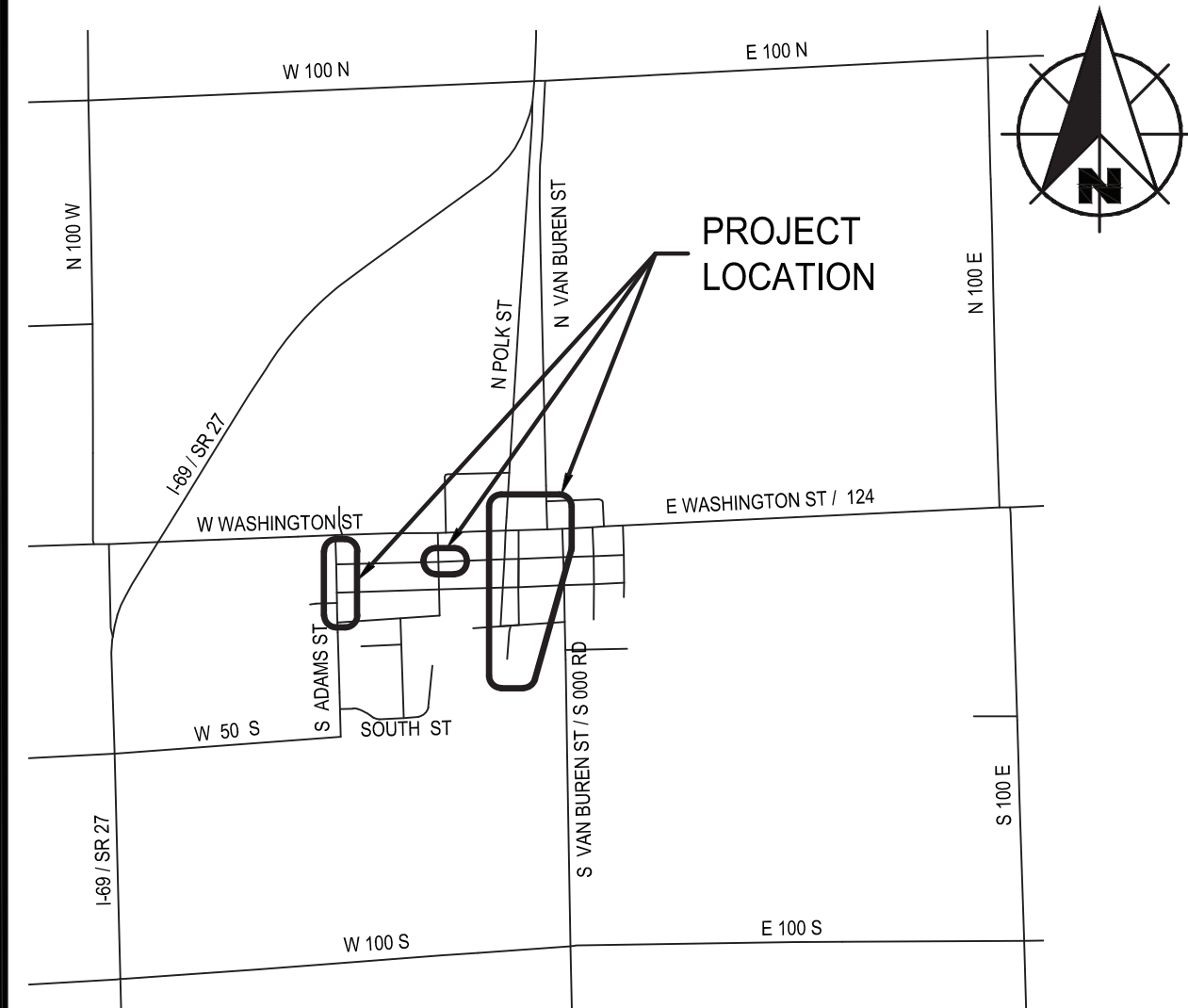


WATER SYSTEM IMPROVEMENTS

FOR THE

TOWN OF MONROE, INDIANA

INDIANA FINANCE AUTHORITY
SRF: DW190101 01

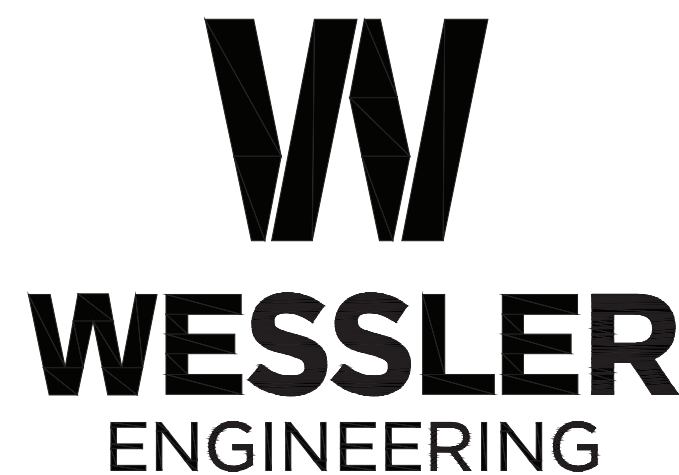


MONROE, INDIANA
VICINITY MAP

SCALE: NONE



STATE LOCATION MAP
SCALE: NONE



More than a Project™

OHIO
80 State Route 103, Suite A
Bluffton, Ohio 45817
Phone: (419) 358-0521
www.wesslerengineering.com

PROJECT NO. 214319-04-001

DRAWINGS PREPARED FOR:

TOWN COUNCIL

DEBRA GIESSLER, PRESIDENT
JEFF JOHNSON, MEMBER
MIKE GEELS, MEMBER
RACHEL TAGUE, CLERK-TREASURER
JUSTIN SHAFFER, UTILITIES SUPERINTENDENT

DECEMBER 2019

 <p>*2/17/2019</p>	<div style="text-align: center;"></div> <hr/> RYAN K. BRAUEN REGISTERED ENGINEER STATE OF INDIANA NO. 11011329
 <p>*2/17/2019</p>	<div style="text-align: center;"></div> <hr/> JEFFREY R. BALLARD REGISTERED ENGINEER STATE OF INDIANA NO. 60860191 COVERING STRUCTURAL DESIGN
 <p>*2/17/2019</p>	<div style="text-align: center;"></div> <hr/> WAYNE C. MOORE REGISTERED ENGINEER STATE OF INDIANA NO. 10707476 COVERING ELECTRICAL DESIGN

1



HORIZONTAL AND VERTICAL CONTROL INFORMATION

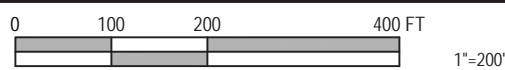
- NOTES:
- A FIELD SURVEY WAS PERFORMED IN APRIL 2019.
 - COORDINATES (INDIANA STATE PLANE, EAST ZONE, NAD 83) AND ELEVATIONS (NAVD 88) ARE BASED ON INCORS.
 - UNITS ARE U.S. SURVEY FEET.
 - CONTROL POINTS WERE SET USING GPS.
 - A LEVEL LOOP WAS PERFORMED ON THE CONTROL POINTS 15 AND 18, AND TBM 19.

- BENCHMARK DESCRIPTION:
- TBM NO. 19 - CUT "X" IN THE SOUTHWEST CORNER OF CONCRETE SIDEWALK AT THE WTP UTILITIES OFFICE. EL 824.39

CONTROL POINTS				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP 1	2001956.41	527699.66	823.4	MAG NAIL
CP 2	2002239.54	527670.61	823.7	MAG NAIL
CP 3	2002575.74	527667.11	824.5	MAG NAIL
CP 4	2002569.35	528852.20	820.3	MAG NAIL
CP 5	2002565.58	528560.65	819.5	MAG NAIL
CP 6	2002902.30	529883.76	827.8	5/8" REBAR
CP 7	2002755.93	529847.36	827.5	5/8" REBAR
CP 8	2002786.74	530155.82	823.4	5/8" REBAR
CP 9	2002773.82	530380.76	821.1	5/8" REBAR
CP 10	2003023.31	530181.51	823.1	MAG NAIL
CP 11	2003217.07	530156.60	822.1	5/8" REBAR
CP 12	2002445.02	530313.40	824.5	5/8" REBAR
CP 13	2002423.64	530063.01	826.0	5/8" REBAR
CP 14	2002419.60	529903.26	827.5	5/8" REBAR
CP 16	2001879.04	529841.76	822.8	MAG NAIL
CP 17	2002230.16	529769.91	824.9	5/8" REBAR
CP 15	2001820.73	529718.10	823.07	MAG NAIL
CP 18	2001507.54	529676.32	822.53	5/8" REBAR

DRAWING INDEX		
PAGE NUMBER	SHEET NUMBER	SHEET TYPE DEFINITIONS:
		G - GENERAL
		D - DEMOLITION
		A - ARCHITECTURAL
		C - CIVIL/PROCESS
		S - STRUCTURAL
		H - HEATING, VENTILATION AND AIR CONDITIONING
		P - PLUMBING
		E - ELECTRICAL
		N - INSTRUMENTATION AND CONTROL
Y - SITE		
R - RESTORATION		
GENERAL INFORMATION (AREA 1)		
1	1G1	TITLE SHEET
2	1G2	DRAWING INDEX, AND LOCATION AND SCOPE OF WORK PLAN
3	1G3	VALVE AND HYDRANT REPLACEMENT PLAN
4	1G4	PLAN NOTES, UTILITIES, ABBREVIATIONS AND LEGEND
5	1S1	STRUCTURAL GENERAL NOTES
6	1H1	MECHANICAL LEGEND, BOD, AND SEQUENCE
7	1H2	MECHANICAL SCHEDULES AND DETAILS
8	1E1	ELECTRICAL SYMBOLS AND ABBREVIATIONS
9	1N1	I&C LEGEND
WATER MAINS (AREA 2)		
10	2Y1	WATER MAIN PLAN - LINE A - S ADAMS ST
11	2Y2	WATER MAIN PLAN - LINE B - W JACKSON ST
12	2Y3	WATER MAIN PLAN - LINES C AND D - ALLEY
13	2Y4	WATER MAIN PLAN - LINE E - CENTER ST AND E WALNUT ST
14	2Y5	WATER MAIN PLAN - LINES E AND F - WTP SERVICE DRIVE
15	2R1	PAVEMENT RESTORATION PLAN - LINE A - S ADAMS ST
16	2R2	PAVEMENT RESTORATION PLAN - LINE B - W JACKSON ST
17	2R3	PAVEMENT RESTORATION PLAN - LINES C AND D - ALLEY
18	2R4	PAVEMENT RESTORATION PLAN - LINE E - CENTER ST AND E WALNUT ST
19	2R5	PAVEMENT RESTORATION PLAN - LINE E - WTP SERVICE DRIVE AND SITE
TREATMENT PLANT SITE (AREA 3)		
20	3Y1	EXISTING SITE DEMOLITION PLAN
21	3Y2	NEW SITE AND YARD PIPING PLAN
22	3Y3	BACKWASH PLAN AND PROFILE - LINE G
23	3E1	ELECTRICAL SITE PLAN
WTP AND CLEAR WELL (AREA 4)		
24	4D1	WTP AND CLEAR WELL - OVERVIEW AND DEMOLITION FLOOR PLAN
25	4D2	WTP AND CLEAR WELL - ROOF DEMOLITION PLAN
26	4C1	WTP AND CLEAR WELL - PERSEPECTIVE VIEWS
27	4C2	WTP MAIN LEVEL - MODIFICATION FLOOR PLAN
28	4C3	WTP AND CLEAR WELL - MODIFICATION SECTIONS
29	4C4	WTP AND CLEAR WELL - MODIFICATION SECTIONS
30	4C5	WTP AND CLEAR WELL - WALL SECTIONS
31	4C6	WTP AND CLEAR WELL - EXISTING CHLORINE ROOM PLAN AND ELEVATIONS
32	4C7	WTP AND CLEAR WELL - BUILDING ELEVATIONS
33	4C8	WTP AND CLEAR WELL - PLUMBING ISOMETRIC
34	4S1	WTP AND CLEAR WELL - FOUNDATION PLAN
35	4S2	WTP AND CLEAR WELL - ROOF MODIFICATION PLAN AND SECTIONS
36	4S3	WTP AND CLEAR WELL - STRUCTURAL DETAILS AND SECTIONS
37	4H1	WTP AND CLEAR WELL - MECHANICAL MODIFICATIONS
38	4E1	WTP POWER PLAN
39	4E2	WTP LIGHTING PLAN
WELL HOUSE (AREA 5)		
40	5D1	WELL HOUSE - DEMOLITION PERSEPECTIVE VIEWS
41	5D2	WELL HOUSE - DEMOLITION FLOOR AND ROOF PLANS
42	5D3	WELL HOUSE - DEMOLITION SECTIONS
43	5G1	WELL HOUSE - MODIFICATION PERSEPECTIVE VIEWS
44	5C1	WELL HOUSE - MODIFICATION FLOOR PLANS
45	5C2	WELL HOUSE - MODIFICATION SECTIONS
46	5H1	WELL HOUSE - MECHANICAL MODIFICATIONS
47	5E1	WELL HOUSE - ELECTRICAL PLAN
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49	6Y2	MISCELLANEOUS DETAILS
50	6Y3	EROSION CONTROL DETAILS
51	6Y4	EROSION CONTROL DETAILS
52	6Y5	MAINTENANCE OF TRAFFIC PLAN AND DETAILS
53	6C1	DOOR AND WINDOW SCHEDULE
54	6S1	STRUCTURAL DETAILS
55	6S2	STRUCTURAL DETAILS
ELECTRICAL (AREA 7)		
56	7E1	ELECTRICAL ONE-LINE DIAGRAM
57	7E2	CONTROL ONE-LINE DIAGRAM
58	7E3	CONTROL ONE-LINE DIAGRAM
59	7E4	ELECTRICAL SCHEMATICS AND DETAILS
60	7E5	ELECTRICAL SCHEMATICS AND DETAILS
61	7E6	ELECTRICAL DETAILS
INSTRUMENTATION AND CONTROL (AREA 8)		
62	8N1	PROCESS AND INSTRUMENTATION DIAGRAM

LOCATION AND SCOPE OF WORK PLAN



SCALE VERIFICATION	DRAWN BY	CHECKED BY	APPROVED BY	ISSUE DATE	PROJECT NUMBER
BAR IS ONE INCH LONG ON ORIGINAL DRAWING 	MRE	MS	RKB	DECEMBER 2019	214319-04-001



WATER SYSTEM IMPROVEMENTS	
TOWN OF MONROE, INDIANA	
DRAWING INDEX, AND LOCATION AND SCOPE OF WORK PLAN	

SHEET NO.
1G2
PAGE NO.
2

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SCALE VERIFICATION

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DRAWN BY

MRE

CHECKED BY

JS

APPROVED BY

RKB

ISSUE DATE

DECEMBER 2019

PROJECT NUMBER

214319-04-001

NO.

DATE

INITIALS

REVISION DESCRIPTIONS

RYAN K. BRAATEN

REGISTERED

No.

11011329

STATE OF INDIANA

PROFESSIONAL ENGINEER

12/17/2019

W

WESSLER

ENGINEERING

More than a Project™

WATER SYSTEM IMPROVEMENTS

TOWN OF MONROE, INDIANA

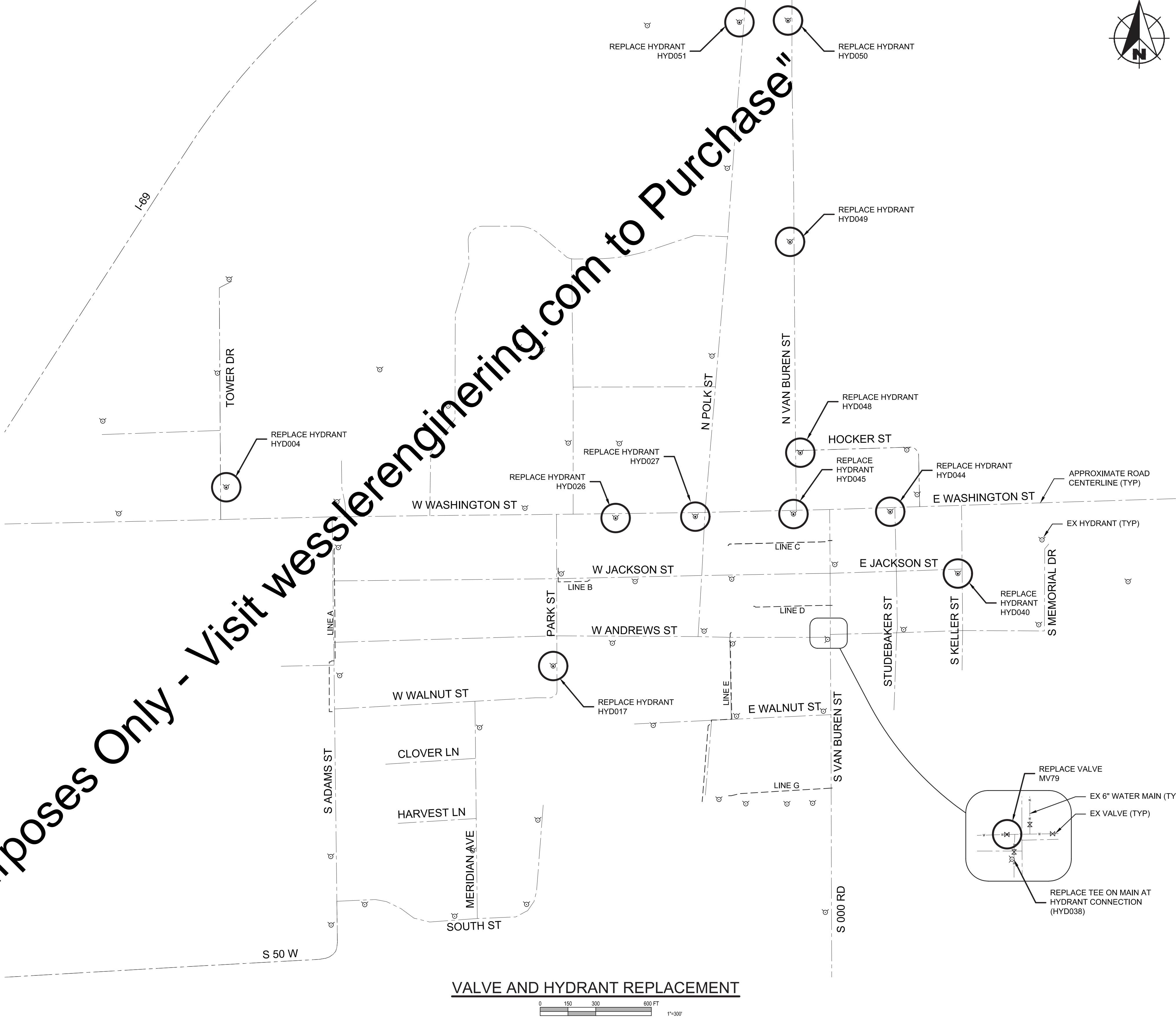
VALVE AND HYDRANT REPLACEMENT PLAN

SHEET NO.

1G3

PAGE NO.

3



VALVE AND HYDRANT REPLACEMENT

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EXISTING FEATURES LEGEND					
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	BENCH MARK		CISTERN		EASEMENT - CONSTRUCTION/PERMANENT
	TEMPORARY BENCH MARK		ELECTRIC METER		LOT BOUNDARY
	SOIL BORING LOCATION		AIR CONDITIONING UNIT		PROPERTY BOUNDARY
	SECTION CORNER		UTILITY RISER (DEFINED BY UTILITY)		RIGHT-OF-WAY - TEMPORARY/PERMANENT
	DRILL HOLE IN CONCRETE/HARRISON MONUMENT		UTILITY PEDESTAL (DEFINED BY UTILITY)		SECTION BOUNDARY
	CONTROL POINT (SET/FOUND)		UTILITY MARKER (DEFINED BY UTILITY)		WETLANDS
	MAGNETIC NAIL (SET/FOUND)		JOINT POWER/TELEPHONE POLE		CONTOUR - INTERMEDIATE ELEVATION
	BOAT SPIKE (SET/FOUND)		LIGHT POLE		CONTOUR - INDEX ELEVATION
	PK NAIL (SET/FOUND)		LIGHT ON POWER POLE		OVERHEAD ELECTRIC
	RAILROAD SPIKE (SET/FOUND)		LIGHT ON JOINT POLE		OVERHEAD CABLE TV
	R/W MARKER - CONCRETE/GRANITE/STONE		POWER POLE		OVERHEAD TELEPHONE
	IRON PIPE/IRON PIN/REBAR (WITH DIAMETER)		TELEPHONE POLE		UNDERGROUND CABLE TV
	BRASS PLUG		LAMP POST		UNDERGROUND ELECTRIC
	CABLE TV MANHOLE		GUY ANCHOR		UNDERGROUND FIBER OPTIC
	ELECTRIC MANHOLE		GUY POLE OR STUB		GAS MAIN
	GAS MANHOLE		CONTROLLER CABINET		DIGESTER GAS
	OTHER MANHOLE		FLAG POLE		PETROLEUM MAIN
	TELEPHONE MANHOLE		POST		UNDERGROUND TELEPHONE
	TELEPHONE VAULT		GROUND LIGHT		WATER MAIN
	TRAFFIC MANHOLE		MAILBOX		WATER SERVICE
	TRAFFIC HANDHOLE		DOUBLE/MULTIPLE MAILBOX		FORCEMAIN
	WATER MANHOLE		MAST ARM POLE		GRAVITY SEWER PIPE
	AIR RELEASE VALVE		TRAFFIC SIGNAL STRAIN POLE		PLANT CHLORINE PIPE
	SANITARY SEWER MANHOLE		SIGNAL LOOP DETECTOR BOX		TOP OF BANK/TOE OF SLOPE
	DRAINAGE/STORM SEWER MANHOLE		SIGNAL LOOP DETECTOR LOOP		CENTERLINE OF DITCH/SWALE/STREAM
	SANITARY SEWER CLEANOUT		SIGN - SINGLE POST		FENCE - FIELD
	SEPTIC TANK		SIGN - DOUBLE POST		FENCE - METAL
	VALVE VAULT		SIGN - RAILROAD SIGNAL		FENCE - WOOD
	BEEHIVE INLET		SIGN - RAILROAD CROSSING		GUARDRAIL
	CURB INLET		BUSH		STREAM
	DROP INLET		STUMP		TREE/BRUSH LINE
	CATCH BASIN		TREE - CONIFEROUS		
	DOWNSPOUT		TREE - DECIDUOUS		
	GAS METER		ROCK OUTCROP		
	GAS VALVE		SATELLITE		
	GAS SERVICE VALVE		SPRINKLER CONTROL VALVE		
	PETROLEUM VALVE		WATER METER		
	PETROLEUM SHUTOFF VALVE		WATER VALVE		
	GAS STATION MONITORING WELL		WATER SERVICE VALVE		
	GAS STATION FILL CAP		WATER WELL		
	NATURAL GAS WELL/STORAGE WELL		WET WELL		
	SPRINKLER HEAD		FIRE HYDRANT		
	YARD HYDRANT		PROCESS VALVE		

*NOTE: THIS TABLE IS A LISTING OF TYPICAL EXISTING SYMBOLS AND MAY NOT INCLUDE ALL EXISTING SYMBOLS FOUND WITHIN THIS PLAN SET. ALL PROPOSED ITEMS WILL BE CALLED OUT ON THEIR PLAN SHEETS. IF A QUESTION ARISES ON THE MEANING OF ANY SYMBOL NOT LISTED IN THIS TABLE, PLEASE CONTACT THE ENGINEER FOR CLARIFICATION. THE SYMBOLS ARE NOT TO SCALE.

ELECTRIC
AMERICAN ELECTRIC
POWER
701 DAYTON ST.
DECATUR, IN 46733

260-724-1846
ATTN: JAMES STRICKER
JESTRICKER@AEP.COM

TELEPHONE
CENTURYLINK
944 S CENTRAL AVE.
LIMA, OH 45844

419-226-6342
ATTN: JOHN UNVERFERTH
JOHN.C.UNVENFERTH@CENTURYLINK.COM

FIBER OPTIC
COMMUNITY FIBER
SOLUTIONS, INC

419-999-2824
ATTN: JOSHUA RUMBAUGH
JOSHD@WATCHTV.NET

CABLE TV
MEDIACOM
COMMUNICATION
3900 26TH AVE
MOLINE, IL 61265

309-743-4750
ATTN: DENNIS JARDING
DJARDING@MEDIACOMCCC.COM

WATER, SEWER
TOWN OF MONROE
UTILITIES
102 E WALNUT ST
MONROE, IN 46772

260-692-6909
ATTN: JUSTIN SHAFFER

GAS
NIPSCO GAS (FORT
WAYNE)
1501 HALE AVE
FORT WAYNE, IN 46802

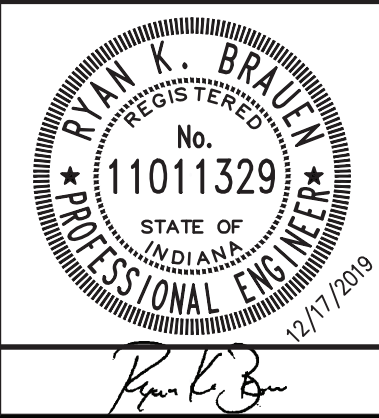
260-433-3514
ATTN: ASHLEY SMITH
NEW BUSINESS SPECIALIST
ASHLEYMSMTH@NISOURCE.COM

TABLE OF ABBREVIATIONS			
ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
AC	ABESTOS CEMENT	IPS	IRON PIPE SIZE
AFF	ABOVE FINISHED FLOOR	ISPC	INDIANA STATE PLANE COORDINATE
ALUM	ALUMINUM	LB	POUND(S)
APP	APPARENT	LF	LINEAR FEET
APPROX	APPROXIMATE(LY)	LN	LANE
ASPH	ASPHALT	LS	LIFT STATION
ASSOC	ASSOCIATES	MA EX	MATCH EXISTING
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS	MJ	MECHANICAL JOINT
AVE	AVENUE	MATL	MATERIAL
AVG	AVERAGE	MAX	MAXIMUM
BLDG	BUILDING	MH	MANHOLE
BLVD	BOULEVARD	MIN	MINIMUM
BM	BENCHMARK	MISC	MISCELLANEOUS
CO	CLEANOUT	N	NORTHING, NORTH
CI	CAST IRON	NGS	NATIONAL GEODETIC SURVEY
CL	CENTER LINE	NO.	NUMBER
CMA	COLD MIX ASPHALT	OC	ON CENTER
CMP	CORRUGATED METAL PIPE	OD	OUTSIDE DIAMETER
CMU	CONCRETE MASONRY UNIT	PC	POINT OF CURVE (BEGIN CURVE)
CONC	CONCRETE	POLY	POLYETHYLENE
CONT	CONTINUOUS	PI	POINT OF INTERSECTION
CNR	CORNER	POT	POINT OF TANGENT
CP	CONTROL POINT	PT	POINT OF TANGENT (END CURVE)
CPP	CORRUGATED PLASTIC PIPE	PSI	POUNDS PER SQUARE INCH
CR STN	CRUSHED STONE	PT	POINT
CYD	CUBIC YARD	PVC	POLYVINYL CHLORIDE
D	DEPTH	R	RADIUS
DI	DUCTILE IRON	ROW	RIGHT-OF-WAY
DI MJ	DUCTILE IRON MECHANICAL JOINT	RCC	REINFORCED CONCRETE PIPE
DBL	DOUBLE	R	ROAD
DIA	DIAMETER	S	SOUTH
DIP	DUCTILE IRON PIPE	SR	STATE ROUTE
DIPS	DUCTILE IRON PIPE SIZE	SST	STAINLESS STEEL
DR	DRIVE	SVA	SERVICE VALVE ASSEMBLY
E	EASTING, EAST	SB	SOIL BORING
EF	EACH FACE	SCHED	SCHEDULE
EW	EACH WAY	SDR	STANDARD DIMENSION RATIO
EA	EACH	SECT	SECTION
EJ	EAST JORDAN CON WORKS	SF	SQUARE FEET
EL	ELEVATION	SHT	SHEET
EX	EXISTING	SPECS	SPECIFICATION(S)
EXP	EXPANSION	SQ	SQUARE
FFE	FINISH FLOOR ELEVATION	SRF	STATE REVOLVING FUND
FM	FORCE MAIN	ST	STREET
FND	FOUND	STA	STATION
FT	FEET	SYD	SQUARE YARD
FOC	FOOTING	TBM	TEMPORARY BENCHMARK
GAL	GALVANIZED	TC	TOP OF CASTING
GPS	GLOBAL POSITIONING SYSTEM	TYP	TYPICAL
HMA	HOT MIX ASPHALT	USGS	US GEOLOGICAL SURVEY
HDPE	HIGH DENSITY POLYETHYLENE	VERT	VERTICAL
HORIZ	HORIZONTAL	VLV	VALVE
ID	INSIDE DIAMETER	W	WIDTH, WEST
IE	INVERT ELEVATION	WSE	WATER SURFACE ELEVATION
INC	INCORPORATED	WTP	WATER TREATMENT PLANT
INDOT	INDIANA DEPARTMENT OF TRANSPORTATION	YR	YEAR
INSTR	INSTRUMENT		
INV	INVERT	T/WTR	TOP OF WATER PIPE ELEVATION
		B/WTR	BOTTOM OF WATER PIPE ELEVATION
		T/SWR	TOP OF SEWER PIPE ELEVATION
		B/SWR	BOTTOM OF SEWER PIPE ELEVATION

*NOTE: THIS TABLE IS A LISTING OF TYPICAL ABBREVIATIONS AND MAY NOT INCLUDE ALL ABBREVIATIONS FOUND WITHIN THIS PLAN SET. IF A QUESTION ARISES ON THE MEANING OF AN ABBREVIATION NOT LISTED IN THIS TABLE, PLEASE CONTACT THE ENGINEER FOR CLARIFICATION.

- GENERAL NOTES:
1. NOTIFY THE ENGINEER IF ANY CONFLICTING INFORMATION BECOMES APPARENT IN THE CONTRACT DOCUMENTS AS SOON AS POSSIBLE AND PRIOR TO THE COMMENCEMENT OF ANY WORK IN THE VICINITY OF OR RELATIVE TO THE APPARENT CONFLICT SO THAT CLARIFICATION MAY OCCUR PRIOR TO CONSTRUCTION.
 2. ANY ALTERATIONS TO THESE DRAWINGS NOT AUTHORIZED BY WESSLER ENGINEERING AND NOT IN ACCORDANCE WITH THE DRAWINGS, SPECIFICATIONS AND RECORDS ON FILE AT WESSLER ENGINEERING SHALL RELIEVE WESSLER ENGINEERING OF ANY RESPONSIBILITY FOR THE ACCURACY OF THE DRAWINGS.
 3. USE CAUTION DURING THE EXECUTION OF WORK TO PREVENT DAMAGE TO STATE, COUNTY, MUNICIPAL, AND PRIVATE PROPERTY. REPAIR ALL DAMAGES AS A RESULT OF OPERATIONS, INCLUDING DAMAGE TO DRAINAGE STRUCTURES, FIELD TILE, PUBLIC/PRIVATE ROADS, AND LANDSCAPING (INCLUDING FENCING). REPAIR AND REPLACE DAMAGED ITEMS AT NO ADDITIONAL COST TO THE OWNER. PERFORM ALL REPAIR AND REPLACEMENT WORK TO THE SATISFACTION OF THE PERMITTING AGENCY, THE OWNER AND THE ENGINEER.
 4. TAKE CARE TO AVOID DAMAGE TO PAVED AREAS WHICH ARE NOT SPECIFICALLY CALLED OUT FOR REPAIR OR REPLACEMENT. REPAIR, OR REPLACE ALL SUCH PAVEMENTS WHICH ARE DAMAGED BY CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST TO THE OWNER.
 5. OBTAIN ALL TEMPORARY EASEMENTS REQUIRED FOR THE CONSTRUCTION OF THE PROJECT AT NO ADDITIONAL COST TO THE OWNER.
 6. COMPLY WITH ALL APPLICABLE PERMITS AND REGULATIONS. APPLICABLE PERMITS ISSUED TO THE OWNER WILL BE MADE AVAILABLE TO THE CONTRACTOR. CONTACT ALL APPLICABLE PERMITTING AGENCIES WITHIN THE TIME PERIOD SPECIFIED BY THAT AGENCY PRIOR TO BEGINNING CONSTRUCTION.
 7. ALL PRIVATE WELL LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE. FIELD VERIFY AND DETERMINE EXACT LOCATIONS OF ALL PRIVATE WELLS IN THE PROJECT AREA.
 8. ALL EXISTING AND NEW UTILITY INFORMATION, INCLUDING BUT NOT LIMITED TO LOCATION, SIZE AND INVERT ELEVATION, IS SHOWN BASED UPON AVAILABLE INFORMATION. THE ENGINEER DOES NOT GUARANTEE OR ASSUME SUCH INFORMATION TO BE TRUE, ACCURATE, ALL INCLUSIVE OR EVEN APPROXIMATE. CONTACT THE INDIANA UNDERGROUND PLANT PROTECTION SERVICE (IUPPS) AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY CONSTRUCTION ACTIVITY. CONTACT NON-MEMBER UTILITIES DIRECTLY.
 9. DETERMINE WHICH UTILITIES MAY CONFLICT WITH WORK AND VERIFY THEIR LOCATION, SIZE AND ELEVATION PRIOR TO CONSTRUCTION AND DETERMINE IF THERE ARE ANY DISCREPANCIES OR CONFLICTS. IF ANY DISCREPANCIES OR CONFLICTS ARE DISCOVERED, NOTIFY THE ENGINEER AS SOON AS POSSIBLE.
 10. EXISTING UTILITY SERVICE LINES TO INDIVIDUAL CUSTOMERS MAY NOT BE SHOWN ON THE DRAWINGS. ASSUME THAT UNDERGROUND SERVICE LINES FOR ALL UTILITIES EXIST TO EACH PROPERTY ALONG THE ROUTE OF THE PLANNED IMPROVEMENTS.
 11. COORDINATE ALL WORK WITH THE RESPECTIVE UTILITIES. SCHEDULE WORK ACCORDINGLY, AND NOTIFY ALL UTILITIES A MINIMUM OF TWO (2) WEEKS IN ADVANCE OF ANY CONSTRUCTION ACTIVITY.
 12. COORDINATE PLANNED UTILITY SERVICE INTERRUPTIONS WITH THE RESPECTIVE UTILITIES AND THE UTILITIES' AFFECTED CUSTOMERS. SERVICE INTERRUPTIONS SHOULD NOT LAST MORE THAN FOUR (4) HOURS. GIVE WRITTEN NOTICE TO ALL AFFECTED UTILITY CUSTOMERS AND PROPERTY OWNERS AT LEAST TWENTY-FOUR (24) HOURS BUT NOT MORE THAN SEVENTY-TWO (72) HOURS PRIOR TO ANY PLANNED INTERRUPTION OF UTILITY SERVICE.
 13. USE CAUTION DURING THE EXECUTION OF WORK TO PREVENT DAMAGE TO EXISTING UTILITIES. REPAIR OR REPLACE ALL PUBLIC AND PRIVATE FACILITIES DAMAGED AS A RESULT OF CONSTRUCTION OPERATIONS. BRACE AND PROTECT ALL UTILITY POLES AND EXISTING STRUCTURES ADJACENT TO NEW EXCAVATIONS. UTILITY POLE BRACING SHALL BE AS DIRECTED BY THE GOVERNING UTILITY.
 14. MAINTAIN EXISTING STORMWATER DRAINAGE FOR THE ENTIRE DURATION OF THE PROJECT.
 15. DO NOT DISTURB EXISTING MANHOLES OR INLETS, UNLESS NOTED OTHERWISE.
 16. ALL EQUIPMENT, APPURTENANCES AND PIPING REMOVED AS PART OF THE DEMOLITION SHALL FIRST BE OFFERED TO THE OWNER FOR SALVAGE. DELIVER SALVAGED ITEMS SELECTED BY OWNER TO A LOCATION DESIGNATED BY THE OWNER OR ENGINEER. IN THE EVENT THE OWNER DOES NOT ELECT TO KEEP THE REMOVED ITEMS, REMOVE SUCH ITEMS FROM THE SITE AND DISPOSE OF AT A LOCATION APPROVED FOR SUCH DISPOSAL AT THE CONTRACTOR'S EXPENSE.
 17. COORDINATE STAGING AREA LOCATIONS WITH THE OWNER.
 18. ALL CONSTRUCTION TRAFFIC SHALL USE MAJOR ROADS. NO CONSTRUCTION TRAFFIC SHALL USE LOCAL STREETS FOR INDIRECT ACCESS.
 19. TO CONTROL DUST, REMOVE SOIL FROM STREETS USED BY CONSTRUCTION TRAFFIC DAILY, VACUUM AND WATER AS NECESSARY AND/OR AS DIRECTED BY THE OWNER.
 20. PLACE NEW ASPHALT PAVEMENT FLUSH WITH ADA RAMPS.
 21. ALL EXISTING PIPING MAY NOT BE SHOWN. REFERENCE EXISTING RECORD DRAWINGS ON FILE WITH THE OWNER AND WESSLER ENGINEERING FOR ADDITIONAL INFORMATION OF EXISTING PIPING AND CONDUIT THROUGHOUT THE PLANT SITE.
 22. THE WORK SHOWN ON THESE DRAWINGS IS OCCURRING ON A PLANT SITE IN WHICH BURIED ELECTRICAL CONDUIT AND SMALL PIPING MAY EXIST THROUGHOUT AND IN THE VICINITY OF THE PROJECT AND MAY NOT BE SHOWN ON THESE DRAWINGS. EXPECT TO ENCOUNTER BURIED ELECTRICAL AND COMMUNICATIONS WIRING, WITH OR WITHOUT CONDUIT, SMALL PIPING, AND FIELD TILE WHILE DIGGING ON THIS SITE.
 23. NEW PIPING CARRYING LIQUIDS SHALL HAVE MINIMUM COVER AS DEFINED IN THE MISCELLANEOUS SITE DETAILS, UNLESS SPECIFIC ELEVATIONS ON THE DRAWINGS INDICATE OTHERWISE.
 24. INSPECT THE SITE PRIOR TO BIDDING TO UNDERSTAND THE EXTENT OF THE DEMOLITION WORK INVOLVED AND ADJUST BID ACCORDINGLY.
 25. COMPLETELY REMOVE UNDERGROUND PIPING THAT HAS PREVIOUSLY BEEN OR WILL BE TAKEN OUT OF SERVICE, IN CONFLICT WITH THE NEW WORK. UNLESS OTHERWISE NOTED, ABANDON IN PLACE ALL UNDERGROUND PIPING NOT IN CONFLICT WITH THE NEW WORK. DO NOT LEAVE ABANDONED PIPING LIVE. SEE SPECIFICATION SECTION 02050 FOR DEMOLITION PROCEDURES. SEE SPECIFICATION SECTION 01550 FOR PLANT OPERATIONS DURING CONSTRUCTION FOR COORDINATION OF DEMOLITION WORK AND NEW CONSTRUCTION.
 26. ALL EQUIPMENT TO BE REMOVED THAT HAS ELECTRICAL COMPONENTS, CONDUIT AND WIRING, OR SMALL PIPING CONNECTED SHALL HAVE THE ELECTRICAL COMPONENTS AND SMALL PIPING REMOVED BACK TO THE SOURCE.
 27. LENGTHS OF SEWERS AS SHOWN ON THE DRAWINGS AND INDICATED AS LINEAR FEET (LF) ARE FROM CENTER TO CENTER OF STRUCTURES.
 28. NORTHING AND EASTING INFORMATION IS GIVEN AT CENTER OF STRUCTURE UNLESS OTHERWISE NOTED.
 29. PLACE NO. 8 CRUSHED AGGREGATE BETWEEN PIPES AT ALL PIPE CROSSINGS TO PREVENT PIPE SETTLEMENT UNLESS SHOWN OTHERWISE.
 30. VERIFY EXISTING SEWER INVERTS AND LOCATIONS PRIOR TO CONSTRUCTION AND DETERMINE IF THERE ARE ANY DISCREPANCIES OR CONFLICTS.
 31. ADJUST SEWER LATERALS AS NECESSARY TO AVOID CONFLICTS. LATERALS THAT REQUIRE FIELD ADJUSTMENT SHALL BE LAID AT THE MINIMUM SLOPE AS SPECIFIED IN THE DRAWINGS AND SPECIFICATIONS.
 32. ALL SANITARY SEWER PIPE, INCLUDING GRAVITY SEWERS, LATERAL WYES AND SERVICE LATERAL PIPE LOCATED WITHIN 50 FEET OF PRIVATE WELLS SHALL BE SDR 21 PVC WATER GRADE PRESSURE PIPE UNLESS SPECIFICALLY INDICATED OTHERWISE. ALL SANITARY SEWER PIPE, INCLUDING GRAVITY SEWERS, LATERAL WYES AND SERVICE LATERAL PIPE NOT LOCATED WITHIN 50 FEET OF PRIVATE WELLS SHALL BE SDR 35 PVC SEWER GRADE PIPE, UNLESS SPECIFICALLY INDICATED OTHERWISE.
 33. RESET ALL MAILBOXES AND SIGNS DISTURBED BY CONSTRUCTION ACTIVITIES.
 34. IF REQUIRED, PLACE TEMPORARY OVERNIGHT AGGREGATE WEDGES AT DRIVEWAYS TO ALLOW PROPERTY OWNER ACCESS.

SCALE VERIFICATION BAR IS ONE INCH LONG ON ORIGINAL DRAWING	DRAWN BY	DATE	INITIALS	REVISION DESCRIPTIONS	
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WATER SYSTEM IMPROVEMENTS		SHEET NO.
TOWN OF MONROE, INDIANA		1G4
PLAN NOTES, UTILITIES, ABBREVIATIONS AND LEGEND		PAGE NO. 4

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STRUCTURAL GENERAL NOTES

A. GENERAL INFORMATION

- SHOP DRAWINGS OF ALL FABRICATED ITEMS SHALL BE SUBMITTED FOR REVIEW PRIOR TO FABRICATION.
- VERIFY DIMENSIONS AND DETAILS BEFORE BEGINNING WORK. COORDINATE WALL OPENINGS WITH PROCESS / MECHANICAL / ARCHITECTURAL DRAWINGS. CONTRACTOR SHALL CHECK AND COORDINATE SIZES AND LOCATIONS OF ALL BLOCK-OUTS, CONDUITS, PIPE SLEEVES, EMBEDDED ITEMS, ETC. WITH MECHANICAL AND ELECTRICAL.
- HORIZONTAL RUNS OF ELECTRICAL CONDUIT ARE NOT PERMITTED IN CONCRETE.
- EXISTING CONDITIONS ARE TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR. VERIFICATION IS THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR IS TO IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR CONFLICTS BETWEEN EXISTING CONDITIONS AND DESIGN AND DETAILS INDICATED BY THESE DRAWINGS.
- NO PIPES, SLEEVES, ETC. SHALL PASS THROUGH BEAMS OR COLUMNS UNLESS CLEARLY INDICATED ON STRUCTURAL PLANS OR AUTHORIZED BY THE ENGINEER.
- STANDARD DETAILS ARE SHOWN ON DRAWINGS TITLED STANDARD DETAILS. THE STANDARD DETAILS INCLUDED MAY OR MAY NOT BE REFERENCED TO PLANS OR SECTIONS, BUT ARE TO BE USED AS APPLICABLE.
- DETAILS NOT SPECIFICALLY INDICATED SHALL BE SIMILAR TO DETAILS SHOWN FOR SIMILAR CONDITIONS.

B. DESIGN

1. CODES AND SPECIFICATIONS

- 2014 INDIANA BUILDING CODE - (2012 INTERNATIONAL BUILDING CODE).
- ACI 318: BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
- ACI 301: SPECIFICATION FOR STRUCTURAL CONCRETE FOR BUILDINGS.
- ACI 315: DETAILS AND DETAILING OF CONCRETE REINFORCING.
- BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES (TMS 402-11) AND SPECIFICATION FOR MASONRY STRUCTURES (TMS 602-11).
- ASCE 7-10: MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES.

2. DESIGN LIVE LOADS

MINIMUM ROOF LIVE LOAD (L_r): 20 PSF

SNOW :
GROUND SNOW LOAD (P_g) 20 PSF
MINIMUM SNOW LOAD (P_m) 22 PSF
IMPORTANCE FACTOR (I_s) 1.1
EXPOSURE FACTOR (C_e) 1.0
THERMAL FACTOR (C_t) 1.0

WIND :
BASIC WIND SPEED 120 MPH
EXPOSURE CATEGORY C
INTERNAL PRESSURE COEFFICIENT +/- 0.55 (PARTIALLY ENCLOSED)

SEISMIC :
RISK CATEGORY III
SEISMIC IMPORTANCE FACTOR 1.25
MAPPED SPECTRAL RESPONSE (S_s) 0.146 g
MAPPED SPECTRAL RESPONSE (S₁) 0.067 g
SITE CLASS (BLDG ADDITION) D
DESIGN SPECTRAL RESPONSE (SDS) 0.155 g
DESIGN SPECTRAL RESPONSE (SD₁) 0.107 g
SEISMIC DESIGN CATEGORY B
BASIC SEISMIC RESISTING SYSTEM ORDINARY REINF MASONRY SHEAR WALLS
DESIGN BASE SHEAR 1.4 KIPS
RESPONSE COEFFICIENTS (C_s) 0.10
RESPONSE MODIFIER (R) 2.0
ANALYSIS PROCEDURE EQUIVALENT LATERAL FORCE

GENERAL FLOOR LOADING:
STAIRS, EXITS, WALKWAYS 100 PSF
GENERAL FLOOR LOADING 250 PSF

C. FOUNDATIONS

- FOUNDATIONS ARE DESIGNED FOR 1500 PSF "GROSS" ALLOWABLE BEARING PRESSURE.
- CONSTRUCT FOOTINGS ON ADEQUATE SUBGRADE SOIL OR ENGINEERED FILL. IN ADDITION, PLACE 8 INCHES OF # 8 STONE BELOW ALL STRUCTURES.
- PROOFROLL EXPOSED FOUNDATION AND SLAB ON GRADE SUBGRADE SOILS TO DELINEATE SOFT SOILS.
- ALL FOUNDATION EXCAVATIONS SHALL BE INSPECTED BY A QUALIFIED GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE TO VERIFY THAT THE STRUCTURE SUBGRADE MATERIALS ARE SUITABLE FOR THE IDENTIFIED GROSS DESIGN PRESSURE. THE CONTRACTOR IS RESPONSIBLE FOR THE COST OF THIS REQUIREMENT.

D. CONCRETE

- REINFORCING SHALL BE DETAILED ACCORDING TO THE ACI DETAILING MANUAL.
- STANDEES ARE REQUIRED FOR REINF STEEL SUPPORT BETWEEN MATS IN SLABS.
- ALL CONSTRUCTION JOINTS TO BE PLACED WITH CHAMFERED EDGES. SEE STANDARD DETAIL FOR CONSTRUCTION JOINTS.
- CAST-IN-PLACE CONCRETE SHALL HAVE A MINIMUM ULTIMATE STRENGTH AT 28 DAYS OF 4500 PSI UNLESS OTHERWISE NOTED.
- THE REINFORCING DETAILS SHOWN ON DRAWINGS TITLED "STRUCTURAL STANDARD DETAILS" ARE INTENDED TO ESTABLISH BASIC REINFORCING REQUIREMENTS FOR VARIOUS GENERAL TYPES OF HORIZONTAL AND VERTICAL JOINTS IN REINFORCED CONCRETE STRUCTURES. DETAILS DESIGNATED AS "PLAN" ARE HORIZONTAL JOINTS AND DETAILS DESIGNATED AS "SECTION" ARE VERTICAL JOINTS. WHEN A CONDITION EXISTS IN A STRUCTURE THAT CONFORMS TO ONE OF THESE DETAILS, THE REINFORCING REQUIREMENTS SHOWN ON THE APPLICABLE DETAIL SHALL BE INCORPORATED INTO THE STRUCTURE UNLESS THE CONDITION IS SPECIFICALLY DETAILED ELSEWHERE ON THE DRAWINGS.
- THE FOLLOWING CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT UNLESS OTHERWISE INDICATED:
 - CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH, 3 INCHES.
 - CONCRETE EXPOSED TO EARTH, WEATHER OR FLUID SURFACES BUT CAST AGAINST FORMS, 2 INCHES.
 - SLABS:
FORMED CONCRETE SURFACES ABOVE WATER OR WASTE WATER: 2 INCHES
FORMED CONCRETE SURFACES ABOVE AREAS NOT CONTAINING WATER OR WASTE WATER: 1 INCH.
- ALL DOWELS SHALL BE THE SAME SIZE AND SPACING AS THE BARS THAT ARE BEING DOWELED OR AS SHOWN ELSEWHERE ON THE DRAWINGS. ALL REINFORCING STEEL SHALL BE DOWELED INTO ADJACENT STRUCTURAL MEMBERS UNLESS SPECIFICALLY EXCEPTED.
- "L" REPRESENTS A TENSION SPLICE, AS NOTED IN THE FOLLOWING TABLE FOR EACH SPECIFIC REINFORCING BAR SIZE. AN UNDIMENSIONED BEND REPRESENTS A STANDARD HOOK. TENSION SPLICES ARE IN ACCORDANCE WITH ACI 318, BASED ON GRADE 60 STEEL REINFORCING AND 4500 PSI 28 DAY CONCRETE STRENGTH BUT ARE NOT TO BE LESS THAN THAT NOTED BELOW.

BAR SIZE	CONDITION	
	OTHER	TOP
3	18"	21"
4	20"	24"
5	24"	30"
6	30"	36"
7	34"	44"
8	40"	50"
9	46"	60"
10	57"	74"

TOP BARS ARE HORIZONTAL BARS
WITH MORE THAN 12 INCHES OF
CONCRETE CAST BELOW THE BAR

- REINFORCING DETAILS SHOWN REPRESENT MINIMUM REQUIREMENTS. ALTERNATE BUT EQUAL METHODS ARE ACCEPTABLE, BUT THEY SHALL NOT BE USED WITHOUT PRIOR APPROVAL BY THE ENGINEER. SEE SPECIFICATION SECTION 03200 "CONCRETE REINFORCEMENT" FOR SHOP DRAWING REQUIREMENTS.
- WHERE ONE GRID OF REINFORCING IS REQUIRED IN A WALL OR SLAB, THE GRID SHALL BE CENTERED IN THE ELEMENT, UNLESS OTHERWISE LOCATED IN THE PLANS WITH A CLEAR DISTANCE TO EITHER SIDE OF THE ELEMENT.
- REINFORCING BARS: BILLET STEEL, DEFORMED BARS TO COMPLY WITH ASTM A616, GRADE 60.
- TYPICAL REINFORCEMENT FOR ALL 8" CAST-IN-PLACE CONCRETE WALLS SHALL BE # 5 @ 12" C/C EACHWAY, UNLESS OTHERWISE NOTED.
- ADDITIONAL REINFORCEMENT IS REQUIRED AT OPENINGS. SEE DETAIL LOCATED ON THE STANDARD DETAIL SHEETS.

- IF NOT OTHERWISE DETAILED OR NOTED THE ANCHORING OF REINFORCING STEEL TO EXISTING CONCRETE SHALL UTILIZE HILTI HIT-HY 200 INJECTION ADHESIVE AND SHALL HAVE THE FOLLOWING REQUIRED EMBEDMENT:

BAR SIZE	# 3	# 4	# 5	# 6	# 7	# 8
EMBEDMENT	5"	6"	8"	9"	11"	12"

USE AND INSTALLATION ARE TO BE IN ACCORDANCE WITH THE MANUFACTURERS PUBLISHED INSTRUCTIONS.

OTHER ANCHORING SYSTEMS, APPROVED EQUAL BY THE ENGINEER, MAY BE USED BUT THEY SHALL NOT BE USED WITHOUT SUBMITTAL OF APPROPRIATE DOCUMENTATION AND APPROVAL BY THE ENGINEER.

- EXPOSED REINFORCING STEEL RESULTING FROM SAW-CUTTING OF EXISTING CONCRETE STRUCTURAL ELEMENTS SHALL BE REPAIRED AS FOLLOWS :
REINFORCING STEEL SHALL BE BURNED BACK 1 INCH FROM THE EXPOSED CONCRETE SURFACE. REINFORCING STEEL SHALL BE COATED WITH A CORROSION INHIBITOR. RESULTING HOLE SHALL BE PATCHED USING GROUT.
- INTERIOR SLABS-ON-GRADE SHALL BE PLACED ON 6 INCHES OF # 8 STONE. STONE BASE IS TO BE CONTINUOUS UNDER THICKENED SLABS.
- FOR ALL FINISHED SPACES PROVIDE VAPOR BARRIER BELOW ALL SLAB ON GRADE CONCRETE.
- CONTROL JOINTS IN SLABS ON GRADE SHALL BE PLACED AS SHOWN ON PLANS. WHERE NOT SHOWN, JOINTS SHALL BE SPACED TO DIVIDE THE SLAB INTO PANELS NOT TO EXCEED 400 SQUARE FEET. JOINTS SHALL BE HAND TOoled, CAST IN OR SAW CUT.
- ALL EXPOSED CORNERS SHALL HAVE 3/4" CHAMFER.
- NO CALCIUM CHLORIDE SHALL BE USED IN CONCRETE.
- WHERE NEW CONCRETE IS OF CASTED AGAINST CONCRETE THAT IS GREATER THAN 28 DAYS OLD, THOROUGHLY CLEAN EXISTING SURFACE OF LAITANCE AND FOREIGN MATERIAL, AND APPLY BONDING AGENT FOLLOWING RECOMMENDATIONS OF MANUFACTURER.
- ALL CONCRETE IS REINFORCED UNLESS SPECIFICALLY NOTED AS UNREINFORCED. REINFORCE ALL CONCRETE NOT OTHERWISE SHOWN WITH THE SAME REINFORCING AS IN SIMILAR SECTIONS OR AREAS.

MASONRY (F_m = 2,000 PSI)

- COMPRESSION STRENGTH OF THE CONCRETE MASONRY UNITS SHALL BE 2,800 PSI MINIMUM. NORMAL WEIGHT HOLLOW LOAD BEARING UNITS CONFORMING TO ASTM C90.
- MASONRY MORTAR TO ASTM C270, TYPE S.
- THE 28-DAY COMPRESSIVE STRENGTH OF GROUT SHALL BE 3,000 PSI. DO NOT ADD AIR-ENTRAINING AGENTS OR OTHER ADMIXTURES TO GROUT.
- MASONRY JOINT REINFORCEMENT: GENERAL TO ASTM A 951.
- MINIMUM WALL REINFORCEMENT :
2- # 5 HORIZONTAL IN BOND BEAM, CONTINUOUS.
9 GA GALV LADDER - TYPE REINFORCEMENT PLACE IN EVERY OTHER COURSE.
1- # 5 VERTICAL BAR/CELL @ 48" C/C. TYPICAL FOR ALL MASONRY WALLS.
DOWEL TO FOUNDATION AND TERMINATE IN BOND BEAM AT TOP OF WALL.
- MASONRY REINFORCING LAP SPLICES ARE IN ACCORDANCE WITH TMS 402-11, BASED ON GRADE 60 STEEL REINFORCING AND 2000 PSI COMPRESSIVE STRENGTH OF MASONRY, BUT ARE NOT TO BE LESS THAN THAT NOTED BELOW.

BAR	LAP LENGTH
3	16"
4	16"
5	24"

- PLACE BOND BEAMS BELOW ROOF TRUSS BEARING AND AS SHOWN ON DRAWINGS. REINFORCE WITH 2 # 5 BARS, CONTINUOUS.
- PROVIDE ADDITIONAL VERTICAL WALL REINFORCEMENT AS FOLLOWS : 1 - # 5 BAR IN ONE CELL AT EACH CORNER, EACH SIDE OF ALL OPENINGS (DOORS, WINDOWS AND MECHANICAL OPENINGS); AT THE END OF A WALL, ADJACENT TO ALL CONTROL JOINT LOCATIONS, AND AT ALL WALL INTERSECTIONS.
- PLACE 1 # 5 VERTICAL BAR IN THE FIRST CELL ADJACENT TO ALL MASONRY OPENINGS LESS THAN 6'-0" WIDE. PLACE 1 # 5 VERTICAL BAR, EACH, IN THE FIRST AND SECOND CELL ADJACENT TO MASONRY OPENINGS EQUAL TO OR GREATER THAN 6'-0" WIDE.
- ALL VERTICAL REINFORCING STEEL TO BE DOWELED TO FOUNDATION AND SHALL TERMINATE IN BOND BEAM AT TOP OF WALL.
- PLACE BOND BEAMS ABOVE AND BELOW ALL MASONRY OPENINGS. PROVIDE 8" X 8" BOND BEAM REINFORCED WITH 2 # 5 BARS AND EXTEND 25 INCHES BEYOND MASONRY OPENING ON EACH SIDE.
- BOND BEAMS BELOW ROOF STRUCTURE BEARING ARE CONTINUOUS THROUGH ALL CONTROL JOINTS.
- PROVIDE BULLNOSE CMU UNITS AT OPENINGS.

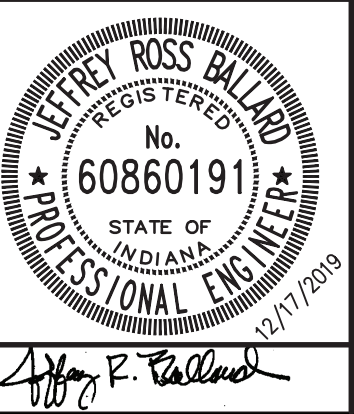
LINTELS

- PRECAST BOND BEAM LINTELS ARE NOT PERMITTED.
- FOR MASONRY OPENINGS LESS THAN OR EQUAL TO 3'-4", USE 8" X 8" BOND BEAM WITH 2 # 5 BARS TOP AND BOTTOM, UNLESS OTHERWISE NOTED.
- PROVIDE 8" OF BEARING, EACH END, FOR ALL LINTELS.
- GROUT CELLS SOLID BELOW LINTEL BEARINGS, FOR THREE COURSES, IF NOT OTHERWISE PROVIDED.

PRE-ENGINEERED PRE-FABRICATED WOOD TRUSSES

- METAL-PLATE-CONNECTED WOOD TRUSS CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE FOLLOWING:
ANSI/TPI 1 "NATIONAL DESIGN STANDARD FOR METAL-PLATE-CONNECTED WOOD TRUSS CONSTRUCTION"
TPI HB "COMMENTARY AND RECOMMENDATIONS FOR HANDLING INSTALLING & BRACING METAL PLATE CONNECTED WOOD TRUSSES"
TPI DSB "RECOMMENDED DESIGN SPECIFICATION FOR TEMPORARY BRACING OF METAL PLATE CONNECTED WOOD TRUSSES"
- ENGINEER, FABRICATE AND ERECT TRUSSES TO WITHSTAND DESIGN LOADS AND WITHIN DEFLECTION LIMITS AS FOLLOWS:
 - TOP CHORD DEAD LOAD 10 PSF
 - TOP CHORD LIVE LOAD (balanced) 25 PSF
 - TOP CHORD LIVE LOAD (unbalanced) 7 PSF / 43 PSF
 - BOTTOM CHORD DEAD LOAD 10 PSF
 - BOTTOM CHORD LIVE LOAD 10 PSF (NOT CONCURRENT W/ TOP CHORD LIVE LOAD)
 - MECHANICAL/EQUIPMENT LOADS AS INDICATED ON PLANS
 - CONCENTRATED LIVE LOAD 200 LBS APPLIED ANYWHERE ON TOP & BOTTOM CHORD
 - LIMIT LIVE LOAD DEFLECTION L/360.
- ENGAGE A FABRICATOR WHO USES A QUALIFIED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF INDIANA TO PREPARE CALCULATIONS, SHOP DRAWINGS AND OTHER STRUCTURAL DATA. DESIGN AND SPECIFY ALL TRUSS-TO-TRUSS CONNECTIONS.
- LUMBER TO BE GRADE STAMPED SOUTHERN YELLOW PINE #2 OR BETTER. TOP AND BOTTOM CHORD MINIMUM SIZE TO BE 2" X 6".
- INSTALL AND BRACE TRUSSES ACCORDING TO RECOMMENDATIONS OF TPI. ENGINEER AND PROVIDE ALL TEMPORARY AND PERMANENT BRACING AS REQUIRED TO PROVIDE OVERALL AND INDIVIDUAL TRUSS AND ELEMENT STABILITY.
- HANDLE AND STORE TRUSSES WITH CARE AND COMPLY WITH MANUFACTURER'S INSTRUCTIONS AND WITH TPI RECOMMENDATIONS TO AVOID DAMAGE AND LATERAL BENDING OF TRUSSES. DO NOT STORE TRUSSES IN CONTACT WITH GROUND.
- DO NOT INSTALL WOOD TRUSSES UNTIL SUPPORTING CONSTRUCTION IS IN PLACE AND IS BRACED AND SECURED. INSTALL TRUSSES PLUMB, SQUARE, AND TRUE TO LINE. SPACE, ADJUST AND ALIGN TRUSSES IN LOCATION BEFORE PERMANENTLY FASTENING.
- TEMPORARY STABILITY OF WOOD TRUSSES AND GLUE LAMINATED MEMBERS DURING ERECTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR IN CONJUNCTION WITH ALL RECOMMENDATIONS OF THE MANUFACTURER.
- USE SIMPSON STRONG-TIE SEISMIC AND HURRICANE CONNECTOR MODEL H10A FOR ALL TRUSSED RAFTER CONNECTIONS TO CAP PLATE. FOR TRUSS T4 USE SIMILAR HURRICANE CONNECTOR SIZED FOR WIDTH OF TRUSS.

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WATER SYSTEM IMPROVEMENTS	
TOWN OF MONROE, INDIANA	
STRUCTURAL GENRAL NOTES	

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DUCTWORK SYMBOLS

RECTANGULAR	ROUND / OVAL	
		ROUND BRANCH DUCTWORK
		RECTANGULAR BRANCH DUCTWORK
		SQUARE TEE WITH TURNING VANES NOTE: ALL SQUARE ELBOWS IN RECTANGULAR AND ROUND / OVAL DUCTWORK SHALL BE PROVIDED WITH TURNING VANES. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAILS.
		RADIUS'D TEE
		RADIUS'D BRANCH
		UNLESS NOTED OTHERWISE ON DRAWINGS, 15° MAX FOR DIVERGING, 30° MAX FOR CONVERGING TRANSITION
		EXISTING DUCTWORK TO REMAIN
		EXISTING DUCTWORK TO BE REMOVED
		RETURN AIR, RELIEF AIR, OR TRANSFER AIR DUCTWORK. (UP AND DOWN) RADIUS'D OR SQUARE WITH TURNING VANES.
		SUPPLY AIR OR OUTDOOR AIR DUCTWORK. (UP AND DOWN) RADIUS'D OR SQUARE WITH TURNING VANES.
		EXHAUST AIR DUCTWORK. (UP AND DOWN) RADIUS'D OR SQUARE WITH TURNING VANES.
		RECTANGULAR AND ROUND / OVAL DUCTWORK RISE / DROP WITH 90° RADIUS'D OR SQUARE ELBOWS AND TURNING VANES.
		RADIUS ELBOW
		90° SQUARE ELBOW (WITH TURNING VANES) NOTE: ALL SQUARE ELBOWS IN RECTANGULAR AND ROUND DUCTWORK SHALL BE PROVIDED WITH TURNING VANES.
		SQUARE THROAT / RADIUS HEEL FITTINGS NOT ACCEPTABLE
		ACCESS DOOR OR PANEL
		DUCTWORK RISE IN DIRECTION OF AIR FLOW
		DUCTWORK DROP IN DIRECTION OF AIR FLOW
		FLEXIBLE DUCTWORK
		DUCTWORK WITH ACOUSTICAL LINER. LISTED DUCT SIZES ARE INSIDE CLEAR DIMENSIONS.
		FLEXIBLE CONNECTION
		DUCTWORK CONSTRUCTED OF SPECIAL MATERIAL AS NOTED
		DIRECTION OF PITCH
		RECTANGULAR DUCTWORK DIMENSIONS (W x H)
		ROUND DUCTWORK DIMENSIONS (DIA)
		OVAL DUCTWORK DIMENSIONS (W x H)

ABBREVIATIONS

AC	- AIR COMPRESSOR OR AIR CONDITIONER	ID	- INSIDE DIAMETER
ACCU	- AIR COOLED CONDENSING UNIT	INV	- INVERT ELEVATION
AD	- ACCESS DOOR OR AREA DRAIN	IN	- INCHES
ADJ	- ADJUSTABLE	KEC	- KITCHEN EQUIPMENT CONTRACTOR
AFF	- ABOVE FINISHED FLOOR	L	- LENGTH
AFG	- ABOVE FINISHED GRADE	LAT	- LEAVING AIR TEMPERATURE
AFMS	- AIR FLOW MEASURING STATION	LAV	- LAVATORY
ALT	- ALTERNATE	LBS	- POUNDS
AP	- ACCESS PANEL	LPC	- LOW PRESSURE CONDENSATE RETURN
APPROX	- APPROXIMATE	LPS	- LOW PRESSURE STEAM SUPPLY
ARCH	- ARCHITECT OR ARCHITECTURAL	LWT	- LEAVING WATER TEMPERATURE
ASSY	- ASSEMBLY		
ATC	- AUTOMATIC TEMPERATURE CONTROL		
BDD	- BACK DRAFT DAMPER	MAX	- MAXIMUM
BFP	- BACKFLOW PREVENTER	MDD	- MOTORIZED DAMPER
BLOG	- BUILDING	MEZZ	- MEZZANINE
BOB	- BOTTOM OF BEAM	MFR	- MANUFACTURER
BOD	- BOTTOM OF DUCT	MH	- MANHOLE
BOE	- BOTTOM OF EQUIPMENT	MIN	- MINIMUM OR MINUTE
BOF	- BOTTOM OF FOOTING	MISC	- MISCELLANEOUS
BOG	- BOTTOM OF GRILLE	MTD	- MOUNTED
BOP	- BOTTOM OF PIPE	MTG	- MOUNTING
BOT	- BOTTOM	MPC	- MEDIUM PRESSURE CONDENSATE RETURN
BTU	- BRITISH THERMAL UNIT		
BTUH	- BRITISH THERMAL UNIT PER HOUR	MPS	- MEDIUM PRESSURE STEAM SUPPLY
		MU	- WATER MAKE-UP
CBD	- COUNTER BALANCED BACKDRAFT DAMPER	N/C	- NORMALLY CLOSED
CFCI	- CONTRACTOR FURNISHED CONTRACTOR INSTALLED	NIC	- NOT IN CONTRACT
		N/O	- NORMALLY OPEN
CFM	- CUBIC FEET PER MINUTE	NOM	- NOMINAL
CHS	- CHILLED WATER SUPPLY	NPT	- NATIONAL PIPE THREAD
CHR	- CHILLED WATER RETURN	NTS	- NOT TO SCALE
CHGR	- CHILLED WATER GLYCOL SOLUTION RETURN		
CHGS	- CHILLED WATER GLYCOL SOLUTION SUPPLY		
CLS	- CEILING	OA	- OUTDOOR AIR
CMU	- CONCRETE MASONRY UNIT	OBD	- OPPOSED BLADE DAMPER
CO	- CLEAN OUT	OD	- OUTSIDE DIAMETER
CO2	- CARBON DIOXIDE	OCFI	- OWNER FURNISHED CONTRACTOR INSTALLED
CONN	- CONNECT OR CONNECTION	OFOI	- OWNER FURNISHED OWNER INSTALLED
CONTR	- CONTRACTOR		
CUR	- CENTER		
CU	- COPPER	P	- PROPANE GAS
CW	- COLD WATER	PC	- PLUMBING CONTRACTOR (DIVISION 22) OR PUMPED CONDENSATE RETURN
CWR	- CONDENSER WATER RETURN		
CWS	- CONDENSER WATER SUPPLY	PLBG	- PLUMBING
		PRESS	- PRESSURE
D	- DRAIN LINE	PRV	- PRESSURE REGULATING VALVE
DB	- DRY BULB	PSF	- POUNDS PER SQUARE FOOT
DDC	- DIRECT DIGITAL CONTROLS	PSI	- POUNDS PER SQUARE INCH
DI	- DEIONIZED WATER	PSIG	- POUNDS PER SQUARE INCH GAUGE
DIA	- DIAMETER		
DIM	- DIMENSION	RA	- RETURN AIR
DN	- DOWN	RAD	- RADIUS
DWG	- DRAWING	RCP	- REFLECTED CEILING PLAN
		RD	- ROOF DRAIN
EA	- EACH OR EXHAUST AIR	REC	- RECESSED
EAT	- ENTERING AIR TEMPERATURE	REQD	- REQUIRED
EC	- ELECTRICAL CONTRACTOR (DIVISION 26)	RI	- ROUGH IN
EJ	- EXPANSION JOINT	RL	- REFRIGERANT LIQUID
ELEC	- ELECTRICAL	ROS	- REVERSE OSMOSIS WATER SUPPLY
ELEV	- ELEVATOR	ROR	- REVERSE OSMOSIS WATER RETURN
EQUIP	- EQUIPMENT	RPM	- REVOLUTIONS PER MINUTE
ET	- EXPANSION TANK	RS	- REFRIGERANT SUCTION
ETR	- EXISTING TO REMAIN		
EQS	- EQUIPMENT SUPPLIER	S	- SPRINKLER (WET)
EWT	- ENTERING WATER TEMPERATURE	SA	- SUPPLY AIR
EXH	- EXHAUST	SAN	- SANITARY OR SANITARY DRAIN
EXP	- EXPANSION	SCH	- SCHEDULE
EXT	- EXTERIOR	SCW	- SOFT COLD WATER
EX	- EXISTING	SHT	- SHEET
		SPEC	- SPECIFICATIONS
FD	- FLOOR DRAIN	SQ	- SQUARE
FF	- FINISHED FLOOR ELEVATION	SR	- SUPPLY RISER
FLR	- FLOOR	SRV	- SAFETY RELIEF VALVE
FOB	- FLAT ON BOTTOM	SS	- STAINLESS STEEL
FOF	- FUEL OIL FLOW	STD	- STANDARD
FOG	- FUEL OIL GAUGE	STM	- STORM OR STORM DRAINAGE
FOR	- FUEL OIL RETURN	STRU	- STRUCTURAL OR STRUCTURE
FOS	- FUEL OIL SUPPLY	SUC	- SITE UTILITY CONTRACTOR
FOT	- FLAT ON TOP		
FPM	- FEET PER MINUTE	TEMP	- TEMPERATURE
FSC	- FIRE SUPPRESSION CONTRACTOR (DIVISION 21)	TOB	- TOP OF BEAM
FT	- FEET	TOD	- TOP OF DUCT
FTG	- FOOTING	TOE	- TOP OF EQUIPMENT
		TOF	- TOP OF FOOTING
G	- GAS OR NATURAL GAS	TOJ	- TOP OF JOIST
GA	- GAUGE	TOP	- TOP OF PIPE
GAL	- GALLON	TOS	- TOP OF STEEL
GALV	- GALVANIZED	TYP	- TYPICAL
GC	- GENERAL TRADES CONTRACTOR		
GPM	- GALLONS PER MINUTE	UNO	- UNLESS NOTED OTHERWISE
		V	- VENT
HB	- HOSE BIBB	VAC	- VACUUM
HC	- HVAC CONTRACTOR (DIVISION 23)	VEL	- VELOCITY
HD	- HUB DRAIN	VB	- VALVE IN BOX
HG	- REFRIGERANT HOT GAS	VL	- VOLUME
HP	- HORSEPOWER	VTR	- VENT THROUGH ROOF
HPC	- HIGH PRESSURE CONDENSATE RETURN	VR	- VENT RISER
HPS	- HIGH PRESSURE STEAM SUPPLY		
HR	- HOUR		
HT	- HEAT TRACE	W/	- WITH
HTR	- HEATER	W/O	- WITHOUT
HVAC	- HEATING, VENTILATING, AND AIR CONDITIONING	WB	- WET BULB
HW	- HOT WATER	WCO	- WALL CLEANOUT
HWR	- HEATING HOT WATER RETURN		
HWS	- HEATING HOT WATER SUPPLY		

DUCTWORK DEVICE SYMBOLS

	AIR DEVICE. A3 = DESIGNATION (REFER TO FLOOR PLANS AND AIR DEVICE SCHEDULE FOR VARIOUS DESIGNATIONS). 10 = NECK SIZE (IN INCHES). 300 = REQUIRED CFM. ALL AIR DEVICE DISCHARGE 4-WAY UNLESS NOTED WITH FLOW ARROWS. AIR DEVICE SHOWN IS 2-WAY SIDE THROW. METHOD OF IDENTIFICATION ALSO APPLIES TO OTHER CEILING MOUNTED AIR DEVICES.
	WALL OR DUCTWORK MOUNTED AIR DEVICE. SG1 = DESIGNATION (REFER TO AIR DEVICE SCHEDULE). 20x12 = DUCT CONNECTION SIZE (IN INCHES). 300 = REQUIRED CFM. 9'-0" = MOUNTING HEIGHT FROM FLOOR TO BOTTOM OF GRILLE.
	MANUAL BALANCING VALVE DAMPER WITH LOCKING DEVICE
	BDD = BACK DRAFT DAMPER CBD = COUNTER-BALANCED BACK DRAFT DAMPER
	FIRE DAMPER A = TYPE (REFER TO FLOOR PLANS FOR VARIOUS TYPES) D OR S = DYNAMIC OR STATIC
	SD = SMOKE DAMPER FS = COMBINATION FIRE - SMOKE DAMPER MDD = MOTORIZED DAMPER AFMS = AIR FLOW MEASURING STATION
	DUCT MOUNTED SMOKE DETECTOR. COORDINATE LOCATION.
	HUMIDITY SENSOR - DUCT MOUNTED
	STATIC PRESSURE SENSOR - DUCT MOUNTED
	CARBON DIOXIDE SENSOR - DUCT MOUNTED
	TEMPERATURE SENSOR - DUCT MOUNTED

MISC SYMBOLS

	CARBON DIOXIDE SENSOR. WHEN WALL MOUNTED, MOUNTING HEIGHT 46" TO MEET ADA REQUIREMENTS. WHEN MOUNTED NEXT TO WALL SWITCH COORDINATE WITH ARCHITECT.
	CARBON MONOXIDE SENSOR. WHEN WALL MOUNTED, MOUNTING HEIGHT 46" TO MEET ADA REQUIREMENTS. WHEN MOUNTED NEXT TO WALL SWITCH COORDINATE WITH ARCHITECT.
	DIFFERENTIAL PRESSURE SENSOR. WHEN WALL MOUNTED, MOUNTING HEIGHT 46" TO MEET ADA REQUIREMENTS. WHEN MOUNTED NEXT TO WALL SWITCH COORDINATE WITH ARCHITECT.
	HUMIDITY SENSOR. WHEN WALL MOUNTED, MOUNTING HEIGHT 46" TO MEET ADA REQUIREMENTS. WHEN MOUNTED NEXT TO WALL SWITCH COORDINATE WITH ARCHITECT.
	TEMPERATURE SENSOR. WHEN WALL MOUNTED, MOUNTING HEIGHT 46" TO MEET ADA REQUIREMENTS. WHEN MOUNTED NEXT TO WALL SWITCH COORDINATE WITH ARCHITECT.
	TEMPERATURE SENSOR MOUNTED IN CEILING PLENUM.
	STATIC PRESSURE SENSOR.
	SPACE TEMPERATURE SENSOR / THERMOSTAT. WHEN WALL MOUNTED, MOUNTING HEIGHT 46" TO MEET ADA REQUIREMENTS. WHEN MOUNTED NEXT TO WALL SWITCH COORDINATE WITH ARCHITECT.
	EMERGENCY SHUTOFF STATION. 46" MOUNTING HEIGHT UNLESS NOTED OTHERWISE.

Monroe Water System Improvements - Basis of Design

Approximately 1,000 sf
HVAC for WTP room, Electrical and Mechanical Room, and Well House
Monroe, IN

Mechanical

1. WTP room to receive a packaged heating/cooling unit with dehumidification ability. A wall mounted combination temperature and humidity sensor will be provided with the unit to maintain the desired setpoint.
2. Demo existing General Electric cooling unit with condenser, unit heater and exhaust fan in WTP room.
3. Demo existing 36 MBH gas fired unit heater in Well house.
4. Provide split gas-fired heating and cooling package system for Well house.
5. Electrical room to receive a split heat pump unit for heating and cooling.

SECTION 23 09 93 – SEQUENCES OF OPERATIONS FOR HVAC CONTROLS

1.1 Packaged Unit – 1 (P-01)

- A. This unit serves the WTP Room. The unit is a single zone air handling unit with constant volume supply fan, outside and return air dampers, gas-fired burner, and direct expansion cooling coil.
- B. Packaged Unit Start/Stop – The unit will go into occupied mode if the wall mounted CO2 reading exceeds 1000ppm during unoccupied mode or by override at the wall mounted temperature sensor. During unoccupied mode the unit shall function as specified only the outside air damper shall remain closed. During unoccupied mode the unit will cycle to maintain unoccupied setpoints (adjustable), 60 degrees for heating, 80 degrees for cooling and 55% relative humidity. During Occupied mode the unit will run continuously, and the unit will maintain the occupied setpoints (adjustable) of 70 degrees for heating, 74 degrees for cooling and 55% relative humidity.
- C. Economizer Control - Outside air temperature and return air temperature shall be measured. If the temperature of the outside air is less than the temperature of the return air the economizer shall be enabled. When the outside air temperature is higher than the return air temperature and mechanical cooling is available the economizer shall be disabled.
- D. Economizer cycle - When the unit operated in the "Occupied" mode, the minimum outside air shall be provided and the return air dampers shall open inversely. This condition is the normal position and shall be maintained during the "Occupied" mode except during the "economizer" cycle. During the "economizer" cycle, the amount of outside air shall be increased as required to maintain the temperature setpoint.
- E. Minimum Outside Air - This paragraph defines the vent air and return air dampers (economizer dampers) to provide minimum outside air for ventilation. The phrase "Minimum" in the sequences of operation shall invoke this paragraph. Simple outside air damper sections (all damper blades operating in unison) shall modulate to maintain a 1000 ppm space mounted CO2 sensor setpoint. When minimum outside air control is enabled the minimum damper position shall be set to the minimum quantity shown on the air handling unit schedule and set up by air balance.
- F. All other sequences shall follow the manufacturer's established guidelines.

1.2 Split Packaged System – 1 (SPS-1)

- A. This unit serves the Wellhouse. The unit is a single zone air handling unit with constant volume supply fan, outside air damper, gas-fired burner, and direct expansion cooling coil.
- B. Split Packaged System Start/Stop – The unit will go into occupied mode if the override at the wall mounted temperature sensor is pressed. During unoccupied mode the unit shall function as specified only the outside air damper shall remain closed. During unoccupied mode the unit will cycle to maintain unoccupied setpoints (adjustable), 60 degrees for heating, 80 degrees for cooling and 55% relative humidity. During Occupied mode the supply fan will run continuously, and the unit will maintain the occupied setpoints (adjustable) of 70 degrees for heating, 74 degrees for cooling and 55% relative humidity.
- C. Minimum Outside Air - When the unit operated in the "Occupied" mode, the minimum outside air shall be provided. When minimum outside air control is enabled the minimum damper position shall be set to the minimum quantity shown on the air handling unit schedule and set up by air balance.
- D. All other sequences shall follow the manufacturer's established guidelines.

1.3 Exhaust Fan – 1 (EF-1)

- A. Exhaust Fan enable shall be controlled by a wall mounted manual switch. When an occupant enters the room and turns on the switch, the exhaust damper will open, the exhaust fan will turn on and the outside air intake damper will open.

1 HVAC LEGEND



SCALE VERIFICATION

BAR IS ONE INCH LONG ON ORIGINAL DRAWING

DRAWN BY

GPW

CHECKED BY

GPW

APPROVED BY

ISSUE DATE

OCTOBER 2019

PROJECT NUMBER

2019-75021

NO.

DATE

INITIALS

REVISION DESCRIPTION



WATER SYSTEM IMPROVEMENTS

MONROE WATER UTILITIES MONROE, IN
102 E Walnut Street, Monroe, IN 46772

MECHANICAL LEGEND, BOD AND SEQUENCE

SHEET NO.

1H1

PAGE NO.

6

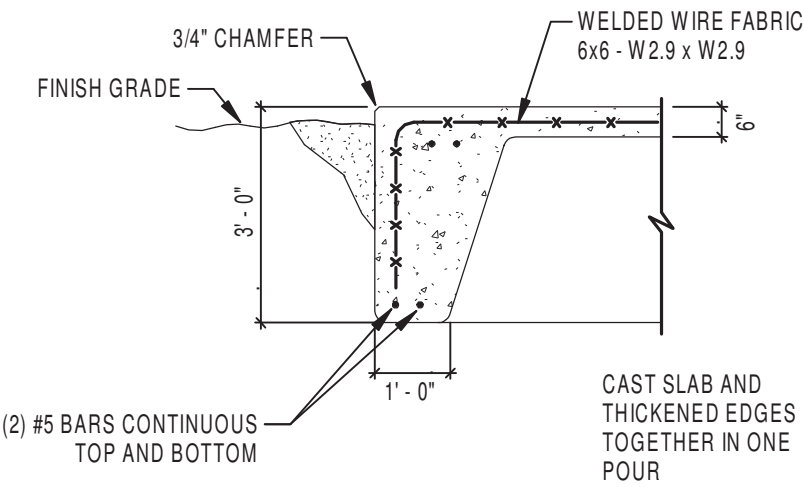
Drawing: H:\L7500\2019-75021 - Monroe IN - HVAC\REV\T2019\ProjectContent\Wessler\22-04 Titleblock.dwg | Layout: Model | Plotted: 09/18/19 @ 08:28:56 | LastSavedBy: jphanson

BUILDING VENTILATION RATES						
PER ANSI/ASHRAE STANDARD 62.1						
(KNOWN OCCUPANCY VALUES)						
Zone	Room/Occupancy Category	Number of Occupants	CFM/Person	CFM/FT ²	FT ²	O.A. (CFM)
WTP Room	Occupiable Storage	2	5	0.12	582	80
	Outside Air Provided (TOTAL)					250
Electrical Room	Occupiable Storage	1	5	0.12	209	30
	Outside Air Provided (TOTAL)					100
Wellhouse	Occupiable Storage	1	5	0.12	166	25
	Outside Air Provided (TOTAL)					50

TYPE	UNIT CONFIGURATION	AREA SERVED	INDOOR UNIT										OUTDOOR UNIT										Type Comments				
			SUPPLY FAN			COOLING SECTION DX COOLING COIL	HEATING SECTION GAS FIRED HEAT	PRE-FILTERS	OUTSIDE AIR	BASIS OF DESIGN		UNIT NO.	NOMINAL CAPACITY (TONS)	MAX UNIT WEIGHT (LBS.)	ELECTRICAL SERVICE			BASIS OF DESIGN									
			FAN QUANTITY	MOTOR (HP EACH)	VOLTAGE - PHASE										TOTAL CAPACITY (MBH)	CAPACITY (MBH)	THICKNESS			MINIMUM FACE (SQ. FT.)	MINIMUM CFM	MANUFACTURER		MODEL	VOLTAGE - PHASE	FULL LOAD AMPS (FLA)	MIN CIRCUIT AMPS (MCA) (MOOP)
SPS-1	Upflow	Wellhouse	1	0.33	115-1	30.0	60.0	1"	2.7					TRANE	TUD1A060A9361A	SCU-1	2	240	230-1	14	18	20	TRANE	4TTR7024	18 SEER		

AIR DISTRIBUTION DEVICES											
NOTES: 1. DRAINABLE, RAIN TIGHT											
MARK	DESCRIPTION	MOUNTING TYPE			MATERIAL		BASIS OF DESIGN		SEE NOTE		
		LAY-IN	SURFACE	DUCT	SPLINE	SNAP-IN	STEEL	ALUMINUM		STAINLESS STEEL	MANUFACTURER
L-1	5 in Frame Wind Driven Rain Louver		•					•	Greenheck	EHH-501	1
L-2	5 in Frame Wind Driven Rain Louver		•					•	Greenheck	EHH-501	1
RG-1	Aluminum Gymnasium Grille			•				•	Price	98	
SG-1	Industrial Grille Double Deflection			•				•	Price	152	

MARK	DESCRIPTION	LOCATION	FAN	INDOOR UNIT		ELECTRICAL SERVICE	APPROX. DIMENSIONS				BASIS OF DESIGN		OUTDOOR HEAT PUMP CONDENSING UNIT - AIR COOLED						REFRIGERANT CONN. SIZE		Type Comments																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
				ROOM NAME	ROOM NUMBER		COIL CAPACITY		VOLTAGE - PHASE	FULL LOAD AMPS (FLA)	MIN CIRCUIT AMPS (MCA)	LENGTH	WIDTH	HEIGHT	MANUFACTURER	MODEL	CONDENSING UNIT - AIR COOLED					LIQUID LINE	SUCTION LINE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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SHP-1	SPLIT HEAT PUMP INDOOR	NEW ELECTRICAL & MECHANICAL ROOM	6	990	160/185	70/37	230/1	1	2	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"	63"	9"	27"</



GENERAL NOTES
A. TYP. ALL FOUR SIDES
B. CONCRETE BASES AND PADS WITH ANCHOR BOLTS CAST-IN-PLACE. PROVIDE A MINIMUM 6" THICK CONCRETE PAD THAT IS A MINIMUM 4" WIDER THAN EQUIPMENT IN EACH DIRECTION, FORMED ON ALL SIDES AND HAND TROWELED TO A SMOOTH, DENSE FINISH WITH NEATLY CHAMFERED CORNERS. LARGE CONCRETE PADS ON GRADE SHALL BE CONSTRUCTED WITH REINFORCING STEEL OR REINFORCING ROADWAY MESH.

1 PAD DETAIL
SCALE: 1/8" = 1'-0"

PACKAGED HEATING & COOLING UNITS - DX/GAS FIRED																									
NOTES: 1. MINIMUM EER/SEER - 11.6 / 14.2																									
UNIT NUMBER	NOMINAL TONS	UNIT CONFIGURATION	AREA SERVED	SUPPLY FAN				COOLING SECTION DX COOLING COIL				HEATING SECTION		MISCELLANEOUS	ELECTRICAL SERVICE			Economizer	Outside Air CFM	BASIS OF DESIGN					
				EXTERNAL STATIC PRESSURE (IN. W.C.)	FAN QTY	MOTOR (HP EACH)	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	ENTERING AIR TEMPERATURE DBWB (°F)	LEAVING AIR TEMPERATURE DBWB (°F)	REFRIGERANT TYPE														
PU-1	4	Horizontal	Room	1,280	0.5/0.671	1	0.42	42	36	75.2/59.1	50.95/47.36	R-410A	49.0	62.3	60	•	976	460/3	11	15	Yes	250	TRANE	YHC048	1

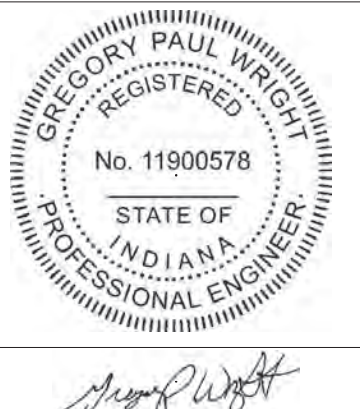
FANS													
GENERAL NOTES: A. ALL FANS SHALL BE A.M.C.A. 211 AND 311 PERFORMANCE CERTIFIED AND SHALL BEAR THE A.M.C.A. LABEL. B. MOTOR HORSEPOWERS LISTED SHALL BE CONSIDERED MINIMUM. C. WALL OPENINGS ARE APPROX. VERIFY SIZE & COORDINATE.									F. ALL PENETRATIONS SUCH AS FANS AND LOUVERS TO BE WEATHER TIGHT AND RAIN PROOF.				
NOTES: 1. ECM dial only, not capable of accepting control signal									2. Include Vertical Mount Motorized Exhaust Damper. BOD - Greenheck WD-330-PB-8x8				
MARK	DESCRIPTION	SERVICE	FAN CFM	STATIC PRESSURE (IN. W.C.)	MOTOR			APPROX. WALL OPENING	APPROX. WEIGHT (LBS.)	BASIS OF DESIGN			SEE NOTE
					HORSEPOWER (HP)	VOLTAGE - PHASE	ELECTRONICALLY COMMUTATED			MANUFACTURER	MODEL		
EF-1	Wall Mount Direct Drive Exhaust Fan	Electrical Room	100	0.125	1/15	115-1	•	10.5x10.5	29	Greenheck	CUE-060-VG	1,2	



SCALE VERIFICATION
BAR IS ONE INCH LONG ON ORIGINAL DRAWING

DRAWN BY
CHECKED BY
APPROVED BY
ISSUE DATE
OCTOBER 2019
PROJECT NUMBER
2019-75021

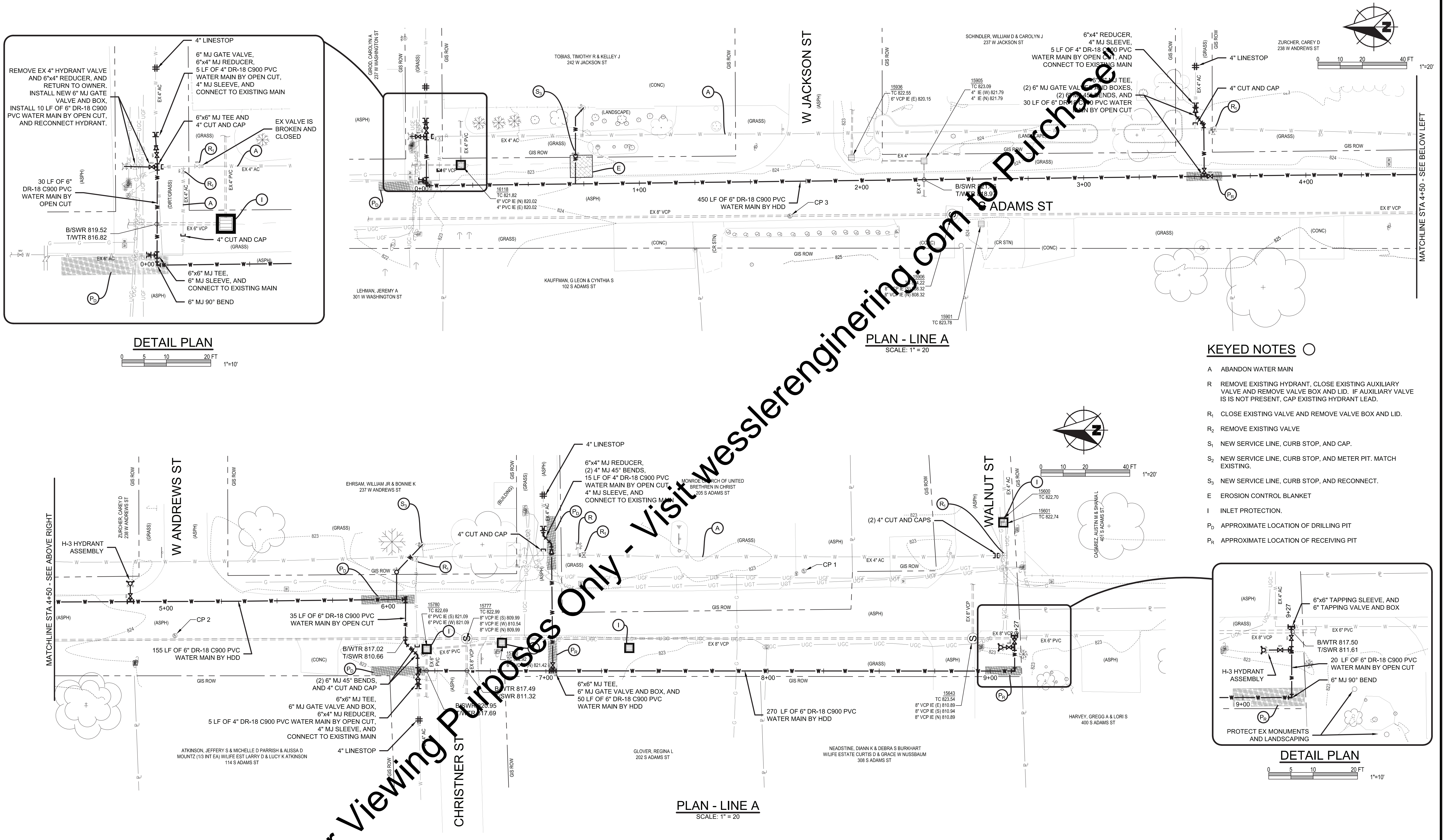
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DATE
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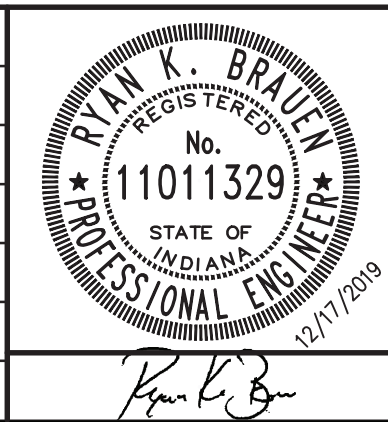
WATER SYSTEM IMPROVEMENTS
MONROE WATER UTILITIES MONROE, IN
102 E Walnut Street, Monroe, IN 46772
MECHANICAL SCHEDULES AND DETAILS

SHEET NO.
1H2
PAGE NO.
7

Drawing: J:\Monroe\Projects\214319-PN.dwg | Layout: 01 | Plotted: 12/10/19 @ 10:22:31 | LastSavedBy: Michelle E



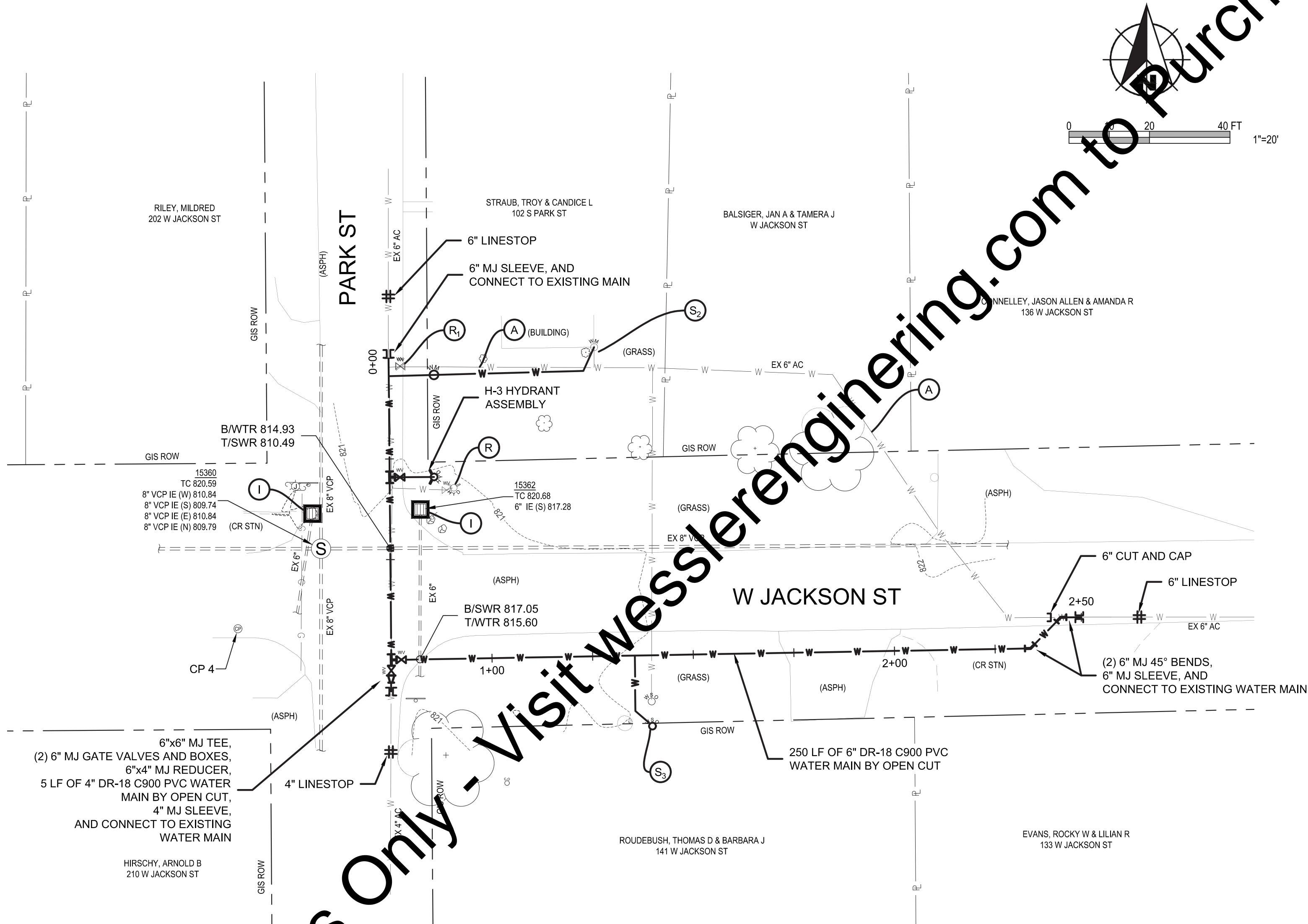
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	APPROVED BY	RKB				
	ISSUE DATE					
	DECEMBER 2019					
	PROJECT NUMBER					
	214319-04-001					



WATER SYSTEM IMPROVEMENTS	
TOWN OF MONROE, INDIANA	
WATER MAIN PLAN LINE A - S ADAMS ST	

SHEET NO.	2Y1
PAGE NO.	10

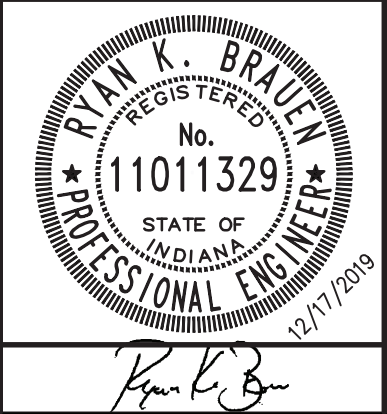
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PLAN - LINE B
SCALE: 1" = 20'

- KEYED NOTES** ○
- A ABANDON WATER MAIN
 - R REMOVE EXISTING HYDRANT, CLOSE EXISTING AUXILIARY VALVE AND REMOVE VALVE BOX AND LID. IF AUXILIARY VALVE IS NOT PRESENT, CAP EXISTING HYDRANT LEAD.
 - R₁ CLOSE EXISTING VALVE AND REMOVE VALVE BOX AND LID.
 - R₂ REMOVE EXISTING VALVE
 - S₁ NEW SERVICE LINE, CURB STOP, AND CAP.
 - S₂ NEW SERVICE LINE, CURB STOP, AND METER PIT. MATCH EXISTING.
 - S₃ NEW SERVICE LINE, CURB STOP, AND RECONNECT.
 - E EROSION CONTROL BLANKET
 - I INLET PROTECTION.
 - P_D APPROXIMATE LOCATION OF DRILLING PIT
 - P_R APPROXIMATE LOCATION OF RECEIVING PIT

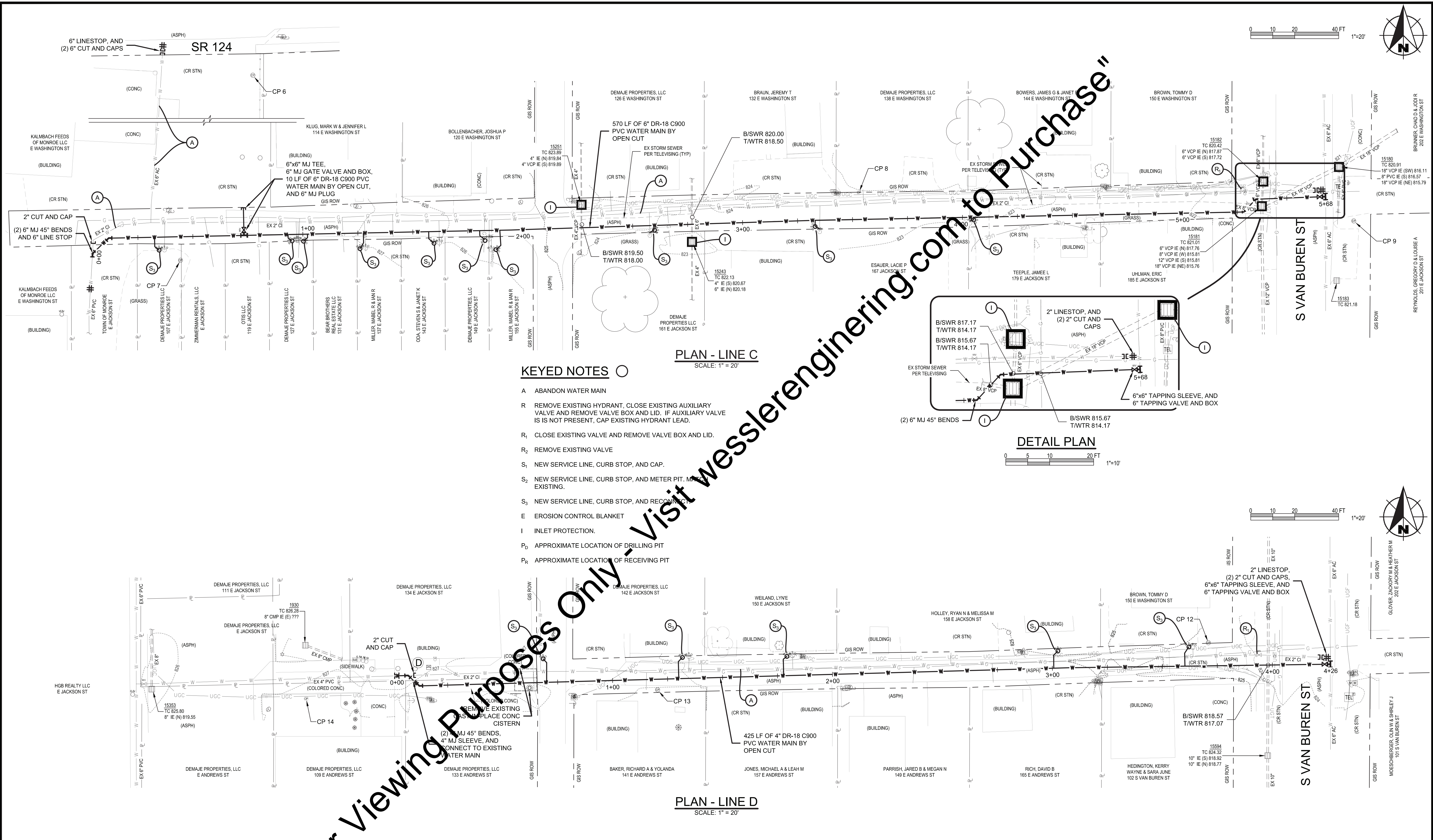
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	APPROVED BY	RKB			
	ISSUE DATE	DECEMBER 2019			
	PROJECT NUMBER	214319-04-001			



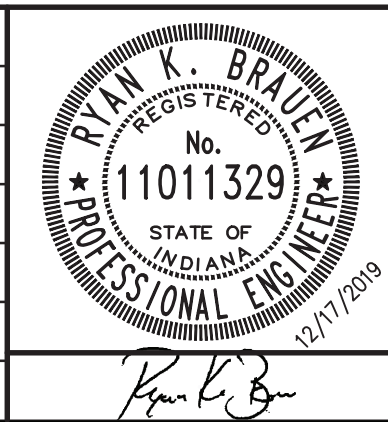
WATER SYSTEM IMPROVEMENTS	
TOWN OF MONROE, INDIANA	
WATER MAIN PLAN LINE B - W JACKSON ST	

SHEET NO. 2Y2
PAGE NO. 11

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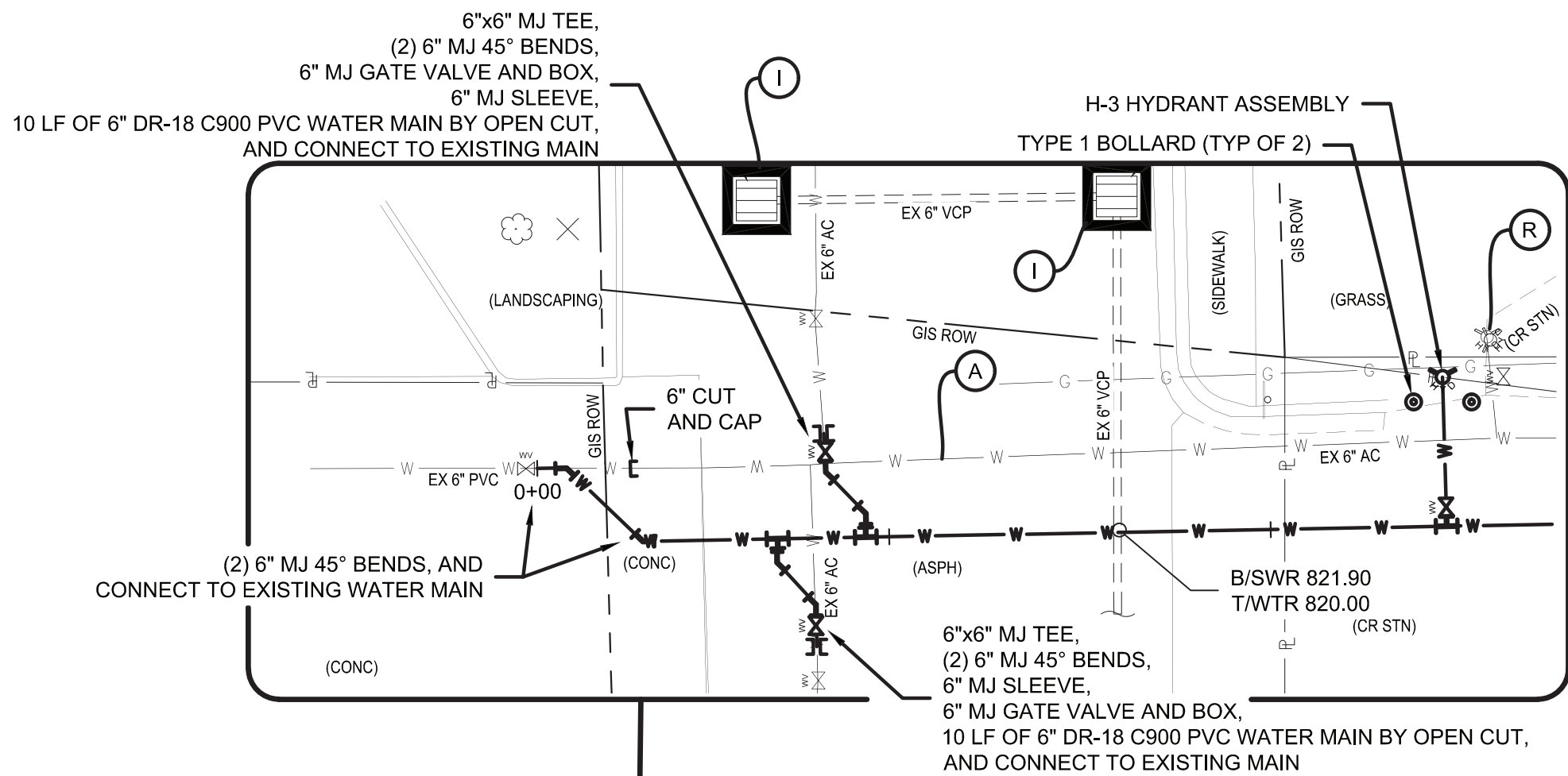
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	CHECKED BY	RKB			
	APPROVED BY	RKB			
	ISSUE DATE	DECEMBER 2019			
	PROJECT NUMBER	214319-04-001			



WATER SYSTEM IMPROVEMENTS	
TOWN OF MONROE, INDIANA	
WATER MAIN PLAN	
LINES C AND D - ALLEY	

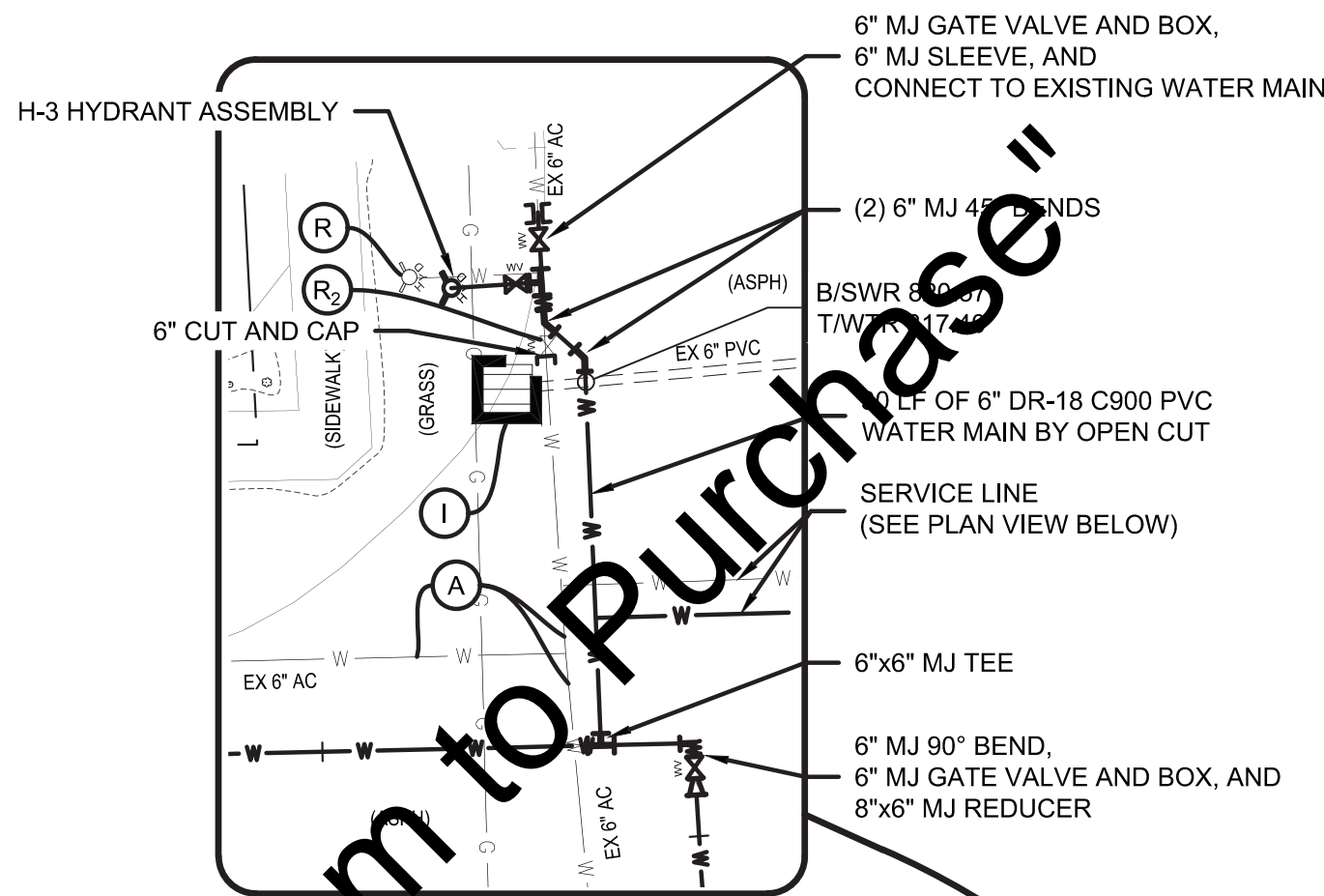
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PAGE NO.	12

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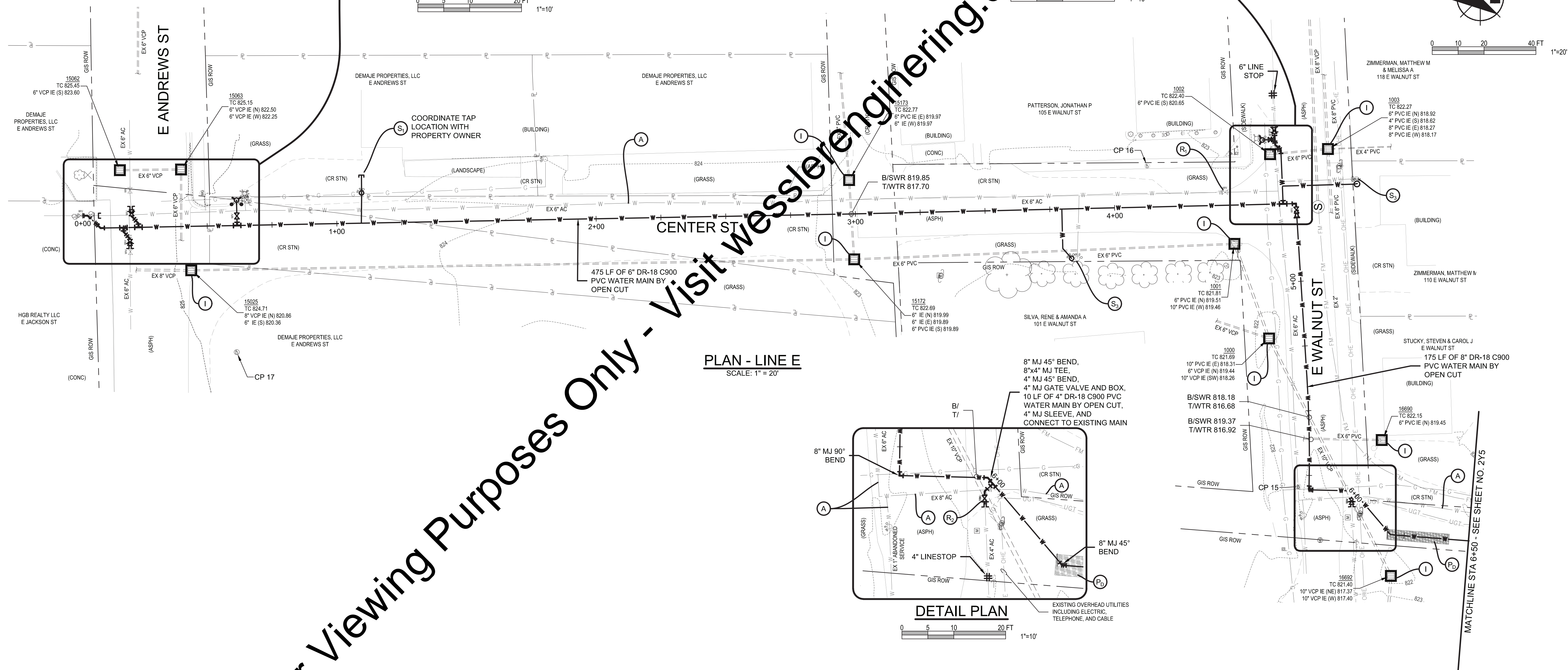
DETAIL PLAN

0 5 10 20 FT
1"=10'



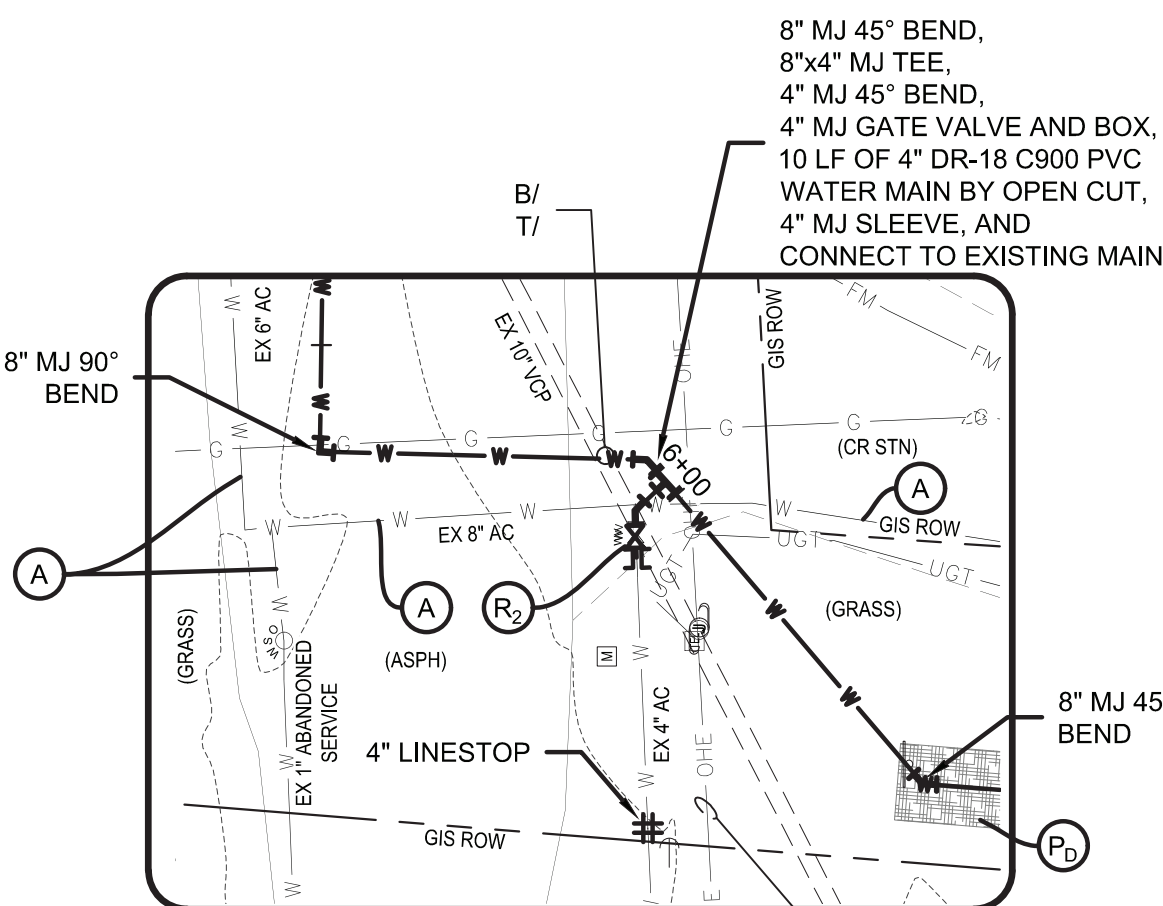
DETAIL PLAN

0 5 10 20 FT
1"=10'



PLAN - LINE E

SCALE: 1" = 20'

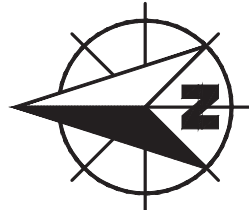


DETAIL PLAN

0 5 10 20 FT
1"=10'

KEYED NOTES

- A ABANDON WATER MAIN
- R REMOVE EXISTING HYDRANT, CLOSE EXISTING AUXILIARY VALVE AND REMOVE VALVE BOX AND LID. IF AUXILIARY VALVE IS NOT PRESENT, CAP EXISTING HYDRANT LEAD.
- R₁ CLOSE EXISTING VALVE AND REMOVE VALVE BOX AND LID.
- R₂ REMOVE EXISTING VALVE
- S₁ NEW SERVICE LINE, CURB STOP, AND CAP.
- S₂ NEW SERVICE LINE, CURB STOP, AND METER PIT. MATCH EXISTING.
- S₃ NEW SERVICE LINE, CURB STOP, AND RECONNECT.
- E EROSION CONTROL BLANKET
- I INLET PROTECTION.
- P_D APPROXIMATE LOCATION OF DRILLING PIT
- P_R APPROXIMATE LOCATION OF RECEIVING PIT



0 10 20 40 FT
1"=20'

MATCHLINE STA 6+50 - SEE SHEET NO. 215

SCALE VERIFICATION BAR IS ONE INCH LONG ON ORIGINAL DRAWING 	DRAWN BY MRE	DATE	INITIALS	REVISION DESCRIPTIONS
	CHECKED BY RKS			
	APPROVED BY RKB			
	ISSUE DATE DECEMBER 2019			
	PROJECT NUMBER 214319-04-001			



WATER SYSTEM IMPROVEMENTS
TOWN OF MONROE, INDIANA
WATER MAIN PLAN
LINE E - CENTER ST AND E WALNUT ST

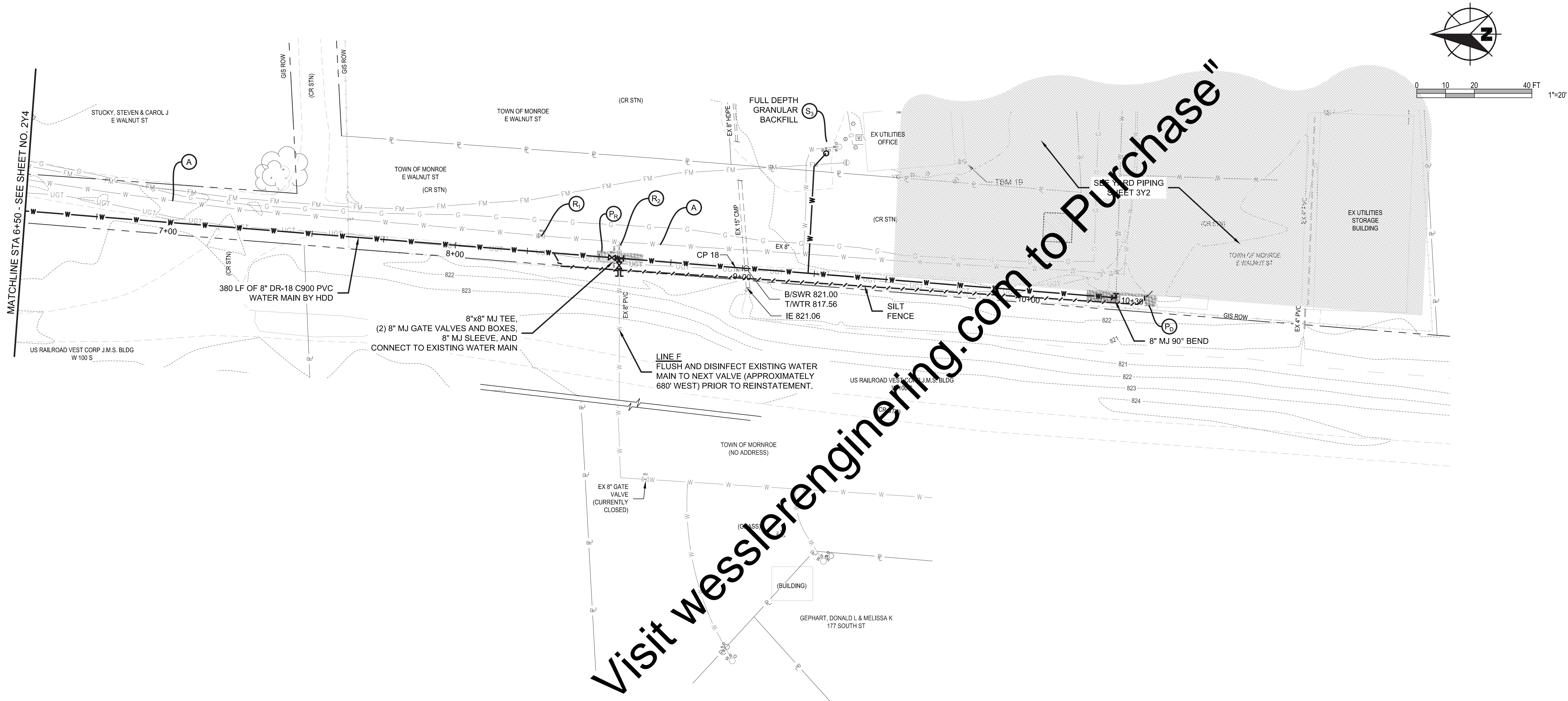
SHEET NO.

2Y4

PAGE NO.

13


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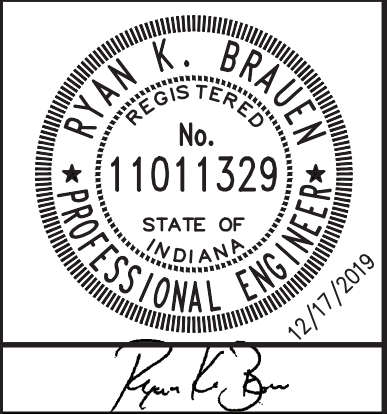


PLAN - LINES E AND F
SCALE: 1" = 20'

KEYED NOTES ○

- A ABANDON WATER MAIN
- R REMOVE EXISTING HYDRANT, CLOSE EXISTING AUXILIARY VALVE AND REMOVE VALVE BOX AND LID. IF AUXILIARY VALVE IS NOT PRESENT, CAP EXISTING HYDRANT LEAD.
- R₁ CLOSE EXISTING VALVE AND REMOVE VALVE BOX AND LID.
- R₂ REMOVE EXISTING VALVE
- S₁ NEW SERVICE LINE, CURB STOP, AND CAP.
- S₂ NEW SERVICE LINE, CURB STOP, AND METER PIT. MATCH EXISTING.
- S₃ NEW SERVICE LINE, CURB STOP, AND RECONNECT.
- E EROSION CONTROL BLANKET
- I INLET PROTECTION.
- P_D APPROXIMATE LOCATION OF DRILLING PIT
- P_R APPROXIMATE LOCATION OF RECEIVING PIT

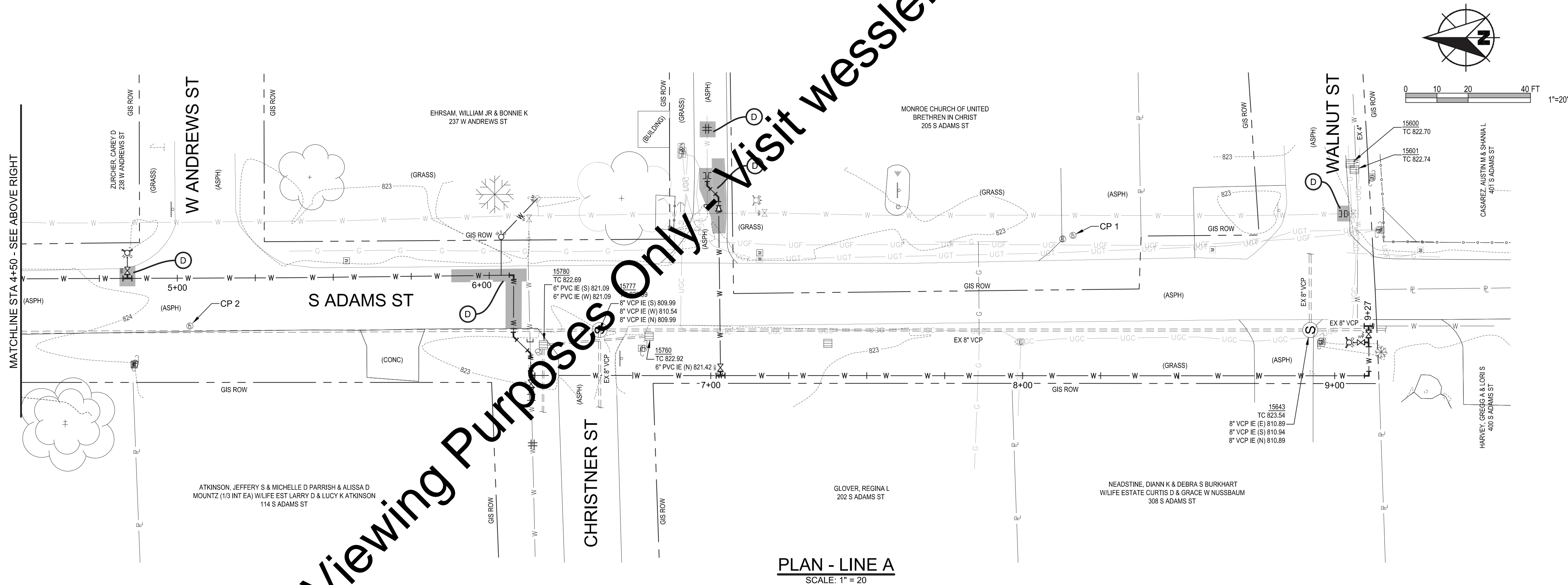
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	ISSUE DATE DECEMBER 2019			
	PROJECT NUMBER 214319-04-001			



WATER SYSTEM IMPROVEMENTS	
TOWN OF MONROE, INDIANA	
WATER MAIN PLAN LINES E AND F - WTP SERVICE DRIVE	

SHEET NO. 2Y5
PAGE NO. 14

Drawing: J:\Monroe\Projects\214319-PN-ROAD.dwg | Layout: 01 | Plotted: 12/10/19 @ 10:24:20 | LastSavedBy: Michelle E



PLAN - LINE A
SCALE: 1" = 20'

PLAN - LINE A
SCALE: 1" = 20'

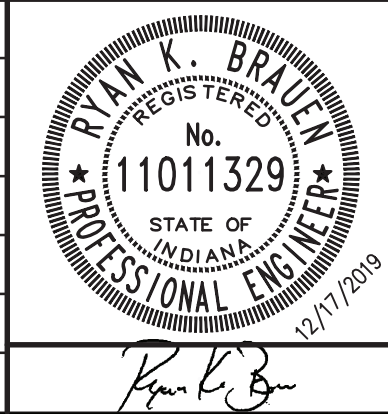
KEYED NOTES

- D ASPHALT ROAD REPAIR
- D₁ NEW ASPHALT PAVEMENT
- D₂ ASPHALT DRIVE REPAIR
- F₁ CONCRETE DRIVE REPAIR
- F₂ CONCRETE SIDEWALK REPAIR
- N CRUSHED STONE SURFACE REPAIR

LEGEND

- ASPHALT ROAD REPAIR
- NEW ASPHALT PAVEMENT
- ASPHALT DRIVE REPAIR
- CONCRETE PAVEMENT REPAIR
- CRUSHED STONE DRIVE REPAIR

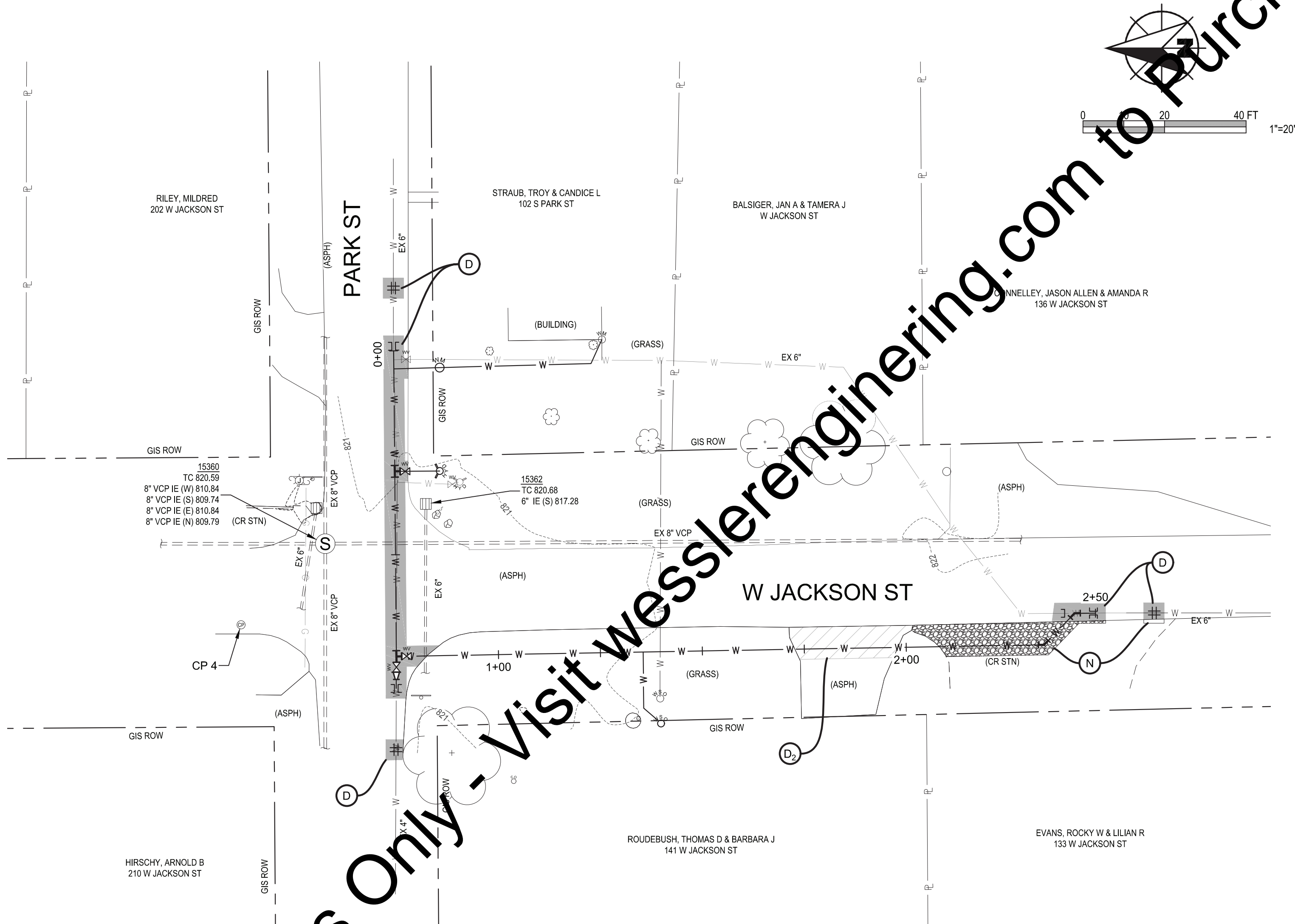
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	ISSUE DATE	DECEMBER 2019			
	PROJECT NUMBER	214319-04-001			



WATER SYSTEM IMPROVEMENTS	
TOWN OF MONROE, INDIANA	
PAVEMENT RESTORATION PLAN	
LINE A - S ADAMS ST	

SHEET NO.	2R1
PAGE NO.	15

Drawing: J:\Monroe\Projects\214319 Monroe Water Syst Improvement\CAD\DWG\Sheets\214319-PN-ROAD.dwg | Layout: 02 | Plotted: 12/10/19 @ 10:24:29 | LastSavedBy: Michelle E



PLAN - LINE B
SCALE: 1" = 20'

KEYED NOTES

- D ASPHALT ROAD REPAIR
- D₁ NEW ASPHALT PAVEMENT
- D₂ ASPHALT DRIVE REPAIR
- F₁ CONCRETE DRIVE REPAIR
- F₂ CONCRETE SIDEWALK REPAIR
- N CRUSHED STONE SURFACE REPAIR

LEGEND

- ASPHALT ROAD REPAIR
- NEW ASPHALT PAVEMENT
- ASPHALT DRIVE REPAIR
- CONCRETE PAVEMENT REPAIR
- CRUSHED STONE DRIVE REPAIR

SCALE VERIFICATION	DRAWN BY	MRE	DATE	INITIALS	REVISION DESCRIPTIONS
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	ISSUE DATE	DECEMBER 2019			
	PROJECT NUMBER	214319-04-001			

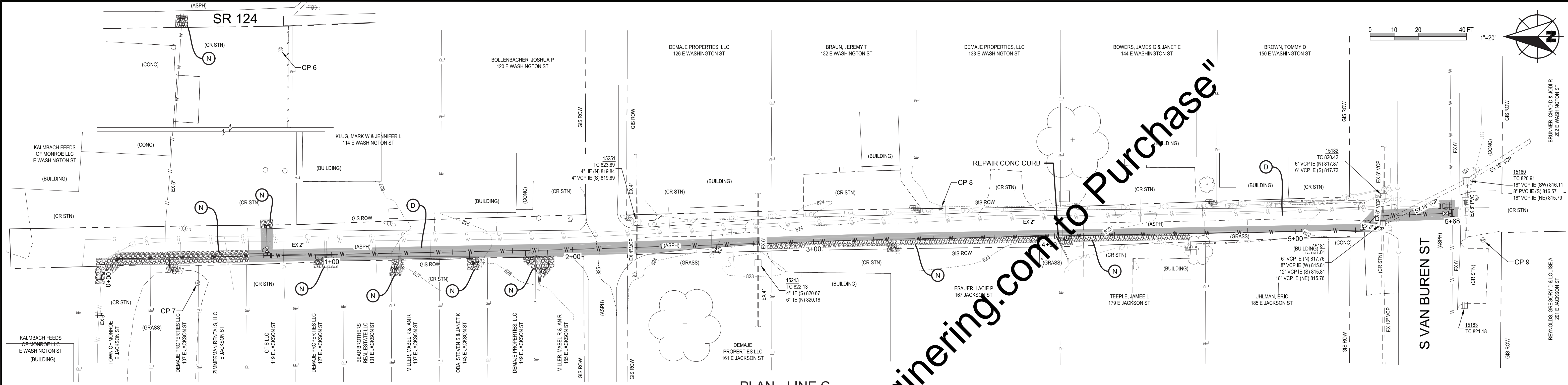
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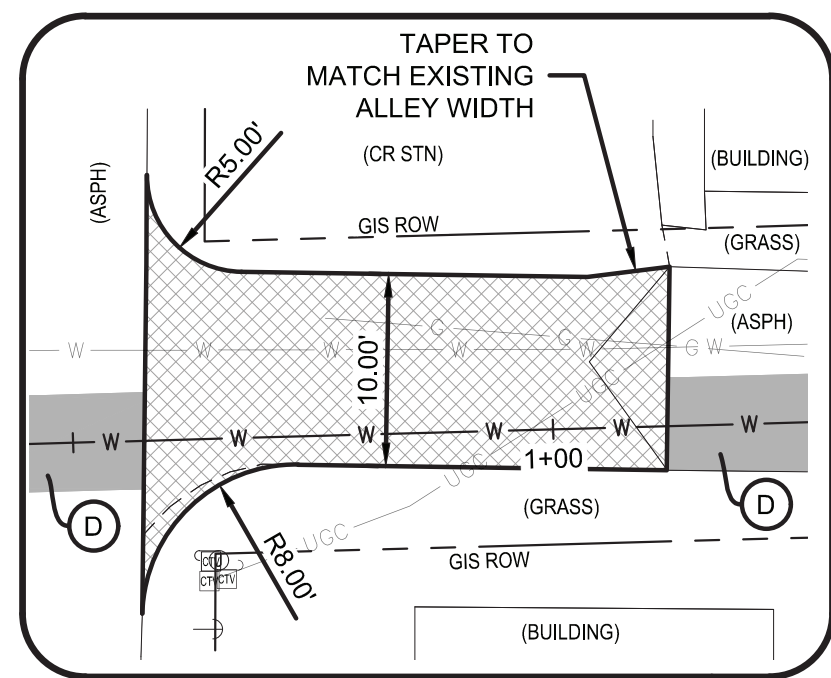
WATER SYSTEM IMPROVEMENTS	
TOWN OF MONROE, INDIANA	
PAVEMENT RESTORATION PLAN LINE B - W JACKSON ST	

SHEET NO.	2R2
PAGE NO.	16

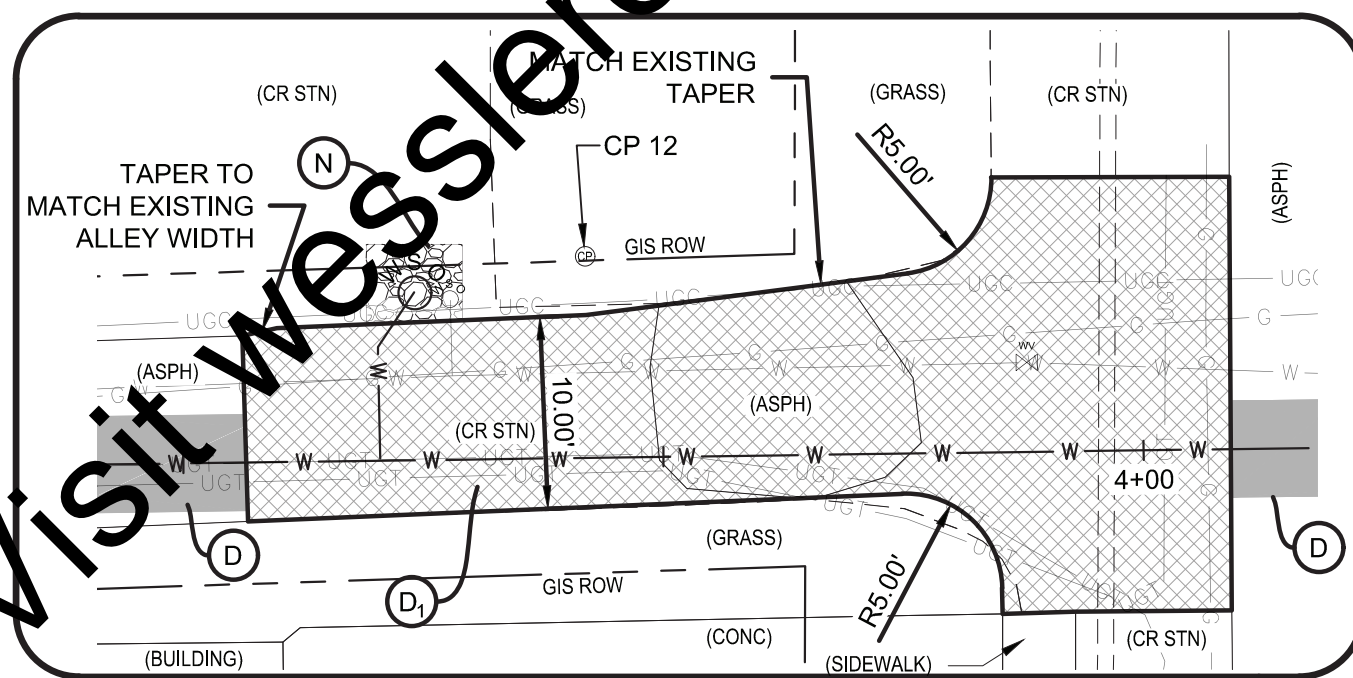
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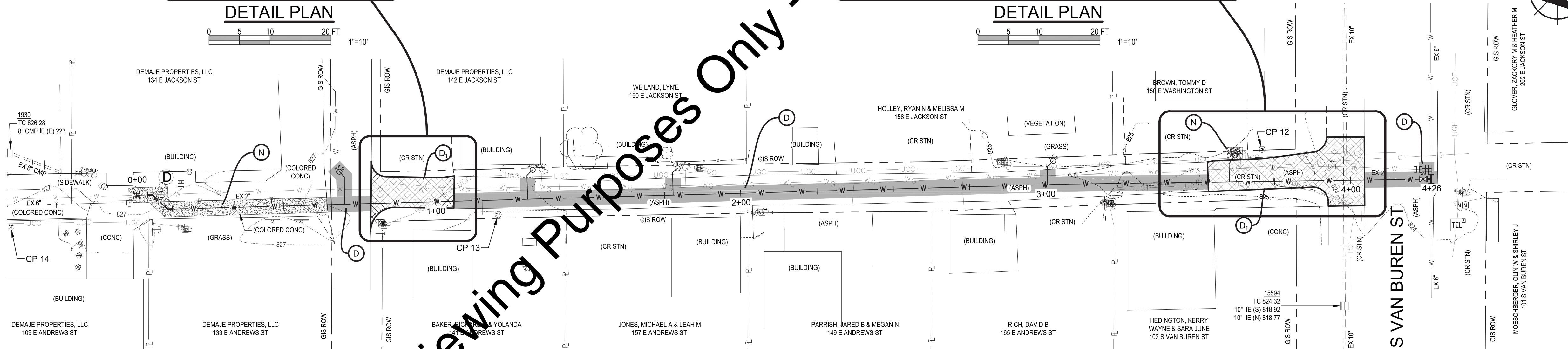
PLAN - LINE C
SCALE: 1" = 20'



DETAIL PLAN
SCALE: 1" = 10'



DETAIL PLAN
SCALE: 1" = 10'



PLAN - LINE D
SCALE: 1" = 20'

KEYED NOTES

- D ASPHALT ROAD REPAIR
- D₁ NEW ASPHALT PAVEMENT
- D₂ ASPHALT DRIVE REPAIR
- F₁ CONCRETE DRIVE REPAIR
- F₂ CONCRETE SIDEWALK REPAIR
- N CRUSHED STONE SURFACE REPAIR

LEGEND

- ASPHALT ROAD REPAIR
- NEW ASPHALT PAVEMENT
- ASPHALT DRIVE REPAIR
- CONCRETE PAVEMENT REPAIR
- CRUSHED STONE DRIVE REPAIR

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	DECEMBER 2019				
	PROJECT NUMBER				
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WATER SYSTEM IMPROVEMENTS
TOWN OF MONROE, INDIANA
PAVEMENT RESTORATION PLAN
LINES C AND D - ALLEY

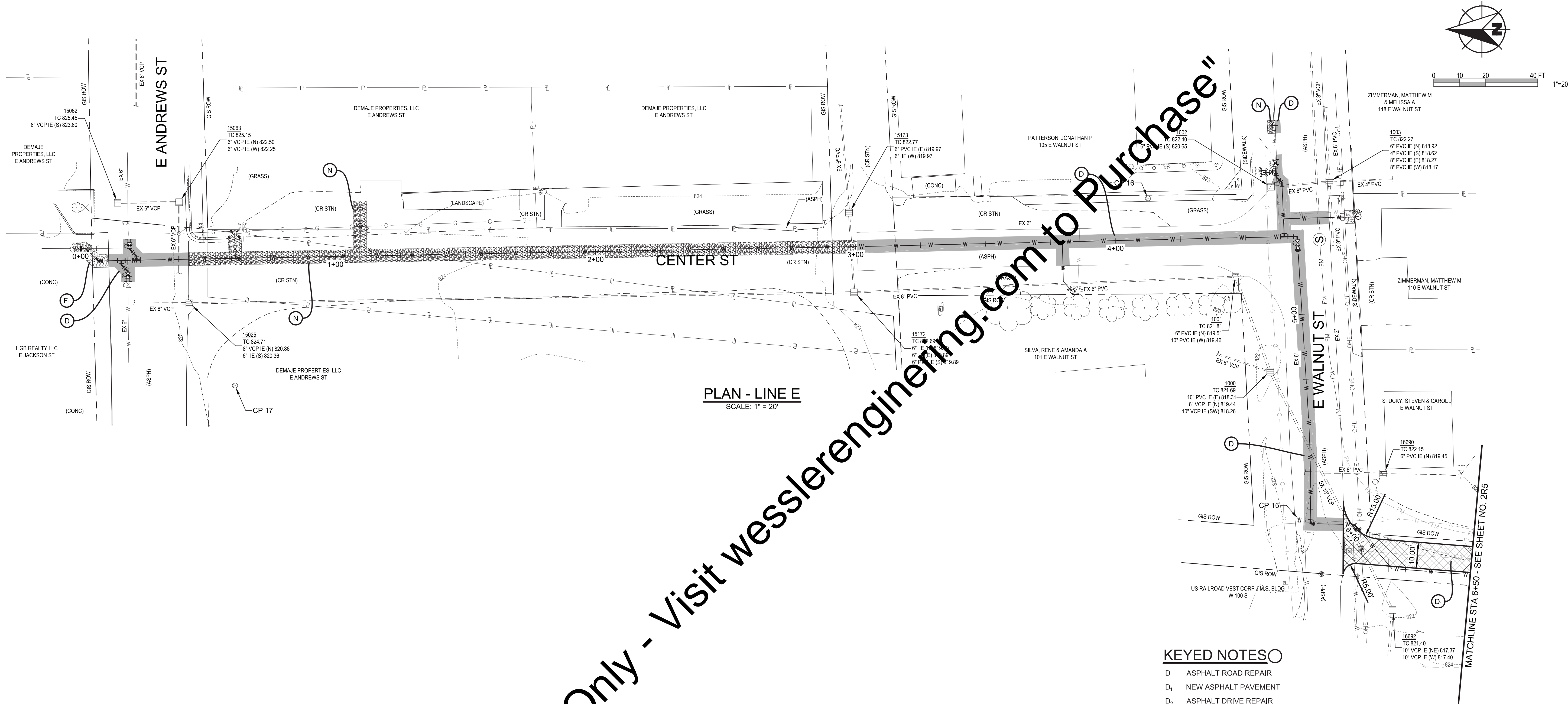
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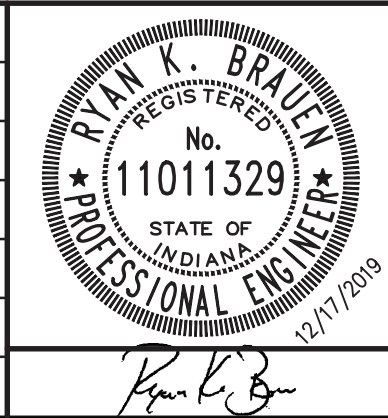
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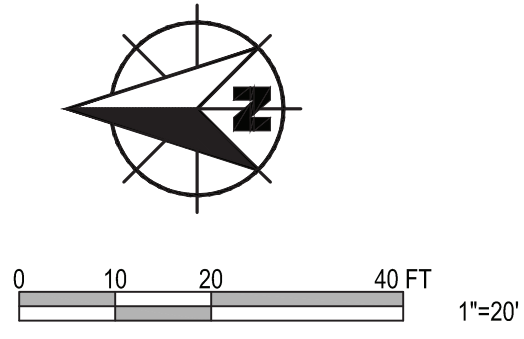
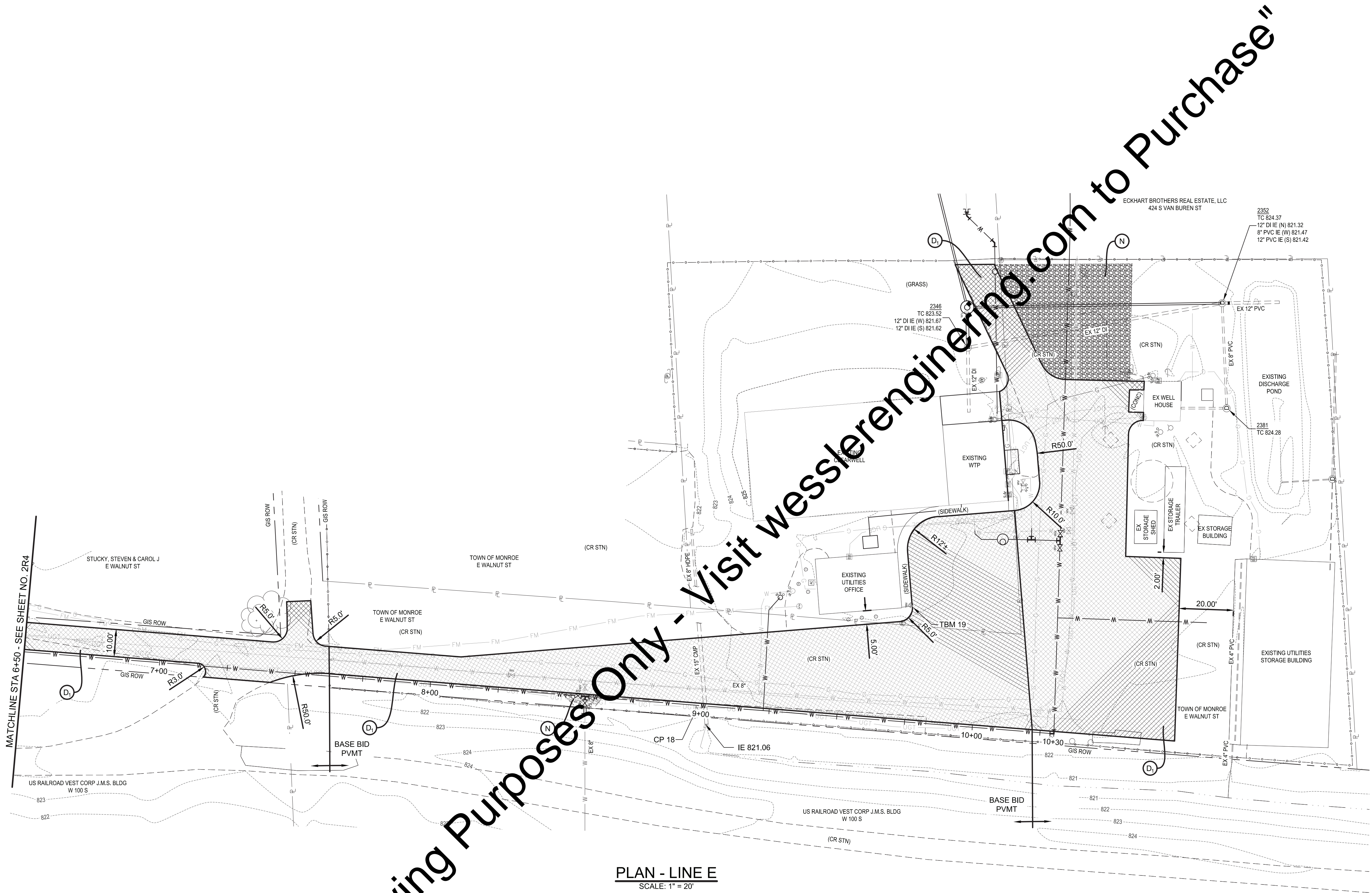
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	ISSUE DATE DECEMBER 2019			
	PROJECT NUMBER 214319-04-001			



WATER SYSTEM IMPROVEMENTS	
TOWN OF MONROE, INDIANA	
PAVEMENT RESTORATION PLAN LINE E - CENTER ST AND E WALNUT ST	

SHEET NO. 2R4
PAGE NO. 18

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KEYED NOTES

- D ASPHALT ROAD REPAIR
- D₁ NEW ASPHALT PAVEMENT
- D₂ ASPHALT DRIVE REPAIR
- F₁ CONCRETE DRIVE REPAIR
- F₂ CONCRETE SIDEWALK REPAIR
- N CRUSHED STONE SURFACE REPAIR

LEGEND

- ASPHALT ROAD REPAIR
- NEW ASPHALT PAVEMENT
- ASPHALT DRIVE REPAIR
- CONCRETE PAVEMENT REPAIR
- CRUSHED STONE DRIVE REPAIR

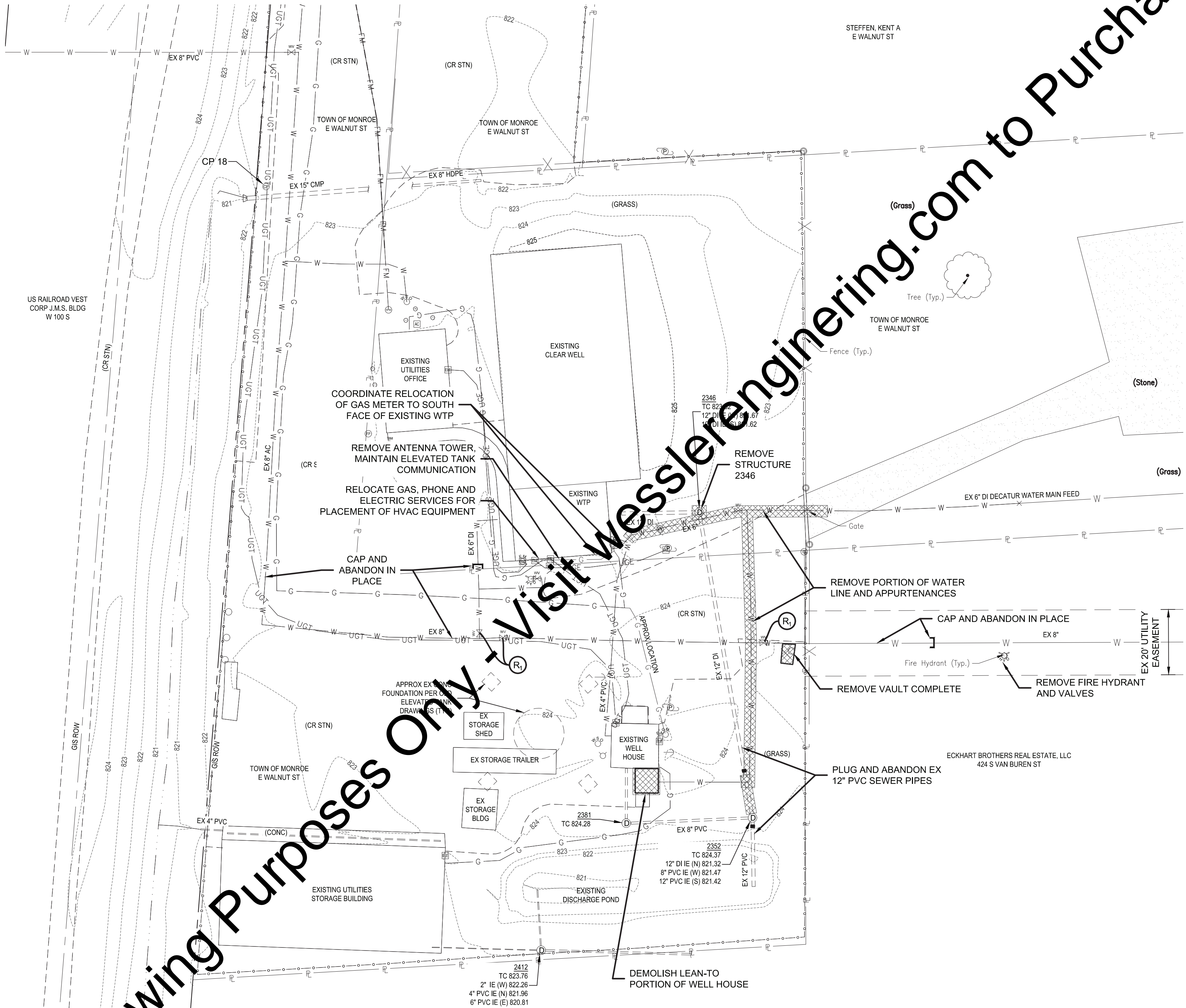
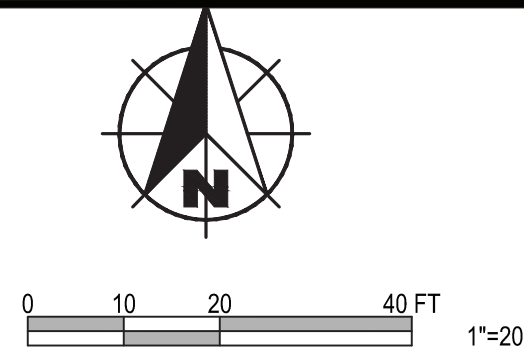
PLAN - LINE E
SCALE: 1" = 20'

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	APPROVED BY	RKB			
	ISSUE DATE	DECEMBER 2019			
	PROJECT NUMBER	214319-04-001			



WATER SYSTEM IMPROVEMENTS	
TOWN OF MONROE, INDIANA	
PAVEMENT RESTORATION PLAN LINE E - WTP SERVICE DRIVE AND SITE	

SHEET NO. 2R5
PAGE NO. 19



EXISTING SITE DEMOLITION PLAN
SCALE: 1" = 20'

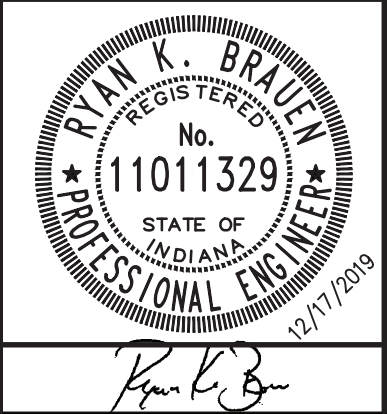
KEYED NOTES

R₁ CLOSE EXISTING VALVE AND REMOVE VALVE BOX AND LID

LEGEND

DEMO AND REMOVE UTILITY

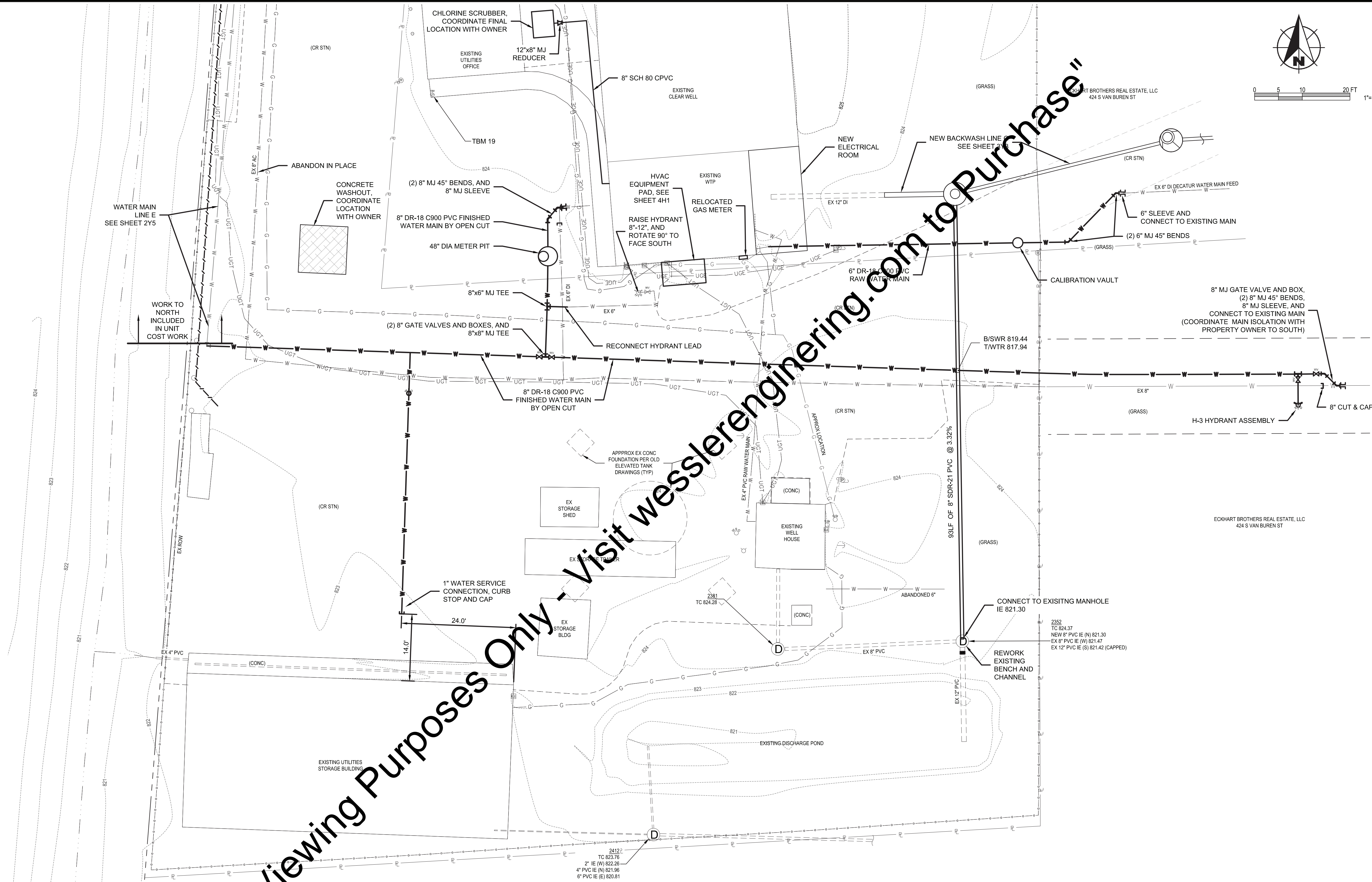
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	ISSUE DATE				
	DECEMBER 2019				
	PROJECT NUMBER				
	214319-04-001				



WATER SYSTEM IMPROVEMENTS	
TOWN OF MONROE, INDIANA	
TREATMENT PLANT SITE EXISTING SITE DEMOLITION PLAN	

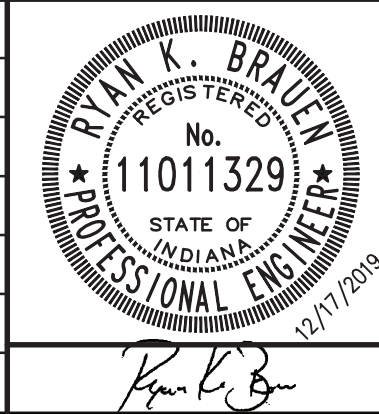
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3Y1
PAGE NO.
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NEW SITE AND YARD PIPING PLAN
SCALE: 1" = 10'

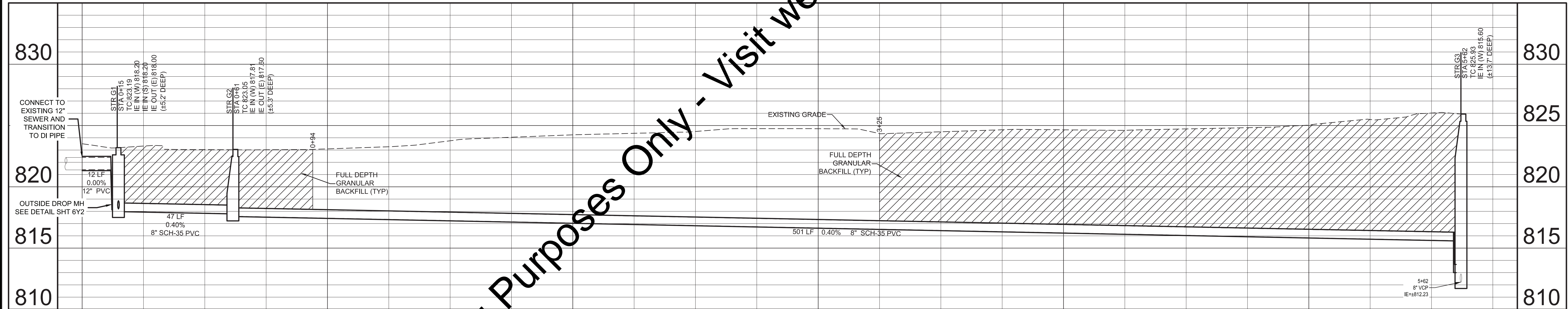
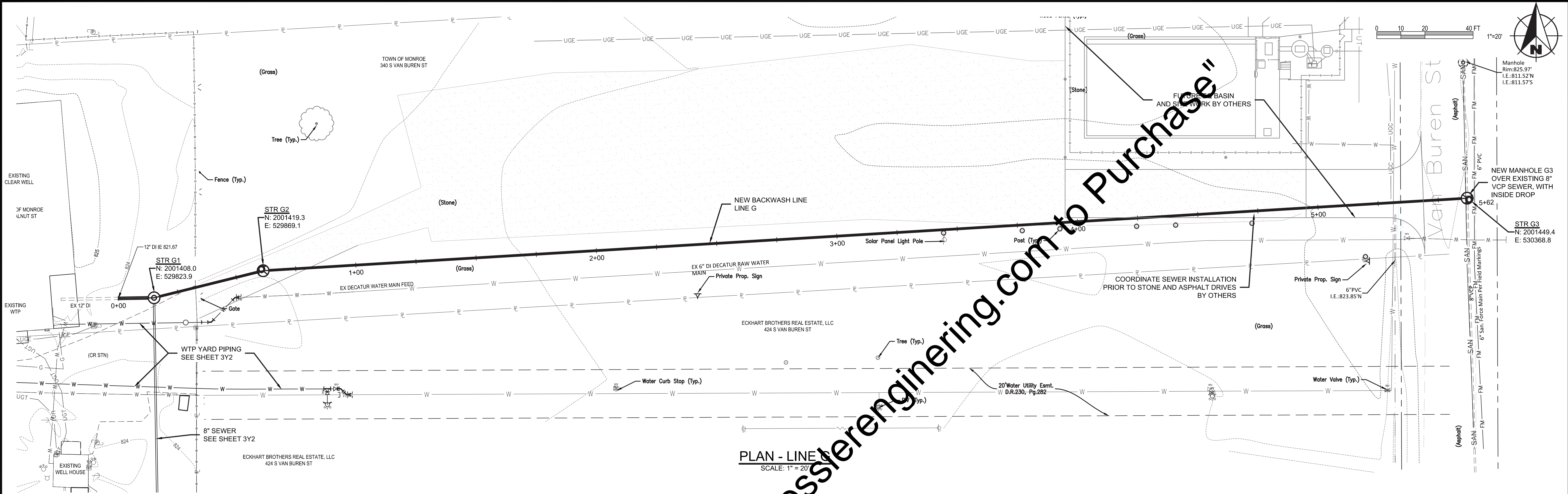
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PROJECT NUMBER					
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WATER SYSTEM IMPROVEMENTS	
TOWN OF MONROE, INDIANA	
TREATMENT PLANT SITE	
NEW SITE AND YARD PIPING PLAN	

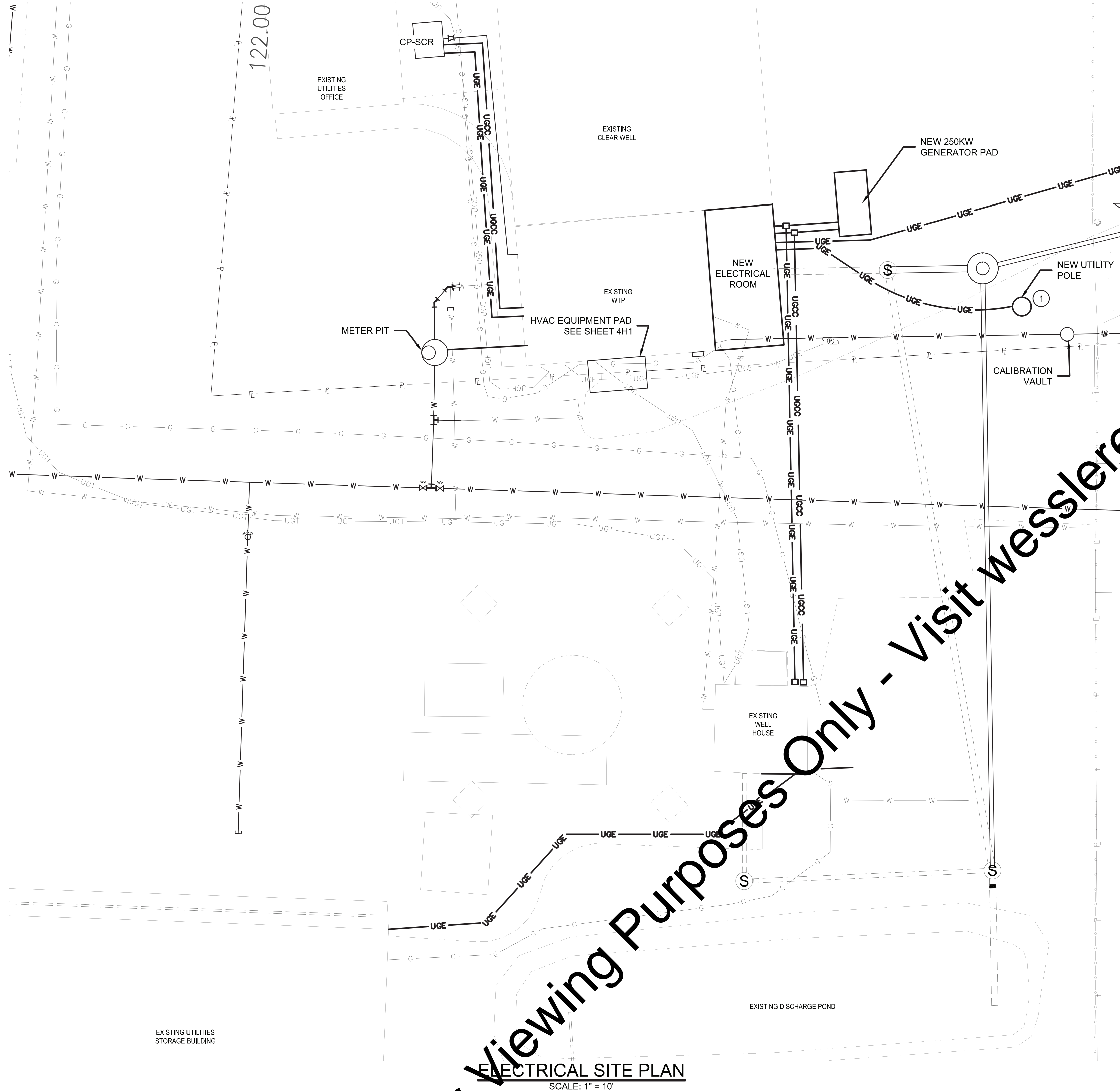
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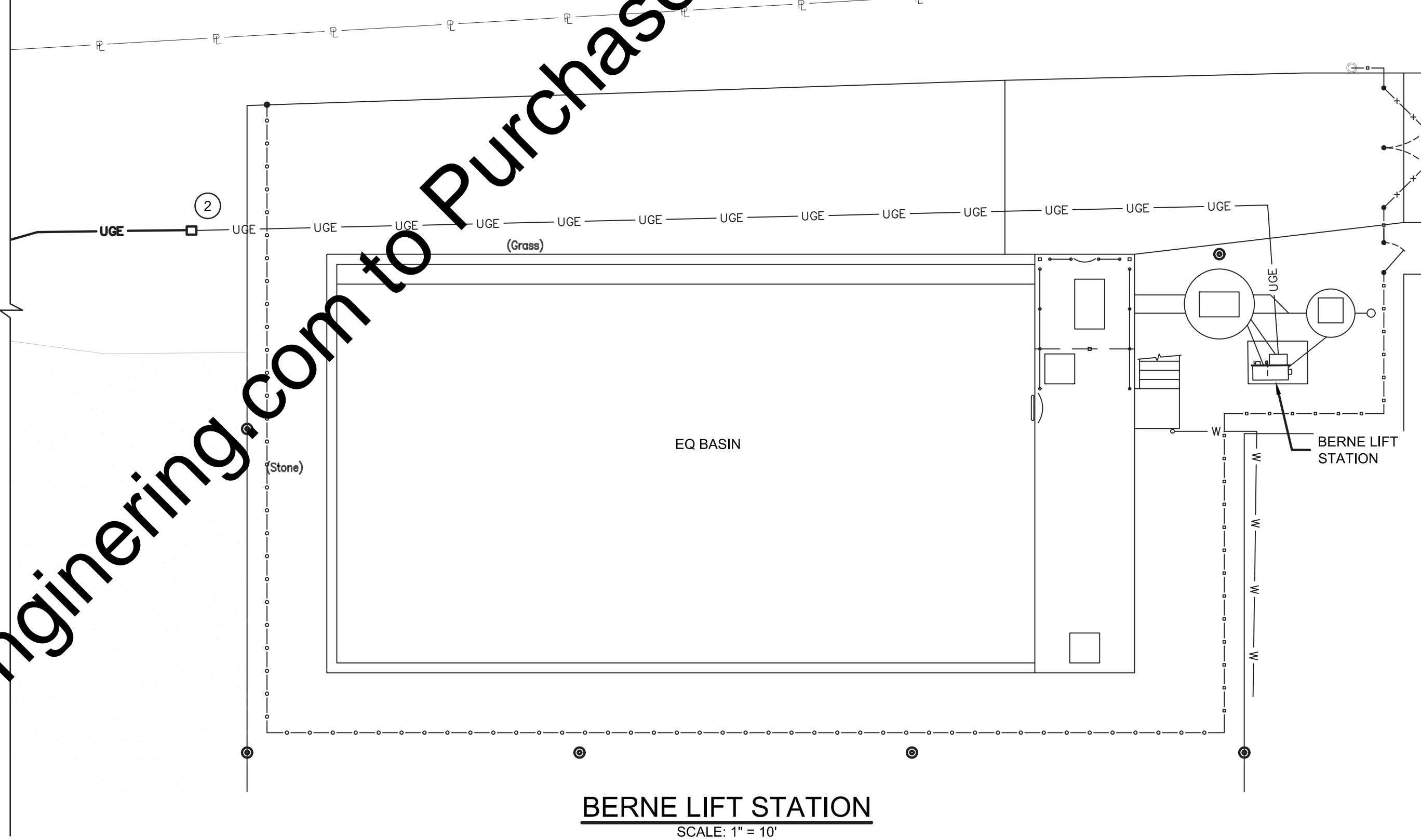


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	APPROVED BY	RKB						BACKWASH PLAN AND PROFILE - LINE G PLAN AND PROFILE		PAGE NO.
	ISSUE DATE				22					
	DECEMBER 2019									
	PROJECT NUMBER									
	214319-04-001									

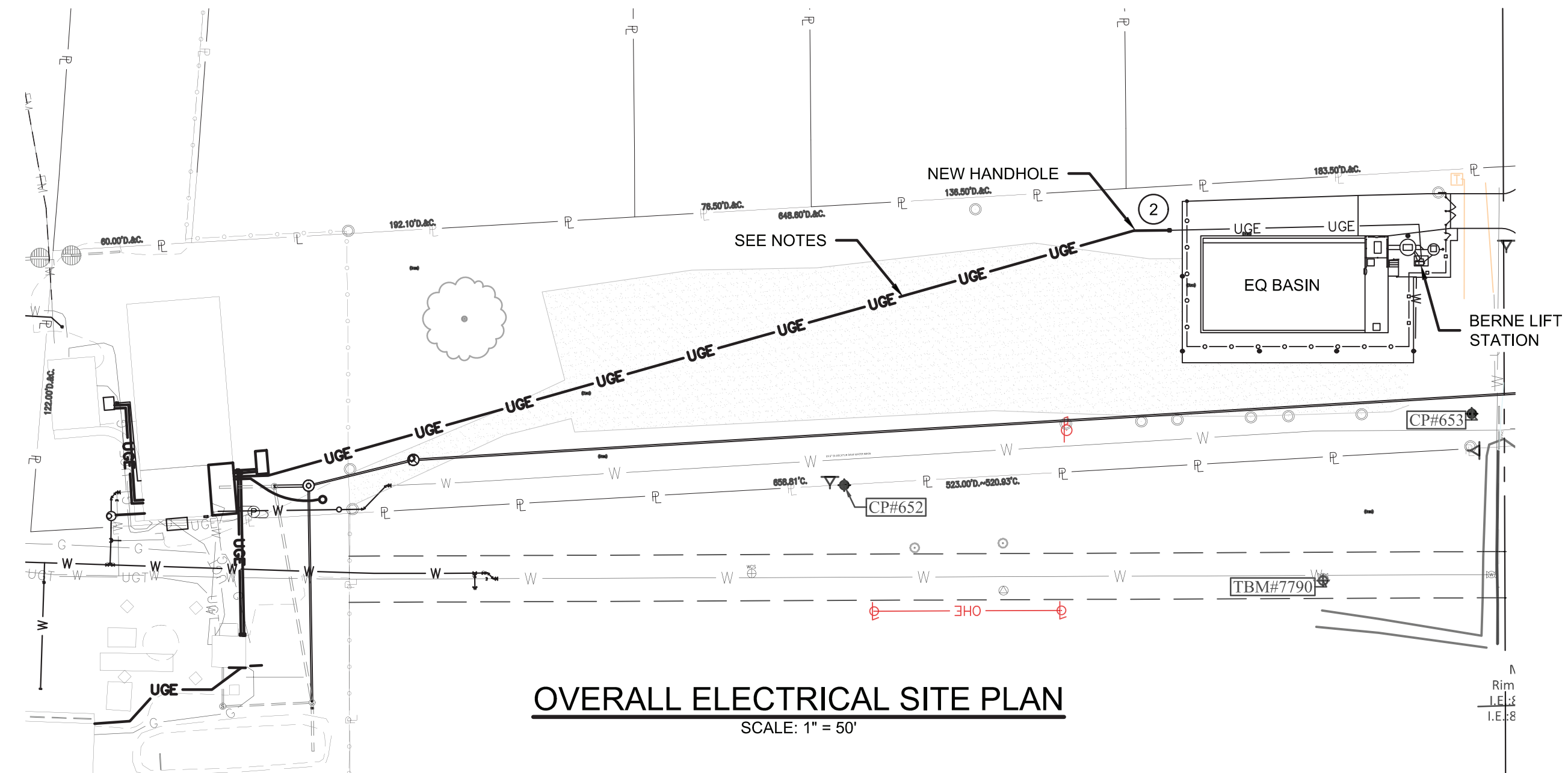
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ELECTRICAL SITE PLAN
SCALE: 1" = 10'





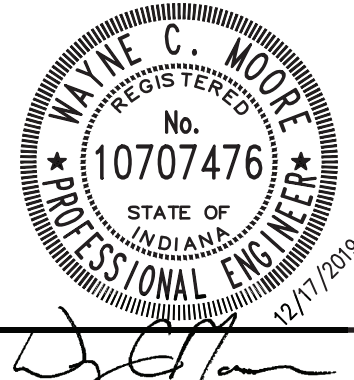
BERNE LIFT STATION
SCALE: 1" = 10'



OVERALL ELECTRICAL SITE PLAN
SCALE: 1" = 50'

- KEYED NOTES:**
- COORDINATE NEW ELECTRICAL SERVICE WITH LOCAL UTILITY.
 - EXISTING CONDUITS FROM HERE TO LIFTSTATION.
- GENERAL NOTES:**
- CONDUIT AND WIRE REQUIREMENTS ARE SHOWN ON THE ONE LINE DIAGRAMS AND PANEL SCHEDULES.
 - PROVIDE HANDHOLES AS NEEDED TO PULL IN WIRE.

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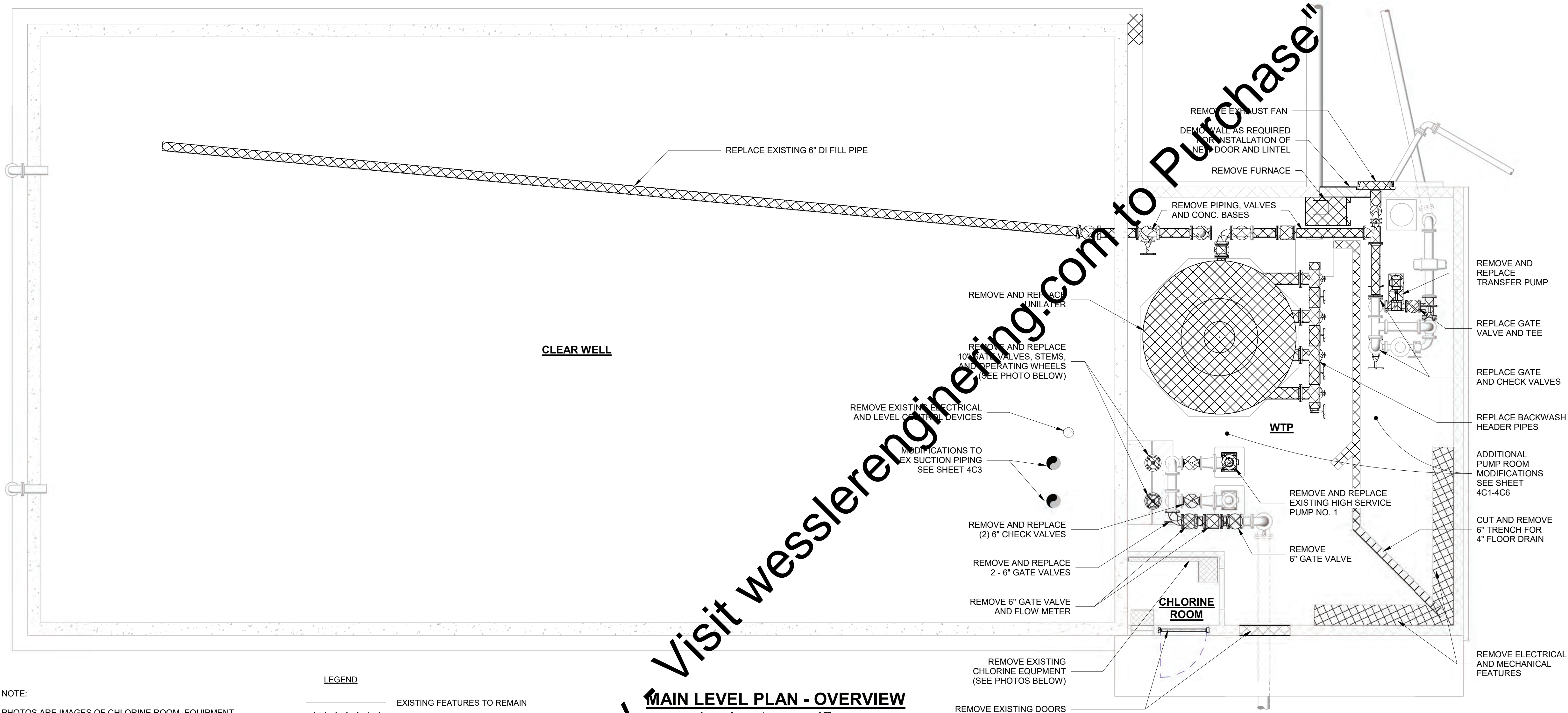


WATER SYSTEM IMPROVEMENTS
TOWN OF MONROE, INDIANA

ELECTRICAL SITE PLAN

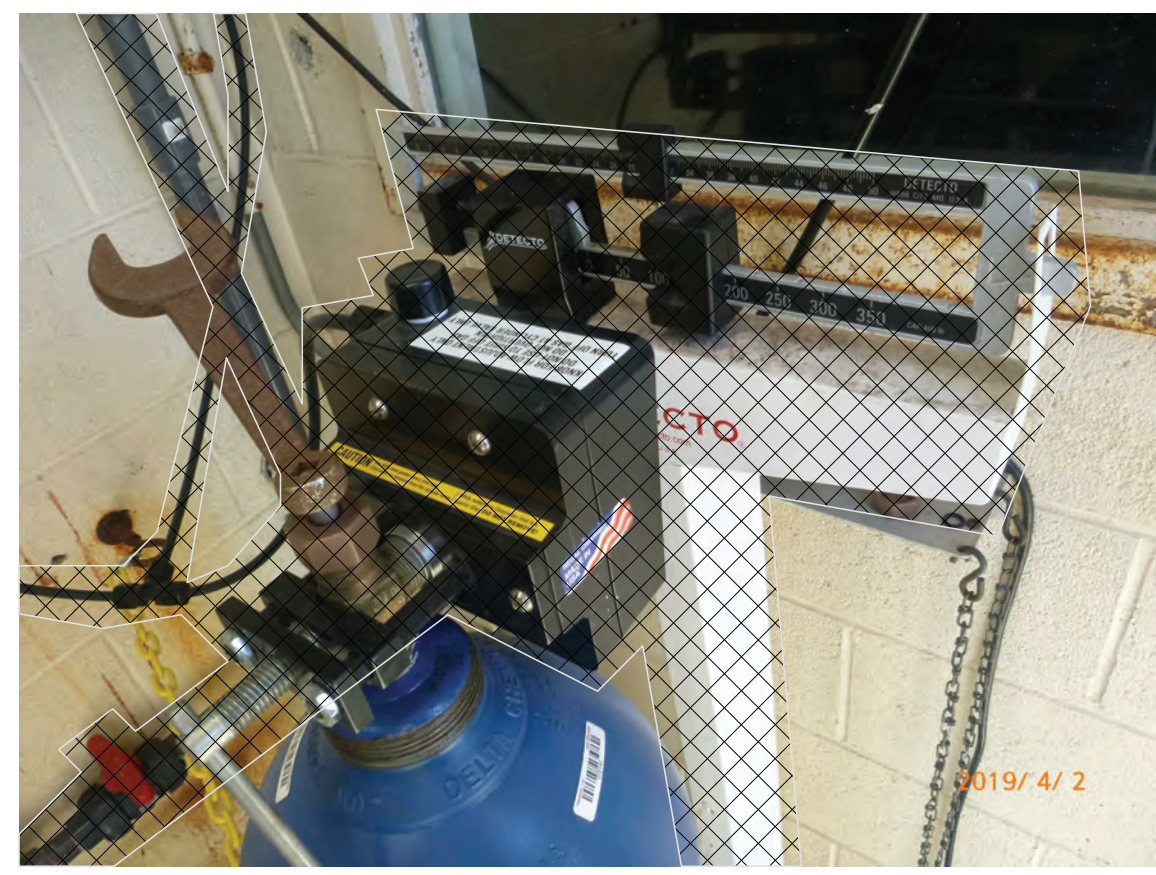
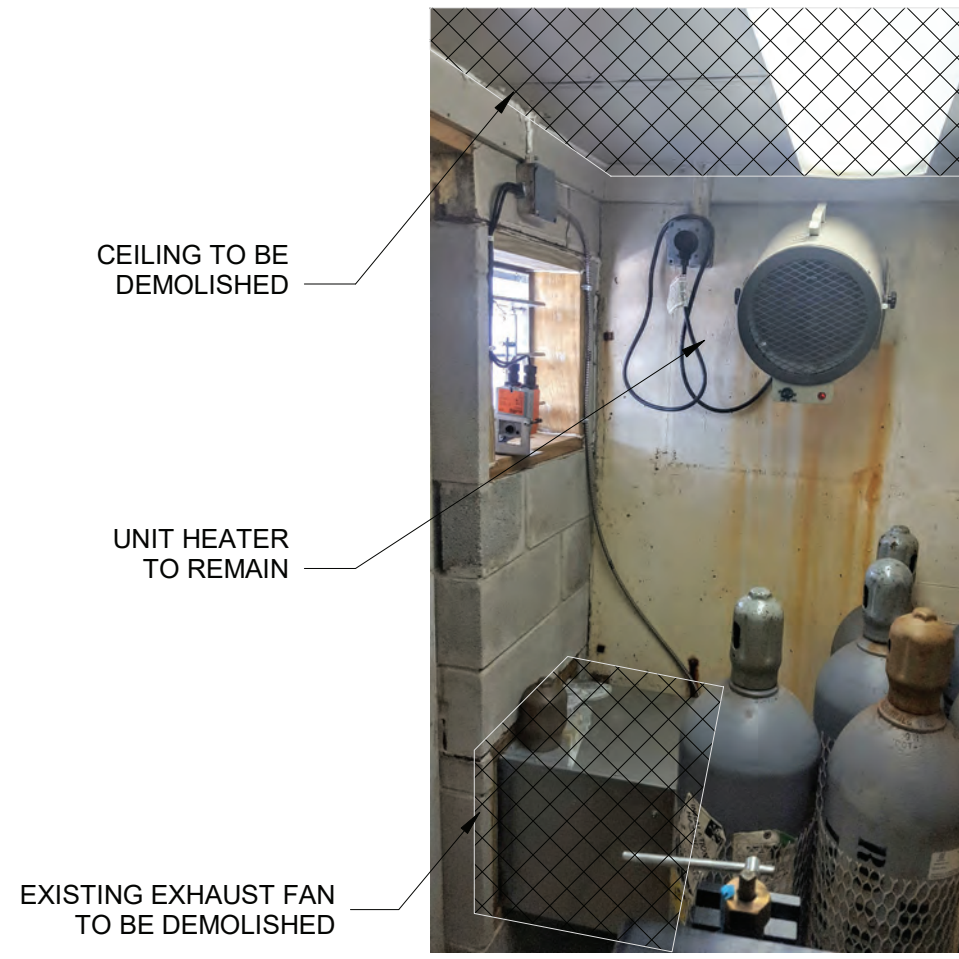
SHEET NO.
3E1

PAGE NO.
23



MAIN LEVEL PLAN - OVERVIEW

0 2 4 8 FT
1/4"=1'-0"



Plotted: 12/12/2019 12:23:53 PM L:\Monroe\Projects\214319 Monroe Water Syst Improve\CAD\Revit\Modals\Design\214319 - Tank-Pump Bldg - R19.rvt

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		APPROVED BY	RKB							WTP AND CLEAR WELL		PAGE NO.
		ISSUE DATE	DECEMBER 2019							OVERVIEW AND DEMOLITION FLOOR PLAN		24
		PROJECT NUMBER	214319-04-001									

REMOVE EXISTING CLEAR WELL ROOFING MATERIALS INCLUDING:
BALLAST, ROOFING, INSULATION, ROOF HATCHES (2X), FLASHING
AND ADHESIVE COMPLETE

REMOVE AND REPLACE
ROOF HATCH
(TYP)




REMOVE EXISTING WTP ROOF AND
FRAMING STRUCTURE IN ITS ENTIRETY

(APPROX 2800 SF)

ROOF DEMO PLAN



"For Viewing Purposes Only - Visit wesslerengineering.com to Purchase"

SCALE VERIFICATION	DRAWN BY JRB	NO.	DATE	INITIALS	REVISION DESCRIPTION		 WESSLER ENGINEERING <i>More than a Project™</i>	WATER SYSTEM IMPROVEMENTS	
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	ISSUE DATE DECEMBER 2019								
	PROJECT NUMBER 214319-04-001								

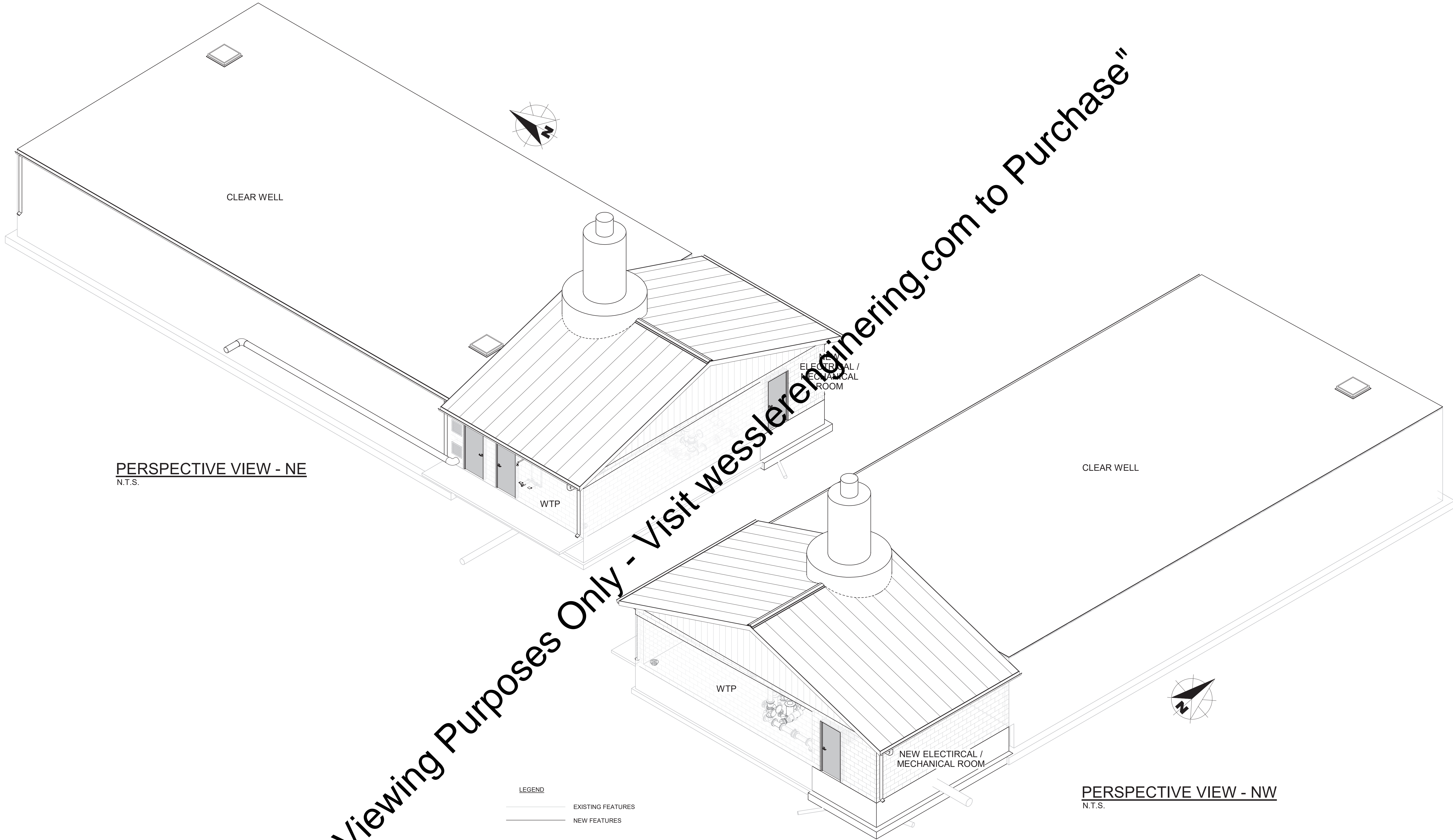




WESSLER
ENGINEERING

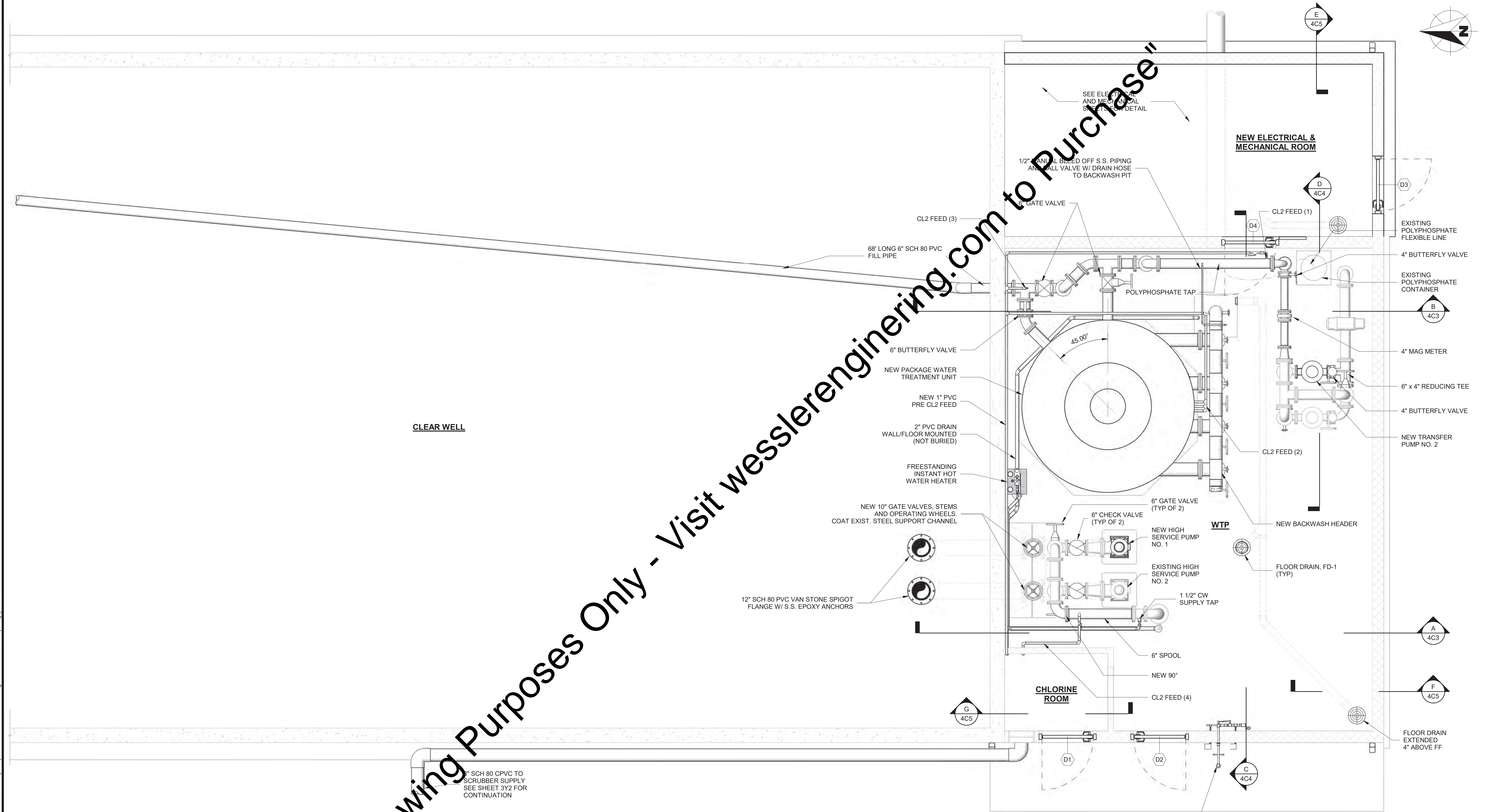
More than a Project™

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	DECEMBER 2019								
PROJECT NUMBER						WTP AND CLEAR WELL PERSPECTIVE VIEWS	PAGE NO.		
	214319-04-001						26		


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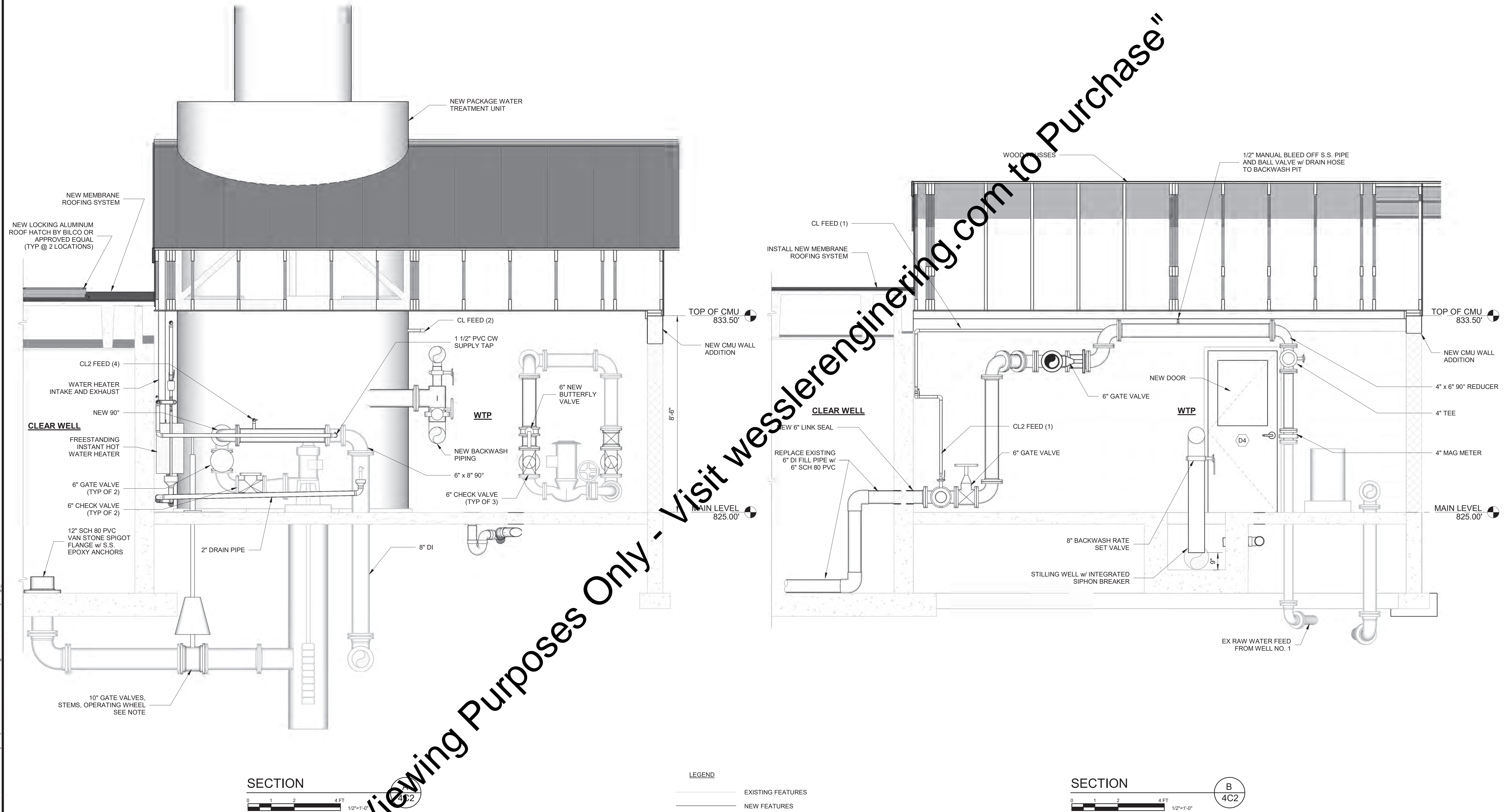
NOTE:
ANCHOR NEW 6" PVC FILL PIPE TO CLEAR WELL FLOOR
USING MIN. 1" S.S. STRAPPING AS MANUFACTURED BY
TOLCO OR APPROVED EQUAL AND S.S. EPOXY ANCHORS
ON 10' INTERVALS AND WITHIN 12" OF DISCHARGE END.

LEGEND
EXISTING FEATURES
NEW FEATURES

MAIN LEVEL PLAN - WTP
0 2 4 6 FT
3/8"=1'-0"

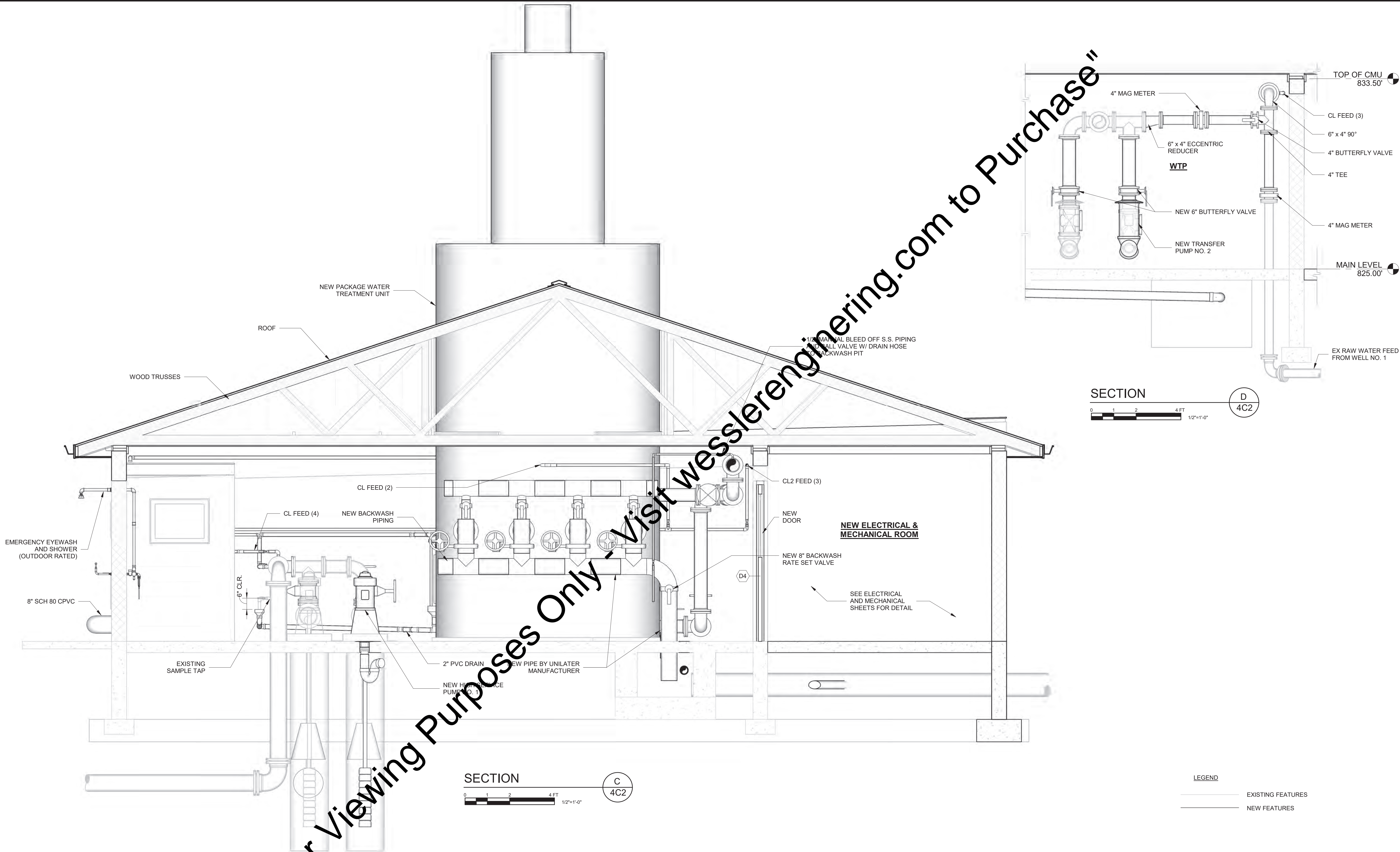
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	APPROVED BY	RKB						WTP AND CLEAR WELL MODIFICATION FLOOR PLAN		PAGE NO.
	ISSUE DATE	DECEMBER 2019								27
	PROJECT NUMBER	214319-04-001								


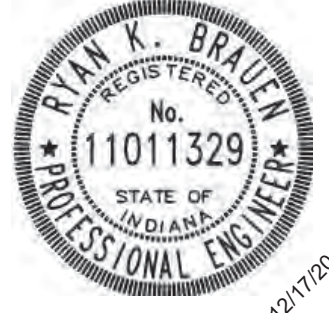
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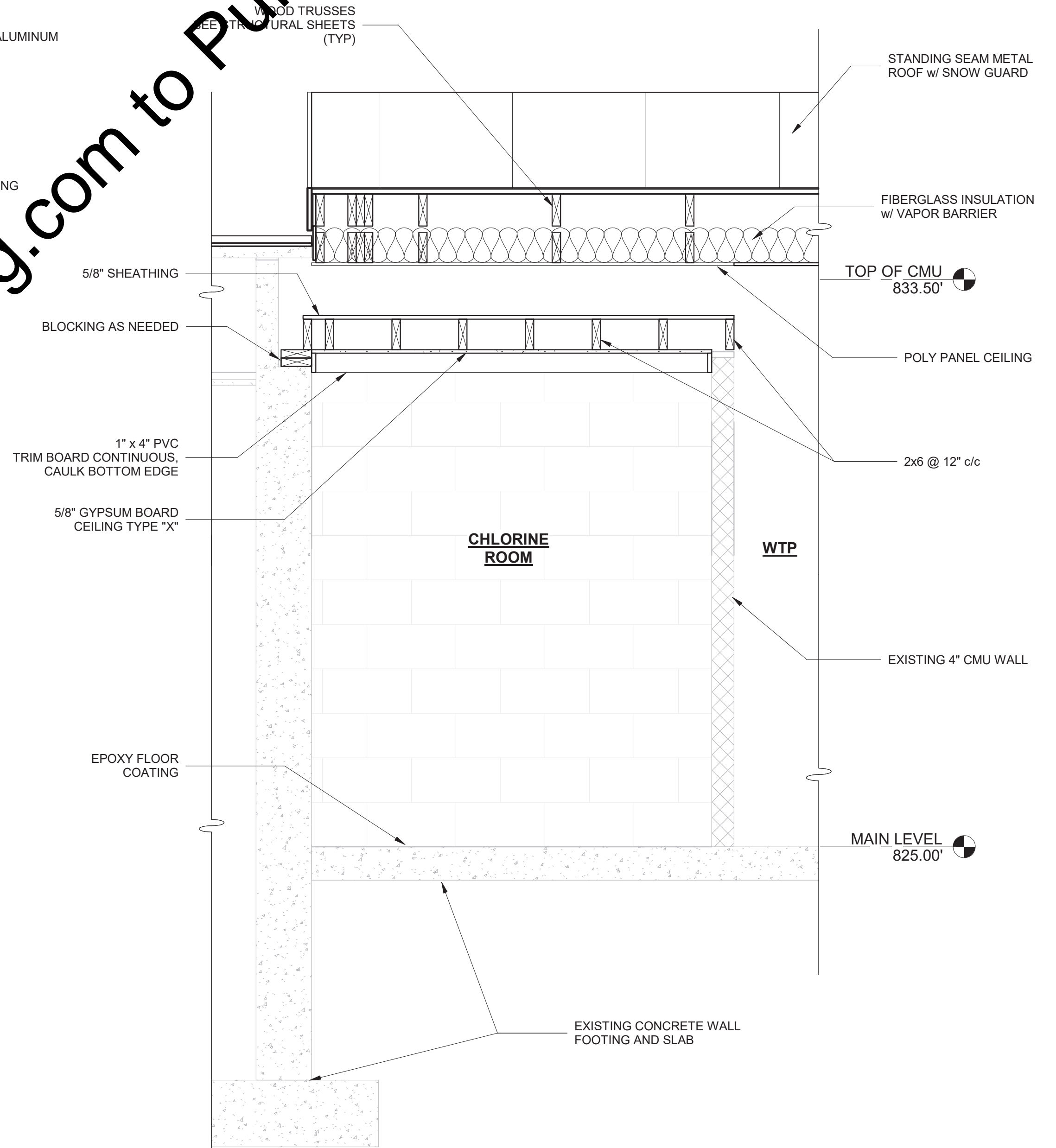
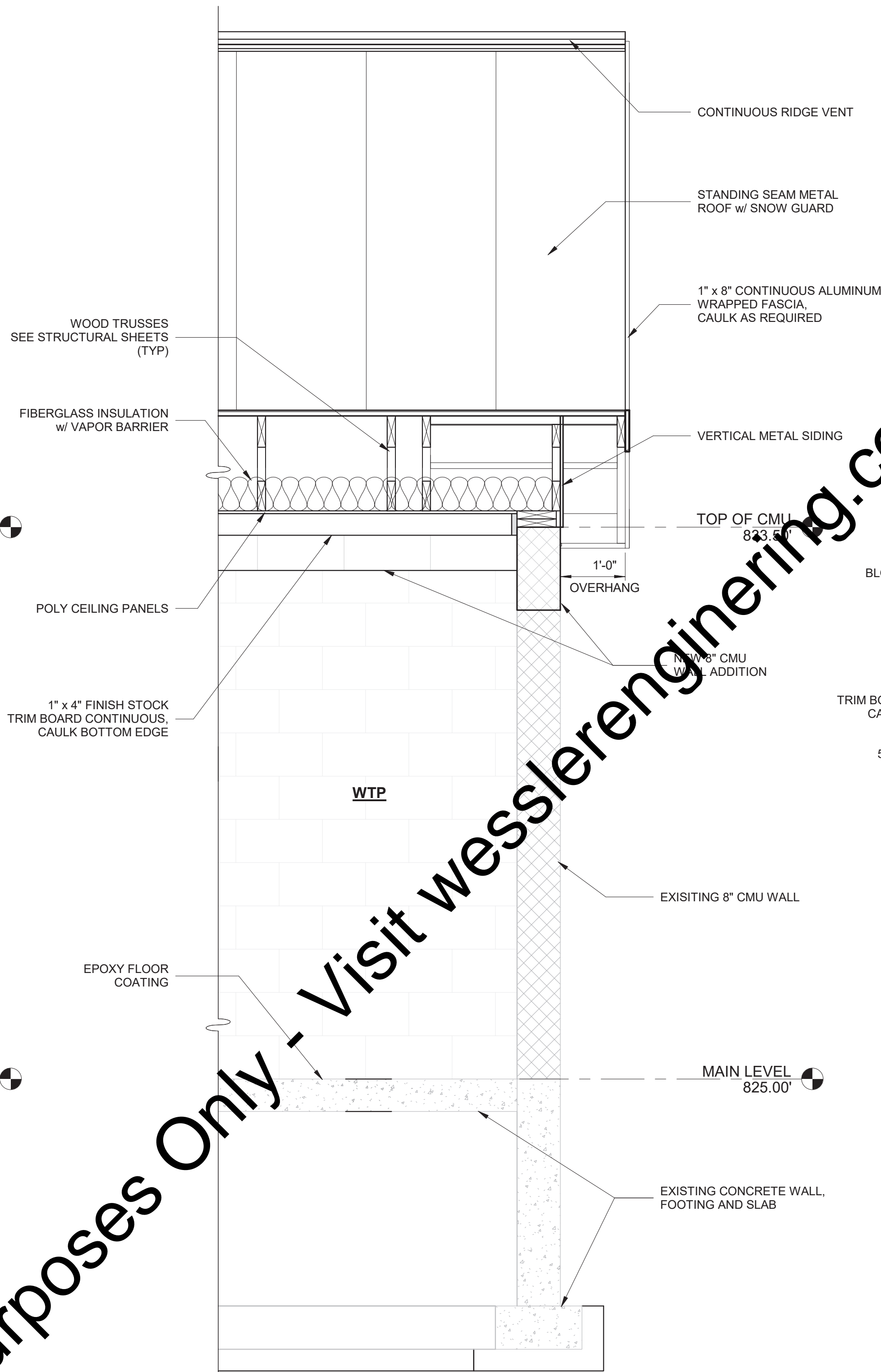
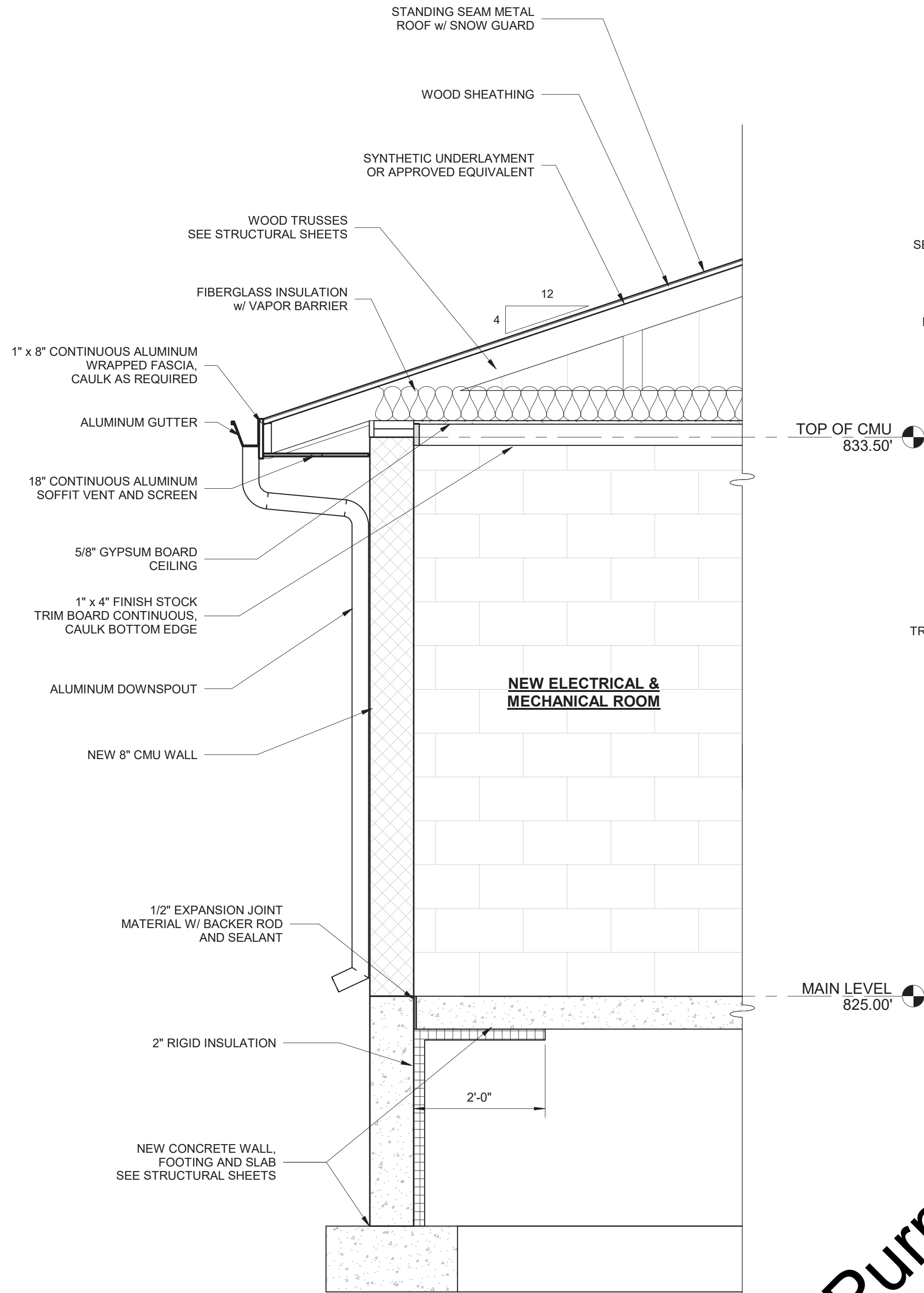
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	PROJECT NUMBER 214319-04-001									28

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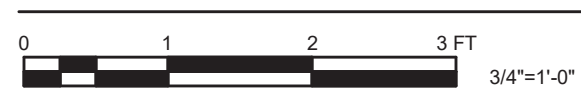


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	APPROVED BY RKB						WTP AND CLEAR WELL MODIFICATION SECTIONS		PAGE NO.
	ISSUE DATE DECEMBER 2019								29
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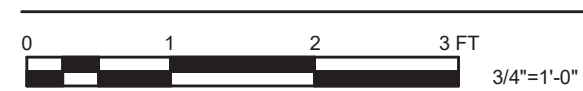


SECTION



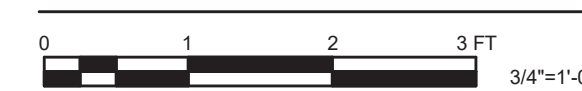
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4C2

SECTION



F
4C2

SECTION



G
4C2

SCALE VERIFICATION

BAR IS ONE INCH LONG ON ORIGINAL DRAWING



DRAWN BY

J

CHECKED BY

BJS

APPROVED BY

RKB

ISSUE DATE

DECEMBER 2019

PROJECT NUMBER

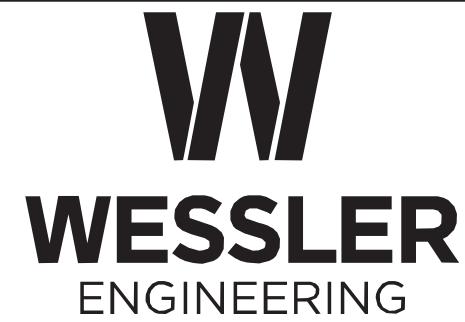
214319-04-001

NO.

DATE

INITIALS

REVISION DESCRIPTION



WATER SYSTEM IMPROVEMENTS

TOWN OF MONROE, INDIANA

WTP AND CLEAR WELL WALL SECTIONS

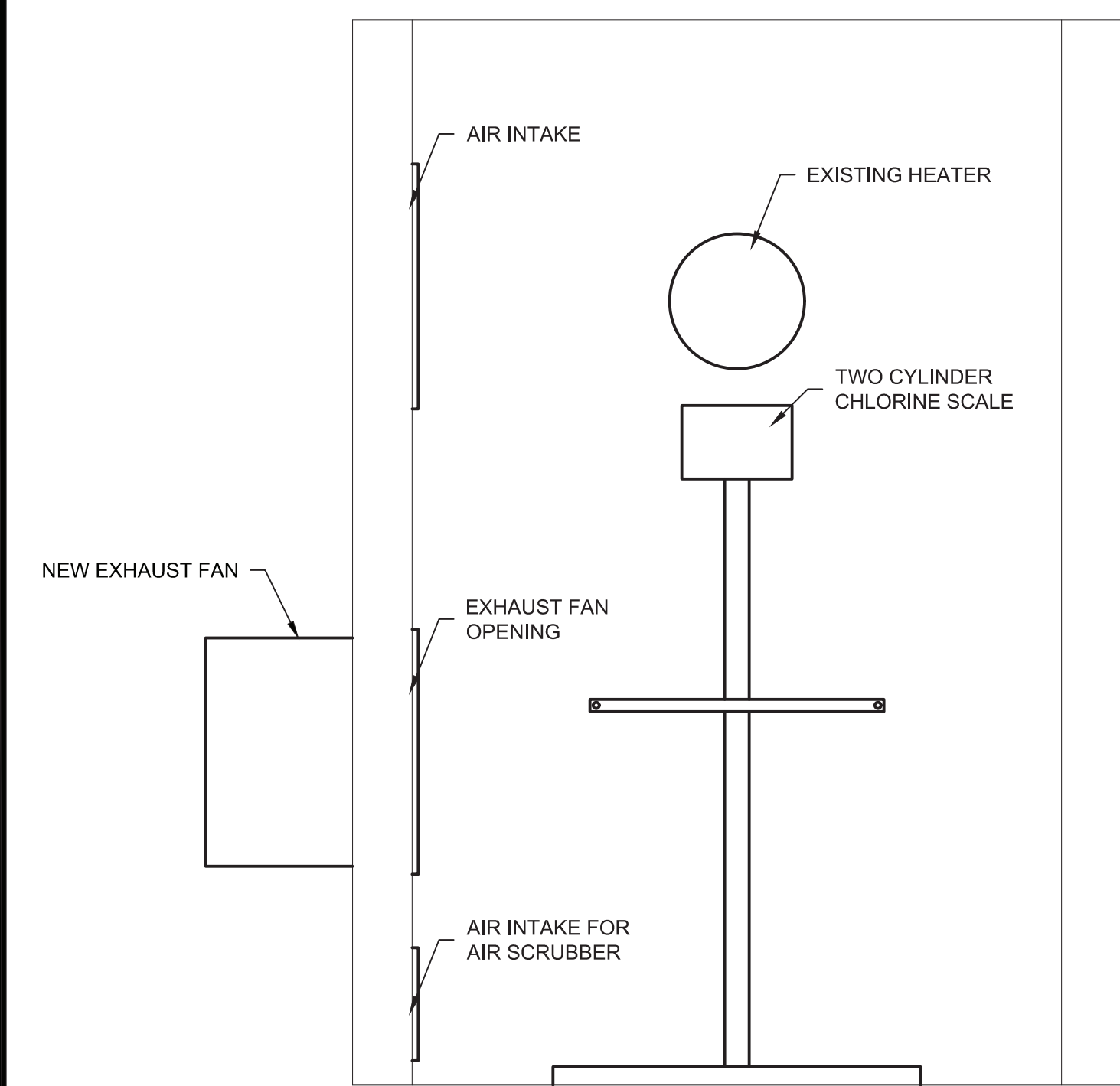
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4C5

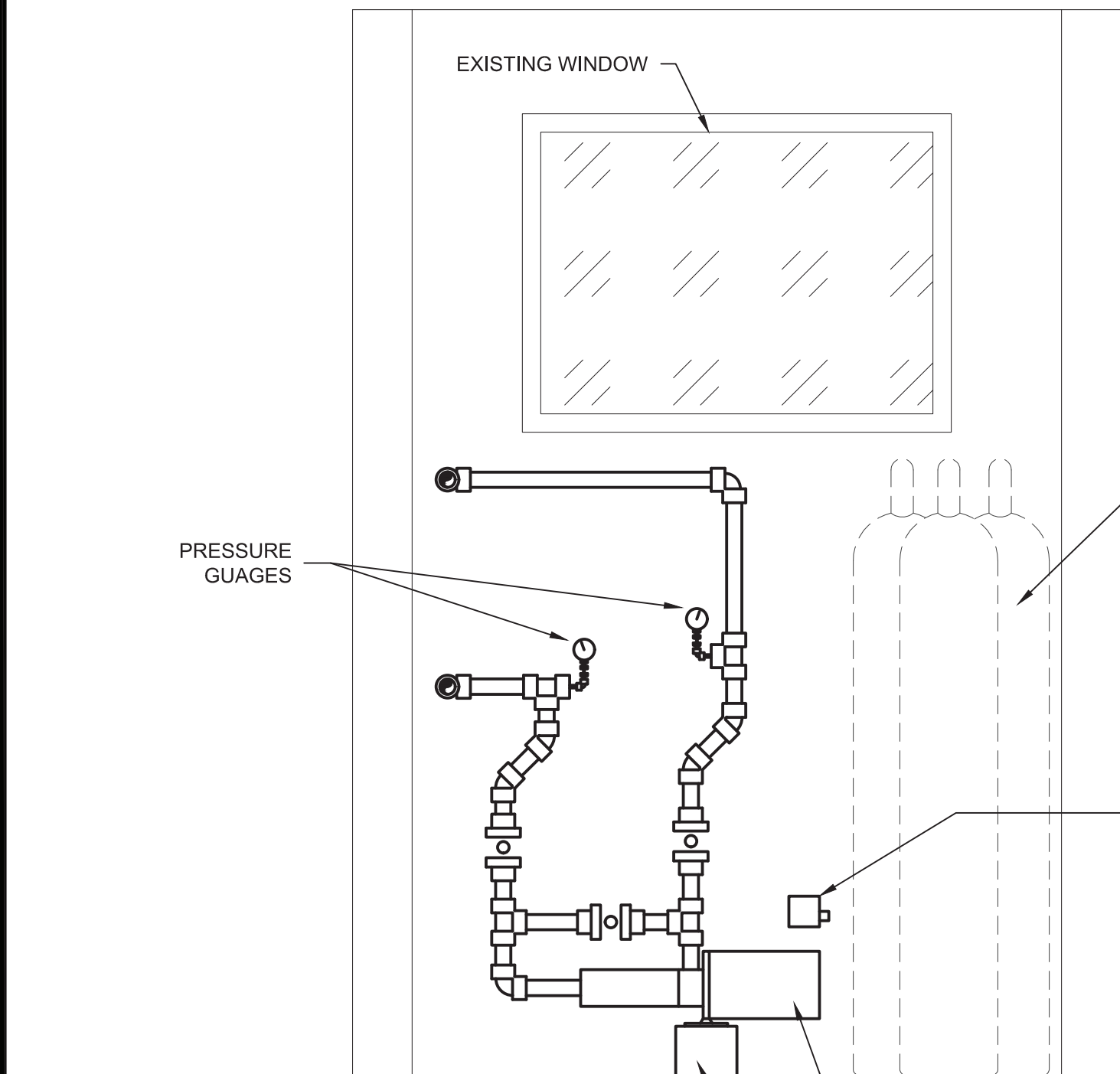
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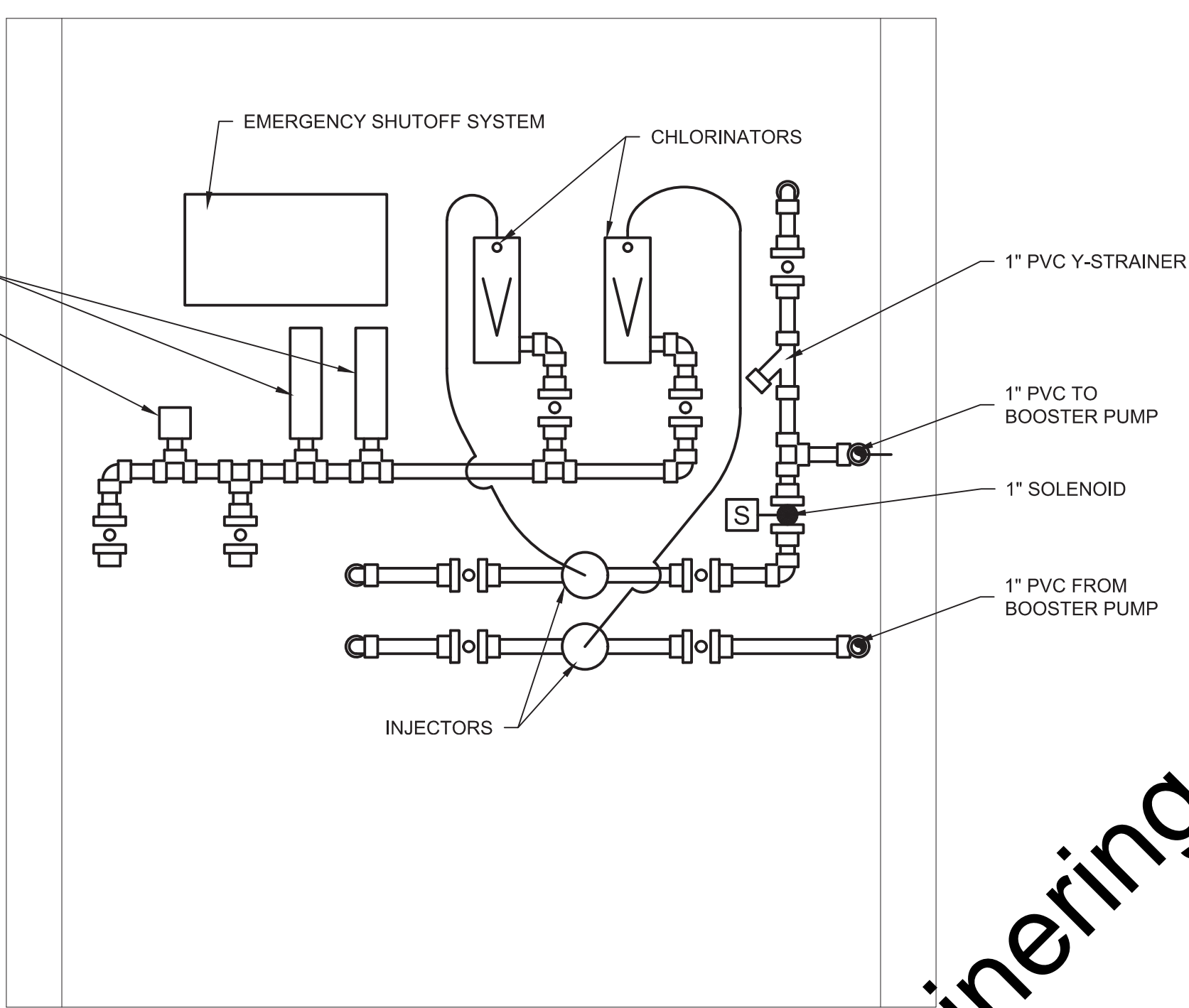
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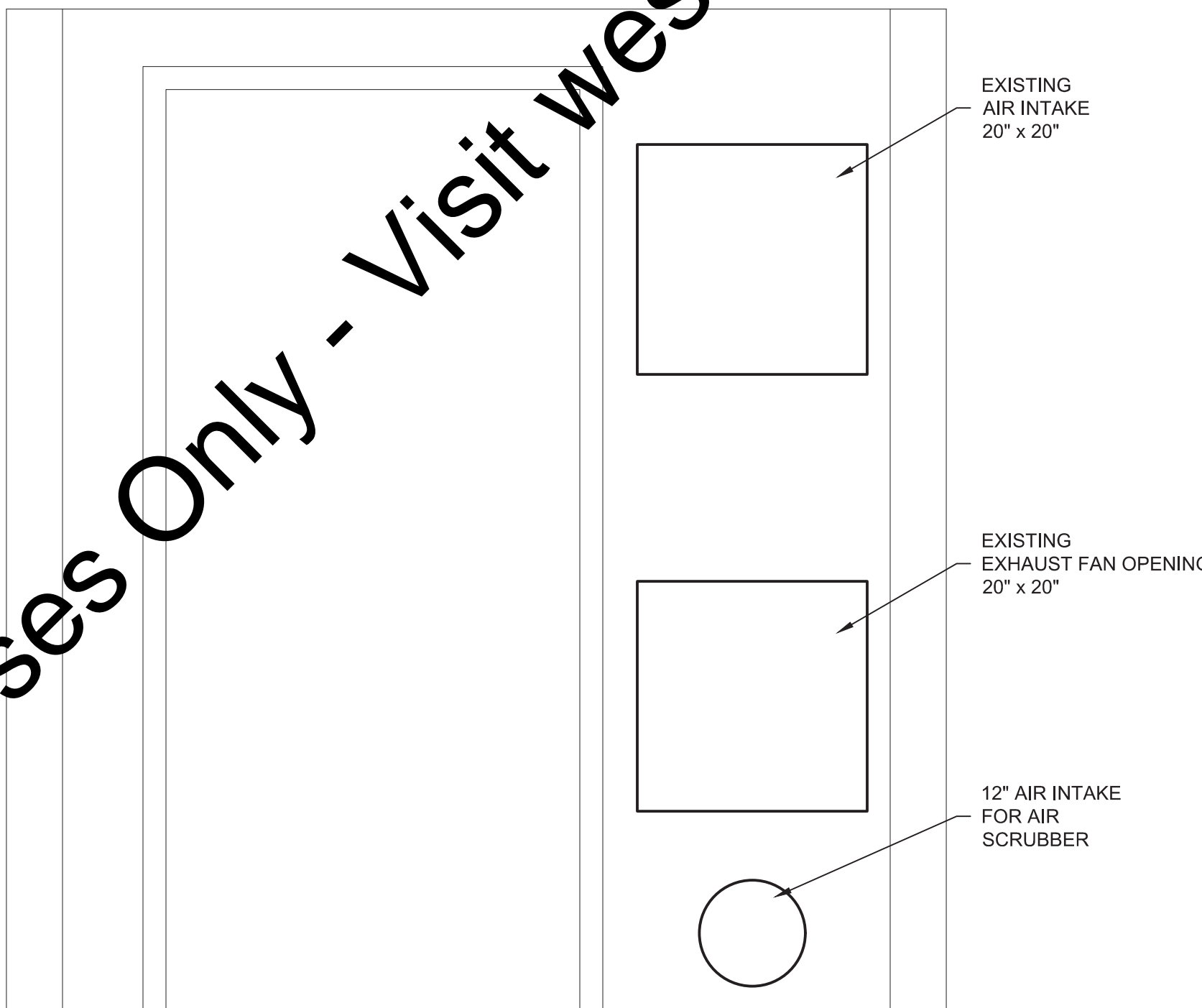
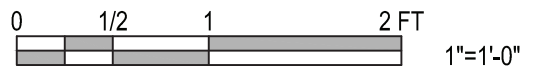
NORTH WALL ELEVATION



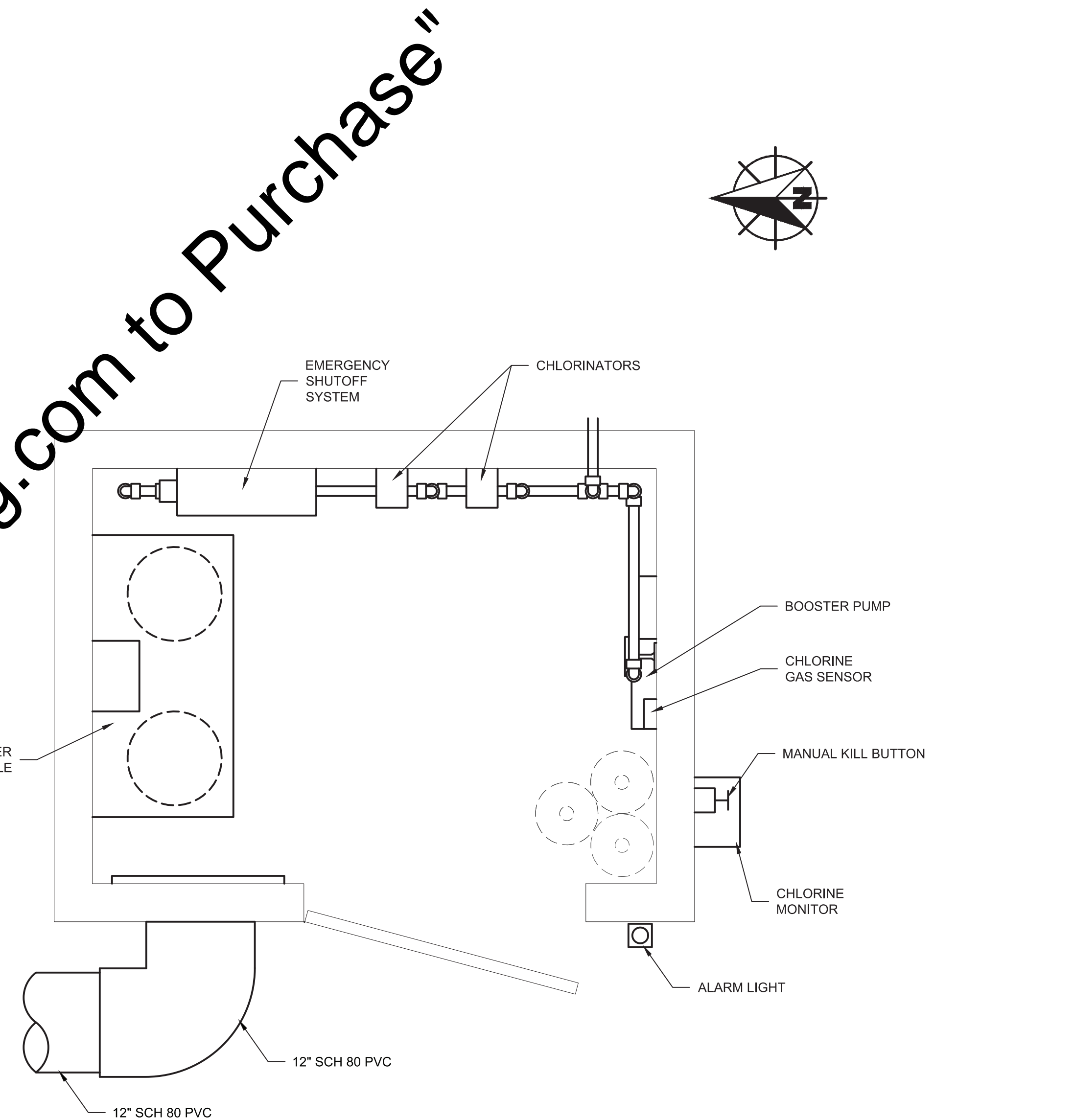
SOUTH WALL ELEVATION



EAST WALL ELEVATION



WEST WALL ELEVATION



CHLORINE ROOM CONCEPT
PLAN VIEW



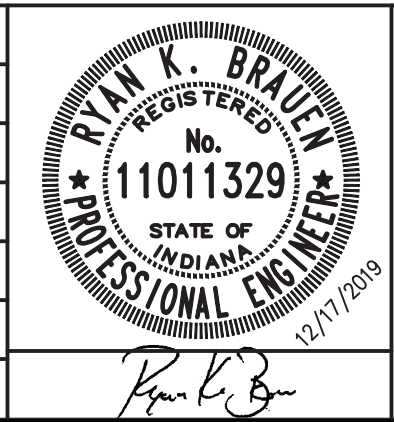
NOTES:

1. ALL PIPING AND VALVES ARE 1" SCH 80 PVC UNLESS INDICATED OTHERWISE.
2. ALL METAL STRAPPING, FASTENERS, CLIPS AND RELATED SHALL BE STAINLESS STEEL.

LEGEND

- EXISTING
- NEW
- FUTURE

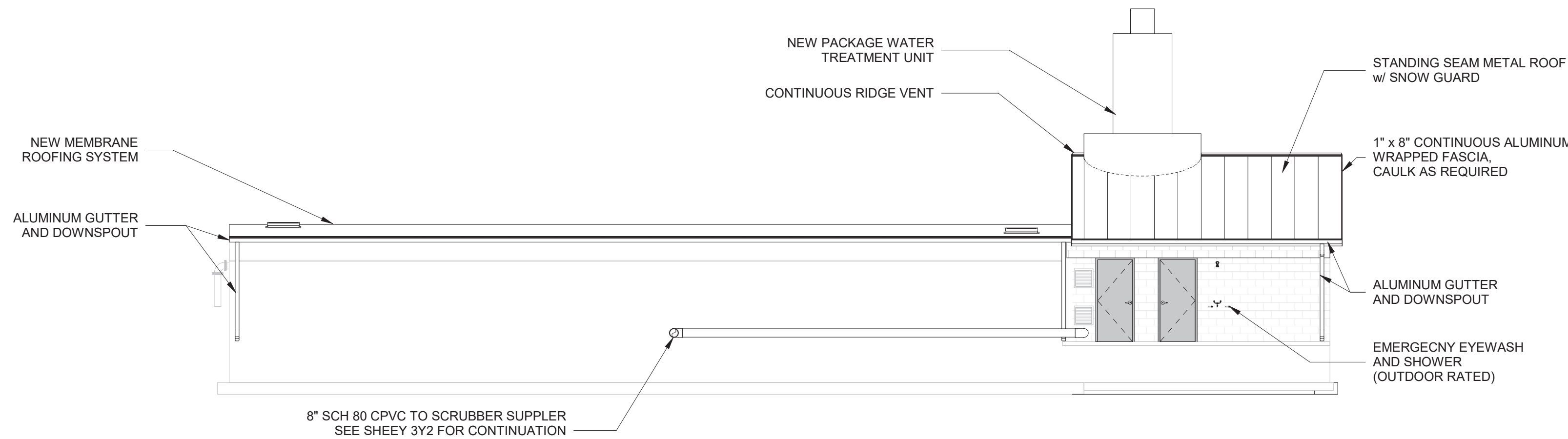
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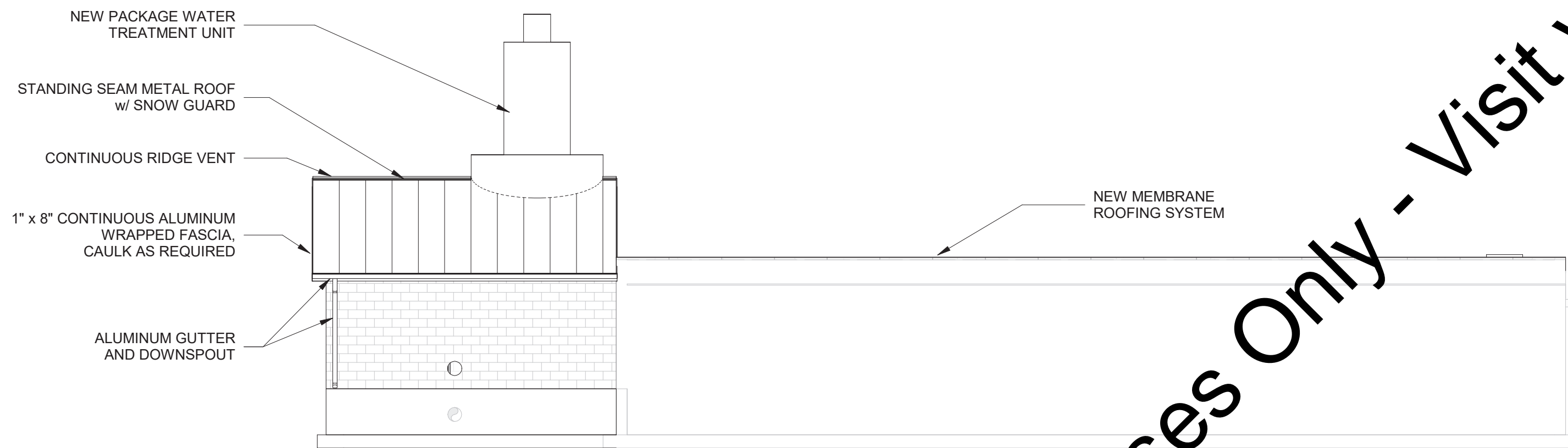
WATER SYSTEM IMPROVEMENTS
TOWN OF MONROE, INDIANA
WTP AND CLEAR WELL EXISTING CHLORINE ROOM PLAN AND ELEVATIONS

SHEET NO.
4C6
PAGE NO.
31

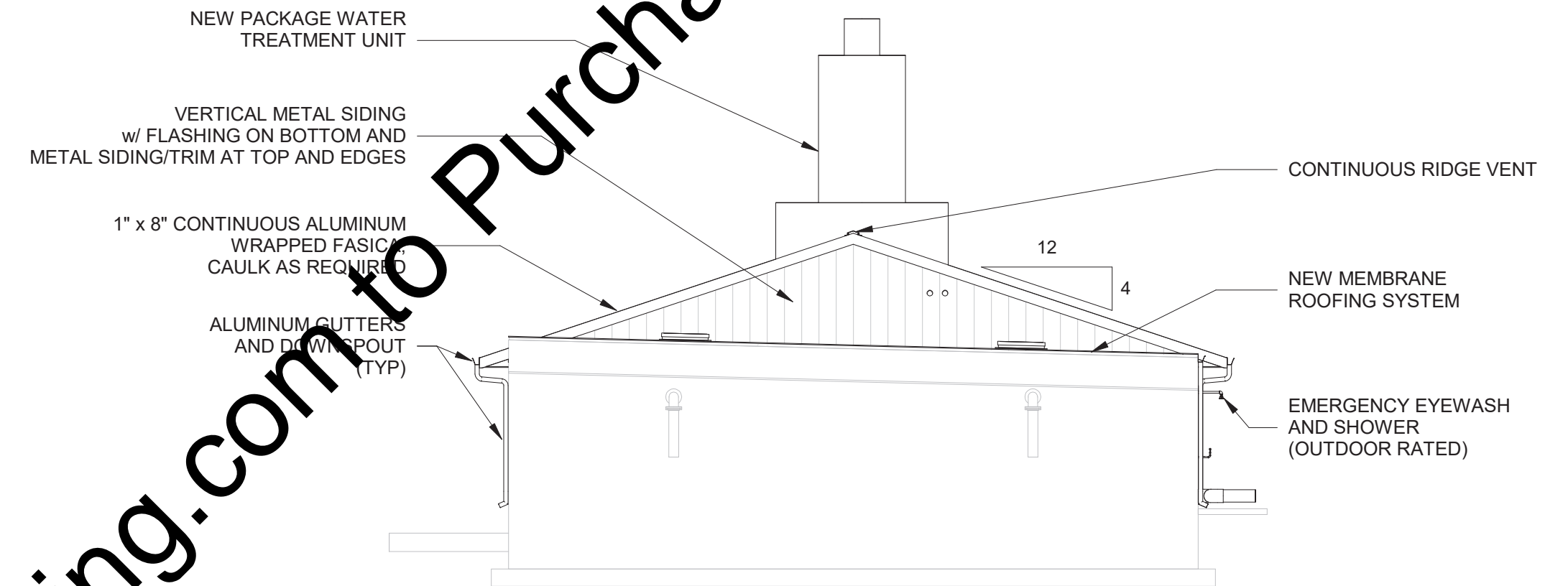
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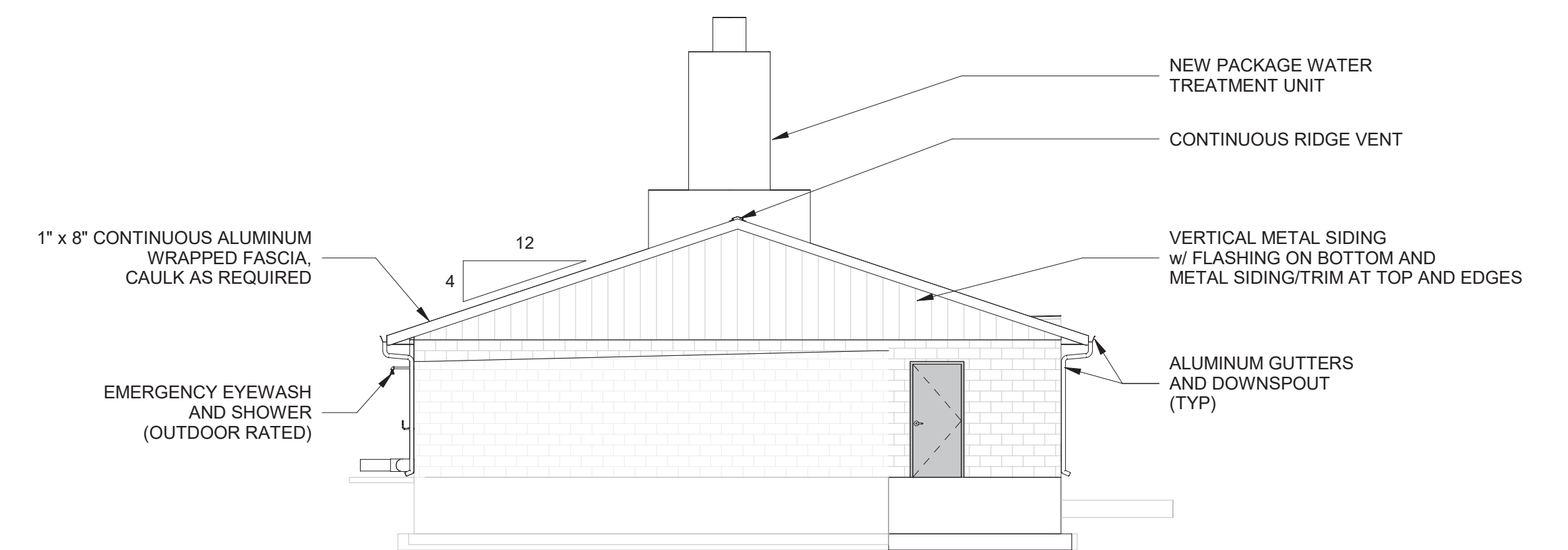
WEST ELEVATION
0 4 8 16 FT
1/8"=1'-0"






EAST ELEVATION
0 4 8 16 FT
1/8"=1'-0"

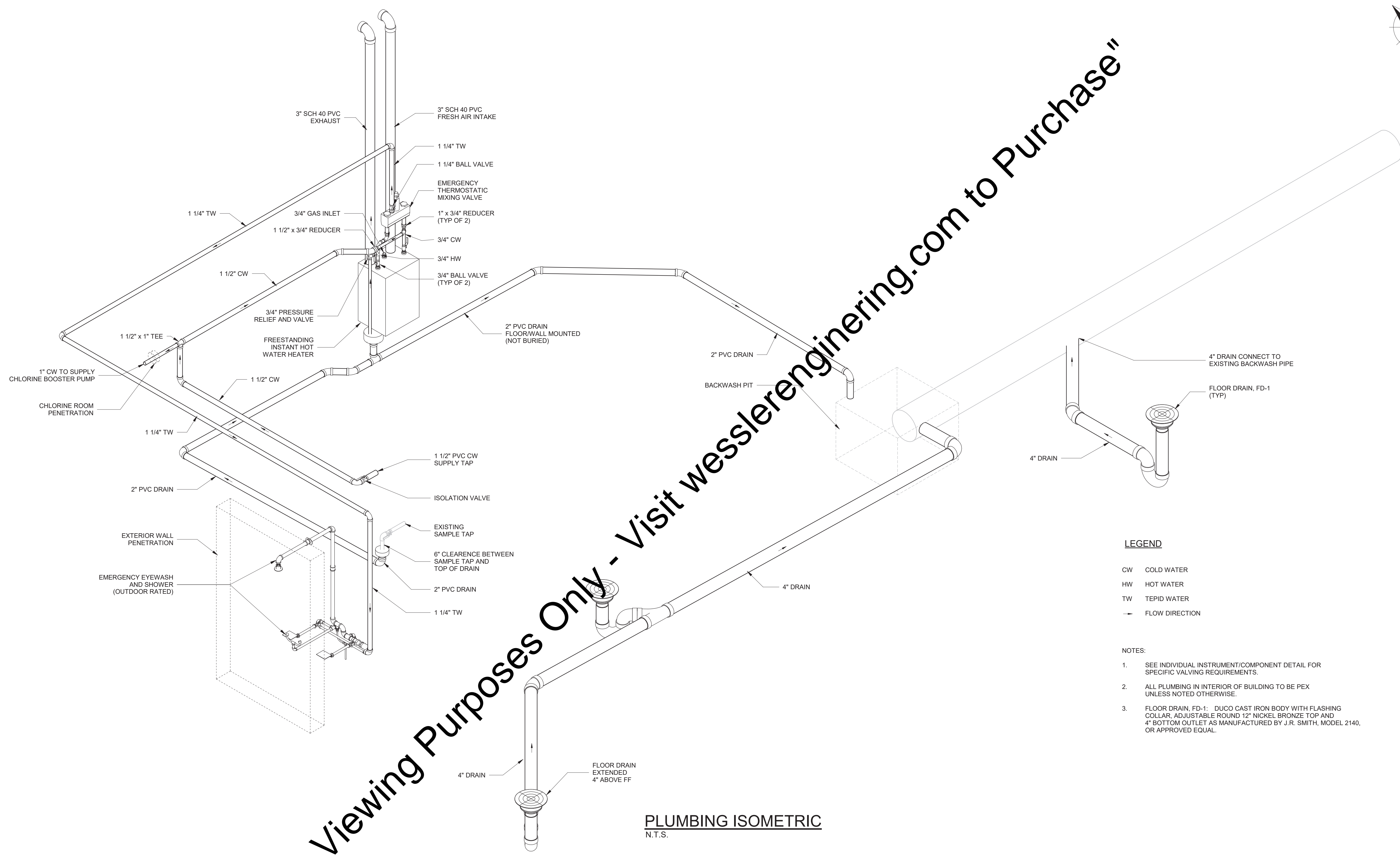
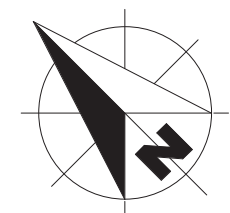


NORTH ELEVATION
0 4 8 16 FT
1/8"=1'-0"



SOUTH ELEVATION
0 4 8 16 FT
1/8"=1'-0"

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BAR IS ONE INCH LONG ON ORIGINAL DRAWING 	CHECKED BY BKS							TOWN OF MONROE , INDIANA		PAGE NO. 32
	APPROVED BY RKB							WTP AND CLEAR WELL BUILDING ELEVATIONS		
	ISSUE DATE DECEMBER 2019									
	PROJECT NUMBER 214319-04-001									



LEGEND

- CW COLD WATER
- HW HOT WATER
- TW TEPID WATER
- FLOW DIRECTION

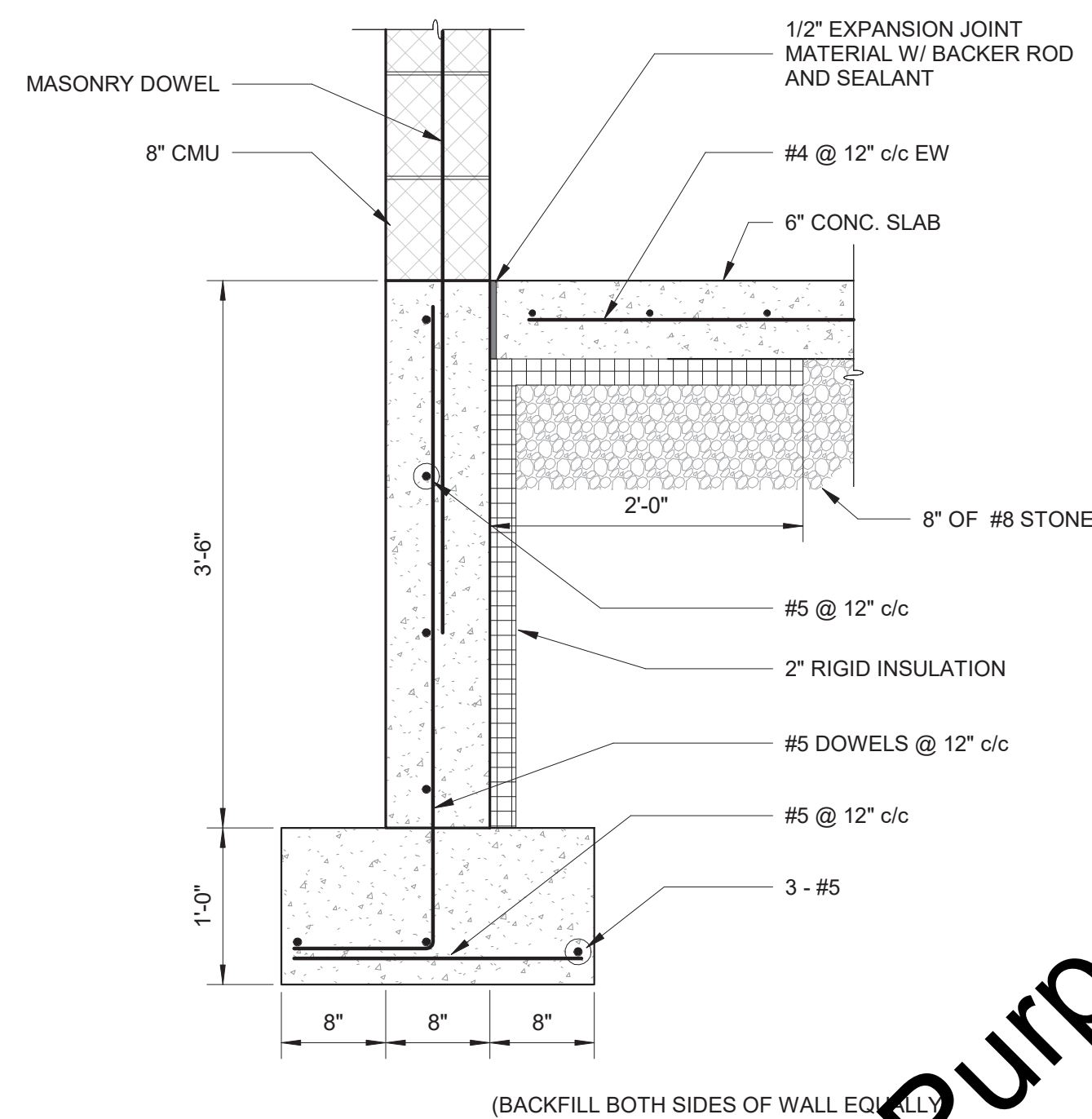
NOTES:

- SEE INDIVIDUAL INSTRUMENT/COMPONENT DETAIL FOR SPECIFIC VALVING REQUIREMENTS.
- ALL PLUMBING IN INTERIOR OF BUILDING TO BE PEX UNLESS NOTED OTHERWISE.
- FLOOR DRAIN, FD-1: DUCO CAST IRON BODY WITH FLASHING COLLAR, ADJUSTABLE ROUND 12" NICKEL BRONZE TOP AND 4" BOTTOM OUTLET AS MANUFACTURED BY J.R. SMITH, MODEL 2140, OR APPROVED EQUAL.

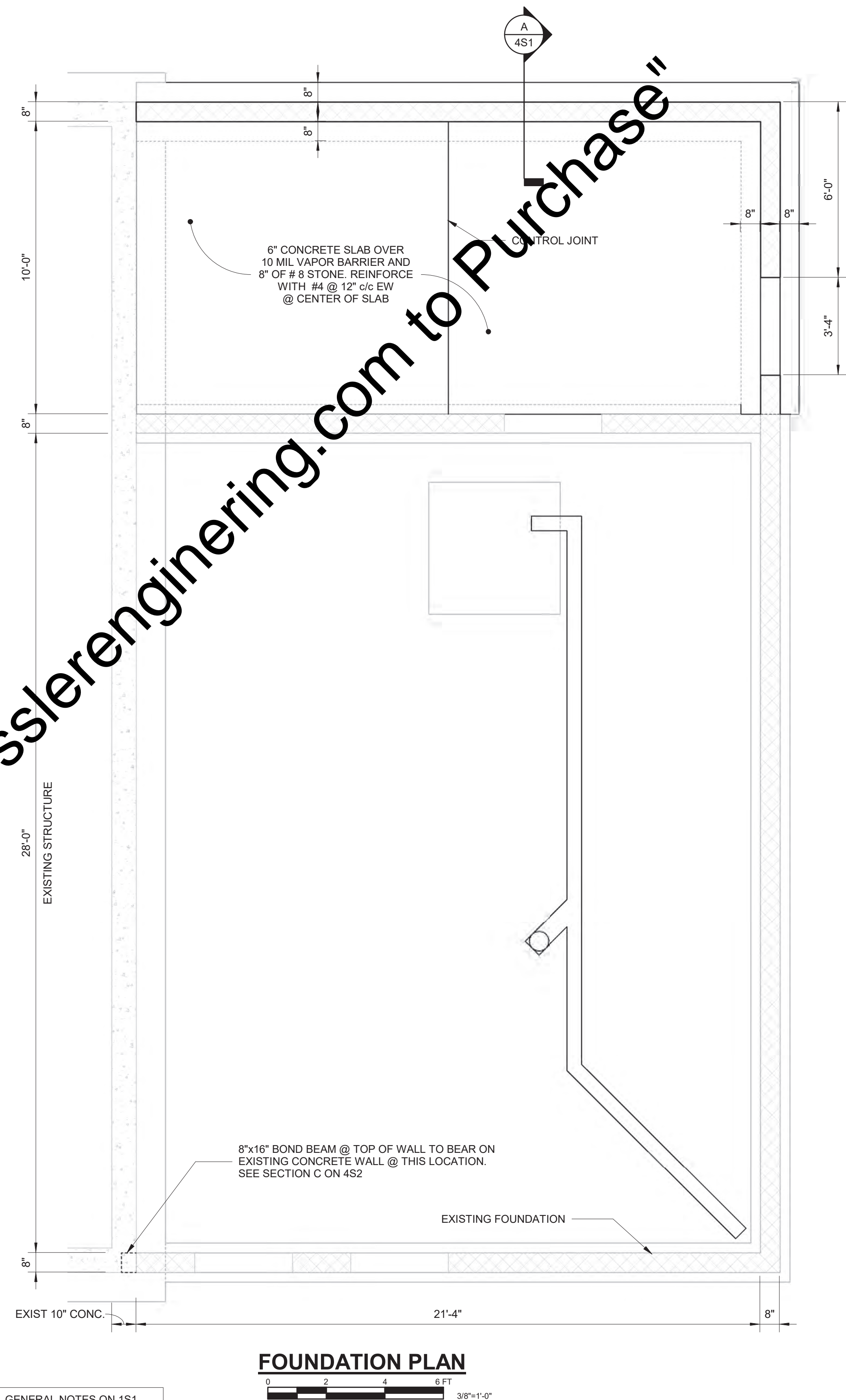
PLUMBING ISOMETRIC
N.T.S.

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<div>SCALE VERIFICATION</div> <div>BAR IS ONE INCH LONG ON ORIGINAL DRAWING</div> <div><div></div></div>	DRAWN BY	J	NO.	DATE	INITIALS	REVISION DESCRIPTION	<div><div><div>RYAN K. BRAVEN</div><div>REGISTERED</div><div>No. 11011329</div><div>STATE OF INDIANA</div><div>PROFESSIONAL ENGINEER</div><div>12/17/2019</div></div><div><div>W</div><div>WESSLER</div><div>ENGINEERING</div><div>More than a Project™</div></div></div>	WATER SYSTEM IMPROVEMENTS		SHEET NO.
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	APPROVED BY	RKB								PAGE NO.
	ISSUE DATE	DECEMBER 2019						WTP AND CLEAR WELL PLUMBING ISOMETRIC		33
	PROJECT NUMBER	214319-04-001								



SECTION



NOTES:

CONTRACTOR: FIELD VERIFY EXISTING BUILDING DIMENSIONS.


NEW CMU: #5 VERT @ 48" c/c. SEE STRUCTURAL GENERAL
NOTES ON SHEET 1S1 FOR ADDITIONAL.

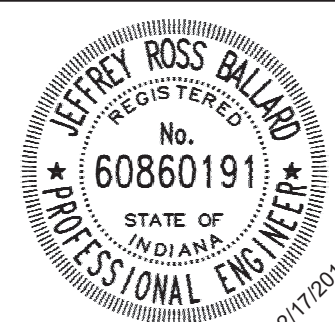
PROVIDE 8"x16" BOND BEAM @ TOP OF WALL FOR NEW AND EXISTING CMU WALLS. REINFORCE WITH 2 - #5 TOP AND BOTTOM.

LEGEND

EXISTING FEATURES

NEW FEATURES

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	APPROVED BY JRB				
	ISSUE DATE				
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	PROJECT NUMBER 214319-04-001				



Jeffrey R. Ballard



More than a Project™

WATER SYSTEM IMPROVEMENTS

TOWN OF MONROE , INDIANA

WTP AND CLEAR WELL FOUNDATION PLAN

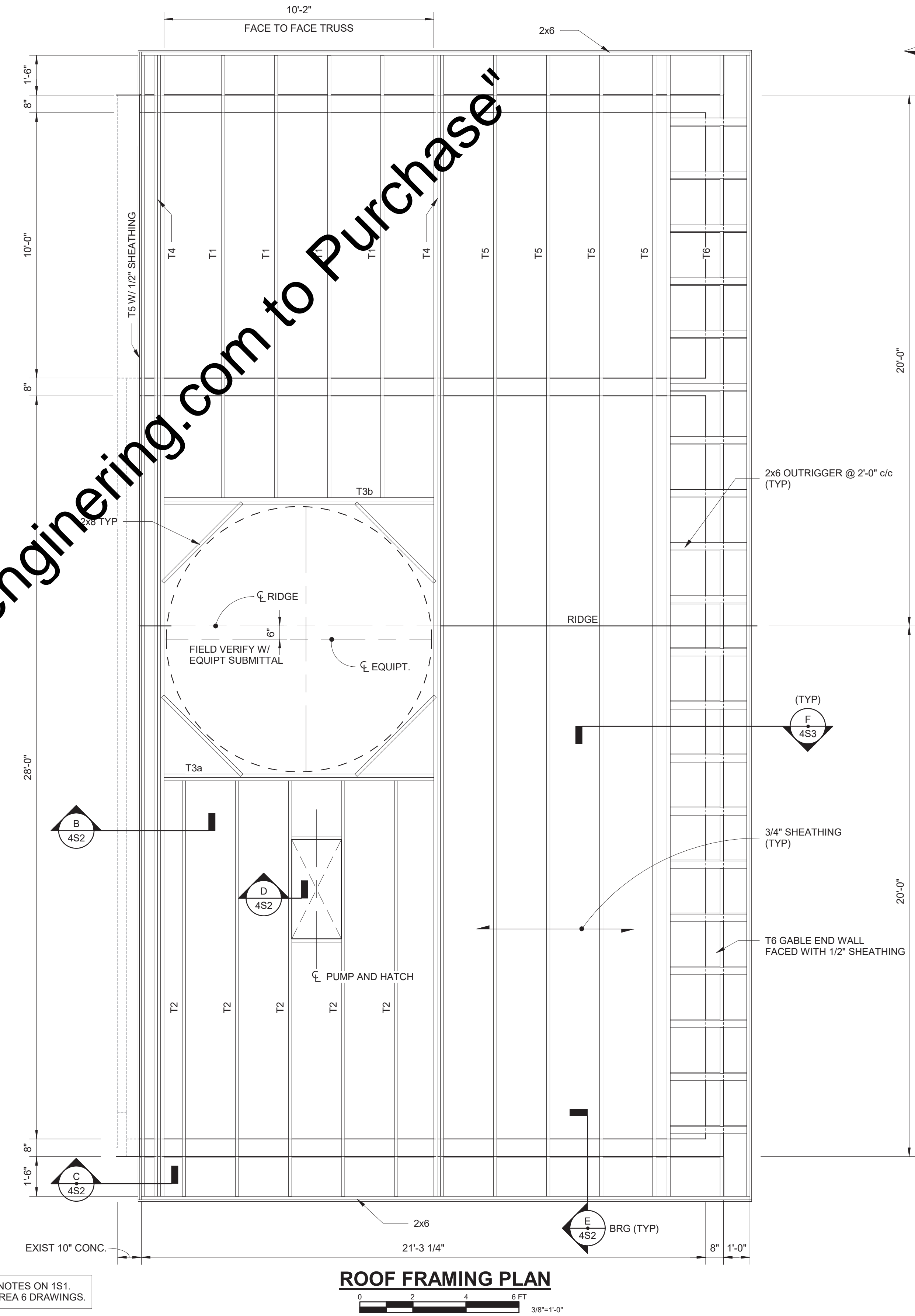
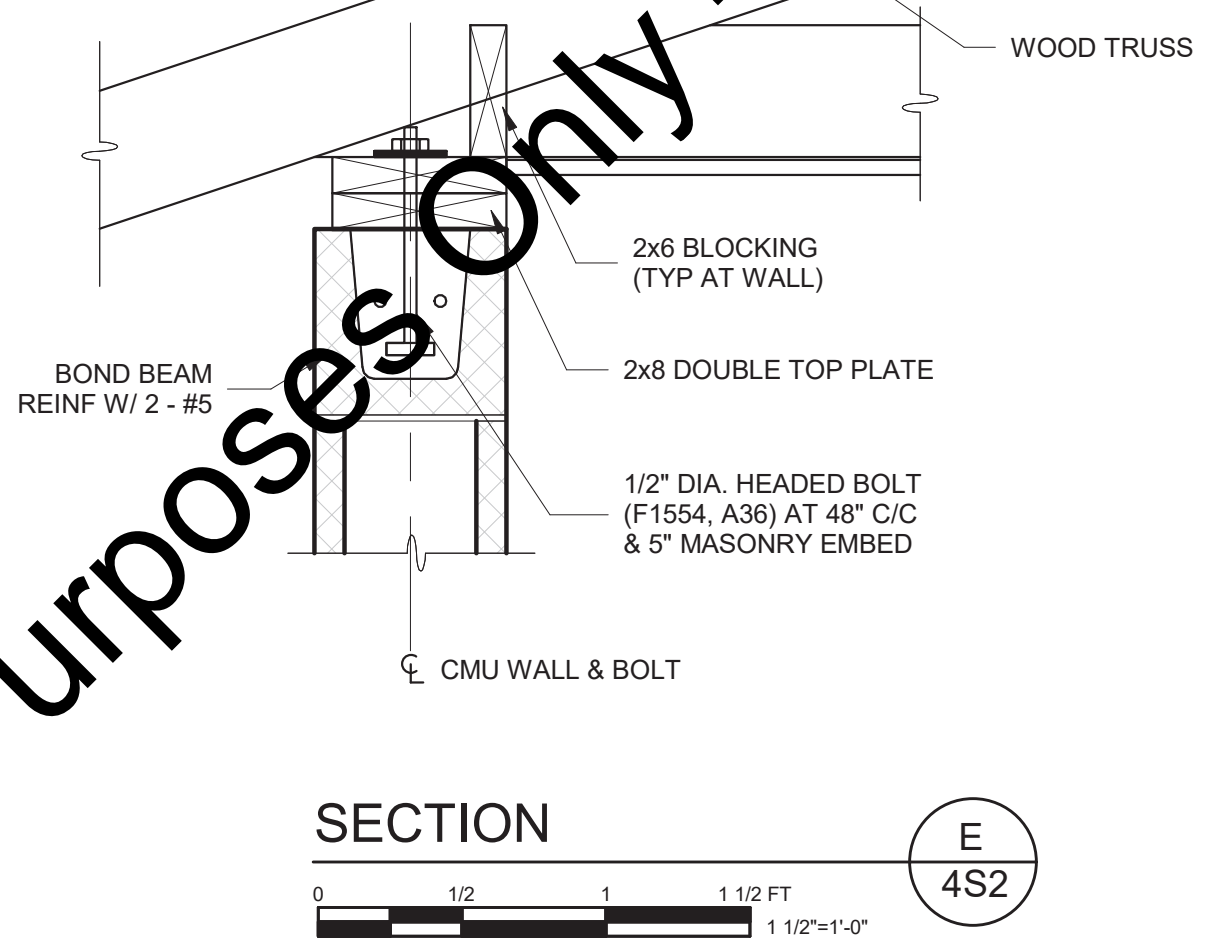
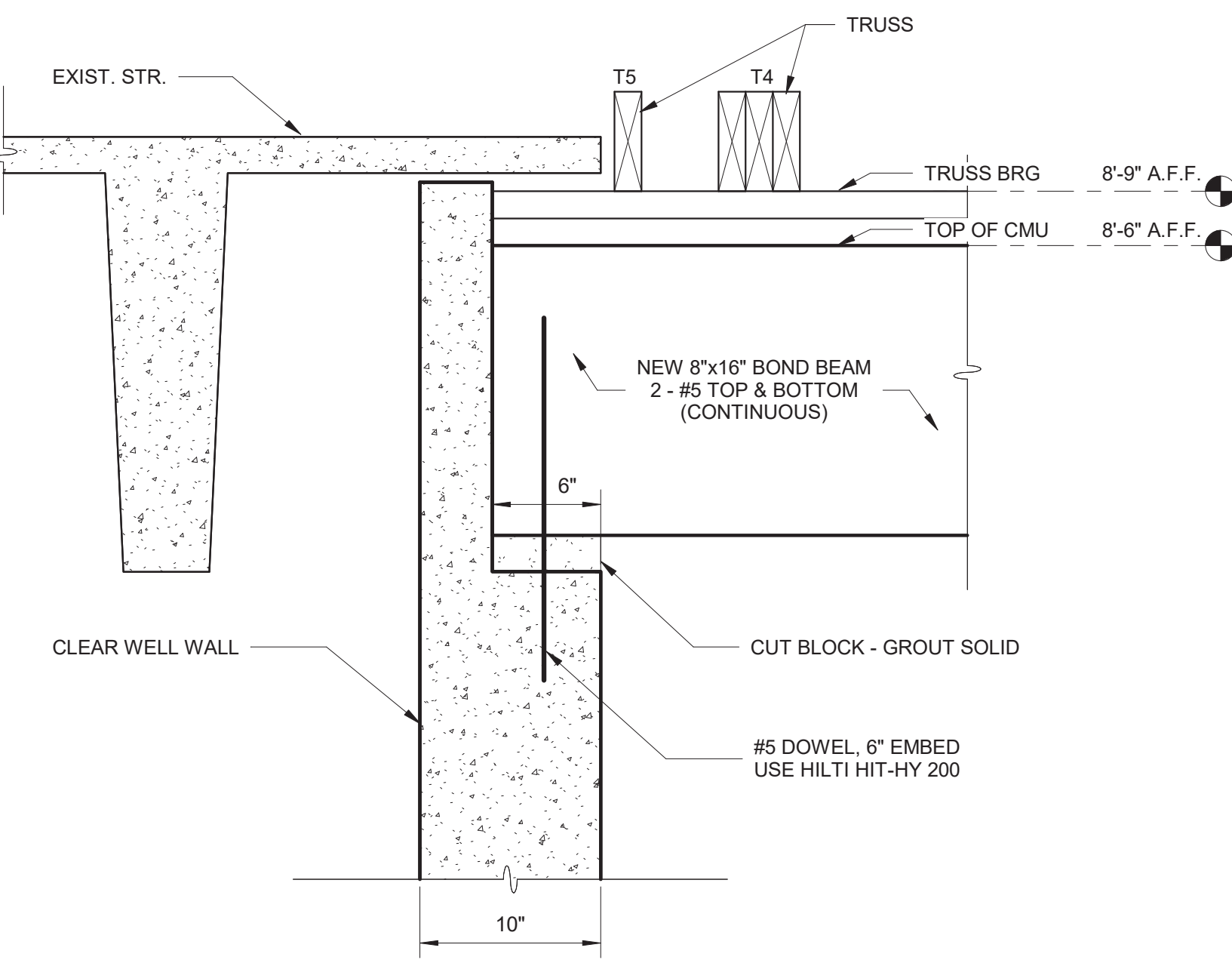
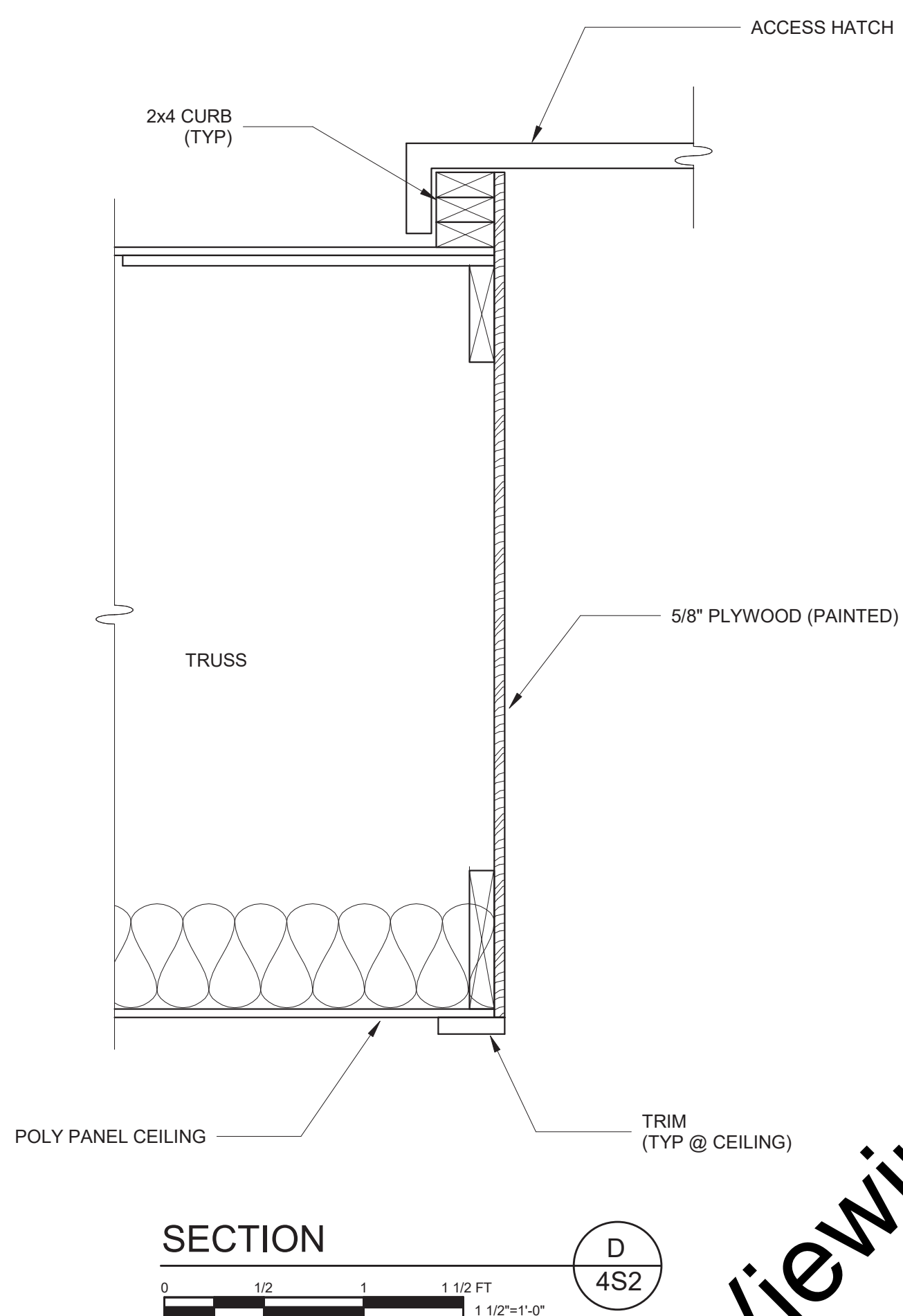
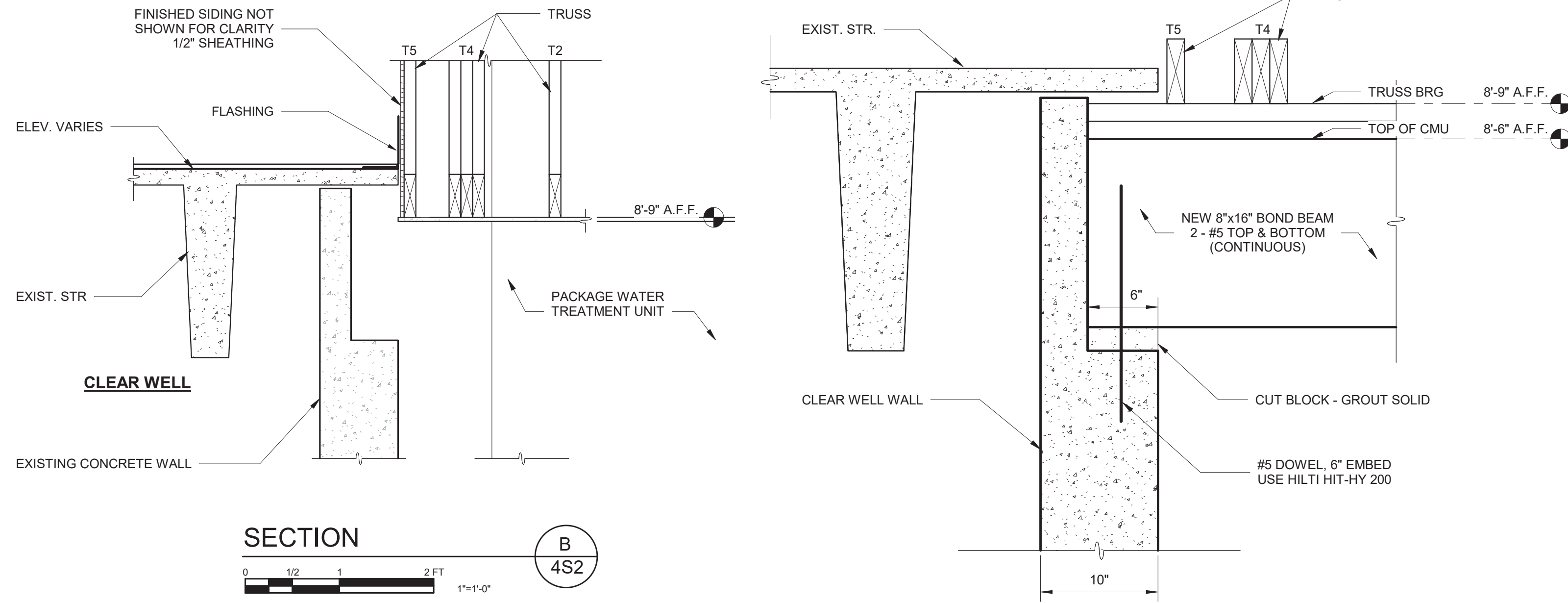
SHEET NO.

4S1

PAGE NO.

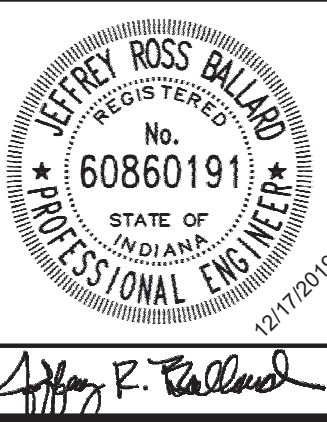
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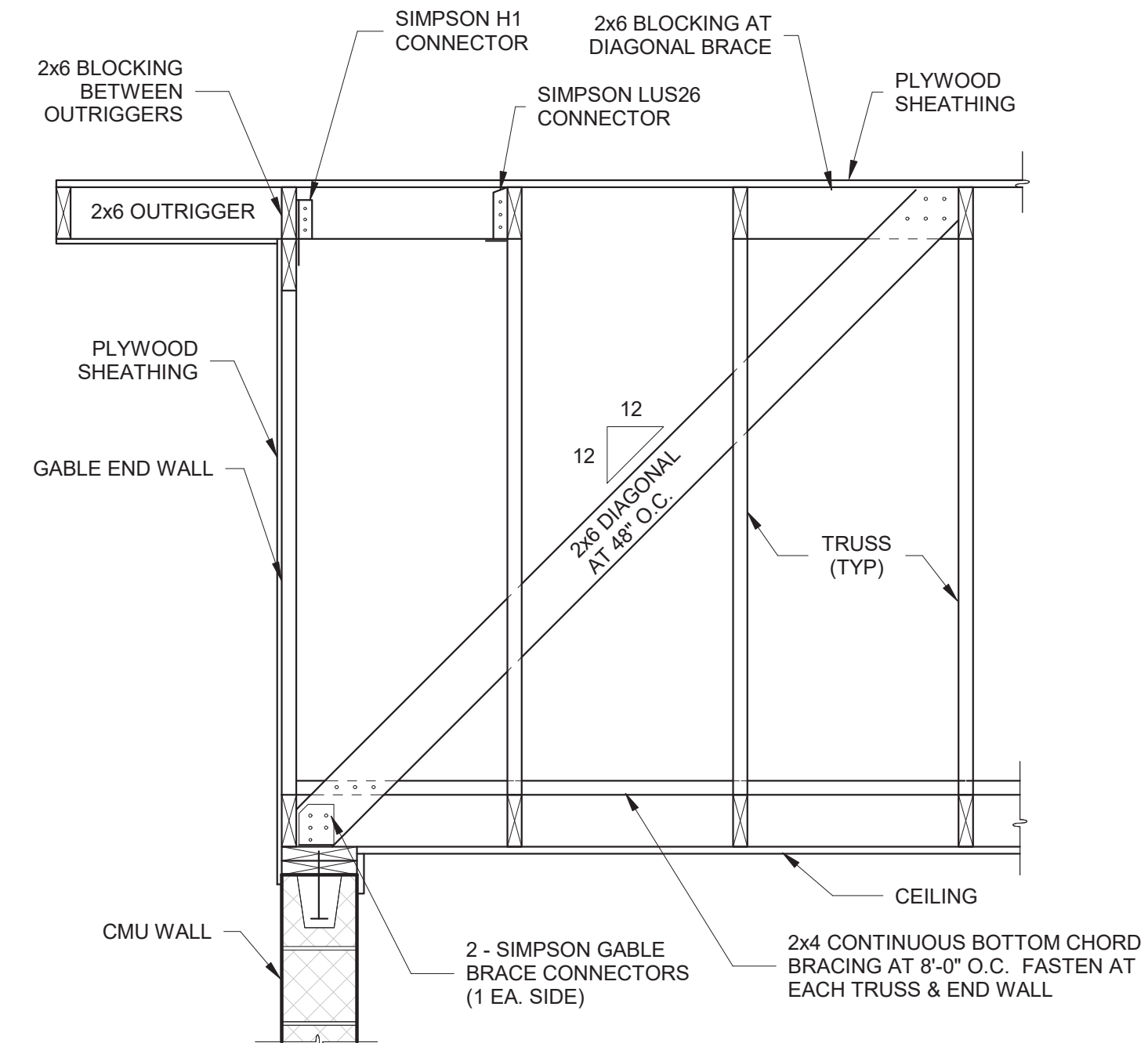
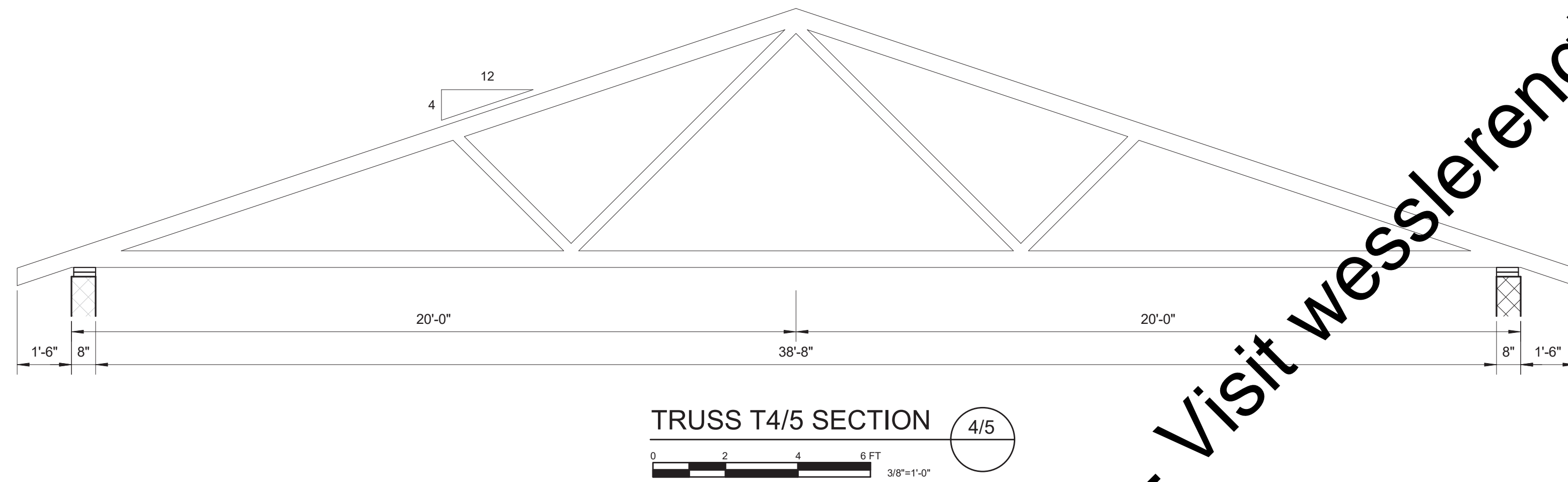
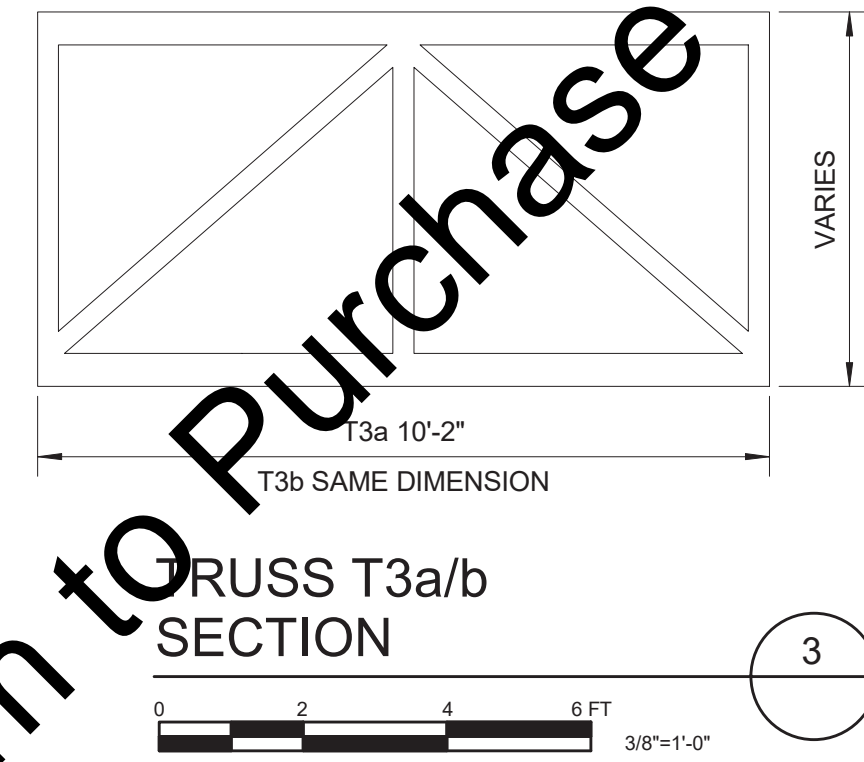
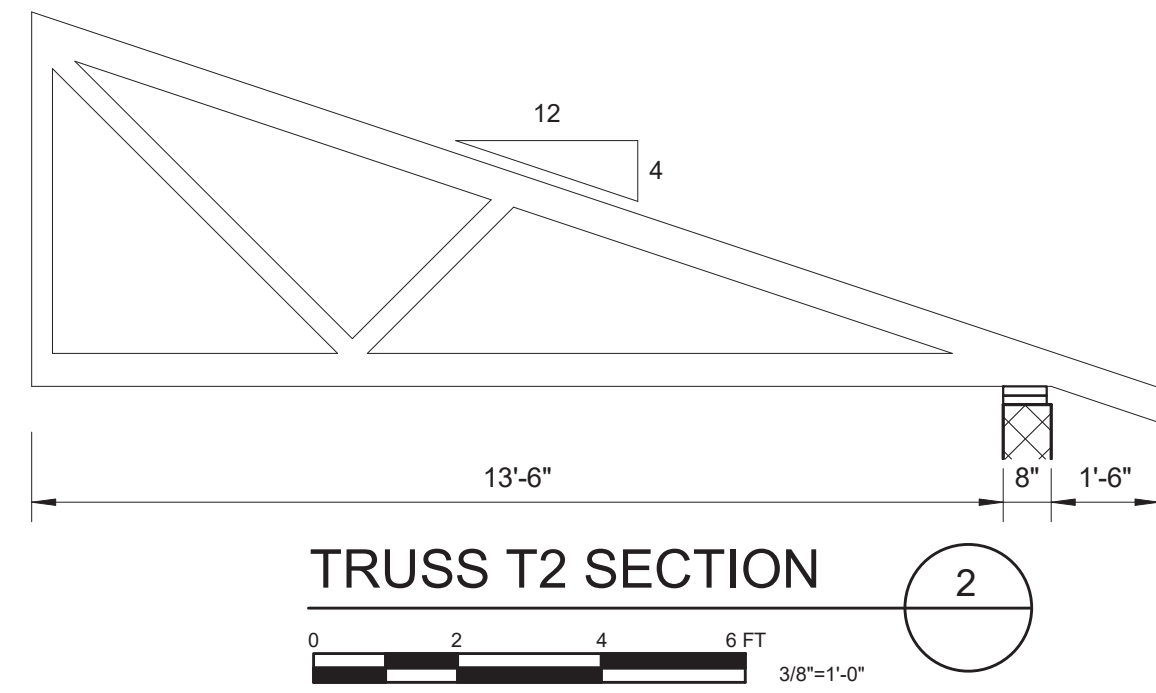
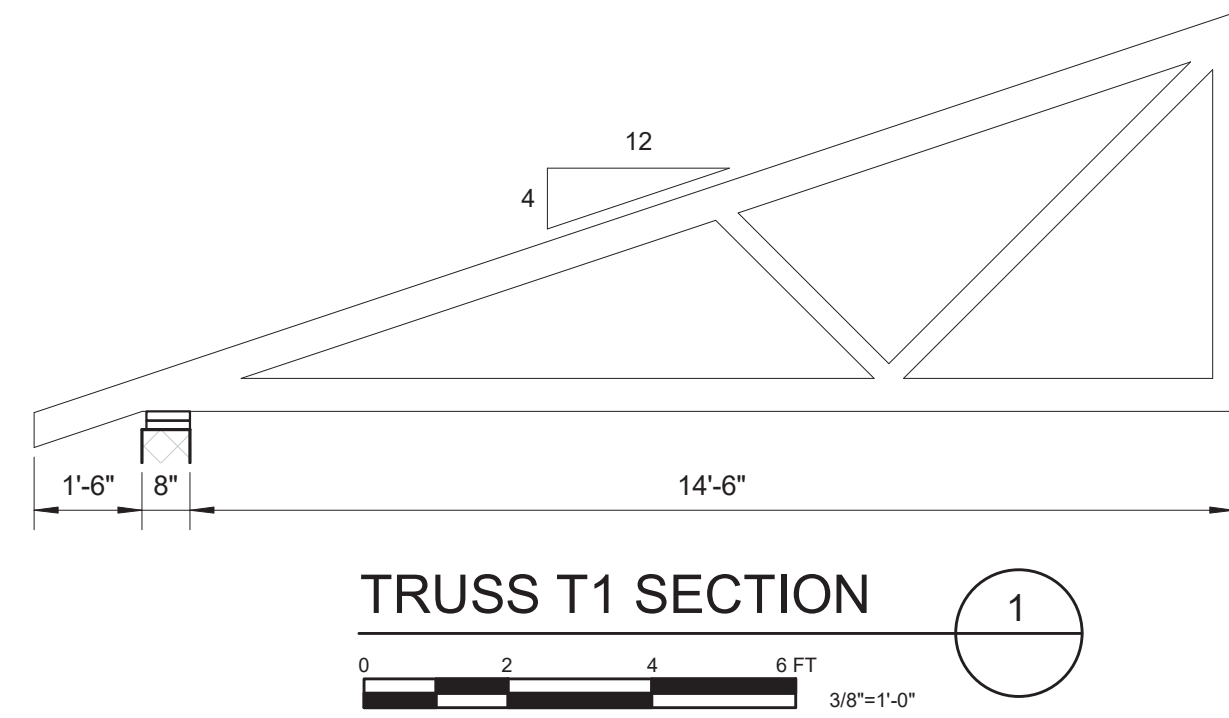


SEE STRUCTURAL GENERAL NOTES ON 1S1.
SEE STANDARD DETAILS IN AREA 6 DRAWINGS.

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	214319-04-001				

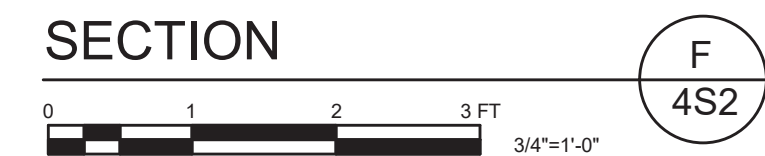


WATER SYSTEM IMPROVEMENTS		SHEET NO.
TOWN OF MONROE, INDIANA		4S2
WTP AND CLEAR WELL		PAGE NO.
ROOF MODIFICATION PLAN AND SECTIONS		35



- NOTE:
- CONTRACTOR: VERIFY ALL TRUSS DIMENSIONS WITH LOCATION OF UNILATER EQUIPMENT AND PUMP ACCESS HATCH.
 - SIMPSON STRONG-TIE CONNECTORS ARE IDENTIFIED. LOAD EQUIVALENT CONNECTORS MAY BE PROPOSED.

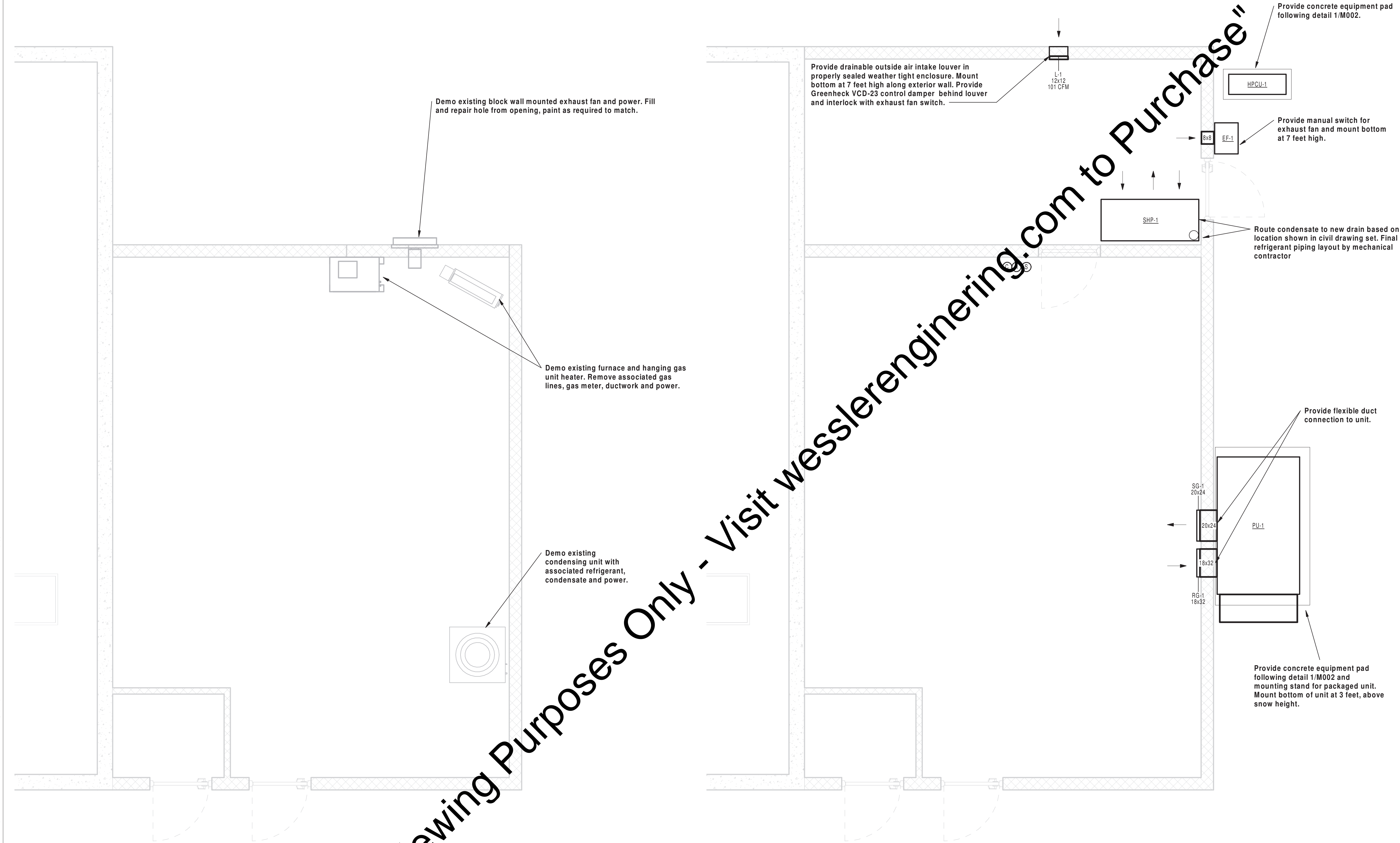
SEE STRUCTURAL GENERAL NOTES ON 1S1.
SEE STANDARD DETAILS IN AREA 6 DRAWINGS.



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	ISSUE DATE DECEMBER 2019						STRUCTURAL DETAILS AND SECTIONS		36
	PROJECT NUMBER 214319-04-001								

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APPROVED BY				
ISSUE DATE				
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PROJECT NUMBER				
2019-75021				



WATER SYSTEM IMPROVEMENTS

MONROE WATER UTILITIES MONROE, IN
102 E Walnut Street, Monroe, IN 46772

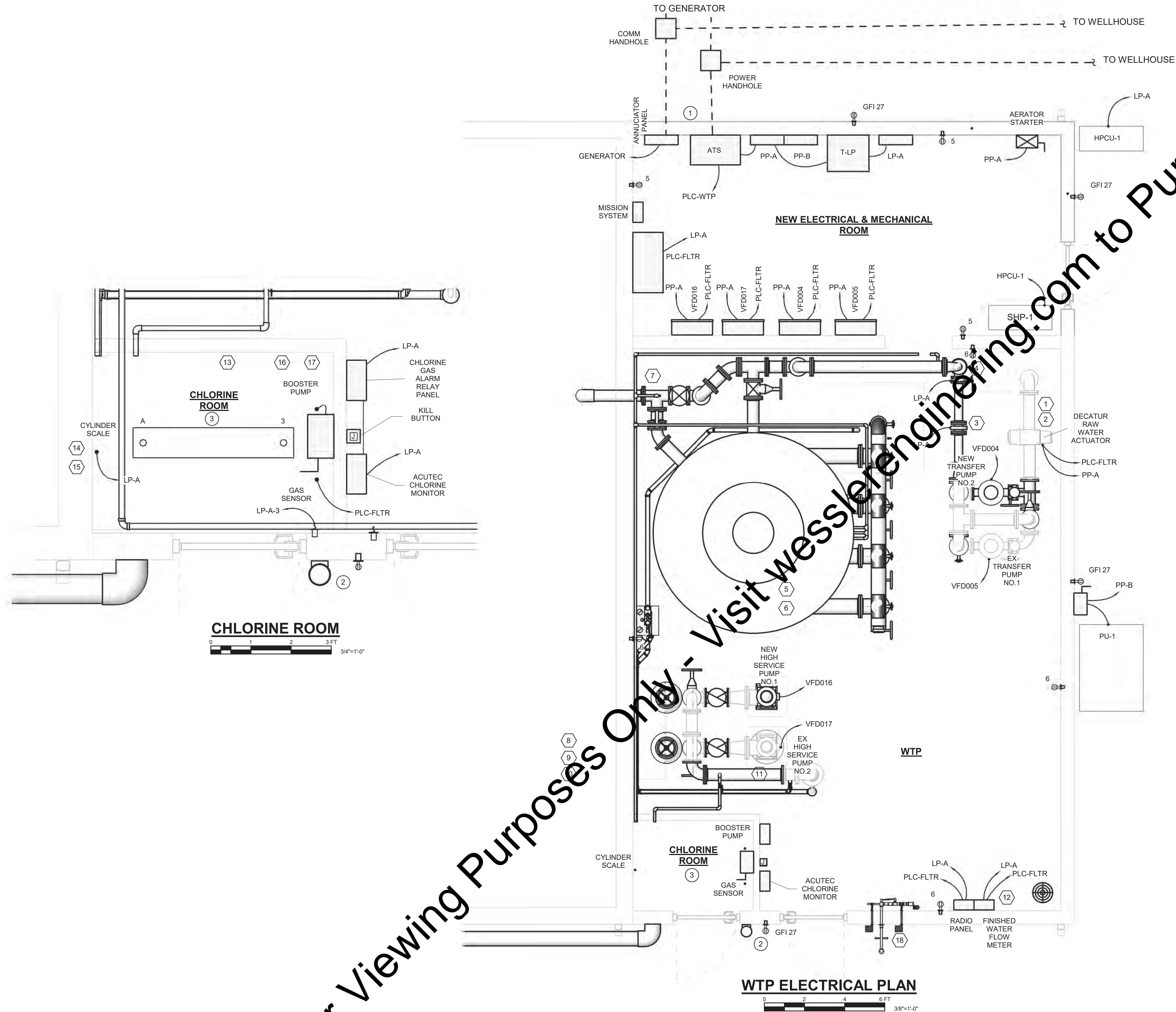
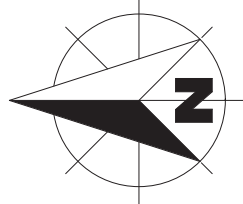
WTP AND CLEAR WELL - MECHANICAL MODIFICATIONS

SHEET NO.

4H1

PAGE NO.

37



GENERAL NOTE:
1. SEE ONE-LINE DIAGRAMS AND PANEL SCHEDULES FOR CONDUIT AND WIRE REQUIREMENTS.

- # KEYED NOTES (ELECTRICAL EQUIPMENT)
- 1 PT002-DECATUR RAW WATER PRESSURE TRANSMITTER. PLC-FLTR
 - 2 PSL002-DECATUR RAW WATER PRESSURE SWITCH LOW. PLC-FILT
 - 3 FIT006-DECATUR RAW WATER FLOW METER. PLC-FLTR
 - 4 FIT008-WELL NO.1 RAW WATER FLOW METER. PLC-FLTR
 - 5 LT009-DETENTION TANK LEVEL INDICATOR. PLC-FLTR
 - 6 LSH011-DETENTION TANK LEVEL SWITCH HIGH. PLC-FLTR
 - 7 ZSO012-ZSC012-FILTERED WATER EFFLUENT VALVE POSITION OPENED/CLOSED. PLC-FLTR
 - 8 LSL013-CLEARWELL LEVEL SWITCH LOW. PLC-FLTR
 - 9 LSL014-CLEARWELL LEVEL SWITCH HIGH. PLC-FLTR
 - 10 LT015-CLEARWELL LEVEL TRANSMITTER. PLC-FLTR
 - 11 PT018-FINISHED WATER LINE PRESSURE TRANSMITTER. PLC-FLTR
 - 12 FIT019-FINISHED WATER FLOW METER. PLC-FLTR
 - 13 CHL024-PRE/POST FILTER CHLORINATOR. PLC-FLTR
 - 14 WIT025A-CHLORINE GAS CYLINDER SCALE INDICATING TRANSMITTER. PLC-FLTR
 - 15 WIT025B-CHLORINE GAS CYLINDER SCALE INDICATING TRANSMITTER. PLC-FLTR
 - 16 CHL026-FINISHED WATER CHLORINATOR. PLC-FLTR
 - 17 SOL030-CHLORINE ISOLATION SOLENOID VALV NO.1. PLC-FLTR
 - 18 FS032-EYEWASH STATION FLOW SWITCH. PLC-FLTR

- # ELECTRICAL NOTES
- 1 CONDUITS TO GENERATOR, WELLHOUSE AND BERNE LIFT STATION.
 - 2 INSTALL DETECTION LIGHT AS REQUIRED. CONNECT TO GAS DETECTION PANEL
 - 3 ALL ELECTRICAL ITEMS IN THIS AREA TO BE HIGH COROSION RESISTED.

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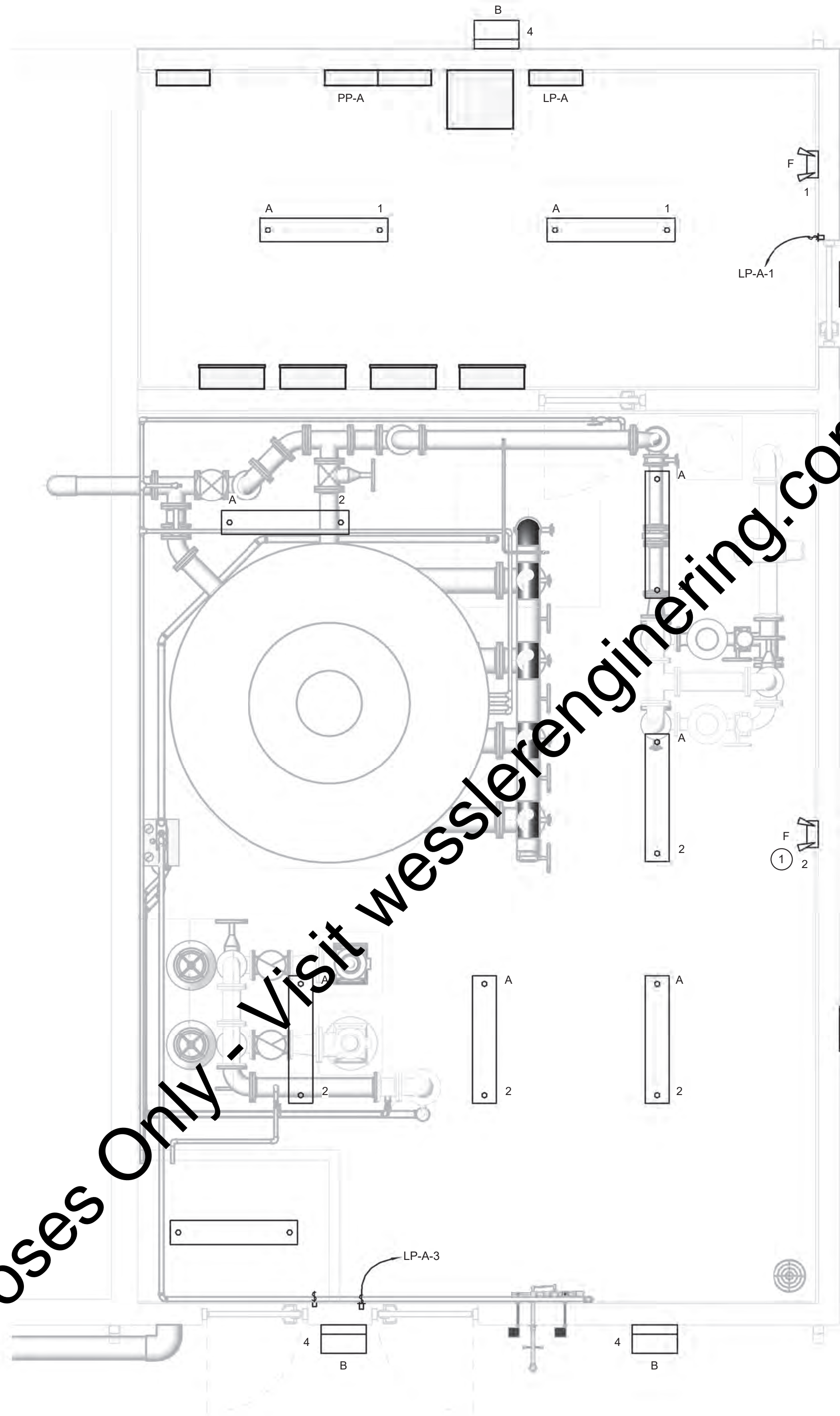
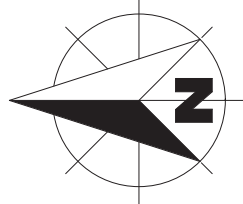
WYATT C. WESSLER
No. 10707476
STATE OF INDIANA
PROFESSIONAL ENGINEER
1/10/2019

W

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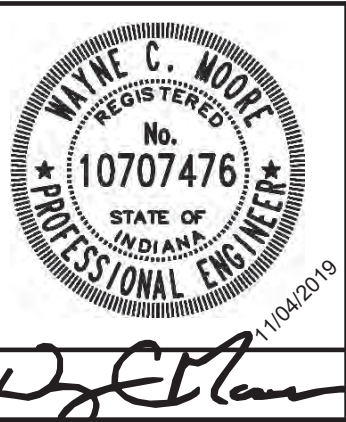
LIGHTING FIXTURE SCHEDULE						
TYPE	WATTS	LAMP	TYPE LUMINAIRE	MANUFACTURER	COMMENTS	WATTS
A	64.0	LED	6000LUMENS, FROSTED POLYCARBONATE LENS, MEDIUM DISTRIBUTION, MULTIVOLT 120/277V, 0 – 10 V DIMMING, 4000K COLOR TEMPERATURE, 90 CRI, WITH WET LOCATION FITTINGS	HOLOPHANE EVT4 SERIES OR EQUAL		50
B	70.0	LED	30C1000, 4000 SERIES CCT COLOR TEMPERTURE, MEDIUM DISTRIBUITION, MULTIVOLT 120/277V, SPD, FIELD ADJUSTABLE LIGHT OUTPUT, AND BLACK SUPER DURABLE PAINT	HOLOPHANE WALLPACK IV-LED OR EQUAL	4	55
F	3.0	LED	HOLOPHANE DESOTO M50, 90 MIN., NICKEL CADMIUM BATTERY OR EQUAL	HOLOPHANE DM300 WL LED OR EQUAL		

- #
- LIGHTING NOTES
- 1 CONNECT EM FIXTURE TO UNSWITCHED POWER.

WTP LIGHTING PLAN



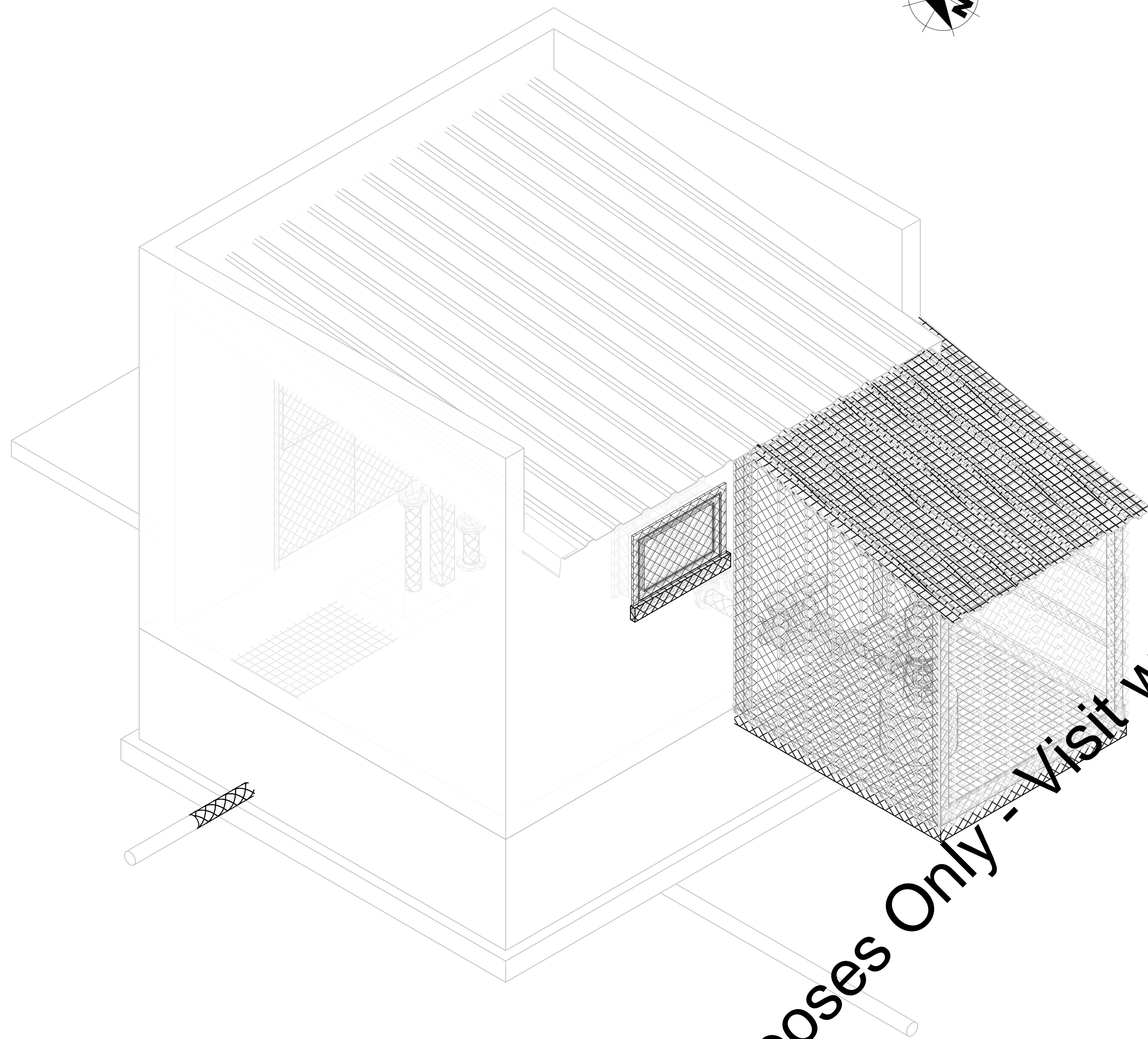
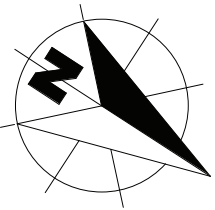
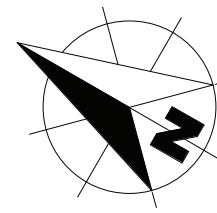
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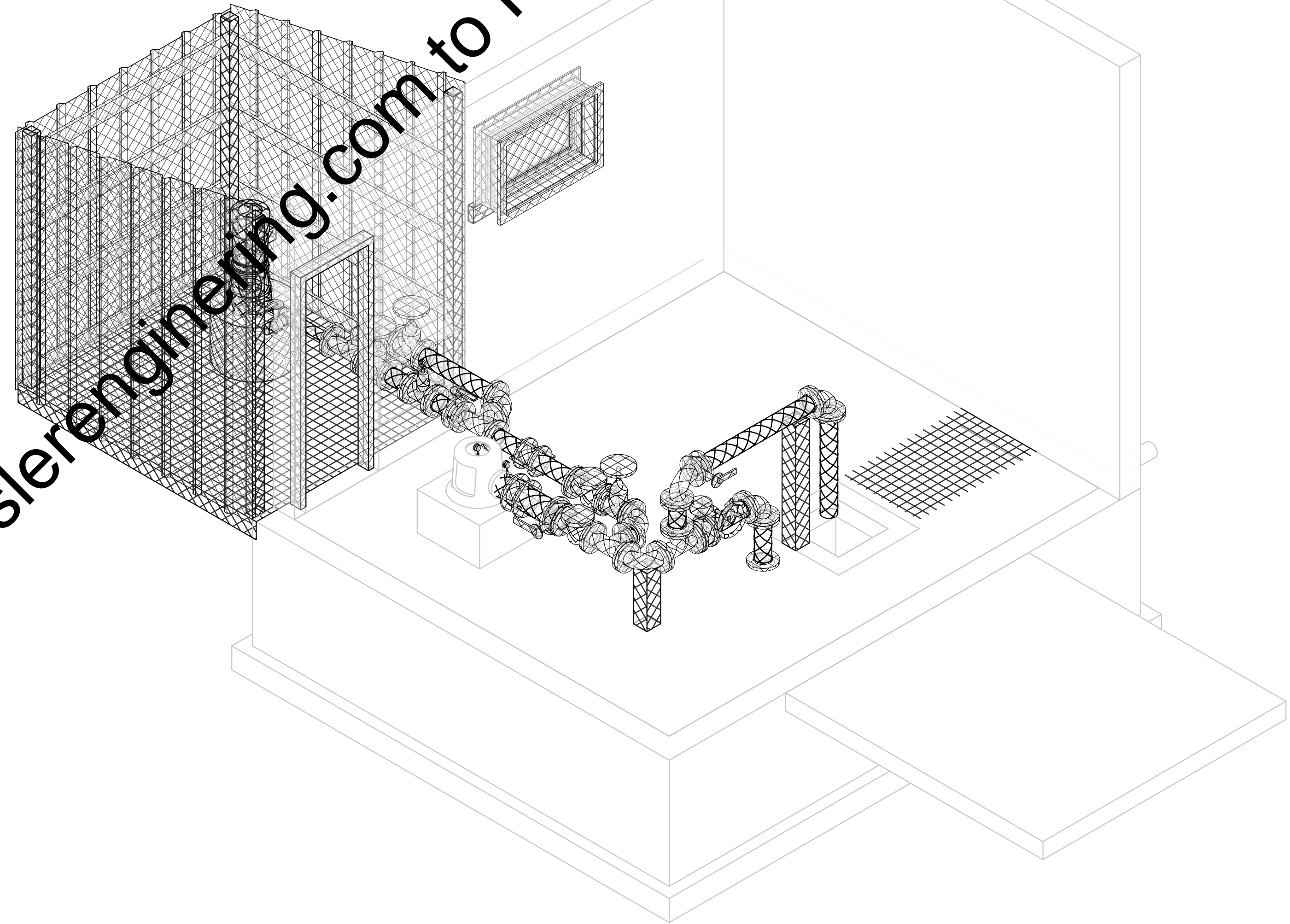
WATER SYSTEM IMPROVEMENTS	
TOWN OF MONROE , INDIANA	
WTP LIGHTING PLAN	

SHEET NO.
4E2
PAGE NO.
39

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OUTSIDE, SOUTHWEST
N.T.S.

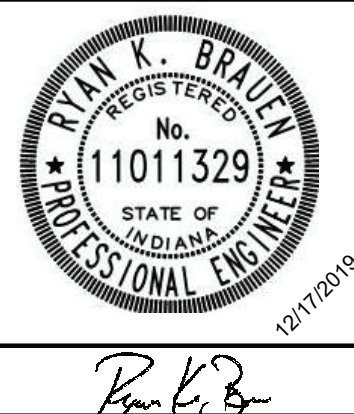


INSIDE, NORTHEAST
N.T.S.

LEGEND

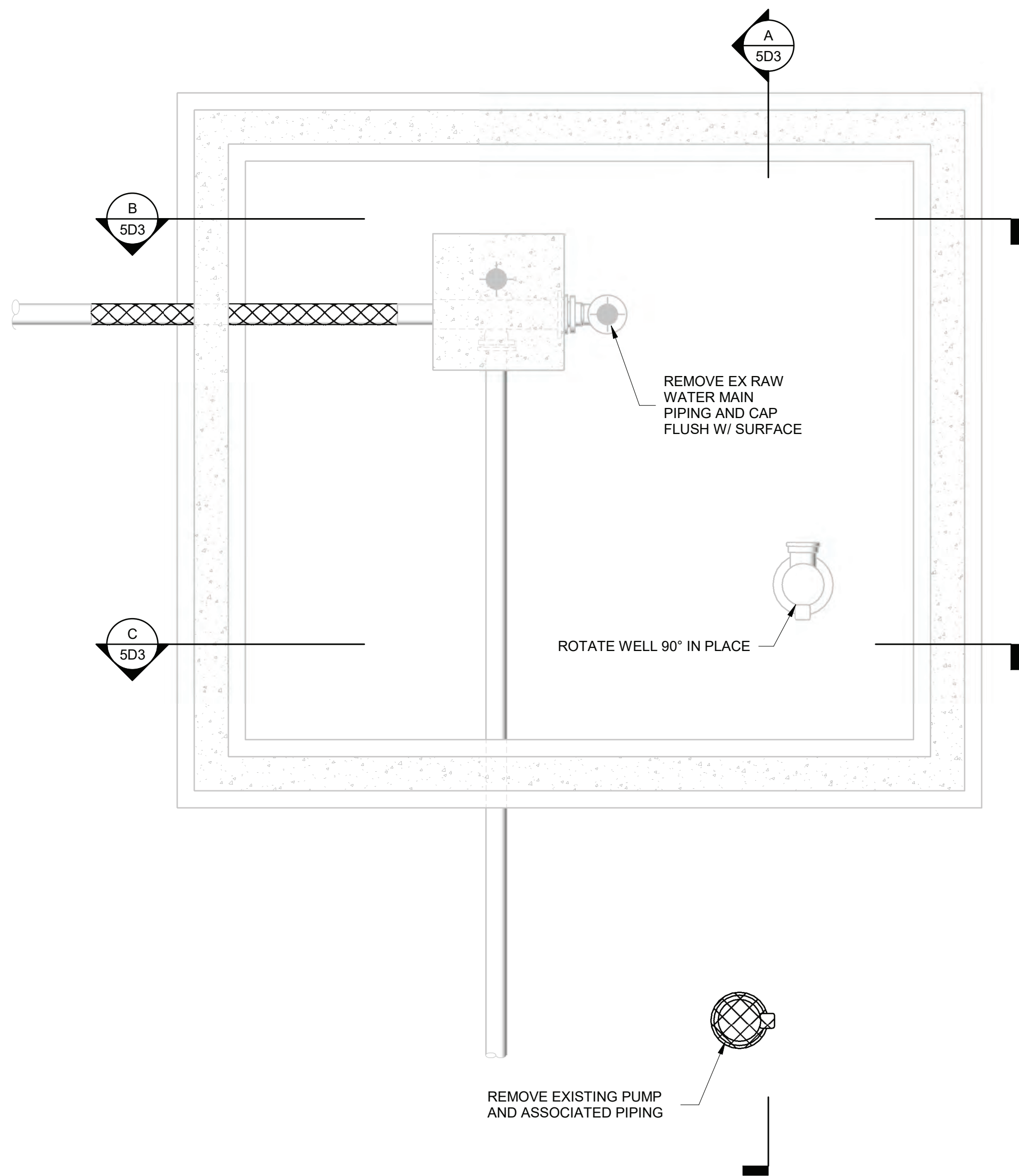
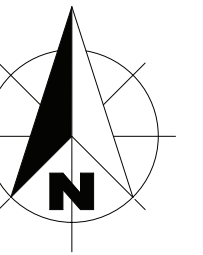
- EXISTING FEATURES TO REMAIN
XXXXXX EXISTING FEATURES TO BE DEMOLISHED

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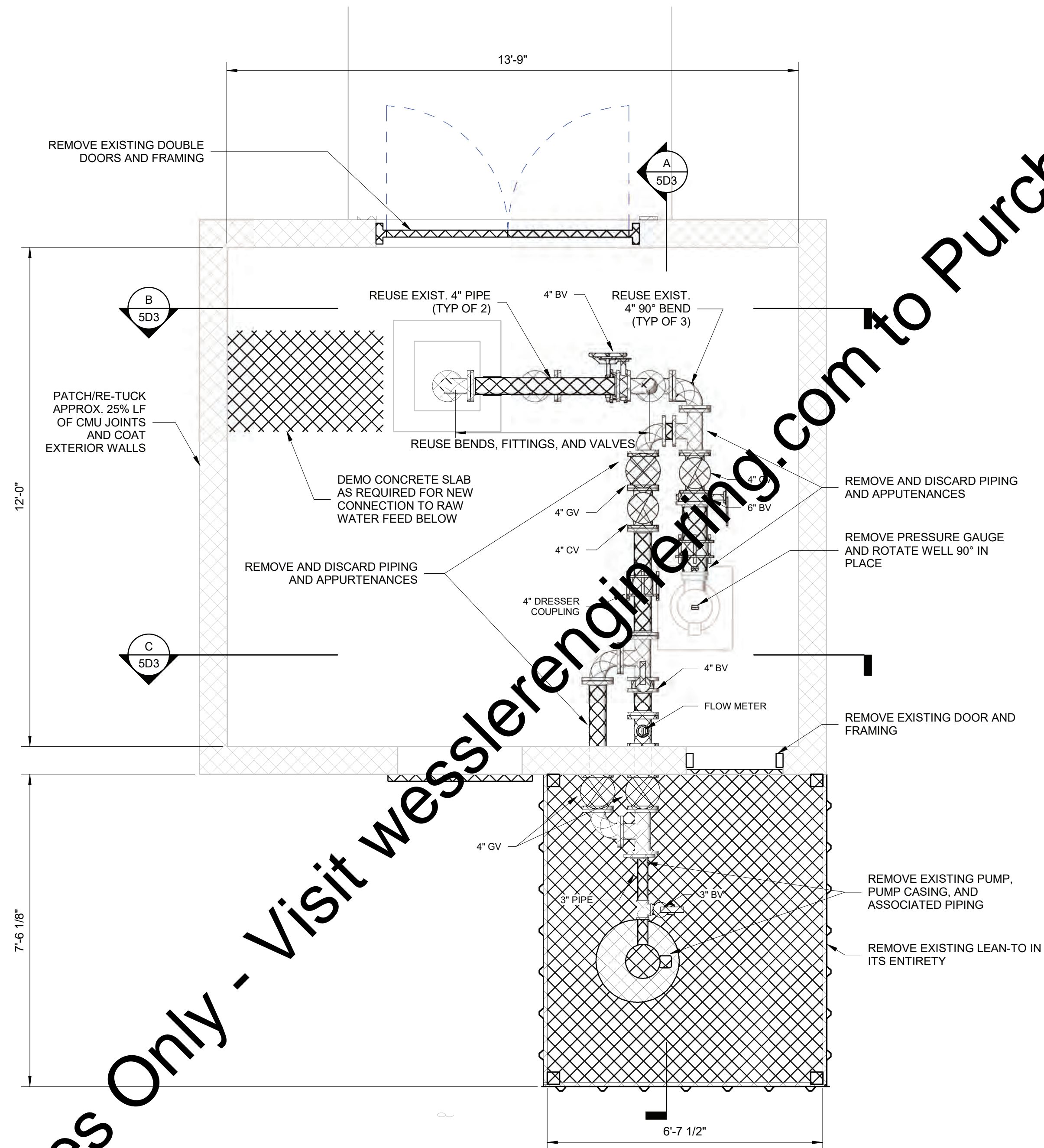


WATER SYSTEM IMPROVEMENTS	
TOWN OF MONROE, INDIANA	
WELL HOUSE DEMOLITION - PERSPECTIVE VIEWS	

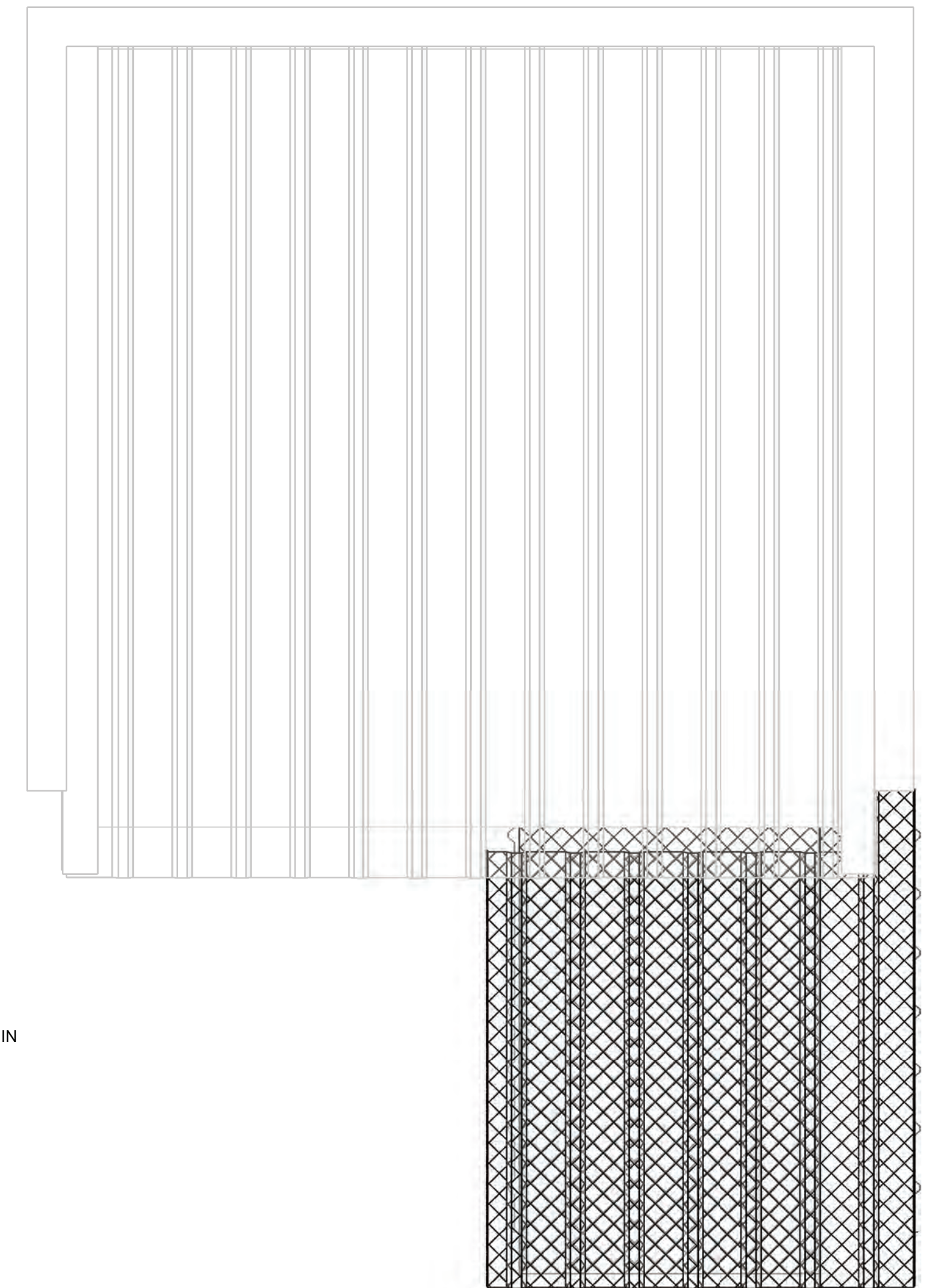
SHEET NO. 5D1
PAGE NO. 40



LOWER LEVEL - DEMO



MAIN FLOOR DEMOLITION PLAN



ROOF DEMOLITION PLAN


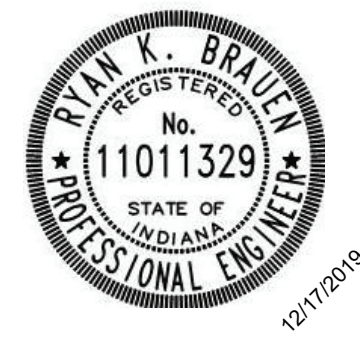



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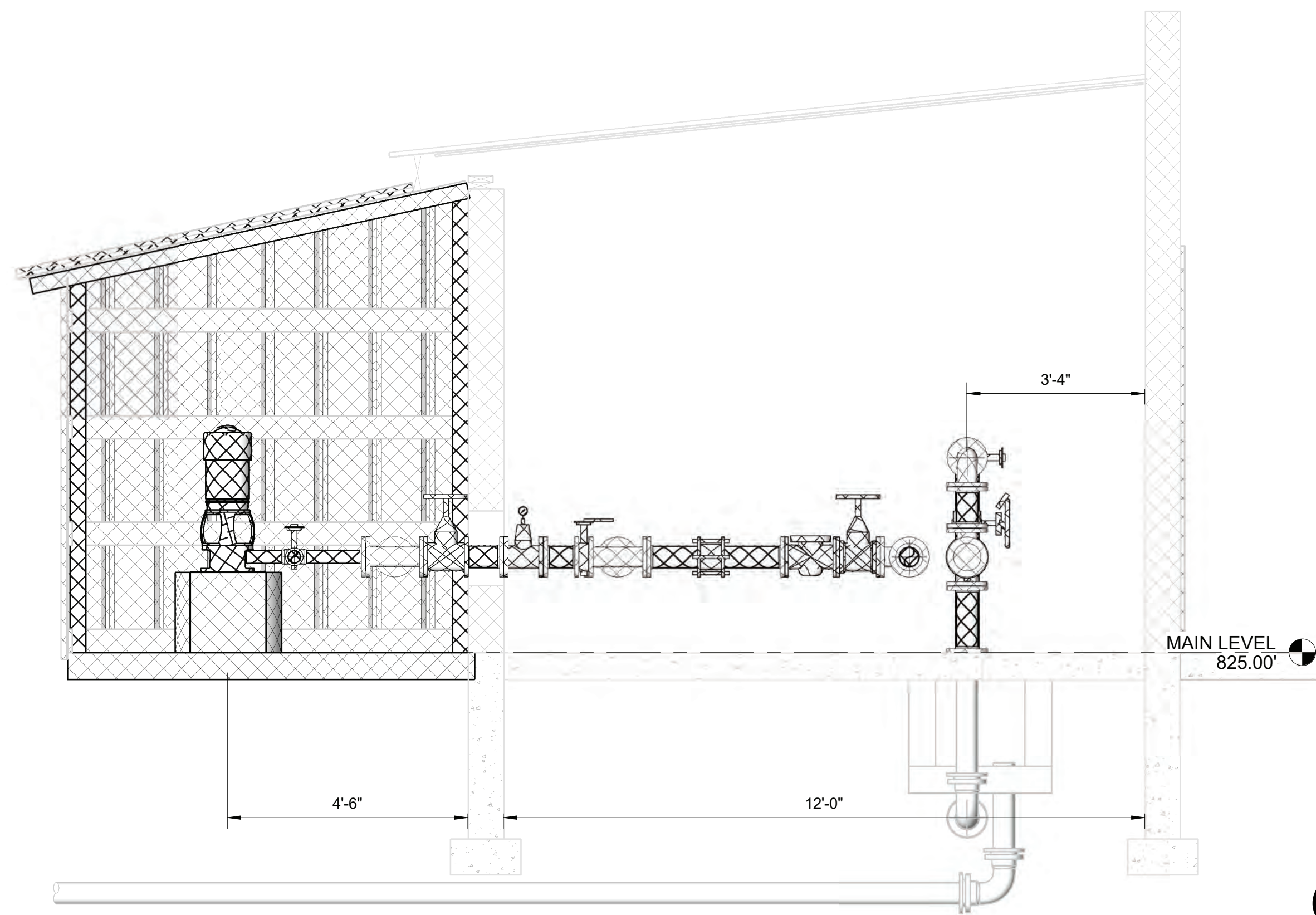
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- EXISTING FEATURES TO BE DEMOLISHED

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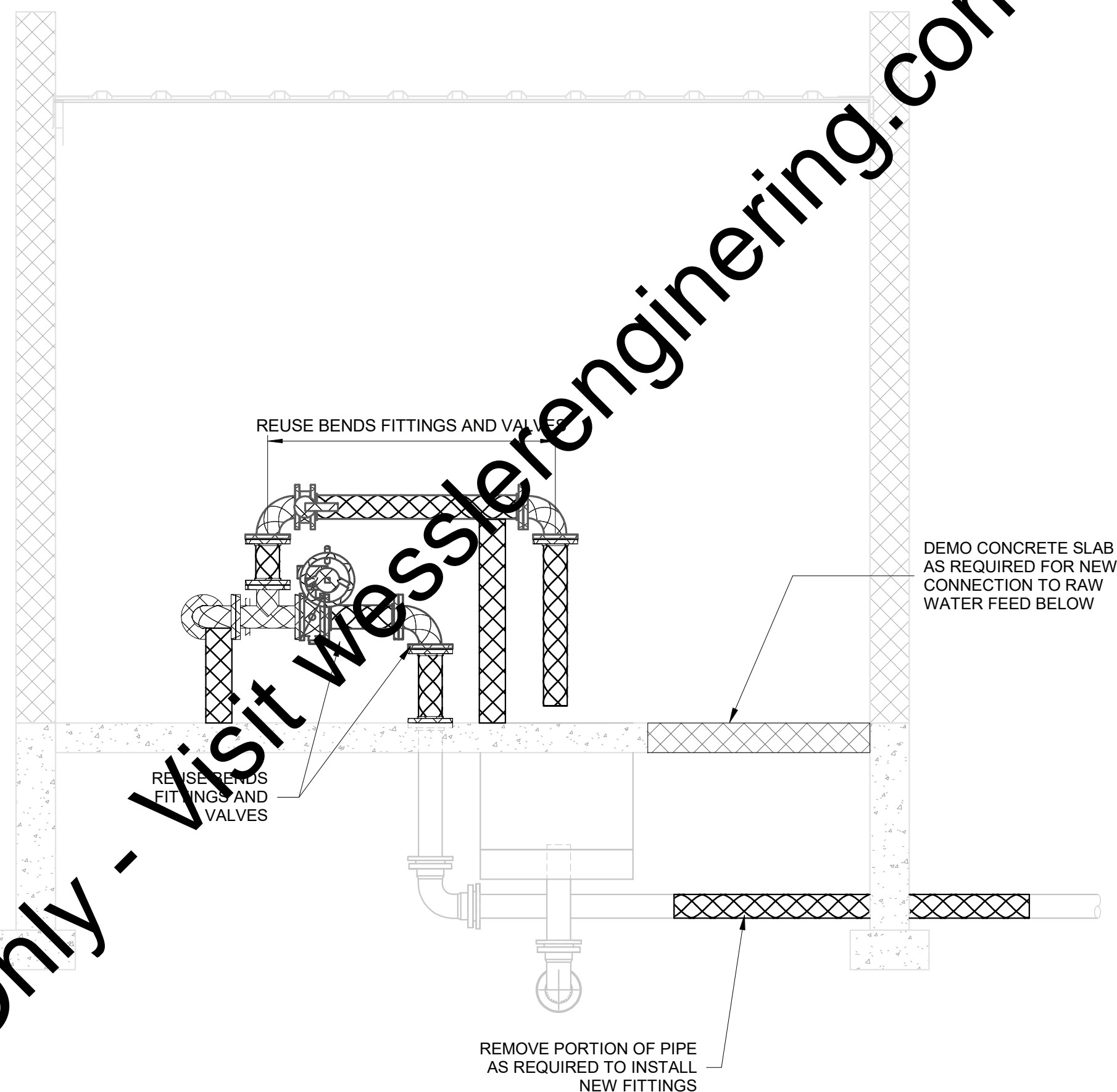
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	ISSUE DATE DECEMBER 2019 PROJECT NUMBER 214319-04-001						FLOOR AND ROOF PLANS		41

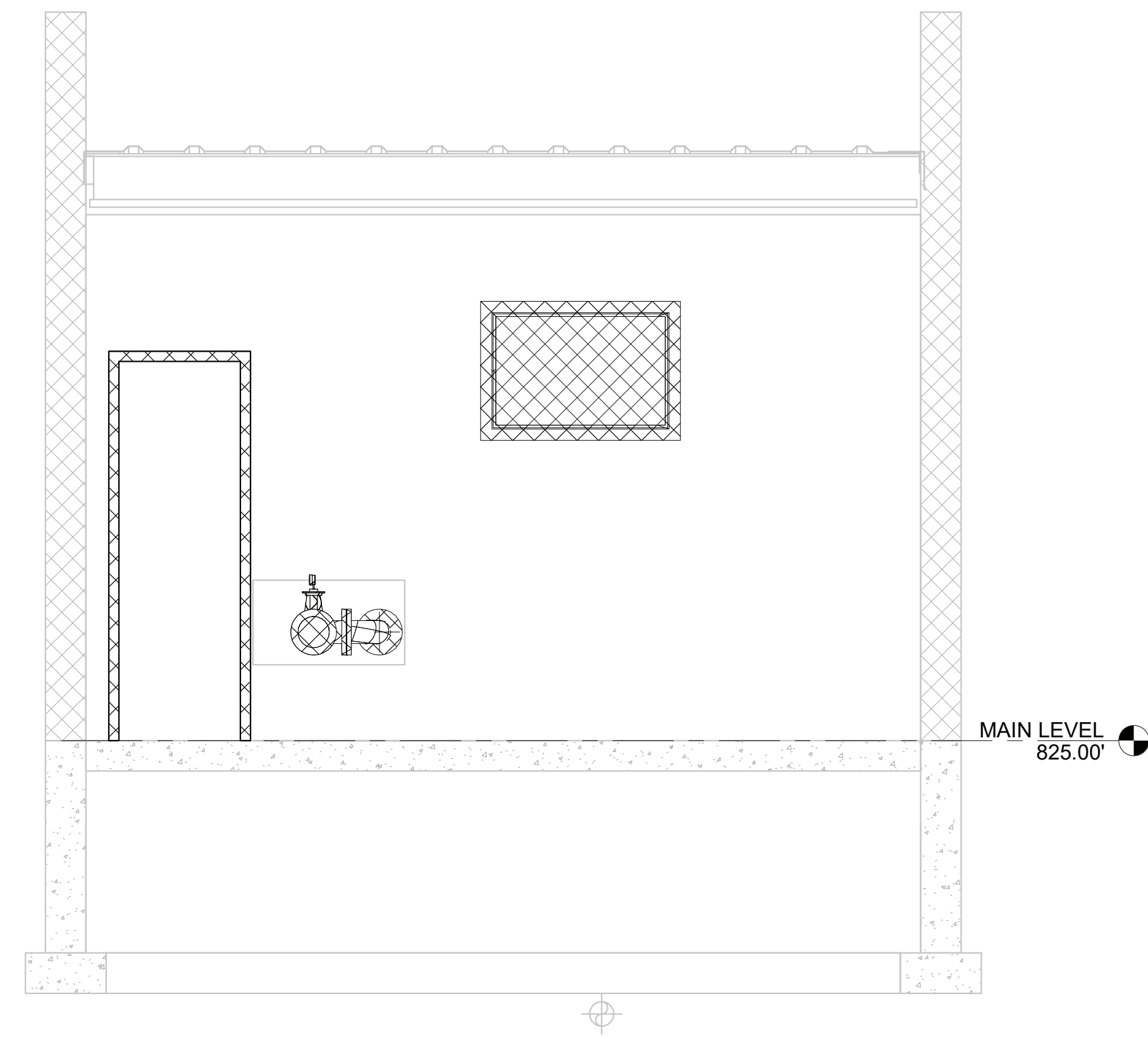
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SECTION A
5D2
0 1 2 4 FT
1/2"=1'-0"



SECTION B
5D2
0 1 2 4 FT
1/2"=1'-0"

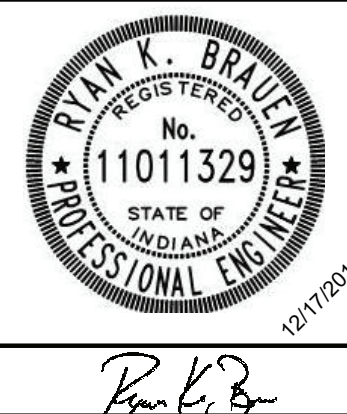


SECTION C
5D2
0 1 2 4 FT
1/2"=1'-0"

LEGEND

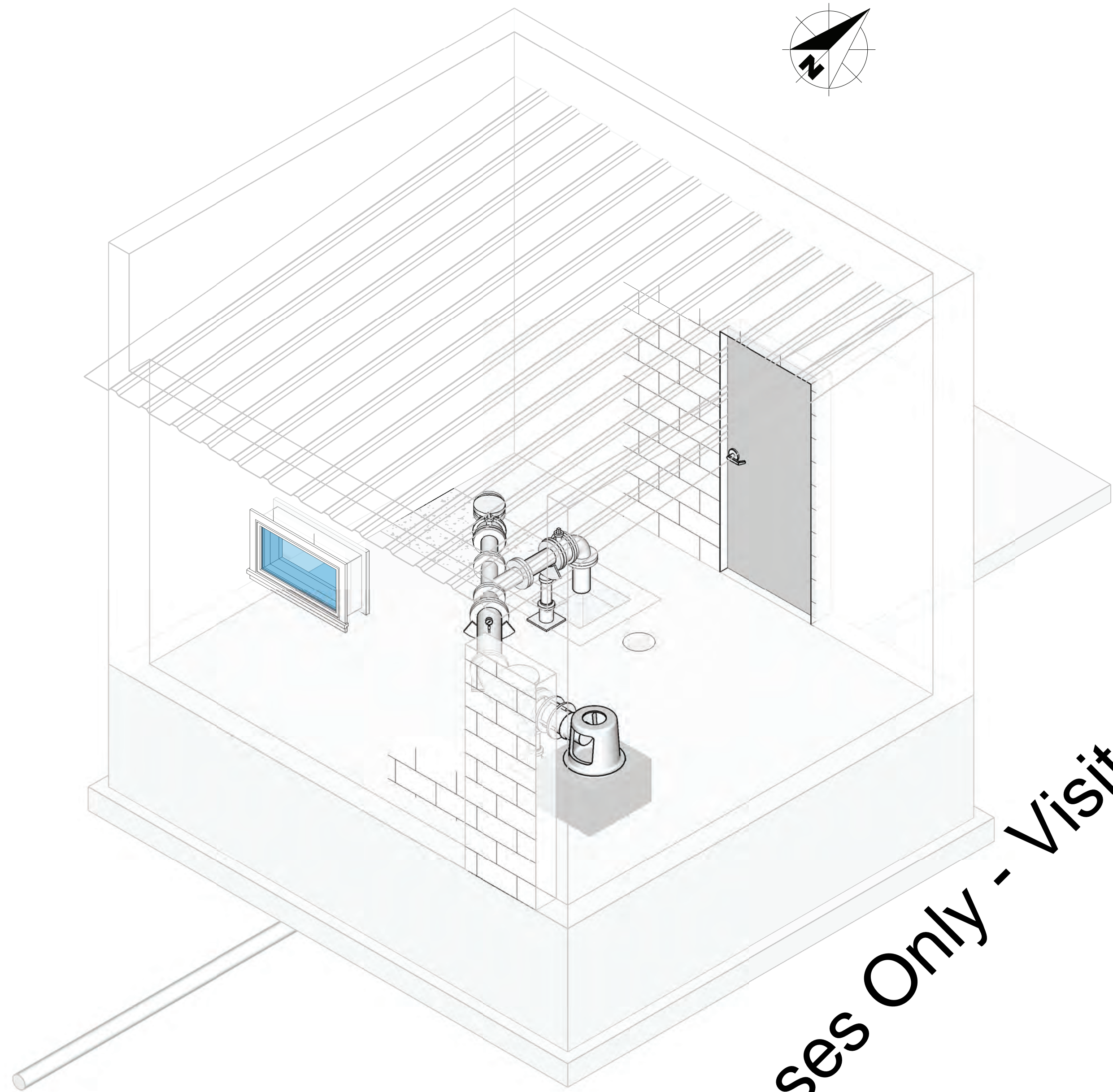
- EXISTING FEATURES TO REMAIN
EXISTING FEATURES TO BE DEMOLISHED

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	PROJECT NUMBER				
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	214319-04-001				

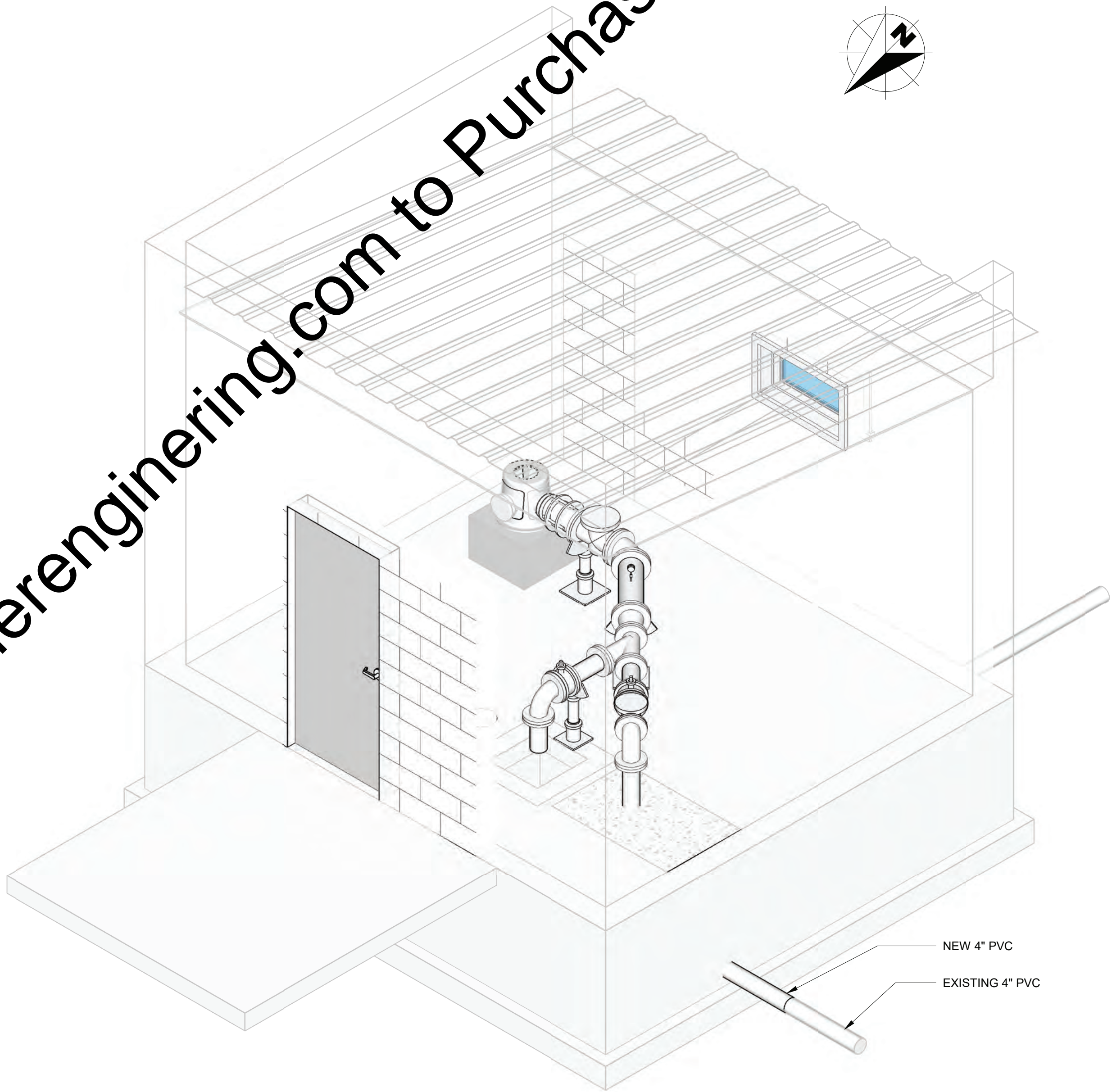


WATER SYSTEM IMPROVEMENTS	
TOWN OF MONROE, INDIANA	
WELL HOUSE DEMOLITION SECTIONS	

SHEET NO.
5D3
PAGE NO.
42



OUTSIDE, NORTH WEST
N.T.S.



INSIDE, SOUTHEAST
N.T.S.

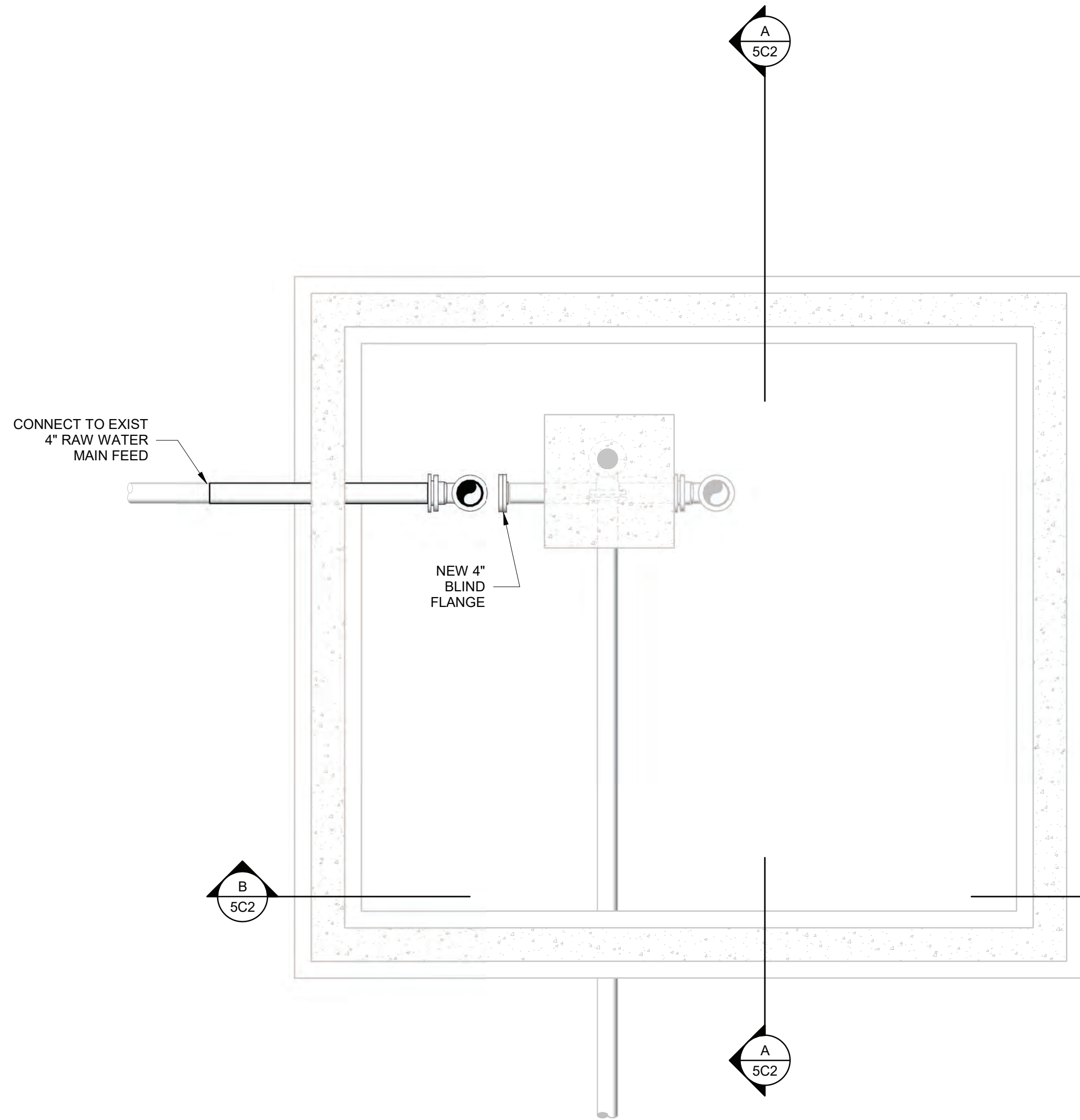
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- EXISTING FEATURES
NEW FEATURES

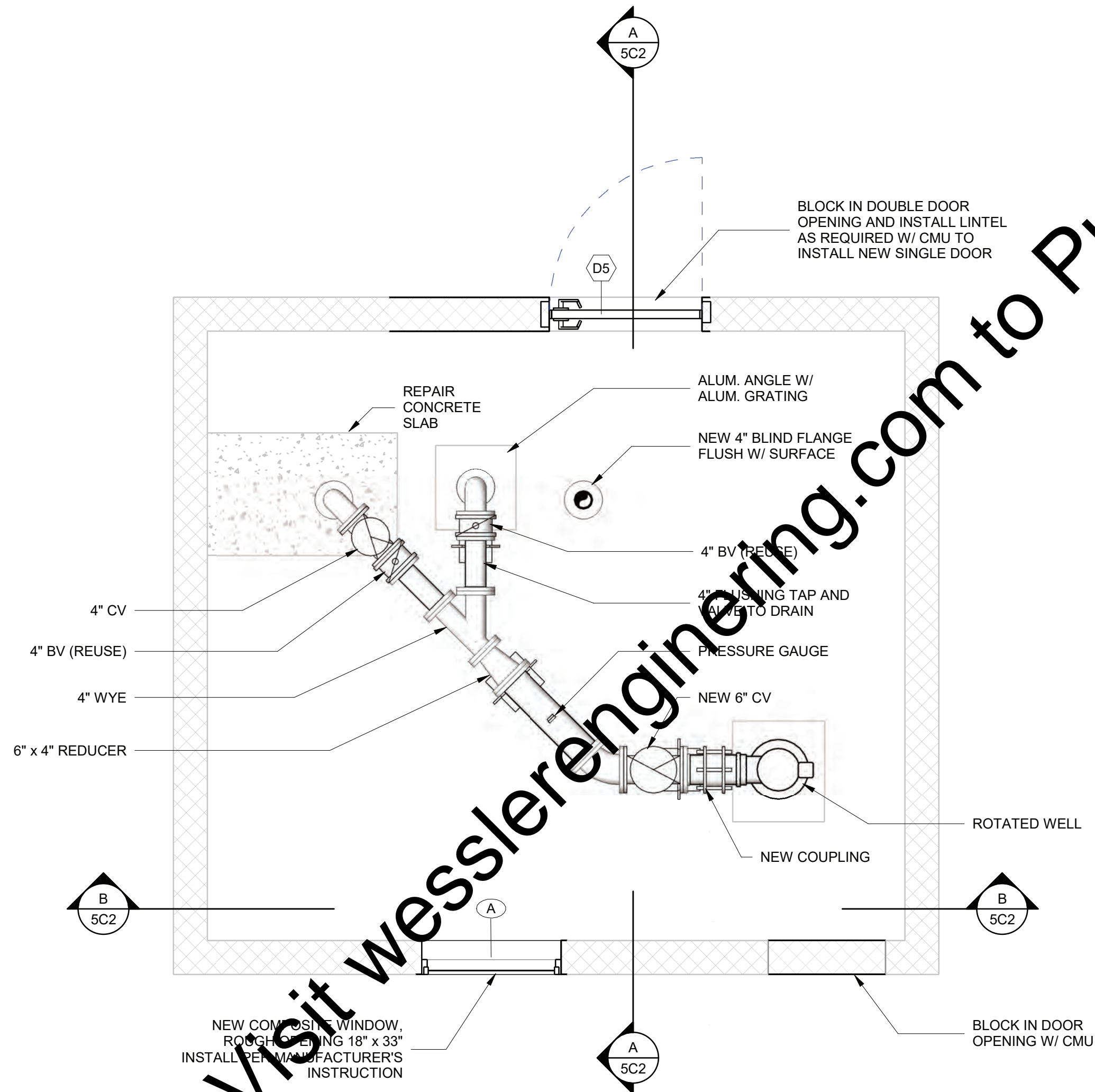
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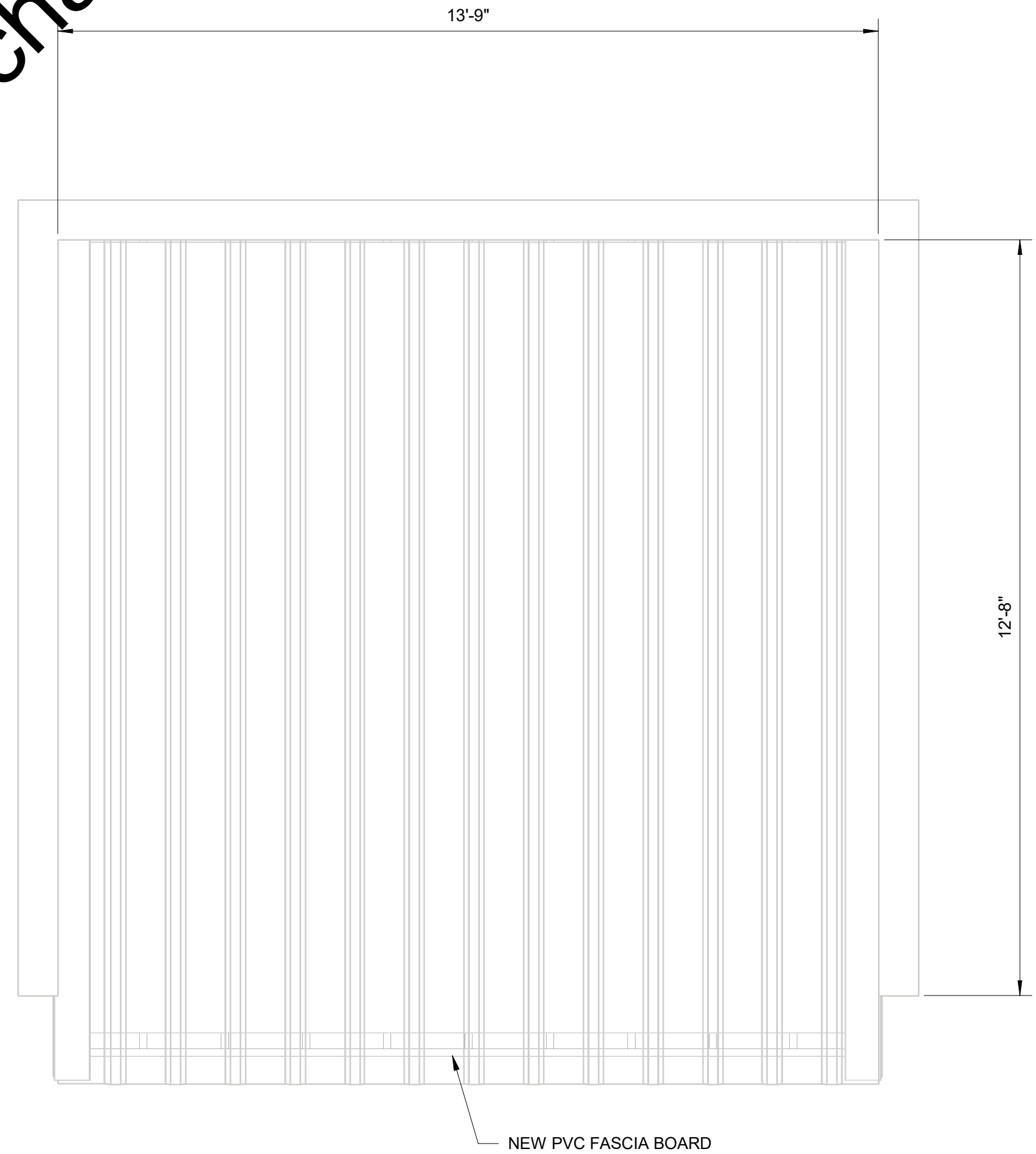
<div>SCALE VERIFICATION</div> <div>BAR IS ONE INCH LONG ON ORIGINAL DRAWING</div> <div><div></div></div>	DRAWN BY	NO.	DATE	INITIALS	REVISION DESCRIPTION	<div><div>RYAN K. BRAVEN</div><div>REGISTERED</div><div>No. 11011329</div><div>STATE OF INDIANA</div><div>PROFESSIONAL ENG. MEMBER</div><div>12/17/2019</div></div> <div><div>W</div><div>WESSLER</div><div>ENGINEERING</div><div>More than a Project™</div></div>	WATER SYSTEM IMPROVEMENTS		SHEET NO.
	CHECKED BY						TOWN OF MONROE, INDIANA		5G1
	APPROVED BY						WELL HOUSE		
	ISSUE DATE						MODIFICATIONS - PERSPECTIVE VIEWS		
	PROJECT NUMBER								
								PAGE NO.	
								43	



LOWER LEVEL - NEW



MAIN FLOOR MODIFICATION PLAN



ROOF FRAMING MODIFICATION PLAN



LEGEND

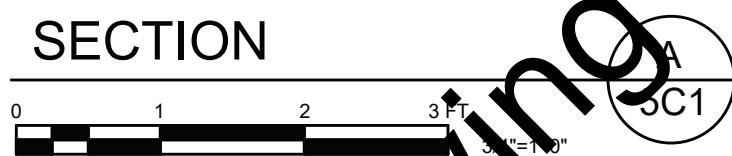
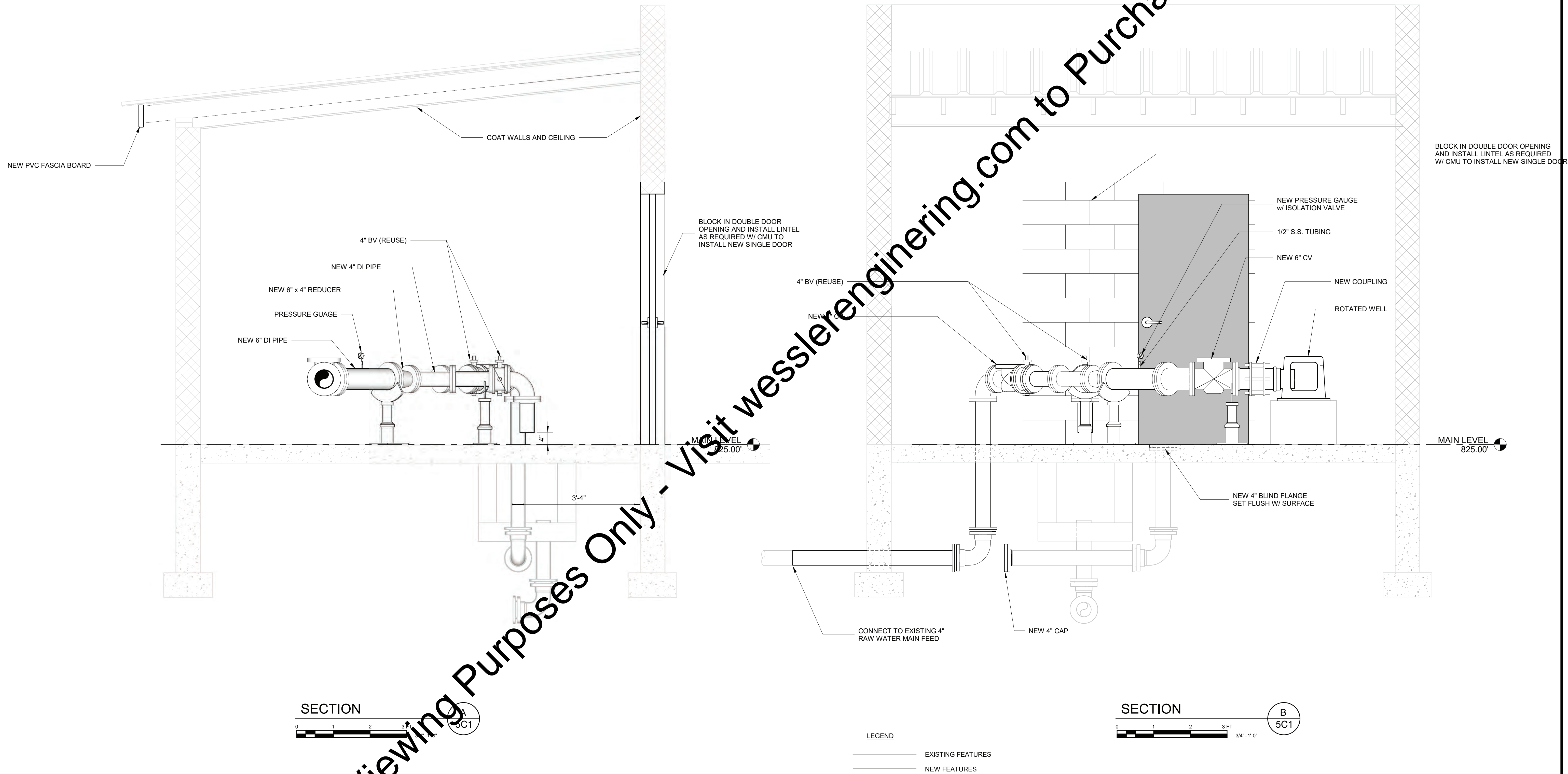
- EXISTING FEATURES
- NEW FEATURES

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	CHECKED BY						TOWN OF MONROE, INDIANA	5C1	
	APPROVED BY							PAGE NO.	
	ISSUE DATE						WELL HOUSE	44	
	PROJECT NUMBER						MODIFICATION FLOOR PLANS		

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LEGEND

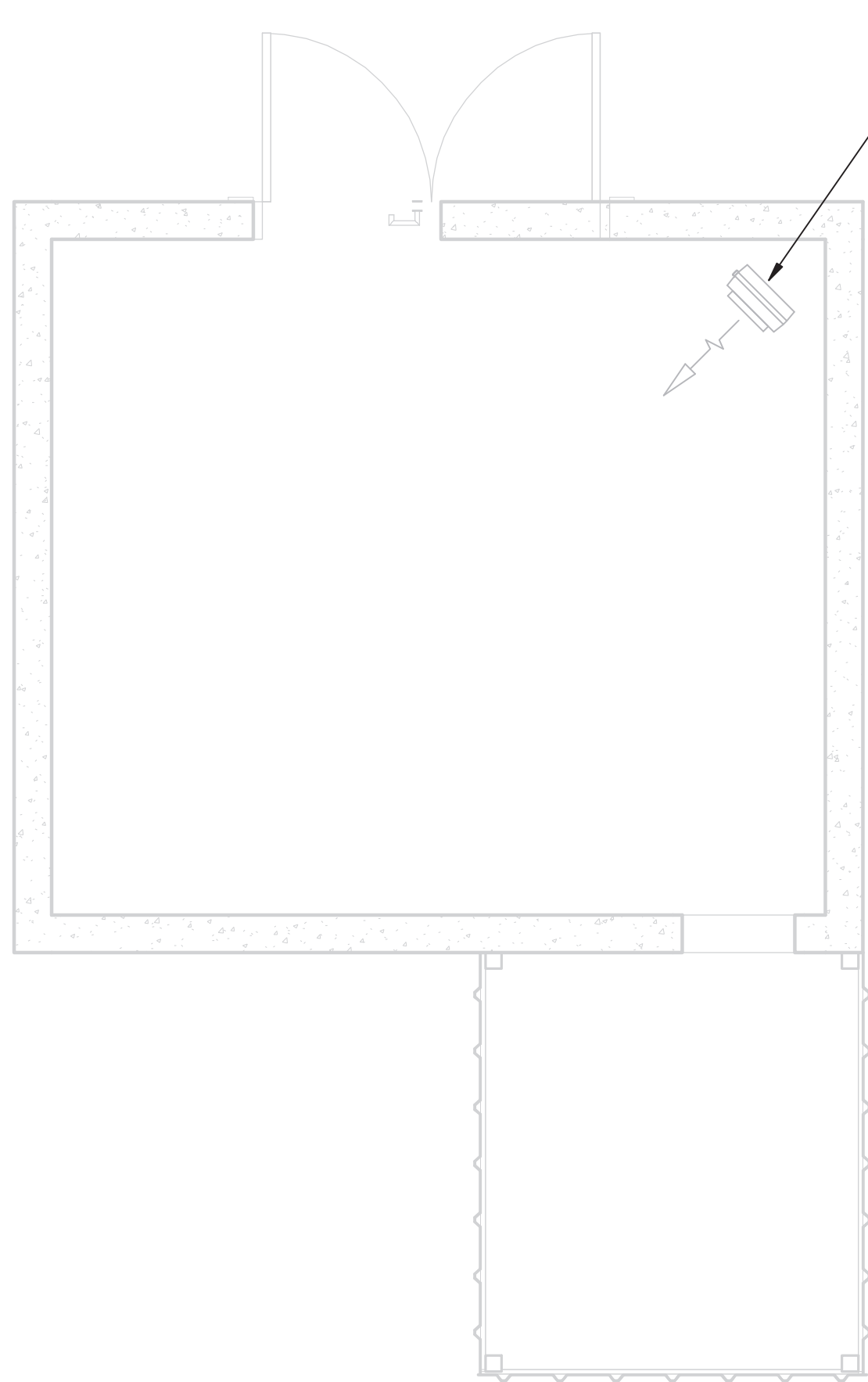
— EXISTING FEATURES

— NEW FEATURES

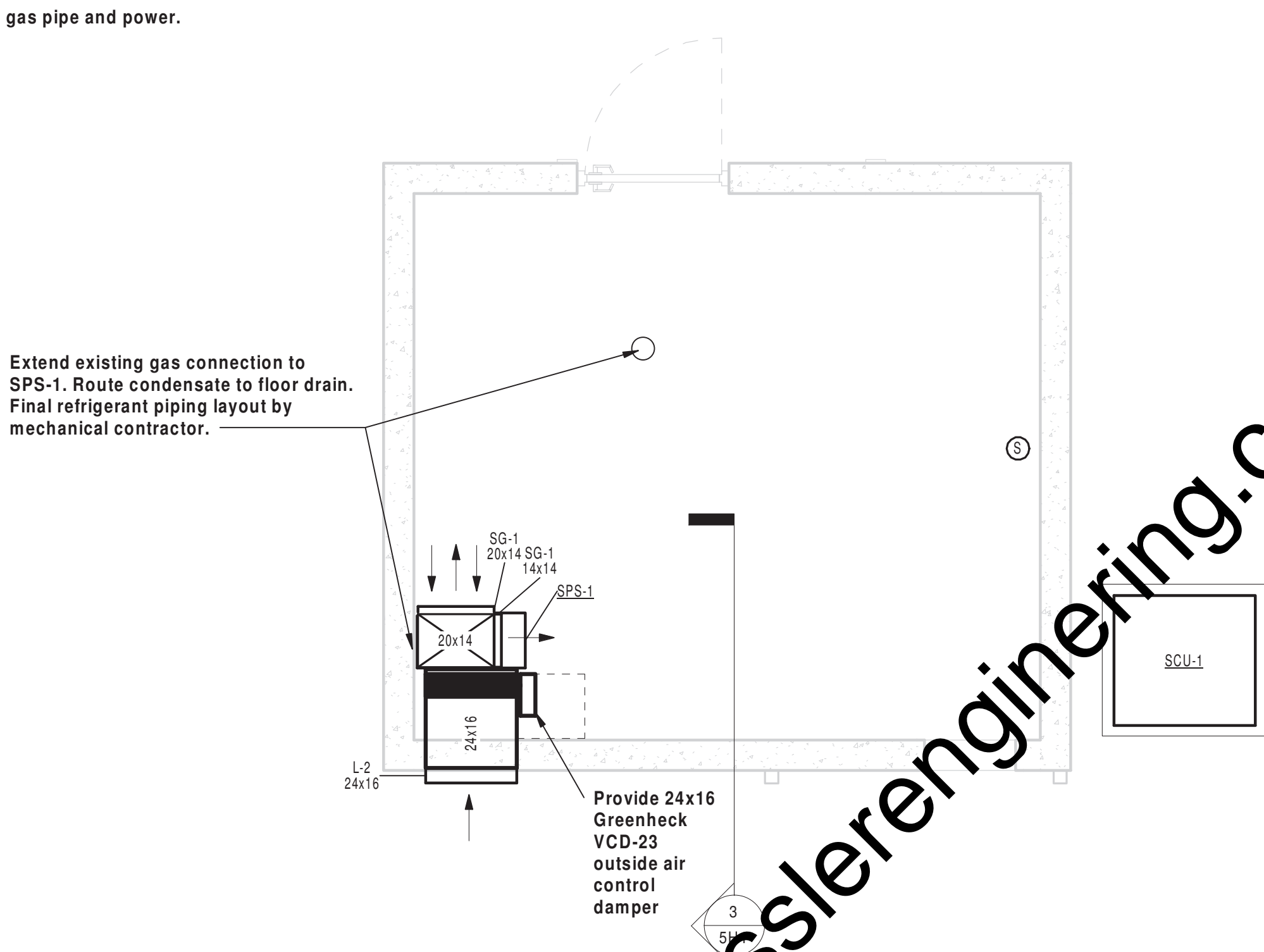


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	<div>CHECKED BY</div> <div>BJS</div>						<div>TOWN OF MONROE, INDIANA</div>		
	<div>APPROVED BY</div> <div>RKB</div>						<div>WELL HOUSE</div>		<div>PAGE NO.</div> <div>45</div>
	<div>ISSUE DATE</div> <div>DECEMBER 2019</div>						<div>MODIFICATION SECTIONS</div>		
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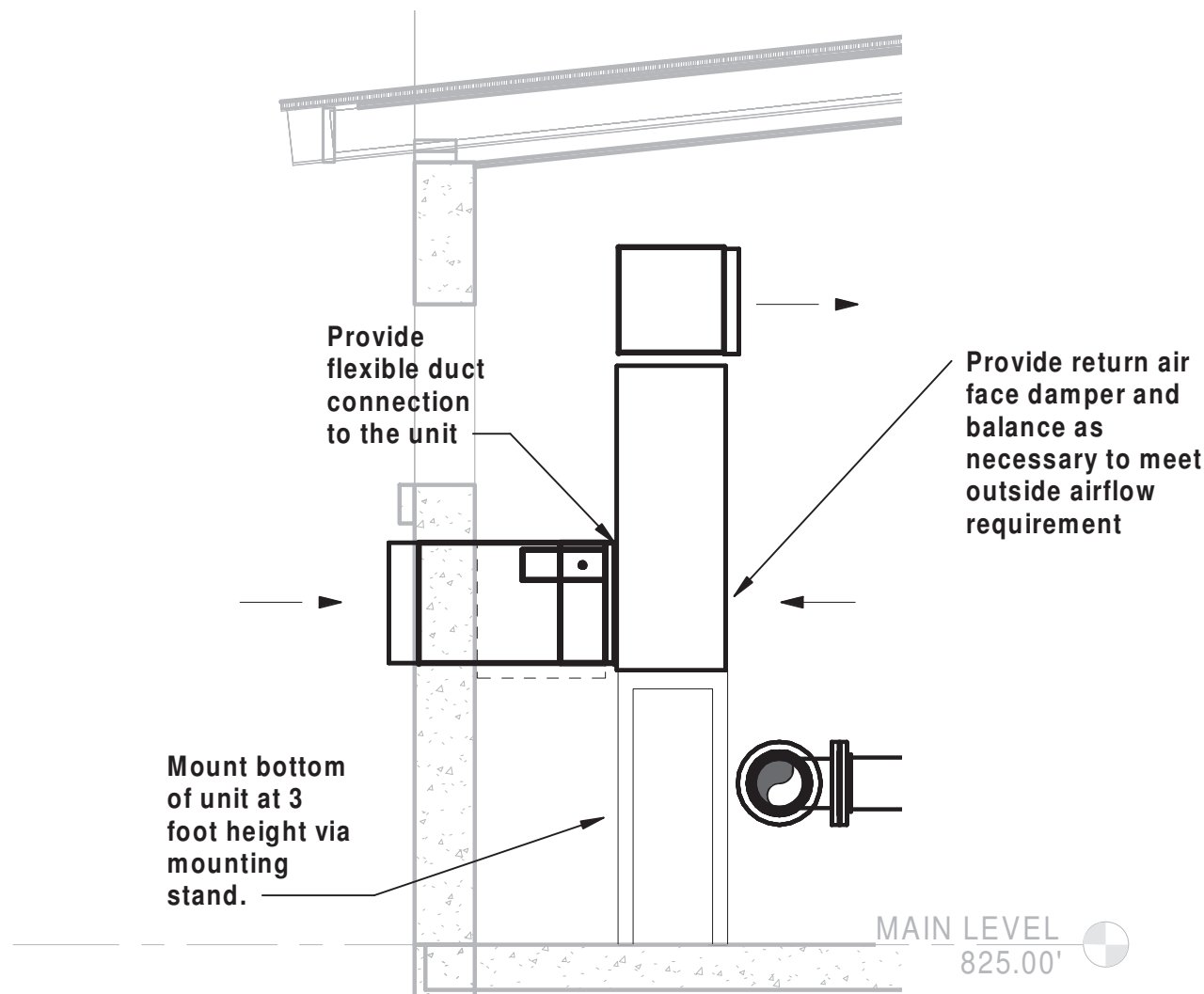
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1 Well House - DEMO
SCALE: 3/8" = 1'-0"



2 Well House - NEW
SCALE: 3/8" = 1'-0"

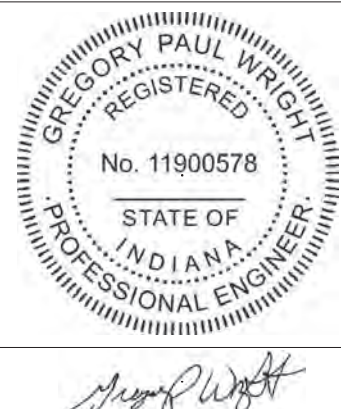


3 SPS-1 Section View
SCALE: 1/2" = 1'-0"



BAR IS ONE INCH LONG ON
ORIGINAL DRAWING

SCALE VERIFICATION	DRAWN BY	DATE	NO.	DATE	INITIALS	REVISION DESCRIPTION
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	CHECKED BY	GPW				
	APPROVED BY					
	ISSUE DATE					
	OCTOBER 2019					
	PROJECT NUMBER					
	2019-75021					



WATER SYSTEM IMPROVEMENTS

MONROE WATER UTILITIES MONROE, IN
102 E Walnut Street, Monroe, IN 46772

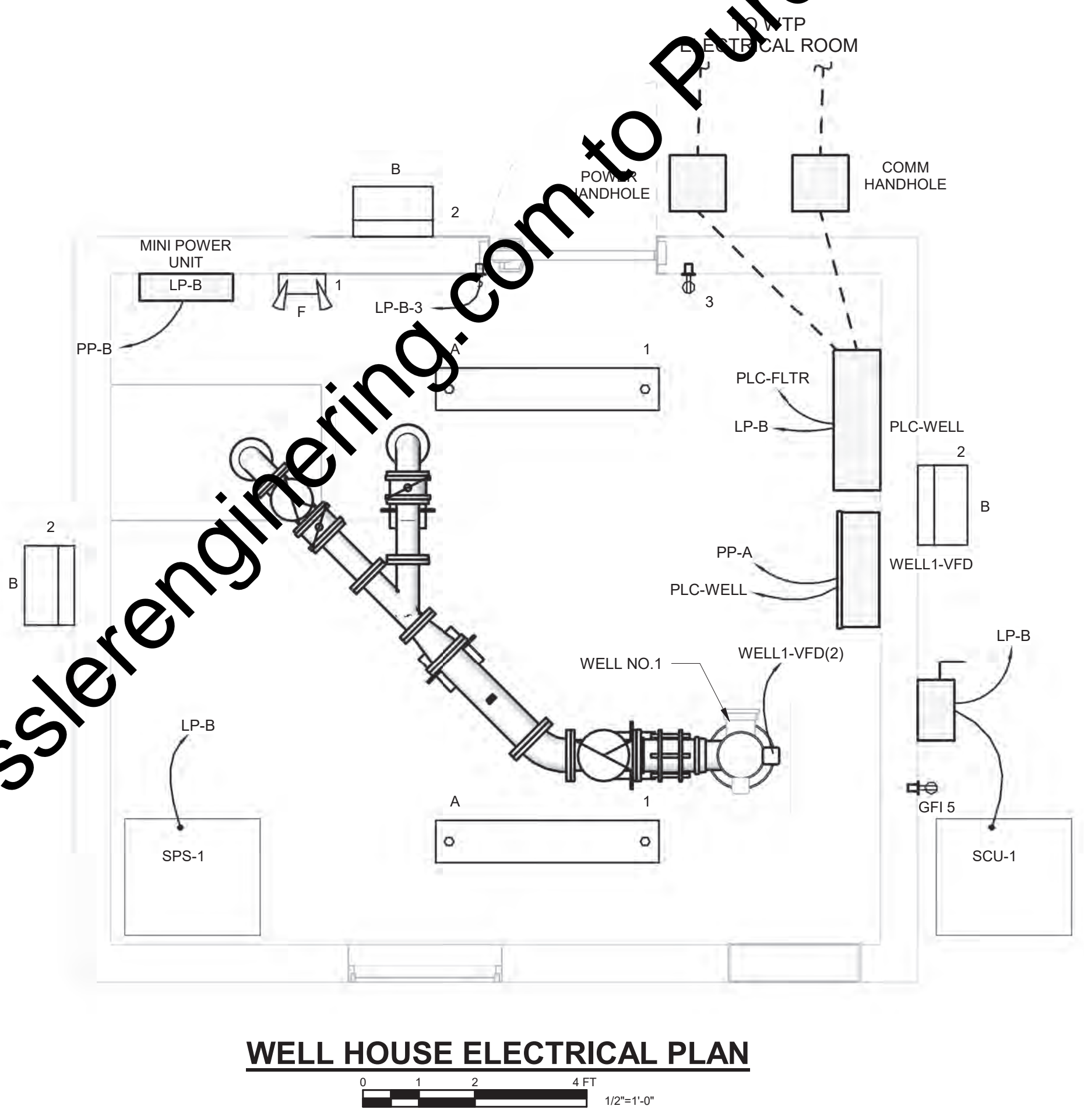
WELL HOUSE - MECHANICAL MODIFICATIONS

SHEET NO.

5H1

PAGE NO.

46



GENERAL NOTE:
1. SEE ONE-LINE DIAGRAMS AND PANEL SCHEDULES FOR CONDUIT AND WIRE REQUIREMENTS.

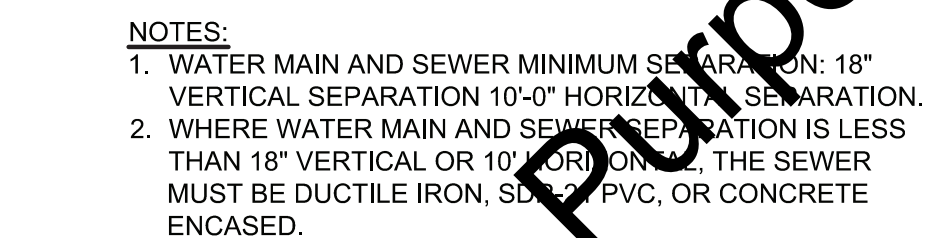
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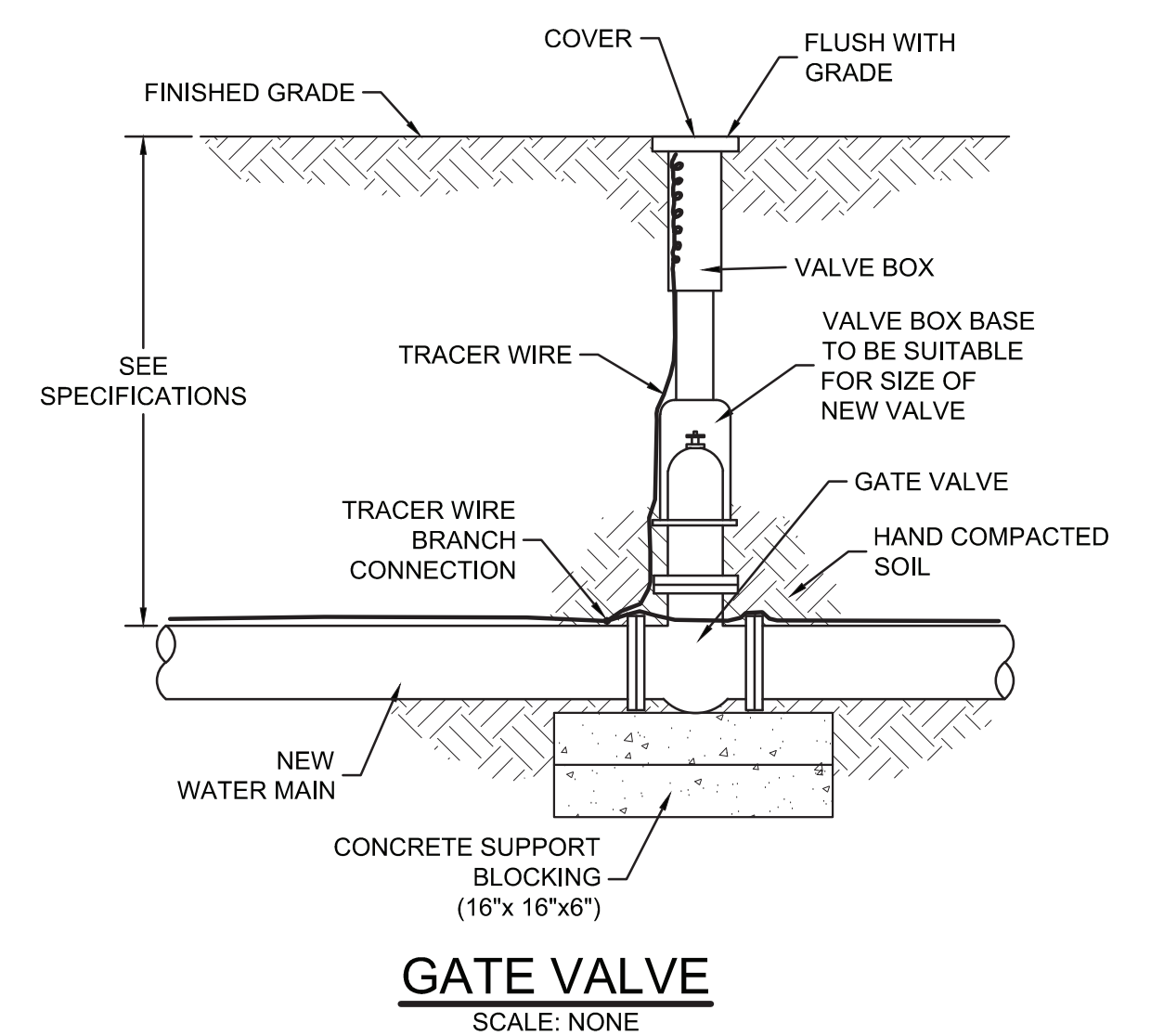
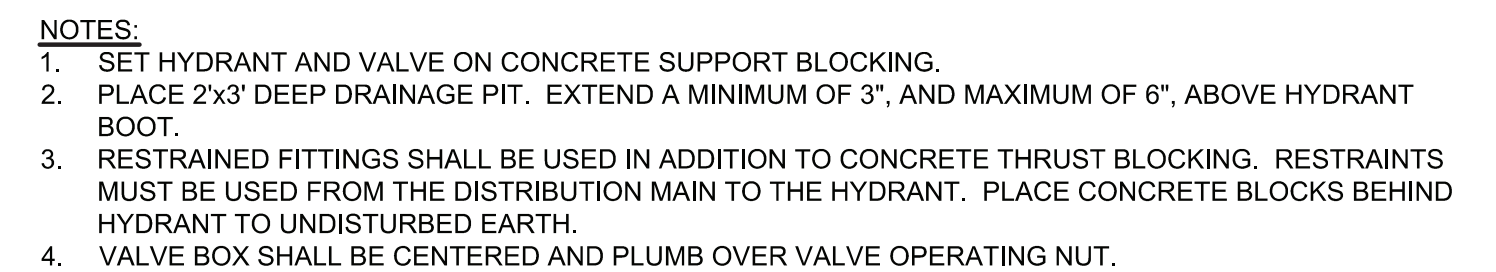
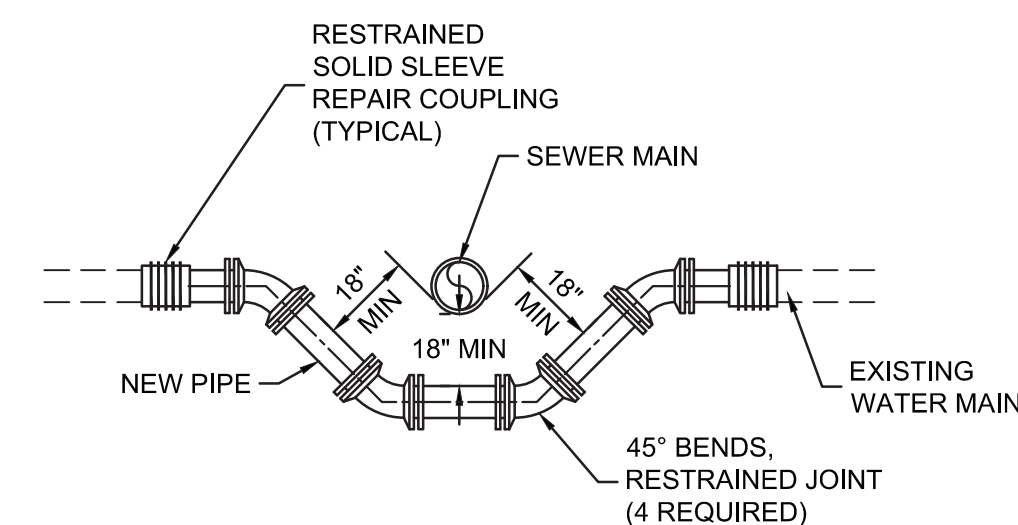
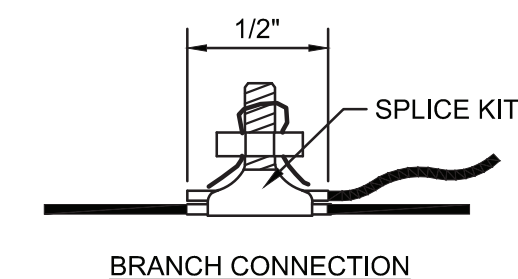
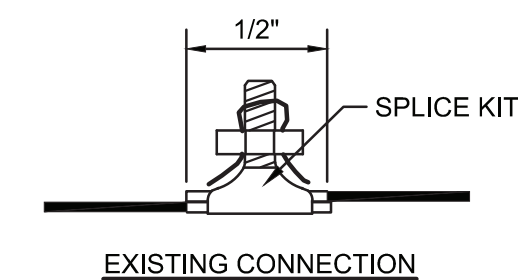
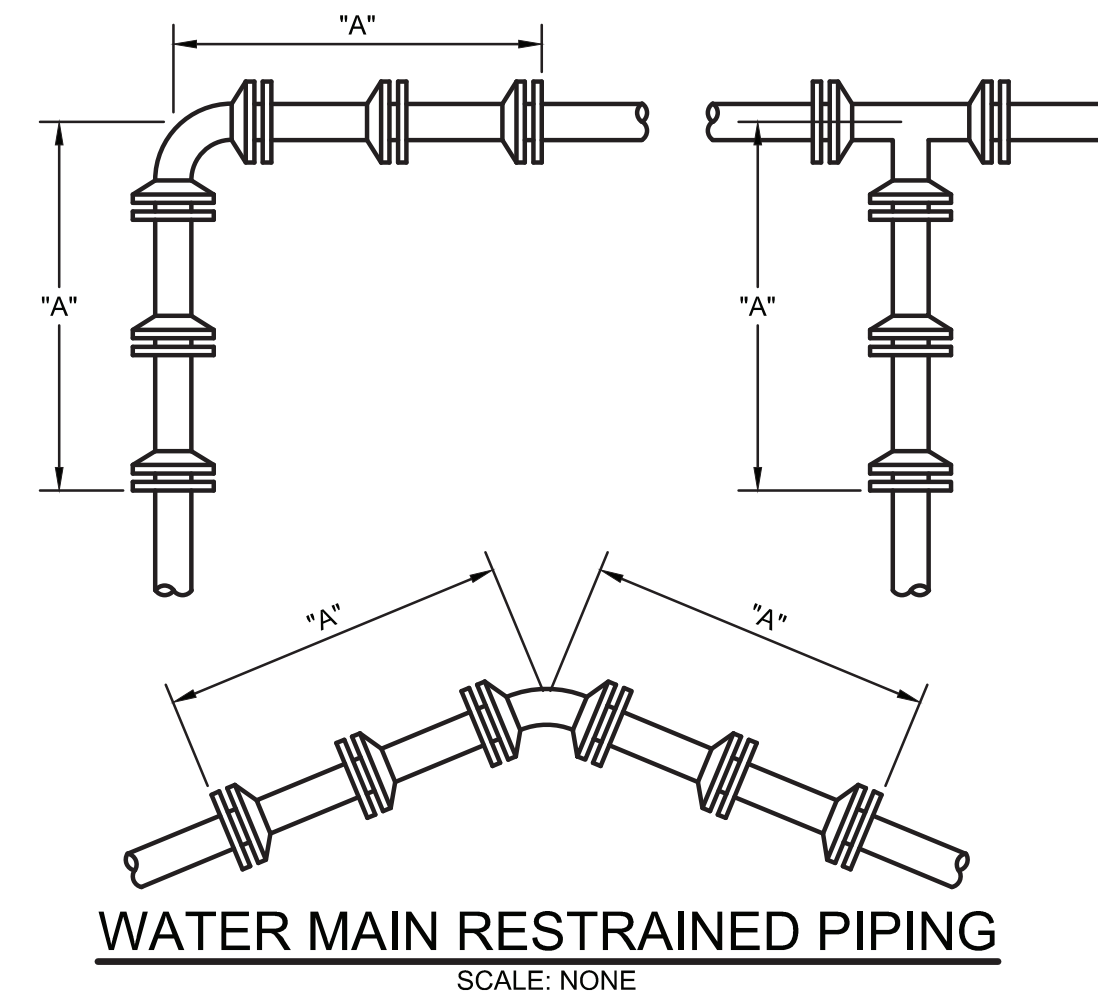
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	<div>CHECKED BY</div> <div>WCM</div>						TOWN OF MONROE , INDIANA		
	<div>APPROVED BY</div> <div>WCM</div>						WELLHOUSE ELECTRICAL PLAN		
	<div>ISSUE DATE</div> <div>NOVEMBER 2019</div>								
	<div>PROJECT NUMBER</div> <div>214319-04-001</div>								




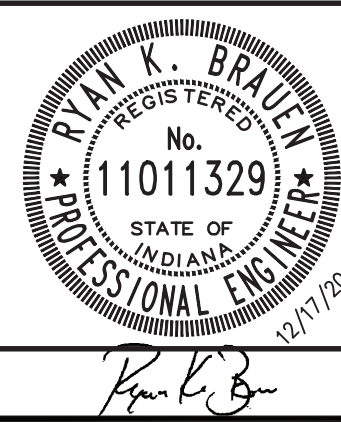
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FEET OF RESTRAINED PIPE @ 150 PSI ON EACH SIDE OF FITTING					
	WATER MAIN SIZE				
FITTING TYPE	4 INCH	6 INCH	8 INCH	10 INCH	12 INCH
11 1/4° HORIZ BEND	3	4	6	7	8
22 1/2° HORIZ BEND	6	8	11	13	15
45° HORIZ BEND	12	17	22	27	31
90° HORIZ BEND	28	40	52	64	75
11 1/4° VERT BEND	7	9	12	15	17
22 1/2° VERT BEND	13	18	24	29	34
45° VERT BEND	26	38	48	60	71
90° VERT BEND	62	90	116	144	170
VALVES AND PLUGS	31	45	58	72	85
TEE OUTLET	19	33	46	60	73
DEAD END	31	45	58	72	85



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	APPROVED BY	RKB			
	ISSUE DATE				
	DECEMBER 2019				
	PROJECT NUMBER				
		214319-04-001			



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WATER SYSTEM IMPROVEMENTS

TOWN OF MONROE, INDIANA

MISCELLANEOUS DETAILS

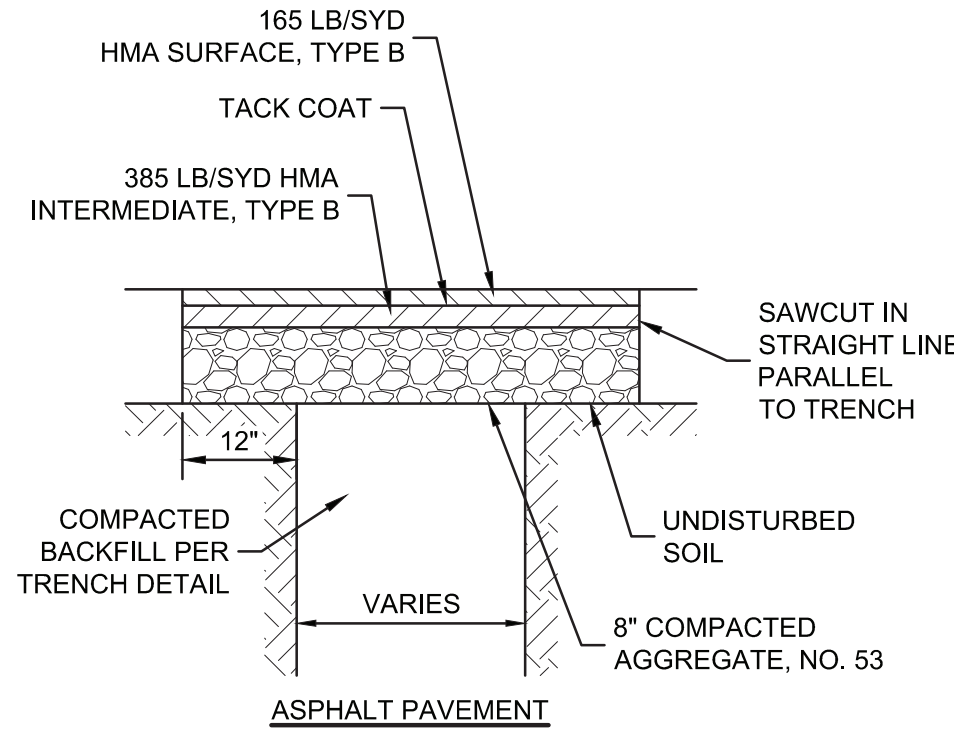
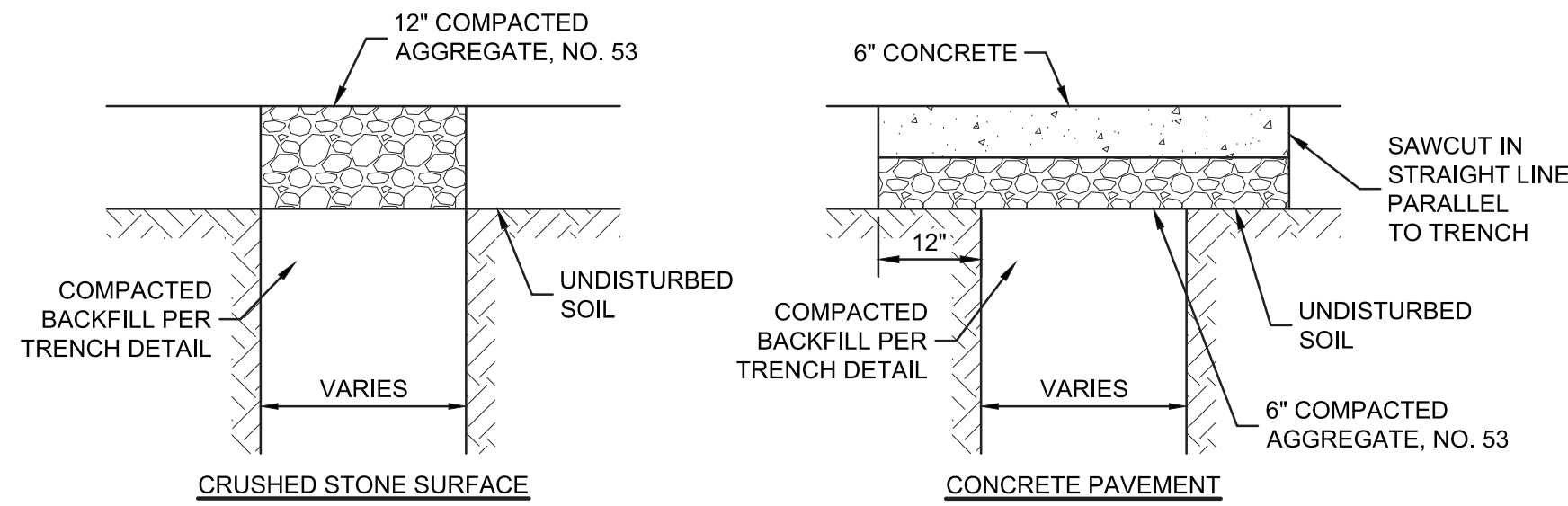
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6Y1

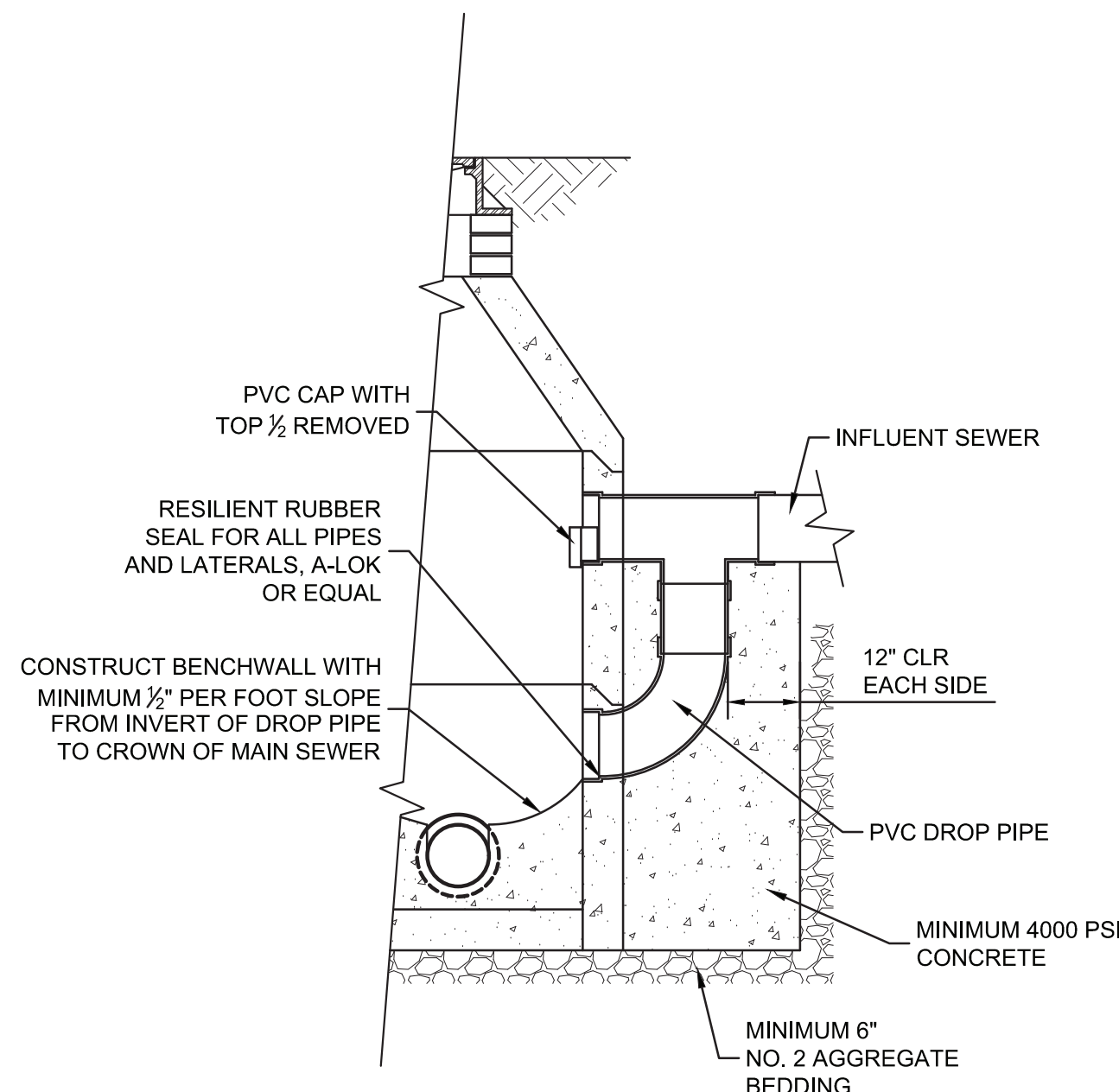
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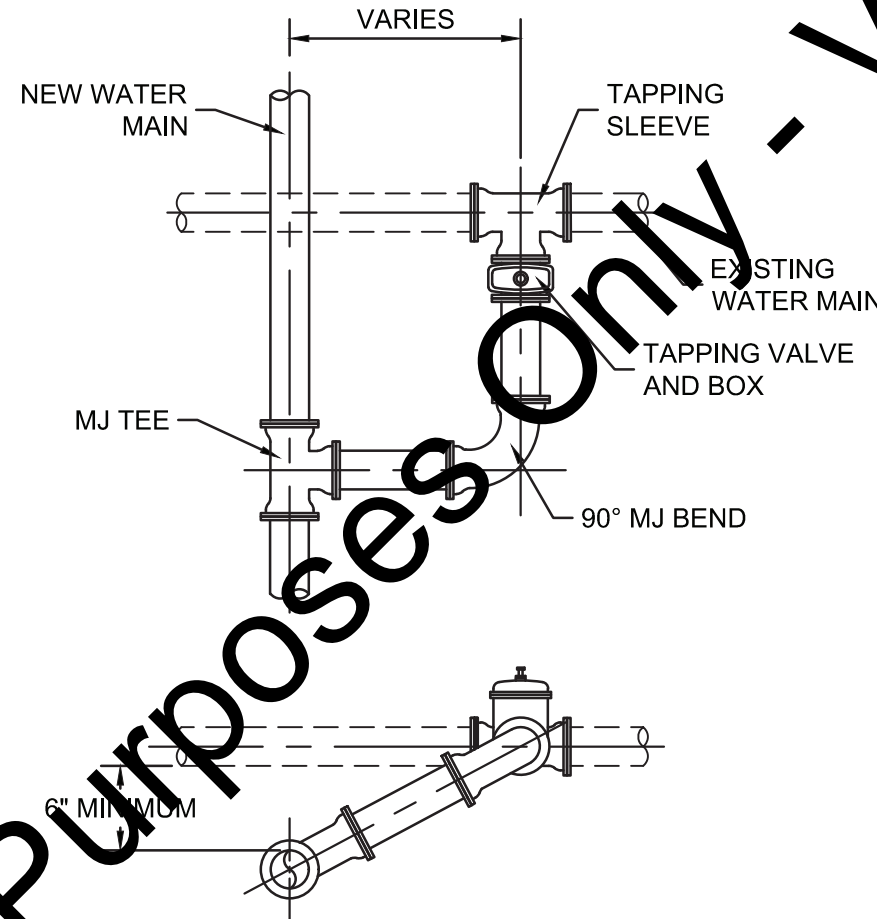
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PAVEMENT REPAIR
SCALE: NONE

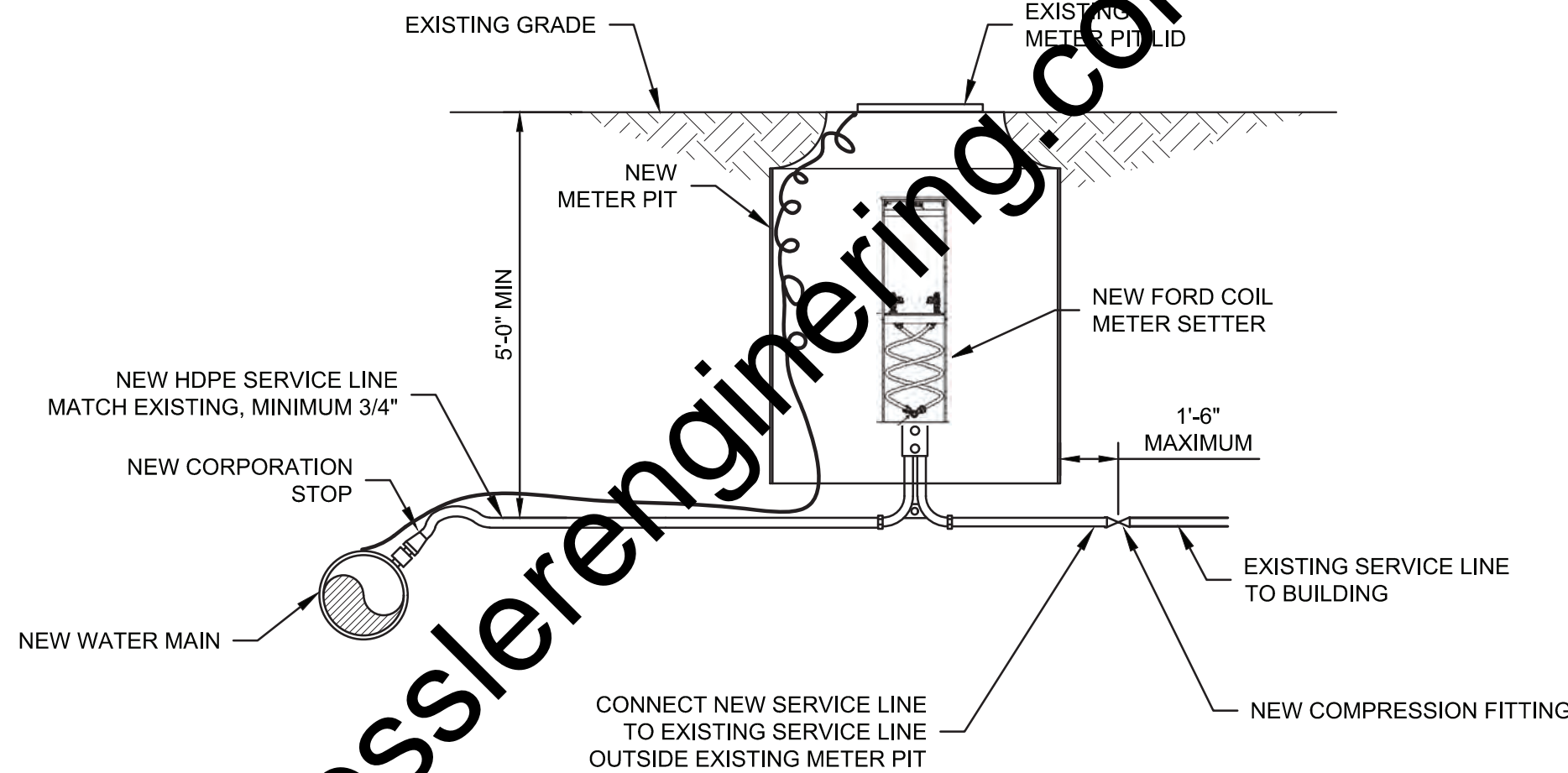


OUTSIDE DROP MANHOLE
SCALE: NONE



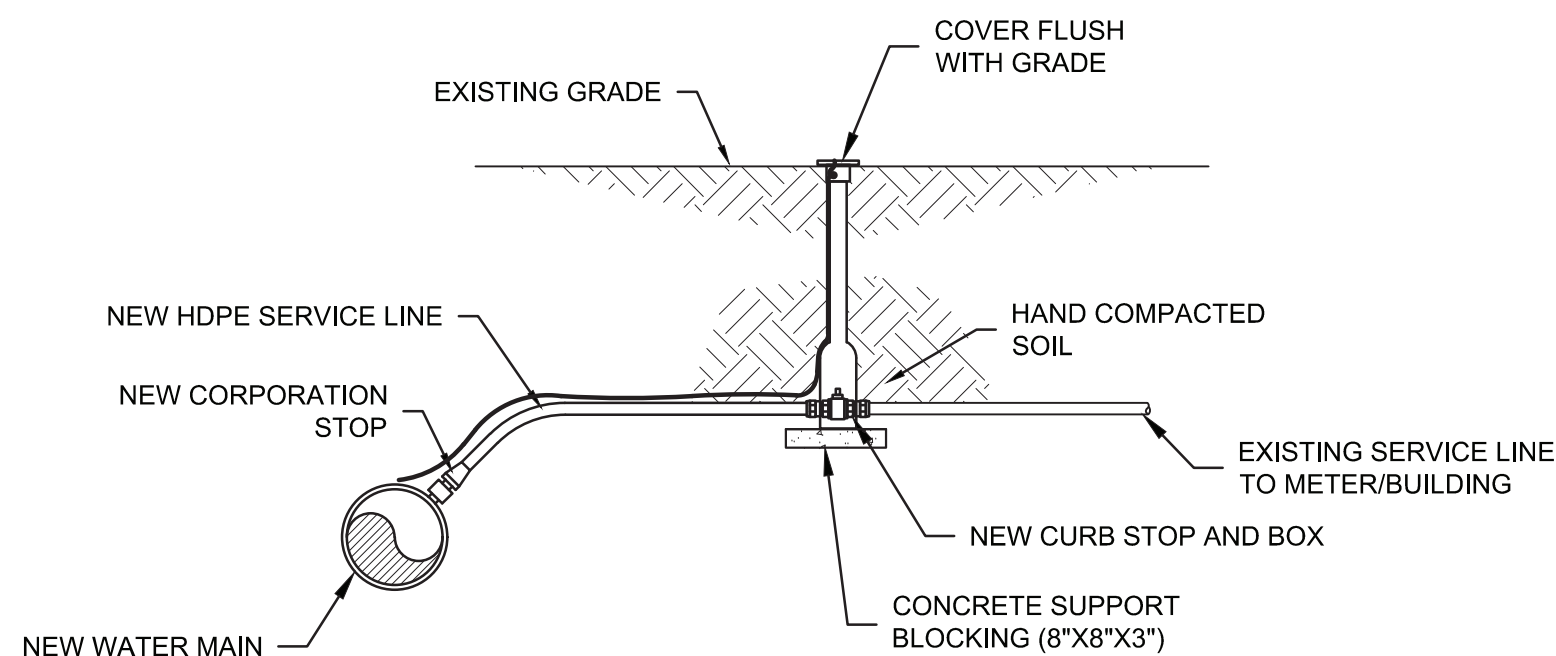
- NOTES:**
1. USE RESTRAINED MJ FITTINGS IN ADDITION TO CONCRETE THRUST BLOCKING. RESTRAINT MUST BE FROM DISTRIBUTION MAIN TO 90° BEND.

CROSS TAP
SCALE: NONE



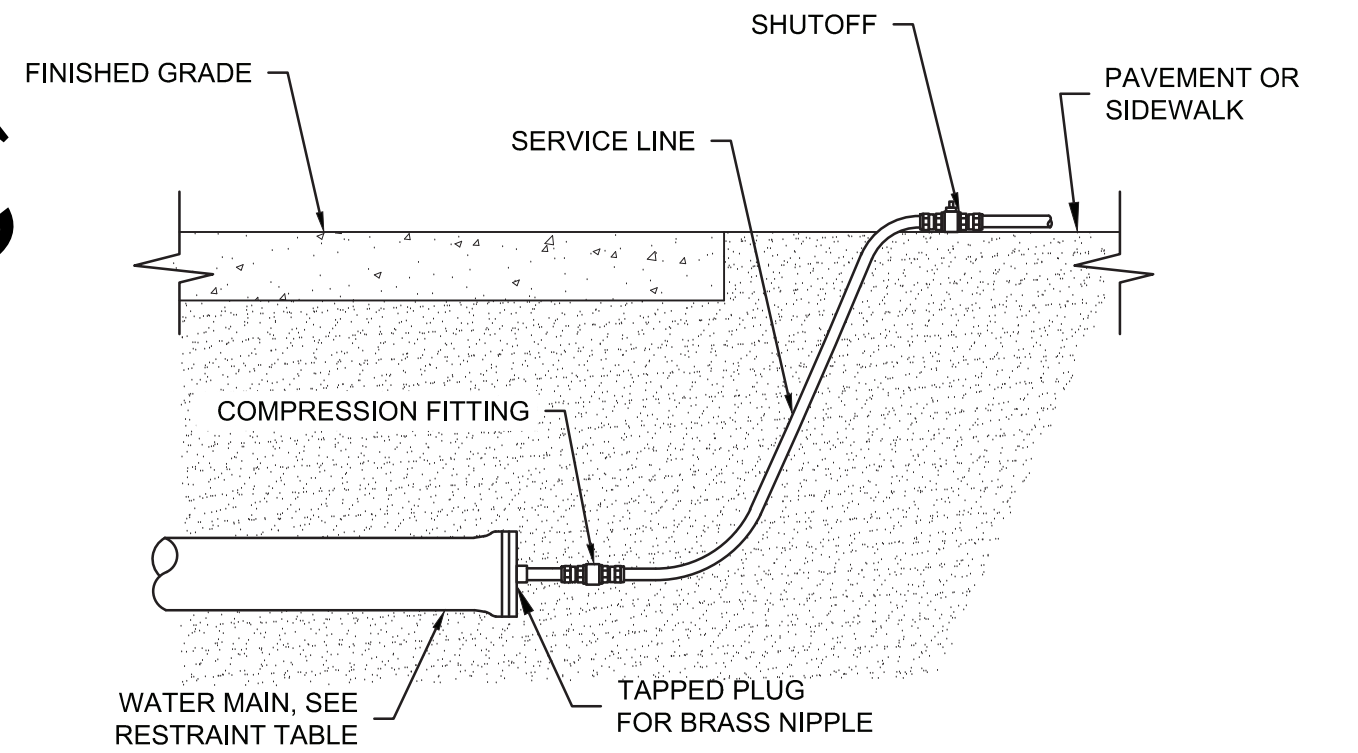
- NOTES:**
1. SERVICE RECONNECTION INCLUDES NEW CORPORATION STOP SADDLE, HDPE SERVICE LINE, TRACER WIRE, AND COMPRESSION FITTING.

SERVICE LINE RECONNECT
SCALE: NONE

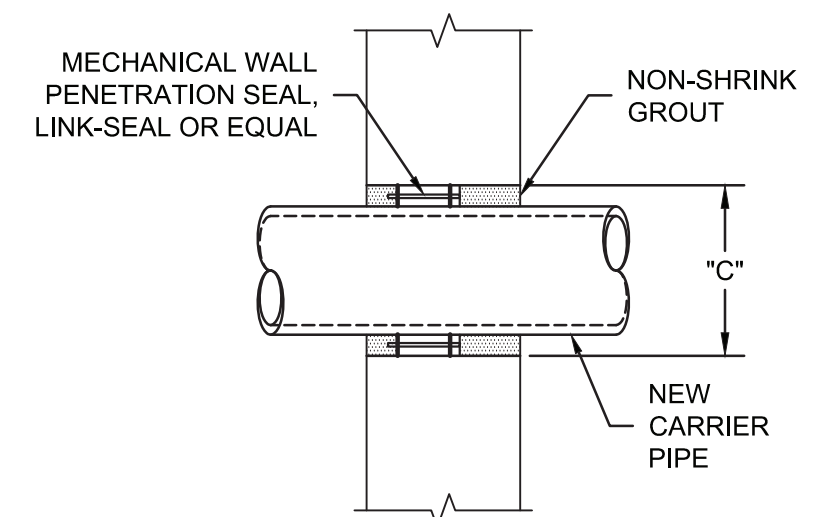


- NOTES:**
1. SERVICE RECONNECTION INCLUDES NEW CORPORATION STOP SADDLE, HDPE SERVICE LINE, TRACER WIRE, CURB STOP AND BOX.

SERVICE LINE RECONNECT AND CURB BOX
SCALE: NONE

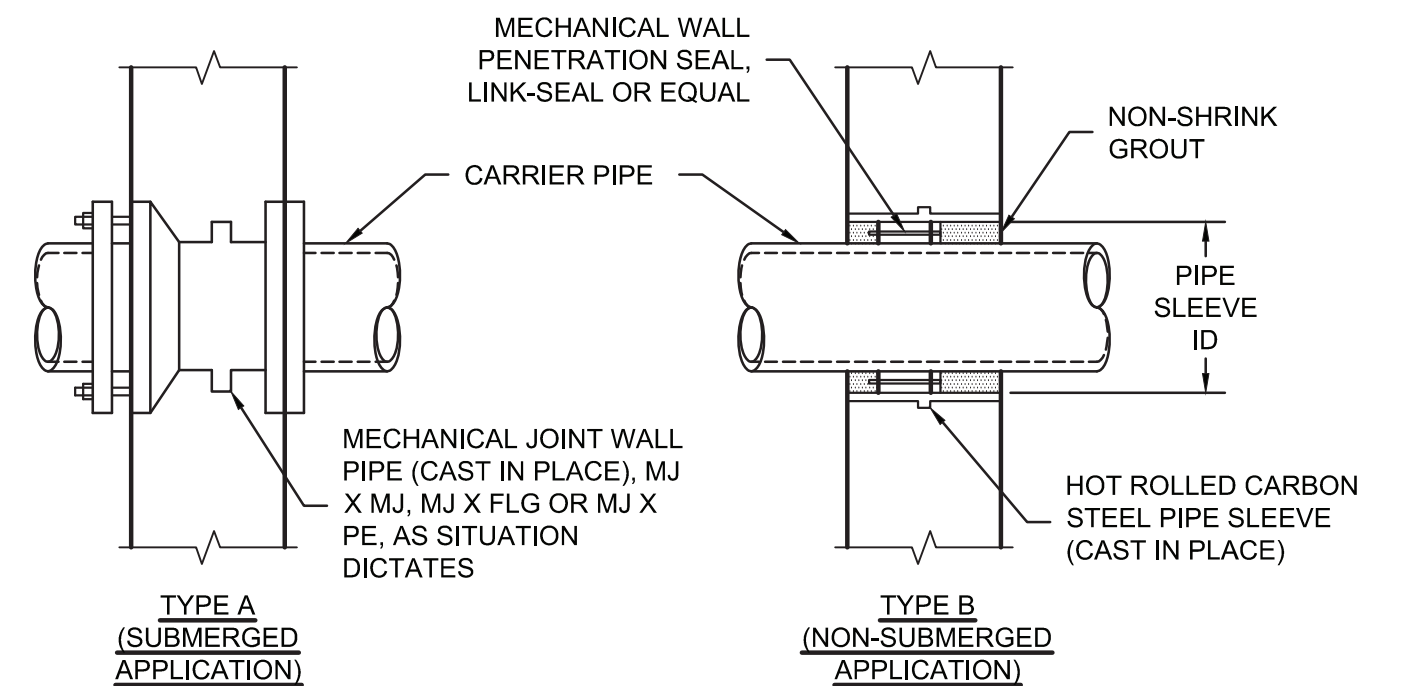


TEMPORARY BLOW-OFF ASSEMBLY
SCALE: NONE



- NOTES:**
1. "C" DIMENSION FOR NEW PIPE THROUGH EXISTING WALL APPLICATION SHALL BE THE DIAMETER OF THE CORE DRILLED HOLE REQUIRED.
 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE "S" OR "C" DIMENSION REQUIRED FOR THE SIZE OF CARRIER PIPE BEING INSTALLED.
 3. ALL TYPE A WALL PIPE FASTENERS, STUDS, BOLTS, NUTS AND WASHERS, SHALL BE STAINLESS STEEL.

NEW PIPE THROUGH EXISTING WALL
SCALE: NONE



NEW PIPE THROUGH NEW WALL
SCALE: NONE

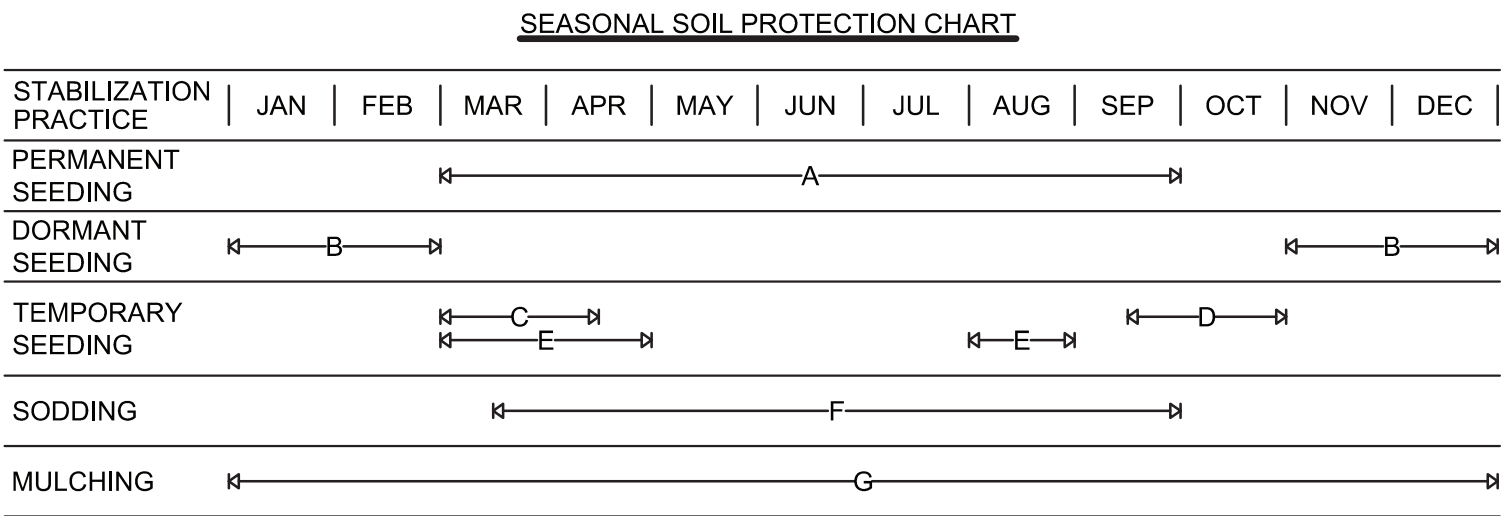
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	ISSUE DATE	DECEMBER 2019			
	PROJECT NUMBER	214319-04-001			



WATER SYSTEM IMPROVEMENTS	
TOWN OF MONROE, INDIANA	
MISCELLANEOUS DETAILS	

SHEET NO.
6Y2
PAGE NO.
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Drawing: J:\Monroe\Projects\214319-Monroe Water Syst Improvements\CADD\DWG\Sheets\214319-04-00.dwg | Layout: CD1 | Plotted: 12/01/19 @ 10:25:59 | LastSavedBy: MichaelB



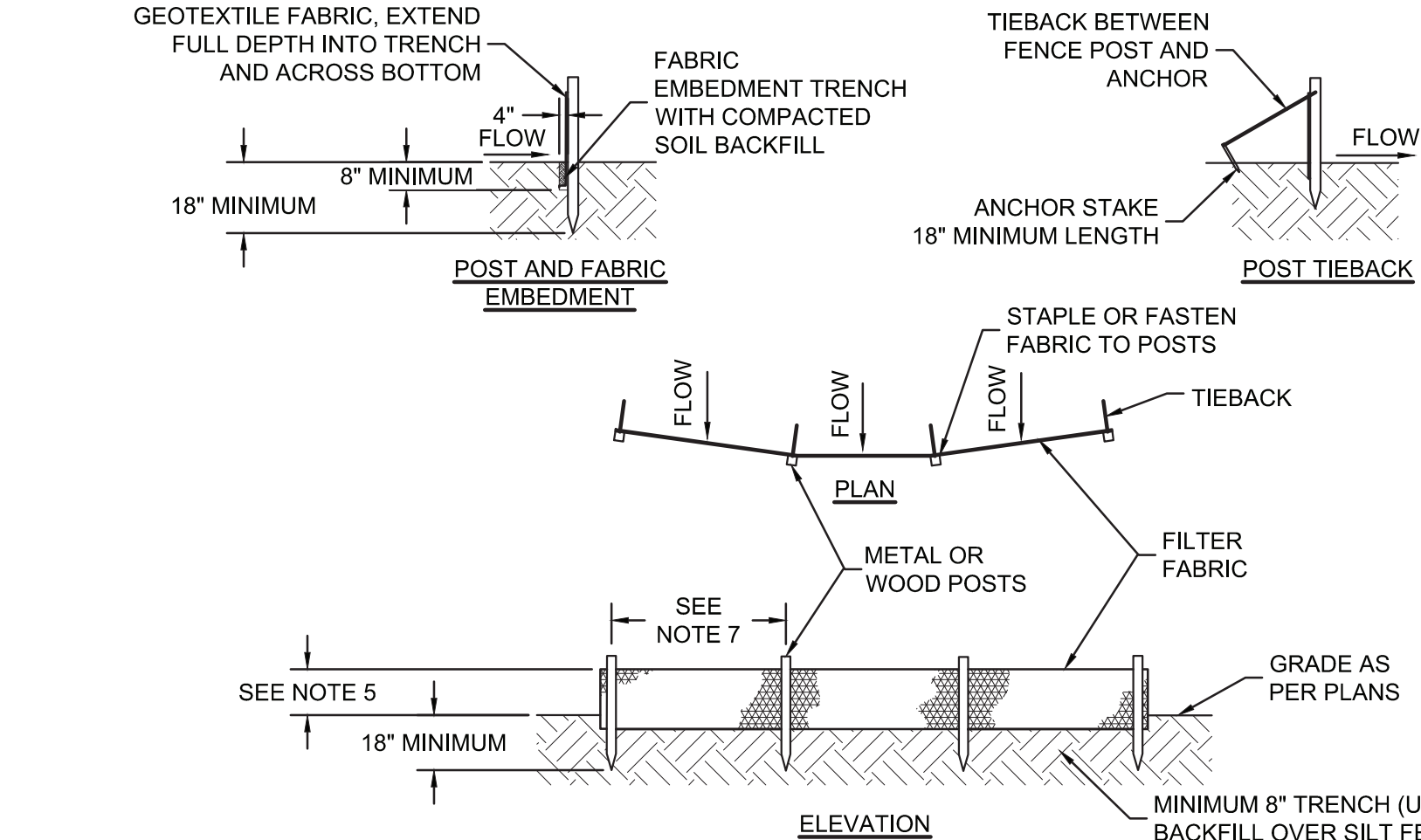
- A. = KENTUCKY BLUEGRASS 40 LB/ACRE
B. = KENTUCKY BLUEGRASS 210 LB/ACRE
C. = SPRING OATS 100 LB/ACRE (1" PLANTING DEPTH)
D. = WHEAT OR RYE 150 LB/ACRE (1" - 1.5" PLANTING DEPTH)
E. = ANNUAL RYEGRASS 40 LB/ACRE (1/4" PLANTING DEPTH)
F. = SOD
G. = ANCHORED STRAW/HAY (2 TONS/ACRE) OR WOOD FIBER/CELLULOSE (1 TON/ACRE)

- NOTES:
1. IRRIGATION NEEDED DURING MAY THROUGH SEPTEMBER.
2. IRRIGATION NEEDED FOR 2 TO 3 WEEKS AFTER APPLYING SOD.
3. ANCHORED MULCH IS REQUIRED FOR PERMANENT, DORMANT AND TEMPORARY SEEDING.
4. OPTIMUM SEEDING DATES PROVIDED. DATES MAY BE EXTENDED OR SHORTENED BASED ON PROJECT LOCATION.
5. SEED MIXTURES PROVIDED FOR LAWNS AND HIGH MAINTENANCE AREAS.
- MAINTENANCE:
1. INSPECT WITHIN 24 HOURS OF EACH RAIN EVENT AND AT LEAST ONCE EVERY 7 CALENDAR DAYS.
2. CHECK FOR EROSION AND MOVEMENT OF MULCH AND REPAIR IMMEDIATELY.
3. MONITOR FOR EROSION DAMAGE AND ADEQUATE COVER (70% DENSITY).
4. RESEED, FERTILIZE OR APPLY MULCH WHERE NECESSARY.

EROSION CONTROL SCHEDULE	
CONSTRUCTION ACTIVITY	SCHEDULE CONSIDERATION
NOTIFY IDEM RULE 5 COORDINATOR (317-233-1864) AND THE STORMWATER AUTHORITY (ADAMS CO. SWCD - SANDY VOGLEWEDE 260-724-4124 X3 AND REGIONAL SEWER DISTRICT - DON BERGDALL 260-706-7074 X374) WITHIN 48 HOURS PRIOR TO STARTING CONSTRUCTION. POST THE CONTACT INFORMATION AT THE CONSTRUCTION ENTRANCE. INCLUDE A COPY OF THE NOTICE OF INTENT (NOI) AND THE ONSITE PERSON WHO IS RESPONSIBLE FOR IMPLEMENTING THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP). THE SWPPP SHOULD BE ONSITE AND WEEKLY SITE INSPECTION REPORTS MUST BE AVAILABLE WITHIN 48 HOURS OF REQUEST.	WITHIN 48 HOURS PRIOR TO STARTING CONSTRUCTION.
CONSTRUCTION ACCESS - ENTRANCE TO SITE, CONSTRUCTION ROUTES, AREAS DESIGNATED FOR EQUIPMENT PARKING OR MATERIAL STAGING.	THIS IS THE FIRST LAND-DISTURBING ACTIVITY. AS SOON AS CONSTRUCTION BEGINS, STABILIZE ANY BARE AREAS WITH AGGREGATE AND TEMPORARY VEGETATION.
SEDIMENT TRAPS AND BARRIERS - BASIN TRAPS, SILT FENCE.	AFTER CONSTRUCTION IS ACCESSED, BASINS SHALL BE INSTALLED, WITH THE ADDITION OF MORE TRAPS AND BARRIERS AS NEEDED DURING GRADING.
RUNOFF CONTROL - DIVERSIONS, PERIMETER PROTECTION, CHECK DAMS, OUTLET PROTECTION.	RUNOFF CONTROL PRACTICES SHALL BE INSTALLED AFTER THE INSTALLATION OF SEDIMENT TRAPS AND BEFORE LAND GRADING. ADDITIONAL RUNOFF CONTROL MEASURES MAY BE INSTALLED DURING GRADING.
RUNOFF CONVEYANCE SYSTEM - STABILIZE STREAM BANKS, STORM DRAINS, CHANNELS, INLET AND OUTLET PROTECTION, SLOPE DRAINS.	AS NECESSARY, STABILIZE STREAM BANKS AND SIDE SLOPES OF RUNOFF SYSTEMS AS SOON AS POSSIBLE. USE EROSION CONTROL BLANKETS OR SLOPE DRAINS TO PREVENT EROSION. INSTALL INLET PROTECTION TO PREVENT SEDIMENTS FROM ENTERING STORM DRAINAGE SYSTEMS. PROTECT STORM OUTLETS TO PREVENT EROSION.
LAND CLEARING AND GRADING - SITE PREPARATION (CUTTING, FILLING, AND GRADING, SEDIMENT TRAPS, BARRIERS, DIVERSIONS, DRAINS, SURFACE ROUGHENING).	IMPLEMENT CLEARING AND GRADING AFTER INSTALLATION OF SEDIMENT TRAPS AND RUNOFF CONTROL MEASURES, AND INSTALL ADDITIONAL CONTROL MEASURES AS GRADING CONTINUES. CLEAR BORROW AND DISPOSAL AREAS AS NEEDED, AND MARK TREES AND BUFFER AREAS FOR PRESERVATION.
SURFACE STABILIZATION - TEMPORARY AND PERMANENT SEEDING, MULCHING, SODDING, RIPRAP, EROSION CONTROL BLANKET.	APPLY TEMPORARY OR PERMANENT STABILIZING MEASURES IMMEDIATELY TO ANY DISTURBED AREAS WHERE WORK HAS BEEN EITHER COMPLETED OR DELAYED.
CONSTRUCTION - STRUCTURES, UTILITIES, PAVING.	DURING CONSTRUCTION, INSTALL ANY EROSION AND SEDIMENTATION CONTROL MEASURES THAT ARE NEEDED.
LANDSCAPING AND FINAL STABILIZATION - TOPSOILING, TREES AND SHRUBS, PERMANENT SEEDING, MULCHING, SODDING, RIPRAP.	THIS IS THE LAST CONSTRUCTION PHASE. STABILIZE ALL DISTURBED AREAS, INCLUDING BORROW AND SPOIL AREAS, AND REMOVE ALL TEMPORARY CONTROL MEASURES. A UNIFORM DENSITY OF 70% VEGETATED COVER IS REQUIRED.

EROSION CONTROL SCHEDULE

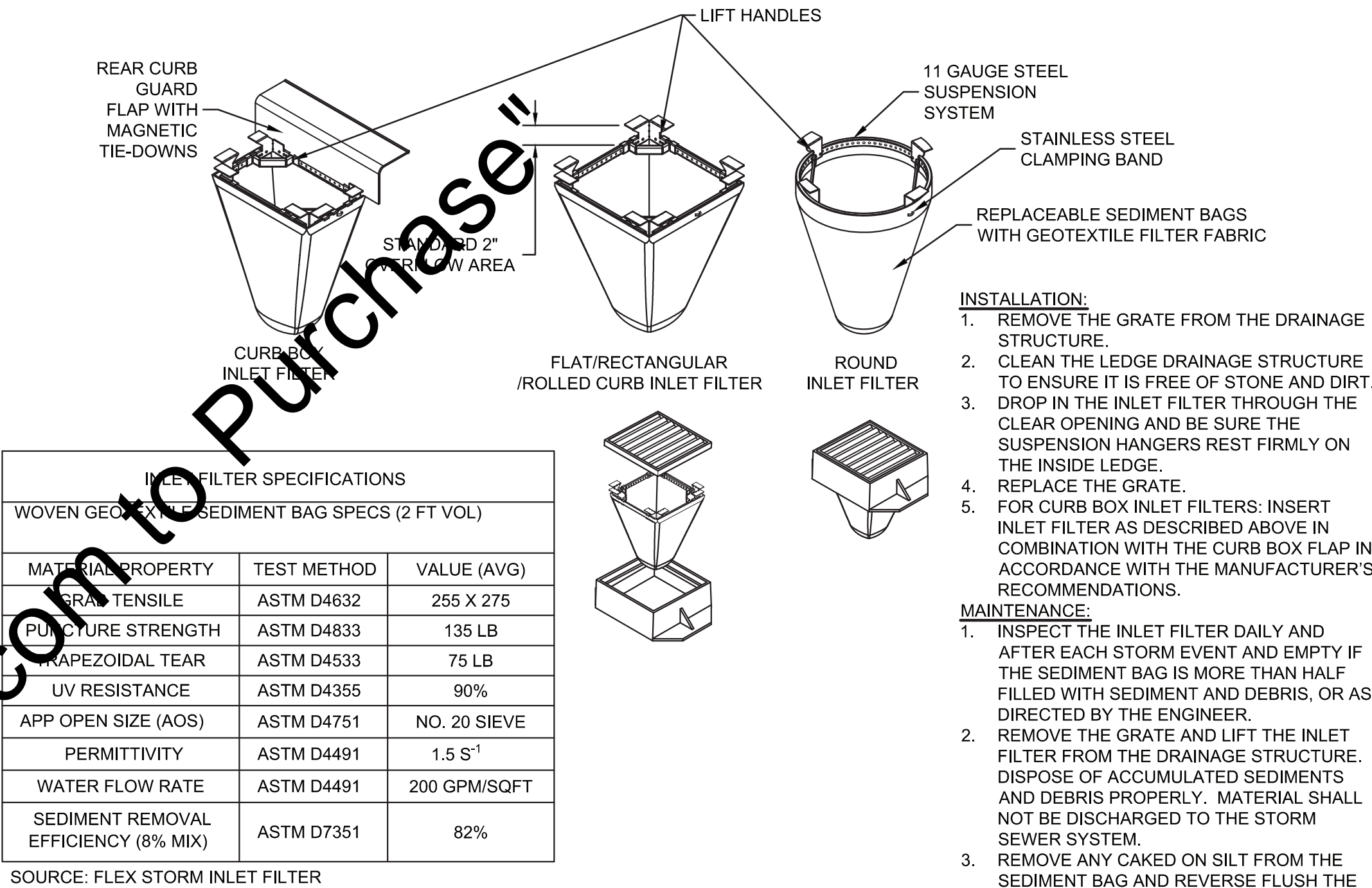
SCALE: NONE



- NOTES:
1. SYNTHETIC FILTER FABRIC SHALL BE A PERVIOUS SHEET OF WOVEN OR NON-WOVEN GEOTEXTILE FABRIC AND SHALL BE CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE FOLLOWING REQUIREMENTS:
a. TEXTILE STRENGTH AT 20% (MAXIMUM) ELONGATION, PER ASTM D4632.
b. WOVEN EXTRA STRENGTH - 50 LB/LINEAR INCH (MINIMUM), NON-WOVEN EXTRA STRENGTH - 70 LB/INCH (MINIMUM).
c. WOVEN STANDARD STRENGTH - 30 LB/LINEAR INCH (MINIMUM), NON-WOVEN STANDARD STRENGTH - 50 LB/INCH (MINIMUM).
d. APPARENT OPENING SIZE (AOS) (U.S. SIEVE) - NO. 30 PARTICLE SIZE OF 0.6 mm (MAXIMUM), ASTM D4751.
e. PERMITTIVITY - 0.05 S⁻¹ (MAXIMUM), ASTM D4491.
2. POSTS FOR SILT FENCES SHALL BE EITHER 2"x2" SQUARE WOOD OR EQUIVALENT METAL POSTS WITH A MINIMUM LENGTH OF 5'. METAL POSTS SHALL HAVE PROJECTIONS FOR FASTENING WIRE TO THEM.
3. ANCHOR STAKES FOR SILT FENCES SHALL BE 1"x2" WOOD (PREFERRED) OR EQUIVALENT METAL WITH A MINIMUM LENGTH OF 18".
4. WIRE FENCE REINFORCEMENT FOR SILT FENCES USING STANDARD STRENGTH FILTER CLOTH SHALL BE A MINIMUM OF 42" IN HEIGHT, A MINIMUM OF 14 GAUGE, AND SHALL HAVE A MAXIMUM MESH SPACING OF 6".
5. THE HEIGHT OF THE BARRIER SHALL BE A MINIMUM OF 18" AND A MAXIMUM OF 30".
6. THE FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER FABRIC SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST WITH A MINIMUM 6" OVERLAP, AND SECURELY SEALED.
7. POSTS SHALL BE SPACED A MAXIMUM OF 6' APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 18"). WHEN STANDARD STRENGTH FABRIC IS USED WITH THE WIRE SUPPORT FENCE, POST SPACING SHALL NOT EXCEED 8'.
8. THE SPACING OF TIEBACKS SHALL EQUAL THE SPACING OF THE POSTS. ADDITIONAL POST DEPTH OR TIEBACKS MAY BE REQUIRED IN UNSTABLE SOILS.
9. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4" WIDE AND A MINIMUM OF 8" DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
10. WHEN STANDARD STRENGTH FILTER FABRIC IS USED WITH A WIRE MESH SUPPORT FENCE IT SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY 1" WIRE STAPLES. TIE WIRE MESH TO THE POSTS WITH A MINIMUM OF 2" AND SHALL NOT EXTEND MORE THAN 36" ABOVE THE ORIGINAL GROUND SURFACE.
11. THE STANDARD STRENGTH FILTER FABRIC, WITHOUT A WIRE MESH SUPPORT FENCE, SHALL BE STAPLED OR WIRED TO THE FENCE, AND A MINIMUM 8" OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 36" ABOVE THE ORIGINAL GROUND SURFACE. DO NOT STAPLE FILTER FABRIC TO EXISTING TREES.
12. WHEN EXTRA STRENGTH FILTER FABRIC OR BURLAP AND POST SPACING IS LESS THAN THE MAXIMUM SPECIFIED SPACING OF 6', THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED.
13. BACKFILL THE TRENCH AND COMPACT THE SOIL OVER THE FILTER FABRIC.
14. REMOVE SILT FENCES WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
15. SILT FENCE SHALL NOT BE USED AS A DIVERSION AND SHALL NOT BE INSTALLED ACROSS A STREAM, CHANNEL, DITCH, SWALE, ETC.
- MAINTENANCE:
1. INSPECT AFTER EACH RAINFALL AND DAILY DURING PROLONGED RAINFALL. INSPECT AT LEAST ONCE EVERY 7 CALENDAR DAYS.
2. REPLACE OR REPAIR FABRIC IMMEDIATELY IF IT DECOMPOSES OR IS INEFFECTIVE.
3. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY HALF THE HEIGHT OF THE BARRIER.
4. SPREAD ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED AND DRESS TO CONFORM WITH THE FINISHED GRADING.

SILT FENCE

SCALE: NONE

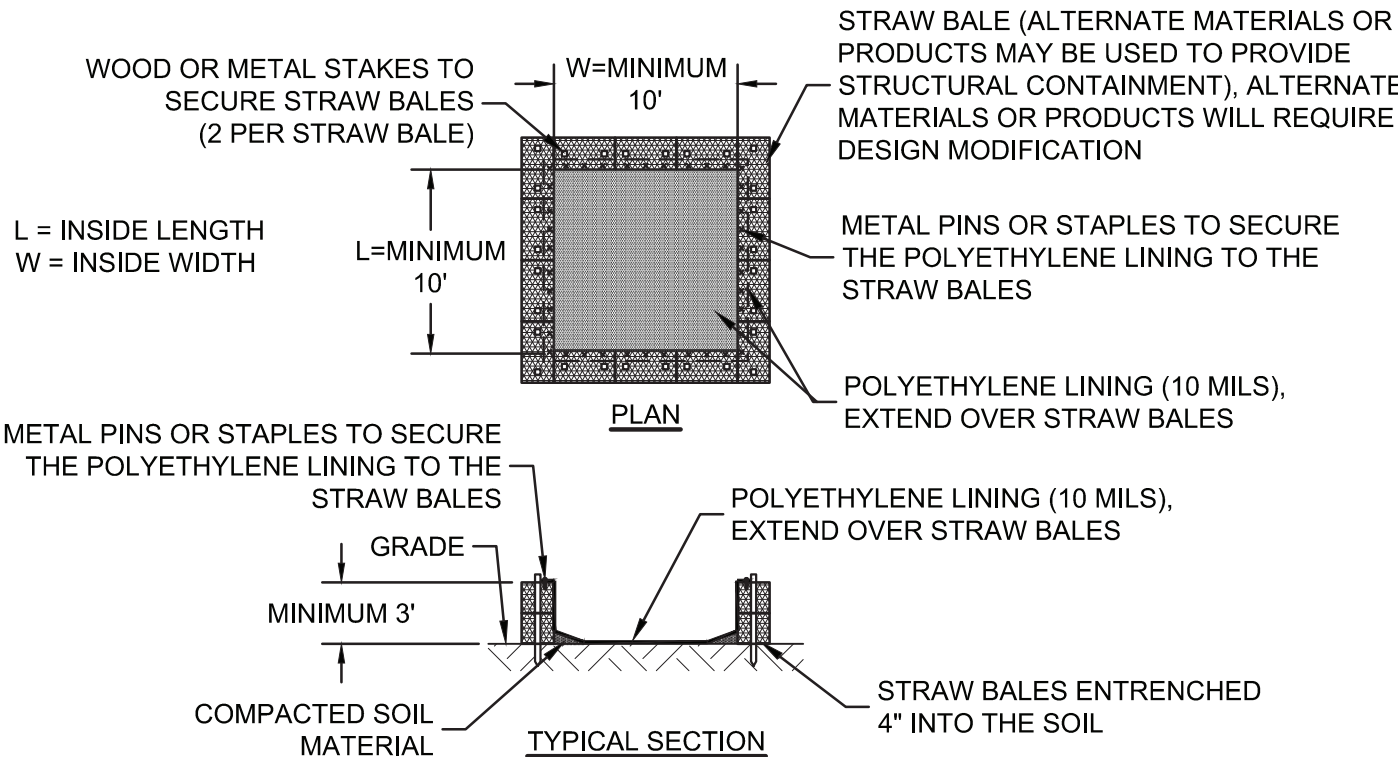


INLET FILTER SPECIFICATIONS		
WOVEN GEOTEXTILE SEDIMENT BAG SPECS (2 FT VOL)		
MATERIAL PROPERTY	TEST METHOD	VALUE (AVG)
GRA TENSILE	ASTM D4632	255 X 275
PUNCTURE STRENGTH	ASTM D4833	135 LB
TRAPEZOIDAL TEAR	ASTM D4533	75 LB
UV RESISTANCE	ASTM D4355	90%
APP OPEN SIZE (AOS)	ASTM D4751	NO. 20 SIEVE
PERMITTIVITY	ASTM D4491	1.5 S ⁻¹
WATER FLOW RATE	ASTM D4491	200 GPM/SQFT
SEDIMENT REMOVAL EFFICIENCY (8% MIX)	ASTM D7351	82%

SOURCE: FLEX STORM INLET FILTER

INLET PROTECTION

SCALE: NONE



- NOTES:
1. LOCATE WASHOUTS AT LEAST 50' FROM ANY CREEKS, WETLANDS, DITCHES, KARST FEATURES, OR STORM DRAIN/CONVEYANCES.
- WASHOUT PROCEDURES:
1. DO NOT LEAVE EXCESS MUD IN THE CHUTES OR HOPPER AFTER POURING CONCRETE. MAKE EVERY EFFORT TO EMPTY THE CHUTE AND HOPPER AT THE POUR. THE LESS MATERIAL LEFT IN THE CHUTES AND HOPPER, THE QUICKER AND EASIER THE CLEANOUT. SMALL AMOUNTS OF EXCESS CONCRETE (NOT WASHOUT WATER) MAY BE DISPOSED OF IN AREAS THAT WILL NOT FLOW TO AN AREA THAT IS TO BE PROTECTED.
2. SCRAPE AS MUCH MATERIAL FROM THE CHUTES AS POSSIBLE BEFORE WASHING THEM. USE NON-WATER CLEANING METHODS TO MINIMIZE THE CHANCE FOR WASTE TO FLOW OFF SITE.
3. STOP WASHING OUT IN AN AREA IF YOU OBSERVE WATER RUNNING OFF THE DESIGNATED AREA OR IF THE WATER IS NOT BEING CONTAINED WITHIN THE WASHOUT AREA.
4. DO NOT BACK FLUSH EQUIPMENT AT THE PROJECT SITE.
5. DO NOT USE ADDITIVES WITH WASH WATER.
6. DO NOT WASH OUT OR DRAIN WASTE WATERS TO STORM DRAINS, WETLANDS, STREAMS, RIVERS, CREEKS, DITCHES OR STREETS.
- MAINTENANCE:
1. MAINTENANCE REQUIREMENTS PROVIDED IN SPECIFICATIONS.

CONCRETE WASHOUT

SCALE: NONE

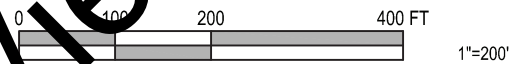
WATER SYSTEM IMPROVEMENTS										SHEET NO.	
TOWN OF MONROE, INDIANA										6Y3	
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2017 IMAGERY FROM INDIANA STATE MAP.

MAINTENANCE OF TRAFFIC PLAN



SPEED (MPH)	DISTANCE (FEET)				
	A	B	C	D	E
20 OR LESS	120	100	100	100	100
25	160	100	100	100	100
30	200	100	100	100	100
35	280	100	350	350	350
40	320	100	350	350	350
45	360	100	500	500	500
50	440	100	500	500	500
55	520	100	500	500	500
60	600	100	1,000	1,600	2,640
65	680	100	1,000	1,600	2,640
70	700	100	1,000	1,600	2,640

- NOTES:
1. DISTANCES SHOWN ARE APPROXIMATE. ADJUST SIGN FOR CURVES, HILLS, INTERSECTIONS, DRIVEWAYS, ETC TO IMPROVE VISIBILITY.
 2. THE SPACING OF CHANNELIZING DEVICES SHOULD BE A DISTANCE IN FEET EQUAL TO THE SPEED LIMIT IN MPH WHEN USED FOR TAPER CHANNELIZATION, AND A DISTANCE IN FEET EQUAL TO 2.0 TIMES THE SPEED LIMIT IN MPH USED FOR TANGENT CHANNELIZATION.

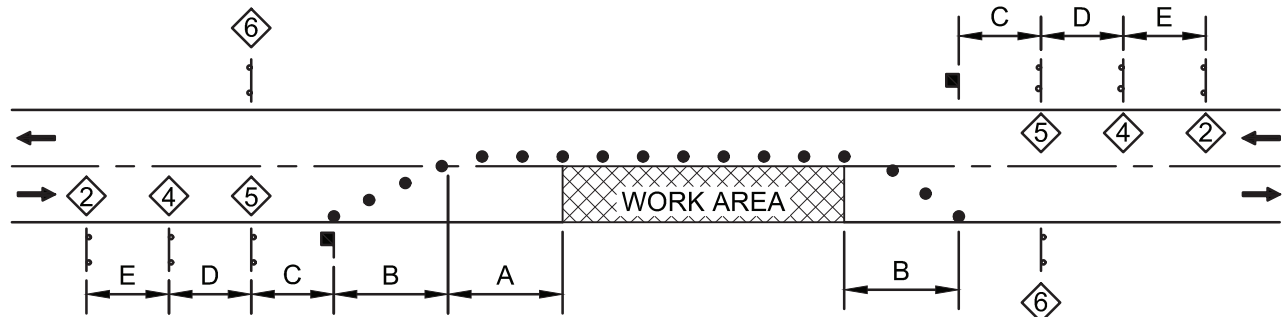
ADVANCE WARNING SIGN AND
FLAGGER OPERATION SPACING

SCALE: NONE

- WORK AREA(S)
- TYPE A CONSTRUCTION WARNING LIGHT
- "ROAD WORK AHEAD" (W20-1) OR "UTILITY WORK AHEAD" (W21-7)
- "ROAD WORK - XXX FT" (W20-1)
- "ONE LANE ROAD AHEAD" (W20-4)
- FLAGGER SIGN (W20-7)
- "END ROAD WORK" (G20-2)
- BARRICADE TYPE IIIB
 - TRAFFIC CONTROL DRUM
- TRAFFIC FLOW DIRECTION
- ROAD CLOSURE SIGN ASSEMBLY, INCLUDES R11-2, BARRICADE TYPE IIIB, AND TYPE B CONSTRUCTION WARNING LIGHT
- UNDISTRIBUTED COMPACTED AGGREGATE, NO. 53, TEMPORARY FOR ACCESS
- TEMPORARY PAVEMENT MARKING, REMOVABLE, SOLID, 4" (YELLOW)
- TEMPORARY PAVEMENT MARKING, REMOVABLE, SOLID, 4" (WHITE)
- TEMPORARY PAVEMENT MARKING, PAINT, SOLID, 4" (YELLOW)
- TEMPORARY PAVEMENT MARKING, PAINT, SOLID, 4" (WHITE)
- REMOVAL OF LINE
- FLAGGER
- SIGN, FACING LEFT
- SIGN, FACING RIGHT

TRAFFIC CONTROL LEGEND

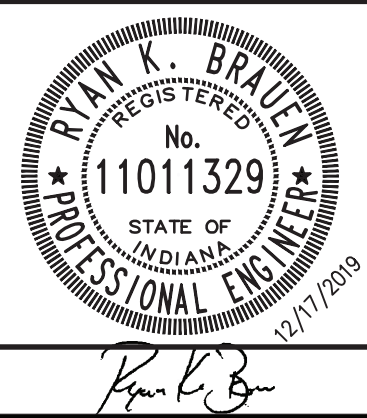
SCALE: NONE



TEMPORARY FLAGGER OPERATION

SCALE: NONE

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	CHECKED BY RJS				
	APPROVED BY RKB				
	ISSUE DATE DECEMBER 2019				
	PROJECT NUMBER 214319-04-001				



WATER SYSTEM IMPROVEMENTS	
TOWN OF MONROE, INDIANA	
MAINTENANCE OF TRAFFIC PLAN AND DETAILS	

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PAGE NO. 52

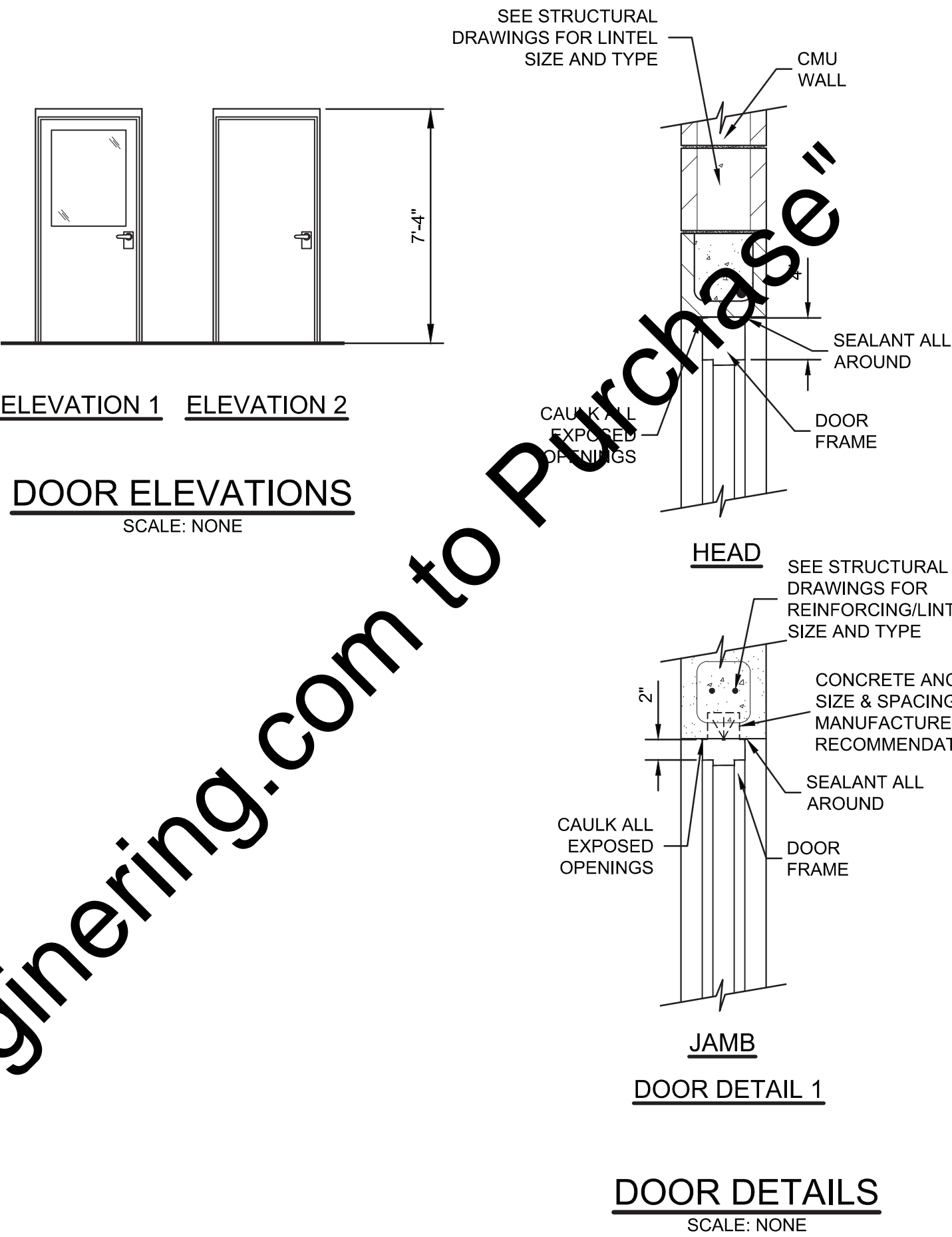
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DOOR SCHEDULE

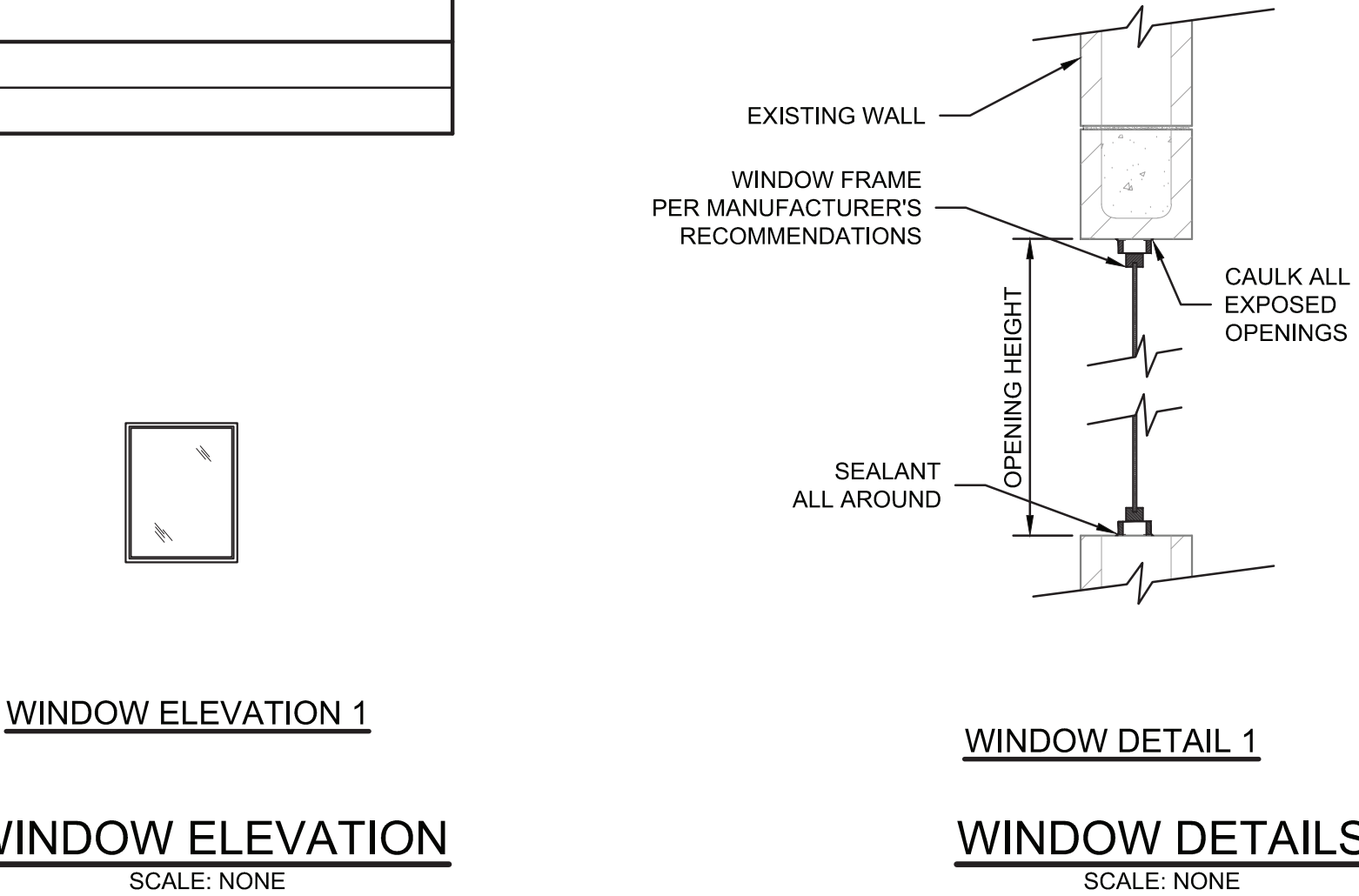
MARK	SIZE	DOOR MATERIAL	FRAME MATERIAL	QUANTITY	DOOR ELEVATION	DOOR DETAIL	GLAZING	COLOR	HARDWARE	NOTES
D1	3'-0" x 7'-0"	FIBERGLASS	FIBERGLASS	1	2	1	--	BY OWNER	E1	WTP CHLORINE ROOM - EXTERIOR DOOR
D2	3'-0" x 7'-0"	ALUMINUM	ALUMINUM	1	2	1	--	BY OWNER	E1	WTP - EXTERIOR DOOR
D3	3'-0" x 7'-0"	ALUMINUM	ALUMINUM	1	2	1	--	BY OWNER	E1	WTP ELECTRICAL/MECHANICAL ROOM - EXTERIOR DOOR
D4	3'-0" x 7'-0"	ALUMINUM	ALUMINUM	1	1	1	2'-4" X 3'-0"	BY OWNER	E2	WTP - ELECTRICAL/MECHANICAL ROOM - INTERIOR DOOR
D5	3'-0" x 7'-0"	ALUMINUM	ALUMINUM	1	2	1	--	BY OWNER	E1	WELL HOUSE - EXTERIOR DOOR


DOOR SCHEDULE NOTES:


1. REFER TO SPECIFICATION SECTION 08710 FOR HARDWARE PACKAGES.
2. ALL DOORS TO BE KEYED ALIKE.

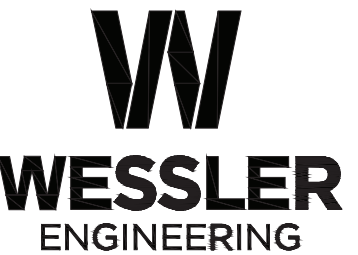


MARK	R.O. SIZE	FRAME MATERIAL	FRAME COLOR	QUANTITY	LOCATION	STYLE	WINDOW ELEVATION	WINDOW DETAIL	NOTES
A	1'-6" x 2'-9"	FIBERGLASS	BY OWNER	1	WELL HOUSE	FIXED	1	1	EXTERIOR WINDOW - SOUTH WALL



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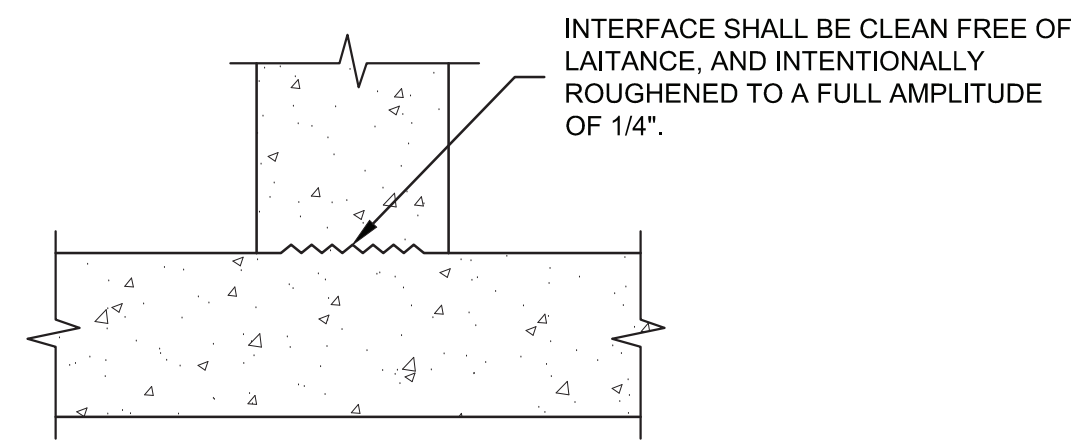




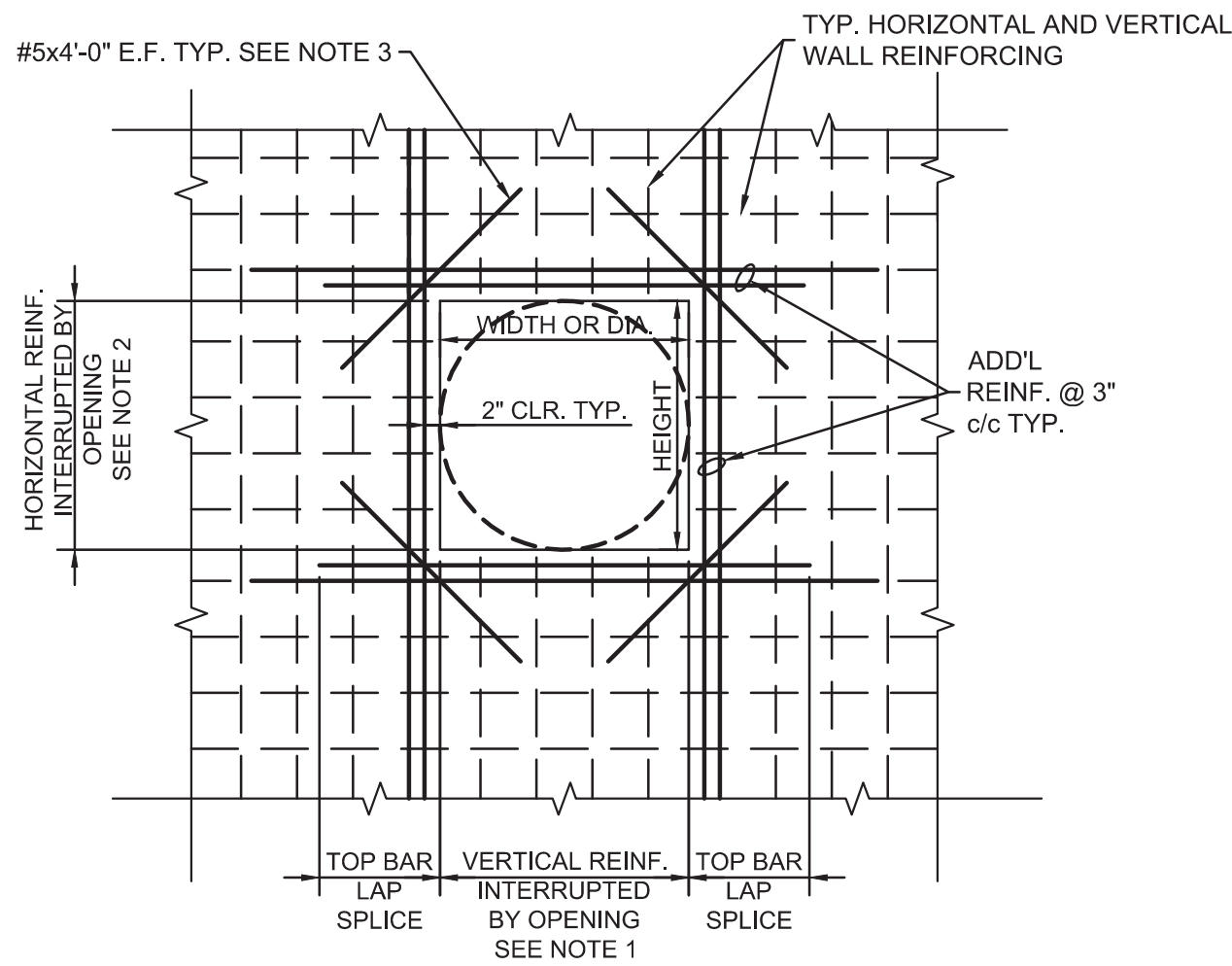
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WATER SYSTEM IMPROVEMENTS	
TOWN OF MONROE, INDIANA	
DOOR AND WINDOW SCHEDULES AND DETAILS	

SHEET NO. 6C1
PAGE NO. 53

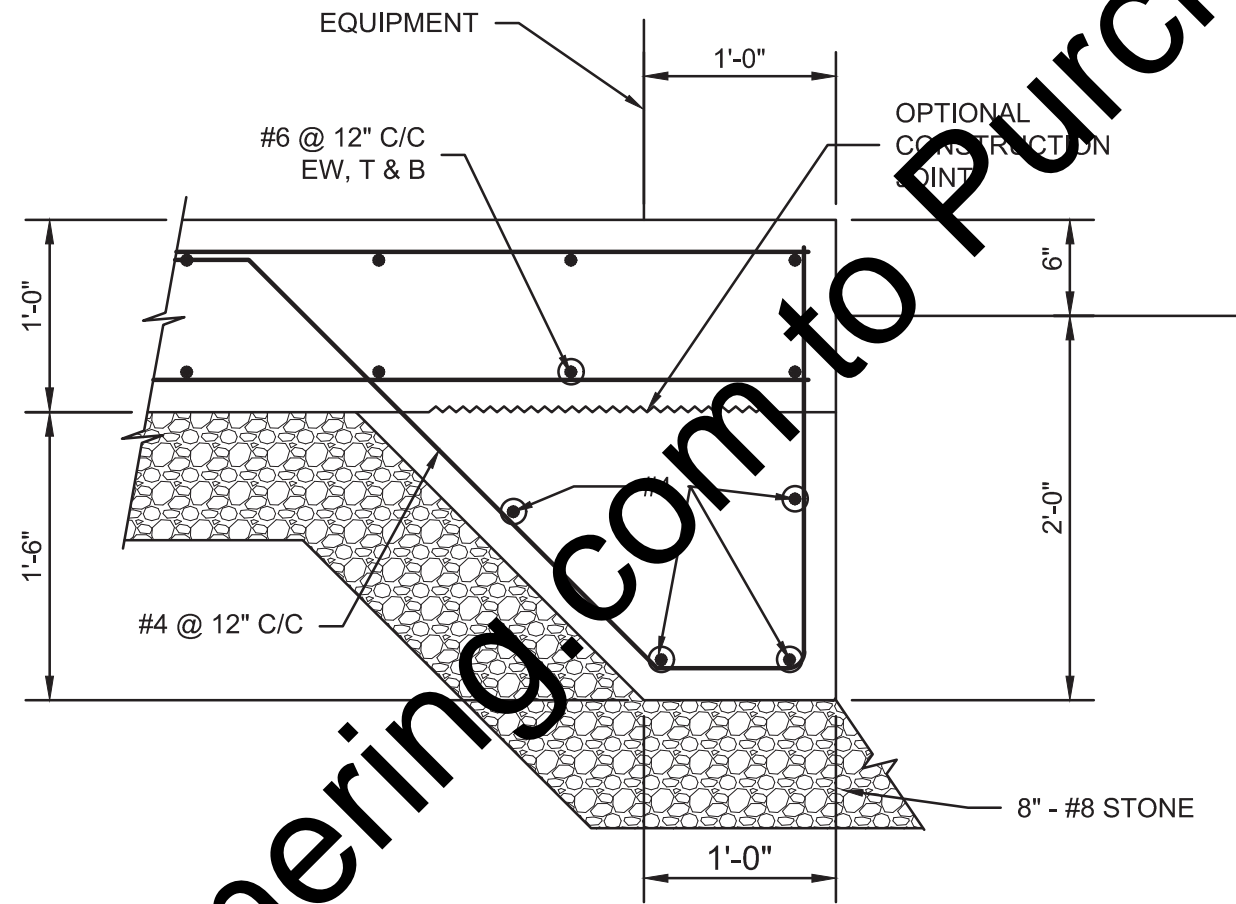


1 CONCRETE JOINT
SCALE: 1 1/2" = 1'-0"

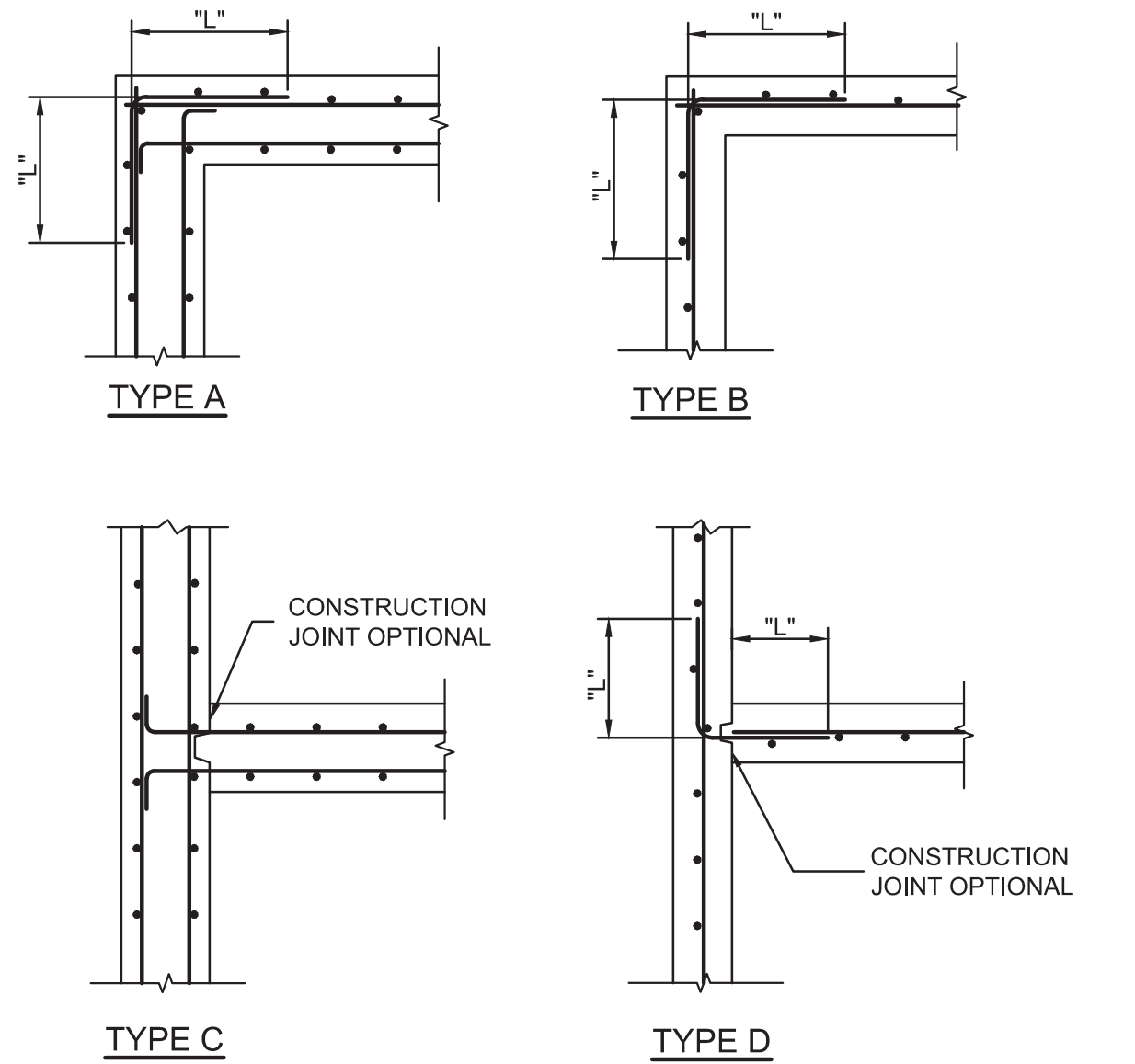


- NOTES:
- PROVIDE HALF THE VERTICAL REINF. INTERRUPTED BY OPENING ON EA. SIDE OF OPENING. DOWEL TO FOUNDATION AND EXTEND TO TOP OF WALL. (TYP. FOR E.F.)
 - PROVIDE HALF THE HORIZONTAL REINF. INTERRUPTED BY OPENING ON TOP AND BOTTOM OF OPENING. (TYP. FOR E.F.)
 - FOR CIRCULAR OPENINGS, DIAGONAL BARS ARE TO BE LOCATED 2" CLEAR OF OPENING.

2 CONCRETE WALL OPENING
SCALE: 1/2" = 1'-0"

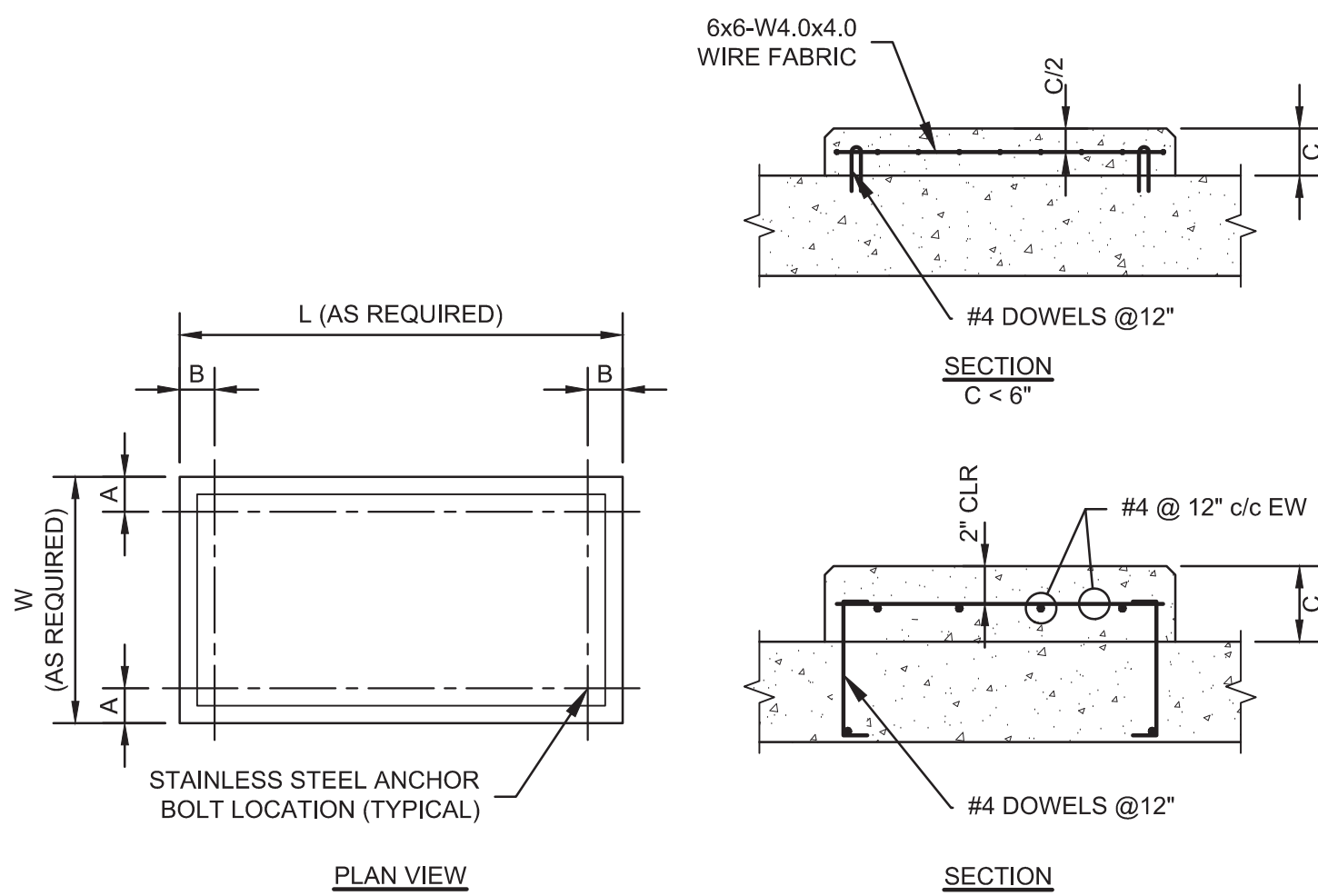


3 EXTERIOR EQUIPMENT FOUNDATION
SCALE: 1" = 1'-0"



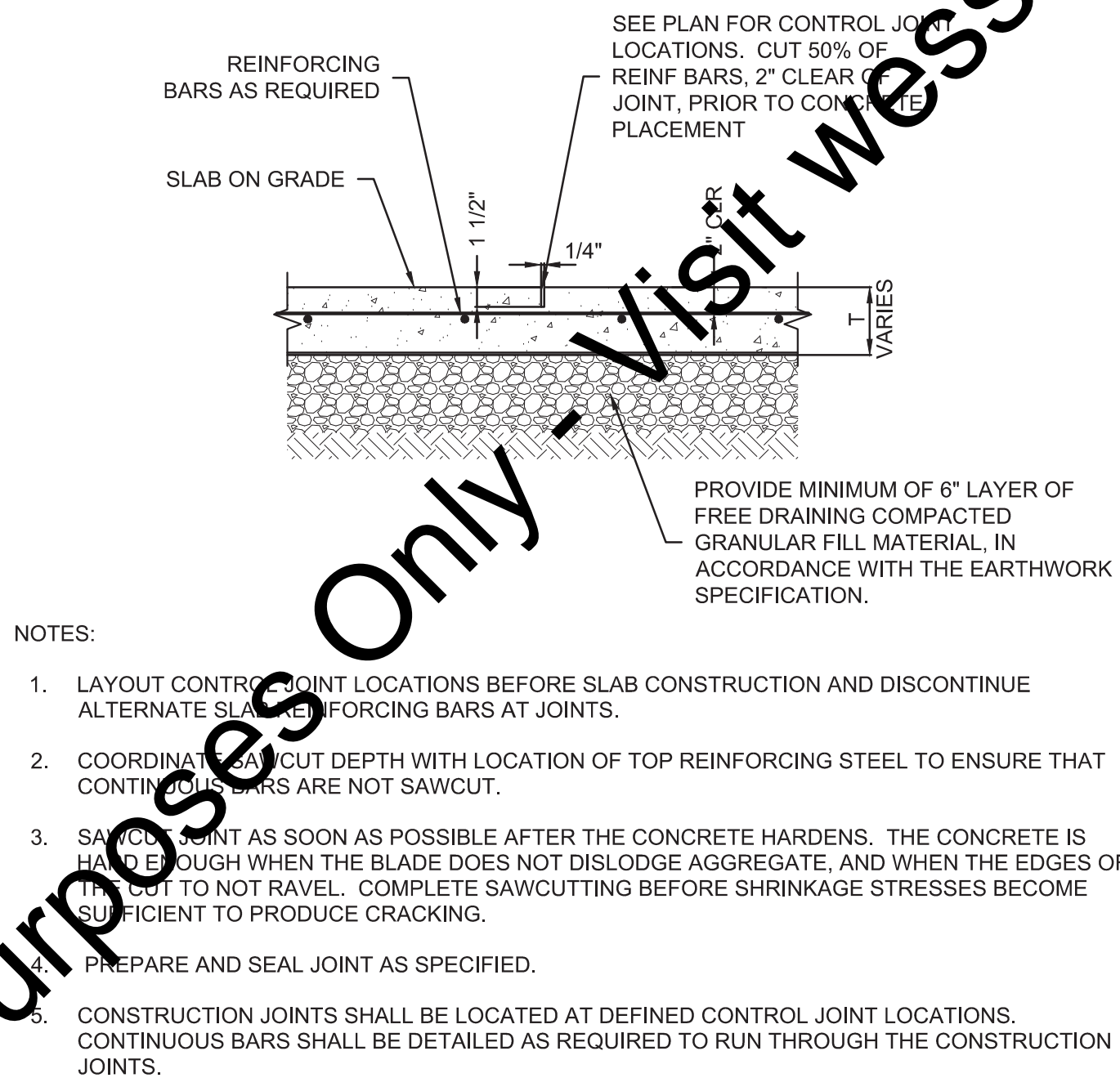
- NOTE:
- L = TENSION LAP SPLICE - SEE CONCRETE REINFORCING TENSION LAP TABLE.
 - WATERSTOPS ARE REQUIRED FOR WALLS AND SLABS THAT RETAIN FLUID.

4 HORIZ. REINFORCING CORNER
SCALE: 1/2" = 1'-0"



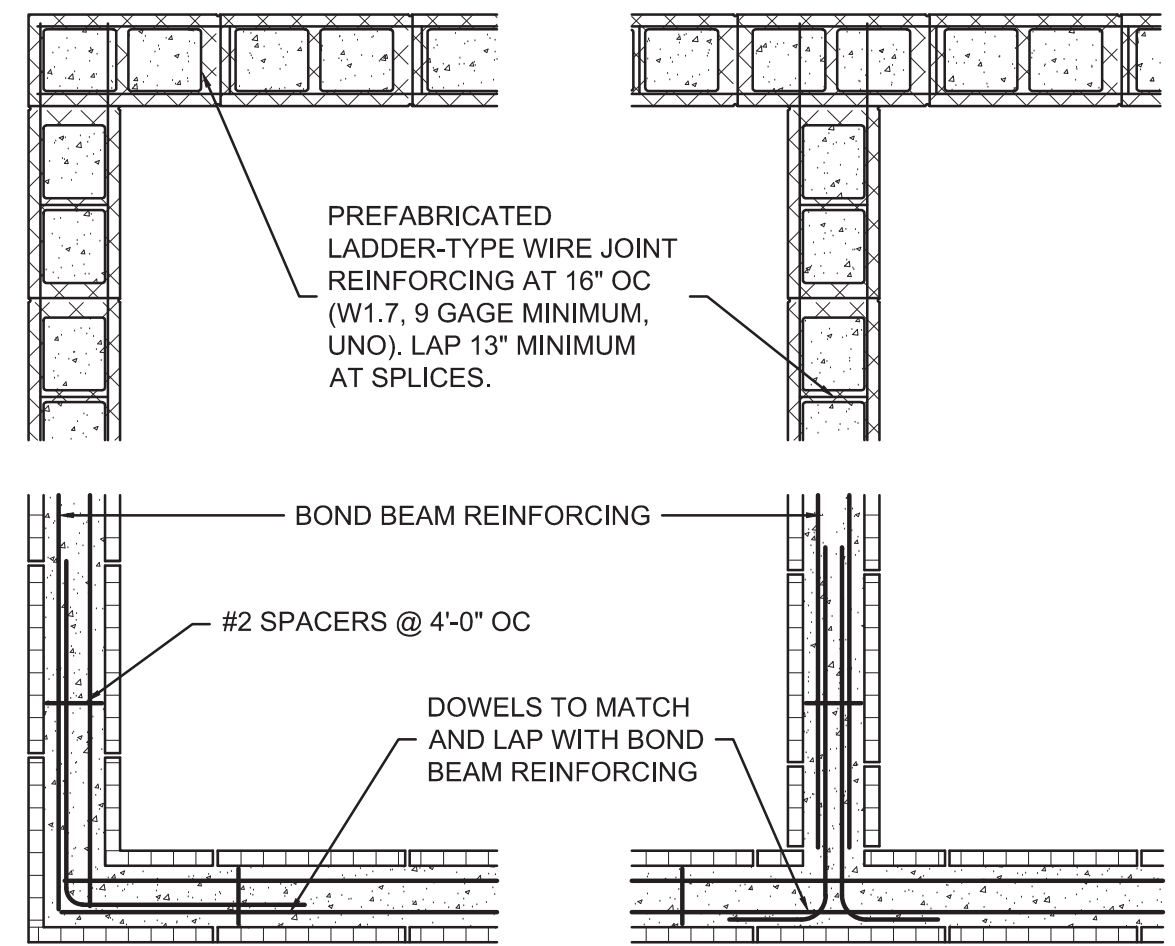
- NOTE:
- DIMENSIONS 'A' & 'B' SHALL BE AS REQ'D BY THE EQUIPMENT, BUT NOT LESS THAN 6". EQUIPMENT PAD HEIGHT SHALL BE AS SHOWN ON THE PLANS OR AS REQUIRED TO SET THE EQUIPMENT AT THE REQUIRED ELEVATION, BUT NOT LESS THAN 4".

5 INTERIOR EQUIP. BASE
SCALE: 1" = 1'-0"



- NOTES:
- LAYOUT CONTROL JOINT LOCATIONS BEFORE SLAB CONSTRUCTION AND DISCONTINUE ALTERNATE SLAB REINFORCING BARS AT JOINTS.
 - COORDINATE SAWCUT DEPTH WITH LOCATION OF TOP REINFORCING STEEL TO ENSURE THAT CONTINUOUS BARS ARE NOT SAWCUT.
 - SAWCUT JOINT AS SOON AS POSSIBLE AFTER THE CONCRETE HARDENS. THE CONCRETE IS HARD ENOUGH WHEN THE BLADE DOES NOT DISLODGE AGGREGATE, AND WHEN THE EDGES OF THE CUT DO NOT RAVEL. COMPLETE SAWCUTTING BEFORE SHRINKAGE STRESSES BECOME SUFFICIENT TO PRODUCE CRACKING.
 - PREPARE AND SEAL JOINT AS SPECIFIED.
 - CONSTRUCTION JOINTS SHALL BE LOCATED AT DEFINED CONTROL JOINT LOCATIONS. CONTINUOUS BARS SHALL BE DETAILED AS REQUIRED TO RUN THROUGH THE CONSTRUCTION JOINTS.

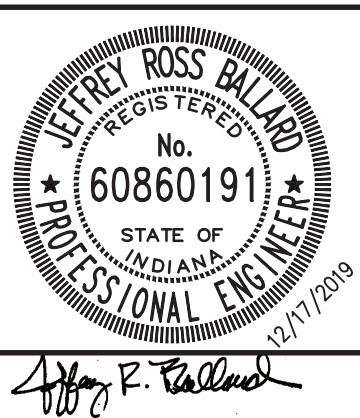
6 REINFORCED SLAB ON GRADE
SCALE: 1" = 1'-0"



- NOTE:
- PROVIDE MASONRY WALL REINFORCING TENSION LAP SPLICE FOR ALL BOND BEAM REINFORCING.

7 CMU WALL HORIZONTAL REINFORCING
SCALE: 3/4" = 1'-0"

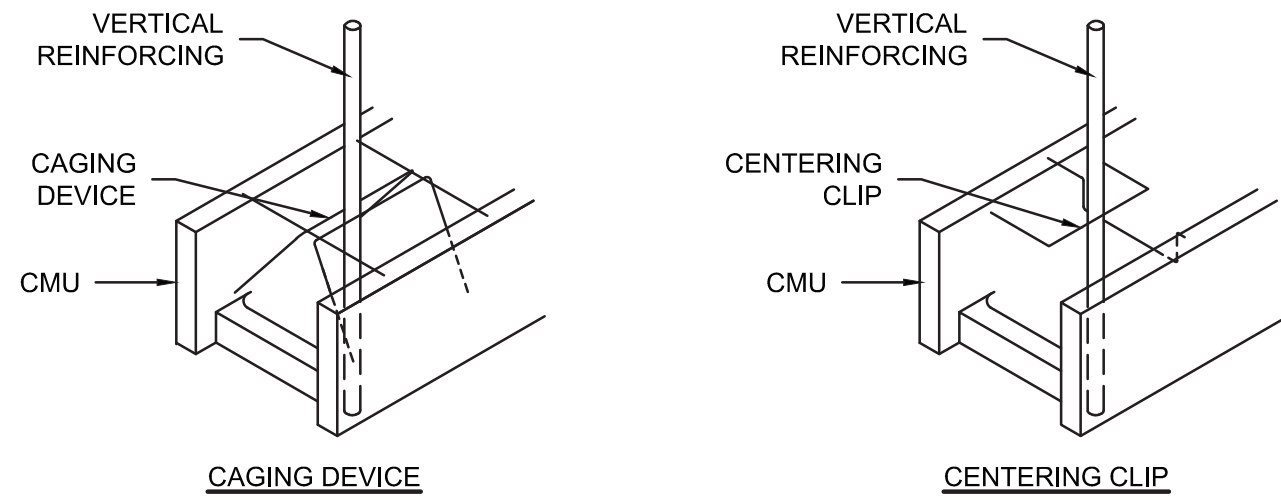
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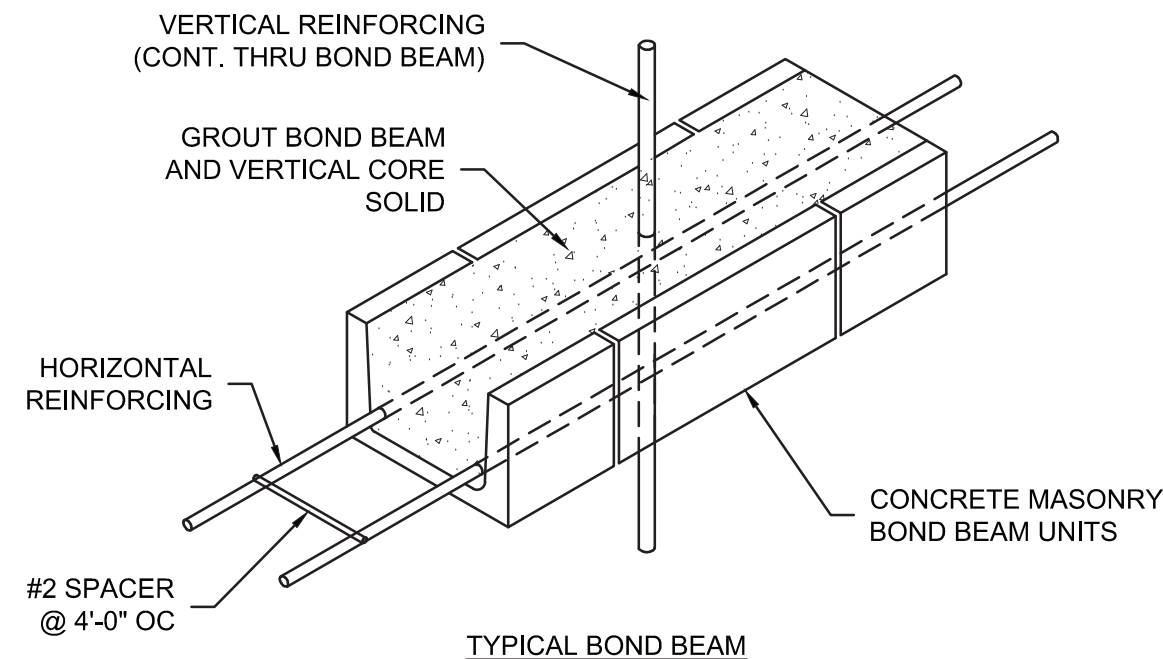
WATER SYSTEM IMPROVEMENTS
TOWN OF MONROE, INDIANA
STRUCTURAL STANDARD DETAILS

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6S1
PROJECT NO.
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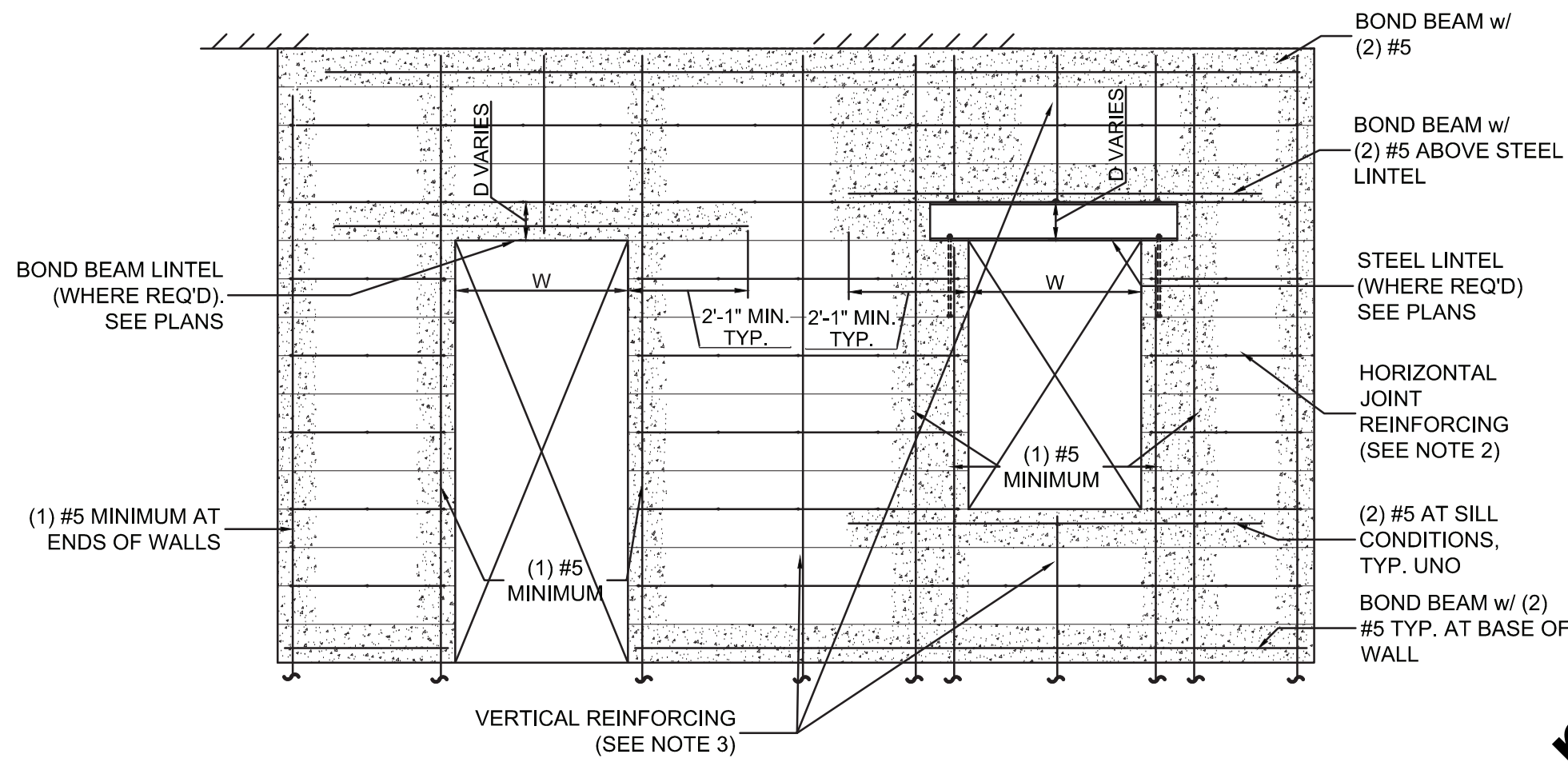


TYPICAL VERTICAL REINFORCING



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

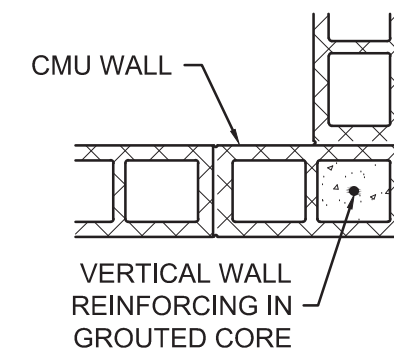
8 CMU WALL REINFORCING SUPPORT
SCALE: 1" = 1'-0"



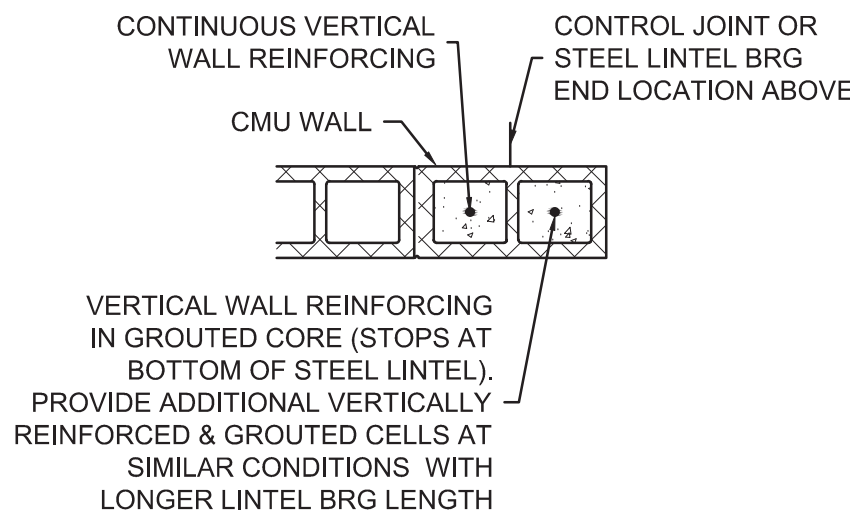
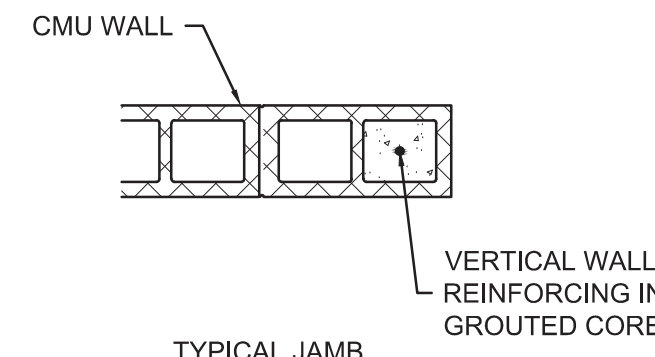
STRUCTURAL MASONRY WALL NOTES:

1. DETAIL APPLIES TO ALL STRUCTURAL CMU WALLS.
2. **HORIZONTAL JOINT REINFORCING:** PROVIDE W1.7 (9 GAGE) GALVANIZED LADDER-TYPE HORIZONTAL JOINT REINFORCEMENT AT 16" OC, UNO. LAP SPLICE HORIZONTAL JOINT REINFORCING 75 DIAMETERS OF SIDE RODS OR 13 INCHES MINIMUM, UNO.
3. **VERTICAL REINFORCING:** PROVIDE VERTICAL REINFORCING AS NOTED ON PLANS AND STRUCTURAL WALL ELEVATIONS, AND AS INDICATED IN TYPICAL STRUCTURAL CMU WALL DETAIL, AND NOT LESS THAN #5 AT 4'-0" MINIMUM REINFORCING NOTED SHALL BE INCREASED WHERE REQUIRED BY TYPICAL SHEAR WALL REINFORCING DETAILS OR OTHER DETAIL REQUIREMENTS. LAP SPLICE ALL REINFORCING PER MASONRY WALL REINFORCING LAP SPLICE TABLE. VERTICAL REINFORCING DOWELS SHALL BE CAST INTO THE FOUNDATION AND DETAILED TO LAP SPLICE WITH THE FOUNDATION VERTICAL REINFORCING OR DEVELOPED WITH A STANDARD HOOK, UNO.
4. **BOND BEAMS:** PROVIDE HORIZONTAL BOND BEAMS WITH 2 #5'S CONTINUOUS AT TOPS OF WALLS AND AT ELEVATIONS OF FLOOR & ROOF FRAMING BEARING AND DECK CONNECTIONS. BOND BEAMS SHALL BE CONTINUOUS THROUGH CONTROL JOINTS AT TOPS OF WALLS AND AT FLOOR OR ROOF BEARING AND DECK CONNECTION COURSES.


9 STRUCTURAL CMU WALL
SCALE: NONE

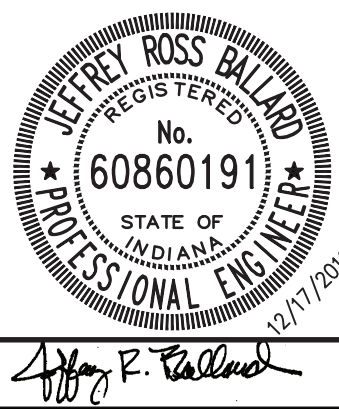


TYPICAL CORNER



10 VERTICAL REINF CMU WALL CONDITIONS
SCALE: 3/4" = 1'-0"

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WATER SYSTEM IMPROVEMENTS
TOWN OF MONROE, INDIANA
STRUCTURAL STANDARD DETAILS

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PAGE NO.
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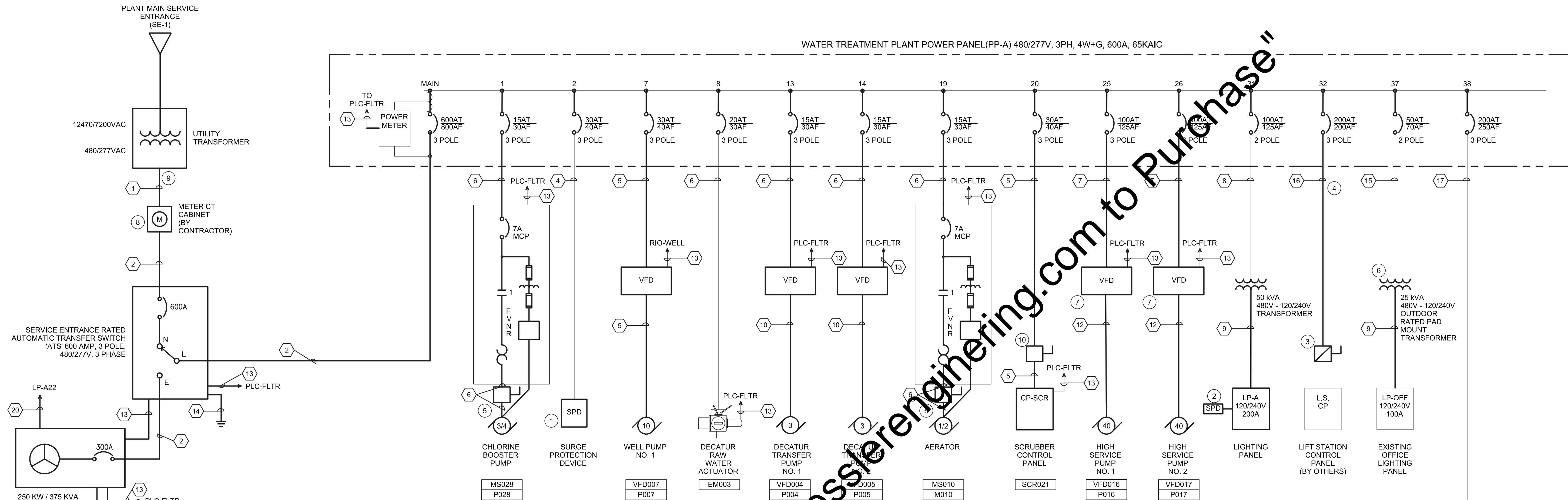
CONDUIT AND WIRE SCHEDULE:

- 1 2 - (4"C, WIRE BY UTILITY)
- 2 2 - (4"C, 3#350, #350N, #2/0G)
- 3 2 - (3"C, 3#2/0, #2/0N, #2G)
- 4 1"C, 3#10, #10N, #10G
- 5 1"C, 3#10, #10G
- 6 1"C, 3#12, #12G
- 7 2"C, 3#4, #8G
- 8 2"C, 2#2, #8G
- 9 2"C, 2#4/0, #4/0N, #2G
- 10 2"C, 3#12, #12G (VFD CABLE)
- 11 SPARE
- 12 3"C, 3#4, #4G (VFD CABLE)
- 13 SEE CONTROL ONE LINE
- 14 2"C, #3/0 BARE COPPER GROUND
- 15 2"C, 2#4, #10G
- 16 4"C, 3#6, #6N, #6G AND 1-4"C SPARE
- 17 3"C, 3#4/0, #6G
- 18 3"C, 2#2, #2N, #6G
- 19 1"C, 2#10, #10G
- 20 2"C, 2#6, #6N, #10G

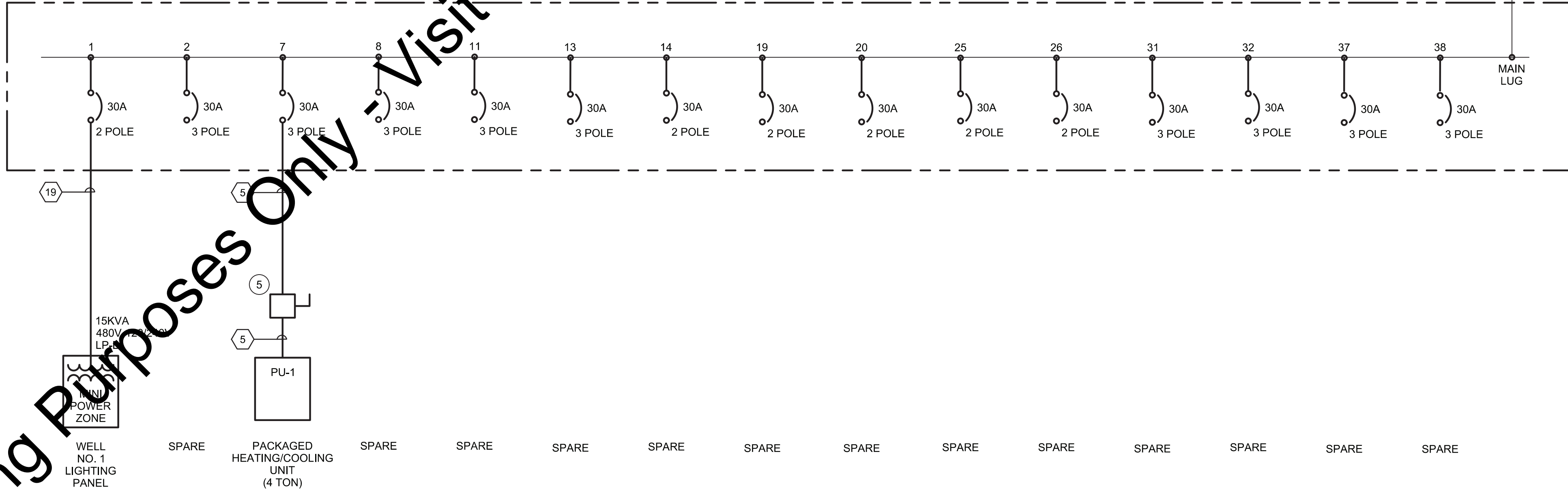
KEYED NOTES:

- 1 PROVIDE A SURGE PROTECTION DEVICE AS A CURRENT TECHNOLOGIES TG-100-480-3DG OR EMERSON EQUIVALENT.
- 2 PROVIDE A SURGE PROTECTION DEVICE AS A CURRENT TECHNOLOGIES CG-50-480-3DG OR EMERSON EQUIVALENT.
- 3 EXISTING DISCONNECT SWITCH. APPROXIMATELY 700 FEET OF CONDUCTORS. COORDINATE LOCATION WITH LIFT STATION CONTRACTOR.
- 4 APPROXIMATELY 700FT OF CONDUIT AND WIRE TO NEW LIFT STATION THAT IS OUTSIDE OF THIS CONTRACT. CONDUIT, WIRE, AND DISCONNECT SWITCH SHALL BE PROVIDED UNDER THIS CONTRACT.
- 5 30A, 480V, 3PH, NEMA 4X SST, NFSS.
- 6 MOUNT TRANSFORMER ON NEW EQUIPMENT PAD OUTDOORS. RE-FEED EXISTING LIGHTING PANEL.
- 7 DRIVE SHALL BE ULTRA LOW HARMONIC AS DESCRIBED IN THE SPECIFICATIONS.
- 8 CONTRACTOR TO PROVIDE AND MOUNT CT CABINET PER ELECTRIC UTILITY REQUIREMENTS. ELECTRIC UTILITY TO PROVIDE METER BASE.
- 9 COORDINATE FINAL POLE MOUNT TRANSFORMER LOCATION ESTIMATE 60 FEET OF CONDUIT FOR BIDDING PURPOSES.
- 10 60A, 480V, 3PH, NEMA 4X SST, NFSS.

WATER TREATMENT PLANT POWER PANEL (PP-A) 480/277V, 3PH, 4W+G, 600A, 65KAIC



WATER TREATMENT PLANT POWER PANEL (PP-B), 480V, 3PH, 3W+G, 200A, MLO, 65KAIC

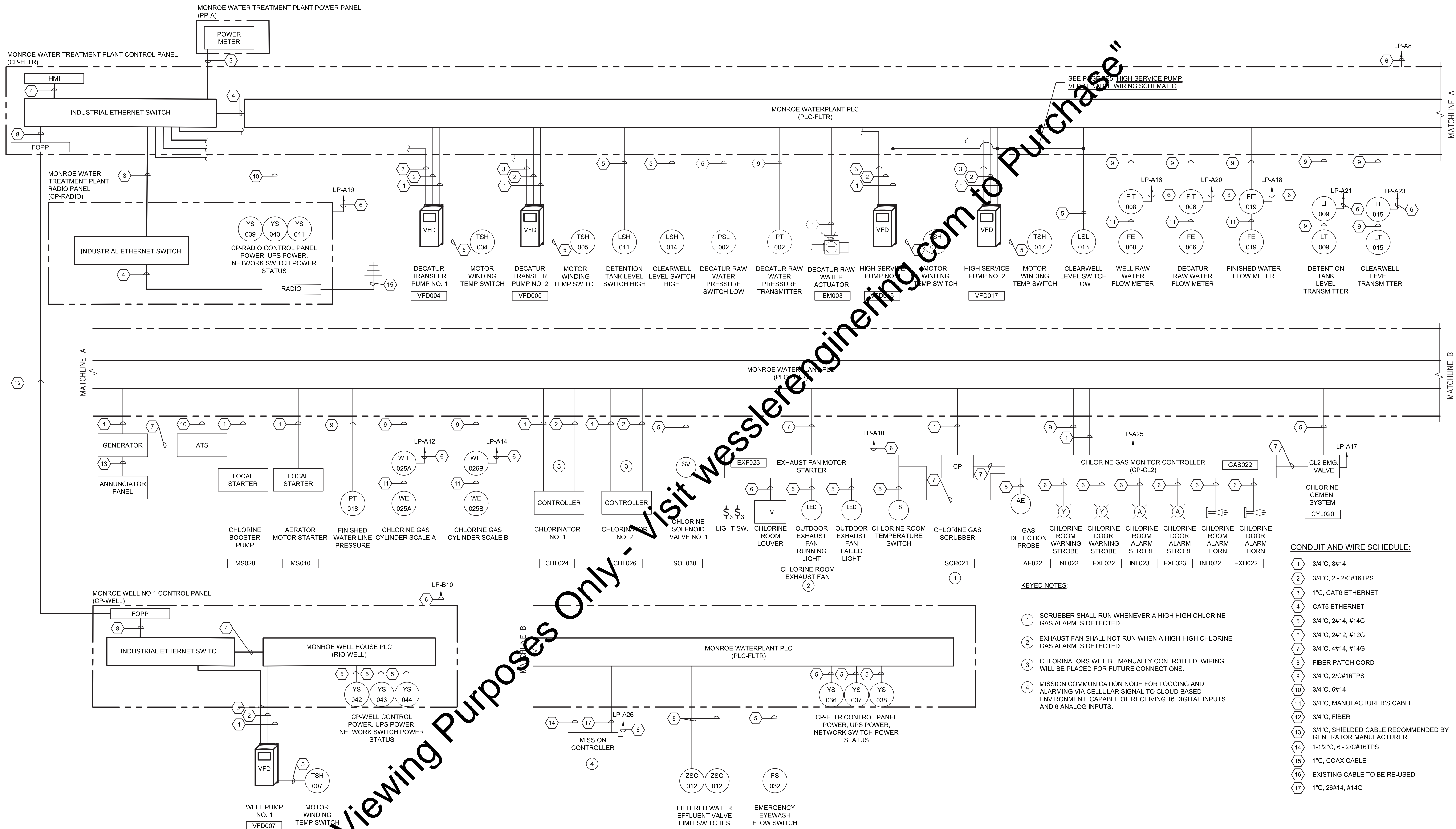


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	PROJECT NUMBER	214319-04-001		

WATER SYSTEM IMPROVEMENTS
TOWN OF MONROE, INDIANA
ELECTRICAL ONE-LINE DIAGRAM

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CONDUIT AND WIRE SCHEDULE:	
1	3/4" C, 8#14
2	3/4" C, 2 - 2/C#16TPS
3	1" C, CAT6 ETHERNET
4	CAT6 ETHERNET
5	3/4" C, 2#14, #14G
6	3/4" C, 2#12, #12G
7	3/4" C, 4#14, #14G
8	FIBER PATCH CORD
9	3/4" C, 2/C#16TPS
10	3/4" C, 6#14
11	3/4" C, MANUFACTURER'S CABLE
12	3/4" C, FIBER
13	3/4" C, SHIELDED CABLE RECOMMENDED BY GENERATOR MANUFACTURER
14	1-1/2" C, 6 - 2/C#16TPS
15	1" C, COAX CABLE
16	EXISTING CABLE TO BE RE-USED
17	1" C, 26#14, #14G

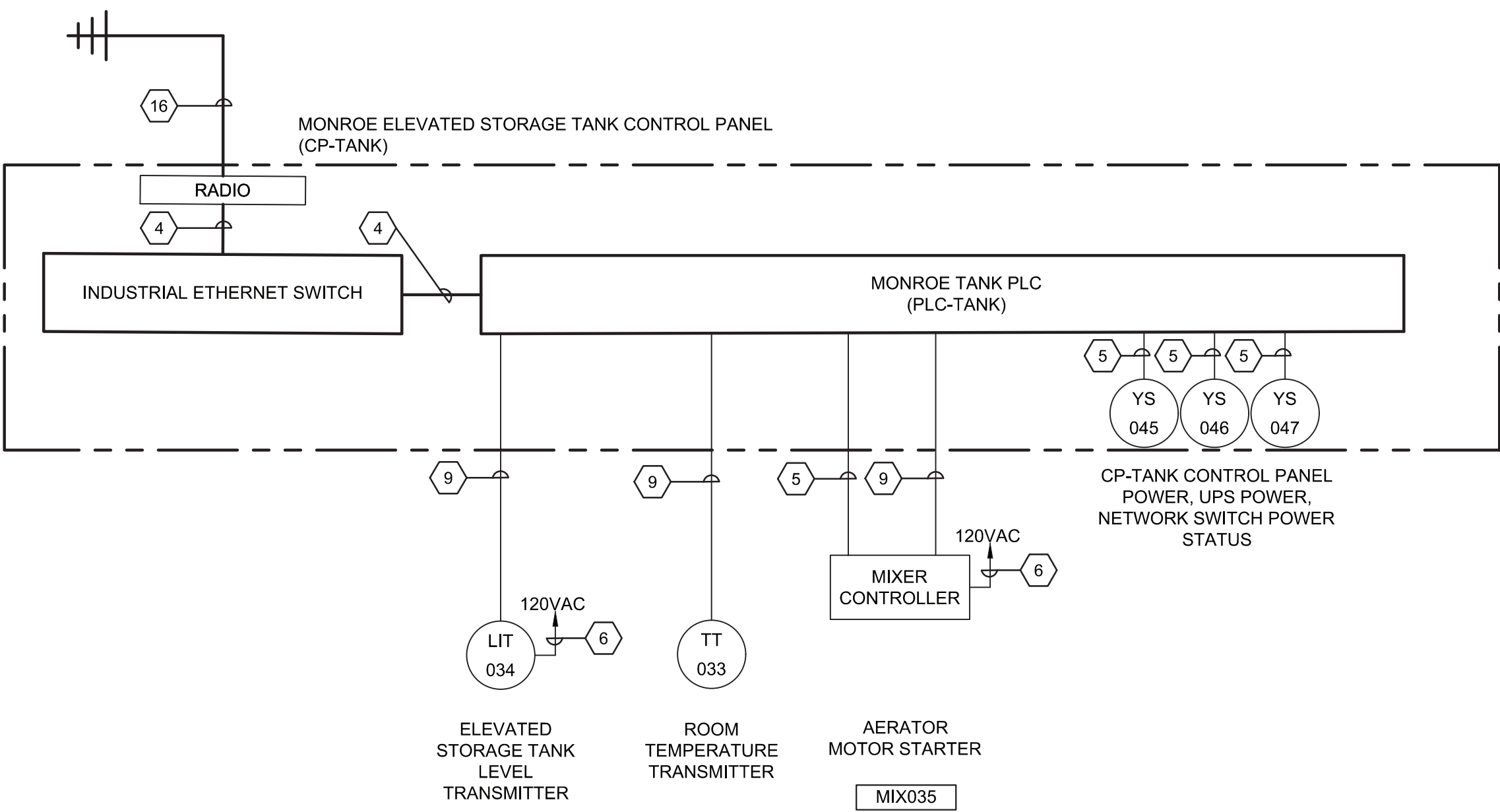
- KEYED NOTES:**
- SCRUBBER SHALL RUN WHENEVER A HIGH HIGH CHLORINE GAS ALARM IS DETECTED.
 - EXHAUST FAN SHALL NOT RUN WHEN A HIGH HIGH CHLORINE GAS ALARM IS DETECTED.
 - CHLORINATORS WILL BE MANUALLY CONTROLLED. WIRING WILL BE PLACED FOR FUTURE CONNECTIONS.
 - MISSION COMMUNICATION NODE FOR LOGGING AND ALARMING VIA CELLULAR SIGNAL TO CLOUD BASED ENVIRONMENT. CAPABLE OF RECEIVING 16 DIGITAL INPUTS AND 6 ANALOG INPUTS.

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	APPROVED BY	WCM		
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WATER SYSTEM IMPROVEMENTS	
TOWN OF MONROE, INDIANA	
CONTROL ONE-LINE DIAGRAM	

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CONDUIT AND WIRE SCHEDULE:

1	3/4"C, 8#14
2	3/4"C, 2 - 2/C#16TPS
3	1"C, CAT6 ETHERNET
4	CAT6 ETHERNET
5	3/4"C, 2#14, #14G
6	3/4"C, 2#12, #12G
7	3/4"C, 4#14, #14G
8	FIBER PATCH CORD
9	3/4"C, 2/C#16TPS
10	3/4"C, 6#14
11	3/4"C, MANUFACTURER'S CABLE
12	3/4"C, FIBER
13	3/4"C, SHIELDED CABLE RECOMMENDED BY GENERATOR MANUFACTURER
14	1"C, 3 - 2/C#16TPS
15	1"C, COAX CABLE
16	EXISTING CABLE TO BE RE-USED

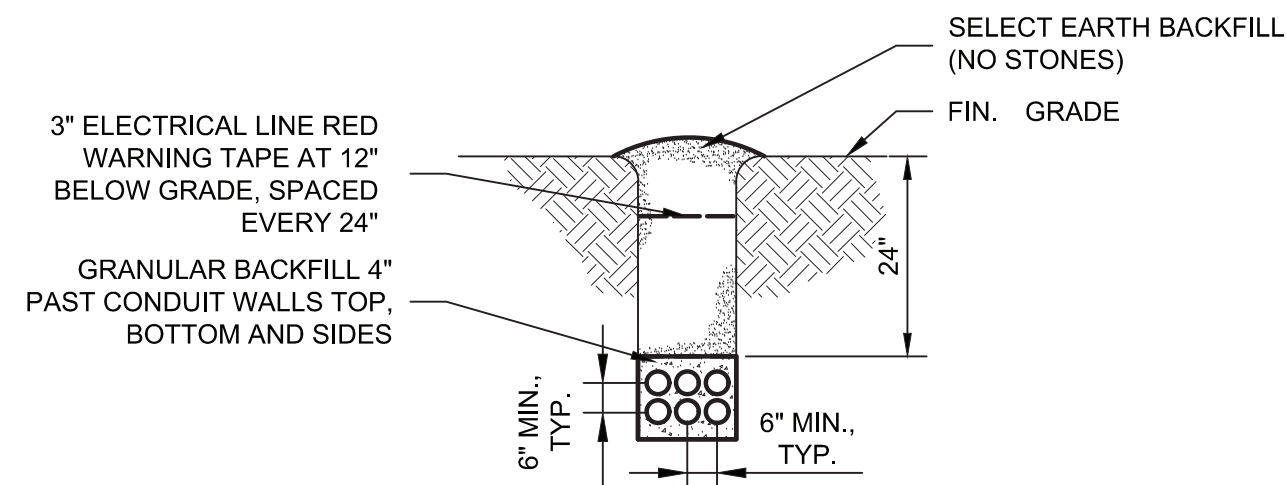
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	APPROVED BY	WCM			
	ISSUE DATE				
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	PROJECT NUMBER				
	214319-04-001				



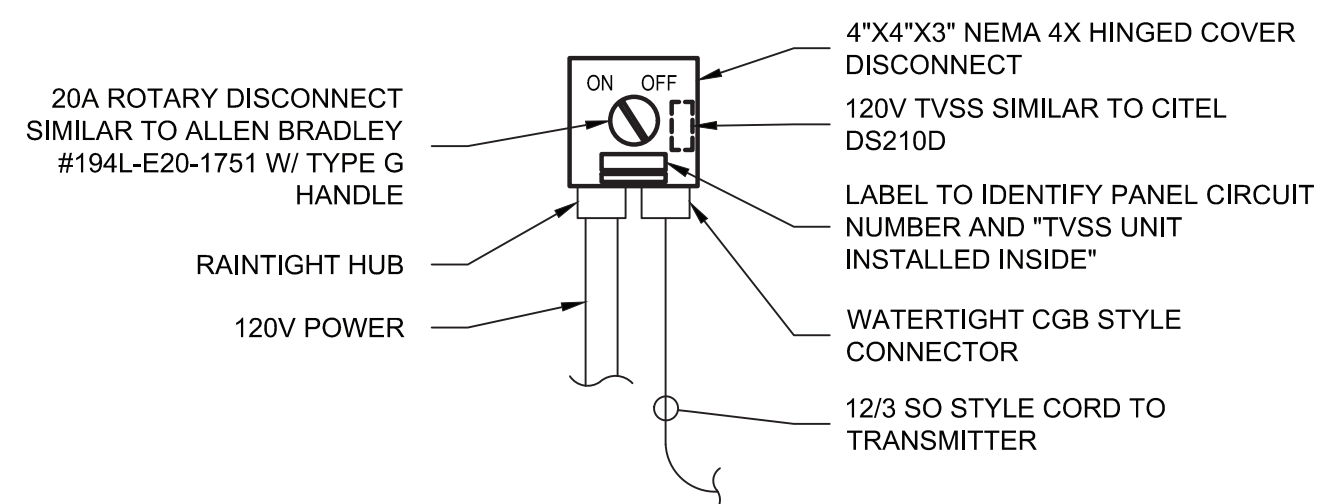
WATER SYSTEM IMPROVEMENTS	
TOWN OF MONROE, INDIANA	
CONTROL ONE-LINE DIAGRAM	

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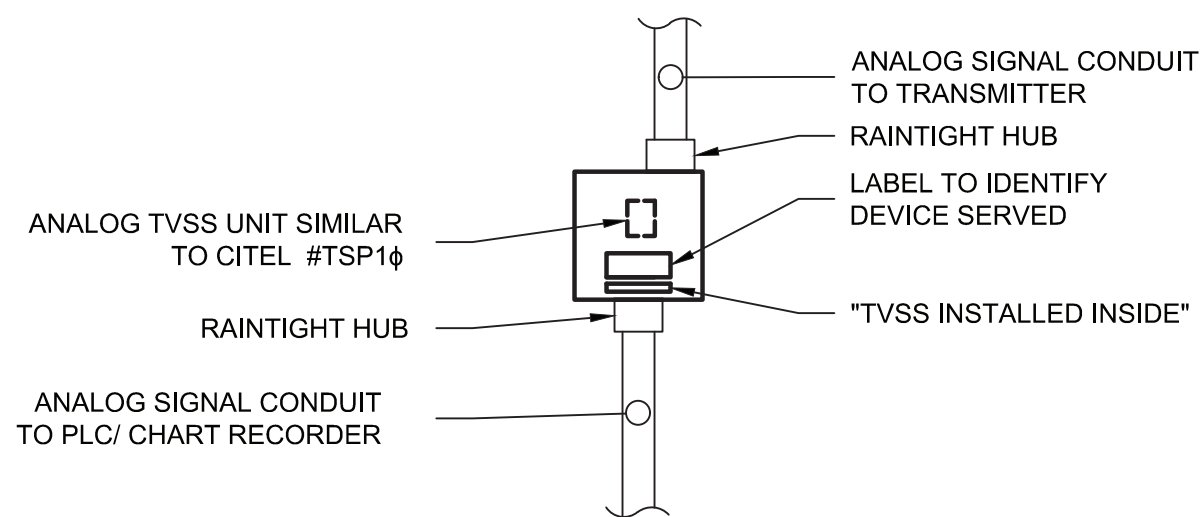
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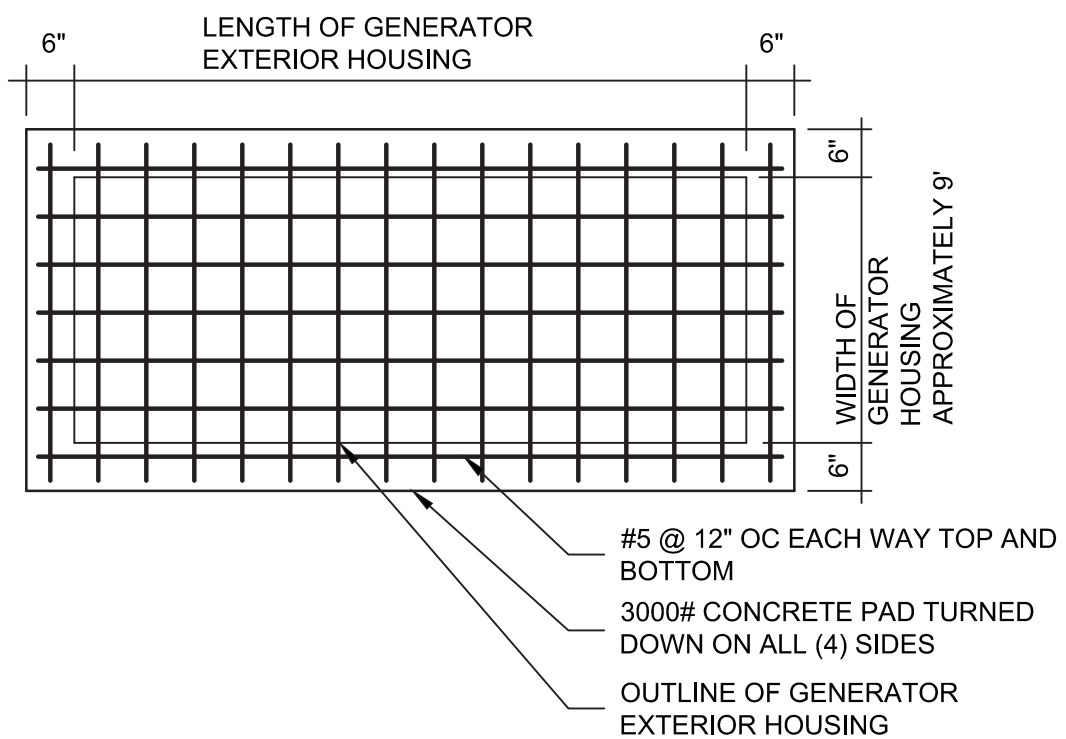
CONDUIT TRENCH



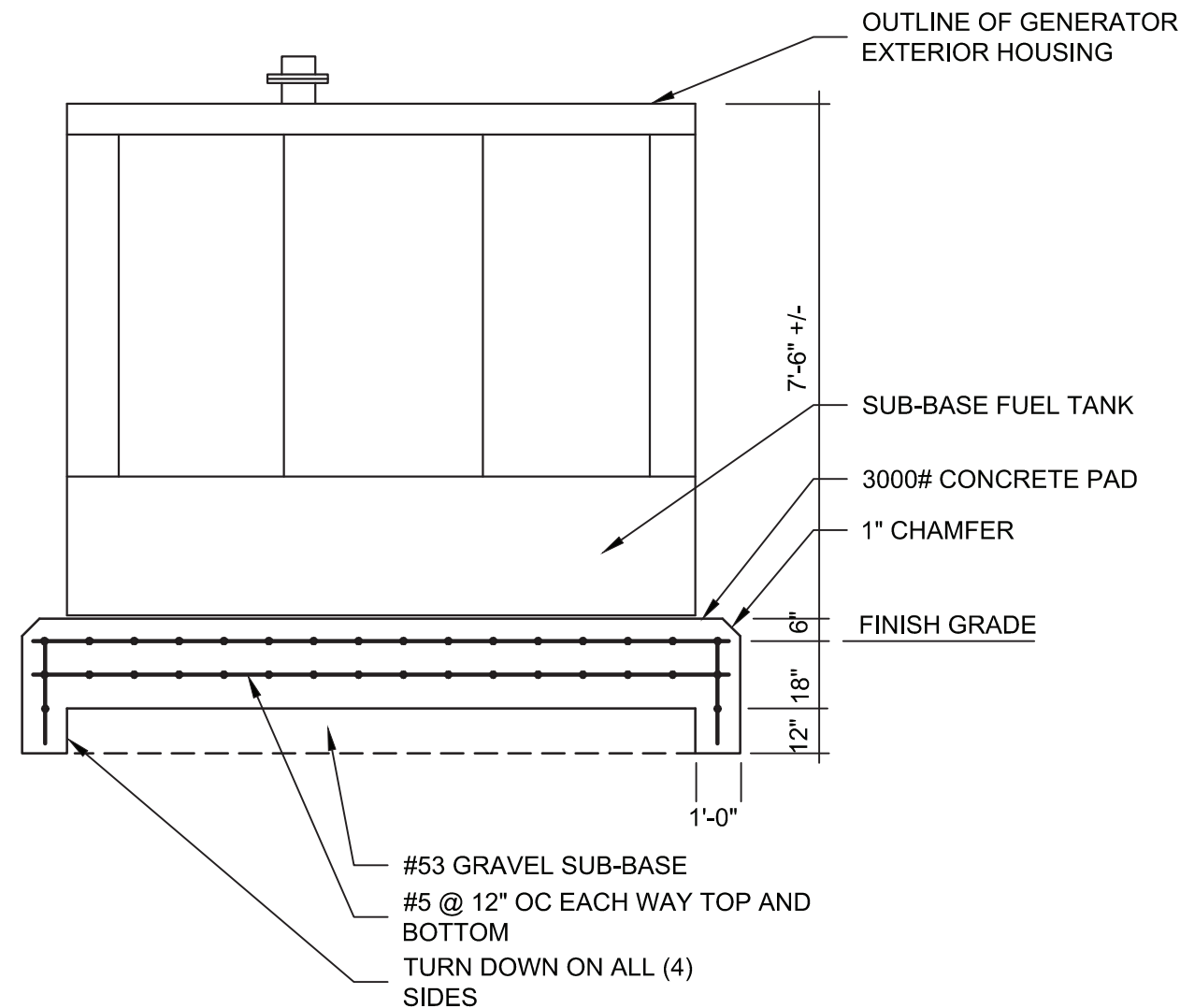
120V INSTRUMENTATION DISCONNECT AND LOCAL TVSS



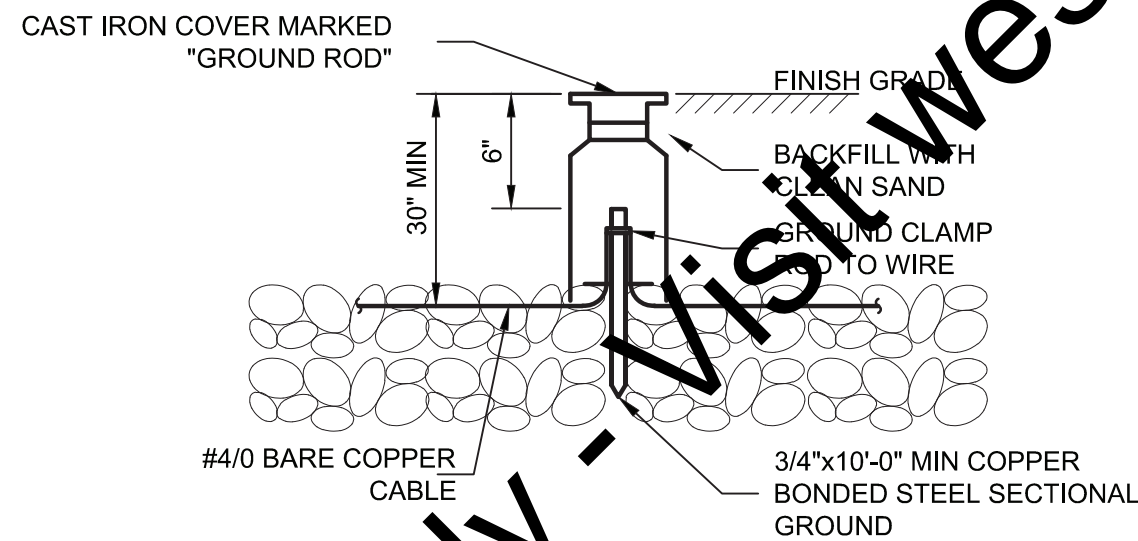
ANALOG INSTRUMENT TVSS



GENERATOR PAD PLAN VIEW

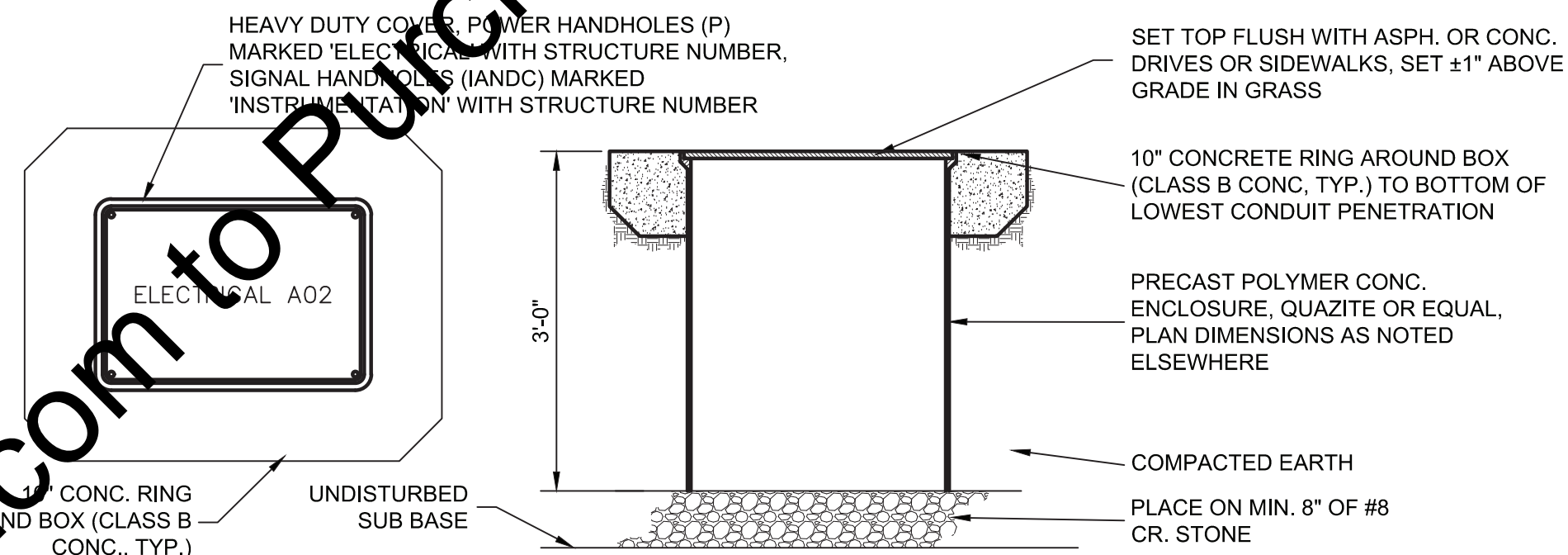


GENERATOR PAD SECTION VIEW

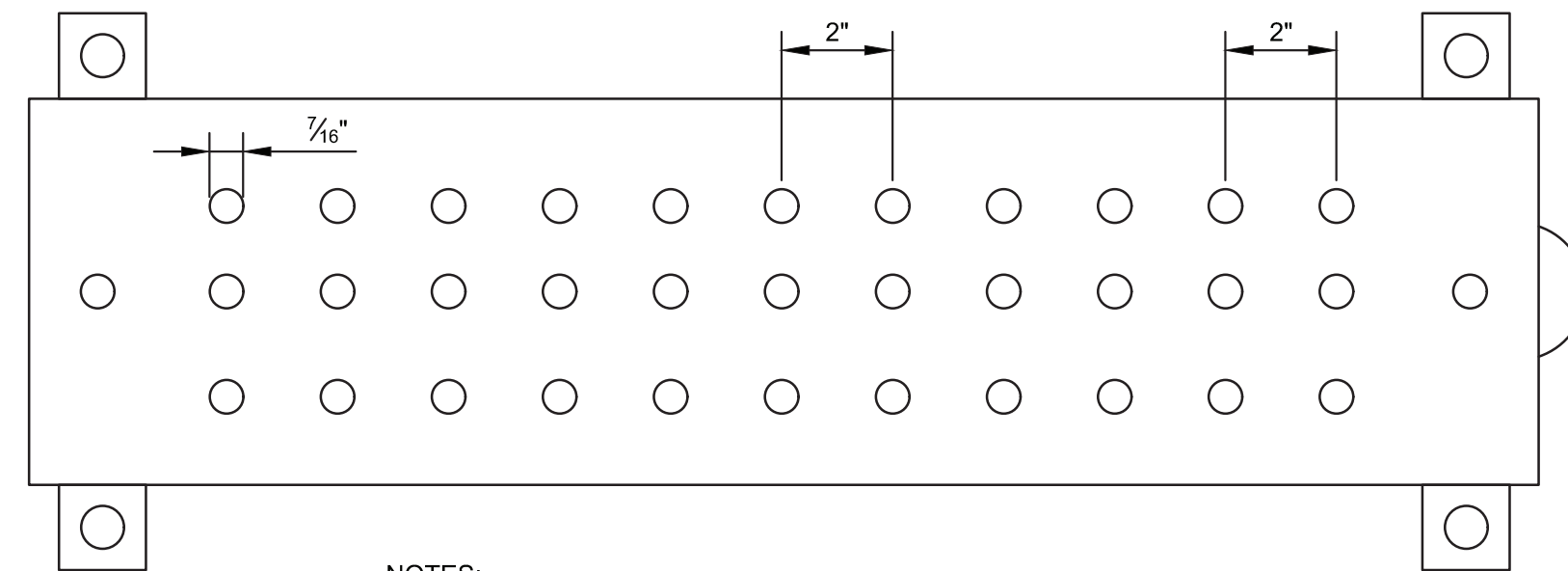


- NOTES:
- REFER TO JOB SPECIFICATION FOR MINIMUM SYSTEM RESISTANCE TO GROUND. IF THE RESISTANCE CANNOT BE MET WITH SINGLE 10'-0" RODS, ADD ADDITIONAL SECTIONS TO RODS OR ADD NEW RODS AS REQUIRED, SPACED 6'-0" TO 10'-0" FROM EXISTING RODS.
 - A METER SHALL DISPLAY ELECTRICAL CURRENT OF THE HEAT TRACE REVERACLE FOR THE DRAIN LINE.
 - INSTALLING CONTRACTOR SHALL CONTROL THE LOGO SPOT LIGHTS VIA PHOTOCCELL AND/OR TIMER.
 - ALL CONDUIT AND WIRE SHALL BE 2 #12, 1 #12 GRD UNLESS OTHERWISE NOTED.

ELECTRICAL INSTALLATION GROUND ROD ASSEMBLY



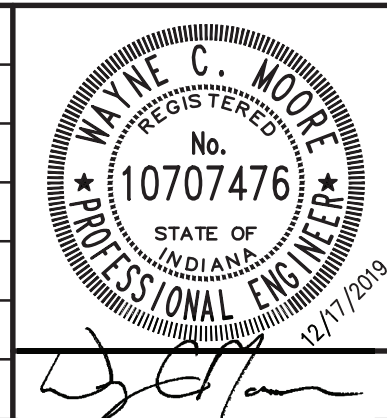
PULL BOX AND HANDHOLE (HH) INSTALLATION



- NOTES:
- PROVIDE 1/4"DEEP X 4" HIGH X 2'-0" LONG COPPER GROUND BUS BAR WITH INSULATED WALL BRACKET ASSEMBLY. ERICO EGB-A-14-4-24-CC OR APPROVED EQUAL AS SPECIFIED. PRE DRILLED NEMA BOLT CONFIGURATION AS INDICATED. PROVIDE BRASS METAL NAME TAGS ON EACH GROUNDING CABLE INDICATING IDENTIFYING TAG OF EQUIPMENT BEING GROUNDED. TERMINATE GROUNDING CABLE WITH NEMA TWO-HOLE BOLTED LUG.
 - REFER TO EQUIPMENT PLANS FOR GROUNDING CABLE SIZES, QUANTITIES AND EQUIPMENT DESCRIPTIONS.

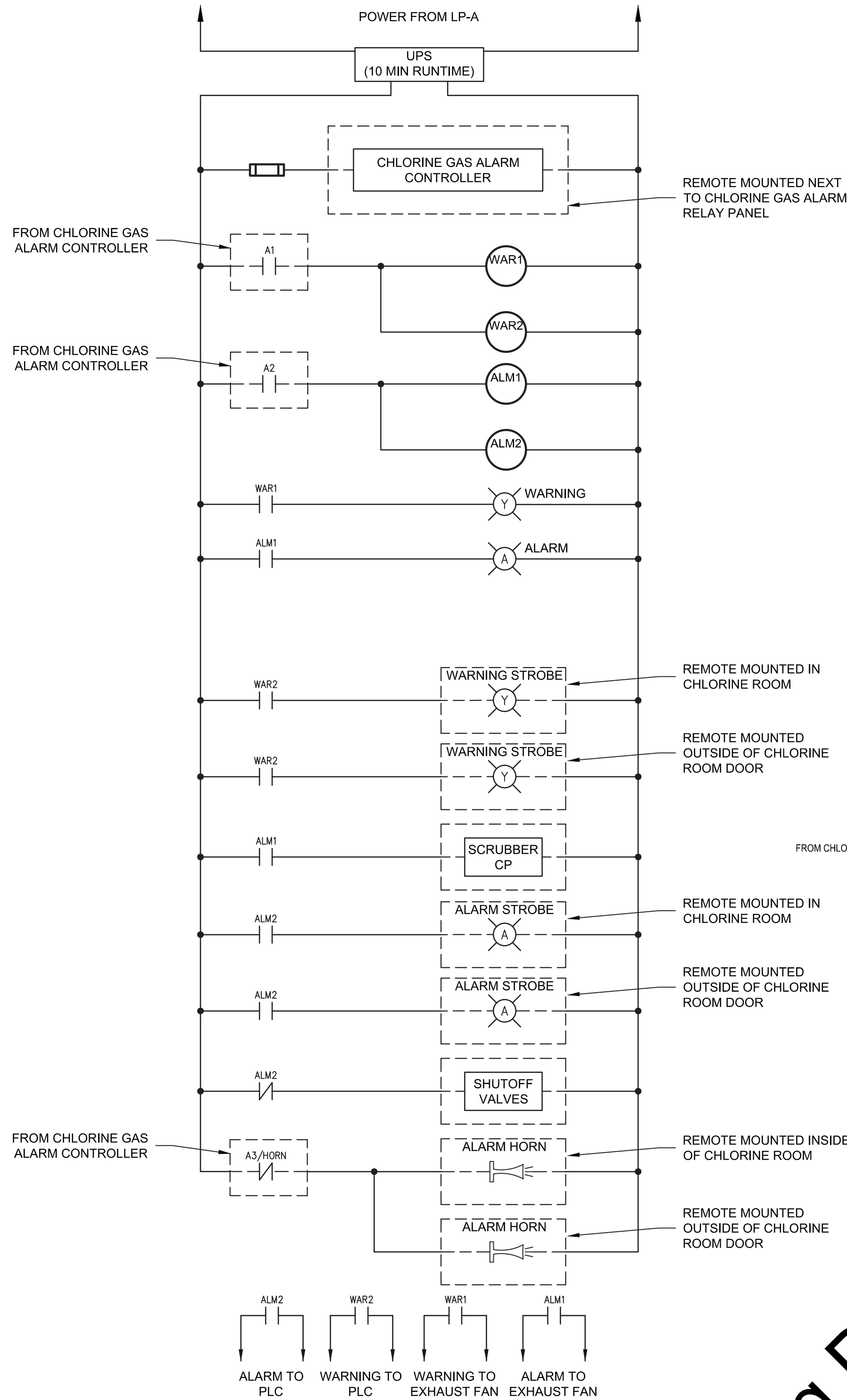
GROUND BUS BAR DETAIL

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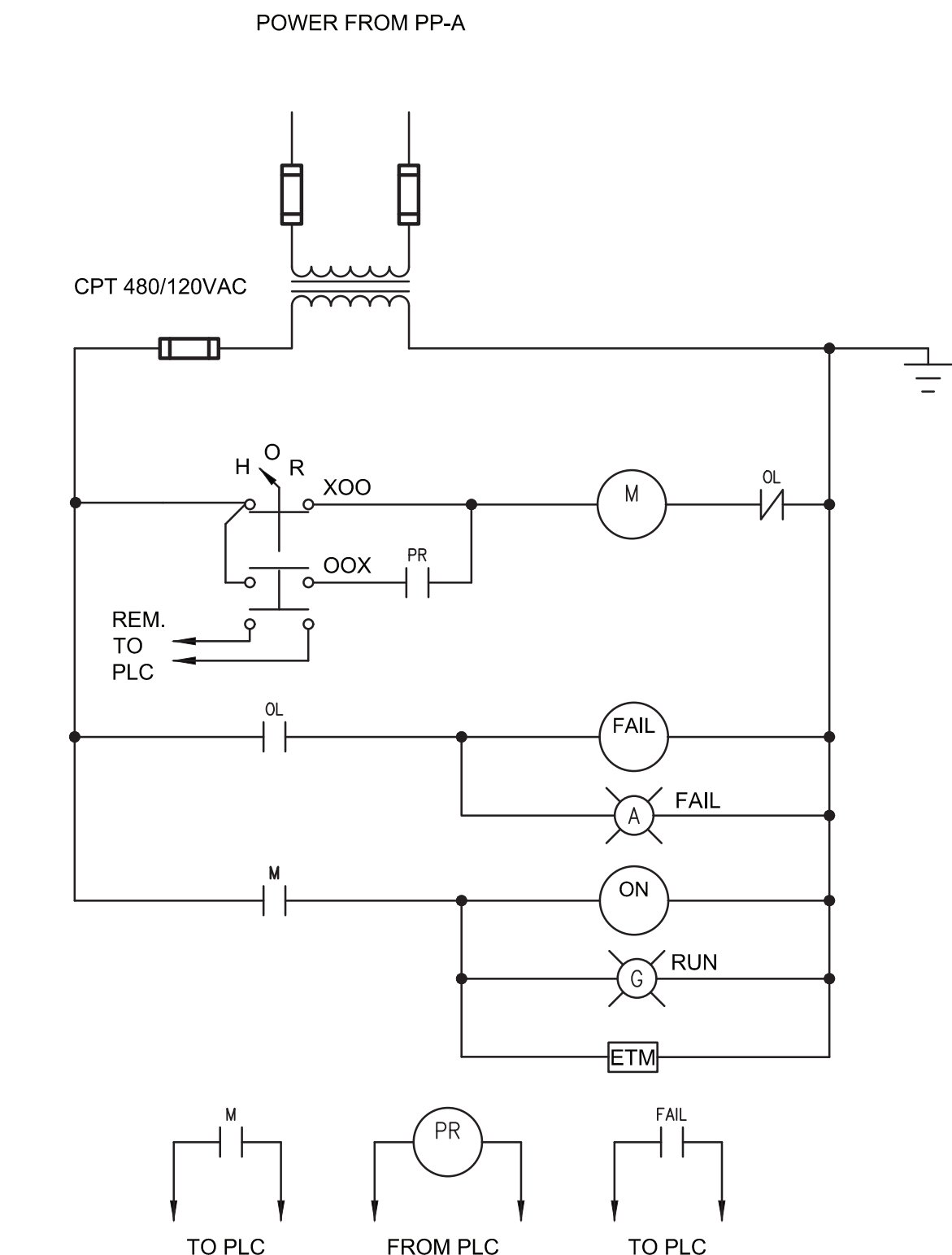


WATER SYSTEM IMPROVEMENTS
TOWN OF MONROE, INDIANA
ELECTRICAL SCHEMATICS AND DETAILS

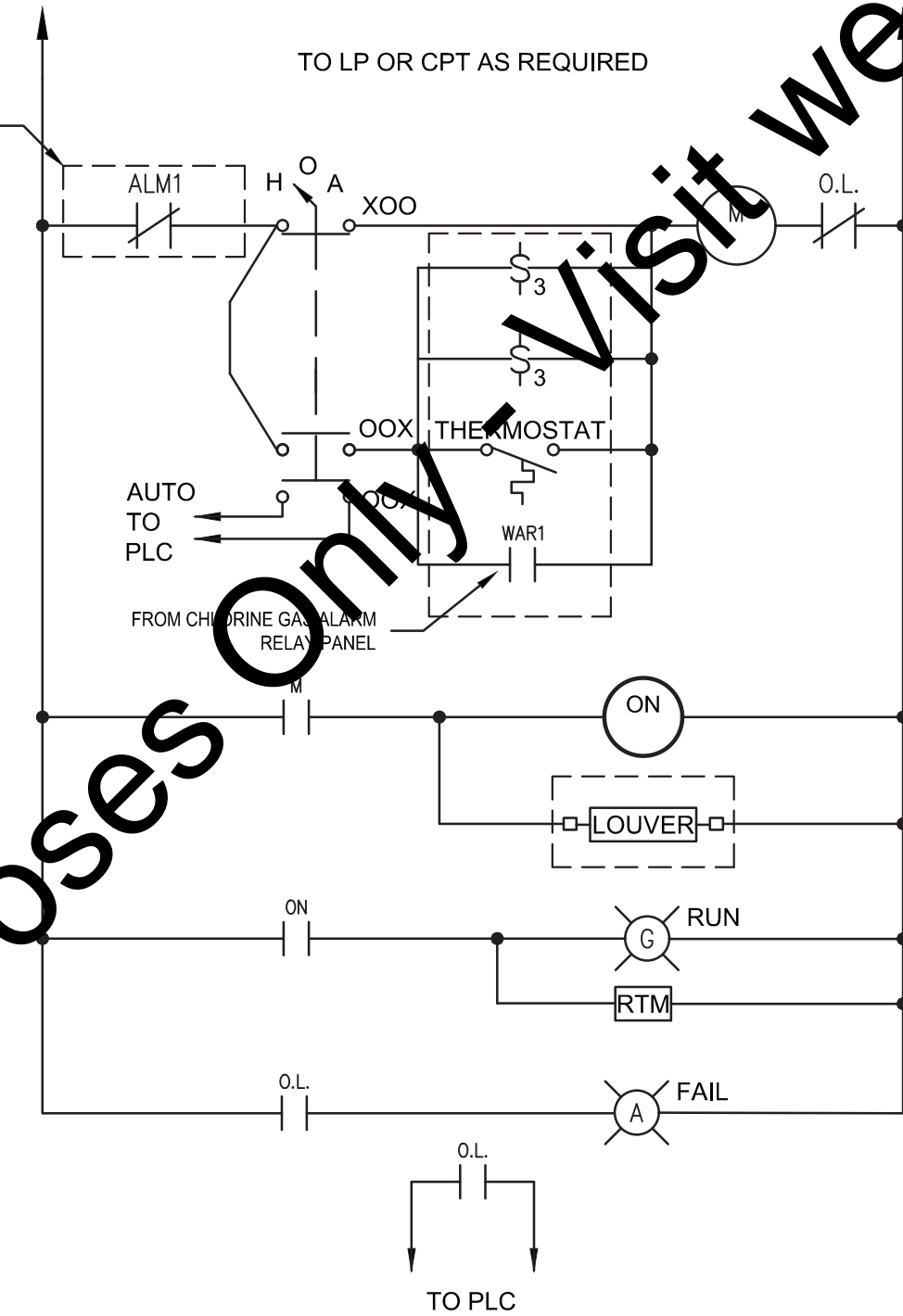
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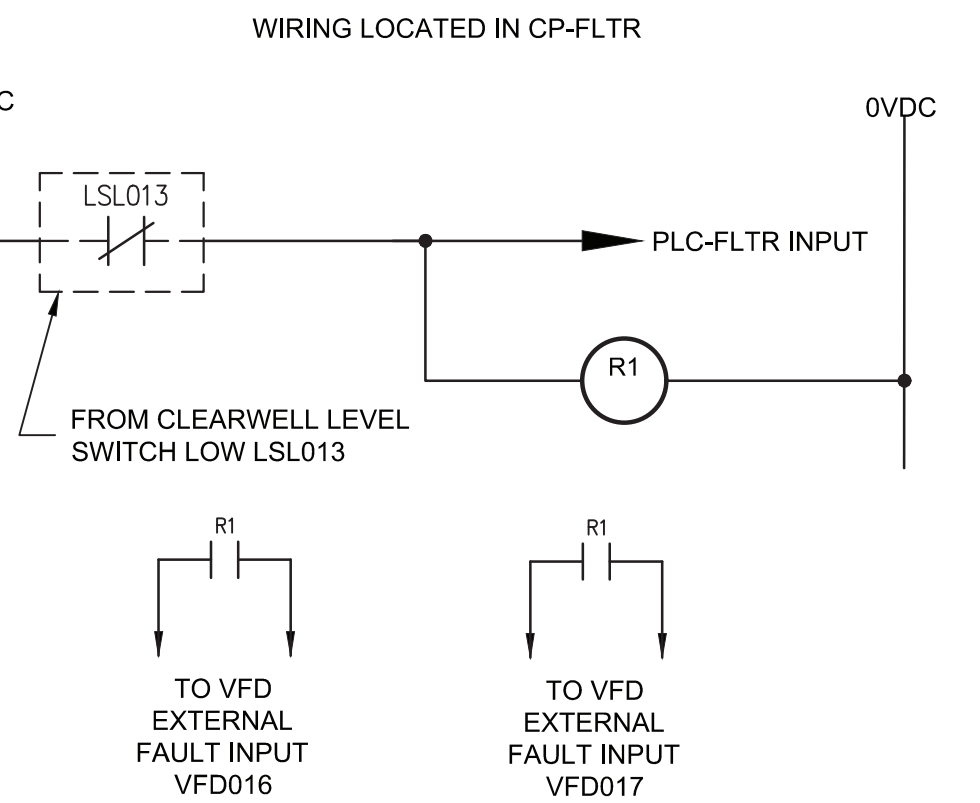
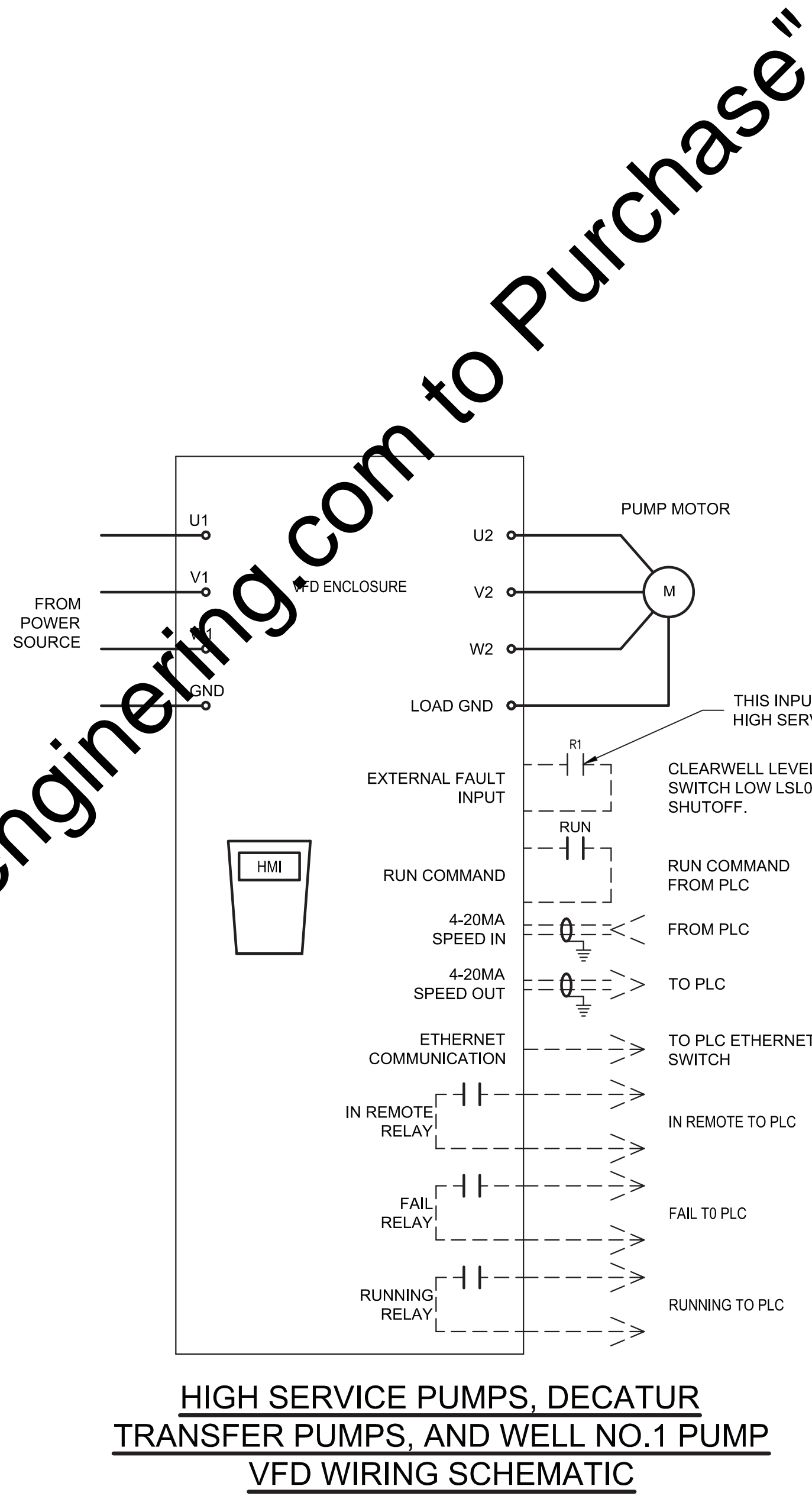
CHLORINE GAS ALARM RELAY PANEL
SCHEMATIC WIRING DIAGRAM



BOOSTER PUMP AND AERATOR MOTOR
STARTER WIRING SCHEMATIC



CHLORINE ROOM EXHAUST FAN
SCHEMATIC WIRING DIAGRAM



HIGH SERVICE PUMP VFD EXTERNAL
FAULT INPUT WIRING SCHEMATIC

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	PROJECT NUMBER	214319-04-001				



WATER SYSTEM IMPROVEMENTS	
TOWN OF MONROE, INDIANA	
ELECTRICAL SCHEMATICS AND DETAILS	

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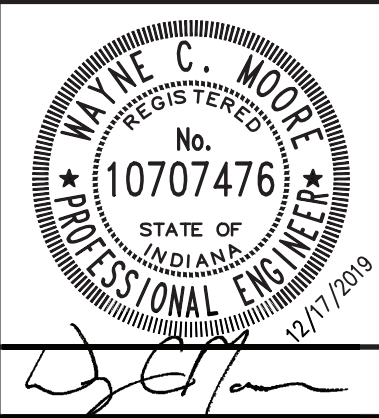
PANEL SCHEDULE			DESIGNATION: LP-A				MAINS: 200 AMP MAIN CIRCUIT BREAKER				
			LOCATION: ELECTRICAL ROOM				BUS SIZE: 225 AMP				
			VOLTAGE: 120/240V				PANEL MOUNTING: SURFACE				
			PHASE: 1 PHASE, 3 WIRE				ALL BREAKERS: 10,000 A.I.C. (MINIMUM)				
CKT. NO.	LOAD DESCRIPTION	KVA	CKT. BKR.		KVA		CKT. BKR.		KVA	LOAD DESCRIPTION	CKT. NO.
			AMPS	POLE	A	B	AMPS	POLE			
1	ELECTRICAL ROOM LIGHTING	1.20	20	1	2.30		20	1	1.10	FILTER ROOM LIGHTING	2
3	CHLORINE ROOM LIGHTING	0.75	20	1		1.75	20	1	1.00	EXTERIOR LIGHTING	4
5	ELECTRICAL ROOM RECEPTACLES	0.90	20	1	1.44		20	1	0.54	FILTER ROOM RECEPTACLES	6
7	FILTER ROOM WEST WALL RECEPTACLES	0.72	20	1		1.67	20	1	0.95	CONTROL PANEL (CP-FLTR)	8
9	SPLIT HEAT PUMP INDOOR UNIT (SHP-1)	1.20	20	2	1.95		20	1	0.75	EXHAUST FAN (EF-1)	10
11		1.20				2.05	20	1	0.85	CHLORINE CYLINDER SCALE NO. 1	12
13	SPLIT HEAT PUMP OUTDOOR UNIT (HPCU-1)	1.20	20	2	2.05		20	1	0.85	CHLORINE CYLINDER SCALE NO. 2	14
15		1.20				2.30	20	1	1.10	WELL RAW WATER FLOW METER	16
17	CHLORINE CYLINDER VALVE CONTROLLER	0.85	20	1	1.95		20	1	1.10	FINISHED WATER FLOW METER	18
19	CONTROL PANEL (CP-RADIO)	0.15	20	1		1.25	20	1	1.10	DECATUR RAW WATER FLOW METER	20
21	DETENTION TANK LEVEL TR. DISPLAY	0.9	20	1	0.90		60	2		GENERATOR LOAD CENTER	22
23	CLEAR WELL LEVEL TR. DISPLAY	0.85	20	1		0.85					24
25	CHLORINE GAS ALARM RELAY PANEL	1.20	20	1	1.35		20	1	0.15	MISSION CONTROL PANEL (CP-MISSION)	26
27	OUTDOOR RECEPTACLES	0.18	20	1		0.18	20	1		SPARE	28
29	SPARE		20	1	0.00			1		SPACE	30
31	SPACE			1		0.00		1		SPACE	32
33	SPACE			1	0.00			1		SPACE	34
35	SPACE			1		0.00		1		SPACE	36
37	SPACE			1	0.00			1		SPACE	38
39	SPACE			1		0.00	30	2		SPACE	40
41	SPACE			1	0.00					SPACE	42
TOTAL CONNECTED LOAD:					11.94	10.05	TOTAL =		21.99	KVA	
20A LOADS SHALL BE 2# 12, # 12G IN 3/ 4" C UNLESS OTHERWISE NOTED ON DRAWINGS.											
30A LOADS SHALL BE 2# 10, # 10G IN 3/ 4" C UNLESS OTHERWISE NOTED ON DRAWINGS.											
NEMA 12 ENCLOSURE											

WATER TREATMENT PLANT ELECTRICAL PANEL SCHEDULE

PANEL SCHEDULE WELL HOUSE NO. 1 MINI POWER ZONE			DESIGNATION: PANEL "LP-B "				MAINS: 60 AMP MAIN CIRCUIT BREAKER				
			LOCATION: WELL HOUSE NO. 1				BUS SIZE: 60 AMP				
			VOLTAGE: 120/240V				PANEL MOUNTING: SURFACE				
			PHASE: 1 PHASE, 3 WIRE				ALL BREAKERS: 14,000 A.I.C. (MINIMUM)				
CKT. NO.	LOAD DESCRIPTION	KVA	CKT. BKR.		KVA		CKT. BKR.		KVA	LOAD DESCRIPTION	CKT. NO.
			AMPS	POLE	A	B	AMPS	POLE			
1	INTERIOR LIGHTS	0.85	20	1	1.95		20	1	1.10	EXTERIOR LIGHTS	2
3	RECEPTACLES	0.36	20	1		1.36	20	1	1.00	SPLIT SYSTEM INDOOR UNIT (SPS-1)	4
5	OUTDOOR RECEPTACLES	0.18	20	1	1.28		20	2	1.10	SPLIT SYSTEM OUTDOOR UNIT (SCU-1)	6
7	SPARE		20	1		1.10			1.10		8
9	SPARE		20	1	1.10		20	1	1.10	CONTROL PANEL (CP-WELL)	10
11	SPACE			1		0.00		1		SPACE	12
13	SPACE			1	0.00			1		SPACE	14
15	SPACE			1		0.00		1		SPACE	16
17	SPACE			1	0.00			1		SPACE	18
19	SPACE			1		0.00		1		SPACE	20
21	SPACE			1	0.00			1		SPACE	22
23	SPACE			1		0.00		1		SPACE	24
TOTAL CONNECTED LOAD:					4.33	2.46	TOTAL =		6.79	KVA	
20A LOADS SHALL BE 2#12, #12G IN 3/4" C UNLESS OTHERWISE NOTED ON DRAWINGS.											
30A LOADS SHALL BE 2#10, #10G IN 3/4" C UNLESS OTHERWISE NOTED ON DRAWINGS.											
NEMA 3R STAINLESS STEEL											

WELL HOUSE NO. 1 ELECTRICAL PANEL SCHEDULE

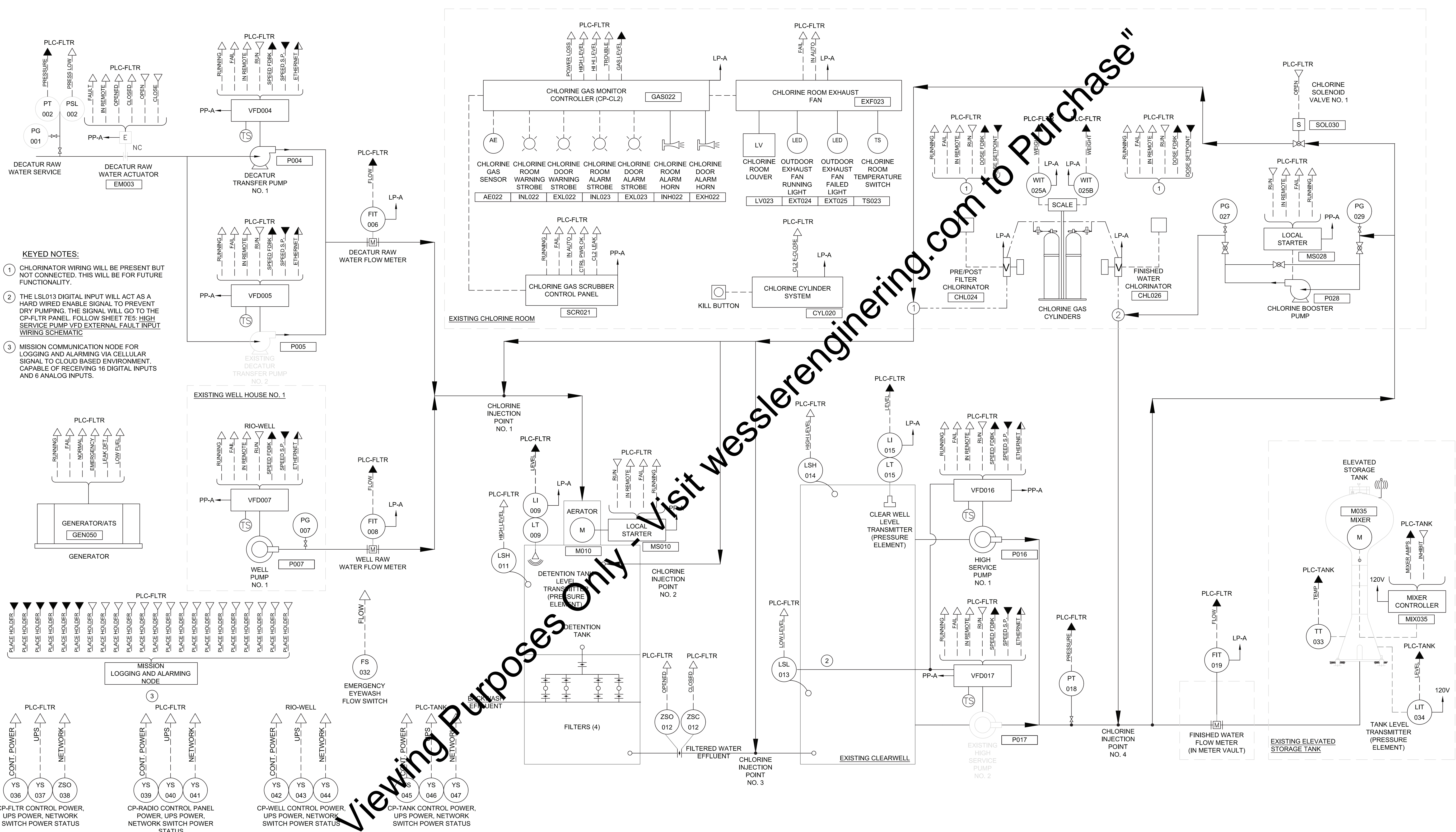
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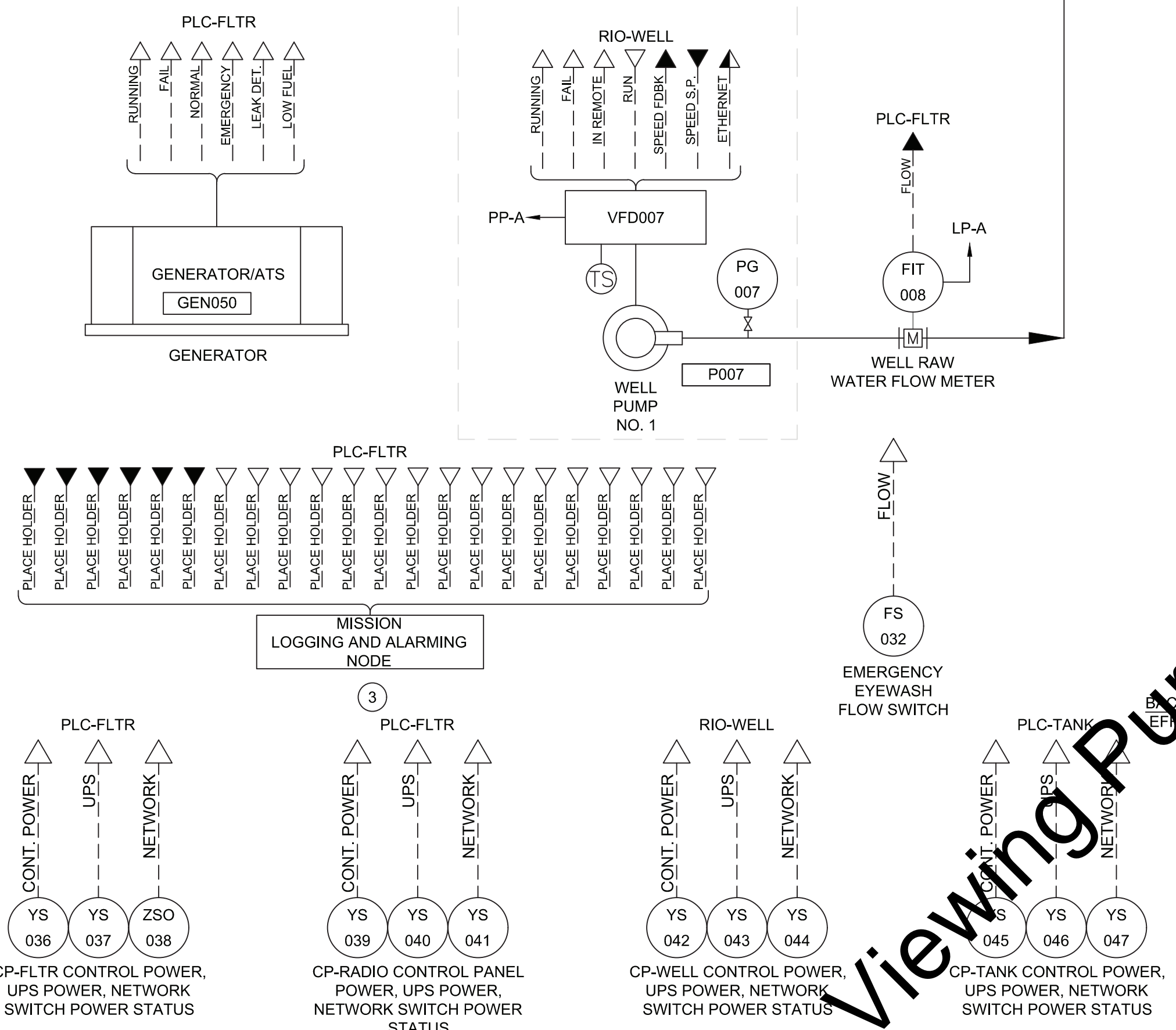
WATER SYSTEM IMPROVEMENTS	
TOWN OF MONROE, INDIANA	
ELECTRICAL DETAILS	

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- KEYED NOTES:**
- 1 CHLORINATOR WIRING WILL BE PRESENT BUT NOT CONNECTED. THIS WILL BE FOR FUTURE FUNCTIONALITY.
 - 2 THE LSL013 DIGITAL INPUT WILL ACT AS A HARD WIRED ENABLE SIGNAL TO PREVENT DRY PUMPING. THE SIGNAL WILL GO TO THE CP-FLTR PANEL. FOLLOW SHEET 7E5: HIGH SERVICE PUMP VFD EXTERNAL FAULT INPUT WIRING SCHEMATIC
 - 3 MISSION COMMUNICATION NODE FOR LOGGING AND ALARMING VIA CELLULAR SIGNAL TO CLOUD BASED ENVIRONMENT. CAPABLE OF RECEIVING 16 DIGITAL INPUTS AND 6 ANALOG INPUTS.



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WATER SYSTEM IMPROVEMENTS
TOWN OF MONROE, INDIANA
PROCESS AND INSTRUMENTATION DIAGRAM