROVEMENTS PROJECT

DIVISION "A" - WTP
IMPROVEMENTS

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No.	Submittal / Revision	By	Date

Designed By:	Drawn By:	Checked By:
ARR	DMJ	AWL
Issue Date: 04/22/2025	Project No: W21115	Scale: AS SHOWN

STORMWATER POLLUTION PREVENTION PLAN I

Drawing No: **EC1**

Sheet: 06 OF 52

File: Z:\SHARED\IN CLIENTS M-Z\ODON\W21115 WATER UTILITY IMPROVEMENTS\06 CAD\A CURRENT FILES\1 DRAWINGS\DIV A\03-EROSION CONTROL DRAWINGS.DWG
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SECTION B: STORMWATER POLLUTION PREVENTION - CONSTRUCTION

B3: SPECIFICATIONS FOR TEMPORARY AND PERMANENT STABILIZATION:

TEMPORARY AND PERMANENT SEED SURFACE STABILIZATION WILL BE UTILIZED WHERE NEEDED. SEE DS-09, "TEMPORARY EROSION AND SEDIMENT CONTROL" AND WM-24 "SEEDING AND SODDING" (LOCATED UNDER SEPARATE ATTACHMENT) FOR ADDITIONAL INFORMATION.

IN ORDER TO REDUCE THE EXTENT OF EXPOSED AREAS AND THE DURATION OF EXPOSURE, CLEARING, GRADING, AND VEGETATIVE RE-STABILIZATION MUST BE PROPERLY TIMED AND COORDINATED. SEEDING AND MULCHING OR TEMPORARY SEEDING WILL BE PERFORMED AS SOON AS PRACTICABLE ON AREAS WHICH HAVE BEEN DISTURBED BY CONSTRUCTION. UNVEGETATED AREAS THAT ARE LEFT IDLE OR SCHEDULED TO BE LEFT UNACTIVE MUST BE TEMPORARILY OR PERMANENTLY STABILIZED WITH MEASURES APPROPRIATE FOR THE SEASON TO MINIMIZE EROSION POTENTIAL. STABILIZATION MUST BE INITIATED BY THE END OF THE SEVENTH DAY THE AREA IS LEFT IDLE. THE STABILIZATION ACTIVITY MUST BE COMPLETED WITHIN FOURTEEN (14) DAYS AFTER INITIATION. INITIATION OF STABILIZATION INCLUDES SEEDING AND APPLYING MULCH OR OTHER TEMPORARY SURFACE STABILIZATION METHODS WHERE APPROPRIATE. BIODEGRADABLE MATTING OR NETTING MAY BE USED TO STABILIZE SOILS ON SLOPED AREAS AND SOME RECENTLY PLANTED AREAS TO PROTECT SEEDLINGS UNTIL THEY HAVE BECOME ESTABLISHED. TEMPORARY SEEDING OR EROSION CONTROL MATS ARE TO BE USED TO STABILIZE EXPOSED SURFACES IF FINAL GRADING AND SEEDING MUST BE DELAYED.

B4: SEDIMENT CONTROL MEASURES FOR CONCENTRATED FLOW AREAS:

PROTECTIVE MEASURES FOR AREAS OF CONCENTRATED FLOW WILL INCLUDE TEMPORARY AND PERMANENT VEGETATION, MULCHES, EROSION CONTROL BLANKETS, OR OTHER PRACTICES TO CORRESPOND WITH CONSTRUCTION ACTIVITIES AND AS SHOWN ON THE PLANS. ADDITIONAL SEDIMENT CONTROL MEASURES FOR AREAS OF CONCENTRATED FLOW WILL BE PROVIDED AS NEEDED BY THE CONTRACTOR. REFER TO DS-09, "TEMPORARY EROSION AND SEDIMENT CONTROL" (UNDER SEPARATE ATTACHMENT) FOR MORE INFORMATION.

B5: SEDIMENT CONTROL MEASURES FOR SHEET FLOW AREAS:

ALL DISTURBED AREAS, WHERE RUNOFF WILL BE IN SHEET FLOW CONDITION AND WHICH ARE NOT TO BE DISTURBED FOR SEVEN (7) DAYS OR MORE, SHALL RECEIVE TEMPORARY SEEDING. DISTURBED AREAS SHALL BE PERMANENTLY SEEDED IMMEDIATELY AFTER LAND DISTURBANCE ACTIVITIES ARE COMPLETED. PERIMETER PROTECTION, SUCH AS SILT FENCE AND INLET PROTECTION, SHALL BE PLACED AT LOCATIONS SHOWN ON THE PLANS. IN GENERAL, SILT FENCES WILL BE INSTALLED APPROXIMATELY FIVE (5) FEET FROM PROPERTY BOUNDARIES/RIGHT OF WAY BOUNDARIES AS APPLICABLE. INSTALLATION OF SILT FENCES WILL TYPICALLY BE REQUIRED ON THE DOWNSLOPE SIDE OF ALL OPEN TRENCHES EXCAVATED FOR WATER MAIN INSTALLATION. THE PLANS SHOW ADDITIONAL EROSION CONTROL MEASURES PROPOSED FOR THIS PROJECT. REFER TO DS-09, "TEMPORARY EROSION AND SEDIMENT CONTROL" (UNDER SEPARATE ATTACHMENT) FOR MORE DETAIL.

B6: RUNOFF CONTROL MEASURES:

DIVERSION DITCHES, CHECK DAMS, SLOPE DRAINS, OR OTHER SIMILAR STRUCTURES FOR RUNOFF CONTROL ARE NOT ANTICIPATED FOR THIS PROJECT.

B7: STORMWATER OUTLET PROTECTION SPECIFICATIONS:

STORMWATER OUTLETS WILL BE PROVIDED WITH A TEMPORARY ROCK CHECK DAM, STRAW DAM, SILT FENCES, EROSION CONTROL BLANKETS, AND TEMPORARY AND PERMANENT SEEDING AS APPLICABLE.

B8: GRADE STABILIZATION STRUCTURE LOCATIONS AND SPECIFICATIONS:

GRADE STABILIZATION WILL BE REQUIRED AS NEEDED DURING CONSTRUCTION. GRADE STABILIZATION REQUIREMENTS ARE ESTABLISHED IN DS-09, "TEMPORARY EROSION AND SEDIMENT CONTROL" (UNDER SEPARATE ATTACHMENT).

SEEDING AND MULCHING OR TEMPORARY SEEDING WILL BE PERFORMED ON AREAS WHICH HAVE BEEN DISTURBED BY CONSTRUCTION. TEMPORARY SEEDING WILL TAKE PLACE AS SOON AS PRACTICABLE AFTER DISTURBED AREAS HAVE BEEN RESTORED TO THEIR REQUIRED GRADE OR HAVE BEEN DISTURBED AND NOT WORKED FOR SEVEN (7) DAYS OR MORE. BIODEGRADABLE MATTING OR NETTING MAY BE USED TO STABILIZE SOILS ON SLOPED AREAS AND SOME RECENTLY PLANTED AREAS TO PROTECT SEEDLINGS UNTIL THEY HAVE BECOME ESTABLISHED.

B9: DEWATERING APPLICATIONS AND MANAGEMENT METHODS:

IF DEWATERING BECOMES NECESSARY ON SITE, THE FOLLOWING METHODS WILL BE USED:

EQUIPMENT OPERATORS ARE PROHIBITED FROM DISCHARGING GROUNDWATER OR ACCUMULATED STORMWATER THAT IS REMOVED FROM EXCAVATIONS, TRENCHES, VAULTS, OR OTHER SIMILAR POINTS OF ACCUMULATION, UNLESS SUCH WATERS ARE FIRST EFFECTIVELY MANAGED BY APPROPRIATE CONTROL MEASURES.

EXAMPLES OF APPROPRIATE CONTROL MEASURES INCLUDE TEMPORARY SEDIMENT BASINS OR SEDIMENT TRAPS, SEDIMENT SOCKS, DEWATERING TANKS AND BAGS, OR FILTRATION SYSTEMS (E.G., BAG OR SAND FILTERS) THAT ARE DESIGNED TO REMOVE SEDIMENT. UNCONTAMINATED, NON-TURBID DEWATERING WATER CAN BE DISCHARGED WITHOUT BEING ROUTED TO A CONTROL.

AT A MINIMUM, THE FOLLOWING DISCHARGE REQUIREMENTS MUST BE MET FOR DEWATERING ACTIVITIES:

1. ALLOW NO DISCHARGE OF VISIBLE SEDIMENT OR SOLIDS.
2. AT ALL POINTS WHERE DEWATERING WATER IS DISCHARGED, UTILIZE VELOCITY DISSIPATION DEVICES.
3. DEWATERING PRACTICES MUST INVOLVE THE IMPLEMENTATION OF APPROPRIATE CONTROL MEASURES AS APPLICABLE (I.E., CONTAINMENT AREAS FOR DEWATERING EARTH MATERIALS, PORTABLE SEDIMENT TANKS AND BAGS, PUMPING SETTLING BASINS, AND PUMP INTAKE PROTECTION).

B10: MEASURES UTILIZED FOR WORK WITHIN WATERBODIES:

NO WORK WITHIN WATER BODIES IS PROPOSED FOR THIS PROJECT.

B11: MAINTENANCE GUIDELINES FOR EACH PROPOSED STORMWATER QUALITY MEASURE:

THROUGHOUT THE DURATION OF CONSTRUCTION, THE CONTRACTOR SHALL MONITOR AND MANAGE PROJECT CONSTRUCTION AND STORMWATER ACTIVITIES THROUGH THE ADMINISTRATION OF A SELF-MONITORING PROGRAM (SMP). A TRAINED INDIVIDUAL SHALL SUBMIT WEEKLY SMP REPORTS, AND EVENT INSPECTION REPORTS AS REQUIRED WITHIN 24 HOURS OF EVERY ½" RAIN EVENT. INSPECTION WILL BE PROVIDED FOR ALL EROSION AND SEDIMENT CONTROL STRUCTURES TO ENSURE INTEGRITY AND EFFECTIVENESS. INSPECTIONS WILL ALSO BE PROVIDED FOR ALL DISTURBED AREAS THAT HAVE NOT ACHIEVED FINAL STABILIZATION, AND AT ALL POINTS OF DISCHARGE FROM THE CONSTRUCTION SITE. REFER TO DS-09, "TEMPORARY EROSION AND SEDIMENT CONTROL (UNDER SEPARATE ATTACHMENT) FOR REQUIREMENTS REGARDING THE SMP REPORTS AND PROJECT MANAGEMENT LOG.

B12: PLANNED CONSTRUCTION SEQUENCE THAT DESCRIBES THE IMPLEMENTATION OF STORMWATER QUALITY MEASURES IN RELATION TO LAND DISTURBANCE:

A PRE-CONSTRUCTION MEETING WILL BE REQUIRED PRIOR TO COMMENCEMENT OF CONSTRUCTION AND ANY LAND DISTURBANCE ACTIVITY. ATTENDEES TO THE PRE-CONSTRUCTION MEETING WILL INCLUDE REPRESENTATIVES OF THE CONTRACTOR, OWNER, ENGINEER. THE DAVIESS COUNTY SOIL AND WATER CONSERVATION DISTRICT (SWCD) SHALL BE PROVIDED WITH A 48-HOUR NOTICE PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY. REFER ALSO TO DS-09, "TEMPORARY EROSION AND SEDIMENT CONTROL" (UNDER SEPARATE ATTACHMENT), WHICH IS INCLUDED AS A PART OF THE CONSTRUCTION SPECIFICATIONS AND CONTRACT DOCUMENTS FOR THE PROJECT.

THE NOTICE OF INTENT AND THE LOCATION OF THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) WILL BE POSTED AT THE JOB SITE. THERE WILL BE FUEL CONTAINMENT AND CONCRETE WASHOUT PROVIDED ON-SITE, IF APPLICABLE.

PROJECT SEQUENCING WILL GENERALLY FOLLOW THE FOLLOWING STEPS:

1. INSTALL CONSTRUCTION ENTRANCES.
2. INSTALL PERIMETER PROTECTION (SILT FENCE, CHECK DAMS, COIR LOGS, FILTER BERM, INLET PROTECTION).
3. TEMPORARY SEED AS NEEDED PER SPECIFICATIONS.
4. REMOVE TEMPORARY EROSION CONTROL MEASURES AS THE PERMANENT MEASURES ARE ESTABLISHED.

B13: PROVISIONS FOR EROSION AND SEDIMENT CONTROL ON INDIVIDUAL BUILDING LOTS REGULATED UNDER THE PROPOSED PROJECT:

ALL PROPOSED IMPROVEMENTS ARE TAKING PLACE ON RIGHT OF WAYS, UTILITY EASEMENTS, OR LAND OWNED BY THE TOWN. THE PROJECT AREA AND INDIVIDUAL AREA EROSION CONTROL IS DEPICTED IN PLANS.

B14: MATERIAL HANDLING AND SPILL PREVENTION AND SPILL RESPONSE PLAN MEETING THE REQUIREMENTS IN 327 IAC 2-6.1:

AS DESCRIBED DS-09, "TEMPORARY EROSION AND SEDIMENT CONTROL" (UNDER SEPARATE ATTACHMENT), THE CONTRACTOR WILL BE REQUIRED TO INSPECT EQUIPMENT REGULARLY TO AVOID UNNECESSARY LEAKS OR SPILLS. THE CONTRACTOR WILL ALSO BE REQUIRED TO PROVIDE SPILL KITS AND EQUIPMENT TO CONTAIN AND CLEAN UP AND PETROLEUM PRODUCTS OR OTHER UNDESIRABLE SPILLS WHICH MAY OCCUR DURING CONSTRUCTION.

FUELS, OILS, GREASE, OR OTHER PETROLEUM PRODUCTS MUST BE STORED IN APPROPRIATE AND APPROVED AREAS. PREVENTATIVE MAINTENANCE WILL BE REQUIRED FOR ON-SITE EQUIPMENT. HAZARDOUS MATERIALS WILL BE REQUIRED TO BE STORED IN A FIELD TRAILER TO AVOID ANY OUTSIDE STORAGE.

ALL FUEL IS TO BE CONTAINED IN A MOBILE SERVICE TRUCK OR IN THE CONSTRUCTION EQUIPMENT OPERATING ON SITE. SMALL CONTAINERS OF OILS, GREASE, AND RELATED PRODUCTS MAY BE STORED IN THE CONTRACTOR'S CONSTRUCTION TRAILER. THESE ITEMS WILL BE REQUIRED TO BE INSPECTED REGULARLY TO INSURE PROPER STORAGE AND HANDLING AND TO GUARD AGAINST LEAKAGE. DEFECTIVE CONTAINERS WILL BE REMOVED FROM THE PROJECT SITE IMMEDIATELY.

IF A SPILL DOES OCCUR, SPILL REPORTING AND NOTIFICATION REQUIREMENTS WILL BE UNDERTAKEN IN ACCORDANCE WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION AND STATE REQUIREMENTS. THE CONTRACTOR WILL BE REQUIRED TO PROVIDE RESPONSE PROCEDURES THAT WILL MINIMIZE GROUNDWATER AND SURFACE WATER IMPACTS.

CONTACT INFORMATION FOR LOCAL AND STATE AGENCIES TO BE CONTACTED IN THE EVENT OF A SPILL IS AS FOLLOWS:

DAVIESS COUNTY SOIL & WATER CONSERVATION DISTRICT
2526 EAST NATIONAL HIGHWAY
WASHINGTON, IN 47501
PHONE: 812-254-4780

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF LAND QUALITY
EMERGENCY RESPONSE AND SPILL REPORTING SECTION
PHONE: 1-888-233-7745

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER QUALITY
INDIANA GOVERNMENT CENTER SOUTHWEST
114 SOUTH 7TH STREET
PETERSBURG, INDIANA 47567-0128
PHONE: 1-888-672-8323

INDIANA DEPARTMENT OF NATURAL RESOURCES
DISTRICT 7 HEADQUARTERS
PHONE: 765-649-1062

INDIANA DEPARTMENT OF TRANSPORTATION
TRAFFIC MANAGEMENT CENTER
PHONE: 317-899-8690

B15: MATERIAL HANDLING AND STORAGE PROCEDURES ASSOCIATED WITH CONSTRUCTION ACTIVITY:

FUELS, OILS, GREASE, OR OTHER PETROLEUM PRODUCTS MUST BE STORED IN APPROPRIATE AND APPROVED AREAS. PREVENTATIVE MAINTENANCE WILL BE REQUIRED FOR ON-SITE EQUIPMENT. HAZARDOUS MATERIALS WILL BE REQUIRED TO BE STORED IN A FIELD TRAILER TO AVOID ANY OUTSIDE STORAGE.

ALL FUEL IS TO BE CONTAINED IN A MOBILE SERVICE TRUCK OR IN THE CONSTRUCTION EQUIPMENT OPERATING ON SITE. SMALL CONTAINERS OF OILS, GREASE, AND RELATED PRODUCTS MAY BE STORED IN THE CONTRACTOR'S CONSTRUCTION TRAILER. THESE ITEMS WILL BE REQUIRED TO BE INSPECTED REGULARLY TO INSURE PROPER STORAGE AND HANDLING AND TO GUARD AGAINST LEAKAGE. DEFECTIVE CONTAINERS WILL BE REMOVED FROM THE PROJECT SITE IMMEDIATELY.

CONCRETE WASHOUT AREA LOCATIONS ARE SHOWN ON THE PLANS.

SECTION C: STORMWATER POLLUTION PREVENTION - POST CONSTRUCTION

C1: DESCRIPTION OF POLLUTANTS AND THEIR SOURCES ASSOCIATED WITH THE PROPOSED LAND USE:

NO CHANGE IN LAND USE IS PROPOSED AS PART OF THE PROJECT.

POTENTIAL POLLUTANTS FROM THIS PROJECT AFTER CONSTRUCTION IS COMPLETED INCLUDE:

§ SEDIMENT
§ HYDROCARBONS
§ CONSTRUCTION LITTER

SEDIMENTS:

SEDIMENT POLLUTION IS A RESULT OF EROSION WHICH CAN BE TRIGGERED BY NATURAL CAUSES OR HUMAN ACTIVITY. FOR THIS PROJECT, SEDIMENTATION MAY OCCUR DUE TO RUNOFF FROM EXCAVATED TRENCH AREAS. SEDIMENT POLLUTION MAY ALSO BE CAUSED BY ON-SITE STORAGE OF EXCAVATED MATERIALS, BACKFILL MATERIALS, AND CONSTRUCTION SPOIL AREAS.

HYDROCARBONS:

LEAKAGE AND SPILL POTENTIAL EXISTS FROM ITEMS SUCH AS GASOLINE, OIL, GREASE, VEHICLE BRAKE AND TRANSMISSION FLUIDS, ANTIFREEZE, AND COOLANTS.

CONSTRUCTION LITTER:

LITTER MAY BE GENERATED BY IMPROPERLY DISCARDED ITEMS SUCH AS PLASTIC BOTTLES OR ALUMINUM CANS, BAGS, PRODUCT PACKING MATERIALS, GENERAL TRASH, GARBAGE, AND SMOKING PARAPHERNALIA.

C2: DESCRIPTION OF PROPOSED POST-CONSTRUCTION STORMWATER QUALITY MEASURES:

PERMANENT SEEDING AND EROSION CONTROL BLANKETS ARE THE ONLY POST CONSTRUCTION STORMWATER QUALITY MEASURES THAT ARE ANTICIPATED TO BE NEEDED. REQUIREMENTS FOR PERMANENT SEEDING ARE REFERENCED IN WM-24 "SEEDING AND SODDING" (UNDER SEPARATE ATTACHMENT).

VEGETATED AREAS:

PERMANENT SEEDING WILL BE APPLIED IMMEDIATELY AFTER THE FINAL DESIGN GRADES ARE ACHIEVED ON PORTIONS OF THE SITE BUT NO LATER THAN SEVEN (7) DAYS AFTER CONSTRUCTION ACTIVITIES HAVE PERMANENTLY CEASED. AFTER THE ENTIRE SITE IS STABILIZED, ANY SEDIMENT THAT HAS ACCUMULATED THAT HAS NOT BEEN INCORPORATED INTO THE FINAL GRADING OPERATIONS WILL BE REMOVED AND HAULED OFF-SITE FOR DISPOSAL AT AN APPROVED LANDFILL. CONSTRUCTION DEBRIS, TRASH AND TEMPORARY EROSION CONTROL STRUCTURES WILL BE REMOVED, AND ANY AREAS DISTURBED DURING REMOVAL WILL BE SEEDED IMMEDIATELY.

NATIVE GRASSES WILL BE USED FOR RESTORATION OF VEGETATED AREAS. ALL VEGETATED AREAS DISTURBED BY CONSTRUCTION ACTIVITIES WILL BE REQUIRED TO BE RESTORED. THE VEGETATIVE COVER SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND SHALL BE:

(a) EFFECTIVE AND PERMANENT;
(b) AT LEAST EQUAL IN EXTENT OF COVER TO THE NATURAL VEGETATION OF THE AREA; AND
(c) CAPABLE OF STABILIZING THE SOIL SURFACE IN ORDER TO CONTROL EROSION;
(d) COMPATIBLE WITH THE LOCAL LAND USE;
(e) HAVE THE SAME SEASONAL GROWTH CHARACTERISTICS AS THE ORIGINAL VEGETATION;
(f) BE CAPABLE OF SELF-REGENERATION AND PLANT SUCCESSION;
(g) BE COMPATIBLE WITH THE PLANT AND ANIMAL SPECIES OF THE AREA.

SPOIL AREAS AND IMPORTED BACKFILL MATERIALS MUST BE COVERED AT ALL TIMES AND PLACED AS FAR AWAY AS PRACTICABLE FROM STORMWATER QUALITY MEASURES. PESTICIDES, HERBICIDES, AND FERTILIZERS ARE TO BE APPLIED IN MINIMAL AMOUNTS. THESE ITEMS ARE NOT TO BE APPLIED WITHIN 24 HOURS OF A FORECASTED RAIN EVENT.

PESTICIDE AND FERTILIZER APPLICATORS WILL BE EXPECTED TO MAXIMIZE THE BENEFITS OF THE PRODUCTS THROUGH SOUND MANAGEMENT WHILE REDUCING ENVIRONMENTAL RISKS. APPLICATORS SHOULD TAKE ALL THE NECESSARY PREVENTIVE MEASURES TO ENSURE THAT PESTICIDES STAY ON-SITE. CAREFUL TRANSPORTATION, SECURE STORAGE, PROPER DISPOSAL OF CONTAINERS, AND SPILL PREVENTION ARE BASIC ELEMENTS OF SAFE PESTICIDE USE WHICH MUST BE IMPLEMENTED. THE APPLICATOR WILL ALSO BE EXPECTED TO BE AWARE OF THE LOCATION OF SENSITIVE AREAS, INCLUDING SINKHOLES, DEPRESSIONS, WELLS, STREAMS, AND SURFACE WATERS. A BUFFER ZONE SHOULD BE IN EFFECT WHEN APPLYING PESTICIDES AROUND THESE SITES.

FERTILIZER APPLICATORS WILL BE REQUIRED TO UNDERSTAND AND FOLLOW PRODUCT LABELS TO MINIMIZE RISKS TO HUMAN HEALTH AND THE ENVIRONMENT. CHEMICALS WITH LOW WATER SOLUBILITY RATES SHOULD BE USED. THE CONTAINERS HOLDING FERTILIZERS AND HERBICIDES ARE TO BE EMPTIED COMPLETELY BEFORE DISPOSAL.

HYDROCARBONS AND HAZARDOUS MATERIALS:

HYDROCARBONS, SUCH AS FUELS AND OILS WILL BE USED FOR THE EXCAVATION EQUIPMENT AND TRUCKS. APPROPRIATE STORAGE AREAS FOR FUELS AND HYDROCARBONS WILL BE PROVIDED. LUBRICATING OILS AND GREASES FOR VEHICLES AND GENERATORS WILL BE STORED UNDER COVER, IN DRUMS OR APPROPRIATE CONTAINERS IN A DESIGNATED AREA.

THE FUEL AND CHEMICAL STORAGE AND HANDLING FACILITIES WILL BE INSPECTED ON A REGULAR BASIS AND MAINTAINED TO ENSURE COMPLIANCE WITH APPLICABLE STANDARDS. THE CONTRACTOR SHALL DESIGNATE THE RESPONSIBLE PERSONNEL WHO WILL HAVE ACCESS TO SAFETY EQUIPMENT REQUIRED FOR THE CORRECT HANDLING OF HAZARDOUS GOODS, AND ALSO ACCESS TO STRATEGICALLY PLACED SPILL STATIONS EQUIPPED WITH THE NECESSARY EQUIPMENT FOR CLEANING UP ANY SPILLS.

CONTRACTOR SHALL PROVIDE HIS PROCEDURE FOR CLEAN-UP AND REPORTING, IN THE EVENT OF A SPILL. ANY SPILLS WILL BE CLEANED UP IMMEDIATELY. CONTAMINATED RUNOFF AND CONTAMINATED SOIL WILL BE COLLECTED AND REMEDIATED ON SITE OR TRANSPORTED TO A SUITABLE FACILITY FOR DISPOSAL.

A CLOSE-OUT PROCEDURE WILL BE USED IN EVENT OF SPILLS, TO ASSESS WHETHER ANY CHANGE TO PROCEDURES, EQUIPMENT OR RESPONSIBILITY IS REQUIRED, TO MINIMIZE THE FUTURE LIKELIHOOD OF EVENT RECURRENCE.

POST-CONSTRUCTION STORMWATER JOURNAL:

FOLLOWING COMPLETION OF CONSTRUCTION, INSPECTIONS SHOULD BE PROVIDED ANNUALLY AND AFTER EACH MAJOR RAINFALL EVENT OF 4" OR GREATER. THE CONTRACTOR WILL BE REQUIRED TO PROVIDE THESE INSPECTIONS FOR A ONE-YEAR WARRANTY PERIOD FOLLOWING THE ISSUANCE OF A CERTIFICATE OF SUBSTANTIAL COMPLETION FOR THE PROJECT. ALL EROSION CONTROL MEASURES SHOWING SIGNS OF DAMAGE OR FAILURE MUST BE CORRECTED. SEDIMENT ACCUMULATIONS ARE TO BE RETURNED TO THEIR SOURCE. CORRECTIVE MEASURES MUST BE TAKEN TO PREVENT FURTHER SEDIMENT ACCUMULATIONS. MEASURES SUCH AS SEEDING, SOD, EROSION CONTROL BLANKETS, AND RELATED METHODS ARE TO BE INCORPORATED AS NEEDED TO PREVENT SEDIMENT ACCUMULATIONS WITHIN THE PROJECT AREA.

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https://commonwealthengineers.com/

AARON R. ROHNER
REGISTERED
No 12000723
STATE OF INDIANA
PROFESSIONAL ENGINEER

Signature 01/30/2024 Date

TOWN OF ODON
DAVIESS COUNTY, INDIANA

WATER UTILITY
IMPROVEMENTS PROJECT
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No.	Submittal / Revision	By	Date

Designed By:	Drawn By:	Checked By:
ARR	DMJ	AWL
Issue Date: 04/22/2025	Project No: W21115	Scale: AS SHOWN

STORMWATER POLLUTION PREVENTION PLAN II

Drawing No: **EC2**

Sheet: 07 OF 52

File: Z:\SHARED\IN CLIENTS MJ\ODON\W21115 WATER UTILITY IMPROVEMENTS\06 CAD\A CURRENT FILES\1 DRAWINGS\DIV. A\03-EROSION CONTROL DRAWINGS.DWG
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SECTION C: STORMWATER POLLUTION PREVENTION - POST CONSTRUCTION

POST-CONSTRUCTION ESTIMATES OF WATER QUALITY VOLUME:

WHEN IMPERVIOUS SURFACES ARE ADDED TO A PROJECT SITE, POST-CONSTRUCTION STORMWATER QUALITY MEASURES MUST BE SIZED TO TREAT THE WATER QUALITY VOLUME (WQV) OR WATER QUALITY FLOW RATES. INDIANA UTILIZES A ONE (1) INCH PRECIPITATION DEPTH TO CALCULATE WQV, WHICH IS A SUFFICIENT DEPTH TO MINIMIZE POLLUTANTS AND REDUCE CHANNEL AND STREAM BANK EROSION.

THE PREFERRED EQUATION TO CALCULATE WATER QUALITY VOLUME (WQV) IS:

WQV = RV X A X P

WHERE:

RV = RUN-OFF COEFFICIENT, RV = 0.05 + 0.9I

Variable	Definition
WQv	"Water Quality Volume" is the volume of stormwater run-off which must be captured and treated prior to discharge from the developed site after construction is complete. WQv is based on the expected run-off generated by the mean storm precipitation volume from post-construction site conditions at which rapidly diminishing returns in the number of run-off events captured begins to occur.
A	"Drainage Area" is the total surface area that will drain to a certain point, such as a detention basin inlet.
P	"Precipitation Depth" is the depth of design storm that is used to treat most storm events. The standard in Indiana is one (1) inch of rainfall over 24 hours. This corresponds to the 90th percentile of events, and therefore, provides treatment for most events.
Rv	"Run-off Volumetric Coefficient" is the fraction of total rainfall that will appear at the outlet as run-off.
I	"Percentage of Impervious Area" is the fraction of the drainage area that is impervious.

THE INTENDED PROJECT IS NOT ANTICIPATED TO CHANGE GENERAL SURFACE CONDITIONS. LAND USE IN THE PROJECT AREA IS DEVELOPED AND THE PROPOSED IMPROVEMENTS WILL NOT CHANGE LAND USE. A SMALL AMOUNT OF IMPERVIOUS SURFACE IS BEING ADDED AT THE NEW TANK SITE IN THE FORM OF A GRAVEL ACCESS DRIVE (DIVISION C). GENERALLY, SURFACES IN THE PROJECT AREA WILL BE RESTORED TO EXISTING CONDITIONS OR BETTER.

PRE-CONSTRUCTION WQV FOR THE PROJECT AREA:

I = 0.50*

*APPROXIMATED FROM AERIAL IMAGES: TOTAL PROJECT AREA IS APPROXIMATELY 50% LOW DENSITY DEVELOPED SPACE AND ROADWAYS.

RV = 0.05 + 0.9(0.50) = 0.50

WQV = 0.50 X 36 ACRES X 1.0 INCH = 18.0 ACRE-INCH

POST-CONSTRUCTION WQV FOR THE PROJECT AREA:

I = 0.0016+0.50=0.5016

/*ADDITIONAL IMPERVIOUS SURFACE = 0.057 ACRES = 0.16% OF TOTAL PROJECT AREA

RV = 0.05 + 0.9(0.5016) = 0.50144

WQV = 0.50144 X 36 ACRES X 1.0 INCH = 18.05 ACRE-INCH

C3: PLAN DETAILS FOR EACH STORMWATER QUALITY MEASURE:

PERMANENT SEEDING IS THE ONLY POST-CONSTRUCTION MEASURES ANTICIPATED FOR THIS PROJECT. PERMANENT SEEDING WILL BE PROVIDED FOR ALL PORTIONS OF THE PROJECT WHICH ARE DISTURBED BY CONSTRUCTION ACTIVITIES, AND WHICH ARE NOT COVERED BY PERMANENT RIGID PAVEMENT OR AGGREGATE SURFACE. SILT FENCING AND OTHER EROSION PROTECTION MEASURES WILL NOT BE REMOVED UNTIL THE PERMANENT SEEDING HAS BEEN ESTABLISHED. PLEASE REFER TO THE PLANS, AS WELL AS DS-09, "TEMPORARY EROSION AND SEDIMENT CONTROL" AND WM-24 "SEEDING AND SODDING" (BOTH UNDER SEPARATE ATTACHMENT).

C4: SEQUENCE DESCRIBING STORMWATER QUALITY MEASURE IMPLEMENTATION:

POST-CONSTRUCTION SEQUENCING MEASURES FOR THIS PROJECT WILL BE AS FOLLOWS:

1. TEMPORARY PLANTINGS WILL BE PROVIDED IN CRITICAL AREAS DEVOID OF VEGETATION AND SUBJECT TO EROSION. SUCH TEMPORARY PLANTINGS MAY BE NECESSARY TO PROTECT AN AREA WHEN PREPARING FOR WINTER SHUT DOWN OR TO PROVIDE COVER WHEN PERMANENT SEEDLINGS ARE LIKELY TO FAIL DUE TO AN EXTENDED PERIOD OF HEAT OR DROUGHT. THE INTENT OF THESE PLANTINGS IS TO PROVIDE PROTECTIVE COVER WHILE WAITING FOR OPTIMAL PLANTING CONDITIONS.
2. REMOVAL AND CLEANUP OF ALL TEMPORARY EROSION CONTROL MEASURES INCLUDING SILT FENCES, INLET AND CULVERT PROTECTION AREAS AND CHECK DAMS.
3. THE ENTIRE CONSTRUCTION AREA IS TO BE INSPECTED AND CLEANED, INCLUDING THE COLLECTION AND DISPOSAL OF CONSTRUCTION TRASH AND DEBRIS.
4. PERMANENT SEEDING AND MULCHING WILL BE INSTALLED IMMEDIATELY AFTER ACHIEVING FINAL GRADE OR WITHIN SEVEN (7) DAYS OF INACTIVITY. IF NECESSARY, A TEMPORARY STABILIZATION PRACTICE WILL BE EMPLOYED UNTIL THE NEXT PRIME SEEDING PERIOD, AS DESCRIBED IN DS-09, "TEMPORARY EROSION AND SEDIMENT CONTROL" (UNDER SEPARATE ATTACHMENT).
5. A FINAL SITE INSPECTION WILL TAKE PLACE TO ASSURE THAT ALL REQUIREMENTS OF THE SWPPP, CONSTRUCTION DRAWINGS, AND SUPPORTING DOCUMENTS HAVE BEEN FULFILLED.

C5: MAINTENANCE GUIDELINES FOR PROPOSED POST-CONSTRUCTION WATER QUALITY MEASURES:

ALL DISTURBED AREAS NOT COVERED BY BITUMINOUS OR AGGREGATE PAVEMENT ARE TO BE PROVIDED WITH SEEDING AND MULCHING TO ESTABLISH A PERMANENT VEGETAL COVER.

MAINTENANCE OF STORMWATER QUALITY CONTROL MEASURES

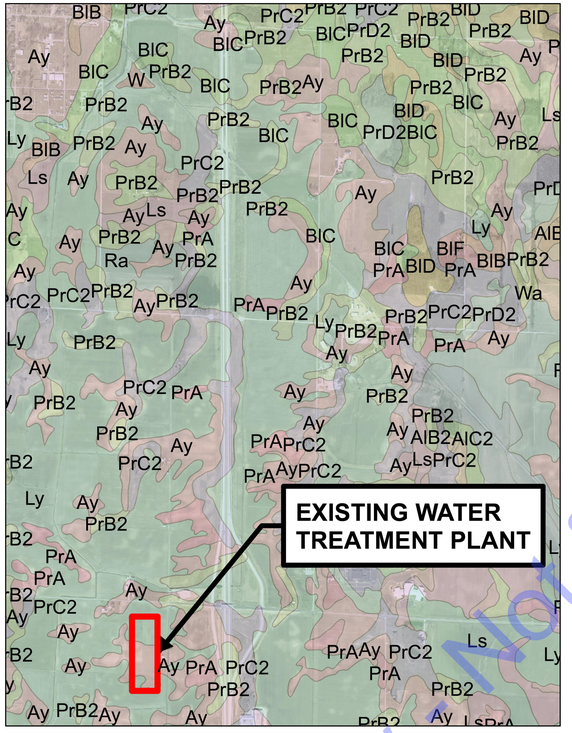
ALL STORMWATER QUALITY CONTROL MEASURES ARE TO REMAIN IN PLACE UNTIL PERMANENT VEGETATIVE COVER HAS BEEN ESTABLISHED. THIS INCLUDES SILT FENCING, INLET PROTECTION, AND CULVERT ENTRANCE CHECK DAM STRUCTURES. FABRIC TEARS, POST FAILURES, VEHICLE DAMAGE, OR UNDERMINING OF THE SILT FENCE ARE TO BE REPAIRED IMMEDIATELY. SEDIMENT BUILDUP ALONG SILT FENCES WILL BE REMOVED IF IT REACHES 1/3 THE HEIGHT OF THE SILT FENCE ABOVE THE GROUND ELEVATION.

VEGETATED AREAS

VEGETATED AREAS WITHIN THE PROJECT BOUNDARIES MUST BE MAINTAINED ON A REGULAR BASIS DURING THE ACTIVE GROWING SEASON. MAINTENANCE ACTIVITIES WILL INCLUDE INSPECTION FOR SPARSELY SEEDED AREAS, AND RESEEDING AREAS WHICH HAVE BEEN DAMAGED OR WHICH HAVE NOT EXHIBITED A SUCCESSFUL AND HARDY STAND OF VEGETAL COVER. FERTILIZATION AND WATERING REQUIREMENTS ARE PROVIDED IN WM-24 "SEEDING AND SODDING" (UNDER SEPARATE ATTACHMENT).

C6: MAINTENANCE GUIDELINES FOR PROPOSED POST-CONSTRUCTION WATER QUALITY MEASURES:

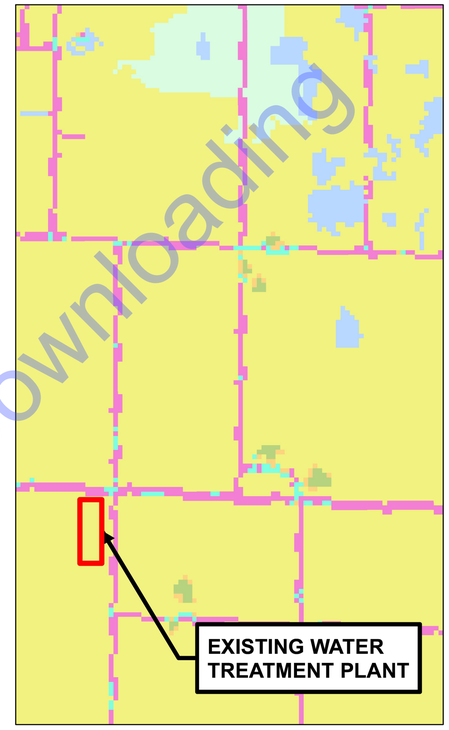
THE TOWN OF ODON WILL BE RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF POST-CONSTRUCTION STORMWATER MEASURES.



SOILS MAP

LEGEND:

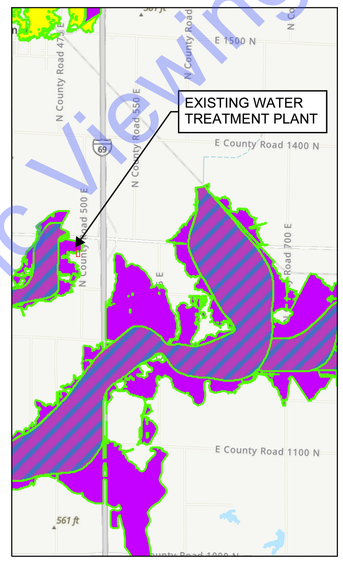
AY - AYRSHIRE FINE SAND LOAM
PRA - PRINCETON FINE SANDY LOAM, 0 TO 2 PERCENT SLOPES
PRB2 - PRINCETON FINE SANDY LOAM, 2 TO 6 PERCENT SLOPES, ERODED
PRC2 - PRINCETON FINE SANDY LOAM, 6 TO 12 PERCENT SLOPES, ERODED
PRD2 - PRINCETON FINE SANDY LOAM, 12 TO 18 PERCENT SLOPES, ERODED
BLB - BLOOMFIELD LOAMY FINE SAND, 2 TO 6 PERCENT SLOPES
BLC - BLOOMFIELD LOAMY FINE SAND, 6 TO 12 PERCENT SLOPES
BLF - BLOOMFIELD LOAMY FINE SAND, 18 TO 35 PERCENT SLOPES
LY - LYLES LOAM
LS - LYLES FINE SANDY LOAM



LAND USE MAP

LEGEND:

- OPEN WATER
- DEVELOPED, OPEN SOURCE
- DEVELOPED, LOW INTENSITY
- DEVELOPED, MEDIUM INTENSITY
- DEVELOPED, HIGH INTENSITY
- BARREN LAND
- DECIDUOUS FOREST
- EVERGREEN FOREST
- MIXED FOREST
- SHRUB/SCRUB
- GRASSLAND/HERBACEOUS
- PASTURE/HAY
- CULTIVATED CROPS
- WOODY WETLANDS
- EMERGENT HERBACEOUS WETLANDS

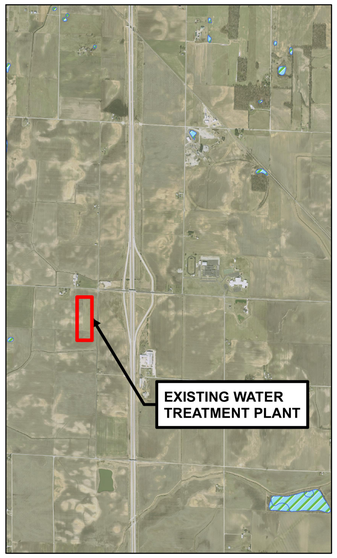


FLOODPLAIN MAP

LEGEND:

FLOODPLAINS - FIRM (MARCH, 2020)

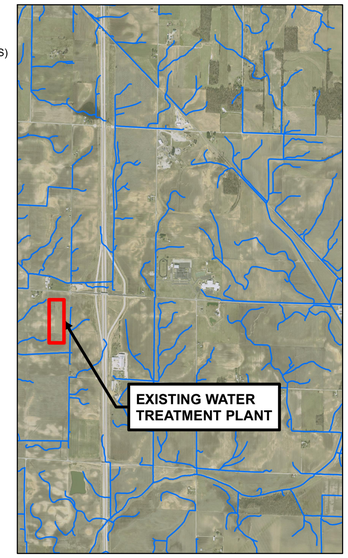
- FLOODWAY
- 1% ANNUAL CHANCE FLOOD HAZARD
- 0.2% ANNUAL CHANCE, PROTECTED BY LEVEE
- 0.2% ANNUAL CHANCE FLOOD HAZARD



WETLANDS MAP

LEGEND:

- WETLANDS NWI (USFWS)



SURFACE WATERS MAP

LEGEND:

- LAKES (NHD)
- RIVERS (NHD)
- STREAMS (NHD)

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AARON R. ROHNER
REGISTERED
No 12000723
STATE OF INDIANA
PROFESSIONAL ENGINEER

Signature 01/30/2024 Date

TOWN OF ODON
DAVIESS COUNTY, INDIANA

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Designed By:	Drawn By:	Checked By:
ARR	DMJ	AWL
Issue Date: 04/22/2025	Project No: W21115	Scale: AS SHOWN

STORMWATER POLLUTION PREVENTION PLAN III

Drawing No: **EC3**

Sheet: 08 OF 52

File: Z:\SHARED\IN CLIENTS M-Z\ODON\W21115 WATER UTILITY IMPROVEMENTS\06 CADA CURRENT FILES\1 DRAWINGS\DIV. A\03 EROSION CONTROL DRAWINGS.DWG
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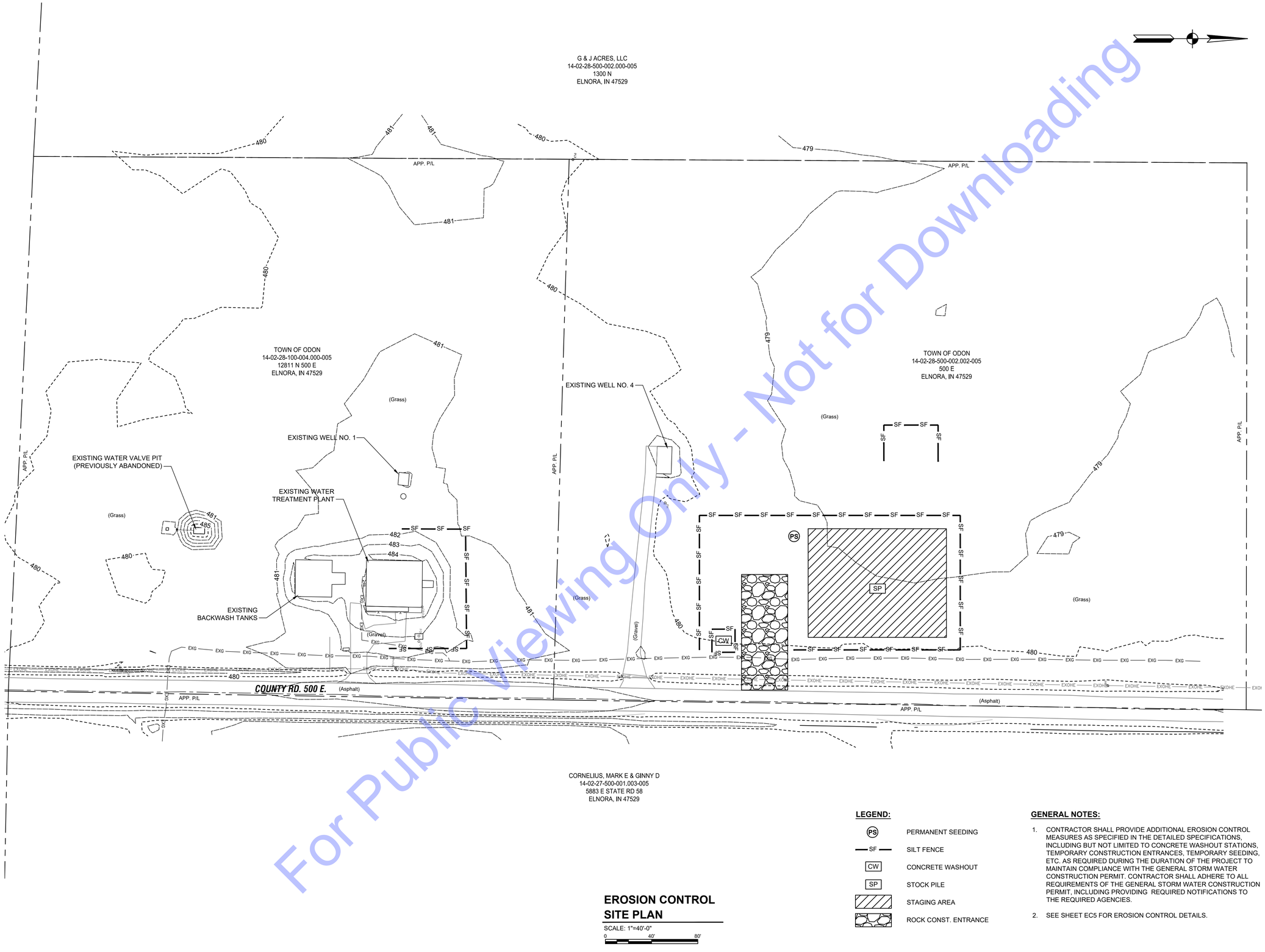

EROSION CONTROL SITE PLAN

SCALE: 1"=40'-0"

0 40' 80'

LEGEND:

- PS — PERMANENT SEEDING
- SF — SILT FENCE
- CW — CONCRETE WASHOUT
- SP — STOCK PILE
- STAGING AREA
- ROCK CONST. ENTRANCE

GENERAL NOTES:

1. CONTRACTOR SHALL PROVIDE ADDITIONAL EROSION CONTROL MEASURES AS SPECIFIED IN THE DETAILED SPECIFICATIONS, INCLUDING BUT NOT LIMITED TO CONCRETE WASHOUT STATIONS, TEMPORARY CONSTRUCTION ENTRANCES, TEMPORARY SEEDING, ETC. AS REQUIRED DURING THE DURATION OF THE PROJECT TO MAINTAIN COMPLIANCE WITH THE GENERAL STORM WATER CONSTRUCTION PERMIT. CONTRACTOR SHALL ADHERE TO ALL REQUIREMENTS OF THE GENERAL STORM WATER CONSTRUCTION PERMIT, INCLUDING PROVIDING REQUIRED NOTIFICATIONS TO THE REQUIRED AGENCIES.
2. SEE SHEET EC5 FOR EROSION CONTROL DETAILS.

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AARON R. ROGNER
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No 12000723
STATE OF INDIANA
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Signature 01/30/2024 Date

TOWN OF ODON
DAVIESS COUNTY, INDIANA

WATER UTILITY IMPROVEMENTS PROJECT

DIVISION "A" - WTP IMPROVEMENTS

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No.	Submittal / Revision	By	Date

Designed By:	Drawn By:	Checked By:
ARR	DMJ	AWL
Issue Date: 04/22/2025	Project No: W21115	Scale: AS SHOWN

EROSION CONTROL SITE PLAN

Drawing No:
EC4
Sheet: 09 OF 52

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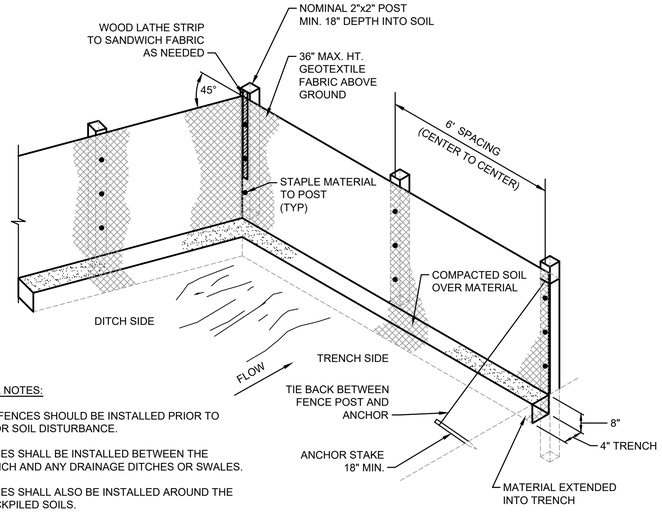
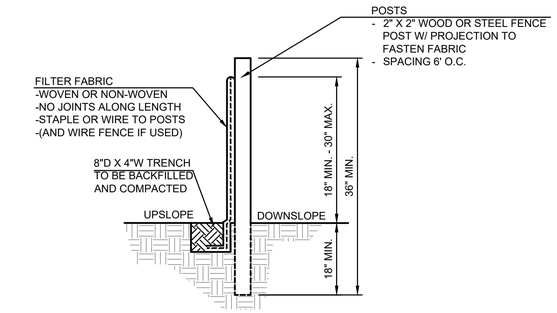


GENERAL NOTES:

1. SILT FENCES SHOULD BE INSTALLED PRIOR TO MAJOR SOIL DISTURBANCE.
2. FENCES SHALL BE INSTALLED BETWEEN THE TRENCH AND ANY DRAINAGE DITCHES OR SWALES.
3. FENCES SHALL ALSO BE INSTALLED AROUND THE STOCKPILED SOILS.
4. THE GEOTEXTILE SHALL BE FREE FROM DEFECTS, TEARS, PUNCTURES, FLAWS, DETERIORATION OR DAMAGE INCURRED DURING MANUFACTURE, TRANSPORTATION, STORAGE, OR INSTALLATION.
5. TIE BACKS SHALL BE PLACED AS REQUIRED.



INSTALLATION:
1. THE BOTTOM 1' OF THE FENCE SHALL BE BURIED IN THE TRENCH ON THE UPSLOPE SIDE.
2. FENCE SHALL BE INSTALLED ALONG LEVEL GRADES, NOT ACROSS FLOW CHANNELS.
3. IF OPTIONAL SUPPORT WIRE FENCE IS USED, POST SPACING MAY BE EXTENDED TO 8' O.C.

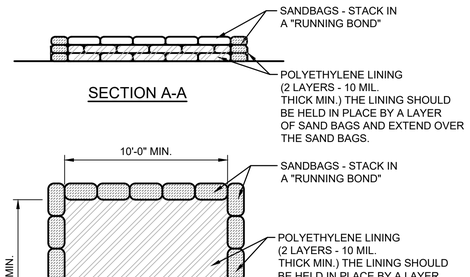
MAINTENANCE:
1. INSPECT SILT FENCE PERIODICALLY (WEEKLY) AND AFTER EACH STORM EVENT.
2. IF FABRIC IS TORN OR DAMAGED OR IN ANY WAY BECOMES INEFFECTIVE, REPLACE THE AFFECTED PORTION IMMEDIATELY.
3. REMOVE DEPOSITED SEDIMENT WHEN IT REACHES HALF THE HEIGHT OF THE FENCE, OR IT IS CAUSING THE FABRIC TO BULGE.
4. TAKE CARE NOT TO UNDERMINE THE FENCE DURING SEDIMENT REMOVAL.
5. AFTER THE CONTRIBUTING AREA HAS BEEN STABILIZED, REMOVE THE FENCE AND REMAINING SEDIMENT, BRING THE DISTURBED AREA TO GRADE, AND STABILIZE.

SILT FENCE DETAIL

NOT TO SCALE

GENERAL EROSION AND SEDIMENT CONTROL NOTES

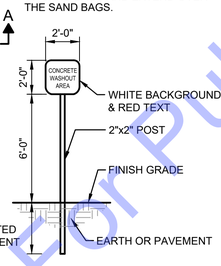
1. ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE IN ACCORDANCE WITH THE INDIANA STORM WATER QUALITY MANUAL FROM THE INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT AND LOCAL EROSION AND SEDIMENT CONTROL ORDINANCE, OR SWCD.
2. THE NOTICE OF INTENT (NOI) AND PUBLIC NOTICE FOR THE PROJECT SHALL BE POSTED ON A SIGN INSTALLED AT OR NEAR THE SITE CONSTRUCTION TRAILER. THE NOI SHALL LIST THE CONTACT INFORMATION FOR THE SITE CONTACT PERSON. THE SIGN AND INFORMATION SHALL BE MAINTAINED AND REMAIN LEGIBLE THROUGHOUT CONSTRUCTION.
3. A COPY OF THIS EROSION AND SEDIMENT CONTROL PLAN AND THE EROSION AND SEDIMENT CONTROL REPORT SHALL BE AVAILABLE AT THE PROJECT SITE THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD.
4. THE CONTRACTOR SHALL CONTROL WASTE, GARBAGE, DEBRIS, WASTEWATER, AND OTHER SUBSTANCES ON THE SITE SO THEY WILL NOT BE TRANSPORTED FROM THE SITE BY THE ACTION OF WIND, STORM WATER RUNOFF, OR OTHER FORCES. PROPER DISPOSAL OR MANAGEMENT OF ALL WASTES AND UNUSED BUILDING MATERIAL APPROPRIATE TO THE NATURE OF THE WASTE OR MATERIAL IS REQUIRED.
5. PUBLIC OR PRIVATE ROADWAYS SHALL BE KEPT CLEAR OF ACCUMULATED SEDIMENT. ALL SEDIMENT THAT IS CLEARED MUST BE RETURNED TO THE LIKELY POINT OF ORIGIN OR OTHER SUITABLE LOCATION. CLEARING OF LARGE AMOUNTS OF SEDIMENT SHALL NOT INCLUDE FLUSHING THE AREA WITH WATER.
6. MINIMIZE THE EXPOSURE OF BARE EARTH BY LIMITING THE WORK AREA TO THAT NECESSARY TO PERFORM THE WORK, AND BY PROPER SCHEDULING OF MANPOWER AND EQUIPMENT.
7. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED, CLEANED, AND MAINTAINED FOLLOWING EACH STORM EVENT.
8. WHEREVER POSSIBLE, MAINTAIN EXISTING VEGETATIVE COVER. USE NON-VEGETATIVE MATERIAL INCLUDING MULCH, EROSION BLANKETS, OR STONE TO CONTROL EROSION FROM DISTURBED AREAS.
9. A LOG SHALL BE MAINTAINED OF ALL INSPECTIONS (WEEKLY, AND FOLLOWING STORM EVENTS), MAINTENANCE AND REPAIR OF EROSION AND SEDIMENT CONTROL MEASURES. THE LOG SHALL BE MAINTAINED ON SITE AND BE AVAILABLE UPON REQUEST TO THE OWNERS REPRESENTATIVES AND THE OPERATING AUTHORITIES HAVING JURISDICTION OVER THE SITE.



SECTION A-A

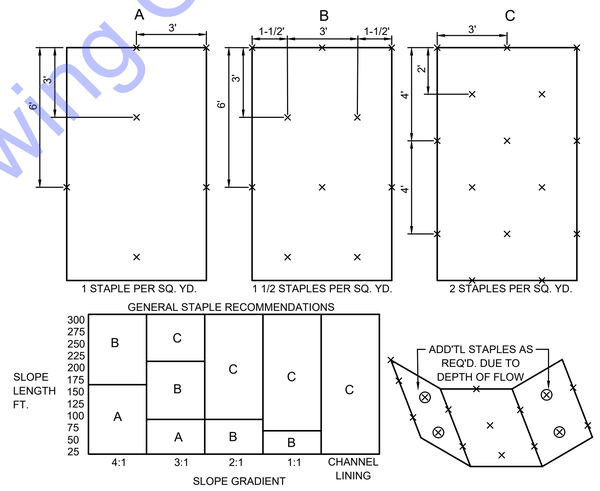
PLAN VIEW

NOTE:
DUE TO SITE CONSTRAINTS THE MINIMUM INTERIOR DIMENSION MAY BE ADJUSTED TO FIT THE SITE. THE STRUCTURE'S INTERIOR FOOTAGE OF 100 S.F. MUST BE MAINTAINED AND THE CONTRACTOR SHALL SUBMIT ANY DESIGN ALTERATIONS TO THE ENGINEER. CONCRETE WASHOUT STRUCTURE SHALL BE RE-LOCATED CLOSE TO AREAS RECEIVING CONCRETE, AS CONSTRUCTION PROGRESSES.



CONCRETE WASHOUT PIT DETAIL

NOT TO SCALE



EROSION CONTROL BLANKET

NOT TO SCALE

SPECIFICATIONS

EFFECTIVE LIFE
- THE FUNCTIONAL LIFE OF AN EROSION CONTROL BLANKET IS DEPENDENT ON THE MATERIALS USED.

ANCHORING
- STAPLES, PINS OR STAKES USED TO PREVENT MOVEMENT OR DISPLACEMENT OF BLANKET. (FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR SPECIFIC APPLICATIONS.)

MATERIALS
- ORGANIC (STRAW, EXCELSIOR, WOVEN PAPER, COCONUT FIBER, ETC.) OR SYNTHETIC MULCH INCORPORATED WITH A POLYPROPYLENE, NATURAL FIBER OR SIMILAR NETTING MATERIAL. (THE NETTING MAY BE BIODEGRADABLE, PHOTODEGRADABLE OR PERMANENT.)

  NOTE: SOME EROSION CONTROL BLANKET NETTINGS MAY POSE A THREAT TO CERTAIN SPECIES OF WILDLIFE IF THEY BECOME ENTANGLED IN THE NETTING MATRIX.

- SIX TO 12-INCH STAPLES, PINS, OR STAKES.

INSTALLATION
1. SELECT THE TYPE AND WEIGHT OF EROSION CONTROL BLANKET TO FIT THE SITE CONDITIONS (E.G., SLOPE, CHANNEL, FLOW VELOCITY) PER THE MANUFACTURER'S RECOMMENDATIONS.
2. PREPARE THE SEEDBED, ADD SOIL AMENDMENTS, AND PERMANENTLY SEED THE AREA IMMEDIATELY FOLLOWING SEEDBED PREPARATION.
3. LAY EROSION CONTROL BLANKETS ON THE SEEDED AREA SO THAT THEY ARE IN CONTINUOUS CONTACT WITH THE SOIL WITH EACH UP-SLOPE OR UP-STREAM BLANKET OVERLAPPING THE DOWN-SLOPE OR DOWN-STREAM BLANKET BY AT LEAST EIGHT INCHES, OR FOLLOW MANUFACTURER'S RECOMMENDATIONS.
4. TUCK THE UPPERMOST EDGE OF THE UPPER BLANKETS INTO A CHECK SLOT (SLIT TRENCH), BACKFILL WITH SOIL AND TAMP DOWN. IN CERTAIN APPLICATIONS, THE MANUFACTURER MAY REQUIRE ADDITION CHECK SLOTS AT SPECIFIC LOCATIONS DOWN SLOPE FROM THE UPPERMOST EDGE OF THE UPPER BLANKETS.
5. ANCHOR THE BLANKETS IN PLACE BY DRIVING STAPLES, PINS, OR STAKES THROUGH THE BLANKET AND INTO THE UNDERLYING SOIL. FOLLOW AN ANCHORING PATTERN APPROPRIATE FOR THE SITE CONDITIONS AND AS RECOMMENDED BY THE MANUFACTURER.

MAINTENANCE
- INSPECT WITHIN 24 HOURS OF EACH RAIN EVENT AND AT LEAST ONCE EVERY SEVEN CALENDAR DAYS.
- CHECK FOR EROSION OR DISPLACEMENT OF THE BLANKET.
- IF ANY AREA SHOWS EROSION, PULL BACK THAT PORTION OF THE BLANKET COVERING THE ERODED AREA, ADD SOIL AND TAMP, RESEED THE AREA, REPLACE AND STAPLE THE BLANKET.

NOTES

CHANNEL LININGS UTILIZE STAPLE PATTERN "C" WITH ADDITIONAL STAPLES ON SIDE SLOPES AT PROJECTED WATER LINE.

STAPLE PATTERNS APPLY TO ALL NORTH AMERICAN GREEN EROSION CONTROL BLANKETS. STAPLE PATTERNS MAY VARY DEPENDING UPON SOIL TYPE AND AVERAGE RAINFALL.

AT SLOPE LENGTHS GREATER THAN 300 FEET OR WHERE DRAINAGE OVER LARGE AREAS IS DIRECTED ONTO THE BLANKETS, STAPLE PATTERN "C" SHOULD BE UTILIZED.

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DAVIESS COUNTY, INDIANA

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EROSION CONTROL DETAILS I

Drawing No:
EC5
Sheet: 10 OF 52

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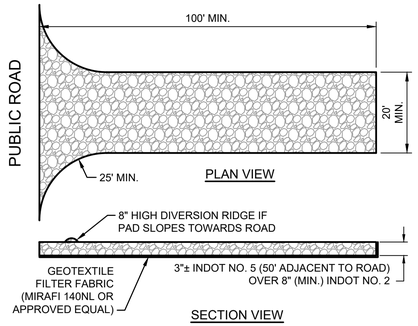

MAINTENANCE:

1. INSPECT DAILY, AND AFTER EACH STORM EVENT OR HEAVY USE.
2. RESHAPE AS NEEDED FOR DRAINAGE AND RUNOFF CONTROL.
3. TOPDRESS WITH CLEAN STONE AS REQUIRED. MAINTAIN MINIMUM DEPTH THROUGHOUT CONSTRUCTION.
4. IMMEDIATELY REMOVE MUD AND SEDIMENT TRACKED OR WASHED ONTO PUBLIC ROADS BY SWEEPING OR BRUSHING. (DO NOT FLUSH AREA WITH WATER UNLESS WATER IS CONVEYED TO SEDIMENT TRAP.)
5. REPAIR ANY BROKEN PAVEMENT IMMEDIATELY.

STABILIZED CONSTRUCTION ENTRANCE DETAIL

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EROSION CONTROL DETAILS II

Drawing No: **EC6**

Sheet: 11 OF 52

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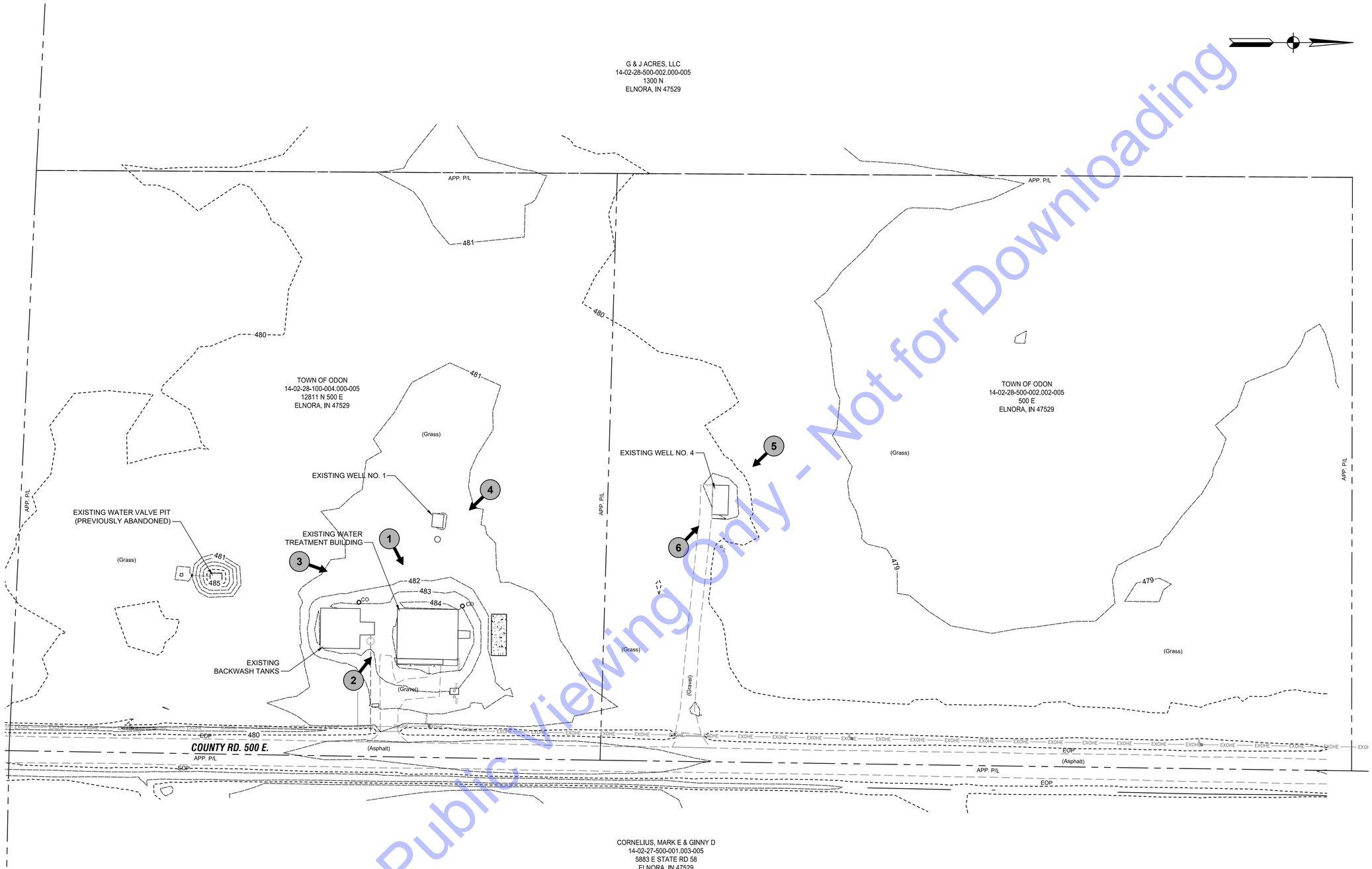

EXISTING WTP OVERALL SITE PLAN AND PHOTO INDEX

SCALE: 1"=40'-0"

0 40' 80'

LEGEND:

(#) INDICATES PHOTO NUMBER AND DIRECTION OF PHOTO
(PHOTOS TAKEN BY COMMONWEALTH ENGINEERS, INC. - MARCH, 2023)

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EXISTING WTP
OVERALL SITE PLAN
AND PHOTO INDEX

Drawing No:
PS1
Sheet: 12 OF 52

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PHOTO #1

PHOTO #2

PHOTO #3

PHOTO #4

PHOTO #5

PHOTO #6

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PHOTO LOG

Drawing No:
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Sheet: 13 OF 52

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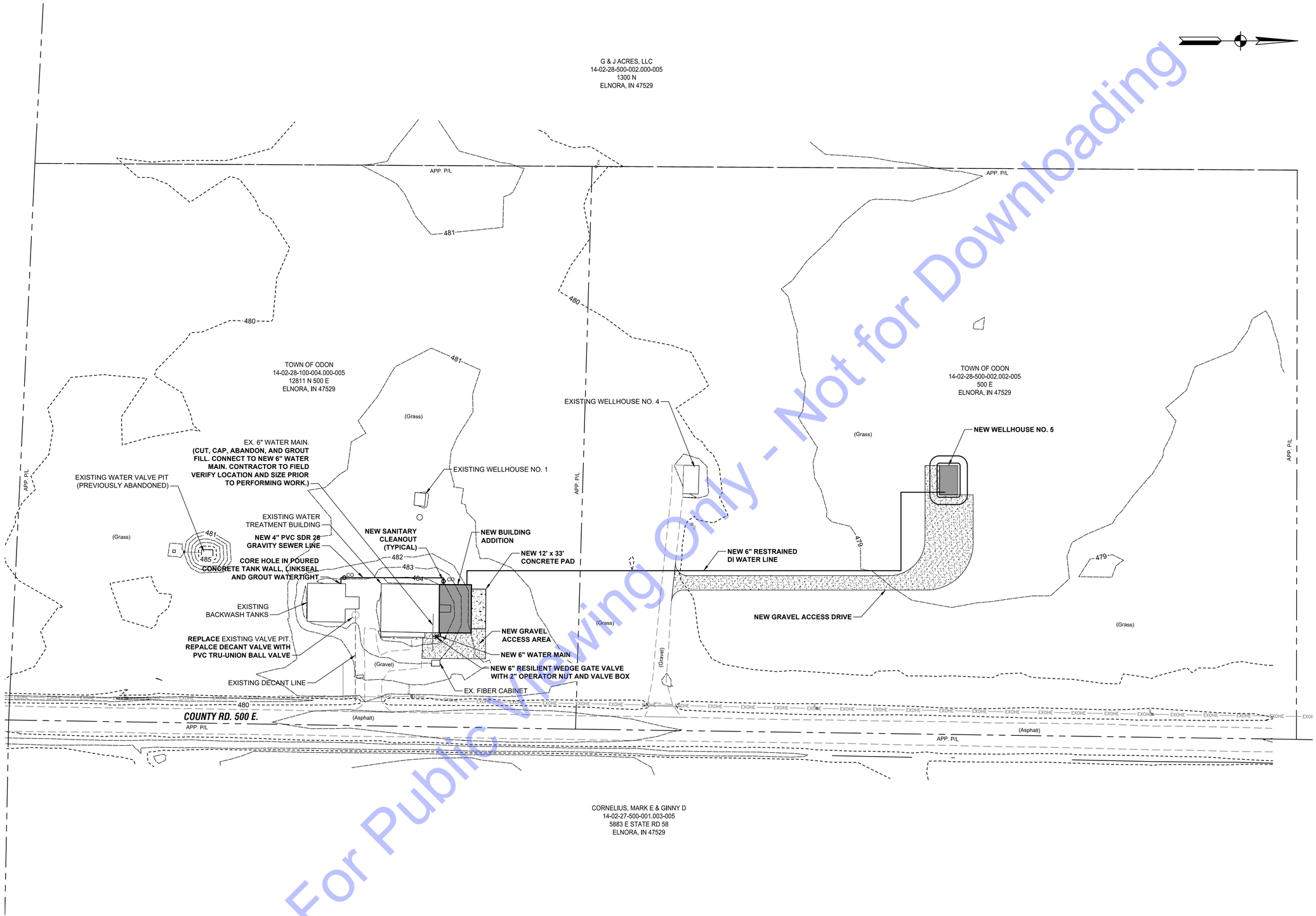

EXISTING WTP SITE IMPROVEMENTS PLAN

SCALE: 1"=40'-0"

0 40' 80'

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EXISTING WTP SITE IMPROVEMENTS PLAN

Drawing No:
PS3
Sheet: 14 OF 52

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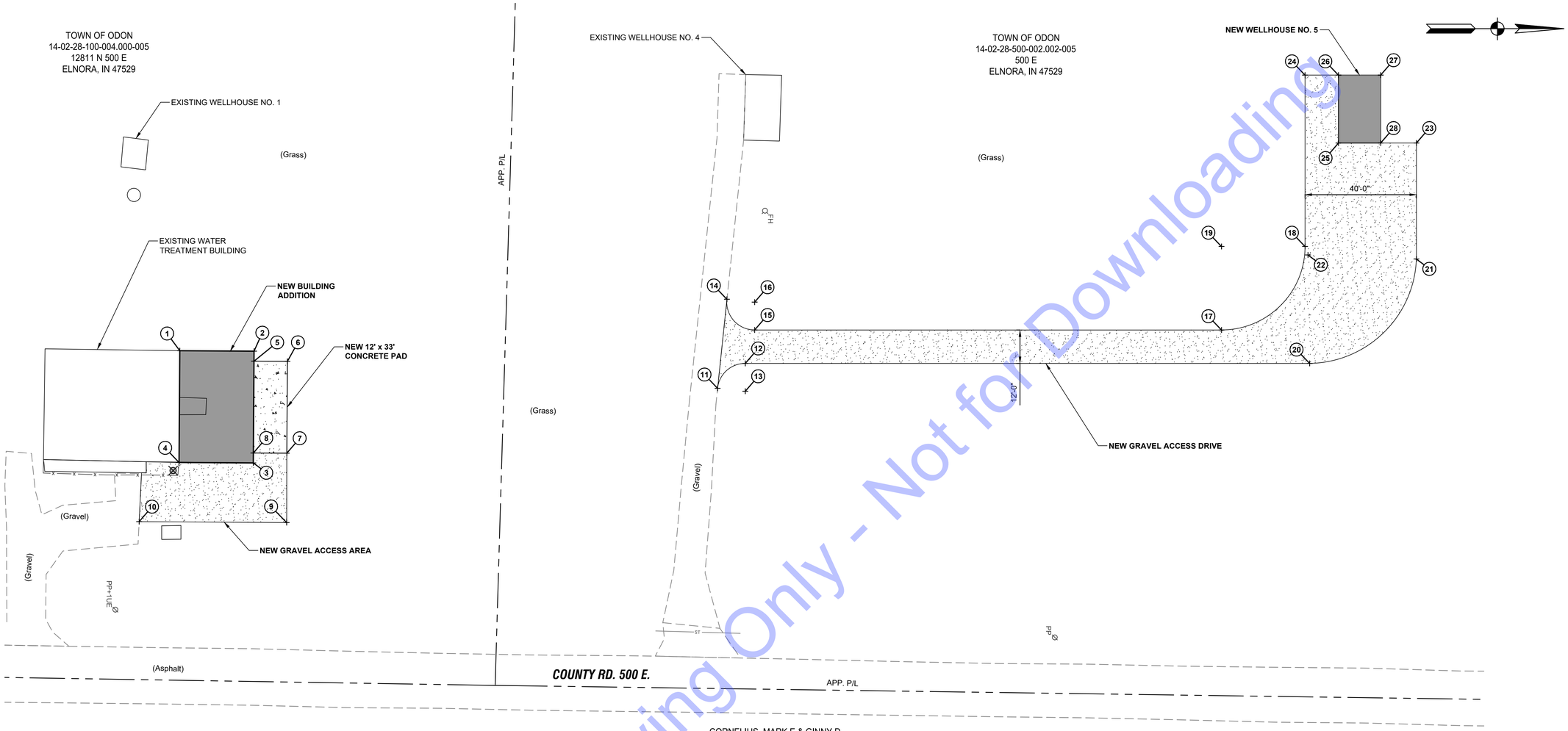

EXISTING WTP SITE IMPROVEMENTS LOCATION PLAN

SCALE: 1"=20'-0"

0 20' 40'

(#) LOCATION KEYNOTES			
POINT	NORTHING	EASTING	TYPE
01	2955245.66	1309357.01	SW CORNER WTP ADDITION
02	2955245.83	1309383.67	NW CORNER WTP ADDITION
03	2955285.98	1309383.41	NE CORNER WTP ADDITION
04	2955285.81	1309356.75	SE CORNER WTP ADDITION
05	2955249.41	1309383.65	SW CORNER CONC. PAD
06	2955249.48	1309395.65	NW CORNER CONC. PAD
07	2955282.48	1309395.43	NE CORNER CONC. PAD
08	2955282.40	1309383.43	SE CORNER CONC. PAD
09	2955307.41	1309395.39	NE CORNER GRAVEL PAD
10	2955307.07	1309342.41	SE CORNER GRAVEL PAD
11	2955259.18	1309550.13	SE CORNER GRAVEL DRIVE
12	2955250.22	1309560.08	GRAVEL DRIVE PT
13	2955260.22	1309560.08	GRAVEL DRIVE RADIUS POINT
14	2955227.18	1309553.48	SW CORNER GRAVEL DRIVE

(#) LOCATION KEYNOTES			
POINT	NORTHING	EASTING	TYPE
15	2955238.22	1309563.43	GRAVEL DRIVE PT
16	2955228.22	1309563.43	WEST RADIUS POINT GRAVEL DRIVE
17	2955238.22	1309731.08	GRAVEL DRIVE PT
18	2955208.22	1309761.08	GRAVEL DRIVE PT
19	2955208.22	1309731.08	GRAVEL DRIVE RADIUS POINT
20	2955250.22	1309762.74	GRAVEL DRIVE PT
21	2955212.72	1309801.07	GRAVEL DRIVE PT
22	2955211.26	1309762.13	GRAVEL DRIVE RADIUS POINT
23	2955171.05	1309801.07	NW CORNER GRAVEL DRIVE
24	2955146.66	1309761.08	SW CORNER GRAVEL DRIVE
25	2955171.05	1309773.08	SE CORNER NEW WELL HOUSE NO. 5
26	2955146.66	1309773.08	SW CORNER NEW WELL HOUSE NO. 5
27	2955146.66	1309788.24	NW CORNER NEW WELL HOUSE NO. 5
28	2955171.05	1309788.24	NE CORNER NEW WELL HOUSE NO. 5

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EXISTING WTP SITE IMPROVEMENTS LOCATION PLAN

Drawing No:
PS4
Sheet: 15 OF 52

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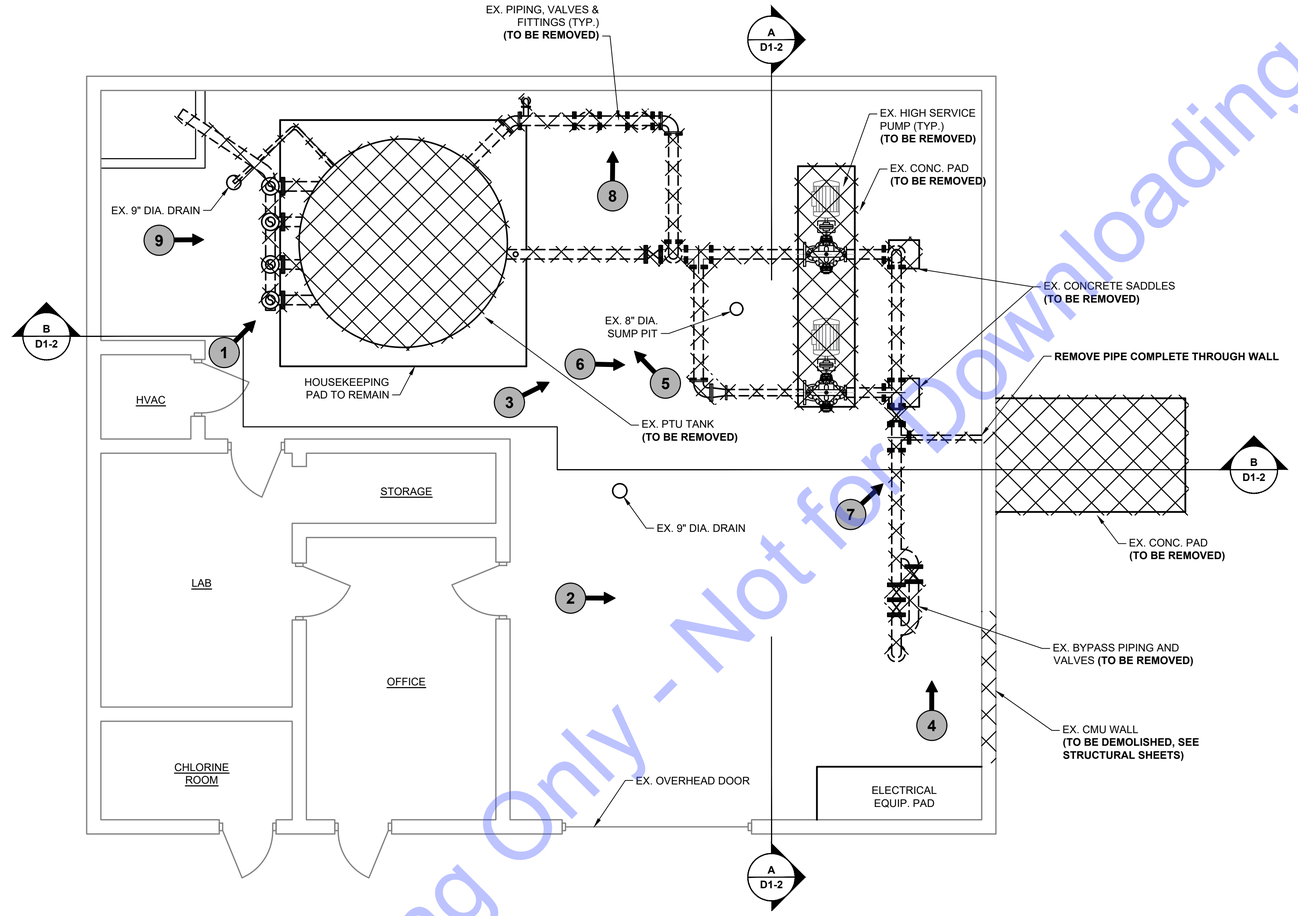

EXISTING TREATMENT BUILDING DEMOLITION PLAN

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

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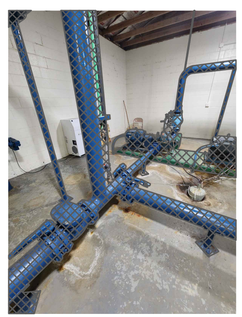
PHOTO #1

PHOTO #2



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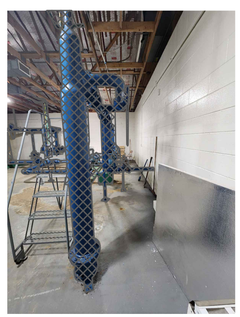

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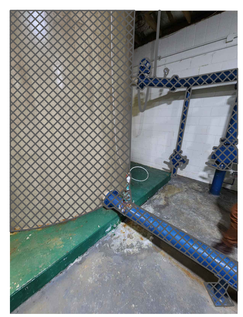

PHOTO #5

GENERAL NOTES

SEE SHEET D1-2 FOR SITE PHOTOS #6 THROUGH #9.

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EXISTING TREATMENT BUILDING DEMOLITION PLAN

Drawing No: **D1-1**

Sheet: 16 OF 52

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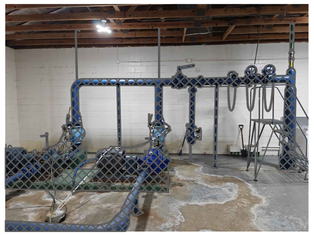


PHOTO #6

PHOTO #7

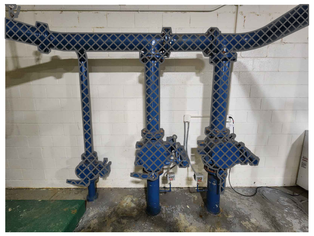
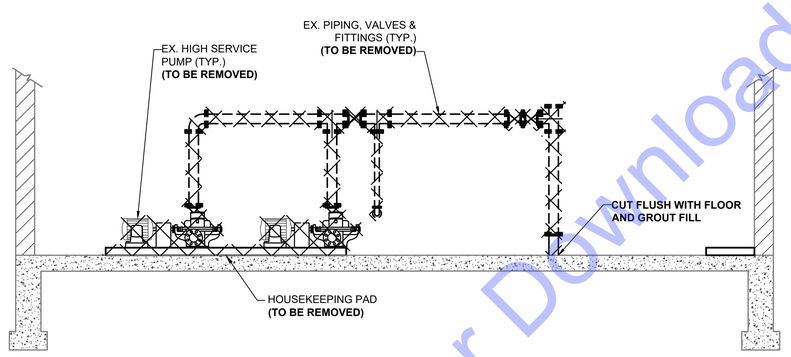


PHOTO #8

PHOTO #9



SECTION A (D1-1)
SCALE: 1/4"=1'-0"
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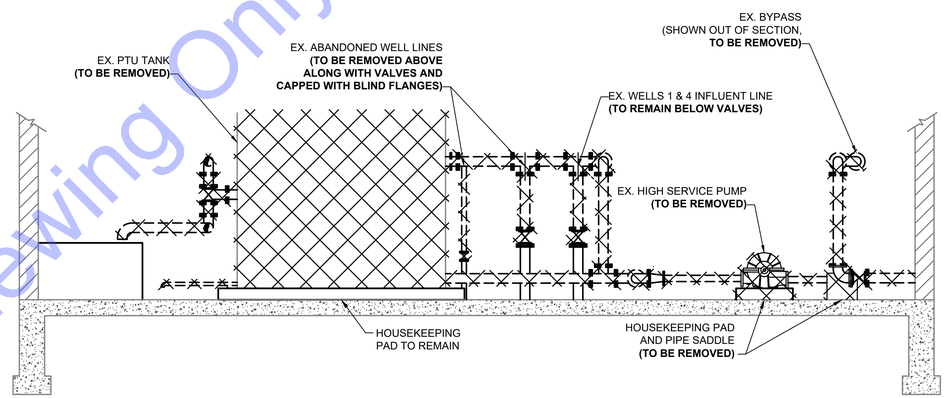

SECTION B (D1-1)
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STATE OF INDIANA
PROFESSIONAL ENGINEER

Signature 01/30/2024 Date

TOWN OF ODON
DAVIESS COUNTY, INDIANA

WATER UTILITY
IMPROVEMENTS PROJECT
DIVISION "A" - WTP
IMPROVEMENTS

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No.	Submittal / Revision	By	Date

Designed By:	Drawn By:	Checked By:
ARR	DMJ	AWL
Issue Date:	Project No:	Scale:
04/22/2025	W21115	AS SHOWN

EXISTING TREATMENT BUILDING DEMOLITION SECTIONS

Drawing No:
D1-2
Sheet: 17 OF 52

File: Z:\SHARED\IN CLIENTS M-Z\DODON\W21115 WATER UTILITY IMPROVEMENTS\06 CAD\A CURRENT FILES\1 DRAWINGS\DIV A\D5-PROCESS DRAWINGS - WTP.DWG
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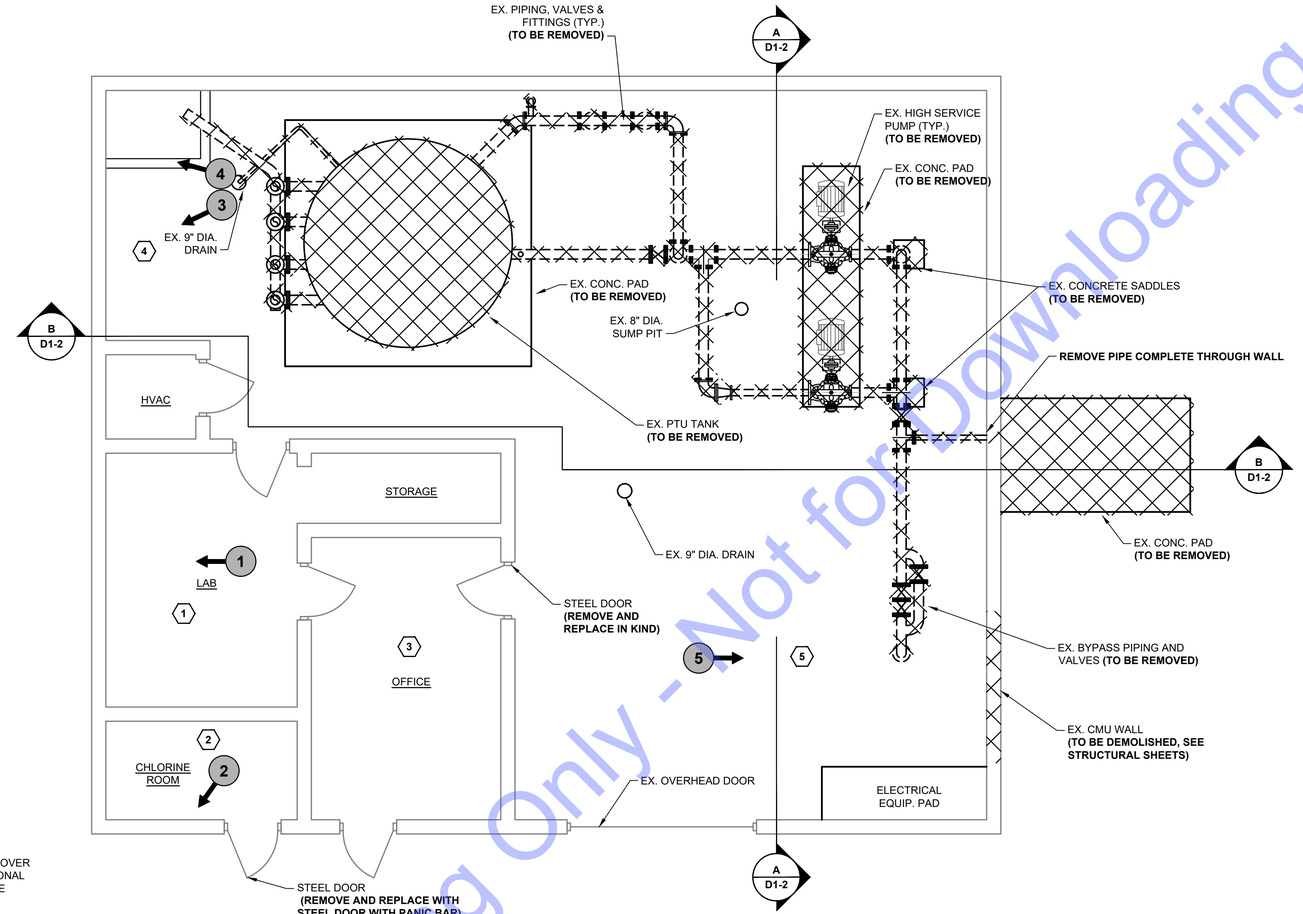

EXISTING TREATMENT BUILDING DEMOLITION PLAN

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

0 2' 4' 8'

GENERAL DEMOLITION NOTES

1. LAB: ALL CHEMICAL LINES IN LAB TO BE DEMOLISHED AND REMOVED COMPLETE. TURNOVER PUMPS TO OWNER. REMOVE AND REPLACE DRYWALL CEILING IN KIND, ADDING ADDITIONAL NAILER BLOCKS AS NEEDED TO SECURE DRYWALL. DEMOLISH AND REMOVE COMPLETE EXISTING CASEWORK, WATER HEATER AND SINK. (PHOTO #1)
2. CHLORINE ROOM: OLD CHEMICAL LINE IN CHLORINE ROOM TO BE DEMOLISHED AND REMOVED COMPLETE. REMOVE AND REPLACE DRYWALL CEILING IN KIND, ADDING ADDITIONAL NAILER BLOCKS AS NEEDED TO SECURE DRYWALL. (PHOTO #2)
3. OFFICE: REMOVE AND REPLACE DRYWALL CEILING IN KIND, ADDING ADDITIONAL NAILER BLOCKS AS NEEDED TO SECURE DRYWALL. REMOVE AND REPLACE IN KIND DOOR TO SHOP.
4. DEMOLISH AND REMOVE COMPLETE WATER LINES AND CHEMICAL LINES. TURNOVER PUMPS TO OWNER, SCALES TO BE REUSED IN NEW LOCATION. DEMOLISH AND REMOVE COMPLETE IBC TOTE SPILL CONTAINMENT. CONTACT SUPPLIER OF IBC TOTE FOR PICKUP AND REMOVAL. (PHOTOS #3 & #4)
5. DEMOLISH AND REMOVE COMPLETE 2" WATER LINE FROM MAIN TO PAST THE BACKFLOW PREVENTER IN THE RAFTERS. (PHOTO #5)

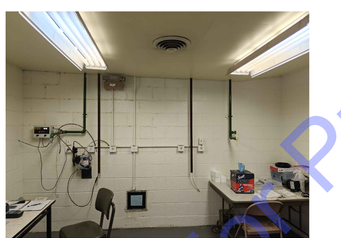

PHOTO #1

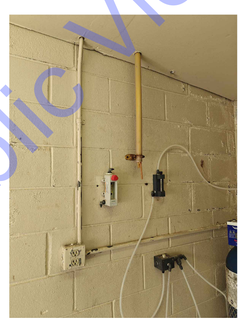

PHOTO #2

PHOTO #3

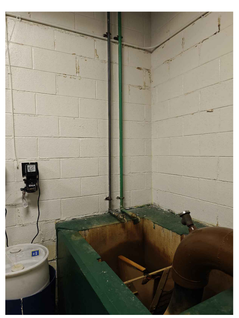

PHOTO #4

PHOTO #5

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ARR	DMJ	AWL
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EXISTING TREATMENT BUILDING DEMOLITION PLAN

Drawing No: **D1-3**

Sheet: 18 OF 52

File: Z:\SHARED\IN CLIENTS M-Z\ODON\W21115 WATER UTILITY IMPROVEMENTS\06 CADA CURRENT FILES\1 DRAWINGS\D1V. A\05-PROCESS DRAWINGS - WTP.DWG
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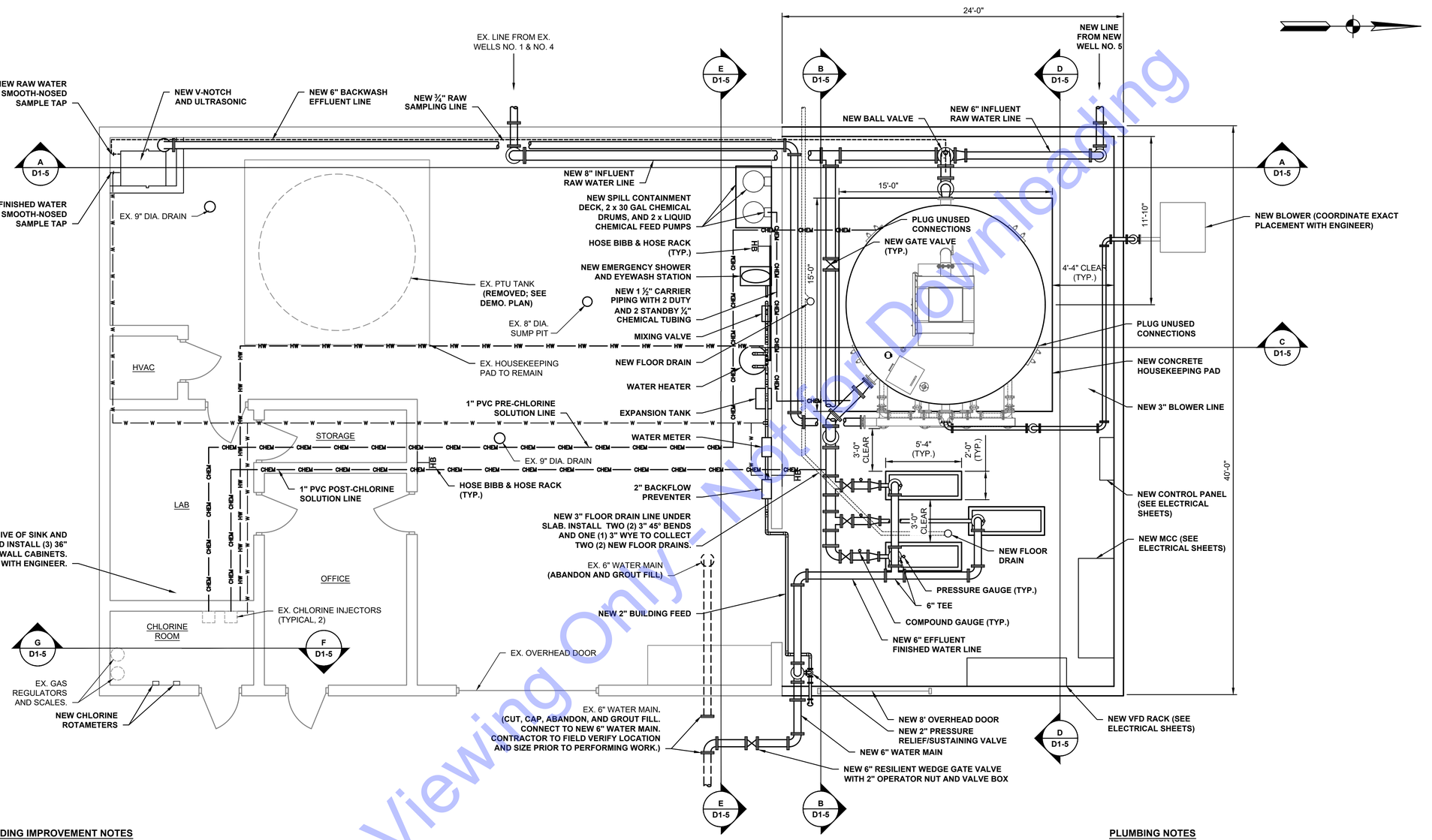

EXISTING TREATMENT BUILDING IMPROVEMENTS PLAN

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

0 2' 4' 8'

GENERAL BUILDING IMPROVEMENT NOTES

1. REMOVE AND DISPOSE OF EXISTING GABLE SIDING. INSTALL NEW SIDING BOTH GABLES PER WM 29-074633. COLOR SELECTION BY OWNER.
2. PAINT CMU INTERIOR AND EXTERIOR. SEE WM 25.2. COLOR SELECTION BY OWNER.
3. REMOVE AND DISPOSE OF EXISTING ASPHALT SHINGLES. INSTALL NEW ASPHALT SHINGLES ON EXISTING AND NEW ROOF. SEE WM 29-073113. COLOR SELECTION BY OWNER.
4. INSTALL FLOOR COATING ON EXISTING AND NEW CONCRETE PER WM 25.2. COLOR SELECTION BY OWNER.
5. REMOVE AND DISPOSE OF EXISTING SOFFIT, FASCIA, GUTTERS, AND DOWNSPOUTS. INSTALL COMPLETE NEW PER WM 29. COLOR SELECTIONS BY OWNER.

PLUMBING NOTES

GENERAL:

1. DRAWINGS ARE DIAGRAMMATIC ONLY. COORDINATION WITH OTHER TRADES, LAYOUT, ROUTING, AND FITTINGS NECESSARY ARE THE RESPONSIBILITY OF THE CONTRACTOR.
2. ANY MINOR CHANGES IN THE LOCATION OF ALL EQUIPMENT OR FIXTURES FROM THOSE SHOWN ON THE PLANS SHALL BE MADE WITHOUT EXTRA CHARGE IF SO DIRECTED BY ENGINEER OR OWNER BEFORE INSTALLATION. MINOR CHANGES IN LOCATION SHALL BE DEFINED AS WITHIN 10 FEET IN ANY DIRECTION, HORIZONTALLY OR VERTICALLY, FROM THE LOCATION INDICATED ON THE DRAWINGS.
3. UNLESS OTHERWISE SPECIFIED ALL MATERIALS AND EQUIPMENT INCORPORATED IN THE WORK SHALL BE NEW. ALL WORKMANSHIP SHALL BE FIRST CLASS AND SHALL BE PERFORMED BY PERSONS QUALIFIED IN THEIR RESPECTIVE TRADES.
4. INSTALL BLOCKING INSIDE WALL FOR INSTALLATION OF WALL HUNG EQUIPMENT INCLUDING OWNER PROVIDED EQUIPMENT.
5. ALL WORK INSTALLED BY THIS CONTRACTOR SHALL BE IN COMPLIANCE WITH ALL GOVERNING CODES, REGULATIONS AND THE RECOMMENDED INSTALLATION DETAILS OF THE PRODUCT MANUFACTURERS, UNLESS NOTED OTHERWISE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY PERMITS, LICENSES, AND INSPECTIONS GOVERNING HIS PORTION OF THE CONTRACT FROM THE AUTHORITIES HAVING JURISDICTION AND SHALL PAY THE COST OF SUCH UNLESS SPECIFIED OTHERWISE.
7. THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR THE START UP OF ALL PLUMBING EQUIPMENT. PRIOR TO START UP OF ANY EQUIPMENT THE CONTRACTOR SHALL CHECK AND REVIEW ALL MANUFACTURERS RECOMMENDATIONS FOR PROPER PROCEDURE.
8. PIPE SUPPORTS AND HANGERS ARE OMITTED FROM DRAWINGS IN MOST LOCATIONS FOR CLARITY. WHERE ILLUSTRATED, PIPE SUPPORTS AND HANGERS ARE SHOWN FOR REFERENCE PURPOSES ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SUPPORTS AND HANGERS AS REQUIRED TO ADEQUATELY SUPPORT ALL NEW PIPING.
9. HORIZONTAL AND VERTICAL RUNS OF PIPING SHALL BE INSTALLED PARALLEL AND PERPENDICULAR TO THE WALLS. VERTICAL PIPING SHALL BE PLUMB AND PERPENDICULAR TO THE FLOORS AND CEILINGS UNLESS NOTED OTHERWISE.
10. ALL PIPING SHALL BE INSTALLED & CONNECTED BY THE PLUMBING CONTRACTOR.

WATER PIPING:

1. ALL HOT AND COLD WATER PIPING SHALL BE INSULATED WITH 1/2" THICK ELECTROMETRIC INSULATION INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS ALL INSULATION SHALL BE INSTALLED BY QUALIFIED PERSONNEL TO PROVIDE A PROFESSIONAL VAPOR TIGHT SEAL ON ALL PIPING.
2. ALL WATER PIPE SHALL BE PRESSURE TESTED IN ACCORDANCE WITH PART SIX SECTION 15, HYDROSTATIC TESTING IN THE CONTRACT DOCUMENTS.

SANITARY WASTE AND VENT PIPING:

1. PIPING BELOW GRADE TO BE INSTALLED ON FIRM EARTH TO SLOPE AT A MINIMUM 1/8" PER FOOT. VERIFY ALL INVERTS PRIOR TO CONSTRUCTION START.

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1	UPDATE PLAN VIEW	AR	4/2025

Designed By:	Drawn By:	Checked By:
ARR	DMJ	AWL
Issue Date: 04/22/2025	Project No: W21115	Scale: AS SHOWN

EXISTING TREATMENT BUILDING IMPROVEMENTS PLAN

Drawing No: **D1-4**

Sheet: 19 OF 52

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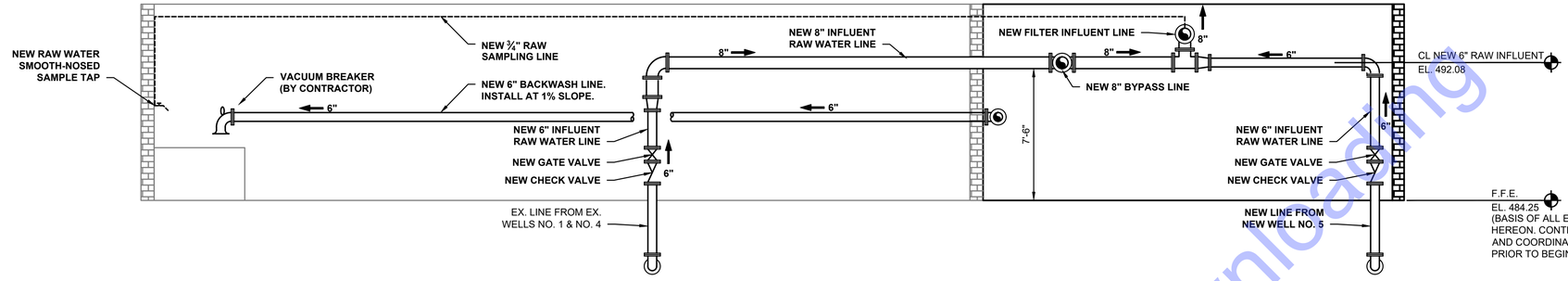
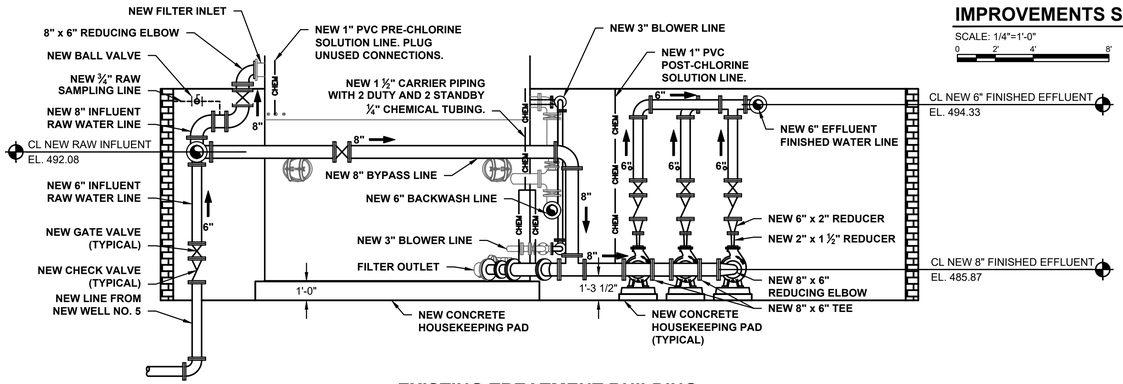


EXISTING TREATMENT BUILDING IMPROVEMENTS SECTION A

SCALE: 1/4"=1'-0" (D1-4)



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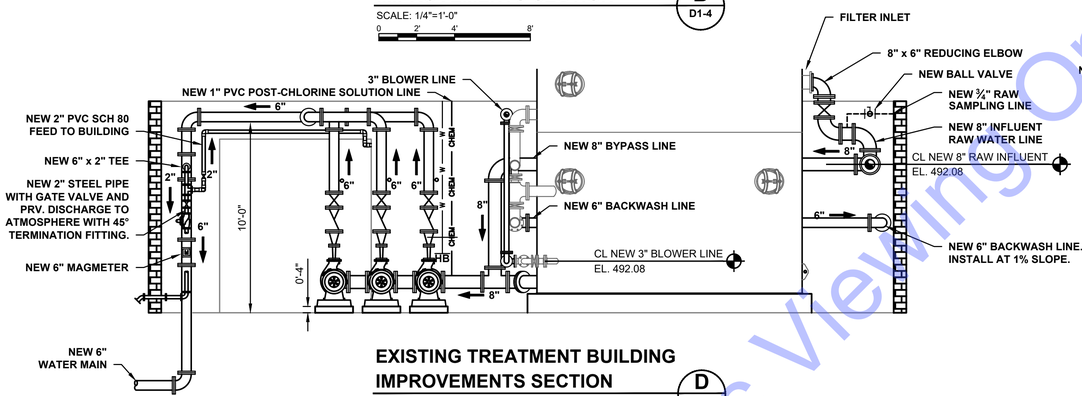

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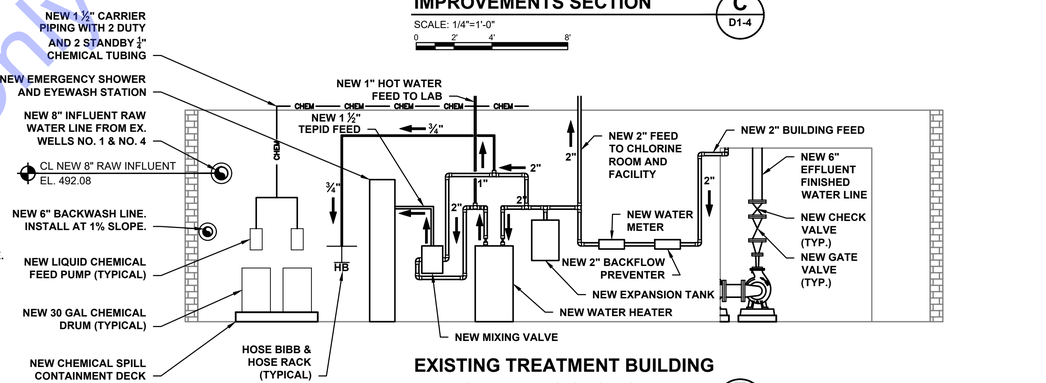

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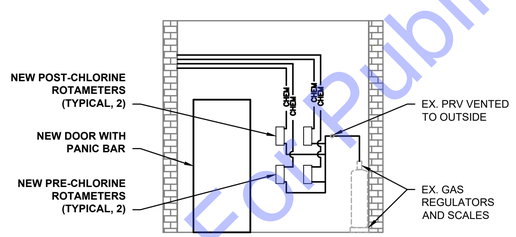

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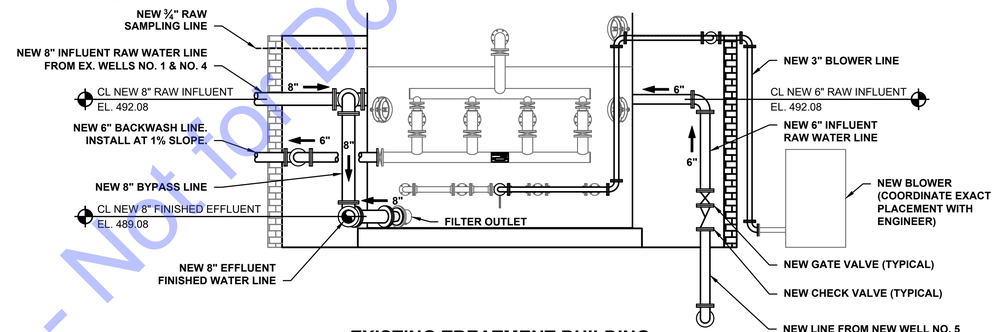

EXISTING TREATMENT BUILDING IMPROVEMENTS SECTION E

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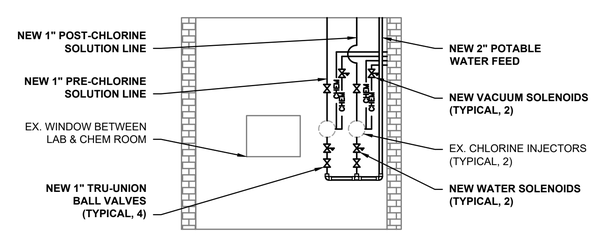

EXISTING TREATMENT BUILDING IMPROVEMENTS SECTION G

SCALE: 1/4"=1'-0" (D1-4)

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AARON R. ROHNER — REGISTERED — No 12000723 — STATE OF INDIANA — PROFESSIONAL ENGINEER

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1	UPDATE SECTION VIEWS	AR	4/2025

Designed By:	Drawn By:	Checked By:
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Issue Date: 04/22/2025	Project No: W21115	Scale: AS SHOWN

EXISTING TREATMENT BUILDING IMPROVEMENTS SECTIONS

Drawing No: **D1-5**

Sheet: 20 OF 52

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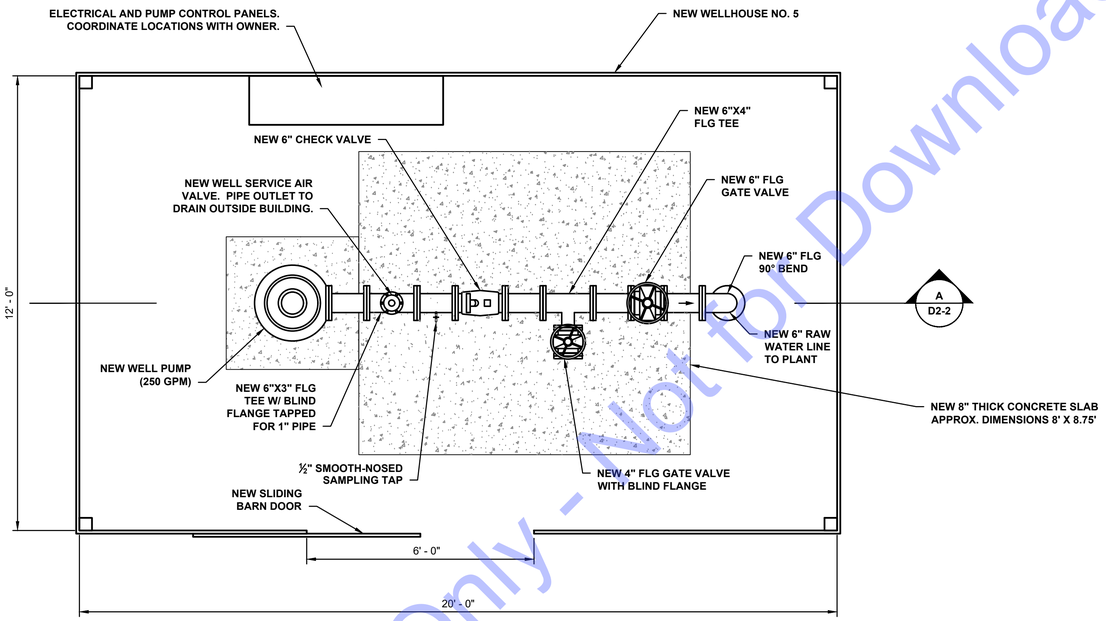

NEW WELLHOUSE NO. 5 PLAN

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

0 1' 2' 4'

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Issue Date: 04/22/2025	Project No: W21115	Scale: AS SHOWN

NEW WELLHOUSE NO. 5 PLAN

Drawing No:
D2-1
Sheet: 21 OF 52

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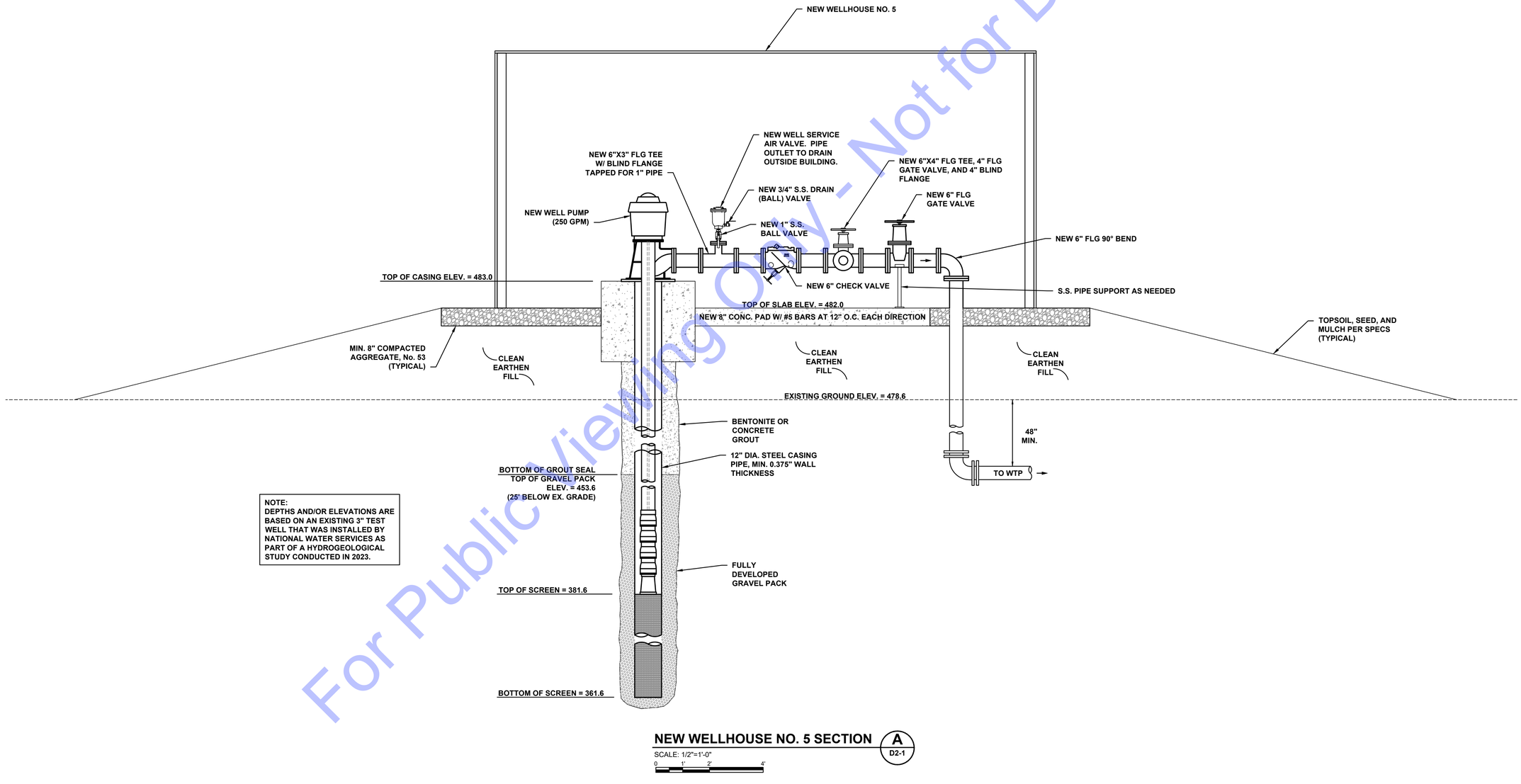

NEW WELLHOUSE NO. 5 SECTION A

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

0 1' 2' 4'

D2-1

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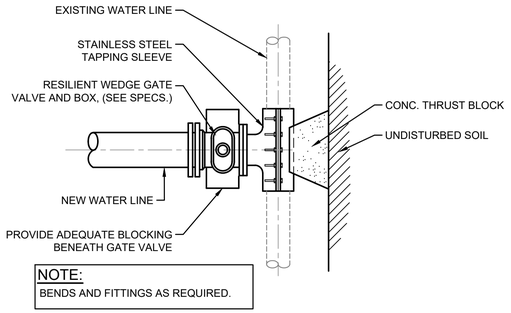
NEW WELLHOUSE NO. 5 SECTION

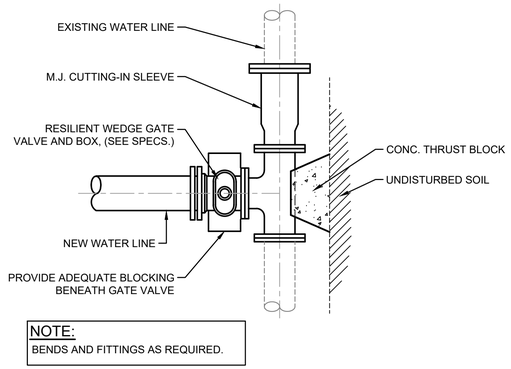
Drawing No: **D2-2**

Sheet: 22 OF 52



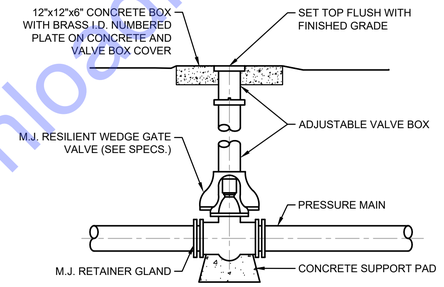
TYPE "A" CONNECTION TO EXISTING WATER MAIN

NOT TO SCALE



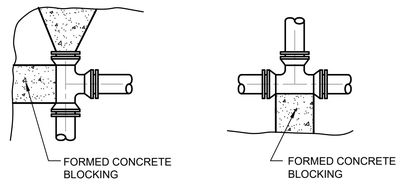
TYPE "B" CONNECTION TO EXISTING WATER MAIN

NOT TO SCALE



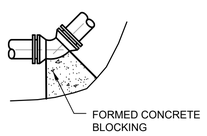
BURIED PLUG/GATE VALVE AND BOX DETAIL

NOT TO SCALE

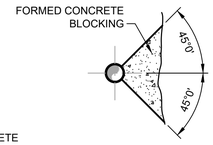


DETAIL A

DETAIL B



DETAIL C



TYP. PROFILE

TABLE OF DIMENSION FOR CONCRETE BLOCKING

SIZE	TEE				PLUG				90° BEND				45° BEND				22° BEND				11° BEND			
PIPE	L	T	W	D	L	T	W	D	s	L	T	W	D	L	T	W	D	L	T	W	D	L	T	W	D
4"	18"	12"	12"	8"	18"	12"	18"	18"	2"	24"	12"	24"	8"	18"	8"	12"	8"	18"	8"	12"	8"	15"	8"	12"	6"
6"	18"	12"	12"	8"	18"	12"	18"	18"	2"	24"	15"	24"	8"	18"	10"	12"	8"	18"	10"	12"	8"	18"	10"	18"	6"
8"	30"	12"	24"	8"	30"	18"	30"	24"	4"	36"	16"	30"	8"	24"	12"	18"	8"	24"	18"	18"	8"	24"	12"	18"	8"
10"	36"	18"	30"	10"	36"	18"	36"	24"	4"	48"	20"	36"	10"	30"	14"	24"	10"	30"	14"	24"	10"	24"	14"	18"	8"
12"	48"	18"	36"	10"	42"	18"	42"	24"	4"	54"	24"	48"	10"	36"	16"	30"	10"	36"	16"	30"	10"	30"	16"	24"	10"
14"	54"	24"	42"	12"	48"	18"	48"	30"	6"	60"	28"	60"	12"	42"	16"	42"	12"	42"	16"	42"	12"	33"	16"	27"	12"
16"	60"	24"	48"	12"	54"	18"	54"	30"	6"	66"	32"	63"	12"	48"	18"	48"	12"	48"	18"	48"	12"	36"	18"	30"	12"
18"	66"	30"	60"	14"	60"	24"	60"	36"	6"	66"	36"	66"	14"	54"	18"	54"	14"	54"	18"	54"	14"	39"	18"	33"	14"
20"	72"	30"	60"	14"	66"	24"	66"	36"	8"	72"	40"	69"	14"	60"	20"	60"	14"	60"	20"	60"	14"	42"	20"	36"	14"
24"	84"	36"	72"	18"	78"	30"	78"	42"	8"	84"	48"	75"	18"	72"	22"	72"	18"	72"	22"	72"	18"	48"	22"	42"	18"
30"	96"	42"	78"	24"	96"	36"	78"	48"	10"	108"	54"	96"	24"	84"	24"	72"	24"	72"	26"	72"	24"	54"	26"	48"	24"
42"	144"	48"	96"	36"	144"	42"	96"	60"	10"	180"	66"	144"	36"	120"	36"	96"	36"	84"	34"	72"	36"	60"	34"	48"	36"

NOTES:

1. FOR TEE WITH BRANCH UNEQUAL TO RUN USE TEE TYPE KICKER WITH D, L, AND W DIMENSIONS THE SAME AS THOSE FOR PLUG WITH SAME DIAMETER AS BRANCH OF TEE, SELECT "T" DIMENSIONS FROM TEE TABLE UNDER COLUMN HEADED BY THE SIZE OF THE BRANCH
2. IF EXACT SIZE PIPE BLOCKING IS NOT SHOWN USE NEXT LARGER SIZE
3. DEPTH "D" MAY BE GREATER THAN SPECIFIED TO ALLOW WORKING SPACE BLOCKING MUST BE PLACED AGAINST UNDISTURBED EARTH OR ROCK
4. CONCRETE BLOCKING SHALL BE CLASS "B"

THRUST BLOCKING DETAIL

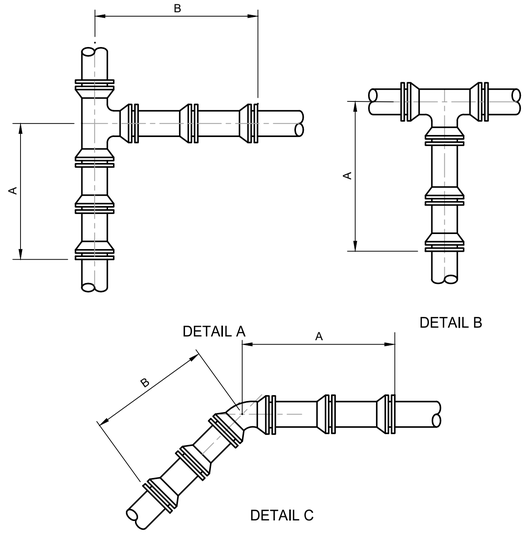
NOT TO SCALE

LENGTH IN FEET REQUIRED FOR RESTRAINING JOINTS

	A		B		
SIZE	TEE & PLUG	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND
6"	12'-0"	12'-0"	10'-0"	6'-0"	3'-0"
8"	16'-0"	22'-0"	13'-0"	8'-0"	4'-0"
10"	19'-0"	27'-0"	16'-0"	9'-0"	5'-0"
12"	23'-0"	32'-0"	19'-0"	11'-0"	6'-0"
14"	26'-0"	36'-0"	21'-0"	12'-0"	7'-0"
16"	29'-0"	41'-0"	24'-0"	14'-0"	8'-0"
18"	32'-0"	45'-0"	26'-0"	15'-0"	8'-0"
20"	35'-0"	50'-0"	29'-0"	16'-0"	9'-0"
24"	41'-0"	58'-0"	34'-0"	19'-0"	10'-0"
30"	50'-0"	70'-0"	40'-0"	22'-0"	12'-0"
36"	58'-0"	82'-0"	46'-0"	26'-0"	14'-0"
42"	66'-0"	93'-0"	52'-0"	29'-0"	15'-0"

NOTE:

1. THE LENGTHS OF PIPE WITH RESTRAINED JOINTS ARE BASED ON A COMPACTED SILTY SOIL SURROUNDING THE PIPE.
2. THE USE OF RESTRAINED FITTINGS DOES NOT ELIMINATE THE NEED FOR CONCRETE THRUST BLOCKS. INSTALL THRUST BLOCKS AS REQUIRED (SEE DETAIL THIS SHEET).



RESTRAINED JOINT DETAILS

NOT TO SCALE

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TOWN OF ODON
DAVIESS COUNTY, INDIANA

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MISCELLANEOUS DETAILS I

Drawing No:
MD1
Sheet: 23 OF 52

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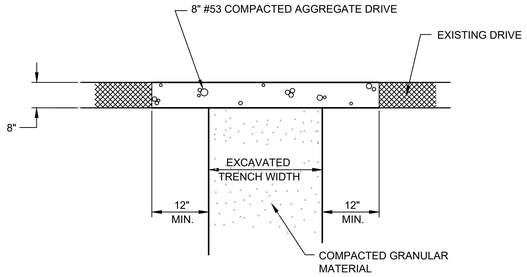
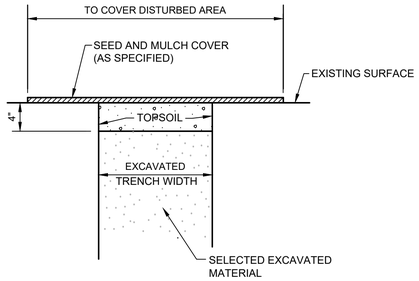


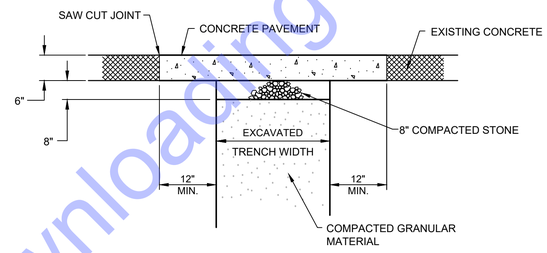
SURFACE RESTORATION DETAIL FOR GRAVEL PAVEMENT - ROAD

NOT TO SCALE



SURFACE RESTORATION DETAIL FOR GRASS AREAS

NOT TO SCALE



SURFACE RESTORATION DETAIL FOR CONCRETE PAVEMENT - DRIVE

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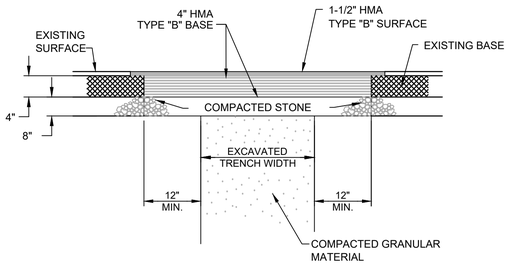
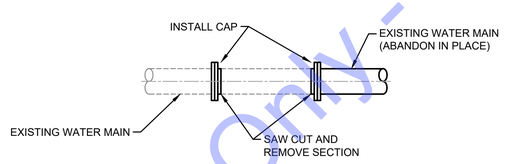


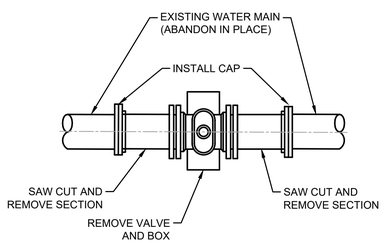
SURFACE RESTORATION DETAIL FOR ASPHALT PAVEMENT - ROAD

NOT TO SCALE



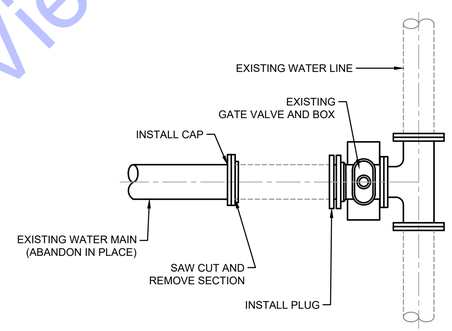
CUT AND CAP DETAIL

NOT TO SCALE



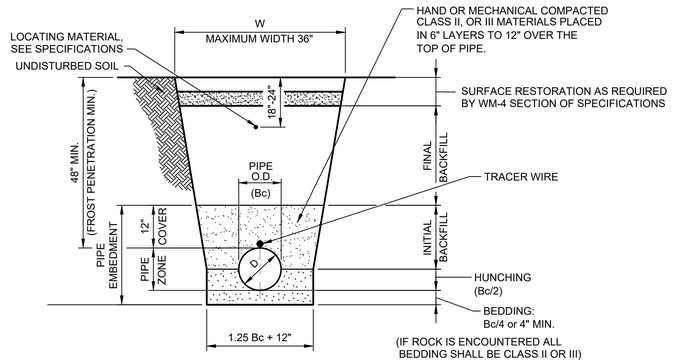
CUT AND CAP WITH VALVE REMOVED DETAIL

NOT TO SCALE



CUT AND CAP/PLUG DETAIL

NOT TO SCALE



W = MAX. ALLOWABLE TRENCH WIDTH FOR PIPE SHALL NOT TO EXCEED 30 INCHES FOR 4" THROUGH 8" PIPE, 36" FOR 8" THROUGH 12" PIPE.

D = PIPE DIAMETER (INTERNAL)

Bc = PIPE DIAMETER (EXTERNAL)

APPLICATION	BEDDING & HUNCHING INITIAL BACKFILL	FINAL BACKFILL
GRASSY AREA OR NEW PAVED AREAS	CLASS I, OR II MATERIAL (REFER TO WORKMANSHIP & MATERIALS SPECIFICATIONS	SELECTED EXCAVATED MATERIAL
PAVEMENT AREA OR ANY AREA SUBJECT TO VEHICULAR TRAFFIC	CLASS I, II OR III MATERIAL (REFER TO WORKMANSHIP & MATERIALS SPECIFICATIONS	COMPACTED GRANULAR MATERIAL

NOTES:

1. INITIAL BACKFILL STOPS AT A POINT 12" ABOVE THE TOP OF THE PIPE. BACKFILLING ABOVE THIS POINT SHALL BE IN ACCORDING WITH THE SPECIFICATIONS AND AS REQUIRED BY HEREIN.
2. BEDDING, HUNCHING AND INITIAL BACKFILL SHALL BE CLASS I, II, OR III MATERIALS ACCORDING TO THE WORKMANSHIP AND MATERIALS SPECIFICATIONS.
3. WORK FALLING UNDER THE JURISDICTION OF THE INDIANA DEPARTMENT OF TRANSPORTATION (INDOT) SHALL UTILIZE COMPACTED GRANULAR BACKFILL MATERIAL FOR INITIAL AND FINAL BACKFILL ANYWHERE WITHIN 12 FEET OF THE EDGE OF PAVEMENT.
4. WORK NOT FALLING UNDER THE JURISDICTION OF IN. DEPT. OF TRANSPORTATION SHALL UTILIZE COMPACTED GRANULAR BACKFILL MATERIAL FOR INITIAL AND FINAL BACKFILL ANYWHERE WITHIN 5 FEET OF THE EDGE OF PAVEMENT.

TRENCH DETAIL FOR WATER MAIN

NOT TO SCALE

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MISCELLANEOUS DETAILS II

Drawing No: **MD2**

Sheet: 24 OF 52

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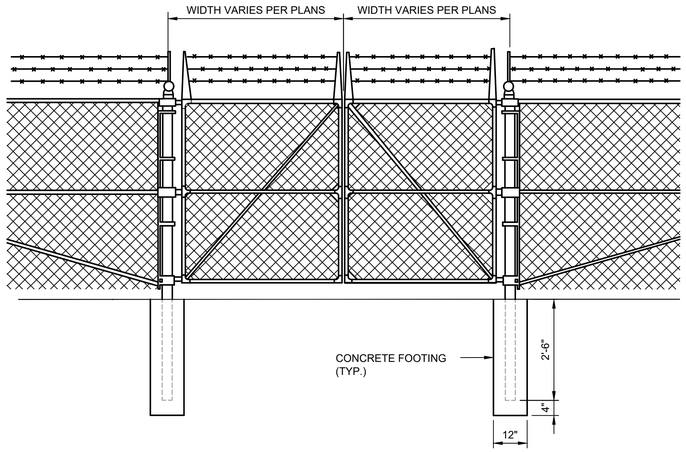
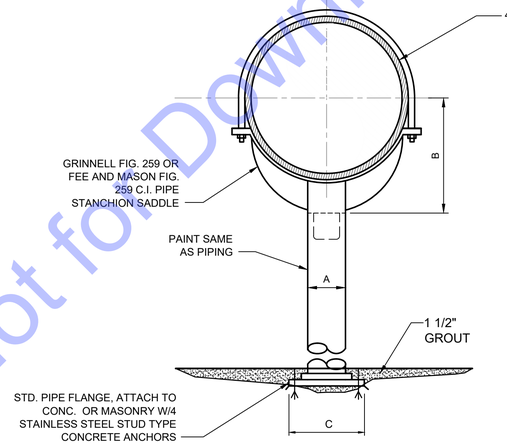


CHAIN LINK FENCE - SWINGING GATE DETAIL

NOT TO SCALE



PIPE SUPPORT

NOTES:

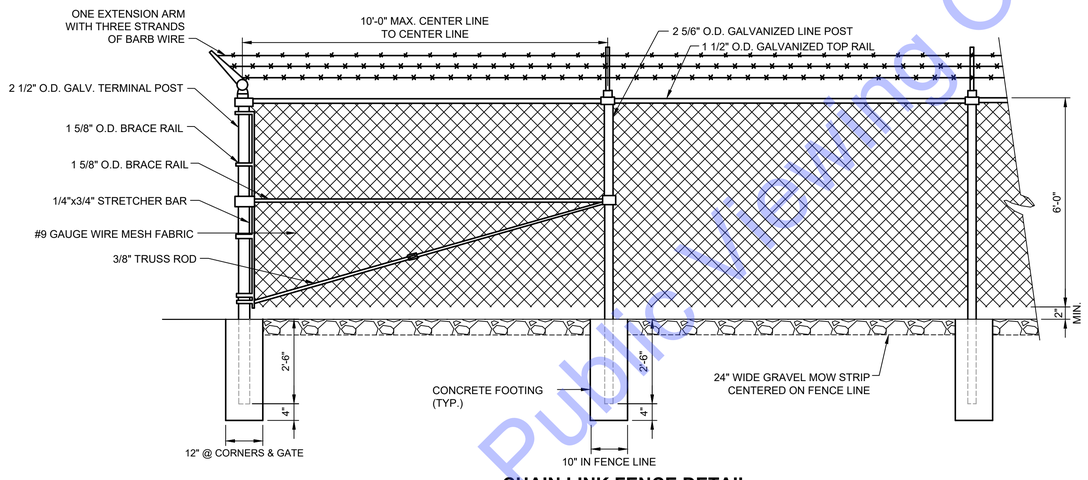
1. PROVIDE HALF ROUND RIGID INSULATION AND INSULATION PROTECTION SHIELD, SIMILAR TO GRINNELL FIG. 167 OR ELCEN FIG. 219, WHERE PIPING IS INSULATED
2. PROVIDE NEOPRENE WAFFLE INSULATION PAD, SIMILAR TO MASON TYPE "W" OR KORKFUND KORPAD 40 UNDER SUPPORT FOOT WHEN PIPING IS ISOLATED OR SUPPORT IS ADJACENT TO MECHANICAL EQUIPMENT.
3. FOR BASE HEIGHT AND FLANGE DIMENSIONS, SEE TABLE

DIMENSION TABLE

PIPE SIZE	A	B	C
4"	3"	4-3/16"	9"
5"	3"	4-13/16"	9"
6"	3"	5-7/16"	9"
8"	3"	6-15/16"	9"
10"	3"	8-7/16"	9"
12"	3"	9-15/16"	9"
14"	4"	10-15/16"	11"
16"	4"	12-3/8"	11"
18"	4"	13-7/8"	11"
20"	6"	15-3/8"	13-1/2"
22"	6"	16-5/8"	13-1/2"
24"	6"	17-15/16"	13-1/2"
26"	6"	19-1/8"	13-1/2"
30"	6"	21-5/16"	13-1/2"
32"	6"	22-1/2"	13-1/2"
36"	8"	24-1/2"	16"

PIPE SUPPORT AND TABLE DETAIL

NOT TO SCALE



CHAIN LINK FENCE DETAIL

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MISCELLANEOUS DETAILS III

Drawing No: **MD3**

Sheet: 25 OF 52

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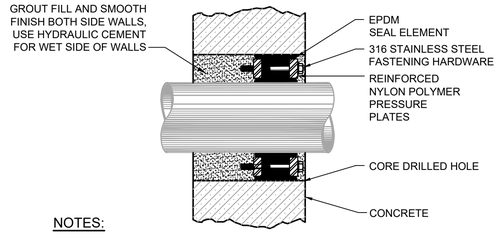


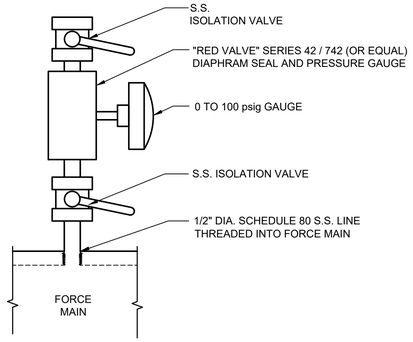
NOTES:

1. ELECTROMETRIC ELEMENT AND LINK-SEAL APPARATUS REQUIRED COMPATIBLE FOR HIGH TEMPERATURE APPLICATIONS - FOR ALL LINES

2. ALL WALL PENETRATIONS (EXISTING WALLS) CONVEYING PIPE SHALL UTILIZE A LINK-SEAL EQUIVALENT, SHALL BE GROUTED SMOOTH, AND SHALL HAVE A BONDING AGENT APPLIED

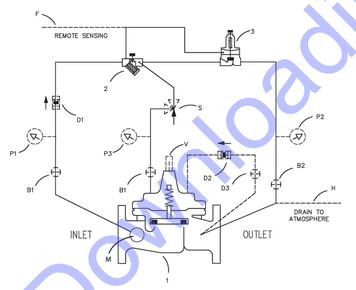
LINK-SEAL WITH CORE DRILLED HOLE DETAIL

NOT TO SCALE



PRESSURE GAUGE DETAIL

NOT TO SCALE



Schematic Diagram

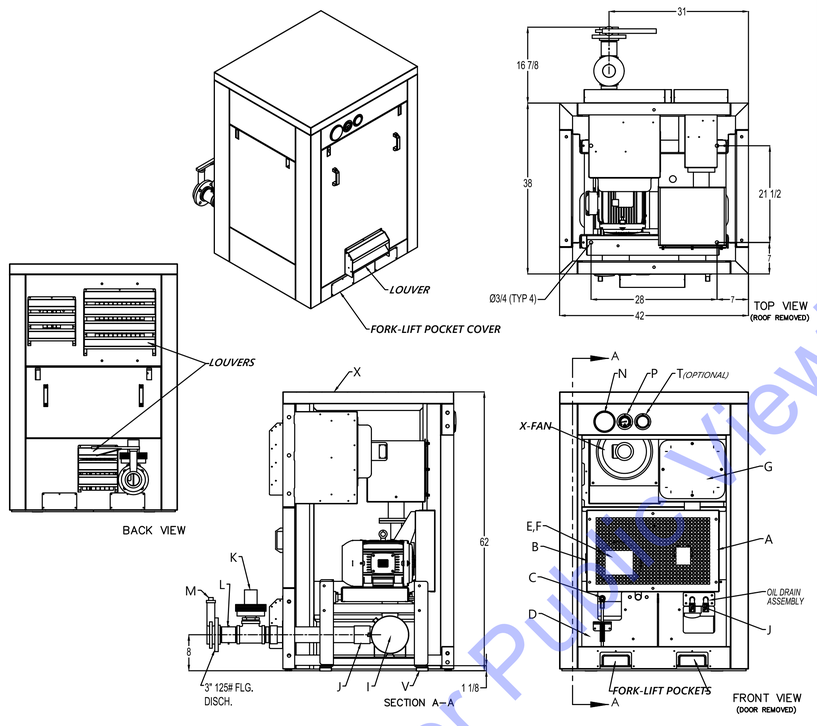
Item	Description
1	100-01 Hytrol Main Valve
2	X42N-2 Strainer & Needle Valve
3	CRL-60 Pressure Relief Control

Optional Features

Item	Description
B	CK2 Isolation Valve
D	Check Valves with Isolation Valve
F	Remote Pilot Sensing
H	Drain to Atmosphere
M	X144 e-FlowMeter
P	X141 Pressure Gauge
S	CV Speed Control (Opening)
V	X101 Valve Position Indicator

PRESSURE RELIEF VALVE DETAIL

NOT TO SCALE



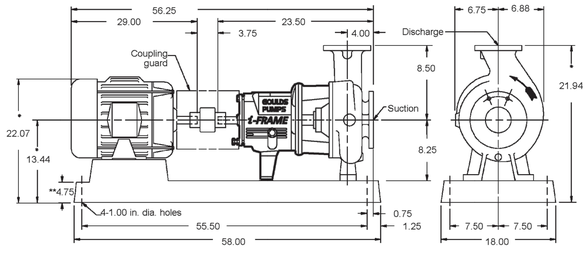
ITEM	DESCRIPTION
A	BLOWER:
B	MOTOR: HP, 1800 RPM, TEFC, 230/460/3/60
C	MOTOR TILT BASE
D	ELEVATED STEEL BASE
E	V-BELT DRIVE
	BLOWER SHEAVE:
	MOTOR SHEAVE:
	BELTS: C.D. = "
F	BELT GUARD: STEEL
G	INLET SILENCER: XL-IFS-3"
I	DISCHARGE SILENCER: PROGENTEX DRS-SP-3", GRADE I
J	FLEXIBLE PIPE CONNECTOR: FLEX-FAB TYPE II
K	RELIEF VALVE: SUBOTBILT PL-2", SET @ PSI
L	CHECK VALVE: 3"
M	BUTTERFLY VALVE: 3"
N	DIFFERENTIAL PRESSURE GAUGE: DWYER 2020, 0-20"WC
P	PRESSURE GAUGE: WIKA 213.53, 0-15 PSI
T	TEMPERATURE GAUGE: WEISS 716, 30-300°F
V	VIBRATION ISOLATION PADS: VMC CORK-RIBBED, 1" THICK
X	NOISE ENCLOSURE: ALUMINUM EXTERIOR W/ ACOUSTIC FOAM, 4 TILT-OUT LATCHING DOORS, LOUVERS & EXHAUST FAN (60 W, 115/1/60, 0.5 FLA) W/ T-STAT

BLOWER ROTATION: CCW
ESTIMATED BLOWER PACKAGE WEIGHT: 1,000#
TOLERANCE: ±1/2"
DISCHARGE PIPING MUST BE INDEPENDENTLY SUPPORTED.
FIELD SUPPORT RELIEF VALVE BY OTHERS.
COMPONENT K, L & M WILL SHIP LOOSE.

NOTE
ATTACH FORK–LIFT POCKET COVERS & ENCLOSURE LOUVERS AFTER PACKAGE IS INSTALLED.

BLOWER ASSEMBLY DETAIL

NOT TO SCALE



PUMP DETAIL

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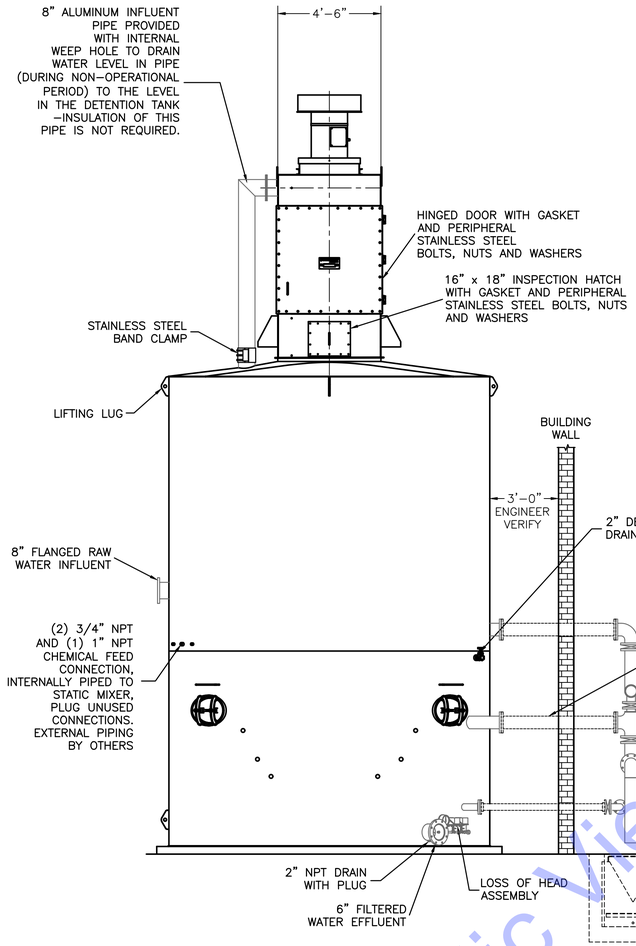
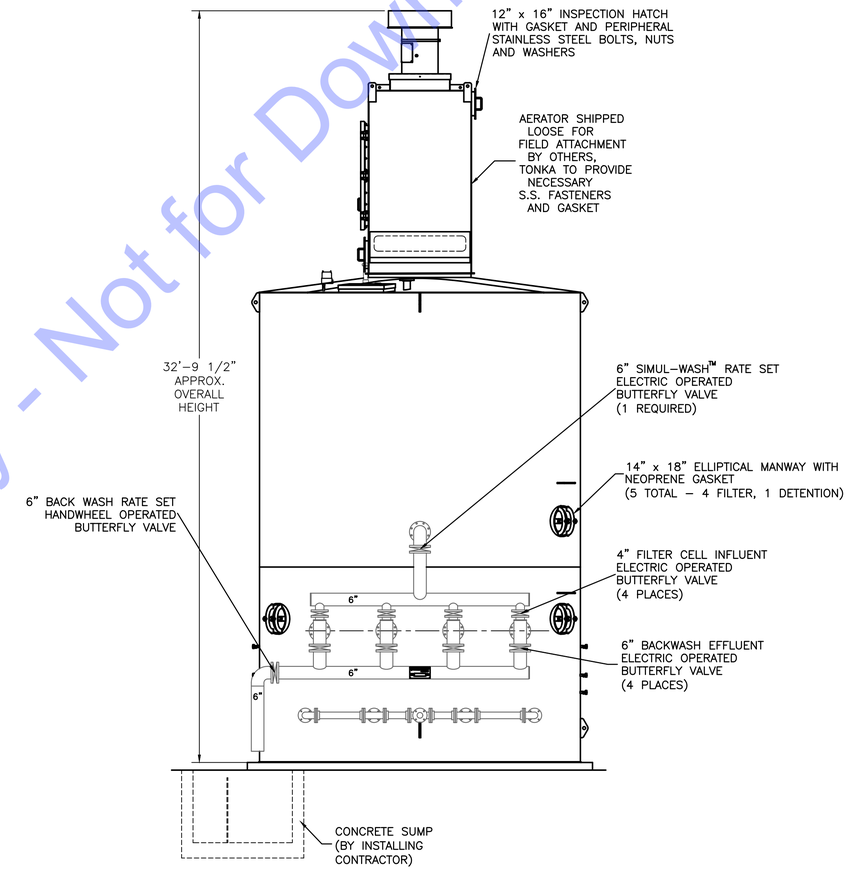
MISCELLANEOUS DETAILS IV

Drawing No: **MD4**

Sheet: 26 OF 52



FILTER DETAIL
SIDE ELEVATION
NOT TO SCALE



FILTER DETAIL
FRONT ELEVATION
NOT TO SCALE

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MISCELLANEOUS DETAILS V

Drawing No:
MD5
Sheet: 27 OF 52

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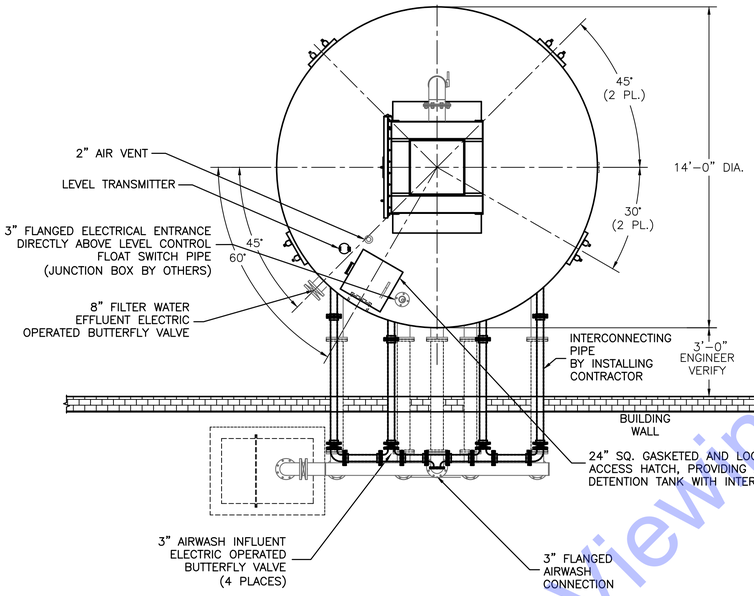
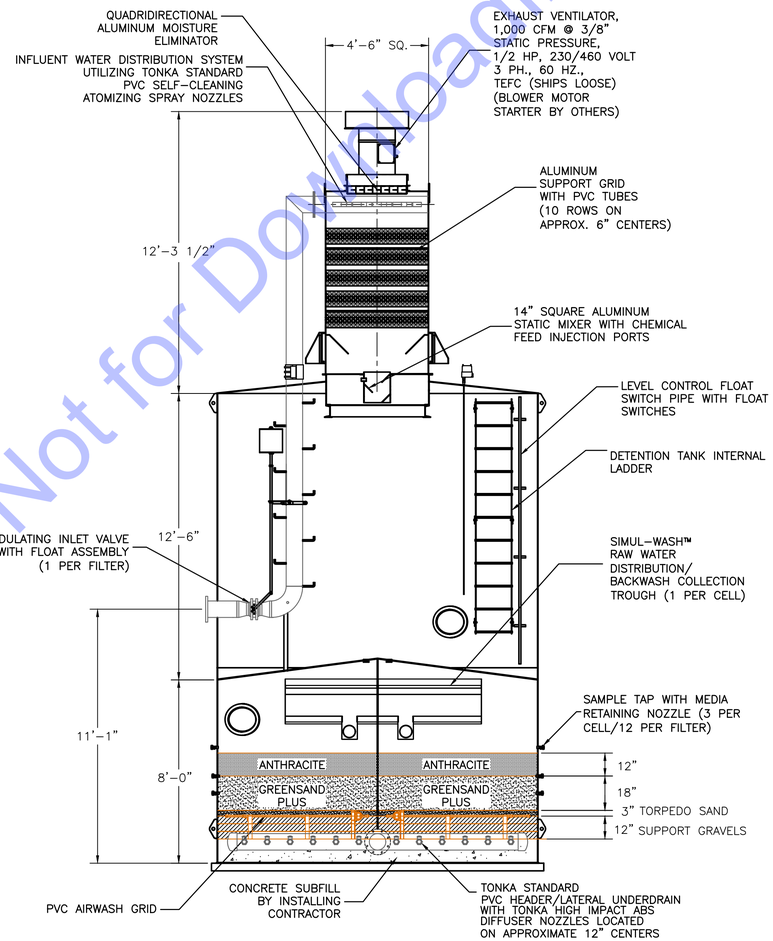


(AIRWASH PIPING SHOWN DASHED–HIDDEN BY UPPER HEADER)

FILTER DETAIL
PLAN VIEW

NOT TO SCALE



(PIPING SHOWN SKEWED FOR CLARITY)

FILTER DETAIL
TYPICAL SECTION

NOT TO SCALE

SHEET NOTES:

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MISCELLANEOUS DETAILS VI

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MD6
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GENERAL

1. The structure has been designed for the in-service loads only. The methods, procedures, and sequences of construction are the responsibility of the Contractor. Supporting formwork for the concrete construction shall not be removed before the concrete has gained sufficient strength to safely support the dead and superimposed loads which will be subsequently applied. The Contractor shall take all necessary precautions to maintain and ensure the integrity of the structure at all stages of construction.
2. All work shall be performed in accordance with the Indiana Building Code, 2014 Edition (2012 International Building Code, first printing, with Indiana Amendments).
3. Where new work is to be fitted to old work, the Contractor shall check all dimensions and conditions in the field, and report any errors or discrepancies to the Structural Engineer prior to the fabrication and erection of any new members.
4. Do not determine dimensions by "scaling" off the plans. The Contractor shall accept all risk associated with "scaling" and shall be responsible for all inadequate work resulting therefrom. Questions regarding missing or conflicting dimensions shall be directed, in writing, to the Structural Engineer.
5. Existing materials to be removed and reinstalled as part of this contract, but become damaged, shall be replaced with approved new material of equivalent quality and appearance at the Contractor's expense.
6. All work shall be performed without damage to adjacent retained work. Adequate protection of areas nearby work against dust, dirt and debris accumulation shall be maintained at all times.
7. Principal openings in the structure are indicated on the structural drawings. Refer to the architectural, mechanical, electrical, and plumbing drawings for sleeves, curbs, inserts, etc. not herein indicated. Openings in slabs with a maximum side dimension or diameter of 10 inches or less shall not require additional framing or reinforcement, unless noted otherwise. The location of sleeves or openings not shown in structural members shall be approved by the Structural Engineer.
8. The location of sleeves or openings not shown in structural members shall be approved by the Structural Engineer.
9. The Contractor shall relocate all mechanical piping, ducts, equipment, electrical conduits, wiring and plumbing that interfere with the proposed construction. Service shall be maintained to all equipment that is served by mechanical, electrical or plumbing conduit being relocated.
10. The Contractor shall relocate all utilities which interfere with the proposed construction. Service shall be maintained at all times during utility relocation unless otherwise noted.

FOUNDATIONS

1. Exterior footings shall bear 3'-0" minimum below finish grade and shall bear on undisturbed soil.
2. Foundation excavation and all other soils related work shall be performed in accordance with the geotechnical engineering report prepared by SME (Report 098537.00) dated March 18, 2025 and all associated supplements.
3. Foundation and soils related work shall be performed under the direct supervision of a qualified Geotechnical Engineer.
4. Foundation excavations shall be made to plan elevations. The soil conditions beneath foundations shall then be inspected by a qualified Geotechnical Engineer. If the underlying soils are found to be unacceptable, one of the following procedures shall be followed:
   A. Remove the unacceptable soil and backfill with an engineered structural fill in accordance with the geotechnical engineering report or inspecting Geotechnical Engineer.
   B. Lower the footing to an acceptable soil. Contact the Structural Engineer for potential modifications to the foundation system.
5. Subgrade structural elements subjected to differential lateral soil pressure shall be adequately braced until the structural elements which provide lateral restraint have been placed and allowed to cure for a minimum of 7 days.
6. Excavations for spread footings, combined footings, continuous footings and/or mat foundations shall be cleaned and hand tamped to a uniform surface. Foundation excavations shall be adequately protected against detrimental change in condition from disturbance, rain, freezing, etc. Surface runoff shall not be allowed to enter the excavation.
7. Foundation conditions noted during construction, which differ from those described in the geotechnical report shall be reported to the Structural Engineer and Geotechnical Engineer before further construction is attempted.
8. Center all column and wall footings under the column or wall above unless otherwise indicated.

CONCRETE

1. Reinforced concrete has been designed in accordance with the latest editions of the Building Code Requirements for Reinforced Concrete (ACI 318) and Environmental Engineering Concrete Structures (ACI 350R) by the American Concrete Institute (ACI).
2. Slabs-on-grade shall be constructed in accordance with the latest edition of the Guide for Concrete Floor and Slab Construction (ACI 302.1R).
3. Mixing, transporting, and placing of concrete shall conform to the latest edition of the Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete (ACI 211.1) and the Standard Specifications for Structural Concrete (ACI 301). The special provisions of ACI 211.1 Appendix 5 (Mass Concrete Mix Proportioning) shall be used in proportioning the concrete mixture for the mat foundation to control temperature rise during hydration. In addition, the provisions of ACI 207.1R (Mass Concrete) shall apply. Concrete curing shall conform to the latest editions of the Standard Practice for Concrete Curing (ACI 308) and the Standard Specification for Curing Concrete (ACI 308.1). In case of a discrepancy, the plans and specifications shall govern.
4. Unless noted otherwise, concrete shall have natural sand fine aggregate and normal weight coarse aggregates conforming to ASTM C33, and Type I or III Portland Cement conforming to ASTM C150. Type III Portland Cement shall not be used in mass concrete. The Contractor shall submit a mix design for each proposed class of concrete. Mix designs shall indicate proportions by weight, water-cement ratio, slump, air content, synthetic fiber size and quantity, sieve analyses of fine and coarse aggregates, standard deviation analysis, and required average strength and documentation of average strength verifying compliance with ACI 318. The Contractor shall not vary from the mix design without approval from the Structural Engineer.
5. Unless noted otherwise, fly ash may be used as a pozzolan to replace a portion of the Portland Cement in a concrete mix. Fly ash, when used, shall conform to ASTM C618, Type C (except in mass concrete, ASTM C618, Type F shall be used). Concrete mixes using fly ash shall be proportioned to account for the properties of the specific fly ash used and to account for the specific properties of the fly ash concrete thus resulting. The ratio of the amount of the fly ash to the total amount of fly ash plus cement in the mix shall not exceed 25 percent.
6. For mass concrete, ground granulated blast-furnace slag (GGBFS) may be used to replace a portion of the Type I Portland Cement in a concrete mix. Ground granulated blast-furnace slag, when used, shall conform to ASTM C989, Grade 100. Concrete mixes using GGBFS shall be proportioned to account for the properties of the specific GGBFS used and to account for the specific properties of the GGBFS concrete thus resulting. The ratio of the amount of the GGBFS to the total amount of GGBFS plus cement in the mix shall be between 65 and 70 percent (except for concrete exposed to deicing chemicals the maximum ratio shall be 50 percent).
7. Water-reducing admixtures conforming to ASTM C494 may be used in the concrete mix design. Maximum slump shall be 5 inches for mixes containing water-reducing admixtures and 5 to 8 inches for mixes containing high range water-reducing admixtures.
8. Concrete compressive strength tests shall be performed in accordance with ASTM C39. Copies of the test results shall be forwarded to the Structural Engineer. One set of specimens shall be taken for each day's pour of appreciable size and for each 50 cubic yards (100 cubic yards for mass concrete) in accordance with the latest edition of ASTM C31. Each set shall include one specimen tested at 7 days, 2 specimens tested at 28 days and one specimen retained in reserve. Two additional reserve specimens shall be retained for all mass concrete pours. These test cylinders shall be laboratory cured. For mass concrete pours, these test cylinders shall remain on-site for 48 hours before being transported to the testing lab.
9. When the ambient temperature is expected to fall below 40 degrees during the course of a concrete pour or subsequent curing period, it shall be placed and cured in accordance with the latest edition of Cold Weather Concreting (ACI 306R) and an additional set of concrete test cylinders shall be made. For mass concrete, this set of additional test cylinders shall consist of four specimens for each 200 cubic yards of concrete placed. These cylinders shall be stored immediately adjacent to, and cured under the same conditions as the building concrete. Special curing boxes are not permitted for these test cylinders.
10. Concrete mixed, transported, placed, and cured under conditions of high ambient temperature, low humidity, solar radiation, or high winds shall conform to the latest edition of Hot Weather Concreting (ACI 305R) and an additional set of concrete test cylinders shall be made. For mass concrete, this set of additional test cylinders shall consist of four specimens for each 200 cubic yards of concrete placed. These cylinders shall be stored immediately adjacent to, and cured under the same conditions as the building concrete. Special curing boxes are not permitted for these test cylinders.
11. Slump tests shall be made prior to and following the addition of plasticizers. Where concrete is placed by pumping methods, concrete for test cylinders and slump tests shall be taken at the point of final placement.
12. Water shall not be added to the concrete at the job site. The Contractor is responsible for coordinating a pumpable and workable mix without the addition of water at the job site. The use of plasticizers, retardants and other additives shall be at the option of the Contractor subject to the approval of the Structural Engineer. Follow the recommendations of the manufacturer for the proper use of additives. Use of calcium chloride or other chloride bearing salts is prohibited.
13. Place concrete in a manner so as to prevent segregation of the mix. Delay floating and trowelling operations until the concrete has lost surface water sheen or all free water. Do not sprinkle free cement on the slab surface. Finishing of slab surfaces shall conform to the latest editions of ACI 302.1R and ACI 304R (Guide for Measuring, Mixing, Transporting and Placing Concrete).
14. Where an epoxy adhesive is specified for bonding plastic concrete to hardened concrete, it shall conform to the latest edition of the Standard Specification for Bonding Plastic Concrete to Hardened Concrete with a Multi-Component Epoxy Adhesive (ACI 503.2).
15. Maintain concrete in a moist condition for at least 5 days at ambient temperatures above 70 degrees, and at least 7 days at ambient temperatures above 50 degrees. Curing compounds or moisture retention covers shall be used for all non-formed surfaces. Formed surfaces shall be cured by leaving forms in place. During hot, dry weather, keep forms moist by sprinkling. When forms are removed prior to the end of the curing period, apply curing compound to the exposed surfaces.
16. All interior slabs shall receive a hard "troweled finish". Exterior slabs, sidewalks, and stoops shall receive a "broom (or other type of slip resistant) finish". All formed surfaces not exposed to public view shall receive a "rough form finish", exposed surfaces shall receive a "smooth form finish". Concrete finishes shall be as defined in ACI 301.
17. Protect finished concrete surfaces from damage, rain, hail, running water, other injurious effects.
18. Protect the concrete surface between finishing operations on hot, dry days or any time plastic shrinkage cracks could develop by using wet burlap, plastic membranes or fogging.
19. Horizontal and vertical joints are not permitted in concrete construction except where indicated.
20. Construction joints and/or contraction joints at locations other than where indicated shall be submitted to the Structural Engineer for approval.
21. Construction joints shall be prepared by roughening the contact surface in an approved manner to a full amplitude of approximately 1/4 inch leaving the contact surface clean and free of laitance.
22. Control joints shall be made in concrete slabs-on-grade at major column centerlines, at points of discontinuity, at reentrant corners, and at other locations shown on the plans.
23. Provide 3/4 inch chamfers on all exposed corners of concrete except those abutting masonry.
24. The Contractor shall verify the location of sleeves, openings, embedded items, etc. and shall ensure that they are in place prior to the placement of the concrete.
25. Earth cuts shall not be used as forms ("bank forming") for vertical or sloping surfaces unless otherwise approved by the Structural Engineer. Where bank forming is permitted, the concrete element shall be increased at least 3 inches on all sides exposed to earth to account for possible soil contamination during concrete placement.

CONCRETE SCHEDULE

CONCRETE SCHEDULE

CLASS	f'_c	AIR CONTENT	MIN. CEMENT: LB/CY (SACKS/CY)	MAX. WATER/ CEMENT: RATIO	CONCRETE PLACEMENT	REMARKS
A	3,000 psi	optional	423 (4.5)	0.58	footings	
B	4,000 psi	optional	517 (5.5)	0.48	filter mat foundation	
C	4,000 psi	≤ 3%	517 (5.5)	0.48	interior slabs-on-grade	synthetic fibers (1.5 lbs/cys)
D	4,500 psi	6% ± 1.5%	611 (6.5)	0.40	exterior slabs-on-grade, stoops, curbs, & sidewalks exposed to de-icers	synthetic fibers (1.5 lbs/cys)

REINFORCING STEEL

1. Reinforcing bar detailing, fabricating, and placing shall conform to the latest edition of the following standards: Specifications for Structural Concrete for Buildings (ACI 301), ACI Detailing Manual (SP66). The latest editions of Concrete Reinforcing Steel Institute's Reinforcing Bar Detailing and Placing Reinforcing Bars may also be used.
2. Provide standard bar chairs, slab bolsters, spacers, etc. as required to maintain concrete protection specified. Reinforcing steel shall be tied to prevent displacement during concrete placement.
3. Reinforcement bars shall not be tack welded, welded, heated or cut unless otherwise indicated or approved by the Structural Engineer.
4. Welding of reinforcement bars, when approved by the Structural Engineer, shall conform to the latest edition of American Welding Society Standard D1.4. Electrodes for shop and field welding of reinforcement bars shall conform to ASTM A233, Class E90XX.
5. Synthetic fibers shall be used for temperature and shrinkage reinforcement in concrete slabs-on-grade. Synthetic fibers shall be virgin (non-recycled) nylon or polypropylene fibers conforming to ASTM C1116, Type III. Fibers shall be introduced into the mix at the plant in accordance with the manufacturer's recommendations. The Contractor shall submit the mix design, including the fiber size and quantity, to the Structural Engineer for approval prior to construction. The Contractor shall take adequate measures to manage any difficulty in concrete finishing associated with the use of the fibers.
6. Concrete cover over reinforcement, unless otherwise noted, shall be as specified in the latest editions of ACI 318 and ACI 350 with the most stringent requirements governing.
7. Unless noted otherwise, splicing of reinforcing bars shall conform to the latest edition of ACI 318.

CONCRETE REINFORCING STEEL LAP SPLICE SCHEDULE

BAR SIZE	TENSION SPLICE		COMPRESSION SPLICE
	TOP BAR	OTHER	
#3	21"	16"	12"
#4	28"	24"	15"
#5	35"	30"	19"
#6	42"	36"	23"
#7	49"	42"	26"
#8	56"	48"	30"
#9	63"	57"	34"
#10	76"	66"	38"
#11	93"	72"	42"

8. Horizontal bars in walls, masonry bond beams, and continuous wall footings shall be bent at corners and intersections in such a way that continuity is provided through the joint. Separate corner bars of the same size and spacing as the horizontal reinforcing may be substituted for the bent portion of the continuous bars.
9. Unless noted otherwise, provide 2-#5 bars (one each face) around unframed openings and diagonally at reentrant corners of vertical height offsets in concrete walls. Place bars parallel to the sides of the opening and extend 24 inches beyond corners.
10. The Contractor shall prepare detailed working or shop drawings to enable him to fabricate, erect and construct all parts of the work in accordance with the drawings and specifications and shall submit one reproducible copy and one blue line copy to the Structural Engineer for review prior to fabrication. These shop drawings will be reviewed for design concepts only. The Contractor shall be responsible for all dimensions, accuracy, and fit of work.

MASONRY

1. Engineered concrete masonry has been designed in accordance with the latest edition of the ACI Building Code Requirements for Masonry Structures (ACI 530/ASCE 5).
2. Concrete masonry construction shall conform to the latest edition of the ACI Specifications for Masonry Structures (ACI 530.1/ASCE 6).
3. Mortar shall be type N for interior non-load bearing walls. For exterior and load bearing walls, mortar shall be type M below grade and type S above grade. Mortar shall conform to the requirements of the latest edition of ASTM C270. Portland Cement-lime without air entrainment shall be used in the mortar mix.
4. Provide standard spacers, etc. as required to prevent reinforcing steel displacement during grout placement.
5. Provide reinforcing steel in vertical cores as indicated. In addition, provide reinforcing steel in vertical cores on each side of all openings and each corner of all walls. Grout cores with reinforcing steel solid.
6. Reinforcing steel lap splices in concrete masonry shall be as indicated in the following table. All splices shall be wired together.

MASONRY REINFORCING STEEL LAP SPLICE SCHEDULE

f'm = 2,000 psi						
BAR SIZE	#3	#4	#5	#6	#7	#8
8" CMU	1'-0"	1'-3"	2'-0"	3'-6"	4'-9"	7'-0"
10" CMU	1'-0"	1'-0"	1'-6"	2'-9"	3'-6"	5'-6"
12" CMU	1'-0"	1'-0"	1'-3"	2'-3"	3'-0"	4'-6"

7. Masonry cores (where specified) and bond beams shall be filled with coarse grout conforming to the requirements of the latest edition of ASTM C476 and having a minimum 28-day compressive strength of 3,000 psi, 3/4 inch maximum aggregate, and an 8 to 11 inch maximum slump.
8. Bearings for beams, lintels, joists, etc. shall be bond beams or hollow masonry units with cores filled solid with grout. The minimum bearing length shall be 8 inches unless otherwise indicated.
9. The Contractor shall prepare detailed working or shop drawings to enable him to fabricate, erect and construct all parts of the work in accordance with the drawings and specifications and shall submit one reproducible copy and one blue line copy to the Structural Engineer for review prior to fabrication. These shop drawings will be reviewed for design concepts only. The Contractor shall be responsible for all dimensions, accuracy, and fit of work.

NON-SHRINK GROUT

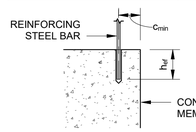
1. Grout shall be a high early strength, non-metallic, shrinkage resistant (when tested in accordance with the latest edition of ASTM C827 or CRD-C621), premixed, non-corrosive, non-staining product conforming to the requirements of the latest edition of ASTM C1107 and containing Portland Cement, silica sands, shrinkage compensating agents and fluidity improving compounds.
2. Grout compressive strength tests shall be performed in accordance with the latest edition of ASTM C109, with a restraining plate placed over the molds.
3. Grout shall be installed and cured in accordance with the manufacturer's instructions.

POST-INSTALLED EXPANSION/ADHESIVE ANCHORS

1. Post-installed anchors shall only be used where specified on the Construction Documents. The Contractor shall obtain approval from the Structural Engineer prior to installing the post-installed anchors in place of missing or misplaced cast-in-placed anchors.
2. Care shall be taken in placing post-installed anchors to avoid conflicts with existing reinforcing steel.
3. Post-installed anchors shall be installed by qualified personnel in accordance with the drawings and specifications.
4. Post-installed anchors shall be installed by qualified personnel in accordance with the Manufacturer's Printed Installation Instructions (MPII), the drawings and specifications. Installation of adhesive anchors shall be performed by personnel trained to install adhesive anchors. Contractor shall submit installer training cards with anchor package.
5. Post-installed anchors shall be HILTI type as manufactured by HILTI Fastening Systems or approved equivalent. Substitution requests must be submitted by the Contractor to the Structural Engineer for review. Provide back-up technical data that demonstrates that the substituted product is capable of achieving the equivalent performance values (minimum) of the specified products using the appropriate design procedure and/or standard(s) as required by the building code.
6. Masonry cores receiving post-installed anchors shall be filled with course grout. Grout must comply with IBC Section 2103.12 or IRC Section R609.1.1, as applicable. Alternatively, the grout must have a minimum compressive strength, when tested in accordance with ASTM C1019, equal to its specified strength, but not less than 2,000 psi. Post-installed anchors shall not be installed in a masonry mortar joints.
7. The Contractor shall inspect the masonry or concrete surface at each proposed post-installed anchor location prior to installation. If the anchor locations align with mortar joints or the masonry or concrete is honeycombed, cracked or otherwise unsound, the post-installed anchors shall be repositioned so as to be located in sound material and be in accordance with the manufacturer's minimum spacing and edge distance requirements.
8. Adhesive anchors shall be subject to the following additional requirements:
   A. Anchors shall meet the requirements of ACI 355.2 (mechanical anchors) and ACI 355.4 (adhesive anchors).
   B. Proof loading of adhesive anchors is not required.
   C. Anchors shall not be installed in concrete cured less than 21-days
   D. Anchors shall not be installed until the concrete has reached a minimum compressive strength of 2,500 psi.
   E. Concrete temperature must be greater than 50 °F and less than 80 °F prior to installation of the anchors unless otherwise permitted by the MPII.
   F. Anchors shall be installed in holes drilled with the HILTI Hollow Drill Bit (TE-CD (SDS Plus) or TE-YD (SDS Max)) and HILTI VC 20/40 Vacuum (VC 20-U or VC 40-U). Follow the MPII for size and depth of holes required.
   G. The acceptability of certification other than the ACI/CRSI Adhesive Anchor Installer Certification shall be the responsibility of the Structural Engineer.

REINFORCING STEEL EPOXY DOWEL SCHEDULE

BAR SIZE	#3	#4	#5	#6	#7	#8
STANDED EFFECTIVE EMBED, h_{ef}	3-3/8"	4-1/2"	5-5/8"	6-3/4"	7-7/8"	9"
MINIMUM EDGE DISTANCE, c_{min}	2"	2-1/2"	3-1/8"	3-3/4"	4-3/8"	5"



TYPICAL EPOXY DOWEL

NOTES:

1. EPOXY DOWELS SHALL UTILIZE HILTI HIT-HY 200 ADHESIVE SYSTEM OR APPROVED EQUIVALENT
2. STANDARD EMBED DEPTH AND MIN EDGE DISTANCES PROVIDED IN THIS SCHEDULE APPLY AT ALL LOCATIONS UNLESS OTHERWISE NOTED ON SECTIONS AND DETAILS.

COORDINATION WITH OTHER TRADES

1. The Contractor shall coordinate and check all dimensions relating to architectural finishes, structural framing, mechanical openings, equipment, etc. The Structural Engineer shall be notified of any discrepancies before proceeding with work in an area under question.

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NATHAN DANIEL BOLTZ
REGISTERED
No. PE11800338
STATE OF INDIANA
PROFESSIONAL ENGINEER

Nathan D Boltz — Signature

03/31/25 — Date

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No.	Submittal / Revision	By:	Date

Designed By:	Drawn By:	Checked By:
NDB	NDB	JDT
Issue Date:	Project No:	Scale:
11/27/24	24-224	NO SCALE

GENERAL STRUCTURAL NOTES

Drawing No:
S1-1
Sheet: 29 OF 52

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STRUCTURAL LUMBER

1. Structural lumber shall be detailed, fabricated and erected in accordance with the latest editions of the Timber Construction Manual by the American Institute of Timber Construction (AITC) and the National Design Specification for Wood Construction by the American Forest & Paper Association (ANSI/NFoPA NDS).
2. Bolts, lag screws, nails and other wood fastenings, unless otherwise noted, shall conform to the latest edition of the National Design Specification for Wood Construction. Standard cut washers shall be used between the wood and bolt head and the wood and nut.
3. Joist hangers and connection plates shall be as manufactured by Simpson Strong-Tie Company, Inc. or approved equivalent. Hardware used with PPT wood to be hot-dip galvanized or stainless steel. Hardware exposed to weather conditions shall be hot-dip galavanized.
4. Wood members that are in contact with concrete or masonry or exposed to weather shall be pressure treated with a water borne treatment to a net retention level of 0.3 pcf in accordance with applicable American Wood Preservers' Association latest requirements.
5. Rough sawn timbers shall be treated and finished where specified. Ends exposed to weather shall be treated with CCA.
6. Connections not specifically detailed herein shall be per Table 2304.9.1 of the 2012 International Building Code.

PLYWOOD/PERFORMANCE RATED PANELS

1. Plywood and performance rated panels (oriented strand board) shall be detailed, fabricated and erected in accordance with the latest criteria established by the American Plywood Association (APA) including their latest edition of the Plywood Design Specification (and its Supplements).
2. Plywood panels shall be identified with the appropriate trademark of the APA and shall meet the requirements of the latest edition of the U.S. Product Standard PS 1 for Construction and Industrial Plywood. Performance rated panels shall be identified with the appropriate trademark of the APA and shall meet the requirements of the latest edition of the APA PRP-108 Performance Standards and Policies for Structural-Use Panels, or the U.S. Product Standard PS 2 for Wood-Based Structural-Use Panels.
3. Roof panels shall be installed with the long dimension (face grain) across the supports with panels continuous over 2 or more supports (minimum 3 span condition).
4. Stagger panel end joints. End joints shall only occur over a support. Unless recommended otherwise by the panel manufacturer, provide a 1/8" gap between panel ends and edges. Panel edges shall be tongue-and-groove or supported on 2" (nominal) lumber blocking installed between joists.
5. Unless otherwise noted, panels shall be fastened to their supports as noted on plans.

METAL-PLATE-CONNECTIONED WOOD TRUSSES

1. Prefabricated wood trusses shall be detailed, fabricated and erected in accordance with the latest editions of the Timber Construction Manual by the American Institute of Timber Construction (AITC) and the National Design Specification for Wood Construction by the American Forest & Paper Association (ANSI/NFoPA NDS) and the latest criteria established by the Truss Plate Institute (TPI) and the Wood Truss Council of America (WTCA).
2. Temporary and permanent bracing of wood trusses shall be in accordance with the latest edition of the Commentary and Recommendations for Handling, Installing and Bracing Metal Plate Connected Wood Trusses (HIB) by the TPI.
3. Wood roof trusses shall be designed to support the following superimposed loads in addition to the weight of the trusses:

Top Chord Dead Load	10 psf
Top Chord Roof Live Load	20 psf
Top Chord Snow Load	*See snow design data*
Bottom Chord Dead Load	10 psf
Bottom Chord Live Load	10 psf
Wind Load (horizontal)	*See wind design data*
Wind Load (vertical)	*See wind design data*

4. Deflection due to live load shall be limited to 1/360 of the truss span. For truss cantilevers, the deflection due to live load at the end of the cantilever shall be limited to 1/180 of the cantilever dimension.
5. Truss plates shall be galvanized steel and shall be applied to both faces of the members being connected.
6. Trusses shall conform to the geometry shown. Minimum lumber size for top and bottom chord members shall be 2"x 4" (nominal). Web member size and configuration shall be the option of the fabricator.
7. The truss manufacturer shall prepare detailed working or shop drawings and shall submit one reproducible copy and one blue line copy, including calculations, to the Structural Engineer for review prior to fabrication. These drawings and calculations shall show the design forces in the truss members, the sizes of the truss plates; the lumber species, commercial grade and normal duration design values; required bracing and details necessary to enable the truss manufacturer to fabricate, erect and construct all parts of the work in accordance with the drawings and specifications. These shop drawings will be reviewed for design concepts only. The truss manufacturer shall be responsible for all dimensions, accuracy, and fit of work. The trusses shall be designed by, and the shop drawings and calculations shall bear the seal and signature of, a registered professional engineer in the State of Indiana.
8. The contractor shall install all permanent truss bracing as shown on the truss manufacturer's shop drawings.

DESIGN

1. Building Code: Indiana Building Code, 2014 Edition (2012 International Building Code, first printing, with Indiana Amendments).
2. Soil information:

Allowable net bearing pressure:	
Mat Footing (Treatment Building Filter Unit)	1600 psf
Continuous Wall Footings (Treatment Buiding Expansion)	2000 psf
Subgrade Modulus (Treatment Building Slab on Grade)	100 pci
Unit weight of soil	125 pcf (assumed)
Coefficient of friction between soil and concrete footing	0.30 (assumed)

3. Concrete:

28 day compressive strength (f'c)	See Schedule

4. Masonry:

28 day compressive strength (f'm)	2000 psi

5. Reinforcing steel (deformed bars of new billet steel):

Stirrup and tie	ASTM A615, Grade 60
Welded wire fabric (smooth)	ASTM A185

6. Structural Steel:

Structural tubing members	ASTM A500, Grade C
Structural steel pipe members	ASTM A53
Structural steel rolled wide flange W shapes	ASTM A992
Structural steel rolled channels	ASTM A36
Structural steel rolled plates & angles	ASTM A36
All other members	ASTM A36
Connection bolts	ASTM A325N
Anchor bolts	ASTM A36

7. Structural Lumber (surfaced dry, used at 19% moisture contect):

Load bearing wall headers, ceiling joists	Southern Pine, No. 2
Roof rafters	Southern Pine, No. 2
Load bearing wall studs	Southern Pine, No. 2
Truss top/bott chord reinforcing (sister members)	Southern Pine, No. 1
All other members	Spruce-Pine-Fir, No.2
Bolts/Lad Screws	ANSI/ASME B18.2
Nails	FF-N-105B

8. Plywood/Performance Rated Panels:

Span Rating / Thickness	*See plan*
Exposure	1

9. Non-shrink grout:

28 day compressive strength	6,500 psi

10. Live loads:

Roof:	20 psf
Slab on grade:	100 psf

11. Live Load Deflection Limitation:

Roof	L/360

12. Risk Category: III
13. Snow Loads:

Ground Snow Load Pg	20 psf
Importance factor, Is	1.1
Exposure Category, Ce	1.0
Thermal Category, Ct	1.1
Balanced Snow Load	22 psf
Unbalanced Snow Load (Gable Roof)	28 psf (leeward) 5 psf (windward)

14. Wind loads:

Basic wind speed (3-second gust)	120 mph
Exposure	C

15. Seismic loads:

Seismic importance factor, Ie	1.25
Mapped Spectral Response Acceleration at Short Periods, Ss	33.2% g
Mapped Spectral Response Acceleration at 1 Second, S1	13.4% g
Site Class	D
Design Spectral Response Acceleration at Short Periods, Sds	33.9% g
Design Spectral Response Acceleration at 1 Second, Sd1	20.2% g
Seismic Design Category	D
Basic Seismic Force Resisting Sys	Ordinary Reinforced Masonry Shear Walls
Response Modification Coeff., R	3
Overstrength factor coeff., Ωo	2.5

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NATHAN DANIEL BOLTZ
REGISTERED
No. PE11800338
STATE OF INDIANA
PROFESSIONAL ENGINEER
Nathan D Boltz
Signature
03/31/25
Date

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DAVIESS COUNTY, INDIANA
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11/27/24	24-224	12" = 1'-0"

GENERAL STRUCTURAL NOTES

Drawing No:
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Sheet: 30 OF 52

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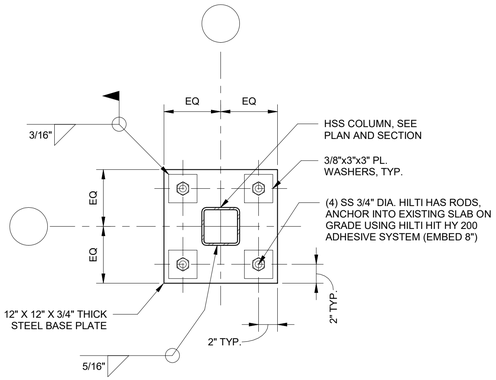
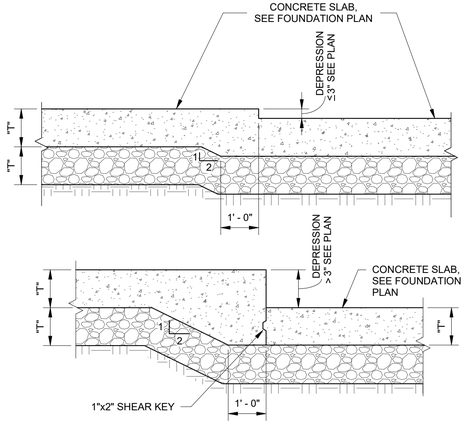


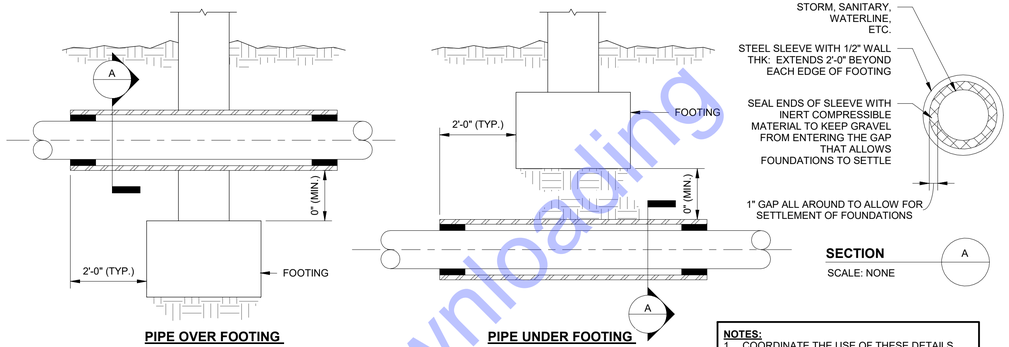
9 S1-3 **TYP. BASE PLATE DETAIL**

1 1/2" = 1'-0"



6 S1-3 **SLAB DEPRESSION DETAIL**

1/2" = 1'-0"



NOTES:
1. COORDINATE THE USE OF THESE DETAILS WITH THE UNDERSLAB PIPING CONTRACTOR.
2. IF THE TOP OF THE SERVICE PIPE IS 2'-0" (OR GREATER) BELOW THE BOTTOM OF THE FOOTING, STEEL SLEEVE IS NOT REQUIRED.

1 S1-3 **TYP. UNDERGROUND SERVICE PIPE DETAIL AT WALL FOUNDATION**

1/8" = 1'-0"

7 S1-3 **TYP. TRENCH DRAIN DETAIL**

3/4" = 1'-0"

NOTES:
1. INSTALL PNA DIAMOND DOWEL PLATES PER MANUFACTURER'S RECOMMENDATIONS.
2. PRIOR TO SEALING JOINT, PREPARE JOINT PER SEALANT MANUFACTURER'S RECOMMENDATIONS.
3. CONSTRUCTION JOINTS SHALL ONLY OCCUR AT LOCATIONS INDICATED.
4. APPLY LIQUID BOND BREAKER TO FULL DEPTH OF JOINT.

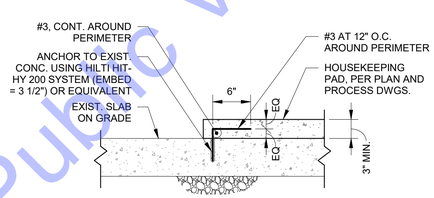
4 S1-3 **TYP. SLAB ON GRADE CONSTRUCTION JOINT**

1" = 1'-0"

NOTES:
1. DEWATER EXCAVATION AS REQUIRED.
2. WIDTH OF EXCAVATION SHALL EQUAL WIDTH OF FOOTING PLUS DEPTH OF UNDERCUT (W=B+D).

2 S1-3 **TYP. FOOTING IN UNDERCUT AREA**

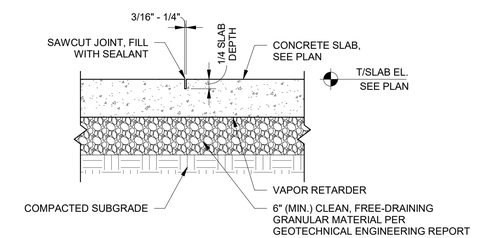
1" = 1'-0"



NOTES:
1. CONTRACTOR - VERIFY LOCATION OF THE HOUSEKEEPING PADS WITH THE PROCESS DRAWINGS PRIOR TO POURING CONCRETE.
2. CONTRACTOR - VERIFY REQUIRED SIZE AND HEIGHT OF THE HOUSEKEEPING PADS WITH THE SELECTED EQUIPMENT MANUFACTURER PRIOR TO POURING CONCRETE.

8 S1-3 **TYP. HOUSEKEEPING PAD**

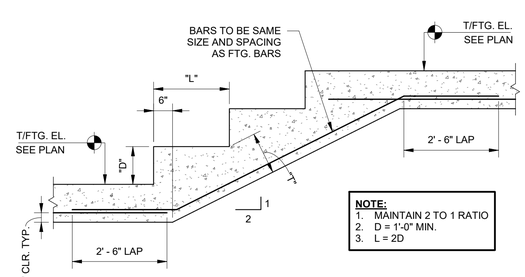
1" = 1'-0"



NOTES:
1. SAWCUT JOINT AS SOON AS POSSIBLE WITHOUT RAVELING THE EDGE OF CONCRETE.
2. PRIOR TO SEALING JOINT, PREPARE JOINT PER SEALANT MANUFACTURER'S RECOMMENDATIONS.

5 S1-3 **TYP. SLAB ON GRADE CONTRACTION JOINT**

1" = 1'-0"



NOTE:
1. MAINTAIN 2 TO 1 RATIO
2. D = 1'-0" MIN.
3. L = 2D

3 S1-3 **TYP. STEP FOOTING**

1/2" = 1'-0"

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TYPICAL STRUCTURAL DETAILS - CONCRETE - 01

Drawing No: **S1-3**

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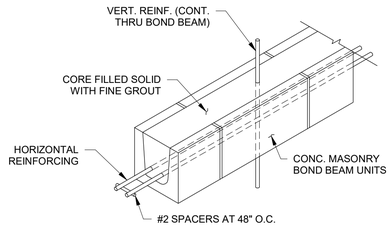
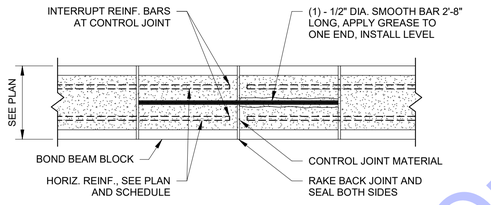
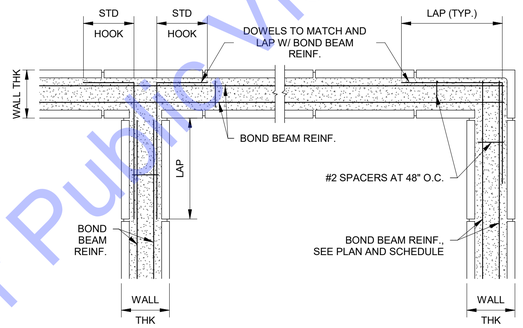


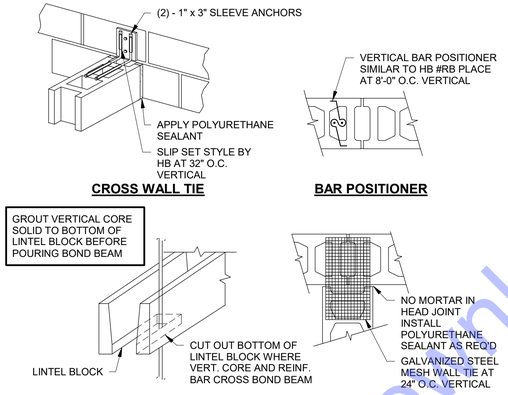
7 S1-4 **TYP. MASONRY BOND BEAM**
1 1/2" = 1'-0"



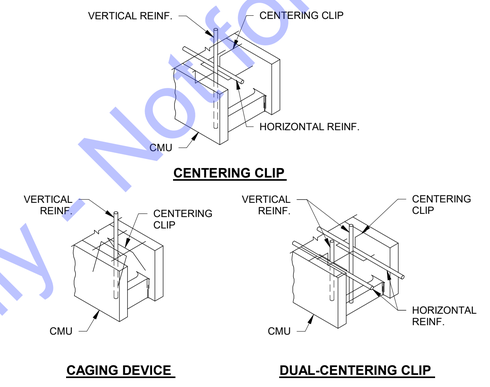
8 S1-4 **BOND BEAM DETAIL**
1" = 1'-0"



9 S1-4 **TYP. BOND BEAM REINFORCEMENT**
1" = 1'-0"

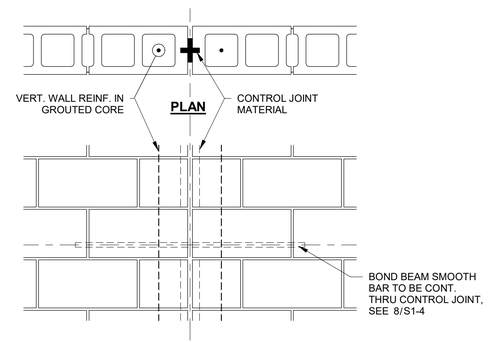


4 S1-4 **MASONRY DETAILS**
1" = 1'-0"



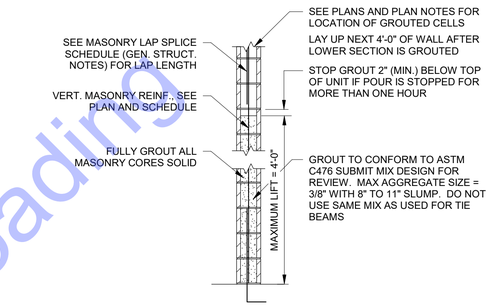
NOTE:
1. CAGING DEVICES AND CENTERING CLIPS SHALL BE FORMED FROM #9 HARD WIRE; SPOT WELDED AND GALVANIZED.

5 S1-4 **TYP. MASONRY REINFORCING CLIPS**
1" = 1'-0"



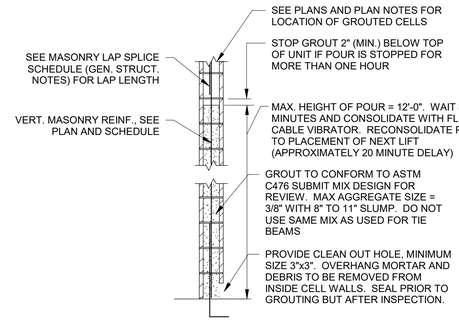
NOTES:
1. BOND BEAM REINF. SHALL NOT BE LAPPED WITHIN 8'-0" OF CONTROL JOINT.
2. HORIZONTAL JOINT REINF. SHALL BE DISCONTINUOUS AT CONTROL JOINTS.

6 S1-4 **TYP. MASONRY CONTROL JOINT**
1" = 1'-0"



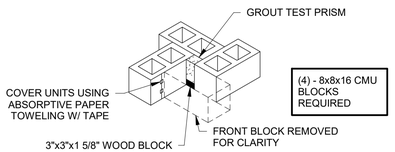
NOTES:
1. DO NOT GROUT UNTIL MORTAR HAS SET SUFFICIENTLY TO WITHSTAND THE PRESSURE OF THE GROUT. WAIT NOT LESS THAN 24 HOURS.

1 S1-4 **LOW LIFT GROUTING DETAIL**
1/2" = 1'-0"



NOTES:
1. DO NOT GROUT UNTIL MORTAR HAS SET SUFFICIENTLY TO WITHSTAND THE PRESSURE OF THE GROUT. WAIT NOT LESS THAN 24 HOURS.

2 S1-4 **HIGH LIFT GROUTING DETAIL**
1/2" = 1'-0"



3 S1-4 **GROUT TEST MOLD (ASTM C-1019)**
1/2" = 1'-0"

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TYPICAL STRUCTURAL DETAILS - MASONRY - 01

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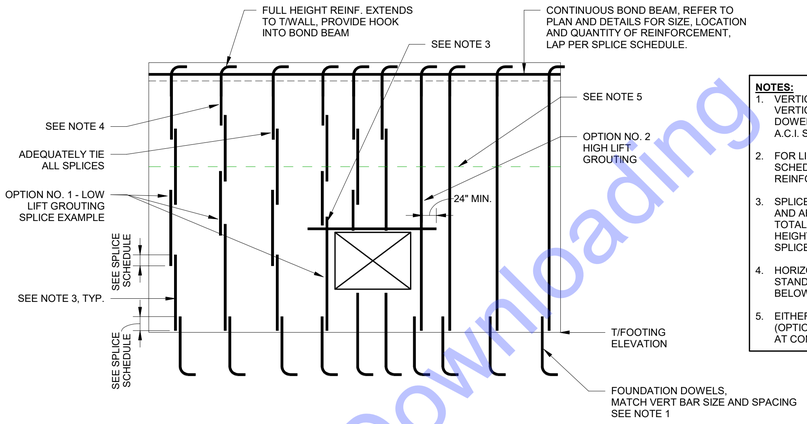


NOTES:

1. VERTICAL WALL REINFORCING SHALL ALIGN WITH VERTICAL FOUNDATION DOWELS. FOUNDATION DOWELS SHALL BE CENTERED IN C.M.U. WALL WITH A.C.I. STANDARD HOOK.
2. FOR LINTEL REINFORCEMENT, REFER TO C.M.U. LINTEL SCHEDULE FOR SIZE, LOCATION AND QUANTITY OF REINFORCEMENT.
3. SPLICES IN ADJACENT BARS SHALL BE STAGGERED AND ARRANGED SO THAT NOT MORE THAN 1/2 OF THE TOTAL NUMBER OF BARS ARE SPLICED AT ANY ONE HEIGHT. VERTICAL REINFORCING BARS MAY BE SPLICED IN 6' -0" TO 8' - 0" LENGTHS.
4. HORIZONTAL WALL REINFORCING SHALL BE STANDARD TRUSS TYPE AT 16" O.C. ABOVE AND 8" O.C. BELOW GRADE, UNLESS NOTED OTHERWISE.
5. EITHER LOW LIFT (OPTION NO. 1) OR HIGH LIFT (OPTION NO. 2) GROUTING TECHNIQUE MAY BE USED AT CONTRACTOR'S OPTION.

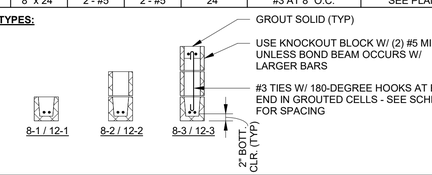
1 / S1-5 TYP. MASONRY WALL REINFORCING DETAIL

3/4" = 1'-0"

CMU LINTEL SCHEDULE

MARK	SIZE	BOTT. BARS	TOP BARS	EXTEND PAST OPNG.	TIES	SPAN
8-1	8" x 8"	2 - #5	-	24"	-	SEE PLAN
8-2	8" x 16"	2 - #5	-	24"	-	SEE PLAN
8-3	8" x 24"	2 - #5	2 - #5	24"	#3 AT 8" O.C.	SEE PLAN

LINTEL TYPES:



NOTES:

1. LINTEL BLOCKS AND BOTTOM BARS TO EXTEND PAST CMU OPENING TO WIDTHS INDICATED IN SCHEDULE. CUT OUT BOTTOM SHELL OF LINTEL BLOCKS AT BEARING TO ALLOW INTEGRAL GROUTING OF LINTEL & FILLED CELLS BELOW AT BEARING. PROVIDE FILLED CELLS FULL WIDTH OF BEARINGS INDICATED WITH VERTICAL IN EACH CELL EXTENDING FROM FLOOR TO FLOOR TO ROOF. USE BAR SIZE INDICATED FOR WALL THICKNESS/TYPE.
2. CONSTRUCTION JOINTS SHALL NOT OCCUR WITHIN 2" OF THE ENDS OF THE LINTEL BEARINGS.
3. LINTELS SHALL BE GROUTED SIMILAR TO WALLS. ALL GROUT MUST BE CONSOLIDATED TWICE, ONCE WITHIN 5 MINUTES OF PLACEMENT AND ONCE 15-20 MINUTES AFTER PLACEMENT.

CMU LINTEL SCHEDULE

12" = 1'-0"

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TYPICAL STRUCTURAL DETAILS - MASONRY - 02

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S1-5
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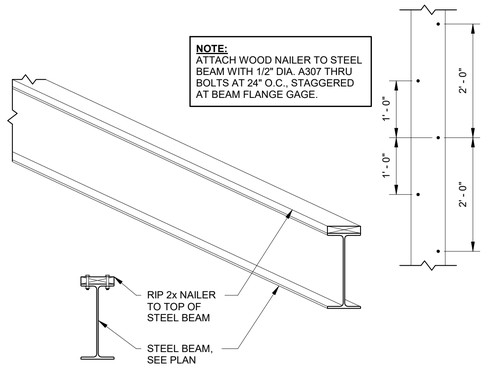
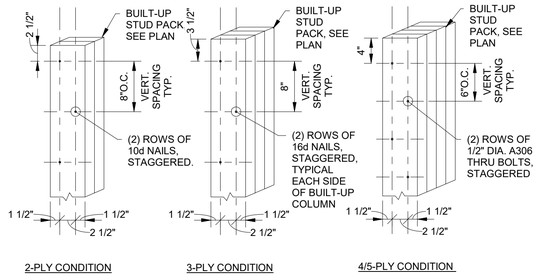
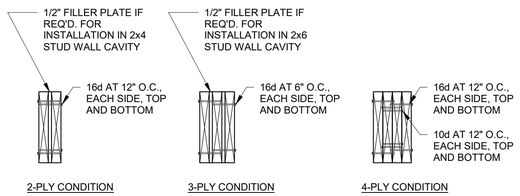


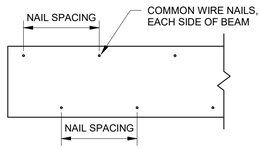
7 TYP. WOOD NAILER ATTACHMENT
S1-6 3/4" = 1'-0"



* BOLTS SHOWN IN 4 & 5 PLY CONDITION MAY BE CARRIAGE BOLTS .

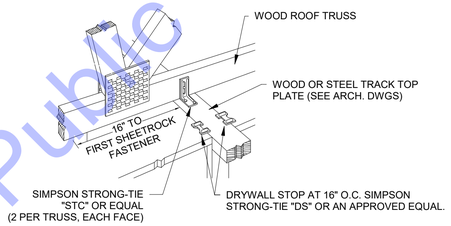
4 NAILING REQUIREMENTS FOR BUILT-UP COLUMNS
S1-6 1" = 1'-0"





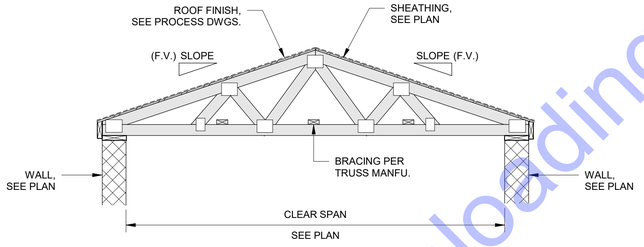
TYP. BEAM PROFILE

5 NAILING REQTS. FOR MULTI-PLY BEAMS
S1-6 1" = 1'-0"



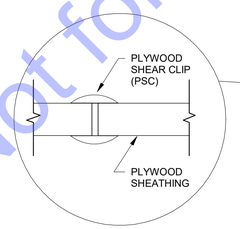
NOTE:
USE 8d x 1 1/2" GALV. NAILS TO ATTACH TIES AND STOPS TO WOOD MEMBERS.

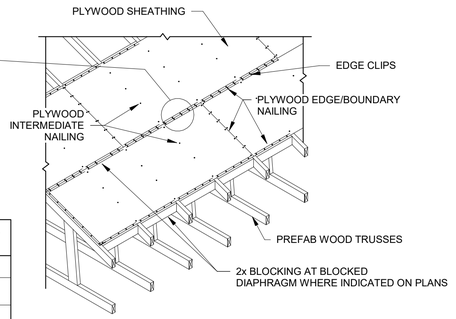
6 INTERIOR WALL SUPPORT AT TRUSS
S1-6 3/4" = 1'-0"



NOTES:
1. ROOF TRUSSES SHALL BE DESIGNED FOR LOADING SPECIFIED ON GENERAL STRUCTURAL NOTES SHEET S1-2.
2. SEE PLAN FOR TRUSS LAYOUT INCLUDING STANDARD, GIRDER, FLAT, AND CREEPER TRUSSES. STANDARD JOIST PROFILE IS DEPICTED HERE.
3. ACTUAL WEB MEMBER CONFIGURATION MAY VARY FROM WHAT IS DEPICTED HERE.
4. SEE OTHER SECTIONS AND DETAILS FOR ROOF TRUSS ATTACHMENT TO SUPPORTING WALLS.

1 TYPICAL ROOF TRUSS
S1-6 1/2" = 1'-0"

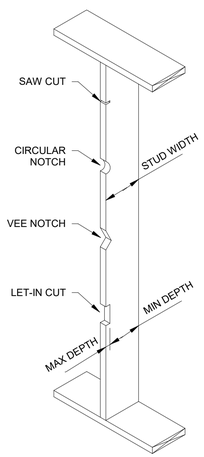


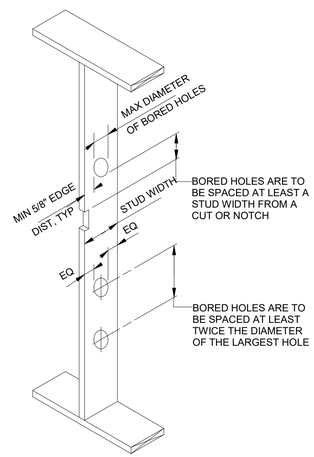


SPAN RATING	PLYWOOD THICKNESS	SPAN (IN)	# OF PSC
24/0	3/8", 7/16"	UP TO 24	1
32/16	15/32" 1/2", 5/8"	UP TO 32	1
40/20	19/32" 5/8", 3/4"	UP TO 40	1
48/24	3/4"	UP TO 48	2

NAILING PATTERNS		
NAIL	EDGES	INTERMEDIATE
8d	6" O.C.	6" O.C

2 ROOF SHEATHING DETAIL
S1-6 1/2" = 1'-0"





BEARING WALL STUDS		
STUD SIZE	MAX DEPTH OF EDGE CUT OR NOTCH	MIN DEPTH REMAINING AFTER CUT OR NOTCH
2x4	7/8"	2 5/8"
2x6	1 3/8"	4 1/8"

BEARING WALL STUDS		
STUD SIZE	MAX DIAMETER OF BORED HOLE	MIN DEPTH REMAINING AFTER BORED HOLE
2x4	1 3/8"	5/8" EA SIDE OF HOLE
2x6	2 3/16"	5/8" EA SIDE OF HOLE

NOTE:
STUDS MAY NOT BE BORED IN EXCESS OF 40% OF THE STUD, IF STUDS ARE DOUBLED, BORINGS MAY BE INCREASED TO 60% OF STUD WIDTH PROVIDED NOT MORE THAN (2) SUCCESSIVE STUDS ARE BORED. BORINGS SHALL NOT BE MADE AT THE SAME SECTION WHERE CUT OR NOTCH HAS BEEN MADE.

NON-BEARING WALL STUDS		
STUD SIZE	MAX DEPTH OF EDGE CUT OR NOTCH	MIN DEPTH REMAINING AFTER CUT OR NOTCH
2x4	1 3/8"	2 1/8"
2x6	2 3/16"	3 3/8"

NON-BEARING WALL STUDS		
STUD SIZE	MAX DIAMETER OF BORED HOLE	MIN DEPTH REMAINING AFTER BORED HOLE
2x4	2 1/16"	5/8" EA SIDE OF HOLE
2x6	3 1/4"	5/8" EA SIDE OF HOLE

NOTE:
STUDS MAY NOT BE BORED IN EXCESS OF 60% OF THE STUD. BORINGS SHALL NOT BE MADE AT THE SAME SECTION WHERE CUT OR NOTCH HAS BEEN MADE.

CUTTING AND NOTCHING WOOD STUDS

NOTE:
DO NOT NOTCH MORE THAN THREE ADJACENT STUDS WITHOUT REVIEW BY ENGINEER.

BORED HOLES IN WOOD STUDS

NOTE:
BORED HOLE NOT PERMITTED IN MORE THAN THREE ADJACENT STUDS WITHOUT REVIEW BY ENGINEER.

3 TYP. HOLES AND NOTCHES IN WOOD STUDS
S1-6 1/2" = 1'-0"

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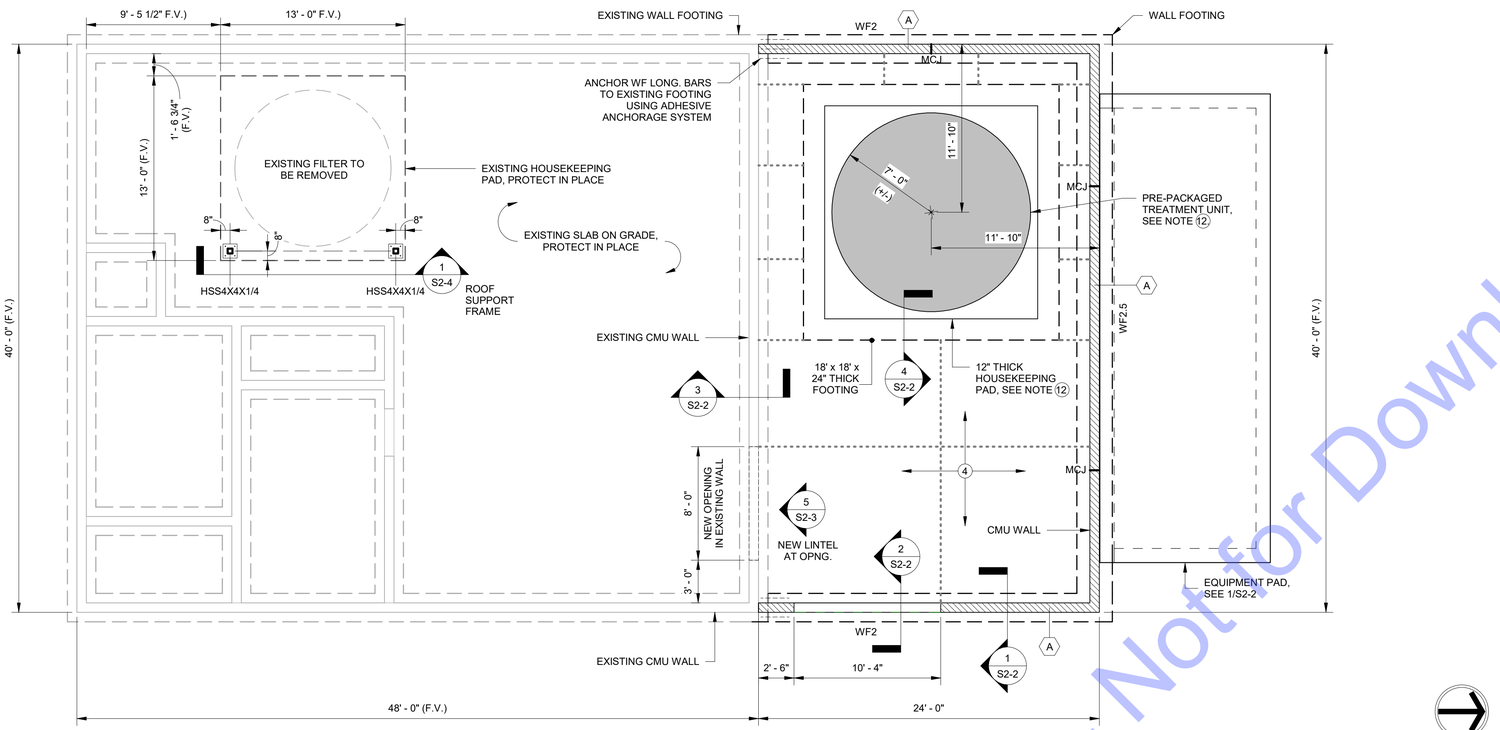
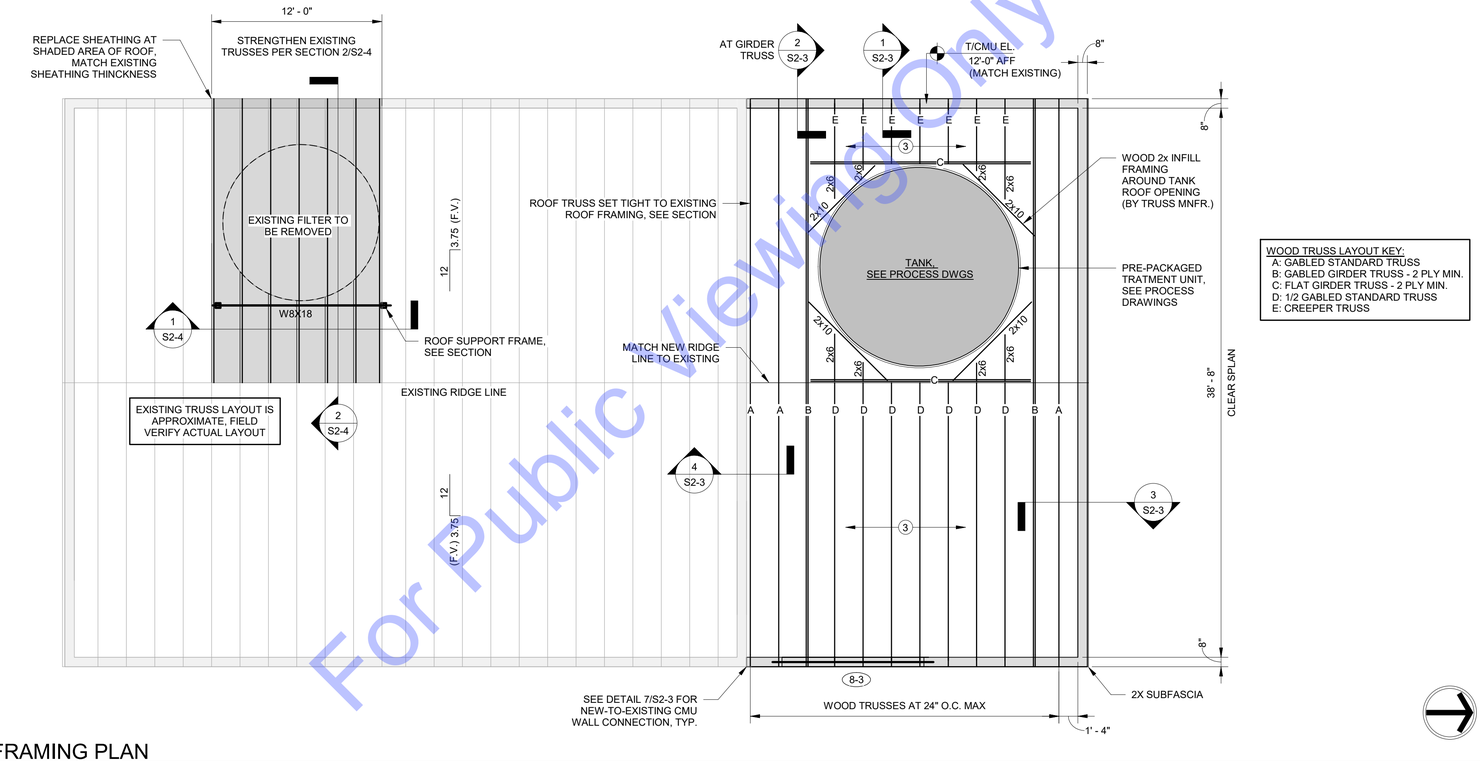


1 S2-1 FOUNDATION / SLAB-ON-GRADE PLAN

3/16" = 1'-0"



WOOD TRUSS LAYOUT KEY:
A: GABLED STANDARD TRUSS
B: GABLED GIRDER TRUSS - 2 PLY MIN.
C: FLAT GIRDER TRUSS - 2 PLY MIN.
D: 1/2 GABLED STANDARD TRUSS
E: CREEPER TRUSS

2 S2-1 ROOF FRAMING PLAN

3/16" = 1'-0"

FOUNDATION / SLAB-ON-GRADE PLAN NOTES

◯ INDICATES NOTE REFERENCED IN PLAN

1. SEE THE S1-SERIES SHEETS FOR GENERAL STRUCTURAL NOTES AND TYPICAL STRUCTURAL DETAILS.
2. GENERAL CONTRACTOR TO COORDINATE ALL OPENING, PIPE SLEEVES, EMBEDDED ITEMS, HANDRAILS, GRATING, ETC. WITH THE PROCESS DRAWINGS.
3. T/SLAB ELEVATION = *MATCH EXISTING*, UNLESS NOTED OTHERWISE.
   T/FOOTING ELEVATION = -2' - 8" BELOW FINISH FLOOR, UNLESS NOTED OTHERWISE.
4. FLOOR SLAB SHALL CONSIST OF A 6-INCH SLAB-ON-GRADE OVER 6-INCHES OF COMPACTED FILL AND A 10-MIL VAPOR RETARDER. REINFORCE SLAB WITH SYNTHETIC FIBER REINFORCING.
5. ALL DIMENSIONS AND ELEVATIONS SHALL BE VERIFIED PRIOR TO FABRICATION, CONSTRUCTION OR ERECTION. THE GENERAL CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ANY DISCREPANCIES.
6. AT RE-ENTRANT SLAB CORNERS CONDITIONS, PROVIDE (2) #4 X 4'-0" LONG AT 3-INCHES O.C. PLACED 2-INCHES CLEAR FROM CORNER, CENTERED IN SLAB, TYPICAL.
7. SEE SITE PLAN FOR ALL FINAL GRADE ELEVATIONS.
8. SEE GEOTECHNICAL REPORT FOR ALL BACKFILLING AND COMPACTION REQUIREMENTS BEHIND WALLS AND UNDER BASE SLABS.
9. SAW CUT OR WET CUT CONTRACTION JOINTS IN SLABS AS SHOWN ON PLANS. WET CUTS ARE TO BE MADE AFTER FINAL FLOATING WHILE CONCRETE IS STILL PLIABLE. SAW CUTS ARE TO BE MADE AS SOON AS PRACTICAL AFTER FINAL HARD TROWELING BUT MUST BE COMPLETED WITHIN 2-HOURS OF FINAL TROWELING.
10. GENERAL CONTRACTOR SHALL SUBMIT A CONSTRUCTION JOINT (CJ) AND CONTRACTION JOINT (CT) LOCATION PLAN TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO CONCRETE PLACEMENT.
11. MAINTAIN STRUCTURAL SLAB THICKNESSES AT ALL FLOOR SLOPES AND DEPRESSIONS.
12. COORDINATE EXACT PRE-PACKAGE UNIT HOUSEKEEPING PAD LOCATION, PLAN DIMENSIONS AND HEIGHT WITH PROCESS DRAWINGS AND UNIT MANUFACTURER. PRE-PACKAGE UNIT ANCHORAGE TO FOUNDATION SHALL BE BY MANUFACTURER. NOTE: ANCHORAGE SHALL SATISFY REQUIRES FOR SEISMIC DESIGN CATEGORY D.
13. SEE PROCESS DRAWINGS AND MECHANICAL DRAWINGS FOR LOCATIONS OF ANY OTHER MISCELLANEOUS HOUSEKEEPING PADS.

ROOF FRAMING PLAN NOTES

◯ INDICATES NOTE REFERENCED IN PLAN

1. SEE THE S1-SERIES SHEETS FOR GENERAL STRUCTURAL NOTES AND TYPICAL STRUCTURAL DETAILS.
2. GENERAL CONTRACTOR TO COORDINATE ALL GUTTERS, DOWNSPOUTS AND ROOF FINISHES WITH PROCESS DRAWINGS.
3. ROOF DECK SHALL BE APA 40/20 SPAN RATED SHEATHING, 5/8-INCH NOMINAL THICKNESS, EXPOSURE 1. ATTACH WITH 8d COMMON NAILS AT 12-INCHES O.C. IN FIELD AND 6-INCHES O.C. AT EDGES AND DIAPHRAGM BOUNDARIES, UNLESS NOTED OTHERWISE ON PLANS. PROVIDE SHEATHING SUPPORT CLIPS BETWEEN TRUSSES AT UNBLOCKED PANEL EDGES (SIMPSON PSCL OR EQUAL).
4. PREFABRICATED WOOD ROOF TRUSSES SHALL BE DESIGNED TO SUPPORT LOADING AS SPECIFIED IN GENERAL STRUCTURAL NOTES SHEET S1-2.
5. ALL STRUCTURAL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED.
6. (8-X) DENOTES MASONRY LINTEL - SEE SCHEDULE ON THIS SHEET S1-5.
7. MJC DENOTES MASONRY CONSTRUCTION JOINT MARKS.

WALL FOOTING SCHEDULE

MARK	WIDTH	LENGTH	THICK.	BOTT. LONG. REINF.	BOTT. TRANS. REINF.
WF2	2'-0"	CONT.	1'-0"	3 - #5	#4 AT 18" O.C.

MASONRY WALL REINFORCING SCHEDULE

A	8-INCH CMU WALL 8-INCH NORMAL WEIGHT CMU BLOCK VERTICAL: #5 BARS AT 48" O.C. HORIZONTAL: (2) #5 BARS AT T/BB ELEV. = T/WALL #9 TRUSS TYPE JOINT REINF. AT 16" O.C. ABOVE GRADE (8" LAP) AND 8" O.C. BELOW GRADE (8" LAP)

NOTES:

1. REINFORCE ALL WALLS AS NOTED BY SCHEDULE EXCEPT AS NOTED ON PLANS AND/OR DETAILS.
2. PROVIDE TOP BOND BEAM (BB) TO ALL WALLS. WHEN WALL COURSING DOES NOT FINISH ON A FULL BLOCK, TOP BB DEPTH SHALL BE THE LAST FULL BLOCK PLUS THE PARTIAL DEPTH OF THE REMAINING BLOCK AT TOP OF THE WALL.
3. PROVIDE A 1'-0" HOOK AT TOP OF ALL VERTICAL BARS.
4. PROVIDE #5 DOWELS WITH 1'-0" HOOK AT BOTTOM OF WALL INTO CONCRETE FOUNDATION. DOWELS TO MATCH VERTICALS IN SPACING.
5. INSULATE EXTERIOR CMU WALLS USING KORFIL IN-CORE INSULATION OR APPROVED EQUAL. MASONRY CORE INSULATION IS TO BE PLACED AT ALL NON-REINFORCED/NON-GROUTED CMU CORES. MASONRY CORE INSULATION IS NOT PERMITTED AT REINFORCED/GROUTED CMU CORES.

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EXISTING TREATMENT BUILDING EXPANSION STRUCTURAL PLANS

Drawing No:
S2-1
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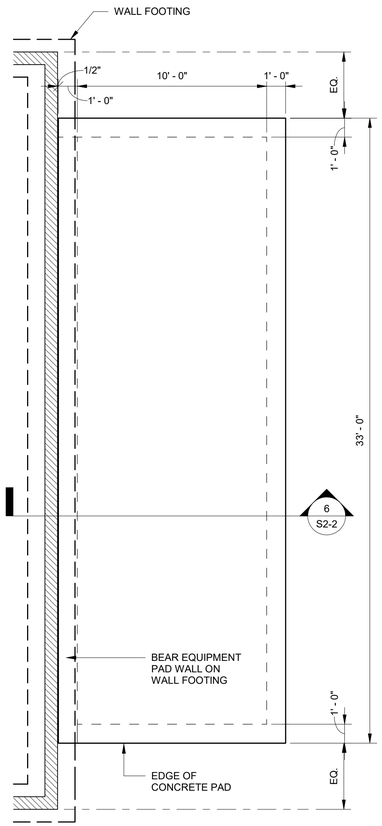
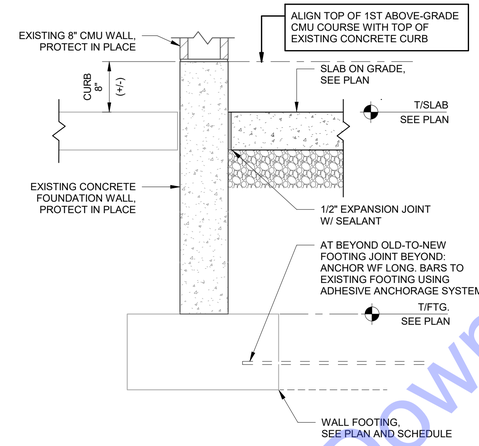
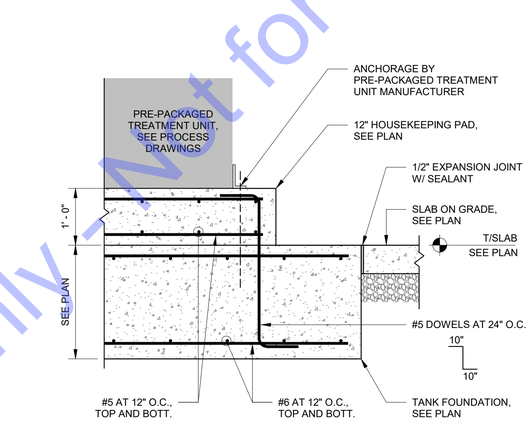


NOTES:
1. SEE PROCESS DRAWINGS FOR EQUIPMENT PAD LOCATION ON SITE.
2. TOP OF EQUIPMENT PAD SHALL BE FLAT AND LEVEL.
3. COORDINATE EQUIPMENT PADS WITH THE SELECTED MECHANICAL/ELECTRICAL CONTRACTORS.

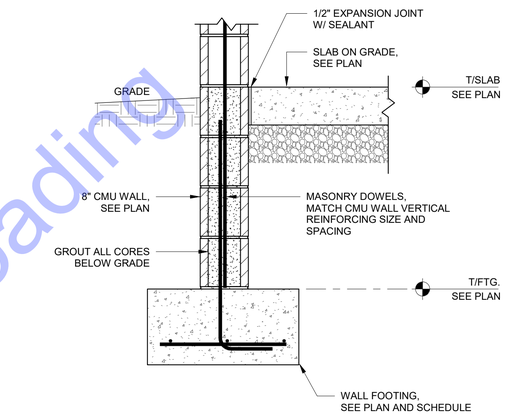
5 S2-2 EQUIPMENT PAD PLAN
1/4" = 1'-0"



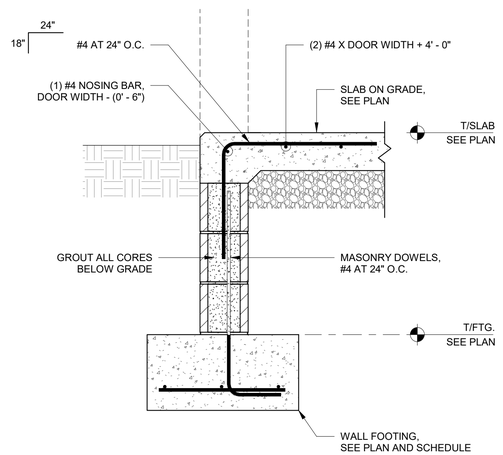
3 S2-2 SECTION
1" = 1'-0"



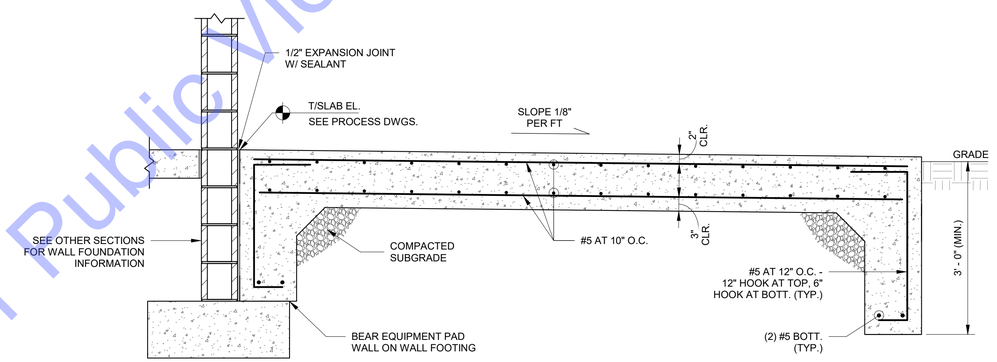
4 S2-2 SECTION
3/4" = 1'-0"



1 S2-2 SECTION
1" = 1'-0"



2 S2-2 SECTION
1" = 1'-0"



6 S2-2 EQUIPMENT PAD SECTION
3/4" = 1'-0"

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Signature
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EXISTING TREATMENT BUILDING EXPANSION STRUCTURAL SECTIONS

Drawing No:
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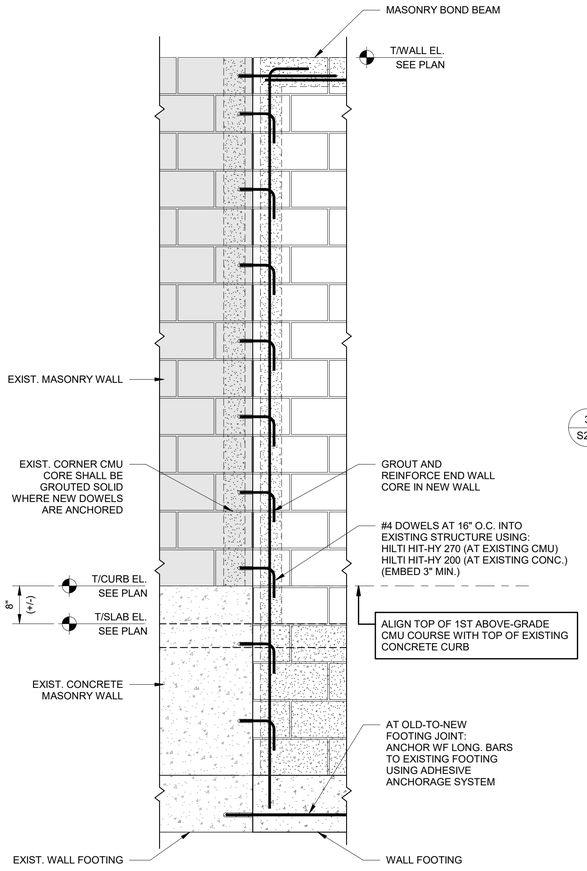
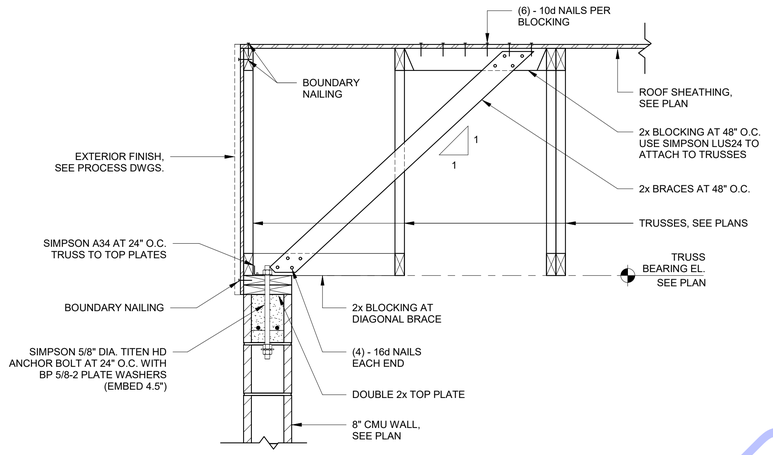
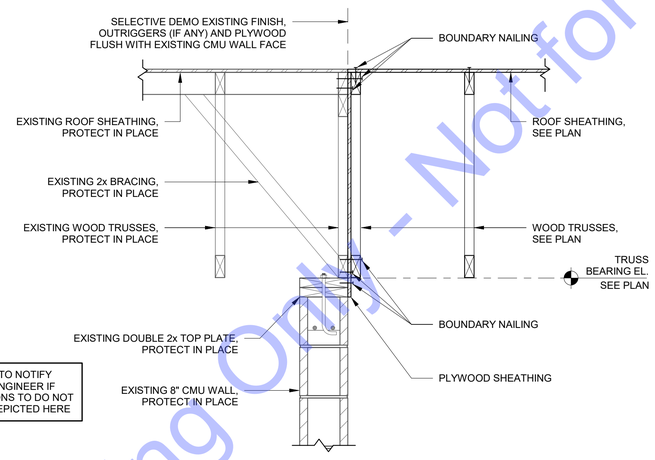


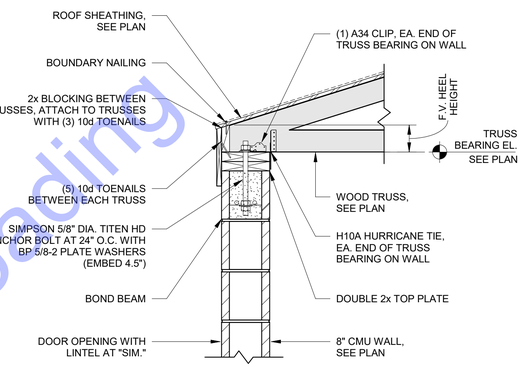
6 S2-3 VERTICAL MASONRY CONNECTION
3/4" = 1'-0"



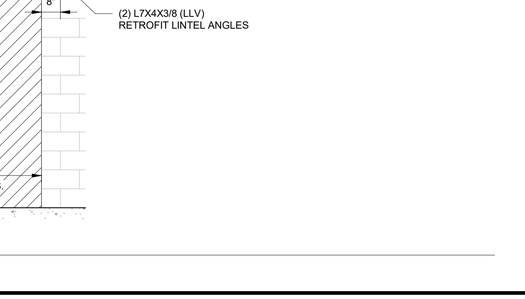
3 S2-3 SECTION AT END WALL
1" = 1'-0"



4 S2-3 SECTION AT EXISTING END WALL
1" = 1'-0"



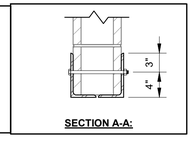
1 S2-3 SECTION AT EAVE
1" = 1'-0"



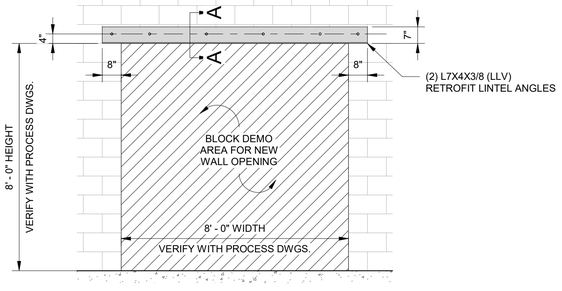
2 S2-3 SECTION AT EAVE (GIRDER TRUSS)
1" = 1'-0"

NOTES:

1. SLOT CMU BED JOINT AND INSTALL BOTH L7X4 LINTEL ANGLES OVER NEW OPENING, ONE FROM EACH SIDE OF WALL, PRIOR TO START OF CMU BLOCK DEMO FOR FOR NEW WALL OPENING.
2. PROVIDE 8" BEARING FOR LINTEL ANGLES BEYOND EACH END OF NEW WALL OPENING WIDTH.
3. SECURE LINTEL ANGLES WITH 1/2" DIA. THRU BOLTS AS SHOWN.
4. PAINT LINTEL ANGLES AND BOLTS TO MATCH SURROUNDING WALL.



SECTION A-A:



5 S2-3 SECTION
3/8" = 1'-0"

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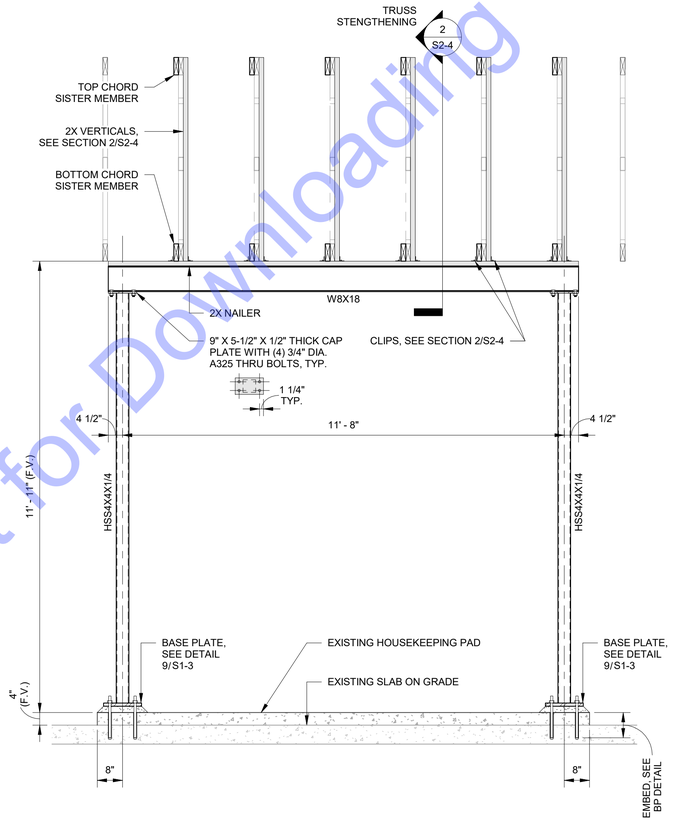
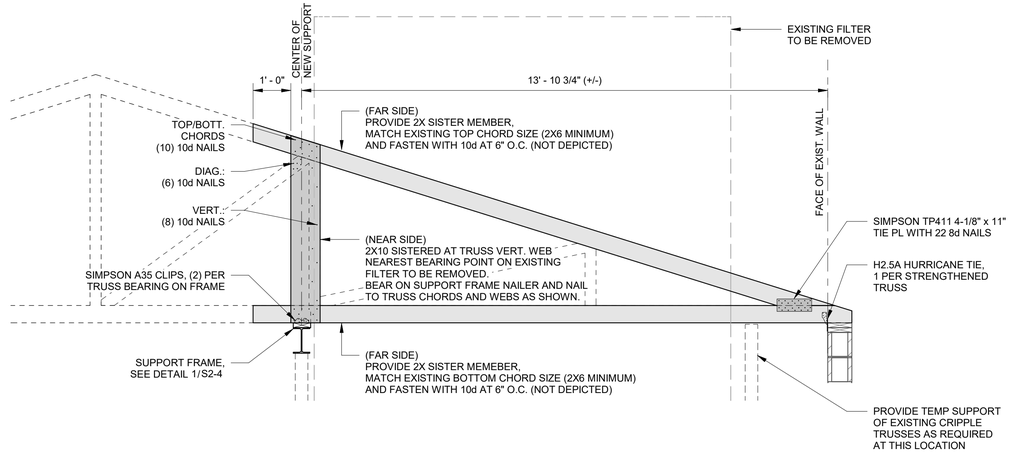


1 S2-4 SUPPORT FRAME AT FILTER REMOVAL

1/2" = 1'-0"



2 S2-4 EXISTING TRUSS STRENGTHENING AT FILTER REMOVAL

1/2" = 1'-0"

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APPLICABLE CODES AND STANDARDS

1. MECHANICAL INSTALLATION TO BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL CODES HAVING JURISDICTION.
2. CODES CONSIDERED APPLICABLE TO THIS PROJECT INCLUDE BUT ARE NOT LIMITED TO:
   - A. OBC; 2011 INDIANA BUILDING CODE - BASED ON IBC 2009.
   - B. OMC; 2011 INDIANA MECHANICAL CODE - BASED ON IMC 2009.
   - C. OPC; 2011 INDIANA PLUMBING CODE - BASED ON IPC 2009.
   - D. OFC; 2011 INDIANA FIRE CODE - BASED ON IFC 2009
   - E. IECC; 2009 INTERNATIONAL ENERGY CONSERVATION CODE.
   - F. ASHRAE STANDARD 90.1 2007 ENERGY STANDARDS FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS.
   - G. NFPA 13: 2010 SPRINKLER SYSTEM INSTALLATION.
   - H. NFPA 14: 2010 STANDPIPE AND HOSE SYSTEMS.
   - I. NFPA 70. 2011 NATIONAL ELECTRIC CODE.(NEC)
   - J. NFPA 72. 2010 FIRE ALARM AND SIGNALING CODE.
   - K. ANSI HANDICAPPED CODE A117.1
   - L. AGA: AMERICAN GAS ASSOCIATION.
   - M. AMCA: AIR MOVING AND CONDITIONING ASSOCIATIONS, INC.
   - N. ANSI: AMERICAN NATIONAL STANDARDS INSTITUTE.
   - O. ARI: AMERICAN REFRIGERATION INSTITUTE.
   - P. ASHRAE: AMERICAN SOCIETY OF HEATING REFRIGERATION AND AIR CONDITIONING ENGINEERS.
   - Q. ASME: AMERICAN SOCIETY OF MECHANICAL ENGINEERS.
   - R. ASTM: AMERICAN SOCIETY FOR TESTING AND MATERIALS.
   - S. MSS: MANUFACTURER'S STANDARDIZATION SOCIETY OF THE VALVE AND FITTING INDUSTRY.
   - T. NEMA: NATIONAL ELECTRIC MANUFACTURER'S ASSOCIATION.
   - U. NFPA: NATIONAL FIRE PROTECTION ASSOCIATION.
   - V. SMACNA: SHEET METAL CONSTRUCTION FOR VENTILATING AND AIR-CONDITIONING SYSTEMS.
   - W. UL: UNDERWRITER'S LABORATORIES, INC.
3. INSTALL ALL WORK IN STRICT CONFORMITY WITH APPLICABLE CODES.
4. SUBMIT AND/OR FILE WITH PROPER AUTHORITIES NECESSARY CONTRACT DOCUMENTS AS REQUIRED BY GOVERNING AUTHORITIES.

COORDINATION NOTES

1. VISIT SITE AND BE INFORMED OF CONDITIONS UNDER WHICH WORK MUST BE PERFORMED.
2. GENERAL CONTRACTOR OR CONSTRUCTION MANAGER SHALL COORDINATE LOCATION AND PROVIDE SUPPORT FRAMING FOR ALL ROOF-MOUNTED HVAC EQUIPMENT.
3. GENERAL CONTRACTOR OR CONSTRUCTION MANAGER SHALL INCLUDE ADEQUATE TIME IN THE CONSTRUCTION SCHEDULE FOR THE TEST & BALANCE SUBCONTRACTOR TO COMPLETE THE SETUP AND BALANCE OF ALL AIR AND WATER FLOW SYSTEMS IN THE PROJECT AFTER THE MECHANICAL SUBCONTRACTOR HAS ALL AIR AND WATER SYSTEMS IN CONTINUOUS, STABLE OPERATION AND UNDER CONTROL. PRIOR TO STARTING THE TESTING AND BALANCING WORK, THE DIVISION 23 SUBCONTRACTOR SHALL FURNISH COMPLETED SETUP AND COMMISSIONING WORKSHEETS AS LISTED IN SECTION 230800 TO THE TEST AND BALANCE SUBCONTRACTOR AS EVIDENCE THAT THE SYSTEMS HAVE BEEN SETUP, CHECKED AND ARE OPERATIONALLY READY FOR BALANCING.
4. NO SUBSEQUENT ALLOWANCE WILL BE MADE BECAUSE OF ERROR OR FAILURE TO OBTAIN NECESSARY INFORMATION TO COMPLETELY ESTIMATE AND PERFORM ALL WORK INVOLVED.
5. CAREFULLY EXAMINE DRAWINGS AND SPECIFICATIONS TO BE THOROUGHLY FAMILIAR WITH ITEMS WHICH REQUIRE PLUMBING OR HVAC CONNECTIONS AND COORDINATION.
6. NOTIFY OTHER TRADES OF ANY DEVIATIONS OR SPECIAL CONDITIONS NECESSARY FOR INSTALLATION OF WORK.
7. RESOLVE INTERFERENCES BETWEEN WORK OF OTHER TRADES PRIOR TO INSTALLATION.
8. ADVISE OTHER TRADES TO LEAVE PROPER CHASES AND OPENINGS, PLACE OUTLETS, ANCHORS, SLEEVES, AND SUPPORTS PRIOR TO POURING CONCRETE OR INSTALLATION OF MASONRY WORK.
9. IN AREAS OF RENOVATION, INSTALLATION OF NEW PIPING, DUCTWORK, AND EQUIPMENT WILL REQUIRE REMOVAL OF THE EXISTING CEILING AND GRID. SURVEY THE SITE AND BE INFORMED OF EXISTING CONDITIONS WHICH WILL REQUIRE CEILING REMOVAL. INCLUDE THE COST OF THE CEILING WORK OR COORDINATE ITS REMOVAL WITH THE GENERAL CONTRACTOR.
10. ADDITIONAL INSTALLATION COST ASSOCIATED WITH SUBSTITUTED EQUIPMENT REQUIRING ADDITIONAL WORK ON THE PART OF THIS CONTRACTOR OR OTHER SUBCONTRACTORS TO SATISFY THE MANUFACTURER'S INSTALLATION REQUIREMENTS SHALL BE THE RESPONSIBILITY OF THE SUBMITTING CONTRACTOR.
11. COORDINATE ALL NECESSARY POWER CONNECTIONS AS RECOMMENDED BY THE MANUFACTURERS OF INSTALLED EQUIPMENT WITH ELECTRICAL TRADESMEN.
12. COORDINATE WITH ELECTRICAL TRADESMEN FOR PROPER SIZING OF CIRCUIT BREAKERS, FUSES, SAFETY SWITCHES, CONDUIT AND WIRING FOR ALL EQUIPMENT FURNISHED BY DIVISION 23 EQUIPMENT PRIOR TO ROUGH-IN.
13. DO NOT ROUTE ANY PIPING DIRECTLY ABOVE OR 42 INCHES IN FRONT OF ELECTRICAL SWITCHGEAR, PANELS OR TRANSFORMERS.
14. IN CERTAIN AREAS OF RENOVATION, INSTALLATION OF NEW PIPING, DUCTWORK, AND EQUIPMENT AS WELL AS HIGHER CEILING HEIGHTS WILL REQUIRE OFFSETTING, RAISING AND IN SOME INSTANCES RELOCATING OF EXISTING PIPING, DUCTWORK, RAIN WATER LEADERS, SPRINKLERS, AND CONDUIT. SURVEY THE SITE AND BE INFORMED OF EXISTING CONDITIONS IN PARTICULAR ABOVE CEILINGS WHICH WILL REQUIRE OFFSETTING AND OR RELOCATION OF EXISTING PIPING, DUCTWORK AND CONDUIT AND INCLUDE THE COST OF THIS WORK.

MECHANICAL LEGEND

PIPING		DUCTWORK	
CHS	CHILLED WATER SUPPLY		SUPPLY DUCTWORK
CHR	CHILLED WATER RETURN		RETURN OR EXHAUST DUCTWORK
HWS	HOT WATER SUPPLY	FD	FIRE DAMPER
HWR	HOT WATER RETURN	SD	SMOKE DAMPER
HWRR	HOT WATER REVERSE RETURN	F/SD	COMBINATION FIRE & SMOKE DAMPER
CWS	CONDENSER WATER SUPPLY	240	SUPPLY DIFFUSER & AIR QUANTITY (INDICATES 4-WAY BLOW)
CWR	CONDENSER WATER RETURN	150 3W (2W)	SUPPLY DIFFUSER & AIR QUANTITY INDICATES 3-WAY BLOW (2-WAY BLOW)
STM.(PSI)	STEAM SUPPLY PIPING AND IT'S PRESSURE	140R	RETURN AIR GRILLE & AIR QUANTITY
C.R.	STEAM CONDENSATE RETURN	150E	EXHAUST AIR GRILLE & AIR QUANTITY
P.C.R.	PUMPED STEAM CONDENSATE RETURN		REDUCER/TRANSITION
D	DRAIN LINE	H	STEAM HUMIDIFIER
RS	REFRIGERANT SUCTION	T	THERMOSTAT (ADJUSTABLE)
RL	REFRIGERANT LIQUID	T2	THERMOSTAT (CONCEALED / KEY OPER.)
FTS	FINNED TUBE SUPPLY	H	HUMIDISTAT
FTR	FINNED TUBE RETURN	R	RISE IN DUCTWORK
FOS	FUEL OIL SUPPLY	D	DROP IN DUCT
FOR	FUEL OIL RETURN		CONICAL TEE
V	EQUIPMENT VENT		BELLMOUTH CONNECTION
E.O.M.	END OF MAIN DRIP		DUCT WITH INTERNAL SOUND LINER
P.R.V.	PRESSURE REDUCING VALVE	SP.D.	SPLITTER DAMPER
T	STEAM TRAP		REHEAT COIL
	BALL VALVE		ELECTRIC REHEAT BOX, CLEARANCE SPACE AND IDENTIFICATION
	GATE VALVE	*	ASTERISK WITH REHEAT BOX INDICATES 3-WAY HOT WATER CONTROL VALVE
	GLOBE VALVE		HOT WATER REHEAT BOX AND IDENTIFICATION
	BUTTERFLY VALVE		SQUARE ELBOW WITH TURNING VANES
	CONTROL VALVE	M.B.D.	MANUAL BALANCE DAMPER
	STRAINER WITH HOSE END DRAIN CONNECTION	A.T.C.	AUTOMATIC TEMP. CONTROL PANEL
	STRAINER AND BLOWDOWN VALVE	A.D.	ACCESS DOOR
	B&G CIRCUIT SETTER, OR EQUAL, BALANCING VALVE	M.L.	MARINE LIGHT
	PLUG COCK (BALANCING VALVE)	50	INDICATES 3/4" DOOR UNDERCUT, DIRECTION & QUAN. OF ROOM AIR PRESS.
	UNION	50	INDICATES DIRECTION & QUANTITY OF ROOM AIR PRESSURIZATION.
	COMPANION FLANGE	S M	DUCT MOUNTED SMOKE DETECTOR
	CHECK VALVE	S P	DUCT MOUNTED STATIC PRESSURE CONTROLLER
	GUIDE	A.F.F.	ABOVE FINISHED FLOOR
	ANCHOR	A.F.R.	ABOVE FINISHED ROOF
	GAUGE & GAUGE COCK		MANUAL BALANCING DAMPER
	THERMOMETER	PI	PRESSURE INDICATOR (GAUGE)
	MOTORIZED VALVE		

HVAC GENERAL NOTES:

1. DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE APPROXIMATE ROUTING OF PIPING AND DUCTWORK. THE CONTRACTOR SHALL COORDINATE WITH OTHER TRADES TO AVOID CONFLICTS AND DELAYS. MINOR OFFSETS AND ADJUSTMENTS SHALL BE PROVIDED WHERE REQUIRED AT NO ADDITIONAL COST TO THE OWNER.
2. COORDINATE LOCATIONS OF EQUIPMENT WITH OTHER TRADES. AND WITH STRUCTURAL AND ARCHITECTURAL ELEMENTS.
3. ALL EXHAUST FANS, SUPPLY FANS, DAMPERS, AND RELIEF VENTS SHALL BE MOUNTED 18" BELOW CEILING HEIGHT. COORDINATE FINAL HEIGHT LOCATIONS WITH OWNER/RPR.
4. DUCT DIMENSIONS INDICATED ON THE DRAWINGS ARE NET AIRSIDE DIMENSIONS.
5. DUCTWORK SHALL BE FABRICATED OF FIBERGLASS (UNLESS NOTED OTHERWISE) AND INSTALLED IN ACCORDANCE WITH SMACNA STANDARDS. SEAL ALL DUCTS, JOINTS, AND SEAMS IN DUCTWORK TO INSURE AGAINST LEAKAGE.
6. PENETRATIONS OF THE WALLS AND FLOORS SHALL BE FLASHED WITH ALUMINUM SHEET ANGLES AND SEALED WITH INSULATING FOAM PER SMACNA ARCHITECTURAL SHEETMETAL DETAILS STANDARDS.
7. ELECTRIC MOTORS FOR EQUIPMENT SHALL BE TEFC, SELECTED FOR NON-OVERLOADING OPERATION. MOTORS SHALL NOT OPERATE IN THEIR SERVICE FACTOR.
8. GRILLES AND DIFFUSERS SHALL BE TITUS OR EQUAL ALUMINUM SIDE WALL GRILLES, RETURN REGISTER SHALL BE TITUS OR EQUAL ALUMINUM LOUVERED SURFACE MOUNT. PROVIDE STANDARD WHITE PAINTED FACE.

FAN SCHEDULE

GENERAL NOTES:		ABBREVIATIONS:			
(1) - HIGH EFFICIENCY MOTOR	(3) - UPBLAST DISCHARGE	PRE - POWER ROOF EXHAUST FAN	SWSI - SINGLE WIDTH, SINGLE INLET	BVS - BELTED VENT SET	PWE - POWERED WALL EXHAUST FAN
(2) - INCL. WEIGHT OF INERTIA BASE	(4) - TOP HORIZONTAL DISCHARGE	PRS - POWER ROOF SUPPLY FAN	DWDI - DOUBLE WIDTH, DOUBLE INLET	C.T. - CONTROL TRANSFORMER	E.P. - EMERGENCY POWER
UNIT ACCESSORIES:					STARTER ACCESSORIES:
1 - INLET SCREEN	6 - MOTORIZED OUTLET DAMPERS	11 - SMOKE DETECTOR	16 - DISCHARGE MIN. 7'0" A.F.R.	21 - WEATHERPROOF HOUSING/TEFC	A - COMBINATION MAG-X-LINE
2 - MOTORIZED INLET VANES	7 - OUTLET GRAVITY DAMPERS	12 - 24" HIGH ROOF CURB	17 - U.L. 762 LISTED	22 - 2 SPEED, 2 WINDING MOTOR	B - AUTO. TRANSFORMER
3 - MOTORIZED INLET DAMPERS	8 - INERTIA BASE	13 - ACCESS DOOR & DRAIN	18 - EXPLOSION PROOF MOTOR	23 - 3ϕ DISC. SWITCH IN HOUSING	C - MANUAL MOTOR STARTER
4 - INLET GRAVITY DAMPERS	9 - SPRING ISOLATORS	14 - 2" WASHABLE FILTERS	19 - THERMAL OVERLOAD PROTECTION	24 - PRE-WIRED DISC. SWITCH	D - VFD WITH LINE REACTOR AND DISCONNECT
5 - OUTLET SCREEN	10 - BELT GUARD	15 - FAN SAFETY CAGE/WALL SLEEVE	20 - SOLID STATE SPEED CONTROLLER	25 - DOOR LIMIT SWITCH	E - HAND/OFF/AUTO SWITCH/PILOT LIGHT/120V XFMR

UNIT ID	SYSTEM	TYPE	MANUFACTURER	MODEL NO.	CFM	S.P.	MAX. SONES	ROOF/WALL OPENING	UNIT WEIGHT (LBS)	FAN ACCESSORIES	MOTOR (1)			STARTER									NOTES:
											MIN. H.P.	RPM	V/ϕ/Hz	LOCATION	TYPE	DISC. TYPE	ACCESSORIES						
EF-1	NEW FILTER ROOM	PWE	GREENHECK (OR EQUAL)	CUE-160-VG	2100	0.4"	10.4	18"X18"	93	4,5	1/2	926	120/1/60										NOTE 1:
NOTE 1:	ENTIRE UNIT INCLUDING FAN CURB SHALL BE COATED WITH HI-PROZ (OR EQUIVELANT PERFORMANCE) COATING FOR CORROSSION PROTECTION.																						

ELECTRIC UNIT HEATER SCHEDULE

MARK	LOCATION	CONFIGURATION	AIRFLOW	FAN DATA					HEATER DATA						ELECTRICAL DATA			ACCESSORIES		FILTER DATA		MANUFACTURER WITH MODEL NUMBER	NOTES
			SUPPLY CFM		TYPE	VOLTAGE	RPM	FLA		KW	MBH	TEMP RISE				FLA	VOLTS	PH	MOUNTING BRACKET	DISCONNECT SWITCH	TYPE	EFF		
EUH-1	NEW FILTER ROOM	HORIZONTAL	2400							15	51	20				20.0	460	3	YES	YES			INDEECO 234-U11L-0150U OPTION CODES C, D, AND T (OR EQUAL)	1

NOTES:

1. OPTION T: THERMOSTAT FACTORY INSTALLED AND PRE-WIRED TO THE CONTROL ENCLOSURE. 50 TO 90 DEGREE F - SET AT 65 F.

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BOWLING GREEN, KY.
SOUTH BEND, IN.

MICHAEL A. MIRANDA II REGISTERED No. 19800084 STATE OF INDIANA PROFESSIONAL ENGINEER

Signature 04/24/2025 Date

TOWN OF ODON
DAVIESS COUNTY, INDIANA

WATER UTILITY IMPROVEMENTS PROJECT
DIVISION "A" - WTP IMPROVEMENTS

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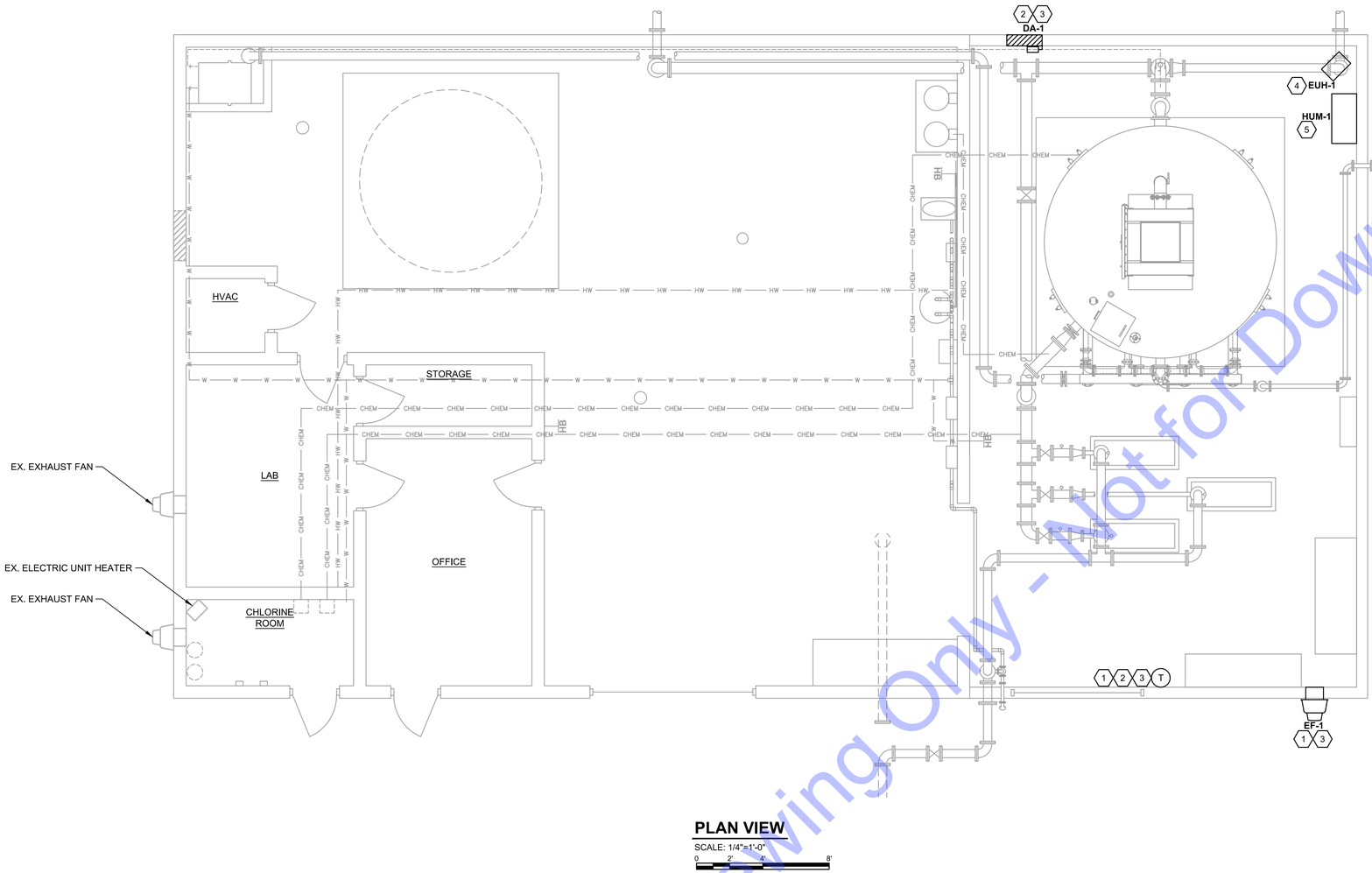
No.	Submittal / Revision	By	Date

Designed By:	Drawn By:	Checked By:
CM	CM	MAM
Issue Date: 04/22/2025	Project No: W21115	Scale: AS SHOWN

MECHANICAL LEGENDS AND SCHEDULES

Drawing No: **M0-0**

Sheet: 39 OF 52



PLAN VIEW

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

0 2' 4' 8'

MECHANICAL NOTES:

1. THE CONTRACTOR SHALL FURNISH AND INSTALL GREENHECK (OR EQUAL) EXHAUST FAN (EF-1). EXHAUST FAN SHALL OPERATE FROM THERMOSTAT IN AUTOMATIC OPERATION AND SHALL OPERATE FROM A MANUAL SWITCH FOR MANUAL OPERATION. REFER TO MECHANICAL SCHEDULES FOR EXHAUST FAN SPECIFICATIONS. INSTALL EXHAUST FAN 18" BELOW CEILING.
2. THE CONTRACTOR SHALL FURNISH AND INSTALL ONE (1) GREENHECK EAD-635 26" X 34" MOTORIZED INTAKE DAMPER (OR EQUAL) WITH BIRD SCREEN. DAMPER ACTUATOR (DA-1) SHALL BE BELIMO (OR EQUAL). MOUNT INTAKE LOUVER/DAMPER 18" ABOVE FINISHED GRADE.
3. THE CONTRACTOR SHALL FURNISH AND INSTALL NEMA 4X THERMOSTAT, (HONEYWELL OR EQUAL). WIRE EXHAUST FAN EF-1 TO START ON A TEMPERATURE RISE ABOVE SET-POINT. INTERLOCK DAMPER DA-1 TO OPEN WITH EXHAUST FAN OPERATION. DA-1 SHALL OPEN 90% BEFORE EXHAUST FAN STARTS. PROVIDE ALL CONDUIT, WIRING AND RELAYS REQUIRED FOR PROPER OPERATION. THERMOSTAT SHALL HAVE LOCKABLE SET-POINT.
4. THE CONTRACTOR SHALL FURNISH AND INSTALL INDEECO (OR EQUAL) ELECTRIC UNIT HEATER (EUH-1). REFER TO MECHANICAL DRAWING M0-0 FOR ELECTRIC UNIT HEATER SPECIFICATIONS. INSTALL HEATER 18" BELOW CEILING.
5. CONTRACTOR SHALL FURNISH AND INSTALL HI-E DRY-195 (OR EQUAL PORTABLE DEHUMIDIFIER (HUM-1), 192 PINTS/DAY @ 80°F/60%; 115V-1Ø, 12A, 540 CFM BLOWER, MERV 8 FILTER, INTERNAL CONDENSATE PUMP. MODEL No. 4030060. ROUTE CONDENSATE TO NEAREST DRAIN.

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MICHAEL A. MIRANDA
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No. 19800084
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PROFESSIONAL ENGINEER

Signature 04/24/2025 Date

TOWN OF ODON
DAVIESS COUNTY, INDIANA

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IMPROVEMENTS PROJECT

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EXISTING TREATMENT BUILDING MECHANICAL IMPROVEMENTS PLAN

Drawing No:
M1-0
Sheet: 40 OF 52

File: Z:\SHARED\IN CLIENTS IN-Z-ODON\W21115 WATER UTILITY IMPROVEMENTS\06 CAD\K MECH-ELECT\ODON WATER ELECTRICAL - DIV A.DWG
Saved: 4/24/2025 9:38:55 AM Plotted: 4/24/2025 9:52:16 AM Current User: Chris Means LastSavedBy: cmeans

PROCESS AND INSTRUMENTATION DIAGRAM LEGEND

INSTRUMENT TAG IDENTIFICATION

COMPONENT DESIGNATOR

AREA 035D: BUILDING OR PROCESS AREA NUMBER

TAG TYPE P: FIRST LETTER, SEE ISA TABLE BELOW
AH: SUCCEEDING LETTERS, SEE ISA TABLE BELOW

TAG NUMBER 12: P&ID NUMBER
3: LOOP NUMBER
4: EQUIPMENT NUMBER
A: DEVICE LETTER IF MULTIPLE DEVICES

TAG FUNCTION HOA: TAG FUNCTION ABBREVIATION, SEE LISTING AT RIGHT

(QUANTITY) (2): TOTAL NUMBER OF DEVICES WHERE MORE THAN ONE DEVICE IS REQUIRED. DEVICE NUMBERS ARE SEQUENTIAL BEGINNING WITH THE TAG NUMBER SHOWN. IF QUANTITY IS NOT SHOWN, THEN ONE DEVICE ONLY IS REQUIRED.

COMPONENT DESIGNATOR SEE LISTING AT RIGHT

PLC POINT TYPE

ANALOG INPUT	▲
ANALOG OUTPUT	▼
DISCRETE INPUT	△
DISCRETE OUTPUT	▽
NETWORK CONNECTION	⧗

TAG FUNCTION ABBREVIATIONS

ALT ALTERNATE
C CLOSED(C)
CM COMPUTER-MANUAL
DIFF DIFFERENCE OR DIFFERENTIAL
DO DISSOLVED OXYGEN
F FAIL
F(X) CHARACTERIZED
FOR FOWARD-STOP(OFF)-REVERSE(MAINTAINED CONTACT)
FSR FOWARD-STOP-REVERSE(MOMENTARY CONTACT)
HOA HAND-OFF-AUTOMATIC(MAINTAINED CONTACT)
HOR HAND-OFF-REMOTE(MAINTAINED CONTACT)
II CURRENT TO CURRENT
IP CURRENT TO PNEUMATIC
LL LEAD-LAG(MAINTAINED CONTACT)
LOE LOSS OF ECHO(ULTRASONIC SENSOR FAILURE)
LOR LOCAL-OFF-REMOTE(MAINTAINED CONTACT)
LOS LOCKOUT STOP(LOCKABLE IN "STOP" POSITION MOMENTARY CONTACT)
L/R LOCAL/REMOTE(MAINTAINED CONTACT)
MA MANUAL-AUTOMATIC(MAINTAINED CONTACT)
MOA MANUAL-OFF-AUTOMATIC(MAINTAINED CONTACT)
O OPEN
OA OFF-AUTOMATIC
OCA OPEN-CLOSE-AUTOMATIC(MAINTAINED CONTACT)
OC OPEN-CLOSE(D)(MAINTAINED CONTACT)
OSC OPEN-STOP-CLOSE(MOMENTARY CONTACT SPRING RETURN TO CENTER POSITION)
00 ON-OFF(MAINTAINED CONTACT)
OOA ON-OFF-AUTOMATIC(MAINTAINED CONTACT)
OOR ON-OFF-REMOTE(MAINTAINED CONTACT)
R RUN
SBL SLUDGE BLANKET INTERFACE LEVEL
SP SPEED POT
SQRT SQUARE ROOT
SS START-STOP
SSA START-STOP-AUTOMATIC
SSL START-STOP-LOCK (LOCKABLE IN "STOP" POSITION. MOMENTARY CONTACT)
SUM SUMMMATION
VIB VIBRATION
X MULTIPLY

FWD FOWARD
REV REVERSE
F/R FOWARD/REVERSE(MOTOR STARTER COILS)
ESTP ESTOP(EMERGENCY STOP)
SPD (SPEED POT)
SUSP SUSPEND
ALRT ALERT
RSET RESET
STRT START

TAG SYMBOLS

INSTRUMENT SOCIETY OF AMERICA TABLE

LETTER	FIRST LETTER(S)		SUCCEEDING LETTER(S)		
	PROCESS OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM(W. LOGGING)	ANNUNCIATE	
B	BURNER COMBUSTION		USERS CHOICE(*)	USERS CHOICE(*)	USERS CHOICE(*)
C	USERS CHOICE(*)			CONTROL	CLOSE
D	USERS CHOICE(*)	DIFFERENTIAL			
E	VOLTAGE		PRIMARY ELEMENT		
F	FLOW RATE	RATIO			FEEDBACK
G	USERS CHOICE(*)		GLASS		
H	HAND (MANUAL)				HIGH
I	CURRENT		INDICATE		
J	POWER	SCAN			
K	TIME OR SCHEDULE	TIME RATE OF CHANGE	KEYPAD(DATA ENTRY)	CONTROL STATION	
L	LEVEL		LIGHT(PILOT)		LOW
M	MOTOR	MOMENTARY			MONITORING
N	USERS CHOICE(*)		USERS CHOICE(*)	USERS CHOICE(*)	USERS CHOICE(*)
O	USERS CHOICE(*)		ORIFICE		
P	PRESSURE OR VACUUM		POINT TEST CONNECTION		
Q	QUANTITY	INTEGRATE			
R	RADIATION		RECORD, TREND, LOG		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSIT	
U	UNIVERSAL/MULTIVARIABLE(*)		MULTIFUNCTION(*)	MULTIFUNCTION(*)	MULTIFUNCTION(*)
V	VIBRATION		VALUE	VALVE	
W	WEIGHT, FORCE, TORQUE		WELL	W	
X	UNCLASSIFIED(*)	X AXIS	UNCLASSIFIED(*)	UNCLASSIFIED(*)	UNCLASSIFIED(*)
Y	EVENT, STATE	Y AXIS		RELAY OR COMPUTE(*)	
Z	POSITION, DIMENSION	Z AXIS		DRIVE, ACTUATE OR UNCLASSIFIED FINAL CONTROL ELEMENT	

(*) WHEN USED, EXPLANATION IS SHOWN ADJACENT TO INSTRUMENT SYMBOL

SPECIAL CASES:
ETM - ELAPSED TIME METER
JBX - JUNCTION BOX
NDX - INDEX #
MS - MOTOR STARTER
MOR - MOTOR OVERLOAD RELAY
MPR - MOTOR PROTECTION RELAY

CONDUIT NOTES

PVC SCHEDULE 40 BELOW GRADE.

RIGID ALUMINUM OR PVC COATED RGS CONDUIT ABOVE GRADE OUTDOORS.

RIGID ALUMINUM OR PVC COATED RGS CONDUIT IN CLASSIFIED AND CORROSIVE SPACES.

NO CONDUIT SHALL BE INSTALLED ON TOP OF A DECK, ON A WALKWAY, OR IN AN AREA THAT MAY POSE A TRIP HAZARD. NO CONDUIT SHALL BE INSTALLED ABOVE A DECK, ABOVE A WALKWAY, OR IN AN AREA THAT IS COMMONLY TRAVELED. ALL CONDUIT IN SUCH AREAS SHALL BE COORDINATED WITH THE OWNER/ENGINEER AND SHALL BE INSTALLED BELOW GRADE OR IN THE CONCRETE DECKING OR PAD. CONDUIT INSTALLED IN CONCRETE DECKING OR PAD SHALL BE AVOIDED WHEN POSSIBLE. IF CONDUIT IS TO BE ROUTED IN A STRUCTURAL CONCRETE DECK, PAD, WALL, ETC. IT SHALL BE COORDINATED AND APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. CONDUIT INSTALLED IN CONCRETE CAN IMPACT THE STRUCTURAL INTEGRITY OF CONCRETE. IT IS THE CONTRACTORS RESPONSIBILITY TO CONFORM TO ANY REQUIREMENTS REQUIRED OF THE STRUCTURAL ENGINEER TO ACCOMMODATE THE INTEGRITY OF THE INSTALLATION AT NO COST TO THE OWNER. FOR A CONDUIT EMBEDDED IN CONCRETE TO BE CONSIDERED IT MUST BE THE ONLY REASONABLE SOLUTION AS DETERMINED BY THE ENGINEER. ALL PROPOSED INSTALLATIONS MUST COMPLY WITH ACI 318 AND BE ENGINEER APPROVED.

ALL UNDERGROUND CONDUITS SHALL BE SEALED AT BOTH ENDS.

NO CONDUIT PENETRATIONS ON THE TOP OF ANY OUTDOOR PANELS/ENCLOSURES.

EMT IS ACCEPTABLE IN CONDITIONED ELECTRICAL ROOMS AND OFFICE/BREAK AREAS ONLY. EMT SHALL BE TRANSITIONED PRIOR TO EXITING NON CORROSIVE SPACES. EMT SHALL NOT BE USED WHEN IT CAN BE EXPOSED TO ANY CORROSIVE GASES.

CONTROL WIRING REQUIREMENTS

EACH ANALOG INPUT REQUIRES AN 18/2 TWISTED SHIELDED PAIR IN 3/4" CONDUIT UNLESS NOTED OTHERWISE.

EACH ANALOG OUTPUT REQUIRES AN 18/2 TWISTED SHIELDED PAIR IN 3/4" CONDUIT UNLESS NOTED OTHERWISE.

EACH DISCRETE INPUT REQUIRES 2 #14's IN 3/4" CONDUIT UNLESS NOTED OTHERWISE.

EACH DISCRETE OUTPUT REQUIRES 2 #14's IN 3/4" CONDUIT UNLESS NOTED OTHERWISE.

CONTROL WIRING OF THE SAME TYPE MAY BE COMBINED INTO THE SAME CONDUIT. EXAMPLES: TWO 4-20MA ANALOG SIGNALS MAY BE COMBINED, TWO 24VDC DISCRETE SIGNALS MAY BE COMBINED, AND TWO 120VAC DISCRETE SIGNALS MAY BE COMBINED.

NOTE: INSTRUMENTS AND CABLE SHALL BE AS REQUIRED BY THE INSTRUMENT MANUFACTURER.

INSTRUMENT POWER

INSTRUMENTS REQUIRING 120 VAC:

1. MAGNETIC FLOW METERS
2. TURBIDITY TRANSMITTERS
3. pH TRANSMITTERS
4. ORP TRANSMITTERS
5. DO TRANSMITTERS
6. ULTRASONIC LEVEL TRANSMITTERS
7. ULTRASONIC FLOW TRANSMITTERS
8. INFLUENT AND EFFLUENT SAMPLERS

NOTE: THIS LIST IS PROVIDED AS A REFERENCE AND IS NOT ALL INCLUSIVE. COORDINATE WITH THE GENERAL CONTRACTOR AND THE EQUIPMENT SUPPLIERS FOR DETAILED WIRING REQUIREMENTS OF INSTRUMENTS, SENSORS, AND EQUIPMENT.

ELECTRICAL GENERAL NOTES

(GENERAL NOTES APPLICABLE TO ALL ELECTRICAL SHEETS)

1. CONTRACTOR SHALL EXAMINE NOT ONLY PLANS AND SPECIFICATIONS FOR ELECTRICAL AND INSTRUMENTATION, BUT PLANS AND SPECIFICATIONS FOR OTHER RELATED SECTIONS. VISIT THE SITE TO BECOME ACQUAINTED WITH ALL PROJECT CONDITIONS INCLUDING EXISTING CONDITIONS. EXECUTION OF CONTRACT IS EVIDENCE THAT THE CONTRACTOR HAS EXAMINED ALL DRAWINGS AND SPECIFICATIONS AND THAT ALL CONDITIONS OF INSTALLING THE WORK IN THIS SECTION ARE VERIFIED. LATE CLAIMS FOR LABOR AND MATERIALS REQUIRED DUE TO DIFFICULTIES ENCOUNTERED, WHICH COULD HAVE BEEN FORESEEN HAD EXAMINATIONS BEEN MADE WILL NOT BE RECOGNIZED.
2. THE DRAWINGS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO INCLUDE EVERY DETAIL OF REQUIRED CONSTRUCTION, EQUIPMENT, AND MATERIALS. PROVIDE ALL MATERIALS AND WORK NOT SPECIFICALLY MENTIONED, SHOWN, OR CAN BE REASONABLY INFERRED ON THE DRAWINGS BUT WHICH ARE NECESSARY TO FULLY COMPLETE THE WORK.
3. WHEN SUBSTITUTING OTHER EQUIPMENT, MATERIALS, AND PRODUCTS THAN SPECIFIED IN THE CONTRACT DOCUMENTS, INCLUDE IN PRICING ALL COSTS FOR OTHER DESIGN CHANGES TO THE PROJECT (ALL DIVISIONS) WHICH WILL RESULT FROM USE OF THE SUBSTITUTED ITEM(S).
4. REVIEW THE CONTRACT DOCUMENTS OF OTHER DIVISIONS, AND COORDINATE ELECTRICAL AND CONTROL WORK WITH THE WORK OF OTHER DISCIPLINES TO AVOID CONFLICTS AND INTERFERENCE.
5. UPON COMPLETION OF THE WORK REQUIRED UNDER THIS CONTRACT, PROVIDE TYPED UPDATED DIRECTORY WITHIN DOOR OF EACH AFFECTED PANELBOARD. LEAVE "SPARE" BREAKERS IN "OFF" POSITION.
6. ALL MOUNTING HEIGHTS INDICATED ON DRAWINGS ARE TO CENTERLINE, UON.
7. PROVIDE LIGHTING FIXTURES COMPATIBLE WITH CEILING CONSTRUCTION. COORDINATE WITH ARCHITECTURAL ROOM FINISH SCHEDULES.
8. IN AREAS HAVING FINISHED CEILINGS, LOCATE CEILING-MOUNTED ELECTRICAL DEVICES AND FIXTURES ACCORDING TO ARCHITECTURAL REFLECTED CEILING PLAN. DO NOT INSTALL CEILING-MOUNTED SMOKE DETECTORS WITHIN 4 FEET OF HVAC SUPPLY DIFFUSERS.
9. IN ELECTRICAL AND MECHANICAL EQUIPMENT SPACES, COORDINATE EXACT LOCATIONS OF LIGHTING FIXTURES WITH CONDUIT BANKS, DUCTWORK, PIPING, STRUCTURE, SUPPORTS, AND OTHER OBSTRUCTIONS. LOCATE FIXTURES SUCH THAT DIALS, GAUGES, METERS, ETC. ARE PROPERLY ILLUMINATED.
10. DO NOT USE ANY LIGHTING FIXTURE AS A RACEWAY FOR CONDUCTORS NOT SERVING THAT PARTICULAR FIXTURE.
11. CONNECT BATTERY-OPERATED EMERGENCY LIGHTING UNITS AND EXIT SIGNS HAVING BATTERY BACK-UP TO UNSWITCHED LEG OF LOCAL LIGHTING CIRCUIT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND NEC SUCH THAT FAILURE OF CIRCUIT TRANSFERS UNIT FROM NORMAL TO EMERGENCY MODE, CAUSING LAMPS TO RE-ENERGIZE.
12. DO NOT INSTALL OUTLET BOXES BACK-TO-BACK IN NON-RATED PARTITIONS. OFFSET AND SEAL, SIMILAR TO REQUIREMENTS FOR RATED PARTITIONS, TO MINIMIZE SOUND TRANSMISSION.
13. COORDINATE ROUTING OF ALL LARGE CONDUITS (2" DIA AND LARGER) AND PULL BOX LOCATIONS WITH GENERAL CONTRACTOR PRIOR TO INSTALLATION TO AVOID CONFLICTS AND TO GUARANTEE REQUIRED CLEARANCE AND ACCESSIBILITY OF ELECTRICAL AND OTHER SYSTEMS.
14. COORDINATE WITH OWNER OR OWNER'S SELECTED VENDOR PRIOR TO ROUGH-IN FOR EXACT LOCATIONS OF SPECIAL PURPOSE OUTLETS DEDICATED TO SPECIFIC EQUIPMENT. VERIFY REQUIRED NEMA CONFIGURATION OF ALL SUCH OUTLETS.
15. PROVIDE APPROPRIATE PULL WIRE IN EACH EMPTY SYSTEMS CONDUIT INCLUDED IN THIS PROJECT.
16. INCLUDE GREEN-INSULATED GROUNDING CONDUCTOR SIZED PER 2002 NEC TABLE 250-122 WITH ALL BRANCH CIRCUIT CONDUCTORS SERVING LIGHTING FIXTURES, RECEPTACLES, MECHANICAL OR OTHER DEVICES INSTALLED AT OR BELOW 8'-0".
17. MATCH A.I.C. RATINGS AND OTHER CHARACTERISTICS OF EXISTING DEVICES IN PANELBOARD WHEN ADDING BREAKERS TO EXISTING PANELBOARDS.
18. ALL WORK SHALL BE IN CONFORMANCE WITH THE NATIONAL ELECTRICAL CODE - LATEST EDITION ADOPTED BY INDIANA, THE INDIANA CODE AMENDMENT, LOCAL/MUNICIPAL CODE, AND THE AUTHORITIES HAVING JURISDICTION.
19. ALL CONNECTIONS TO EQUIPMENT SUBJECT TO MOVEMENT OR VIBRATION SHALL BE LIQUID TIGHT FLEXIBLE METAL CONDUIT, NOT LESS THAN 12" IN LENGTH, NOR GREATER THAN 36" IN LENGTH.
20. ALL CONDUIT PENETRATIONS SHALL BE SEALED WITH APPROPRIATE CONDUIT SEALING MATERIAL.
21. ALL CABLE SIZES SHALL UTILIZE COPPER CONDUCTORS.
22. FIELD VERIFY LOCATIONS OF BUILDING EXPANSION JOINTS WHEN ROUTING CONDUIT. ALL CONDUITS CROSSING EXPANSION JOINTS SHALL BE INSTALLED WITH THE EXPANSION FITTINGS. EXPANSION FITTINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE NEC AND MANUFACTURERS WRITTEN RECOMMENDATIONS.
23. FEEDERS FROM PANELBOARDS BACK TO MAIN SWITCHBOARD, BETWEEN AUTO TRANSFER SWITCHES AND THEIR SOURCES/LOADS, BETWEEN DRY TRANSFORMERS AND THEIR SOURCES/LOADS ARE NOT INDICATED. FEEDERS ARE PART OF THE WORK, AND SHALL BE SIZED AS INDICATED ON THE LINE DIAGRAM.
24. HOMERUNS SHALL NOT BE COMBINED IN A RACEWAY UNLESS SHOWN ON THE CONTRACT DRAWINGS. SINGLE PHASE BRANCH CIRCUIT HOMERUNS MAY BE COMBINED AT THE CONTRACTORS DISCRETION NOT GREATER THAN (3) PHASE CONDUCTORS, NEUTRAL CONDUCTORS, AND A GROUNDING CONDUCTOR.
25. EACH SINGLE PHASE BRANCH CONDUCTOR SHALL HAVE A DEDICATED NEUTRAL BACK TO THE PANEL.
26. ALL PENETRATIONS BELOW GRADE SHALL USE LINK SEALS.
27. WHERE LOW VOLTAGE (CONTROL) CABLING IS ALLOWED TO BE INSTALLED WITHOUT A RACEWAY, IT SHALL BE SUPPORTED NOT EXCEEDING INTERVALS OF 48", AND NOT MORE THAN 6" FROM THE CABINETS, BOXES, FITTINGS, OUTLETS, RACKS, FRAMES AND TERMINALS.
28. ALL MOUNTING HARDWARE INCLUDING NUTS, BOLTS, SCREWS, WASHERS, ETC. SHALL BE STAINLESS STEEL.
29. MOUNT JUNCTION BOXES AND DISCONNECT SWITCHES ON STAINLESS STEEL UNISTRUT.
30. ALL UNISTRUT, MOUNTING BRACKETS AND SUPPORTING STRUCTURES SHALL BE STAINLESS STEEL.
31. DO NOT MIX CONTROL AND POWER CONDUCTORS IN THE SAME CONDUIT. DO NOT MIX DISCRETE AND ANALOG CONTROL CONDUCTORS IN THE SAME CONDUIT.
32. ADJUSTABLE SPEED DRIVES (ASD) LINE AND LOAD WIRE SHALL BE RUN IN SEPARATE RACEWAYS.
33. CONTRACTOR SHALL COORDINATE WITH HEAT TRACE MANUFACTURER DURING BIDDING AND CONSTRUCTION AND SHALL PROVIDE ALL CONDUIT, WIRING, AND CIRCUITS AS REQUIRED. HEAT TRACE SHALL BE PROVIDED/INSTALLED COMPLETE. ALL HEAT TRACE IS REQUIRED TO BE GFI PROTECTED.
34. CONTRACTOR SHALL NOT COMBINE POWER FEEDS FOR THREE PHASE LOADS.
35. THE BELOW LOCATIONS ARE WHERE GFCI OUTLETS ARE REQUIRED:
    - 35.1. KITCHENS: ALL KITCHEN OUTLETS.
    - 35.2. BATHROOMS: GFCI OUTLETS ARE REQUIRED IN BATHROOMS NEAR THE SINK.
    - 35.3. GARAGES: GFCI OUTLETS ARE REQUIRED IN GARAGES THAT HAVE SINKS.
    - 35.4. BASEMENTS: UNFINISHED BASEMENTS REQUIRE AT LEAST ONE GFCI OUTLET.
    - 35.5. OUTDOOR SPACES: GFCI OUTLETS ARE REQUIRED IN OUTDOOR AREAS THAT ARE ACCESSIBLE OR AT GRADE LEVEL.
    - 35.6. LAUNDRY ROOMS: ALL LAUNDRY ROOM OUTLETS.
    - 35.7. CRAWL SPACES: GFCI OUTLETS ARE REQUIRED IN CRAWL SPACES WHERE MECHANICAL EQUIPMENT IS LOCATED.
    - 35.8. UTILITY ROOMS: ALL UTILITY ROOM OUTLETS.
36. LIMIT CAT 6E INSTALLATION TO 230' MAXIMUM DISTANCE. CONTRACTOR SHALL FURNISH AND INSTALL FIBER OPTIC CABLE AND MEDIA CONVERTERS IF CONDUIT ROUTING EXCEEDS CAT 6E LIMITS.

LEGEND

SYMBOL	DESCRIPTION	MTG HGT AFF TO CL, UON
▭ □ ○	OPEN LIGHTING FIXTURE SYMBOLOGY DENOTING FIXTURES CONNECTED TO NORMAL POWER: FIXTURE TYPE DETERMINES MOUNTING.	-----
⧄ ⊘	SINGLE DIAGONAL LIGHTING FIXTURE SYMBOLOGY DENOTING FIXTURES CONNECTED TO CRITICAL OR EQUIPMENT BRANCH (OR EMERGENCY POWER), UON: FIXTURE TYPE DETERMINES MOUNTING.	-----
⊠ ⊗	DOUBLE DIAGONAL LIGHTING FIXTURE SYMBOLOGY DENOTING FIXTURES CONNECTED TO LIFE SAFETY BRANCH (OR EMERGENCY POWER), UON: FIXTURE TYPE DETERMINES MOUNTING.	-----
	BATTERY POWERED EMERGENCY LIGHTING UNIT	7'-6"
⊗	EXIT SIGN: ARROWS DENOTE DIRECTIONAL INDICATING CHEVRON RQMTS, SHADING DENOTES FACE(S) ORIENTATION.	-----
◑	WALLWASH OR OTHER DIRECTIONALLY ADJUSTABLE/AIMABLE FIXTURE: OPEN SIDE DENOTES ORIENTATION. TYPE DETERMINES MOUNTING.	-----
▽ ▽ ▽	TRACK LIGHTING FIXTURE: TYPE DETERMINES MOUNTING.	-----
○□ ○○	POLE-MOUNTED SITE LIGHTING FIXTURE: TYPE DETERMINES MTG.	-----
○◁	FLOOD LIGHTING FIXTURE: TYPE DETERMINES MOUNTING.	-----
PC	PHOTO-CELL	-----
⬡	ALL FIXTURES IN THIS SPACE SHALL BE SAME TYPE INDICATED, U.O.N.	
S	SINGLE-POLE TOGGLE SWITCH	3'-10"
$	SINGLE-POLE TOGGLE SWITCH: SLASH DENOTES ESSENTIAL POWER SYSTEM CONNECTION - TYPICAL FOR ALL SWITCHES.	3'-10"
OS W	DUAL TECHNOLOGY, WALL MNTD OCCUPANCY SENSOR WITH MANUAL OVERRIDE SWITCH	3'-10"
OS C	DUAL TECHNOLOGY, CEILING MNTD OCCUPANCY SENSOR WITH REMOTE MANUAL OVERRIDE SWITCH	
S OR	SINGLE-POLE REMOTE OVERRIDE SWITCH FOR CEILING MNTD OCCUPANCY SENSOR	3'-10"
SD	DIMMER SWITCH	3'-10"
SD3	THREE-WAY DIMMER SWITCH	3'-10"
SP	SINGLE-POLE TOGGLE SWITCH WITH PILOT LIGHT	3'-10"
SM	SINGLE-POLE MOTOR-RATED TOGGLE SWITCH DISCONNECT	3'-10"
ST	SINGLE-POLE OR DOUBLE-POLE MANUAL MOTOR STARTER WITH MELTING ALLOY ELEMENTS FOR THERMAL OVERLOAD PROTECTION	3'-10"
S IR	OCCUPANCY SENSOR SWITCH	3'-10"
SIT	INTERVAL TIMER RESET AND CONTROL SWITCH	3'-10"
S J	JOG SWITCH	3'-10"
⊡	MUSHROOM HEAD TYPE PUSHBUTTON STATION	5'-0"
P	AUTO DOOR CONTROL PUSHPLATE	-----
SV	VARIABLE INTENSITY CONTROLLER INCLUDED WITH OWNER-FURNISHED-CONTRACTOR-INSTALLED SURGICAL LIGHTING FIXTURE	5'-0"
S LV	LOW VOLTAGE CONTROL SWITCH	3'-10"
WS	FACTORY SUPPLIED WALL CONTROLLER FOR CEILING MOUNTED LIGHT-INSTALLED BY ELECTRICAL CONTRACTOR	3'-10"
⊖=	120V DUPLEX RECEPTACLE, STANDARD MOUNTING HEIGHT	1'-6"
	120V DUPLEX RECEPTACLE, SPECIAL MOUNTING HEIGHT INSTALL AT SAME HEIGHT AS SWITCHES IF NO HEIGHT IS INDICATED	ABOVE COUNTER
⊕=	120V QUADRUPLEX RECEPTACLE, STANDARD MOUNTING HEIGHT	1'-6"
	120V QUADRUPLEX RECEPTACLE, SPECIAL MOUNTING HEIGHT INSTALL AT SAME HEIGHT AS SWITCHES IF NO HEIGHT IS INDICATED	ABOVE COUNTER
⊖	120V SINGLE RECEPTACLE, AMP RATING (IF OTHER THAN 20A) SHOWN: STANDARD MOUNTING HEIGHT, OR OTHER HEIGHT AS NOTED	1'-6", UON
GFCI	120V GFCI DUPLEX RECEPTACLE, STANDARD MOUNTING HEIGHT	1'-6"
	120V GFCI QUADRUPLEX RECEPTACLE, SPECIAL MOUNTING HEIGHT INSTALL AT SAME HEIGHT AS SWITCHES IF NO HEIGHT IS INDICATED	ABOVE COUNTER
◐	120V GFCI DUPLEX RECEPTACLE, SPECIAL MOUNTING HEIGHT INSTALL AT SAME HEIGHT AS SWITCHES IF NO HEIGHT IS INDICATED	ABOVE COUNTER
	SINGLE RECEPTACLE (OTHER THAN 120V), VOLTAGE, AMP RATING, NEMA CONFIGURATION, AND MOUNTING HEIGHT AS NOTED	-----
	RECPTACLE OR J-BOX CONNECTION FOR X-RAY VIEWER: VERIFY CONNECTION RQMTS WITH UNIT FURNISHED PRIOR TO ROUGH-IN	-----
⦿	120V DUPLEX RECEPTACLE IN FLUSH FLOOR-MOUNTED BOX	-----
TP	TELE-POWER POLE	-----
H	HALON DUMP STATION	-----
F	FIRE ALARM MANUAL PULL STATION	3'-10"
FK	FIRE ALARM MANUAL PULL STATION, KEY-OPERATED	3'-10"
D	FIRE ALARM CEILING-MOUNTED SMOKE DETECTOR	-----
H	FIRE ALARM CEILING-MOUNTED HEAT DETECTOR	-----
D S	FIRE ALARM SUPPLY AIR DUCT-MOUNTED SMOKE DETECTOR	-----
D R	FIRE ALARM RETURN AIR DUCT-MOUNTED SMOKE DETECTOR	-----
DR◁	FIRE ALARM PROJECTED BEAM SMOKE DETECTOR - RECEIVER	AS NOTED
DT◁	FIRE ALARM PROJECTED BEAM SMOKE DETECTOR - TRANSMITTER	AS NOTED
Y	FIRE ALARM CONNECTION TO SPRINKLER SYSTEM VALVE STATUS SWITCH (TAMPER SWITCH)	-----
FS	FIRE ALARM CONNECTION TO SPRINKLER SYSTEM WATER FLOW SWITCH	-----
F○	FIRE ALARM AUDIO/VISUAL NOTIFICATION DEVICE-CHIME & STROBE	6'-8"
F◁	FIRE ALARM AUDIO/VISIUAL NOTIFICATION DEVICE-HORN & STROBE	6'-8"
F	FIRE ALARM VISUAL ONLY NOTIFICATION DEVICE - STROBE LIGHT	6'-8"
FS FS	FIRE ALARM SPEAKER: CEILING-MOUNTED, WALL-MOUNTED	6'-8"
FH◁	FIRE ALARM HORN, WALL-MOUNTED	AS NOTED
RI RI	DUCT SMOKE DETECTOR ALARM REMOTE INDICATOR LIGHT: CEILING-MOUNTED, WALL-MOUNTED	6'-8"
SAI SAI	DUCT SMOKE DETECTOR ALARM REMOTE INDICATOR LIGHT AND TEST SWITCH: CEILING-MOUNTED, WALL-MOUNTED	6'-8"
Z	FIRE ALARM ZONE ADDRESSABLE MODULE	-----
I	FIRE ALARM INDIVIDUAL ADDRESSABLE MODULE	-----
◀▷	FIRE ALARM ELECTRO-MAGNETIC DOOR HOLDER	6'-4"
FR	FIRE RELAY	-----
ID	DESK MOUNTED INTERCOM	-----
IW	WALL MOUNTED INTERCOM	-----
$X	EXPLOSION PROOF SWITCH	3'-10"
$3	3 WAY SWITCH	3'-10"
$4	4 WAY SWITCH	3'-10"
$WP	NEMA 4X SWITCH	3'-10"

PUMP AND METER LEGEND

SYMBOL	DESCRIPTION
M	MAGNETIC FLOW METER
	SONIC FLOW METER
	CENTRIFUGAL PUMP
	LOBE PUMP
	PERISTALTIC PUMP
	SUBMERSIBLE PUMP
	GRINDER PUMP

LEGEND

ABBREVIATIONS

ABV	ABOVE	IG	ISOLATED GROUND
AFF	ABOVE FINISHED FLOOR	MON	MONITOR
ACLG	ABOVE FINISHED CEILING	MTG	MOUNTING
BFC	BELOW FINISHED CEILING	MV	MULTI-VIEWER
C	CRITICAL BRANCH OR EMERG PWR-RED DEVICE & PLATE, UON.	MW	MICROWAVE OVEN
CL	CENTER-LINE	NEC	NATIONAL ELECTRICAL CODE
CLG	CEILING-MOUNTED	OCPD	OVERCURRENT PROTECTIVE DEVICE
COF	COFFEE MAKER	OFCI	OWNER-FURNISHED-CONTRACTOR-INSTALLED
COP	COPIER	OFE	OWNER-FURNISHED EQUIPMENT
CTR	COUNTER	PRT	PRINTER
ECB	ENCLOSED CIRCUIT BREAKER	PTS	PNEUMATIC TUBE STATION
EMER	EMERGENCY	Q	EQUIP BRANCH OR EMERG PWR-RED DEVICE & PLATE, UON.
EWC	ELECTRIC WATER COOLER	REF	REFRIGERATOR
EWH	ELECTRIC WATER HEATER	RQMTS	REQUIREMENTS
FAX	FACSIMILE MACHINE	T	TAMPERPROOF DEVICE
FBO	FURNISHED BY OTHERS	TSP	TWISTED SHIELDED PAIR
GFCI	GROUND FAULT CIRCUIT INTERRUPT-ING - PERSONNEL PROTECTION	UON	UNLESS OTHERWISE NOTED
GFI	GROUND FAULT INTERRUPTING - EQUIPMENT PROTECTION	UCR	UNDER-COUNTER REFRIGERATOR
HGT	HEIGHT	WP	WEATHERPROOF
FPMR	FUSED PER MANUFACTURE'S RECOMMENDATIONS		

SYMBOL	DESCRIPTION	MTG HGT AFF TO CL, UON
	EXPOSED RACEWAY	-----
	RACEWAY CONCEALED IN OR ABOVE CEILINGS AND WITHIN WALLS	-----
	BRANCH CIRCUIT RACEWAY CONCEALED IN OR BELOW FLOOR SLAB OR BELOW GRADE	-----
	FEEDER RACEWAY CONCEALED BELOW FLOOR SLAB OR BELOW GRADE	-----
	LIGHTNING PROTECTION CABLING	-----
	HOMERUN RACEWAY: NUMBER OF ARROWHEADS DENOTES NUMBER OF CIRCUITS.	-----
—○	RACEWAY TURNING UP AS VIEWED FROM THE LOAD	-----
—●	RACEWAY TURNING DOWN AS VIEWED FROM THE LOAD	-----
—●—	RACEWAY VERTICAL RISER WITH HORIZONTAL CONTINUATION AT TWO LEVELS SHOWN	-----
	CAPPED RACEWAY	-----
	GENERAL LIGHTING OR OUTLET CIRCUIT - MAY BE DAISY CHAINED	
J	JUNCTION BOX	AS NOTED
◪	ENCLOSED BREAKER	
	FUSIBLE SAFETY SWITCH (AMP RATING, POLES, FUSE SIZE, AND NEMA ENCLOSURE TYPE IF OTHER THAN 1 NOTED)	-----
	NON-FUSIBLE SAFETY SWITCH (AMP RATING, POLES, AND NEMA ENCLOSURE TYPE IF OTHER THAN 1 NOTED)	-----
⊠	COMBINATION MAGNETIC ACROSS-THE-LINE STARTER WITH MOTOR CIRCUIT PROTECTOR (NEMA STARTER SIZE NOTED)	-----
▩	CONTROL PANEL FURNISHED INTEGRAL TO EQUIPMENT (SINGLE-POINT ELECTRICAL CONNECTION REQUIRED)	-----
	MOTOR	-----
	FLEXIBLE CONDUIT CONNECTION	-----
▬ ▬	SURFACE- OR FLUSH-MOUNTED LIGHTING/RECEPTACLE PANELBOARD	-----
▨	POWER DISTRIBUTION PANELBOARD	-----
T T	DRY TYPE TRANSFORMER	-----
XXX	MISCELLANEOUS SYSTEMS PANEL OR CABINET: REFER TO ABBREVIATIONS.	-----

NOTE !! ALL ABBREVIATIONS, NOTES, AND SYMBOLS SHOWN ON THIS DRAWING DO NOT NECESSARILY APPEAR IN THIS SET OF CONTRACT DOCUMENTS. REFER ONLY TO THOSE THAT APPLY.

MOTOR CONTROLLER LEGEND

SYMBOL	DESCRIPTION
⊠ MS	ACROSS THE LINE MOTOR STARTER
□ SS	SOFT STARTER
□ VFD	VARIABLE FREQUENCY DRIVE
MS ⊠	ACROSS THE LINE MOTOR STARTER WITH INTEGRAL DISCONNECT
SS □	SOFT STARTER WITH INTEGRAL DISCONNECT
VFD □	VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECT

LIGHTING LEGEND

SYMBOL	DESCRIPTION
○	FIXTURE WITH STANDARD BALLAST.
●	FIXTURE WITH STANDARD BALLAST AND EMERGENCY BALLAST.

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SOUTH BEND, IN.

MICHAEL A. MIRANDE II
No. 19800084
STATE OF INDIANA

Signature: Michael A. Mirande II
Date: 04/24/2025

TOWN OF ODON
DAVIESS COUNTY, INDIANA

WATER UTILITY IMPROVEMENTS PROJECT

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04/22/2025	W21115	AS SHOWN

ELECTRICAL LEGENDS AND SCHEDULES

Drawing No:
E0-0

Sheet: 41 OF 52

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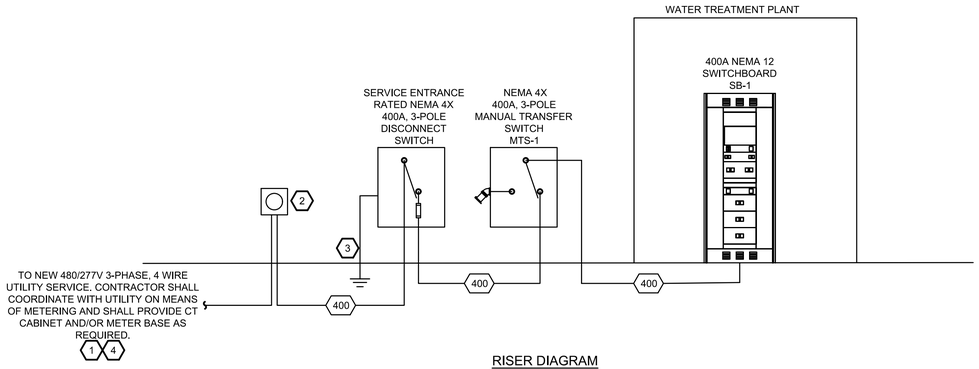

RISER DIAGRAM

SCALE: NTS

PLAN NOTES

1. THE CONTRACTOR SHALL COORDINATE WITH DAVIESS-MARTIN REMC TO INSTALL A 480/277 VAC, 3-PHASE, 400-AMP SERVICE. THE CONTRACTOR IS RESPONSIBLE FOR ALL MATERIAL AND LABOR NOT PROVIDED BY UTILITY. THE CONTRACTOR SHALL COORDINATE WITH UTILITY DURING BIDDING AND CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR BUT NOT LIMITED TO; INSTALLATION AND PROVISION OF PRIMARY CONDUIT, SECONDARY CONDUIT AND WIRE, CONCRETE TRANSFORMER PAD AND CT CABINET AS REQUIRED.
2. THE ELECTRICAL CONTRACTOR SHALL PROVIDE METER BASE AND MOUNTING AS REQUIRED BY LOCAL UTILITY. COORDINATE DURING BIDDING AND CONSTRUCTION.
3. PROVIDE TRIAD GROUNDING SYSTEM.
4. COORDINATE WITH UTILITY DURING BIDDING AND CONSTRUCTION ON TRANSFORMER TYPE (POLE MOUNTED TRANSFORMERS OR PAD MOUNT TRANSFORMER) FOR NEW UTILITY FEED.

GENERAL NOTES:

SEE E0.0 FOR PROJECT CONDUIT REQUIREMENTS.

THE CONTRACTOR SHALL EXAMINE NOT ONLY PLANS AND SPECIFICATIONS FOR ELECTRICAL AND INSTRUMENTATION, BUT PLANS AND SPECIFICATIONS FOR OTHER RELATED SECTIONS. VISIT THE SITE TO BECOME ACQUAINTED WITH ALL PROJECT CONDITIONS INCLUDING EXISTING CONDITIONS. EXECUTION OF CONTRACT IS EVIDENCE THAT THE CONTRACTOR HAS EXAMINED ALL DRAWINGS AND SPECIFICATIONS AND THAT ALL CONDITIONS OF INSTALLING THE WORK IN THIS SECTION ARE VERIFIED. CLAIMS FOR LABOR, MATERIAL, OR TIME EXTENSIONS REQUIRED DUE TO DIFFICULTIES ENCOUNTERED, WHICH COULD HAVE BEEN FORESEEN HAD EXAMINATIONS BEEN MADE WILL NOT BE RECOGNIZED.

FEEDER SCHEDULE ⬡

	COPPER WIRE			SERVICE
TYPE NO.	QUANTITIES & WIRE SIZE	CONDUIT	W/O NEUTRAL	GROUND
15	4#12 & #12 GROUND	3/4"	3/4"	#8
20	4#12 & #12 GROUND	3/4"	3/4"	#8
30	4#10 & #10 GROUND	3/4"	3/4"	#8
50	4#8 & #10 GROUND	1"	1"	#8
65	4#6 & #8 GROUND	1-1/4"	1-1/4"	#8
85	4#4 & #8 GROUND	1-1/4"	1-1/4"	#8
100	4#3 & #8 GROUND	1-1/2"	1-1/4"	#8
115	4#2 & #6 GROUND	1-1/2"	1-1/2"	#8
130	4#1 & #6 GROUND	2"	1-1/2"	#6
150	4#1/0 & #6 GROUND	2"	2"	#6
175	4#2/0 & #6 GROUND	2"	2"	#4
200	4#3/0 & #6 GROUND	2-1/2"	2"	#4
225	4#4/0 & #4 GROUND	2-1/2"	2-1/2"	#2
250	4#250MCM & #4 GROUND	3"	2-1/2"	#2
300	4#350MCM & #3 GROUND	3"	3"	#2
350	4#500MCM & #3 GROUND	4"	4"	#1/0
400	4#600MCM & #2 GROUND	4"	4"	#1/0
450	(2 SETS)4#4/0 & #2 GROUND	2-1/2"	2-1/2"	#1/0
500	(2 SETS)4#250MCM & #2 GROUND	4"	3"	#1/0
600	(2 SETS)4#350MCM & #1 GROUND	4"	3"	#2/0
700	(2 SETS)4#500MCM & #1/0 GND	4"	4"	#2/0
800	(3 SETS)4#300MCM & #1/0 GND	3"	3"	#2/0
1000	(3 SETS) 4#500MCM & #2/0 GND	4"	4"	#3/0
1200	(4 SETS)4#350MCM & #3/0 GND	4"	4"	#3/0
1600	(5 SETS)4#600MCM & #3/0 GND	4"	4"	#3/0
2000	(6 SETS)4#600MCM & #3/0 GND	4"	4"	#3/0

ALL FEEDERS ARE ASSUMED TO BE 4 CURRENT CARRYING CONDUCTORS (3 PHASE CONDUCTORS AND 1 NEUTRAL) UNLESS NOTED OTHERWISE.

FEEDER KEY IS AS FOLLOWS (PARENTHESIS DENOTES SUBSCRIPT):

= 3 PHASES AND NEUTRAL WITH GROUND
###(N) = 3 PHASES, NO NEUTRAL WITH GROUND
###(2) = 2 PHASES AND NEUTRAL WITH GROUND
###(2N) = 2 PHASES, NO NEUTRAL WITH GROUND
ALL CIRCUITS SHALL BE RUN IN PVC BELOW GROUND/PVC COATED RIGID ABOVE GROUND

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MICHAEL A. MIRANDA
REGISTERED
No. 19800084
STATE OF INDIANA
PROFESSIONAL ENGINEER

Signature 04/24/2025 Date

TOWN OF ODON
DAVIESS COUNTY, INDIANA

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RISER DIAGRAM

Drawing No:
E1-0
Sheet: 42 OF 52

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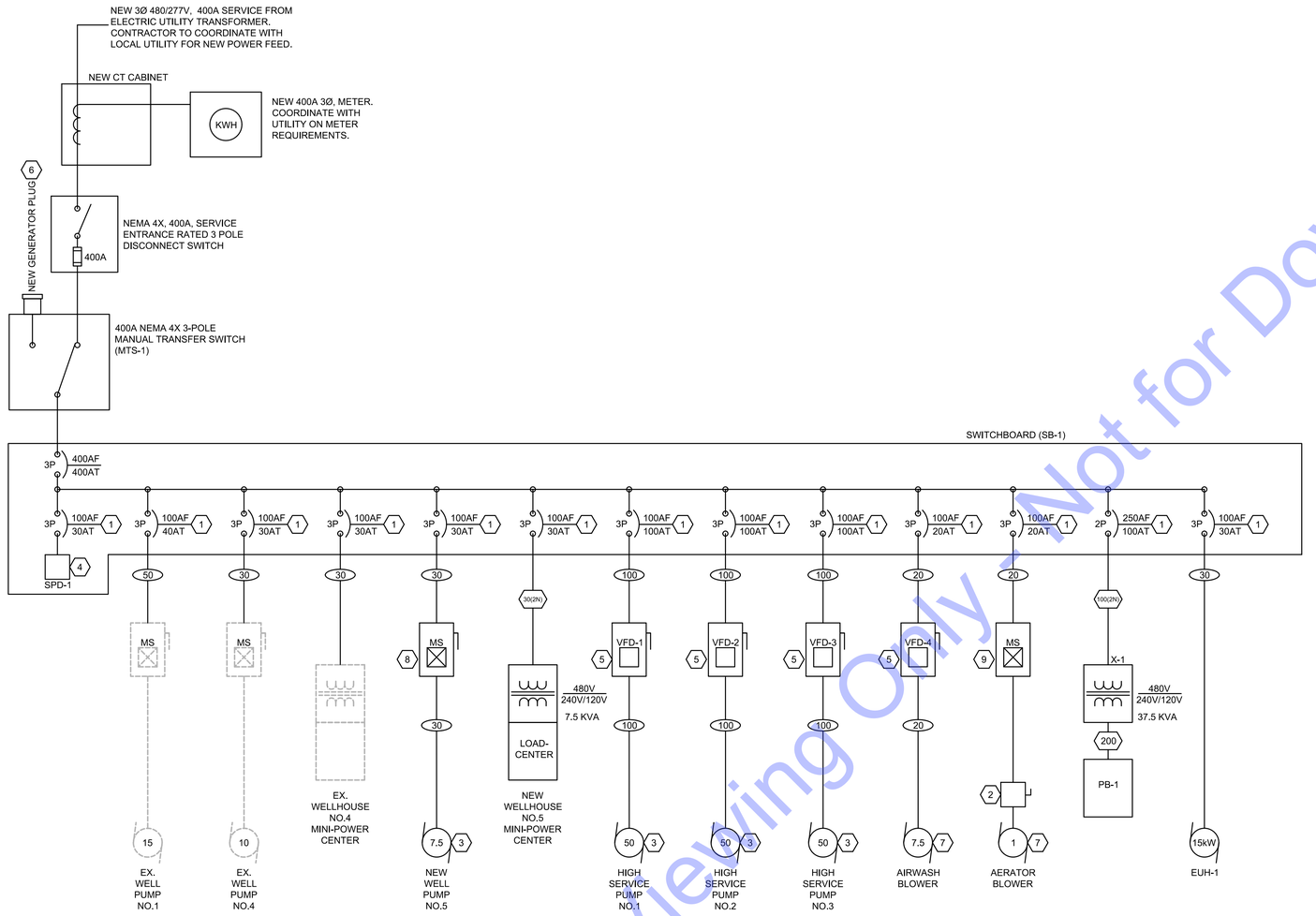

ONE LINE DIAGRAM

SCALE: NTS

Load Wiring Schedule		
	Copper Wire	
Type #:	Quantity and Wire Size	Conduit
20	3 #12's & #12 Ground	3/4"
30	3 #10's & #10 Ground	3/4"
50	3 #8's & #10 Ground	3/4"
60	3 #6's & #8 Ground	3/4"
80	3 #4's & #8 Ground	1"
100	3 #2's & #6 Ground	1.5"
125	3#1's & #6 Ground	1.5"
150	3 - 2/0 & #6 Ground	2"
200	3 - 4/0 & #4 Ground	2.5"
250	3 - 300's & #4 Ground	3"

Panel Name: PB-1					Panel Amperage: 250A
Voltage & Phase: 120/240 - 1 Phase					Panel A.I.C. Rating: 10kAIC
Mounting: Surface					Other: MCB/200A
Description	Brk	Phase		Brk	Description
EMERGENCY LIGHTING	20	1 A	2	20	EXTERIOR LIGHTING
INTERIOR LIGHTING	20	3 B	4	20	INTERIOR LIGHTING
INTERIOR LIGHTING	20	5 A	6	20	RECEPTACLES (INTERIOR)
RECEPTACLES (INTERIOR)	20	7 B	8	20	RECEPTACLES (EXTERIOR)
RECEPTACLES (INTERIOR)	20	9 A	10	20	RECEPTACLES (INTERIOR)
GAS CYLINDER SCALE	20	11 B	12	20	DIGITAL SCALE
CHEMICAL PUMP	20	13 A	14	20	CHEMICAL PUMP
WATER HEATER	30	15 B	16	20	HEAT TRACE
WATER HEATER	-	17 A	18	20	HEAT TRACE
INSTRUMENTATION	20	19 B	20	20	INSTRUMENTATION
EX. HEATER IN BACKWASH TANK	20	21 A	22	20	EX. FAN IN CHLORINE ROOM
EX. SUMP PUMP IN BACKWASH TANK	20	23 B	24	20	EX. FURNACE
EX. HEATER IN CHLORINE ROOM	30	25 A	26	20	EX. HUMIDITY FAN
EX. HEATER IN CHLORINE ROOM	-	27 B	28	20	EF-1/DA-1
DEHUMIDIFIER (HUM-1)	20	29 A	30	20	EX. FAN IN LAB
SPARE	20	31 B	32	2	SPARE
SPARE	20	33 A	34	20	SPARE
SPARE	20	35 B	36	20	SPARE
SPARE	20	37 A	38	20	SPARE
SPARE	20	39 B	40	20	SPARE
SPARE	20	41 A	42	20	SPARE

PLAN NOTES

1. THE CONTRACTOR SHALL COORDINATE WITH THE CONTRACTOR AND EQUIPMENT SUPPLIERS WHEN SELECTING THE CIRCUIT BREAKER SIZES TO ENSURE PROPER SIZING. BREAKERS SHALL HAVE THE CAPABILITY OF LOCKOUT/TAGOUT.
2. THE CONTRACTOR SHALL FURNISH AND INSTALL NEMA 4X STAINLESS STEEL DISCONNECT SIZED AS REQUIRED FOR THE LOAD PER NEC.
3. WIRE PUMP SAFETIES AS REQUIRED. REFERENCE DS SPECIFICATIONS AND COORDINATE WITH MANUFACTURERS DURING BIDDING AND CONSTRUCTION.
4. SURGE PROTECTION DEVICE, SEE SPECIFICATIONS FOR DETAILS. PROVIDE GROUNDING AND INSTALLATION PER MANUFACTURERS RECOMMENDATIONS. ELECTRICAL CONTRACTOR TO SUPPLY AND INSTALL SURGE PROTECTION DEVICE AT SB-1.
5. NEMA 12 WALL MOUNTED VFD'S WITH INTEGRAL DISCONNECT SWITCHES, FURNISHED BY THE PUMP MANUFACTURERS, INSTALLED BY THE CONTRACTOR.
6. EMERGENCY RECEPTACLE WITH ANGLE ADAPTER. COORDINATE WITH OWNER FOR EXACT PART NUMBER BEFORE ORDERING.
7. WIRE BLOWER SAFETIES AS REQUIRED. REFERENCE DS SPECIFICATIONS AND COORDINATE WITH MANUFACTURERS DURING BIDDING AND CONSTRUCTION.
8. NEMA 4X WALL MOUNTED MOTOR STARTER WITH INTEGRAL DISCONNECT SWITCHES.
9. WALL MOUNTED MOTOR STARTER IN NEMA 12 ENCLOSURE FOR AERATOR BLOWER

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ONE LINE DIAGRAM

Drawing No:
E1-1
Sheet: 43 OF 52

File: Z:\SHARED\IN CLIENTS M-Z\ODON\W21115 WATER UTILITY IMPROVEMENTS\08 CAD\E MECH-ELECT\ODON WATER ELECTRICAL - DIV A.DWG
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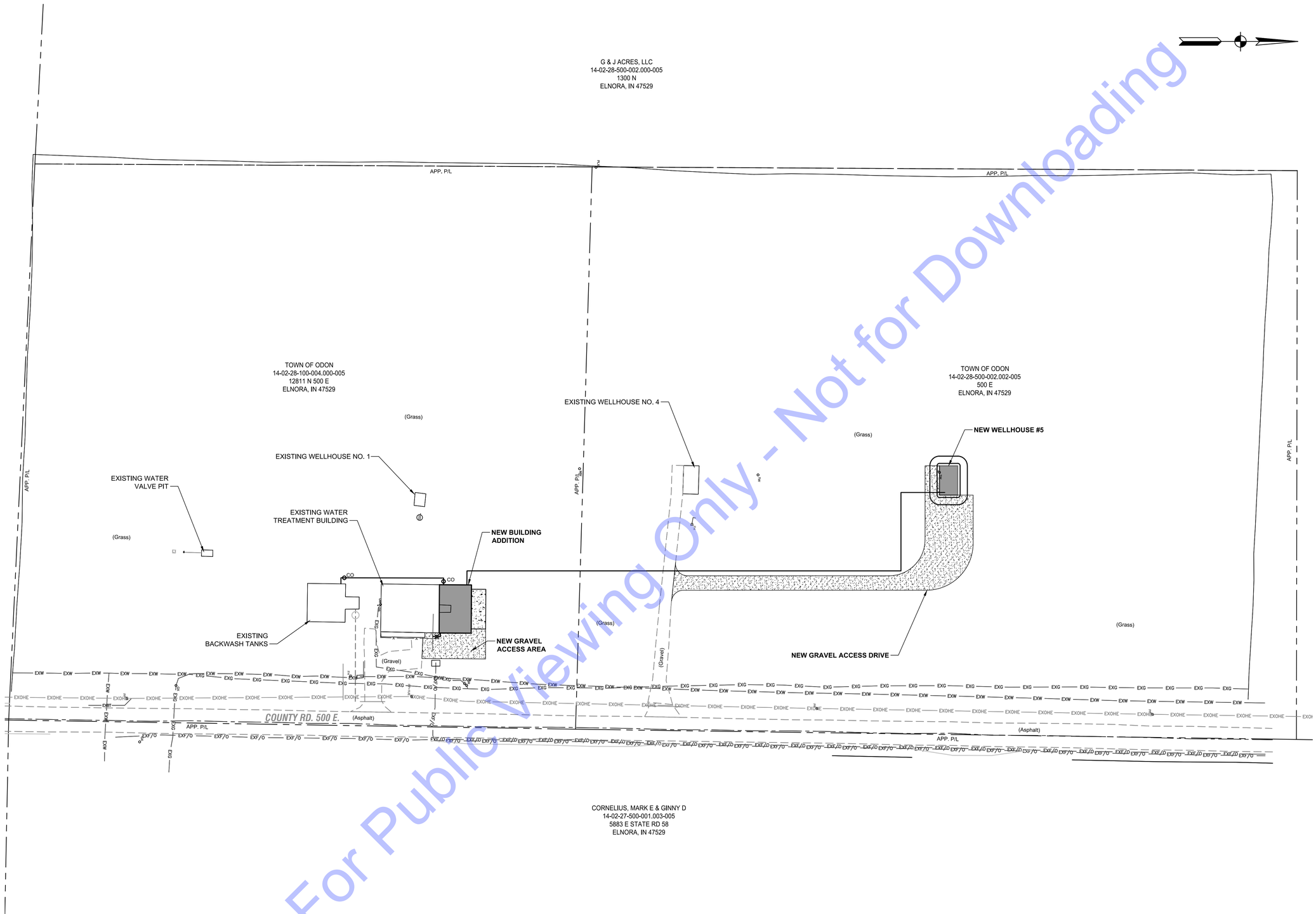

EXISTING WTP SITE IMPROVMENTS PLAN

SCALE: 1"=40'-0"

0 40' 80'

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MICHAEL A. MIRANDE
REGISTERED
No. 19800084
STATE OF INDIANA
PROFESSIONAL ENGINEER

Signature 04/24/2025 Date

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DAVIESS COUNTY, INDIANA

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DIVISION "A" - WTP
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EXISTING WTP SITE ELECTRICAL IMPROVMENTS PLAN

Drawing No:
E2-0
Sheet: 44 OF 52

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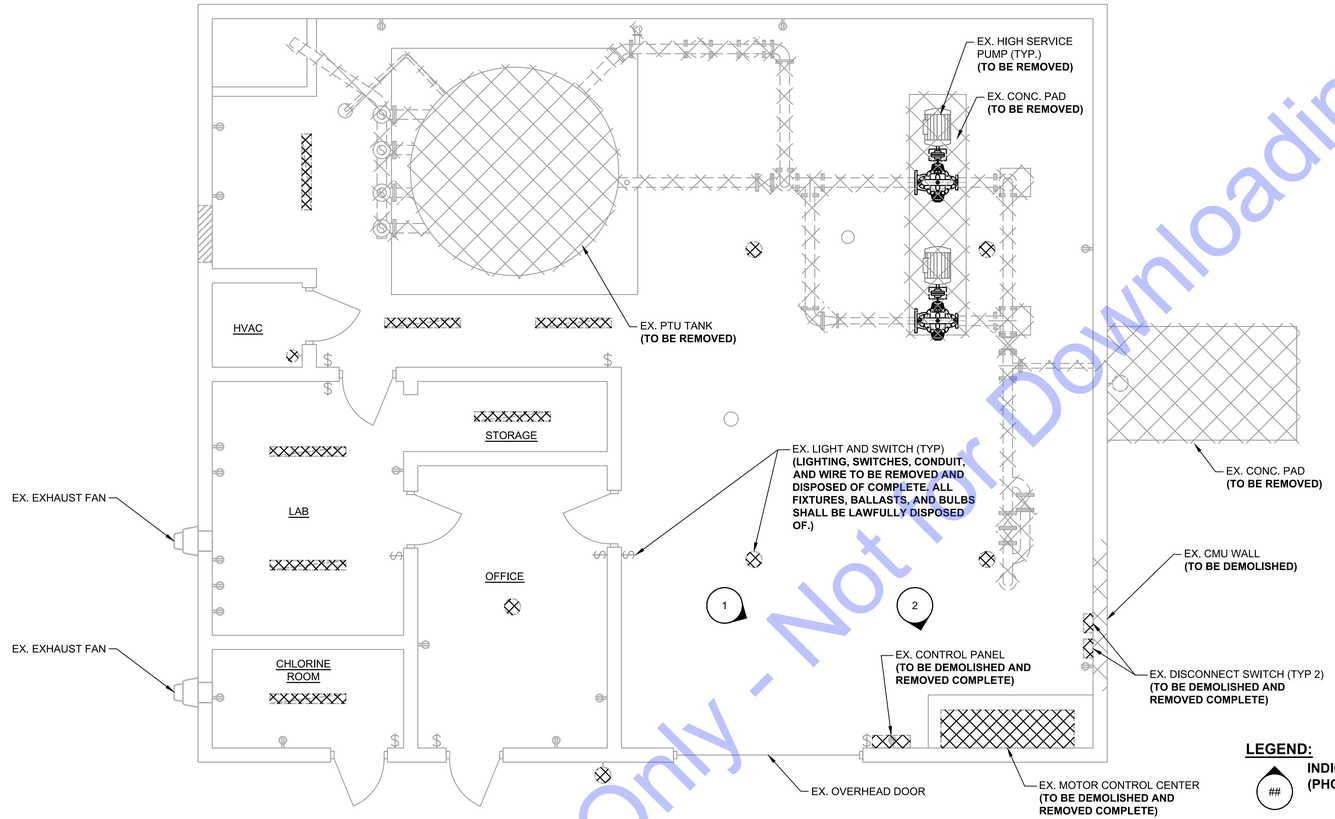

EXISTING TREATMENT BUILDING DEMOLITION PLAN

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

0 2' 4' 8'

LEGEND:

(##) INDICATES PHOTO NUMBER AND DIRECTION OF PHOTO (PHOTOS TAKEN BY COMMONWEALTH ENGINEERS, INC.)

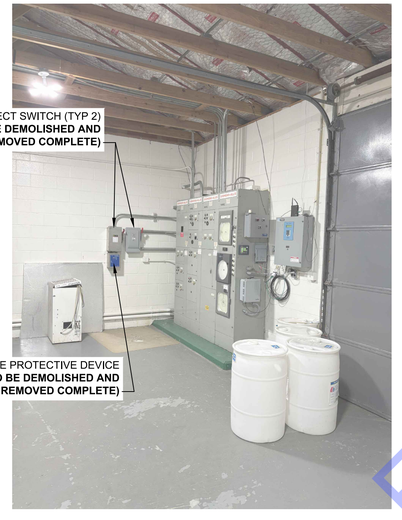

PHOTO No.1

PHOTO No.2

ELECTRICAL DEMOLITION NOTES:

1. CONTRACTOR SHALL TAKE INTO CONSIDERATION EXISTING BURIED EQUIPMENT WHEN PLANNING THE INSTALLATION OF THE NEW EQUIPMENT OUTLINED IN THIS PROJECT. CONTRACTOR SHALL VISIT THE SITE TO BECOME ACQUAINTED WITH ALL THE PROJECT CONDITIONS INCLUDING THE EXISTING CONDITIONS. EXECUTION OF THE CONTRACT IS EVIDENCE THAT THE CONTRACTOR HAS EXAMINED ALL DRAWINGS AND SPECIFICATIONS AND THAT ALL CONDITIONS OF INSTALLING THE WORK IN THIS SECTION ARE VERIFIED. CLAIMS FOR LABOR, MATERIAL, OR TIME EXTENSIONS REQUIRED DUE TO DIFFICULTIES ENCOUNTERED, WHICH COULD HAVE BEEN FORESEEN HAD EXAMINATIONS BEEN MADE, WILL NOT BE RECOGNIZED. REFER TO PROCESS AND STRUCTURAL DRAWINGS FOR ADDITIONAL DETAILS REGARDING BURIED EQUIPMENT.
2. ITEMS TO BE DEMOLISHED, REMOVED, AND LAWFULLY DISPOSED OF COMPLETE TO ACCOMMODATE IMPROVEMENTS (THIS IS NOT INTENDED TO BE ALL INCLUSIVE, MERELY A REFERENCE). CONTRACTOR SHALL PERFORM ANY AND ALL DEMOLITION, REMOVAL, AND DISPOSAL ACTIVITIES AS REQUIRED FOR COMPLETE AND OPERATIONAL FACILITIES/INSTALLATIONS. REQUIRED DEMOLITION FOR SMALL DIAMETER PIPING, CONDUIT, ETC. NOT SHOWN ON THIS SHEET FOR CLARITY.
3. DEMO ALL EXISTING ASSOCIATED ELECTRICAL AND CONTROLS. REMOVE ALL ELECTRICAL AND CONTROL WIRING BACK TO ITS SOURCE AND FURNISH TO OWNER FOR SALVAGE. REMOVE CONDUIT TO 12" BELOW GRADE AND CAP. ALL ASSOCIATED ELECTRICAL AND CONTROL PANELS TO BE TURNED OVER TO OWNER.
4. PLANT IS TO REMAIN FULLY FUNCTIONAL DURING CONSTRUCTION.
5. OWNER SHALL HAVE FIRST RIGHT OF REFUSAL FOR ALL DEMOLISHED EQUIPMENT BEFORE CONTRACTOR DISPOSES OF EQUIPMENT.
6. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE CONTRACTOR DURING BIDDING AND CONSTRUCTION. THE CONTRACTOR SHALL MAINTAIN OPERATION OF THE WWTP DURING THE ENTIRE CONSTRUCTION OF THE PROJECT. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH MAINTAINING OPERATION OF THE PLANT INCLUDING PRIMARY POWER AND BACKUP POWER.

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EXISTING TREATMENT BUILDING ELECTRICAL DEMOLITION PLAN

Drawing No: **E3-0**

Sheet: 45 OF 52

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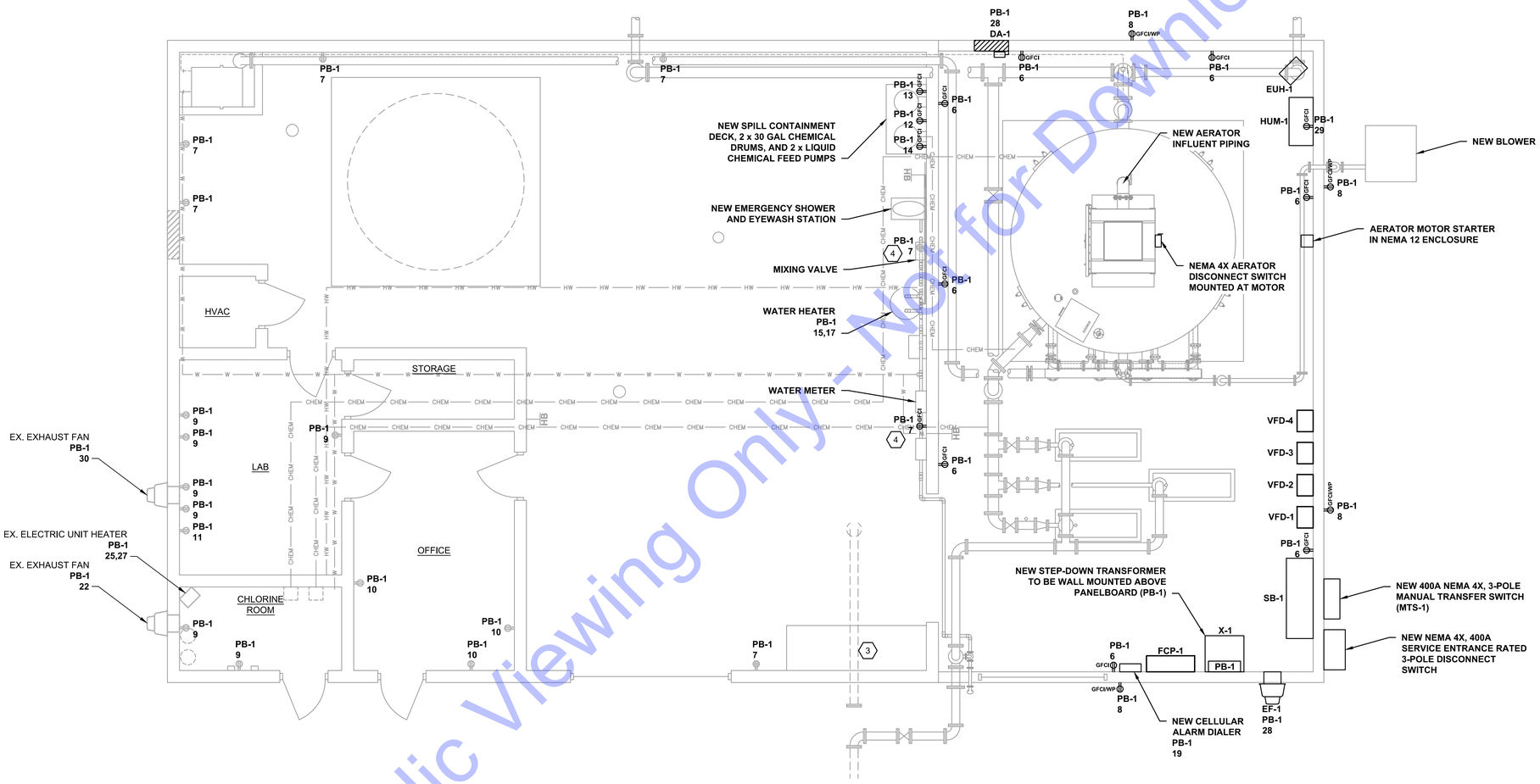

PLAN VIEW

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

0 2' 4' 8'

ELECTRICAL NOTES:

1. AERATOR PIPING SHALL BE HEAT TRACED. HEAT TRACE SHALL BE COVERED WITH 2" FIBERGLASS INSULATION WRAPPED IN AN ALUMINUM JACKET. PIPING IS SHOWN ON PROCESS DRAWING D1-2. CONTRACTOR SHALL COORDINATE WITH HEAT TRACE SUPPLIER/MANUFACTURER DURING BIDDING AND CONSTRUCTION AND SHALL PROVIDE ALL CONDUIT, WIRE, BREAKERS AND CIRCUITS REQUIRED. HEAT TRACE SHALL BE PROVIDED/INSTALLED COMPLETE.
2. THE CONTRACTOR SHALL ENSURE APPROPRIATE EQUIPMENT CLEARANCE IS PROVIDED PER NEC.
3. INSTALL J-BOXES WITH POWER BLOCKS AND EXTEND EXISTING CIRCUITS AS REQUIRED TO NEW SWITCHBOARD AND PANELBOARD. NO SPLICES ALLOWED FOR EXTENDING CONDUCTORS.CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL EXISTING CIRCUITS THAT ARE STILL REQUIRED FOR A FUNCTIONING PLANT ARE POWERED OUT OF THE NEW PANELBOARD OR SWITCHBOARD.
4. REFEED EXISTING OUTLET LOCATED NEAR NEW EMERGENCY SHOWER THROUGH NEW GFCI OUTLET.

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EXISTING TREATMENT BUILDING ELECTRCAL POWER IMPROVEMENTS PLAN

Drawing No: **E3-1**

Sheet: 46 OF 52

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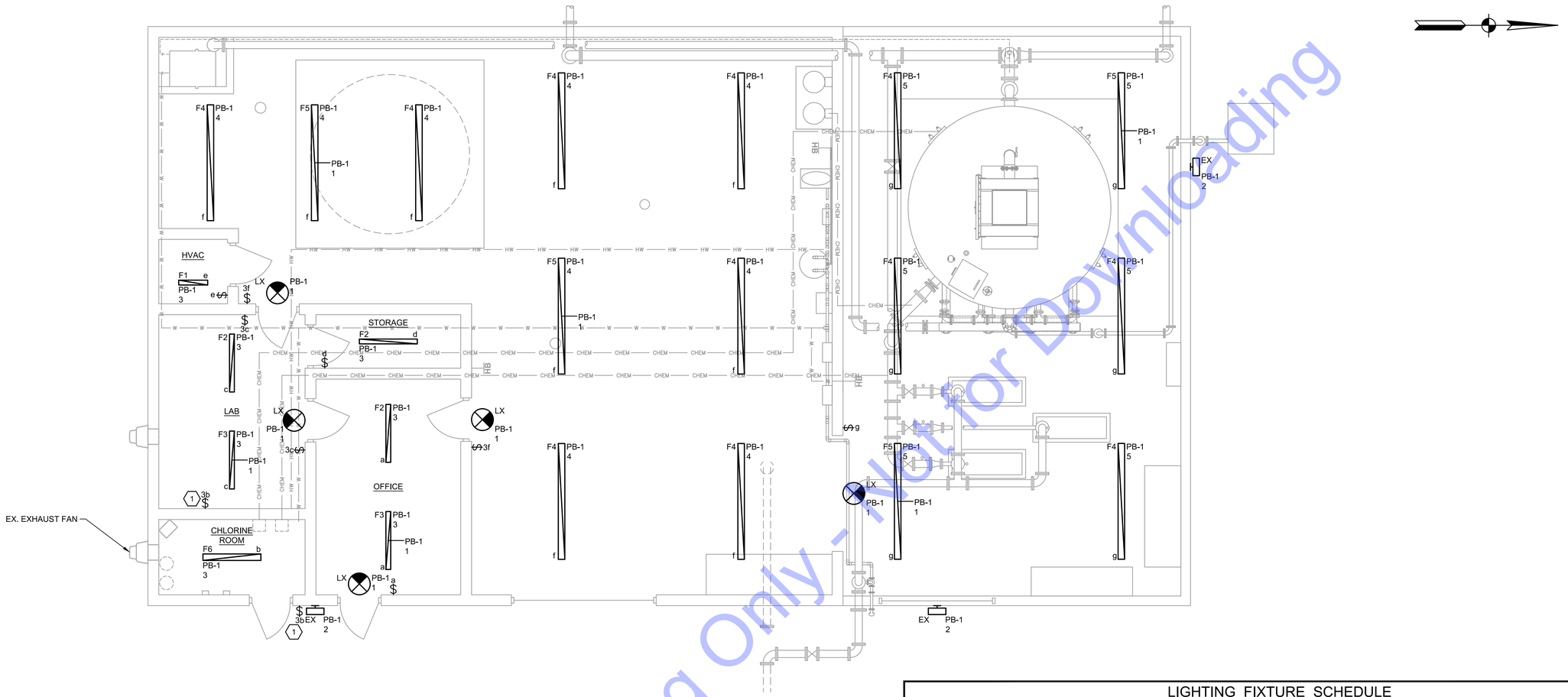

PLAN VIEW

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

0 2' 4' 8'

ELECTRICAL NOTES:

1. NEW 3-WAY LIGHT SWITCHES TO BE MOUNTED OUTSIDE OF CHLORINE ROOM AND INSIDE LAB ADJACENT TO WINDOW INTO CHLORINE ROOM. LIGHT SWITCHES ARE TO BE INTERLOCKED TO START EXHAUST FAN LOCATED IN CHLORINE ROOM.

LIGHTING FIXTURE SCHEDULE

IMAGE	TYPE	MFR	CATALOG NUMBER	LAMPS	VOLT	MOUNTING	NOTES
	F1	LITHONIA, CREE, OR EQUAL	CLX L24 2500LM MVOLT 40K 80CRI	LED	120-277	SURFACE	PROVIDE WITH REQUIRED MOUNTING BRACKETS OR CHAINS AS REQUIRED FOR INSTALLATION.
	F2	LITHONIA, CREE, OR EQUAL	CLX L48 5000LM MVOLT 40K 80CRI	LED	120-277	SURFACE	PROVIDE WITH REQUIRED MOUNTING BRACKETS OR CHAINS AS REQUIRED FOR INSTALLATION.
	F3	LITHONIA, CREE, OR EQUAL	CLX L48 5000LM MVOLT 40K 80CRI PS1050	LED	120-277	SURFACE	PROVIDE WITH REQUIRED MOUNTING BRACKETS OR CHAINS AS REQUIRED FOR INSTALLATION. BATTERY BACKED EMERGENCY LIGHT. TWO BALLASTED LIGHT, STANDARD FUNCTION AND EMERGENCY BACKUP.
	F4	LITHONIA, CREE, OR EQUAL	CSVT L96 6000LM MVOLT 40K 80CRI	LED	120-277	SURFACE	PROVIDE WET LOCATION FITTINGS AS REQUIRED. PROVIDE MOUNTING BRACKETS AS REQUIRED.
	F5	LITHONIA, CREE, OR EQUAL	CSVT L96 6000LM MVOLT 40K 80CRI IE7WCP	LED	120-277	SURFACE	BATTERY BACKED EMERGENCY LIGHT PROVIDE WET LOCATION FITTINGS AS REQUIRED. PROVIDE MOUNTING BRACKETS AS REQUIRED. TWO BALLASTED LIGHT, STANDARD FUNCTION AND EMERGENCY BACKUP.
	F6	LITHONIA, CREE, OR EQUAL	CSVT L48 6000LM MVOLT 40K 80CRI	LED	120-277	SURFACE	PROVIDE WET LOCATION FITTINGS AS REQUIRED. PROVIDE MOUNTING BRACKETS AS REQUIRED.
	EX	SYLVANIA, CREE, OR EQUAL	TWP/L/030/740/C5/UNV/BZ	LED	120-277	SURFACE	WALL MOUNTED OUTDOOR SCONCE WITH TEMPERED GLASS LENS. PROVIDE WITH PHOTOCELL. 2800 LUMENS.
EXIT	LX	EMERGI-LITE OR EQUAL	LEDP-1-R	INCLUDED	120	UNIVERSAL	LED EXIT SIGN WITH RED LETTERING ON BRUSHED ALUMINUM PANEL. CHEVRONS SHALL BE REQUIRED AS SHOWN ON DRAWINGS.
	OL	LITHONIA, CREE, OR EQUAL	OLVTWM	LED	120-277	SURFACE	PROVIDE WET LOCATION FITTINGS AS REQUIRED. PROVIDE MOUNTING BRACKETS AS REQUIRED.

PROVIDE BULBS FOR ALL FIXTURES. PROVIDE 10% SPARE BULBS TO THE OWNER AT THE END OF THE PROJECT.

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No. 19800084
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PROFESSIONAL ENGINEER

Signature 04/24/2025 Date

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EXISTING TREATMENT BUILDING LIGHTING IMPROVEMENTS PLAN

Drawing No:
E3-2
Sheet: 47 OF 52

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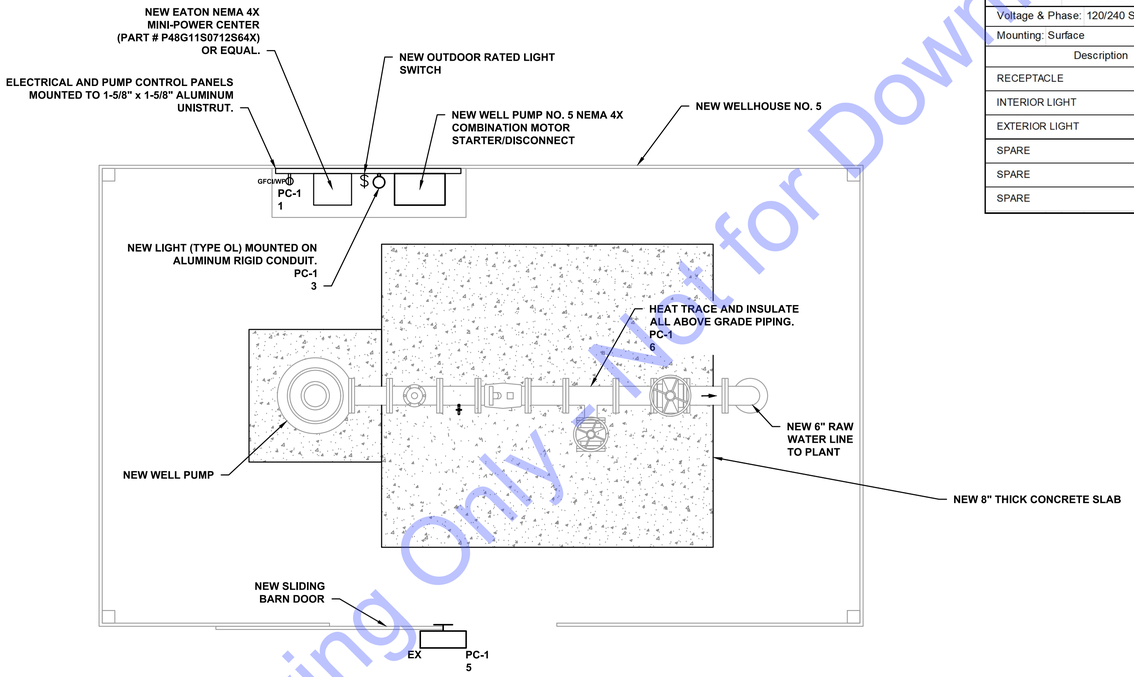

PLAN VIEW

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

0 1' 2' 4'

Panel Name: MINI-POWER CENTER (PC-1)			Panel Amperage: 30A			
Voltage & Phase: 120/240 SINGLE PHASE			Panel A.I.C. Rating: 10kAIC			
Mounting: Surface			Other: MCB/60A			
Description	Brk	Phase		Brk	Description	
RECEPTACLE	20	1	A	2	30	MAIN
INTERIOR LIGHT	20	3	B	4	-	MAIN
EXTERIOR LIGHT	20	5	A	6	20	HEAT TRACE
SPARE	-	7	B	8	20	SPARE
SPARE	20	9	A	10	20	SPARE
SPARE	20	11	B	12	20	SPARE

GENERAL NOTES:

CONTRACTOR SHALL PROVIDE AND INSTALL CONDUIT, WIRE, AND HEAT TRACE FOR ALL EXPOSED PIPING. HEAT TRACE TO BE COVERED WITH TWO INCH FIBERGLASS INSULATION AND WRAPPED WITH WEATHERPROOF STAINLESS STEEL JACKET. THE CONTRACTOR SHALL COORDINATE WITH HEAT TRACE SUPPLIER/MANUFACTURER DURING BIDDING AND CONSTRUCTION AND SHALL PROVIDE ALL CONDUIT, WIRING, AND CIRCUITS REQUIRED. HEAT TRACE SHALL BE PROVIDED/INSTALLED COMPLETE.

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NEW WELHOUSE NO.5
ELECTRICAL PLAN

Drawing No:
E4-0
Sheet: 48 OF 52

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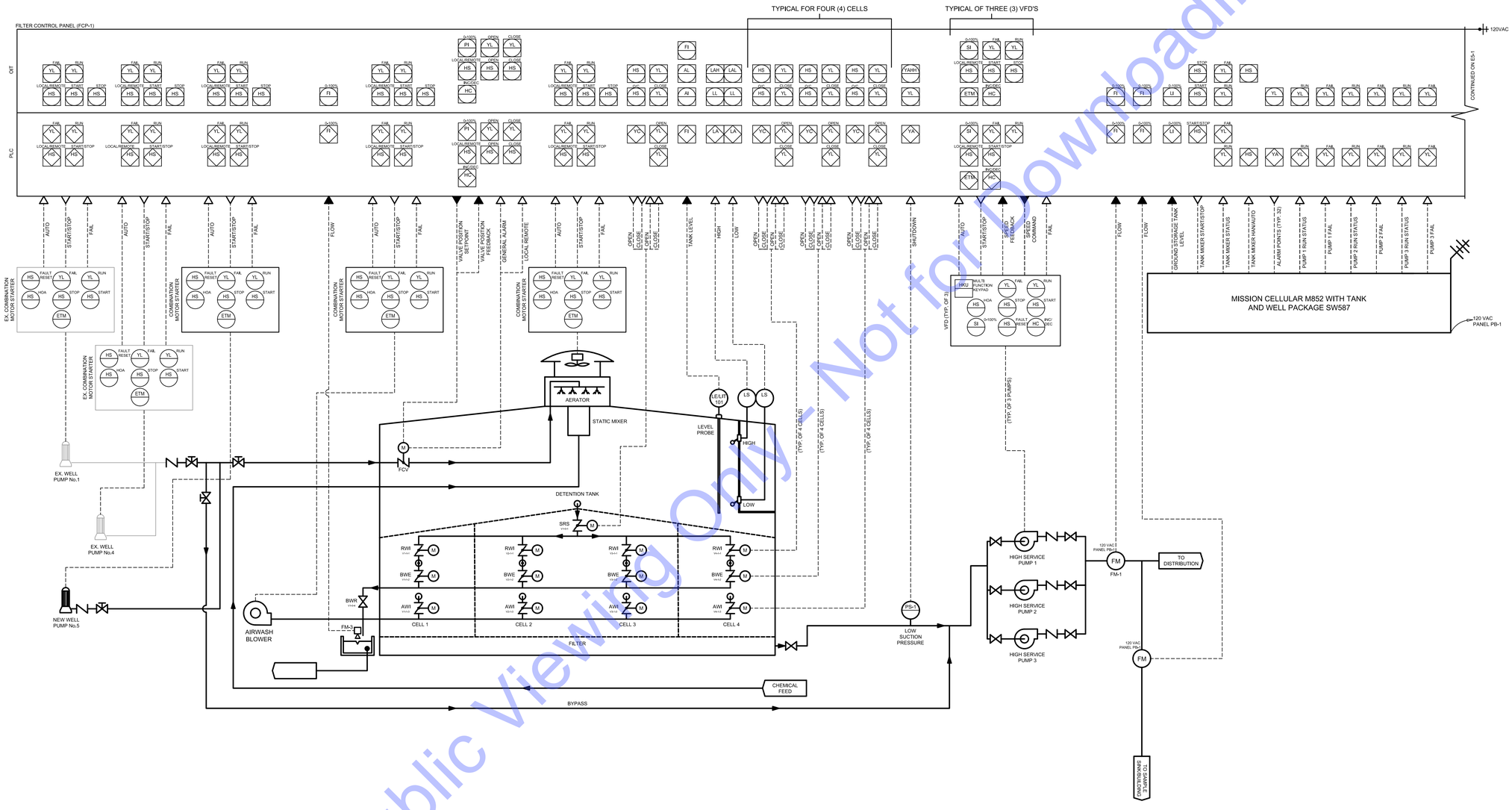

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PROCESS AND INSTRUMENTATION DRAWING

Drawing No:
E5-0
Sheet: 49 OF 52

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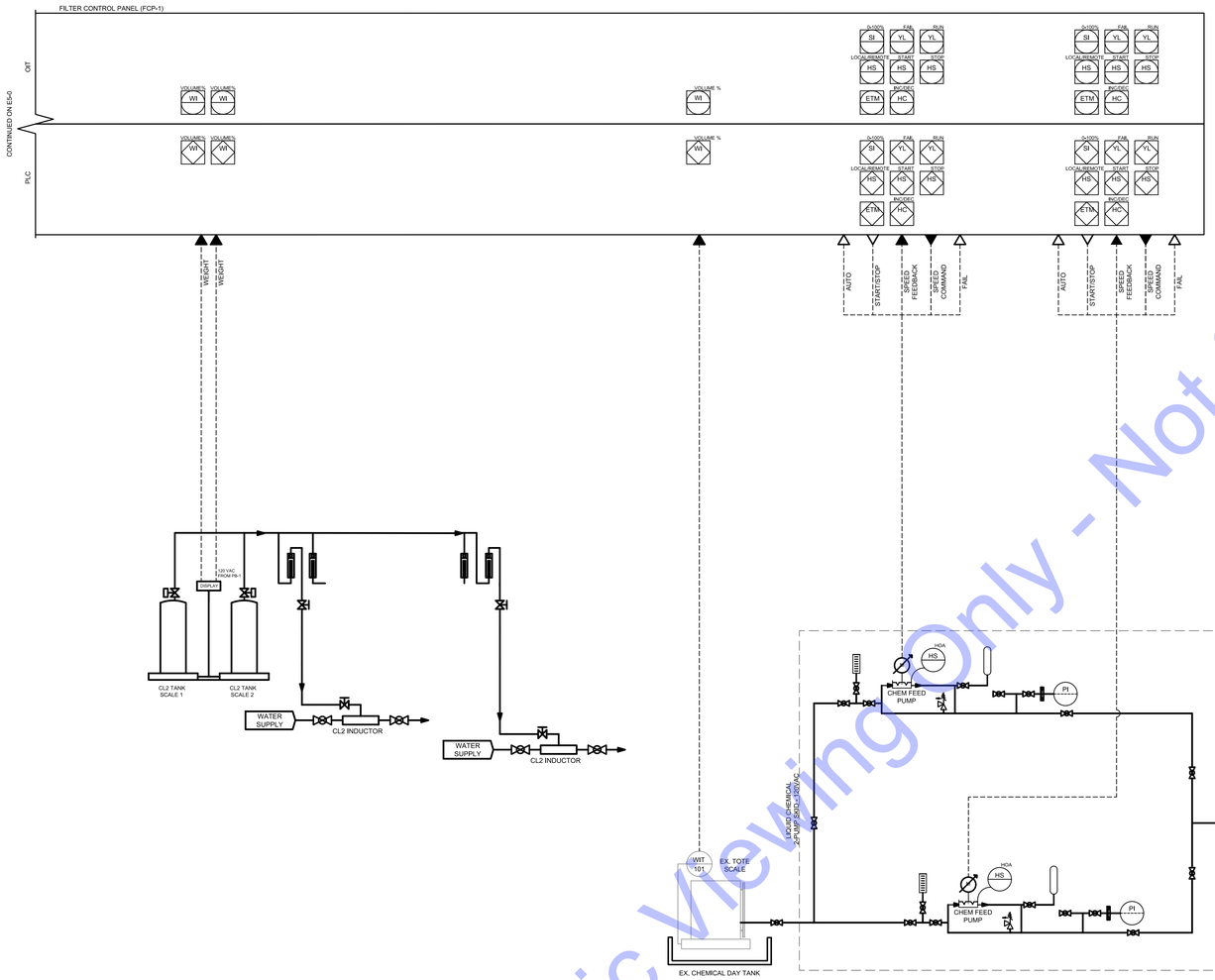

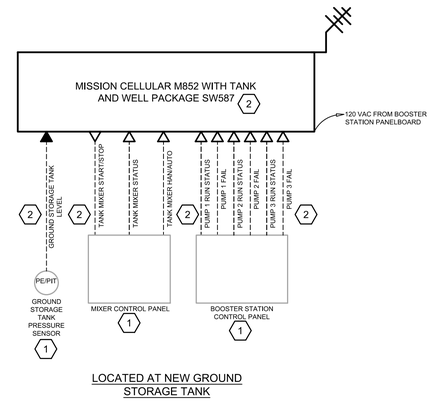

ELECTRICAL NOTES:

1. PRESSURE TRANSDUCER, MIXER CONTROL PANEL, AND BOOSTER STATION CONTROL PANEL ARE ALL INSTALLED AS PART OF THE DIVISION 'B' CONTRACT.
2. THE MISSION CELLULAR RTU AND ALL I/O CONNECTIONS TO BE INSTALLED BY THE DIVISION 'A' CONTRACTOR.

GENERAL NOTES:

1. THE CONTRACTOR SHALL ENSURE THAT THE GROUND STORAGE TANK LEVEL IS TRANSMITTED THROUGH THE MISSION CELLULAR SYSTEM TO THE FILTER CONTROL PANEL (FCP-1) AT THE NEW WATER TREATMENT PLANT FOR CONTROL OF THE PLANT HIGH SERVICE PUMPS.
2. THE CONTRACTOR SHALL FURNISH AND INSTALL MISSION CELLULAR SYSTEM COMPLETE AT NEW GROUND STORAGE TANK. CONTRACTOR SHALL PROVIDE AND INSTALL 120VAC 20A BREAKER IN EXISTING PANELBOARD TO POWER MISSION CELLULAR SYSTEM AND ALL REQUIRED CONDUIT AND WIRE FOR A COMPLETE AND FUNCTIONING SYSTEM. MOUNT MISSION CELLULAR SYSTEM ON A NEW STAINLESS STEEL UNISTRUT STRUCTURE ADJACENT TO EXISTING PANELBOARD.

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PROCESS AND INSTRUMENTATION DRAWING

Drawing No:
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Sheet: 50 OF 52

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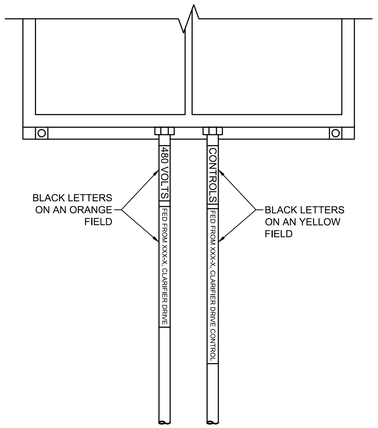

CONDUIT IDENTIFICATION

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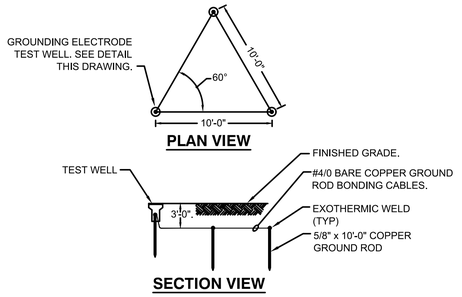
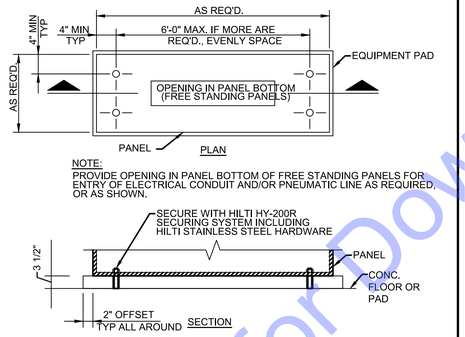


GROUNDING ELECTRODE SYSTEM

NOT TO SCALE



FREE STANDING OR FLOOR MOUNT CONTROL PANEL INSTALLATION

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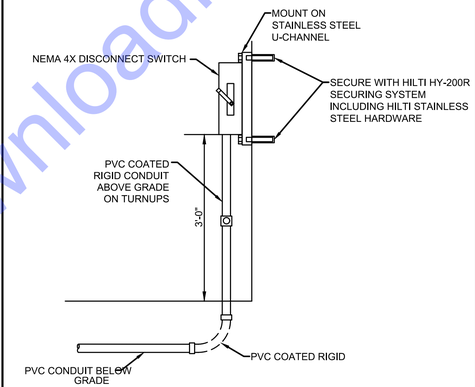
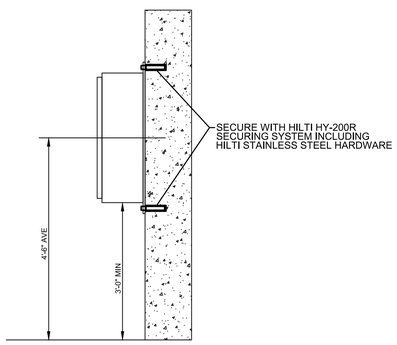


WALL MOUNT DISCONNECT SWITCH/INSTRUMENTATION PANEL

NOT TO SCALE



WALL MOUNT CONTROL PANEL INSTALLATION

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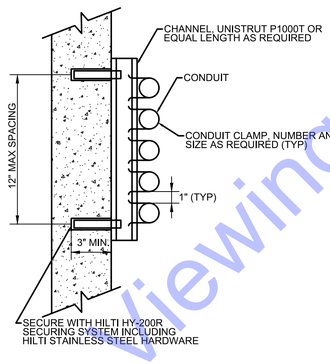
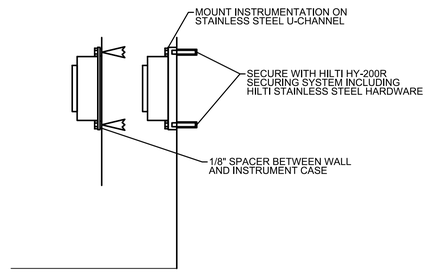


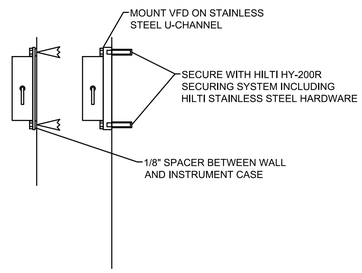
WALL MOUNTED CONDUIT RACK

NOT TO SCALE



WALL MOUNT SMALL CASE INSTRUMENTATION

NOT TO SCALE



WALL MOUNT VFD INSTALLATION

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SOUTH BEND, IN.

MICHAEL A. MIRANDA REGISTERED No. 19800084 STATE OF INDIANA PROFESSIONAL ENGINEER

Signature 04/24/2025 Date

TOWN OF ODON
DAVIESS COUNTY, INDIANA

WATER UTILITY
IMPROVEMENTS PROJECT
DIVISION "A" - WTP
IMPROVEMENTS

Indiana811 Know what's below. 811 before you dig. 1-800-382-5544 (ITS THE LAW)

No.	Submittal / Revision	By	Date

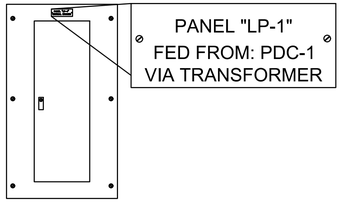
Designed By:	Drawn By:	Checked By:
CM	CM	MAM
Issue Date: 04/22/2025	Project No: W21115	Scale: AS SHOWN

ELECTRICAL DETAILS

Drawing No: **E6-0**

Sheet: 51 OF 52

File: Z:\SHARED\IN CLIENTS M-Z\ODON\W21115 WATER UTILITY IMPROVEMENTS\06 CAD\K MECH-ELECT\ODON WATER ELECTRICAL - DIV A.DWG
Saved: 4/24/2025 9:38:55 AM Plotted: 4/24/2025 9:53:37 AM Current User: Chris Means LastSavedBy: cmeans

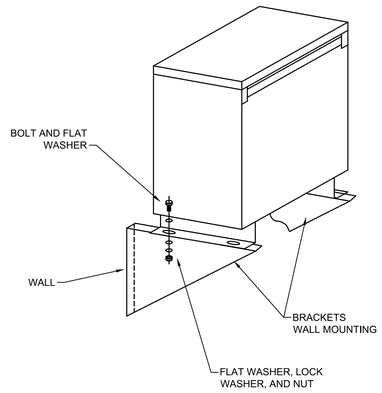


PANEL "LP-1"
FED FROM: PDC-1
VIA TRANSFORMER

NOTE:
ALL PANELBOARDS INVOLVED IN THIS PROJECT SHALL BE IDENTIFIED BY THE PANEL NAME AND SOURCE OF THE PANEL'S POWER. REFER TO THE SPECIFICATIONS FOR COLORS AND ADDITIONAL REQUIREMENTS.

PANELBOARD IDENTIFICATION

NOT TO SCALE

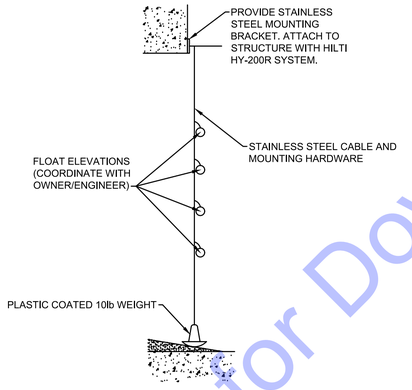


NOTES:

TRANSFORMER TO BE MOUNTED ON WALL USING SPECIFICALLY DESIGNED WALL MOUNTING BRACKET SUPPLIED IN KITS AND SPECIFIC TO THE ENCLOSURE. THEY MUST BE INSTALLED FOLLOWING DIRECTIONS INCLUDED IN THE KIT. IT IS IMPORTANT TO CHECK THE WEIGHT OF THE UNIT AND CONFIRM THAT THE WALL AND THE FASTENERS (NOT SUPPLIED WITH THE KIT) CAN SUPPORT THE UNIT. MOUNT AS CLOSE TO CEILING AS MANUFACTURERS REQUIREMENTS ALLOW.

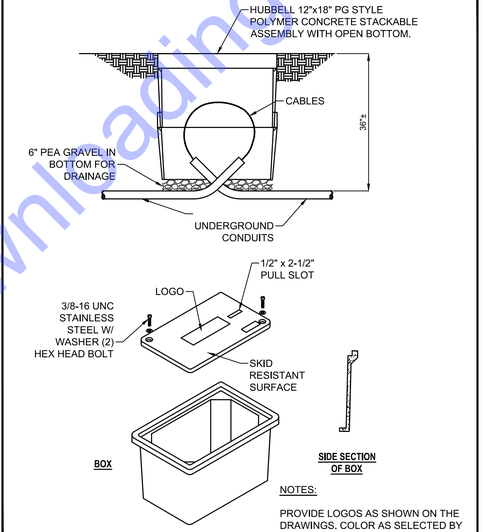
TRANSFORMER MOUNTING DETAIL

NOT TO SCALE



FLOAT MOUNTING DETAIL

NOT TO SCALE



NOTES:

PROVIDE LOGOS AS SHOWN ON THE DRAWINGS. COLOR AS SELECTED BY OWNER.

YARD PULL/JUNCTION BOX DETAIL

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ELECTRICAL DETAILS

Drawing No:
E6-1
Sheet: 52 OF 52

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