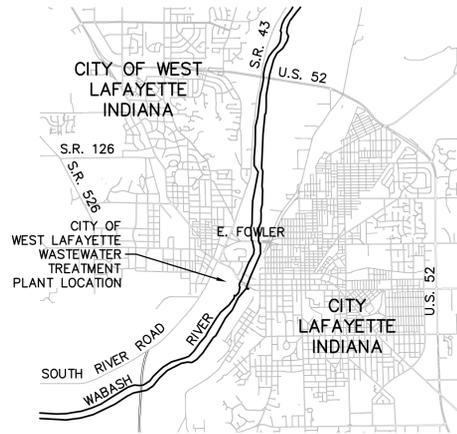


2014 WASTEWATER TREATMENT PLANT PROJECTS AREA 1 - WET WEATHER FACILITY IMPROVEMENTS AREA 2 - PHOSPHORUS REMOVAL - PHASE 1

FOR THE WASTEWATER TREATMENT UTILITY CITY OF WEST LAFAYETTE, INDIANA



VICINITY MAP
 SCALE: 1" = 5000'



STATE LOCATION MAP
 SCALE: NONE



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6219 South East Street
 Indianapolis, Indiana 46227
 Phone: 317-788-4551 - Fax: 317-788-4553
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 DAVID S. HENDERSON, UTILITY DIRECTOR

JULY 2014

NO.	DATE	INITIALS	DESCRIPTION

	<p>GARY L. RUSTON REGISTERED ENGINEER STATE OF INDIANA NO. 19500302</p>
--	--

INDEX TO DRAWINGS

TABLE OF ABBREVIATIONS			
ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
ALUM.	ALUMINUM	ISPC	INDIANA STATE PLANE COORDINATE
APP.	APPARENT	LB	POUND(S)
APPROX.	APPROXIMATE(LY)	LFT	LINEAR FEET
ASPH.	ASPHALT	LN.	LANE
ASSOC.	ASSOCIATES	LS	LIFT STATION
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS	M.E.	MATCH EXISTING
AVE.	AVENUE	M.J.	MECHANICAL JOINT
AVG	AVERAGE	MATL.	MATERIAL
BLDG	BUILDING	MAX.	MAXIMUM
BLVD.	BOULEVARD	MH	MANHOLE
BM	BENCHMARK	MIN.	MINIMUM
BV	BUTTERFLY VALVE	MISC.	MISCELLANEOUS
C.O.	CLEANOUT	N	NORTHING, NORTH
CI	CAST IRON	NGS	NATIONAL GEODETIC SURVEY
CL	CENTER LINE	NO.	NUMBER
CMA	COLD MIX ASPHALT	O.C.	ON CENTER
CMP	CORRUGATED METAL PIPE	O.D.	OUTSIDE DIAMETER
CMU	CONCRETE MASONRY UNIT	P.C.	BEGINNING OF CURVE
CONC.	CONCRETE	P.E.	POLYETHYLENE
CONT.	CONTINUOUS	P.I.	TANGENT/TANGENT INTERSECTION
COR.	CORNER	P.O.T.	POINT ON TANGENT
CP	CONTROL POINT	P.T.	CURVE/TANGENT INTERSECTION
CPP	CORRUGATED PLASTIC PIPE	PSI	POUNDS PER SQUARE INCH
CR. STN.	CRUSHED STONE	PT.	POINT
CYD	CUBIC YARD	PV	PLUG VALVE
D	DEPTH	PVC	POLYVINYL CHLORIDE
D.I.	DUCTILE IRON	R	RADIUS
D.I.M.J.	DUCTILE IRON MECHANICAL JOINT	R/W	RIGHT-OF-WAY
DBL.	DOUBLE	RCP	REINFORCED CONCRETE PIPE
DIA.	DIAMETER	RD.	ROAD
DIP	DUCTILE IRON PIPE	S	SOUTH
D.O.	DISSOLVED OXYGEN	S.R.	STATE ROUTE
DPS	DUCTILE IRON PIPE SIZE	S.S.	STAINLESS STEEL
DR	DRAIN	S.V.A.	SERVICE VALVE ASSEMBLY
DR.	DRIVE	SB	SOIL BORING
E	EASTING, EAST	SCH.	SCHEDULE
E.F.	EACH FACE	SDR	STANDARD DIMENSION RATIO
E.W.	EACH WAY	SEC.	SECTION
EA.	EACH	SFT.	SQUARE FEET
EJW	EAST JORDAN IRON WORKS	SHT.	SHEET
EL.	ELEVATION	SLG	SLIDE GATE
EXIST. / EX.	EXISTING	SPECS.	SPECIFICATION(S)
EXP.	EXPANSION	SQ.	SQUARE
F.F.E.	FINISH FLOOR ELEVATION	SRF	STATE REVOLVING FUND
F.M.	FORCE MAIN	ST.	STREET
FND.	FOUND	STA.	STATION
FT.	FEET	STG	STOP PLATE
FTG	FOOTING	SYD	SQUARE YARD
GALV.	GALVANIZED	SYS.	SQUARE YARDS
GPS	GLOBAL POSITIONING SYSTEM	TBM	TEMPORARY BENCHMARK
HMA	HOT MIX ASPHALT	TC	TOP OF CASTING
HDPE	HIGH DENSITY POLYETHYLENE	TYP.	TYPICAL
HORZ.	HORIZONTAL	USGS	U.S. GEOLOGICAL SURVEY
I.D.	INSIDE DIAMETER	VERT.	VERTICAL
IE	INVERT ELEVATION	VLV	VALVE
INC.	INCORPORATED	W	WIDTH, WEST
INDOT	INDIANA DEPARTMENT OF TRANSPORTATION	WSEL	WATER SURFACE ELEVATION
INSTR.	INSTRUMENT	YR.	YEAR
INV.	INVERT		

*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.

PROCESS PIPING ABBREVIATIONS

BYP	BYPASS
COM	COMBINED SEWER
CSP	CONTAINMENT SUMP PUMP
DR	DRAIN
G	GAS
NPW	NON-POTABLE WATER
PE	PLANT EFFLUENT
PI	PLANT INFLUENT
PW	PLANT WATER
SAN	SANITARY SEWER
SB	SODIUM BISULFITE SOLUTION
SH	SODIUM HYPOCHLORITE SOLUTION
SP	SUMP PUMP
STW	STORM WATER
SW	SEAL WATER

NOTES:

- THE CONTRACTOR SHALL NOTE THAT THE WORK SHOWN ON THESE DRAWINGS IS OCCURRING ON A PLANT SITE IN WHICH BURIED ELECTRICAL CONDUITS AND SMALL PIPING MAY EXIST THROUGHOUT, ALL OF WHICH IN THE VICINITY OF THIS PROJECT MAY NOT BE SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL EXPECT TO ENCOUNTER BURIED ELECTRICAL AND COMMUNICATION WIRING, WITH OR WITHOUT CONDUITS, SMALL PIPING, AND FIELD TILE WHILE DIGGING ON THIS SITE; AND SHALL INCLUDE COSTS IN THE BID TO REPLACE, REPAIR OR RELOCATE SUCH WIRING, CONDUITS, TILE, AND PIPING WHICH ARE DAMAGED OR IN CONFLICT WITH NEW WORK.
- ALL LOCATIONS, SIZES AND INVERTS OF EXISTING UTILITIES AND YARD PIPING ARE SHOWN BASED ON THE BEST INFORMATION AVAILABLE. HOWEVER, THE ENGINEER DOES NOT GUARANTEE OR ASSURE THAT SUCH INFORMATION IS TRUE OR EVEN APPROXIMATE. THE CONTRACTOR SHALL VERIFY THE LOCATION, MATERIAL AND SIZE OF EACH EXISTING UTILITY SERVICE PROVIDED TO THE SITE WITH THE RESPECTIVE UTILITY COMPANIES, AND ADJUST HIS WORK ACCORDINGLY. THE CONTRACTOR SHALL PROVIDE THE ENGINEER RECORD DRAWING INFORMATION OF EACH EXISTING UTILITY SERVICE LOCATED. THE CONTRACTOR SHALL REFER TO APPLICABLE SECTIONS OF THE SPECIFICATIONS RELATIVE TO THE ABOVE.
- COMPLETELY REMOVE ABANDONED UNDERGROUND PIPING IN CONFLICT WITH NEW WORK. UNLESS OTHERWISE NOTED ON THE DRAWINGS, UNDERGROUND PIPING NOT IN CONFLICT WITH NEW WORK MAY BE LEFT IN PLACE AND ABANDONED. DO NOT LEAVE PIPING LIVE. SEE SPECIFICATION SECTION 02050 FOR DEMOLITION PROCEDURES.
- ALL EXISTING PIPING MAY NOT BE SHOWN. THE CONTRACTOR SHALL REFERENCE EXISTING RECORD DRAWINGS ON FILE WITH THE OWNER AND ENGINEER FOR ADDITIONAL INFORMATION OF EXISTING PIPING AND CONDUIT THROUGHOUT THE PLANT SITE.
- NEW PIPING CARRYING LIQUIDS SHALL HAVE MINIMUM COVER AS DEFINED IN THE MISCELLANEOUS SITE DETAILS, UNLESS SPECIFIC ELEVATIONS ON THE DRAWINGS INDICATE OTHERWISE.
- ALL EQUIPMENT TO BE REMOVED THAT HAS ELECTRICAL COMPONENTS, CONDUIT AND WIRING, AND/OR SMALL PIPING CONNECTED TO IT SHALL HAVE THE ELECTRICAL COMPONENTS AND SMALL PIPING REMOVED BACK TO THE SOURCE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR BRACING AND/OR PROTECTING ALL UTILITY POLES AND EXISTING STRUCTURES ADJACENT TO NEW EXCAVATIONS. UTILITY POLE BRACING SHALL BE AS DIRECTED BY THE GOVERNING UTILITY COMPANIES.
- THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING, RESTORING, OR REPLACING ALL PAVEMENT IN STREETS AND DRIVES OUTSIDE AND WITHIN THE CONSTRUCTION LIMITS WHICH IS DAMAGED BY CONSTRUCTION ACTIVITIES AND TRAFFIC, AND SHALL INCLUDE ALL SUCH COSTS IN HIS BID.
- THE CONTRACTOR SHALL INSPECT THE SITE PRIOR TO BIDDING THE PROJECT TO SEE THE EXTENT OF THE DEMOLITION WORK INVOLVED AND TO INCLUDE THE NECESSARY WORK IN HIS BID.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING EACH PERMIT ISSUING AGENCIES WITHIN THE TIME PERIOD SPECIFIED BY THAT AGENCY PRIOR TO BEGINNING CONSTRUCTION.
- THE CONTRACTOR SHALL REFER TO SPECIFICATION SECTION 02101 FOR EROSION AND DUST CONTROL DURING CONSTRUCTION.
- REFER TO SPECIFICATION SECTION 01550 FOR PLANT OPERATION REQUIREMENTS DURING CONSTRUCTION FOR COORDINATION OF DEMOLITION AND NEW CONSTRUCTION.

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DESCRIPTION

GENERAL

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AREA 2 - PHOSPHORUS REMOVAL - PHASE 1

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NEW SITE PLAN

MISCELLANEOUS SITE DETAILS

EROSION CONTROL DETAILS

EROSION CONTROL DETAILS

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UPPER BASEMENT MODIFICATIONS PLAN & DETAILS

EXISTING CONTROL CHAMBER SECTIONS - CHEMICAL DISTRIBUTION DETAILS

NEW CHEMICAL PIPING INSTALLATION - PLAN & DETAIL

CHEMICAL FEED MODIFICATIONS SCHEMATIC

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NEW CHEMICAL FEED BUILDING - FOUNDATION PLAN

NEW CHEMICAL FEED BUILDING - SECTIONS

NEW CHEMICAL FEED BUILDING - ROOF PLAN, ELEVATIONS & SCHEMATICS

NEW CHEMICAL FEED BUILDING - DETAILS

NEW CHEMICAL FEED BUILDING - DETAILS

NEW CHEMICAL FEED BUILDING - DETAILS

NEW CHEMICAL FEED BUILDING - MISCELLANEOUS ARCHITECTURAL DETAILS

MISCELLANEOUS CIVIL DETAILS

STRUCTURAL

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CONTROL CHAMBER PLAN AND SECTIONS

WET WEATHER BASIN PLAN AND SECTIONS

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AREA 2 - PHOSPHORUS REMOVAL - PHASE 1

NEW CHEMICAL FEED BUILDING - MECHANICAL PLAN & DETAILS

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AREA 2 - PHOSPHORUS REMOVAL - PHASE 1

ELECTRICAL SYMBOLS & GENERAL NOTES

NEW CHEMICAL FEED BUILDING - OVERALL ELECTRICAL PLAN

NEW CHEMICAL FEED BUILDING - ELECTRICAL PLANS

SCHEDULE, ONE-LINE DIAGRAM, SCHEMATIC DIAGRAMS & DETAILS



DRAWN BY	CHECKED BY	APPROVED BY	NO.	DATE	INITIALS	DESCRIPTION
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NO SCALE						
ISSUE DATE						
JULY 2014						
PROJECT NUMBER						
148912/158513						

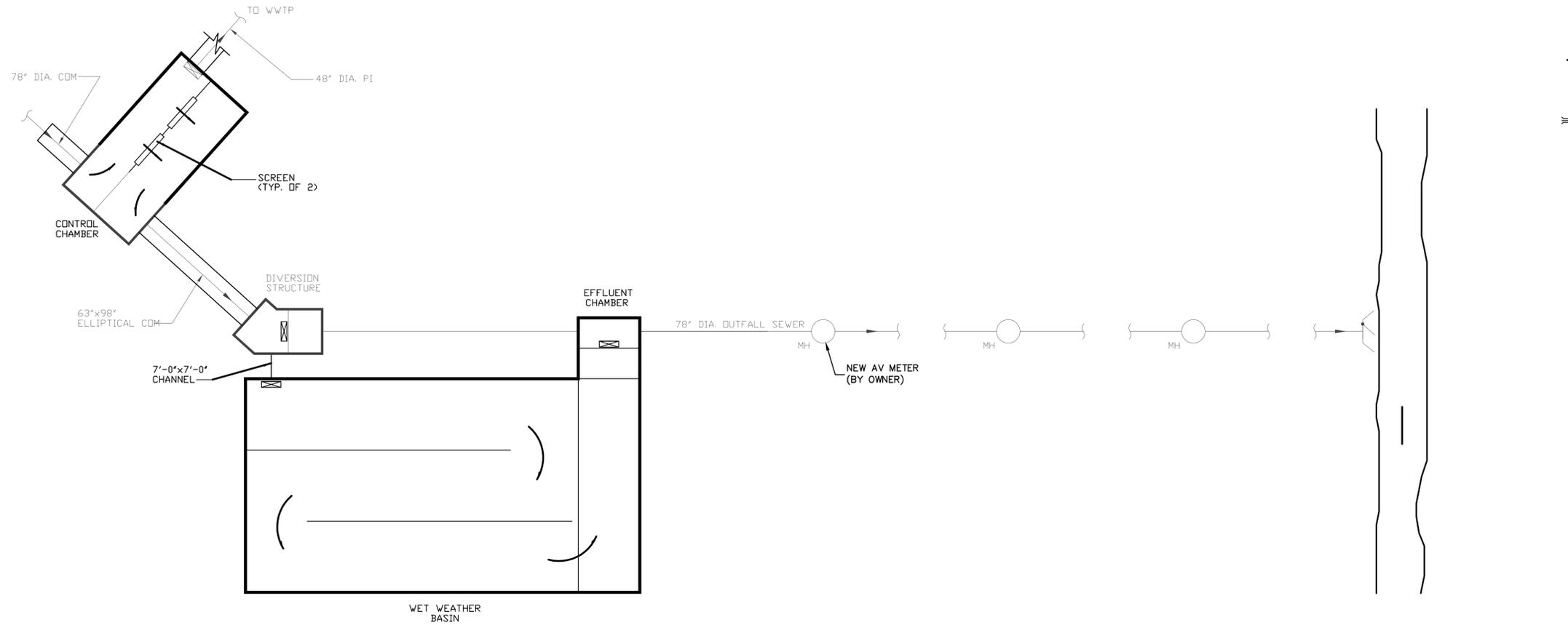


2014 WASTEWATER TREATMENT PLANT PROJECTS

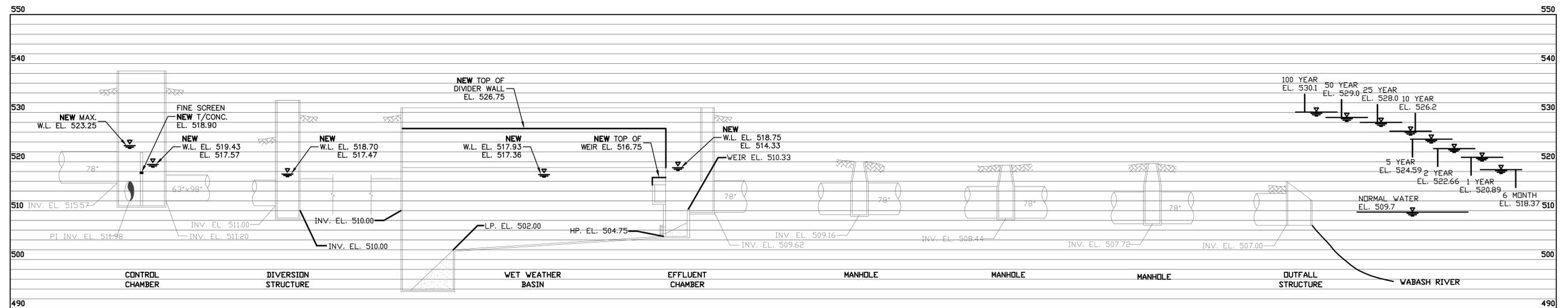
WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA

**INDEX TO DRAWINGS, GENERAL PROJECT NOTES
AND TYPICAL ABBREVIATIONS**

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WET WEATHER FLOW DIAGRAM (EXISTING)



HYDRAULIC PROFILE

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DRAWING SCALE						
NO SCALE						
ISSUE DATE						
JULY 2014						
PROJECT NUMBER						
148912/158513						

REVISIONS

CERTIFICATION

Professional Engineer Seal: Gary L. Ruston, No. 19500302, State of Indiana, Registered Professional Engineer, License No. 19500302, Exp. 12/31/2013.

W

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2014 WASTEWATER TREATMENT PLANT PROJECTS

WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA

AREA 1 - WET WEATHER FACILITY IMPROVEMENTS
WET WEATHER FLOW DIAGRAM & HYDRAULIC PROFILE

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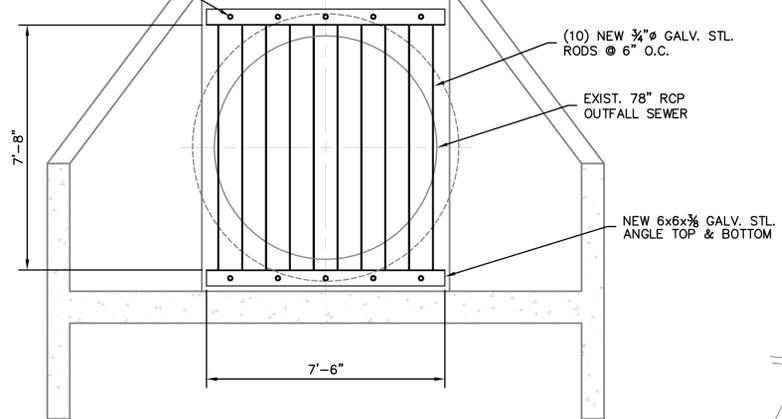


EXIST. OUTFALL HEADWALL

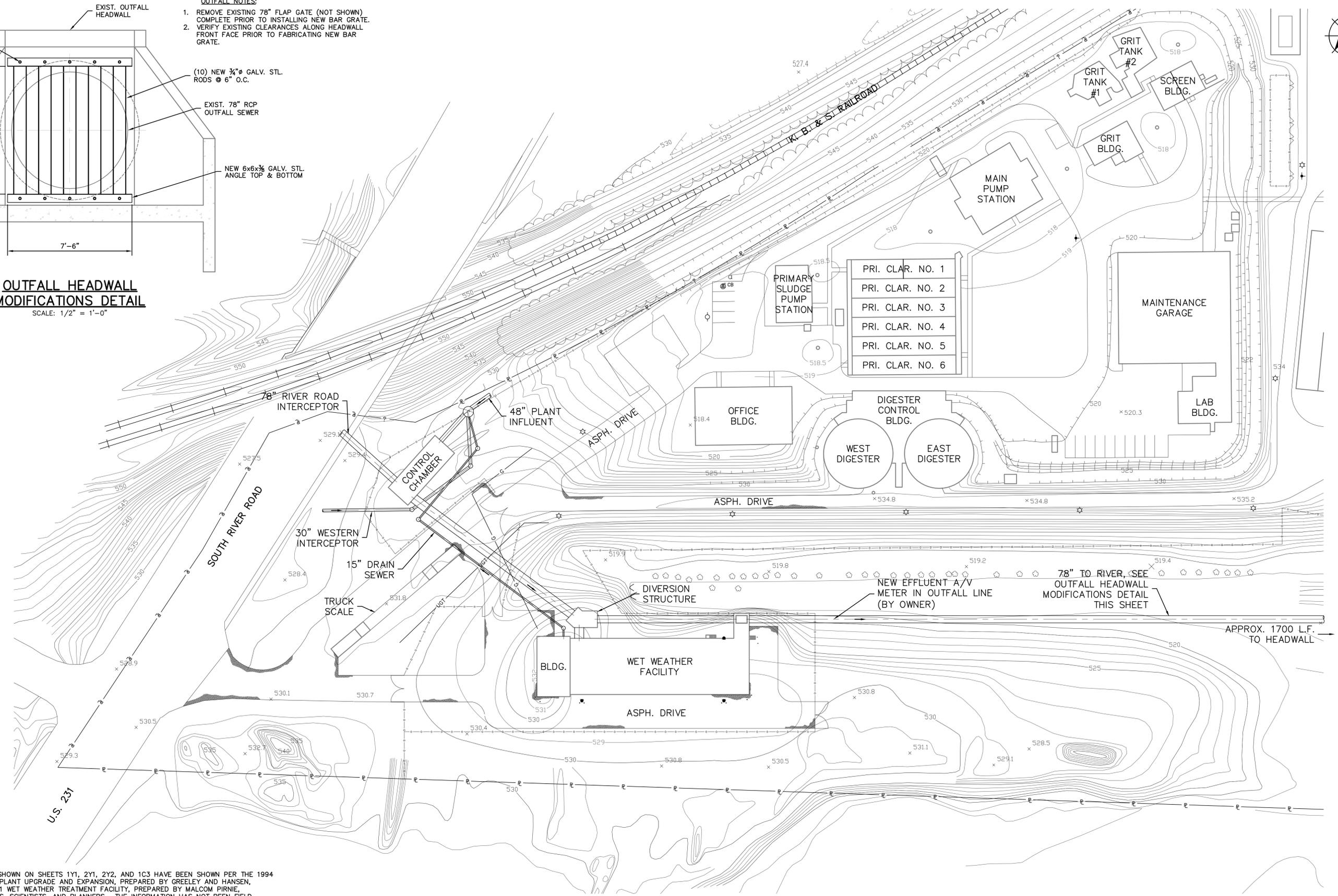
MOUNT TO WALL WITH (5) 3/8" STAINLESS STEEL EXPANSION ANCHORS @ 18" O.C. EACH ANGLE

OUTFALL NOTES:

1. REMOVE EXISTING 78" FLAP GATE (NOT SHOWN) COMPLETE PRIOR TO INSTALLING NEW BAR GRATE.
2. VERIFY EXISTING CLEARANCES ALONG HEADWALL FRONT FACE PRIOR TO FABRICATING NEW BAR GRATE.



OUTFALL HEADWALL MODIFICATIONS DETAIL
SCALE: 1/2" = 1'-0"

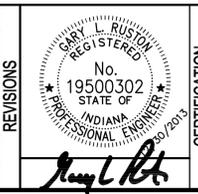


EXISTING SITE PLAN
SCALE: 1" = 40'

GENERAL SITE NOTES:

1. EXISTING SITE FEATURES SHOWN ON SHEETS 1Y1, 2Y1, 2Y2, AND 1C3 HAVE BEEN SHOWN PER THE 1994 WASTEWATER TREATMENT PLANT UPGRADE AND EXPANSION, PREPARED BY GREELEY AND HANSEN, ENGINEERS; AND THE 2001 WET WEATHER TREATMENT FACILITY, PREPARED BY MALCOM PIRNIE, ENVIRONMENTAL ENGINEERS, SCIENTISTS, AND PLANNERS. THE INFORMATION HAS NOT BEEN FIELD VERIFIED, AND ACCURACY IS UNCERTAIN.

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1" = 40'						
ISSUE DATE						
JULY 2014						
PROJECT NUMBER						
148912/158513						



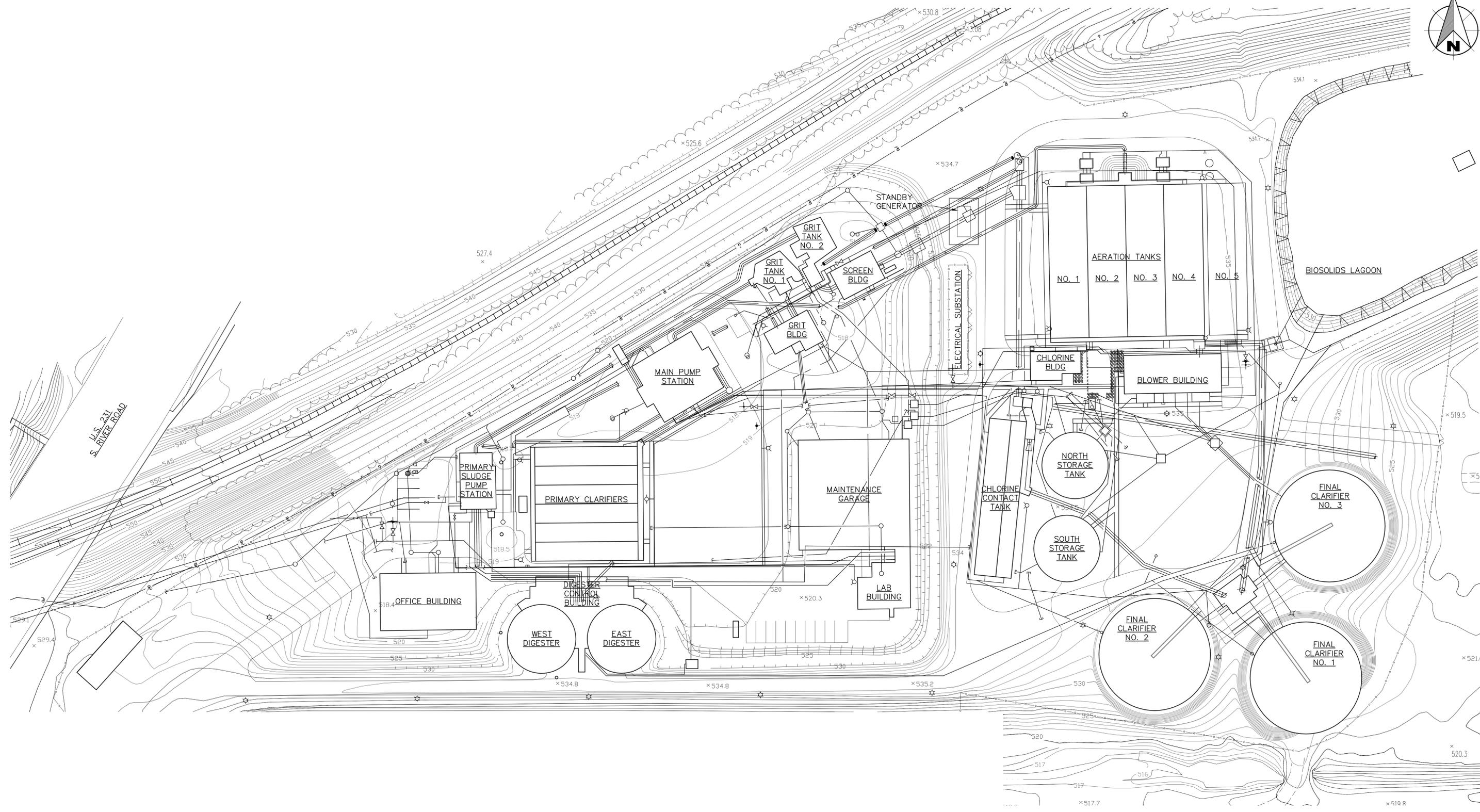
2014 WASTEWATER TREATMENT PLANT PROJECTS

WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA

AREA 1 - WET WEATHER FACILITY IMPROVEMENTS
EXISTING SITE PLAN

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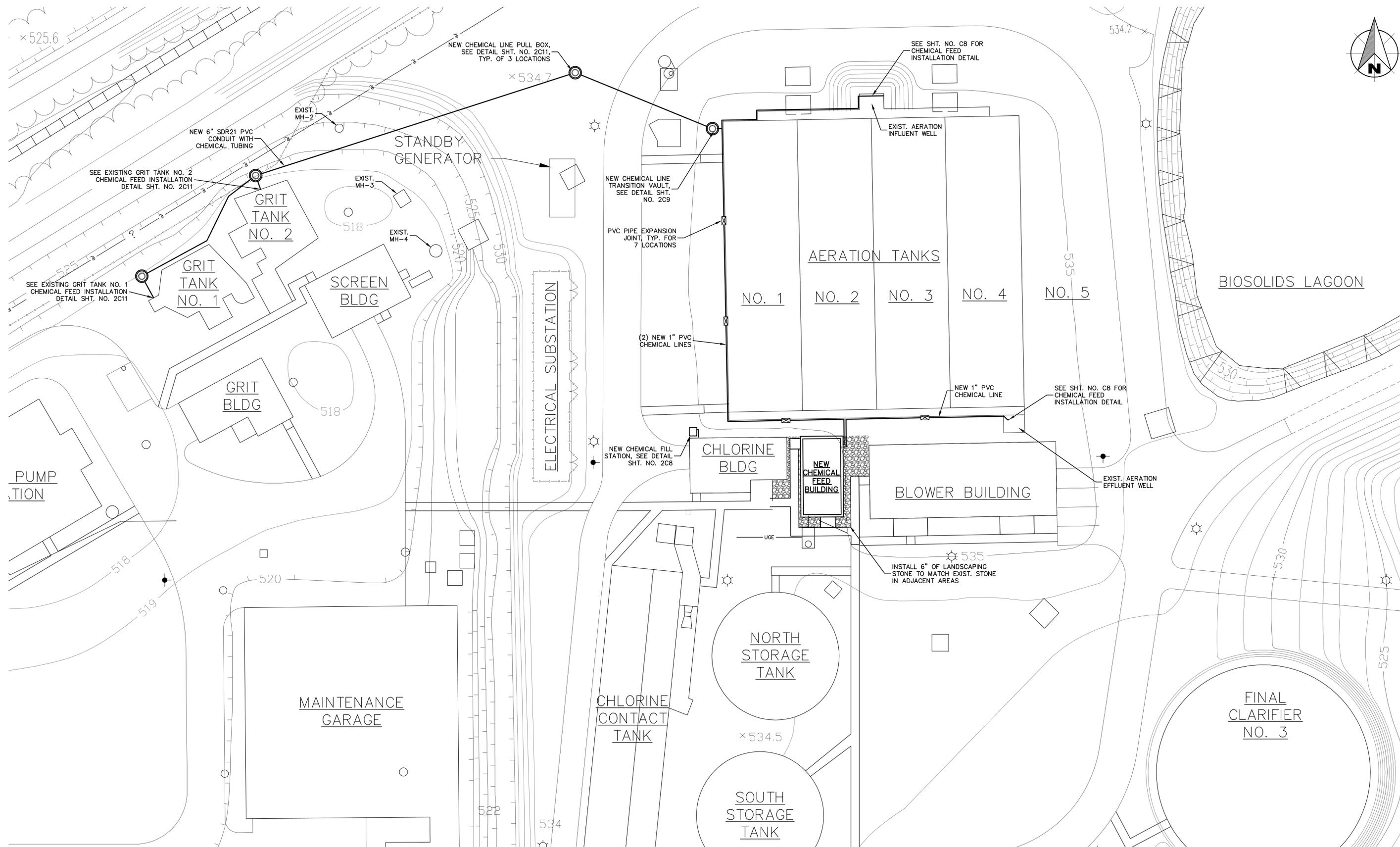


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1" = 40'						
ISSUE DATE						
JULY 2014						
PROJECT NUMBER						
148912/158513						



2014 WASTEWATER TREATMENT PLANT PROJECTS
 WASTEWATER TREATMENT UTILITY
 CITY OF WEST LAFAYETTE, INDIANA
AREA 2 - PHOSPHORUS REMOVAL - PHASE 1
EXISTING SITE PLAN

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DRAWN BY	CHECKED BY	APPROVED BY	NO.	DATE	INITIALS	DESCRIPTION
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PROJECT NUMBER						
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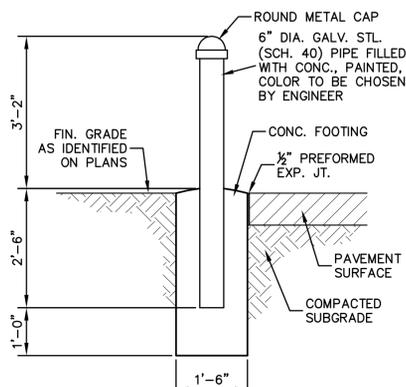
2014 WASTEWATER TREATMENT PLANT PROJECTS

WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA

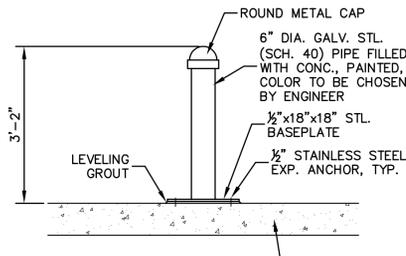
AREA 2 - PHOSPHORUS REMOVAL - PHASE 1
NEW SITE PLAN

SHEET NO.
2Y2

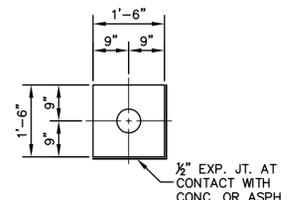
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SECTION VIEW

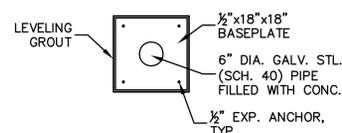


SECTION VIEW



PLAN VIEW

TYPES 1 & 2 BOLLARDS



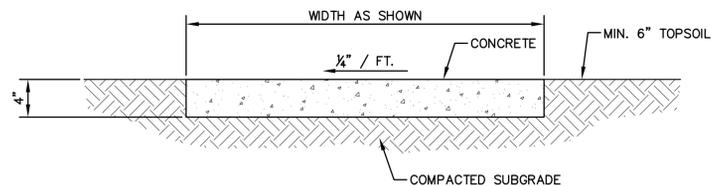
PLAN VIEW

TYPE 3 BOLLARD

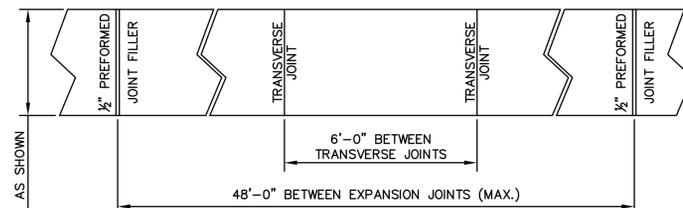
NOTES:

1. TYPE 1 BOLLARD SHALL BE AS SHOWN.
2. TYPE 2 BOLLARD SHALL BE SIMILAR TO TYPE 1, WITH 8" DIA. 6' TALL PIPE, WITH 42" BURY, AND WITH 24" SQ. CONCRETE FOOTING.
3. TYPE OF BOLLARD INSTALLED SHALL BE AS IDENTIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

1 BOLLARD DETAILS
SCALE: NONE



TYPICAL SIDEWALK SECTION

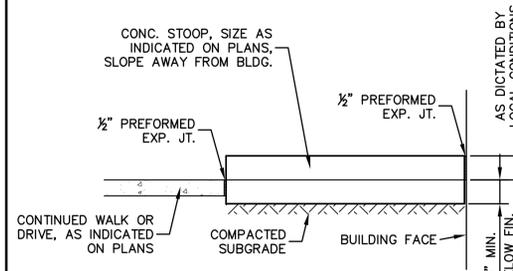


PLAN VIEW

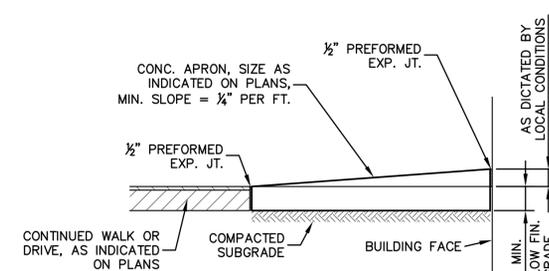
CONCRETE SIDEWALK

- NOTES:
1. WHERE SIDEWALK IS CONSTRUCTED IMMEDIATELY ADJACENT TO CURB, THE SURFACE OF THE SIDEWALK SHALL BE CONSTRUCTED 1/2" HIGHER THAN THE TOP OF THE CURB.
 2. TRANSVERSE JOINTS SHALL BE CUT WITH A JOINTER HAVING A RADIUS OF 1/4" AT SPACING AS INDICATED OR DIRECTED.
 3. COST OF TRANSVERSE PREFORMED JOINT FILLER SHALL BE INCLUDED IN CONTRACT PRICE FOR CONCRETE SIDEWALK.
 4. COMPACTED SUBGRADE - THE UPPER 6" SHALL COMPLY WITH THE DENSITY REQUIREMENTS OF THE CONTRACT IMMEDIATELY PRIOR TO PLACING THE MATERIAL THEREON. ALL SOFT, YIELDING, OR OTHER UNSUITABLE MATERIAL WHICH CANNOT BE COMPACTED SATISFACTORILY, SHALL BE REMOVED. ALL ROCK ENCOUNTERED SHALL BE REMOVED OR BROKEN OFF AT LEAST SIX (6) INCHES BELOW THE SUBGRADE SURFACE. ANY HOLES OR DEPRESSIONS RESULTING FROM THE REMOVAL OF UNSUITABLE MATERIAL SHALL BE FILLED WITH SATISFACTORY MATERIAL AND COMPACTED TO CONFORM WITH THE SURROUNDING SUBGRADE SURFACE.
 5. WHERE SIDEWALK IS CONSTRUCTED ADJACENT TO THE CURB, THE SPACE BEHIND THE CURB SHALL BE FILLED WITH GRANULAR MATERIAL TO THE REQUIRED ELEVATION AND COMPACTED IN LAYERS NOT TO EXCEED 4".
 6. WHERE SIDEWALK IS NOT CONSTRUCTED ADJACENT TO THE CURB, THE SPACE BEHIND THE CURB SHALL BE FILLED WITH SUITABLE MATERIAL TO THE REQUIRED ELEVATION AND COMPACTED IN LAYERS NOT TO EXCEED 4".

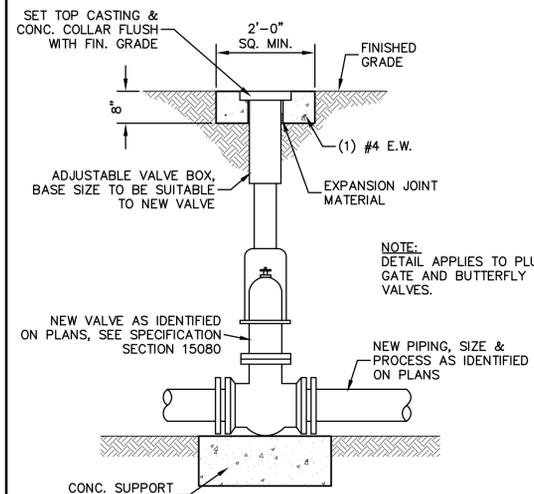
2 SIDEWALK DETAIL
SCALE: NONE



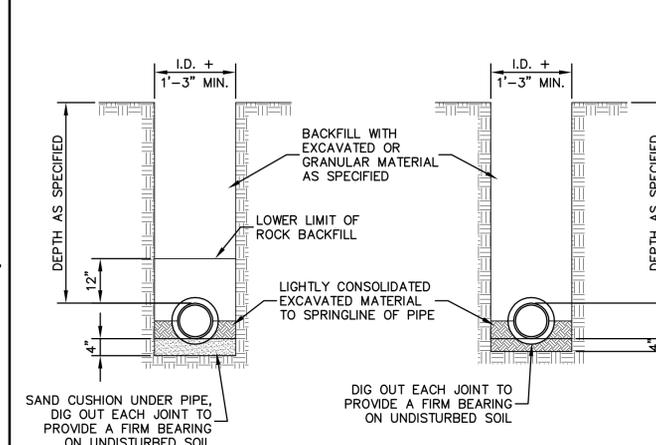
3 CONCRETE STOOP DETAIL
SCALE: NONE



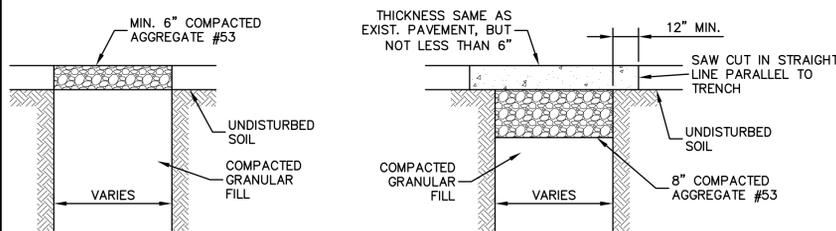
4 CONCRETE APRON DETAIL
SCALE: NONE



5 VALVE & BOX DETAIL
SCALE: NONE

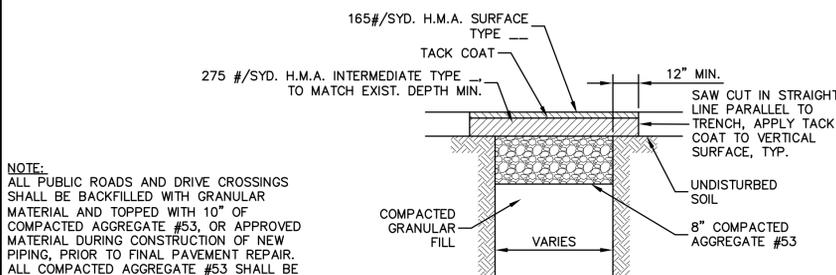


6 BURIED PROCESS PIPE INSTALLATION DETAIL
NO SCALE



CR. STONE SURFACE

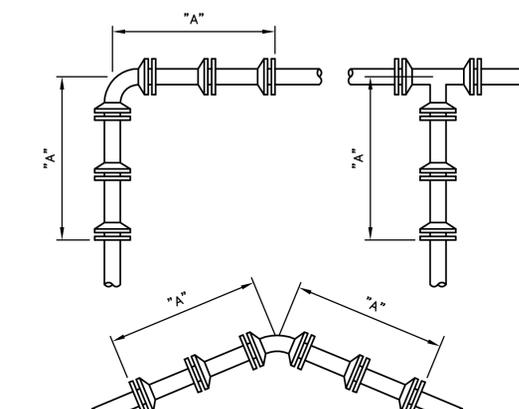
CONCRETE PAVEMENT



ASPHALT PAVEMENT

NOTE:
ALL PUBLIC ROADS AND DRIVE CROSSINGS SHALL BE BACKFILLED WITH GRANULAR MATERIAL AND TOPPED WITH 10" OF COMPACTED AGGREGATE #53, OR APPROVED MATERIAL DURING CONSTRUCTION OF NEW PIPING, PRIOR TO FINAL PAVEMENT REPAIR. ALL COMPACTED AGGREGATE #53 SHALL BE COMPACTED TO 100% MAXIMUM DRY DENSITY, AASHTO 1-99.

7 PAVEMENT REPAIR DETAILS
SCALE: NONE



8 TYPICAL RESTRAINED PIPING DETAILS
SCALE: NONE

FITTING TYPE	FEET OF RESTRAINED PIPE @ 150 PSI ON EACH SIDE OF FITTING				
	D.I. MECHANICAL JOINT PIPE SIZE				
	4 INCH	6 INCH	8 INCH	10 INCH	12 INCH
11 1/4" BEND	2	2	2	3	4
22 1/2" BEND	3	4	5	7	8
45" BEND	7	10	10	15	15
90" BEND	15	20	25	30	35
PLUG	19	27	38	44	52
TEE					
- MAIN SIZE x 4"	10	5	5	5	5
- MAIN SIZE x 6"	20	20	15	15	10
- MAIN SIZE x 8"	30	30	25	25	20
- MAIN SIZE x 10"	40	38	35	35	35
- MAIN SIZE x 12"	48	47	45	45	45

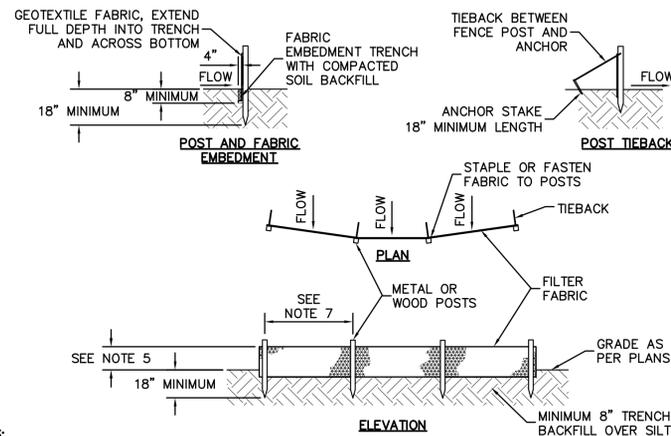
NOTE:
WHERE NEEDED, DETAILS SHOWN ON THIS DRAWING SHALL APPLY TO WORK PERFORMED IN BOTH AREAS 1 AND 2.

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W.B.J.	C.S.D.	GL.R.				
DRAWING SCALE AS NOTED						
ISSUE DATE JULY 2014						
PROJECT NUMBER 148912/158513						



2014 WASTEWATER TREATMENT PLANT PROJECTS
WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA
AREA 2 - PHOSPHORUS REMOVAL - PHASE 1
MISCELLANEOUS SITE DETAILS

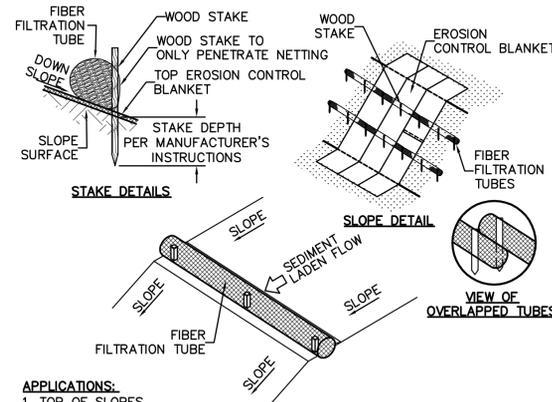
SHEET NO.
2Y3
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- NOTES:**
- SYNTHETIC FILTER FABRIC SHALL BE A PERVIOUS SHEET OF WOVEN OR NON-WOVEN GEOTEXTILE FABRIC AND SHALL BE CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE FOLLOWING REQUIREMENTS:
 - TEXTILE STRENGTH AT 20% (MAXIMUM) ELONGATION, PER ASTM D4632.
 - WOVEN EXTRA STRENGTH - 50 LB/LIN IN. (MINIMUM), NON-WOVEN EXTRA STRENGTH - 70 LB/LIN. (MINIMUM).
 - WOVEN STANDARD STRENGTH - 30 LB/LIN IN. (MINIMUM), NON-WOVEN STANDARD STRENGTH - 50 LB/LIN. (MINIMUM).
 - APPARENT OPENING SIZE (AOS) (U.S. SIEVE) - NO. 30 PARTICLE SIZE OF 0.6 mm (MAXIMUM), ASTM D4751.
 - PERMITTIVITY - 0.05 s⁻¹ (MAXIMUM), ASTM D4491.
 - POSTS FOR SILT FENCES SHALL BE EITHER 2" DIAMETER WOOD OR EQUIVALENT METAL POSTS WITH A MINIMUM LENGTH OF 5'. METAL POSTS SHALL HAVE PROJECTIONS FOR FASTENING WIRE TO THEM.
 - ANCHOR STAKES FOR SILT FENCES SHALL BE 1"x2" WOOD (PREFERRED) OR EQUIVALENT METAL WITH A MINIMUM LENGTH OF 18".
 - 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".
 - THE HEIGHT OF THE BARRIER SHALL BE A MINIMUM OF 18" AND A MAXIMUM OF 30".
 - 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.
 - 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".
 - THE SPACING OF TIEBACKS SHALL EQUAL THE SPACING OF THE POSTS. ADDITIONAL POST DEPTH OR TIEBACKS MAY BE REQUIRED IN UNSTABLE SOILS.
 - A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4" WIDE AND A MINIMUM OF 8" DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
 - 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 WIRES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 2" AND SHALL NOT EXTEND MORE THAN 36" ABOVE THE ORIGINAL GROUND SURFACE.
 - 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.
 - 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.
 - BACKFILL THE TRENCH AND COMPACT THE SOIL OVER THE FILTER FABRIC.
 - REMOVE SILT FENCES WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
 - SILT FENCE SHALL NOT BE USED AS A DIVERSION AND SHALL NOT BE INSTALLED ACROSS A STREAM, CHANNEL, DITCH, SWALE, ETC.

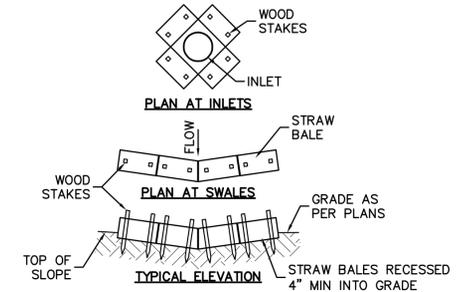
- MAINTENANCE:**
- INSPECT AFTER EACH RAINFALL AND DAILY DURING PROLONGED RAINFALL. INSPECT AT LEAST ONCE EVERY 7 CALENDAR DAYS.
 - REPLACE OR REPAIR FABRIC IMMEDIATELY IF IT DECOMPOSES OR IS INEFFECTIVE.
 - SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY HALF THE HEIGHT OF THE BARRIER.
 - 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



- APPLICATIONS:**
- TOP OF SLOPES.
 - AT PROJECT PERIMETER.
- INSTALLATION:**
- INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
 - USE THE APPROPRIATE SIZE, LENGTH AND DISTANCE BETWEEN TUBES AS SPECIFIED BY THE MANUFACTURER.
 - ENTRENCH PER MANUFACTURER'S INSTRUCTIONS.
- MAINTENANCE:**
- REMOVE ALL ACCUMULATED SEDIMENT WHEN IT REACHES 1/4 THE HEIGHT OF THE TUBE.
 - REPAIR ERODED AND DAMAGED AREAS.
 - IF PONDING BECOMES EXCESSIVE DUE TO REDUCED FILTERING CAPACITY, REMOVE THE TUBE AND EITHER RECONSTRUCT OR REPLACE WITH NEW PRODUCT.
 - INSPECT WITHIN 24 HOURS OF A RAIN EVENT AND AT LEAST ONCE EVERY 7 CALENDAR DAYS.

FIBER FILTRATION TUBES - SLOPE
SCALE: NONE



- NOTES:**
- ALL BALES SHALL ALL BE EITHER WIRE-BOUND OR STRING-TIED. INSTALL BALES SO THAT BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES (IN ORDER TO PREVENT DETERIORATION OF THE BINDINGS).
 - THE BARRIER SHALL BE ENTRENCHED AND BACKFILLED. EXCAVATE TRENCH THE WIDTH OF A BALE AND THE LENGTH OF THE PROPOSED BARRIER TO A MINIMUM DEPTH OF 4" AFTER THE BALES ARE STAKED AND CHINKED. BACKFILL THE EXCAVATED SOIL AGAINST THE BARRIER. BACKFILL SOIL SHALL CONFORM TO THE GROUND LEVEL ON THE DOWNHILL SIDE AND SHALL BE BUILT UP TO 4" AGAINST THE UPHILL SIDE OF THE BARRIER.
 - SECURELY ANCHOR EACH BALE BY AT LEAST TWO STAKES OF WOOD OR STEEL, WITH A LENGTH OF AT LEAST 36", DRIVEN THROUGH THE BALE. DRIVE THE FIRST STAKE IN EACH BALE TOWARD THE PREVIOUSLY LAID BALE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN DEEP ENOUGH INTO THE GROUND TO SECURELY ANCHOR THE BALES.
 - CHINK (FILL BY WEDGING) THE GAPS BETWEEN BALES WITH STRAW TO PREVENT WATER FROM ESCAPING BETWEEN THE BALES.
 - IN SHEET FLOW APPLICATIONS, PLACE BALES IN A SINGLE ROW, LENGTHWISE ON THE CONTOUR, WITH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER.
 - IN CHANNEL FLOW APPLICATIONS, PLACE BALES IN A SINGLE ROW, LENGTHWISE, ORIENTED PERPENDICULAR TO THE DIRECTION OF FLOW, WITH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER. THE BARRIER SHALL BE EXTENDED TO SUCH A LENGTH THAT THE BOTTOMS OF THE END BALES ARE HIGHER IN ELEVATION THAN THE TOP OF THE LOWEST MIDDLE BALE TO ASSURE THAT SEDIMENT LADEN RUNOFF WILL BE TRAPPED.

- MAINTENANCE:**
- REMOVE SEDIMENT DEPOSITS PROMPTLY (TO ENSURE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN), TAKING CARE NOT TO UNDERMINE THE ENTRENCHED BALES.
 - INSPECT WITHIN 24 HOURS OF A RAIN EVENT AND AT LEAST ONCE EVERY 7 CALENDAR DAYS FOR DETERIORATION OR DAMAGE FROM CONSTRUCTION ACTIVITIES REPLACE DAMAGED BALES IMMEDIATELY.
 - WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE ALL STRAW BALES AND SEDIMENT DEPOSITS, GRADE THE SITE TO BLEND WITH THE SURROUNDING AREA, AND STABILIZE.

STRAW BALE FILTER
SCALE: NONE

SEASONAL SOIL PROTECTION CHART

STABILIZATION PRACTICE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
PERMANENT SEEDING						A						
DORMANT SEEDING	B											B
TEMPORARY SEEDING			C					E			D	
SODDING						F						
MULCHING							G					

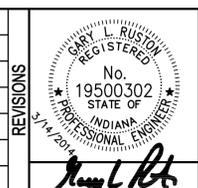
- A = KENTUCKY BLUEGRASS 40 LB/ACRE
 B = KENTUCKY BLUEGRASS 210 LB/ACRE
 C = SPRING OATS 100 LB/ACRE (1" PLANTING DEPTH)
 D = WHEAT OR RYE 150 LB/ACRE (1" - 1.5" PLANTING DEPTH)
 E = ANNUAL RYEGRASS 40 LB/ACRE (1/4" PLANTING DEPTH)
 F = SOD
 G = ANCHORED STRAW/HAY (2 TONS/ACRE) OR WOOD FIBER/CELLULOSE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

- NOTES:**
- IRRIGATION NEEDED DURING MAY THROUGH SEPTEMBER.
 - IRRIGATION NEEDED FOR 2 TO 3 WEEKS AFTER APPLYING SOD.
 - ANCHORED MULCH IS REQUIRED FOR PERMANENT, DORMANT AND TEMPORARY SEEDING.
 - OPTIMUM SEEDING DATES PROVIDED. DATES MAY BE EXTENDED OR SHORTENED BASED ON PROJECT LOCATION.
 - SEED MIXTURES PROVIDED FOR LAWNS AND HIGH MAINTENANCE AREAS.

- MAINTENANCE:**
- INSPECT WITHIN 24 HOURS OF EACH RAIN EVENT AND AT LEAST ONCE EVERY 7 CALENDAR DAYS.
 - CHECK FOR EROSION AND MOVEMENT OF MULCH AND REPAIR IMMEDIATELY.
 - MONITOR FOR EROSION DAMAGE AND ADEQUATE COVER (70% DENSITY).
 - RESEED, FERTILIZE OR APPLY MULCH WHERE NECESSARY.

NOTE:
WHERE NEEDED, DETAILS SHOWN ON THIS DRAWING SHALL APPLY TO WORK PERFORMED IN BOTH AREAS 1 AND 2.

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2014 WASTEWATER TREATMENT PLANT PROJECTS

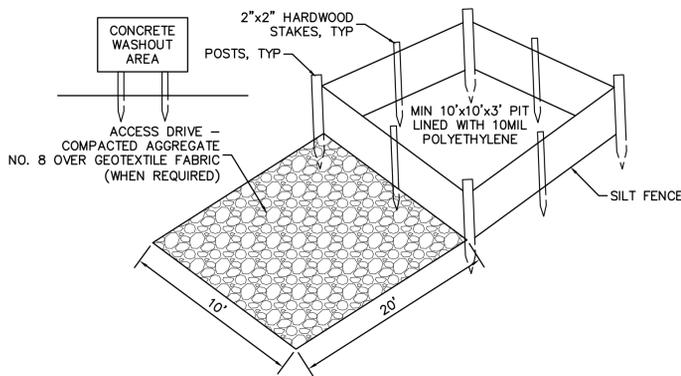
WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA

AREA 2 - PHOSPHORUS REMOVAL - PHASE 1
EROSION CONTROL DETAILS

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EROSION CONTROL SCHEDULE	
CONSTRUCTION ACTIVITY	SCHEDULE CONSIDERATION
NOTIFY IDEM RULE 5 COORDINATOR (317-233-1864) AND THE STORMWATER AUTHORITY 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 GRAVEL 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.



NOTES:

- INSTALL SILT FENCE TO FILTER RUNOFF THAT FLOWS INTO THE WASHOUT AREA.
- THE POLYETHYLENE LINER SHALL BE A MINIMUM OF 10 MIL AND FREE OF TEARS, HOLES, AND OTHER DEFECTS. THE POLYETHYLENE LINING SHALL BE OF ADEQUATE SIZE TO EXTEND OVER THE CONTAINMENT AREA.
- POSTS FOR SILT FENCES SHALL BE EITHER 4" DIAMETER WOOD OR 1.33 LBS PER LINEAR FOOT STEEL WITH A MINIMUM LENGTH OF 5'. STEEL POSTS SHALL HAVE PROJECTIONS FOR FASTENING WIRE TO THEM. POSTS SHALL BE USED TO SECURE THE POLYETHYLENE LINING AND SHALL SUPPORT THE SILT FENCE.
- STAKES FOR SILT FENCES SHALL BE 2"x2" WOOD (PREFERRED) OR EQUIVALENT METAL WITH A MINIMUM LENGTH OF 3'.
- BACKFILL THE SILT FENCE TRENCH AND COMPACT THE SOIL OVER THE FILTER FABRIC.
- LOCATE WASHOUTS AT LEAST 50' FROM ANY CREEKS, WETLANDS, DITCHES, KARST FEATURES OR STORM DRAIN/CONVEYANCES.

WASHOUT PROCEDURES:

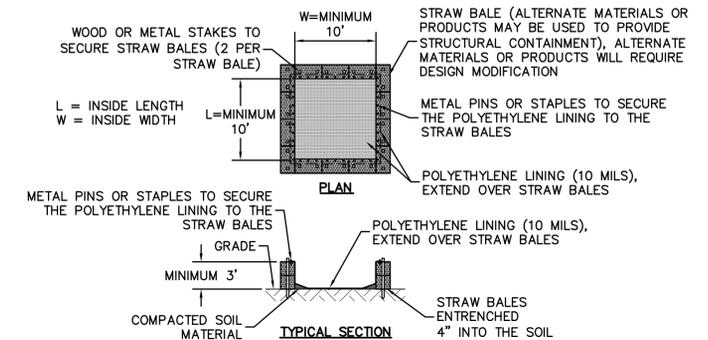
- DO NOT LEAVE EXCESS MUD IN THE CHUTES OR HOPPER AFTER POURING CONCRETE. MAKE EVERY EFFORT TO EMPTY THE CHUTE AND HOPPER AT THE POUR. THE LESS MATERIAL LEFT IN THE CHUTES AND HOPPER, THE QUICKER AND EASIER THE CLEANOUT. SMALL AMOUNTS OF EXCESS CONCRETE (NOT WASHOUT WATER) MAY BE DISPOSED OF IN AREAS THAT WILL NOT FLOW TO AN AREA THAT IS TO BE PROTECTED.
- 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.
- 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.
- DO NOT BACK FLUSH EQUIPMENT AT THE PROJECT SITE.
- DO NOT USE ADDITIVES WITH WASH WATER.
- DO NOT WASH OUT OR DRAIN WASTE WATERS TO STORM DRAINS, WETLANDS, STREAMS, RIVERS, CREEKS, DITCHES OR STREETS.

MAINTENANCE:

- INSPECT SILT FENCE BARRIERS AND POLYETHYLENE LINER IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
- INSPECT ACCESS DRIVE PERIODICALLY AND REPLACE DISPLACED STONE.
- ADDITIONAL REQUIREMENTS PROVIDED IN SPECIFICATIONS.

CONCRETE WASHOUT

SCALE: NONE



NOTES:

- LOCATE WASHOUTS AT LEAST 50' FROM ANY CREEKS, WETLANDS, DITCHES, KARST FEATURES, OR STORM DRAIN/CONVEYANCES.

WASHOUT PROCEDURES:

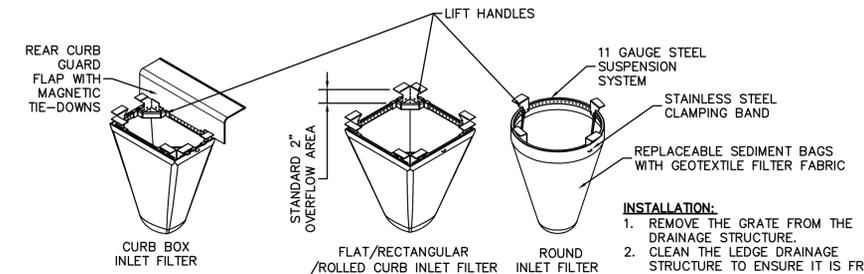
- DO NOT LEAVE EXCESS MUD IN THE CHUTES OR HOPPER AFTER POURING CONCRETE. MAKE EVERY EFFORT TO EMPTY THE CHUTE AND HOPPER AT THE POUR. THE LESS MATERIAL LEFT IN THE CHUTES AND HOPPER, THE QUICKER AND EASIER THE CLEANOUT. SMALL AMOUNTS OF EXCESS CONCRETE (NOT WASHOUT WATER) MAY BE DISPOSED OF IN AREAS THAT WILL NOT FLOW TO AN AREA THAT IS TO BE PROTECTED.
- 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.
- 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.
- DO NOT BACK FLUSH EQUIPMENT AT THE PROJECT SITE.
- DO NOT USE ADDITIVES WITH WASH WATER.
- DO NOT WASH OUT OR DRAIN WASTE WATERS TO STORM DRAINS, WETLANDS, STREAMS, RIVERS, CREEKS, DITCHES OR STREETS.

MAINTENANCE:

- MAINTENANCE REQUIREMENTS PROVIDED IN SPECIFICATIONS.

CONCRETE WASHOUT

SCALE: NONE



INLET FILTER SPECIFICATIONS		
WOVEN GEOTEXTILE SEDIMENT BAG SPECS (2 FT VOL)		
MATERIAL PROPERTY	TEST METHOD	VALUE (AVG)
GRAB 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

INSTALLATION:

- REMOVE THE GRATE FROM THE DRAINAGE STRUCTURE.
- CLEAN THE LEDGE DRAINAGE STRUCTURE TO ENSURE IT IS FREE OF STONE AND DIRT.
- DROP IN THE INLET FILTER THROUGH THE CLEAR OPENING AND BE SURE THE SUSPENSION HANGERS REST FIRMLY ON THE INSIDE LEDGE.
- REPLACE THE GRATE.
- FOR CURB BOX INLET FILTERS: INSERT INLET FILTER AS DESCRIBED ABOVE IN COMBINATION WITH THE CURB BOX FLAP IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

MAINTENANCE:

- INSPECT THE INLET FILTER DAILY AND AFTER EACH STORM EVENT AND EMPTY IF THE SEDIMENT BAG IS MORE THAN HALF FILLED WITH SEDIMENT AND DEBRIS, OR AS DIRECTED BY THE ENGINEER.
- REMOVE THE GRATE AND LIFT THE INLET FILTER FROM THE DRAINAGE STRUCTURE. DISPOSE OF ACCUMULATED SEDIMENTS AND DEBRIS PROPERLY. MATERIAL SHALL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM.
- REMOVE ANY CAKED ON SILT FROM THE SEDIMENT BAG AND REVERSE FLUSH THE BAG FOR OPTIMAL FILTRATION.
- REPLACE THE BAG IF THE INNER FILTER MEMBRANE IS TORN.

INLET PROTECTION

SCALE: NONE

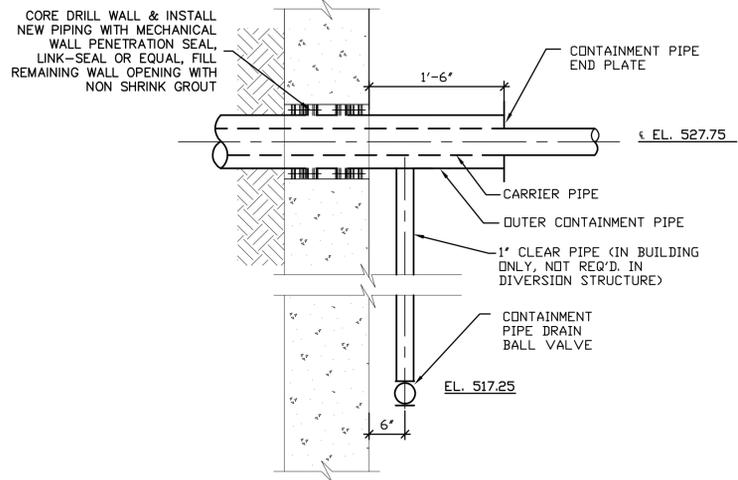
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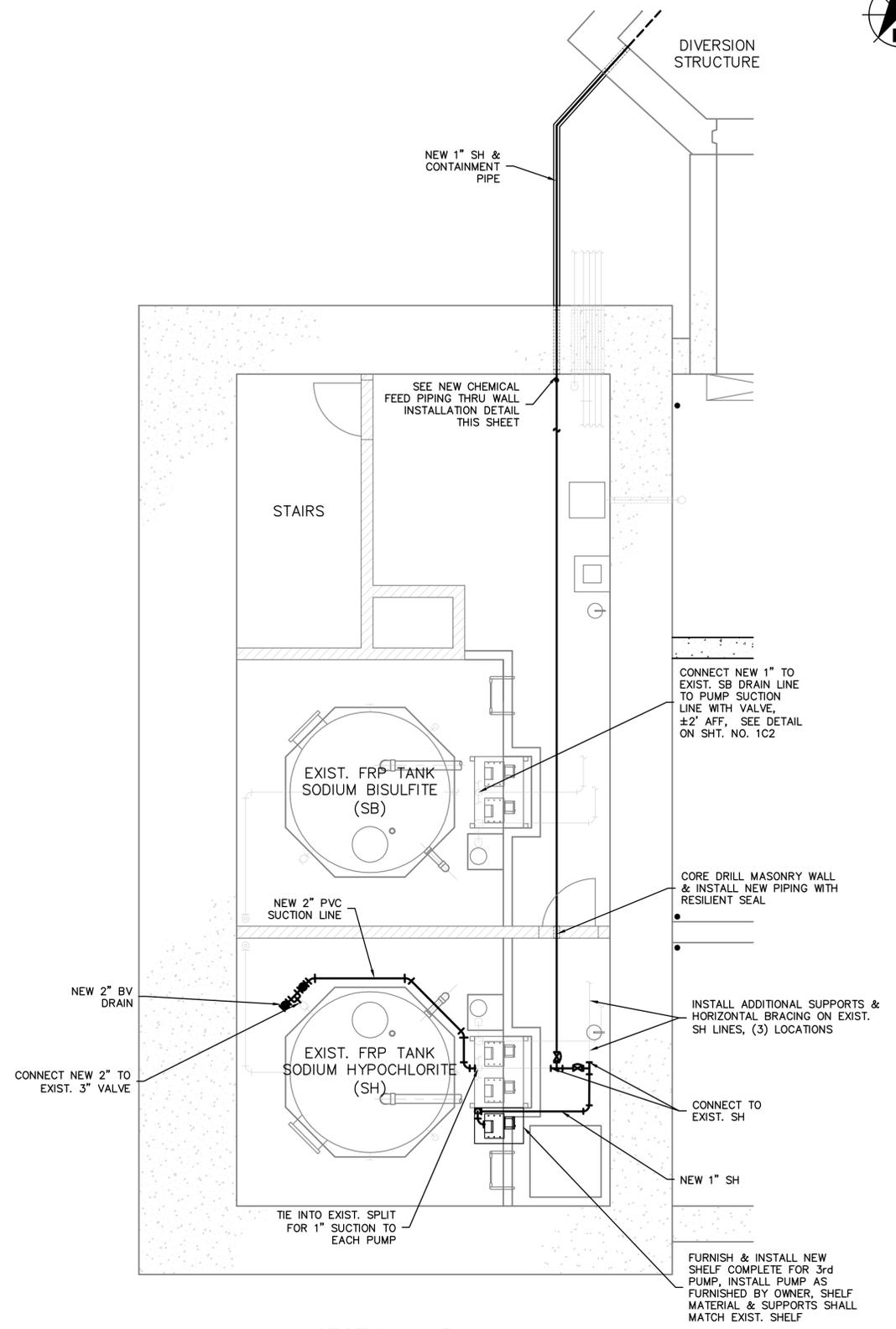


2014 WASTEWATER TREATMENT PLANT PROJECTS
 WASTEWATER TREATMENT UTILITY
 CITY OF WEST LAFAYETTE, INDIANA
AREA 2 - PHOSPHORUS REMOVAL - PHASE 1
EROSION CONTROL DETAILS

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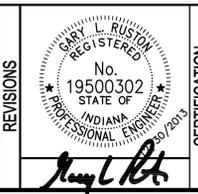


NEW CHEMICAL FEED PIPING THRU WALL INSTALLATION DETAIL
SCALE: NONE



SECTIONAL PLAN AT APPROXIMATE EL. 520.0
SCALE: 3/16" = 1'-0"

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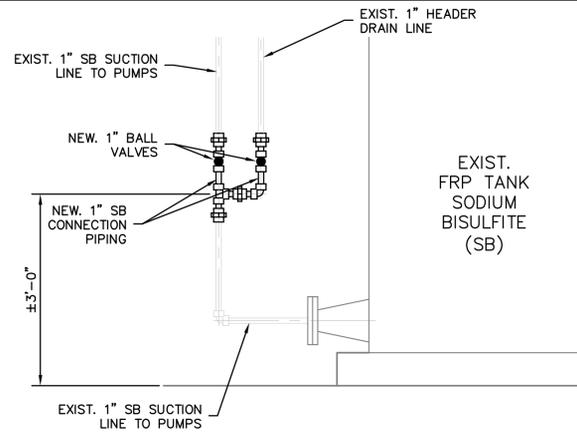


2014 WASTEWATER TREATMENT PLANT PROJECTS
WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA

**AREA 1 - WET WEATHER FACILITY IMPROVEMENTS
EXISTING WET WEATHER TREATMENT BUILDING
UPPER BASEMENT MODIFICATIONS PLAN & DETAILS**

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1C1

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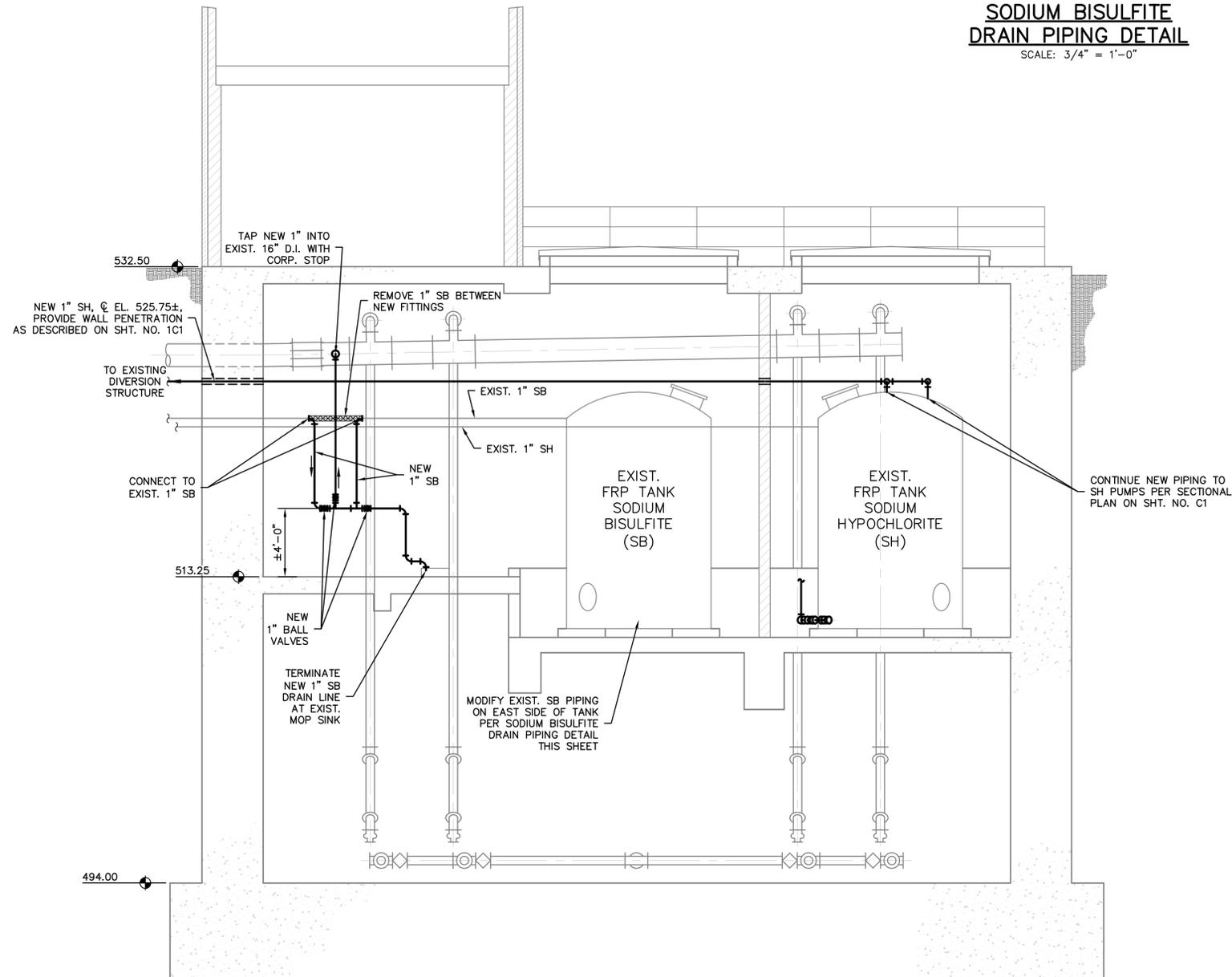
**SODIUM BISULFITE
DRAIN PIPING DETAIL**

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



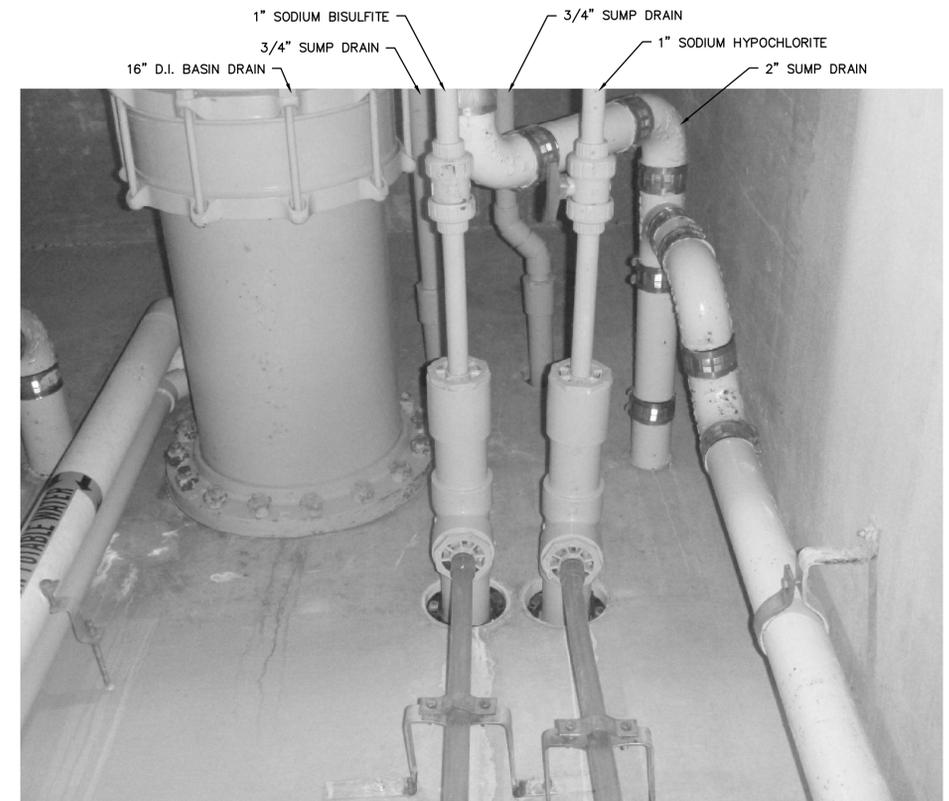
NORTHEAST CORNER VIEW

SCALE: NONE



**WET WEATHER TREATMENT BUILDING
TYPICAL SECTION - EAST VIEW**

SCALE: 3/16" = 1'-0"



NORTH WALL VIEW

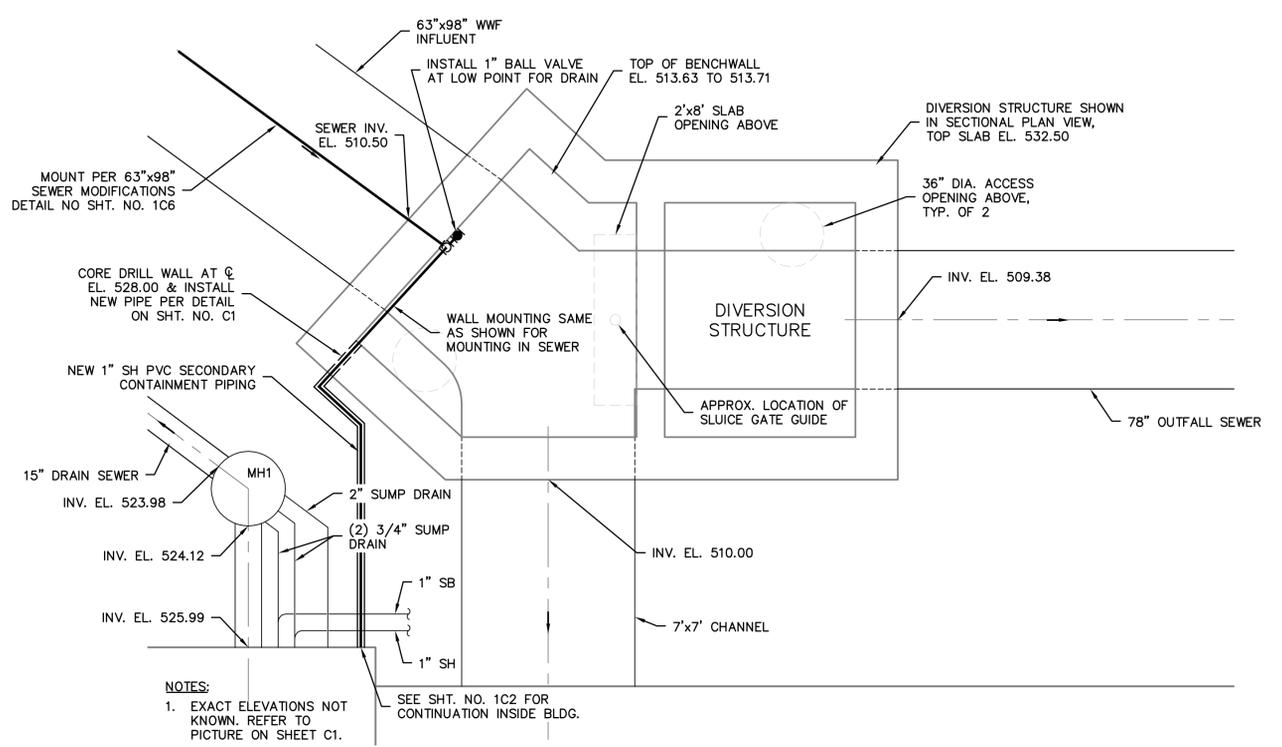
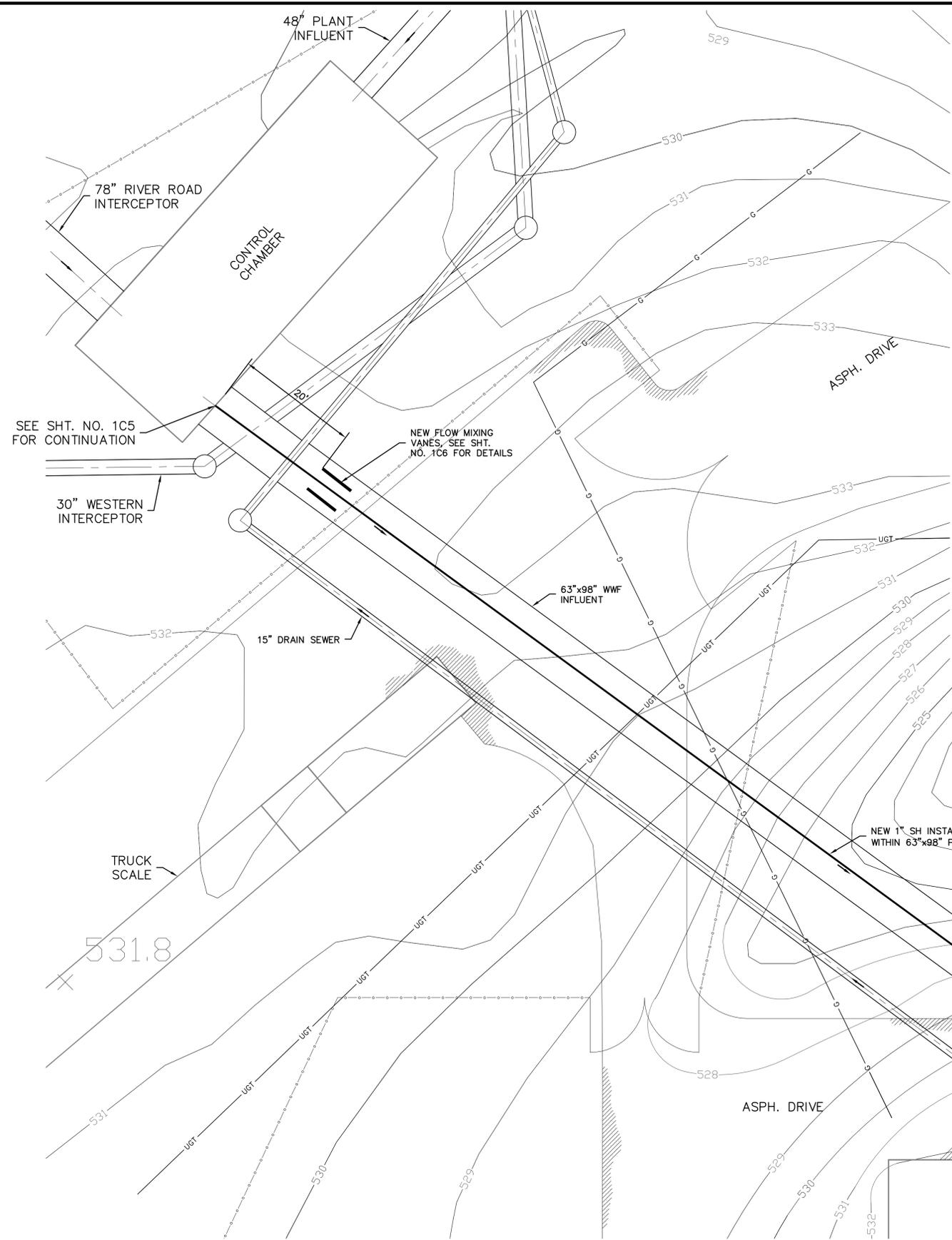
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DRAWING SCALE						
3/16" = 1'-0"						
ISSUE DATE						
JULY 2014						
PROJECT NUMBER						
148912/158513						



2014 WASTEWATER TREATMENT PLANT PROJECTS
 WASTEWATER TREATMENT UTILITY
 CITY OF WEST LAFAYETTE, INDIANA
AREA 1 - WET WEATHER FACILITY IMPROVEMENTS
EXISTING WET WEATHER TREATMENT BUILDING
NEW CHEMICAL FEED PIPING DETAILS

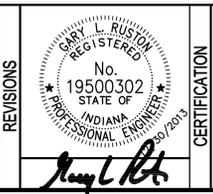
SHEET NO.
1C2
 PAGE NO.
11



**CHEMICAL PIPING INSTALLATION
INSIDE DIVERSION STRUCTURE DETAIL**
SCALE: 1/4" = 1'-0"

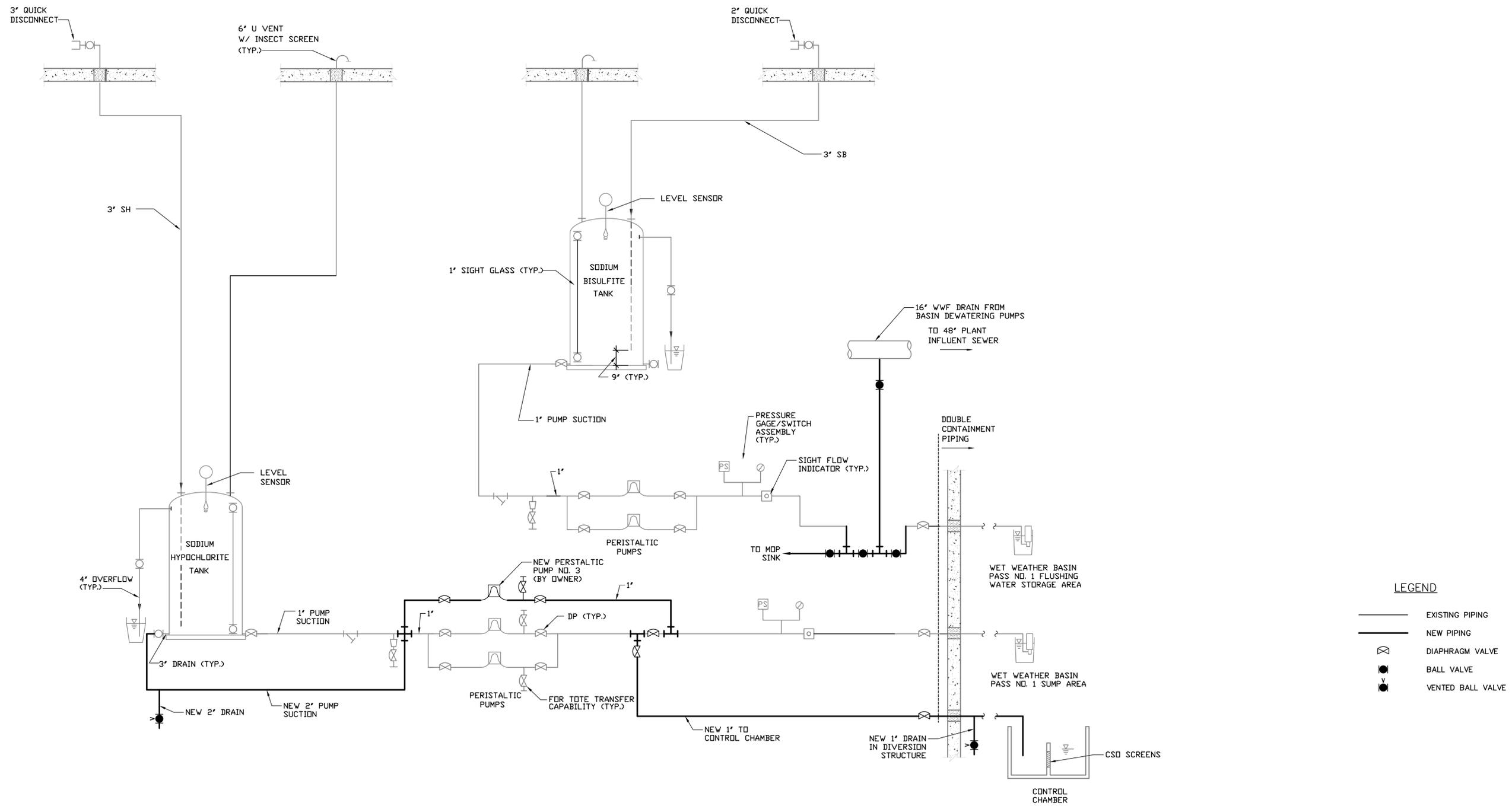
ENLARGED SITE PLAN
SCALE: 1" = 10'

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ISSUE DATE JULY 2014						
PROJECT NUMBER 148912/158513						

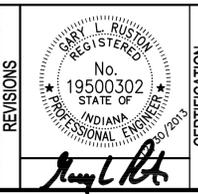


2014 WASTEWATER TREATMENT PLANT PROJECTS
WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA
AREA 1 - WET WEATHER FACILITY IMPROVEMENTS
NEW CHEMICAL PIPING INSTALLATION
PLAN & DETAIL

SHEET NO.
1C3
PAGE NO.
12

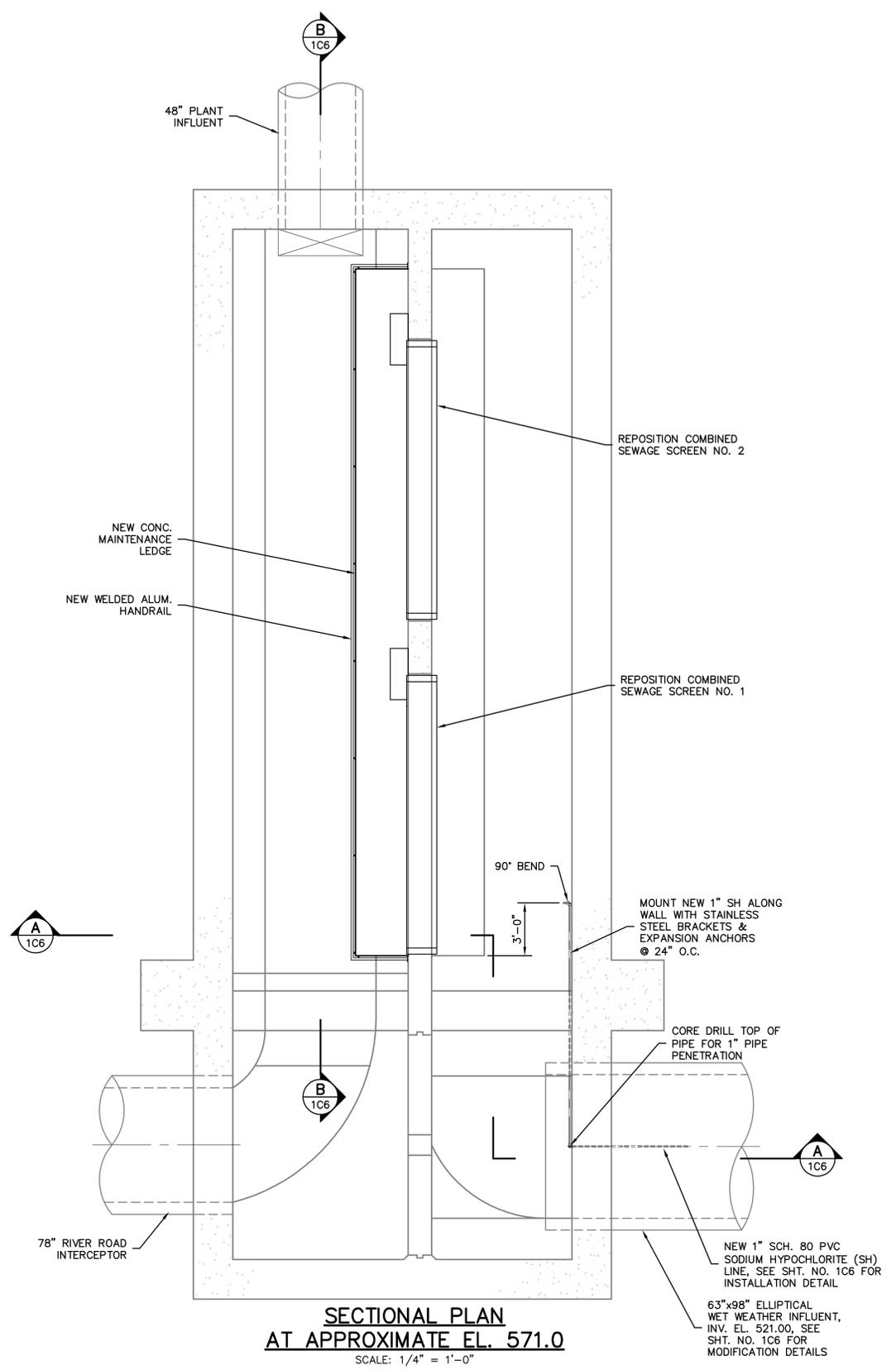


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ISSUE DATE						
JULY 2014						
PROJECT NUMBER						
148912/158513						

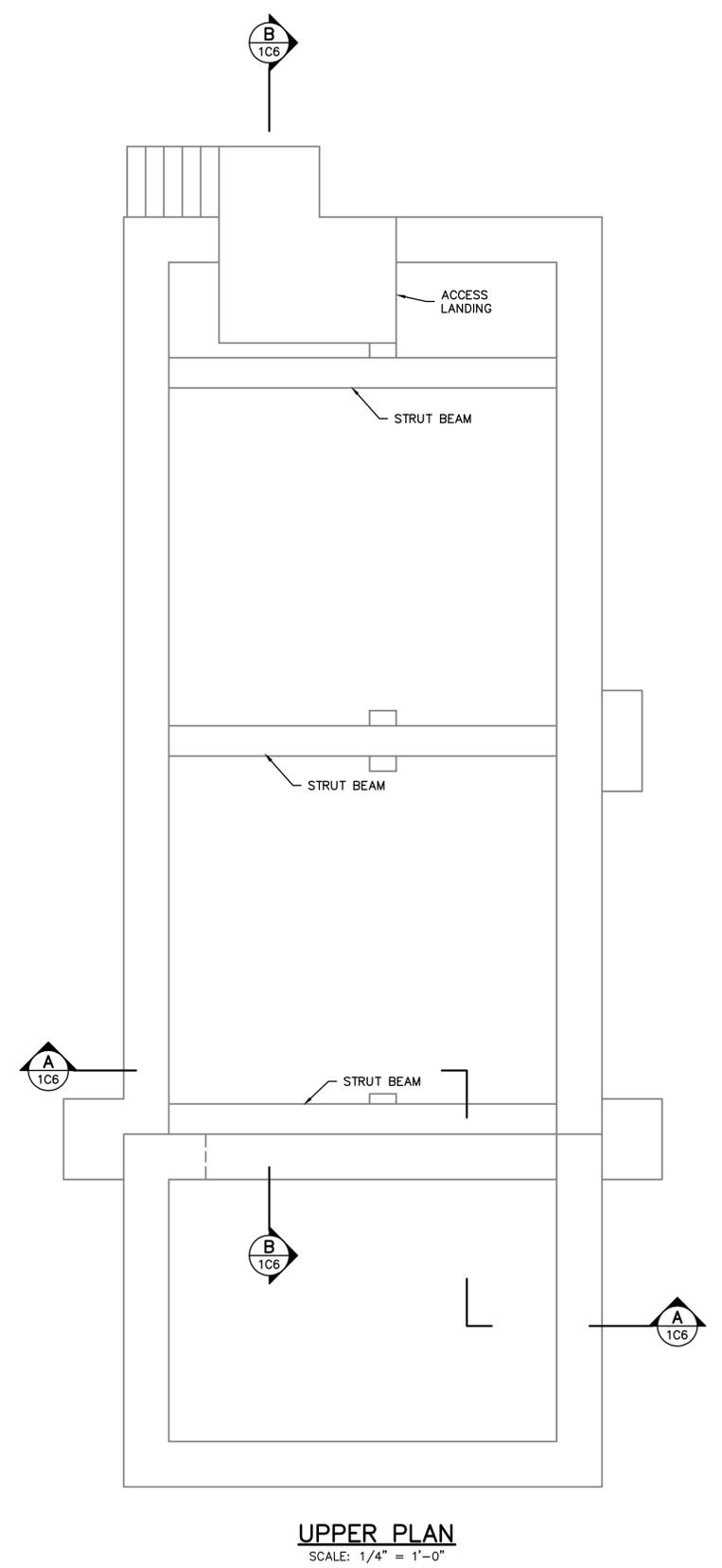


2014 WASTEWATER TREATMENT PLANT PROJECTS
 WASTEWATER TREATMENT UTILITY
 CITY OF WEST LAFAYETTE, INDIANA
AREA 1 - WET WEATHER FACILITY IMPROVEMENTS
CHEMICAL FEED MODIFICATIONS SCHEMATIC

SHEET NO.
1C4
 PAGE NO.
13

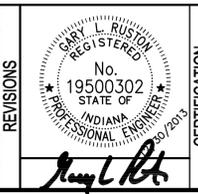


SECTIONAL PLAN
AT APPROXIMATE EL. 571.0
 SCALE: 1/4" = 1'-0"



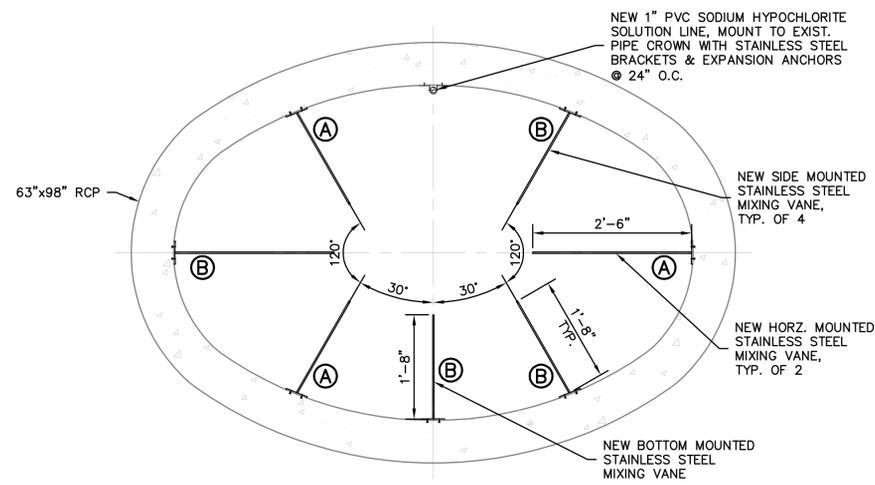
UPPER PLAN
 SCALE: 1/4" = 1'-0"

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DRAWING SCALE						
AS NOTED						
ISSUE DATE						
JULY 2014						
PROJECT NUMBER						
148912/158513						



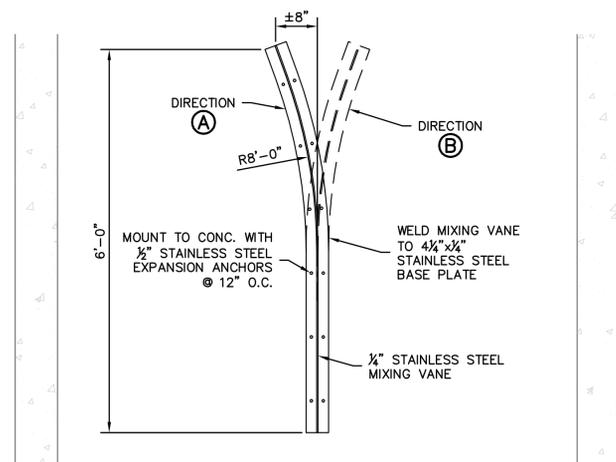
2014 WASTEWATER TREATMENT PLANT PROJECTS
 WASTEWATER TREATMENT UTILITY
 CITY OF WEST LAFAYETTE, INDIANA
AREA 1 - WET WEATHER FACILITY IMPROVEMENTS
EXISTING CONTROL CHAMBER
PLANS & DETAILS

SHEET NO.
1C5
 PAGE NO.
14

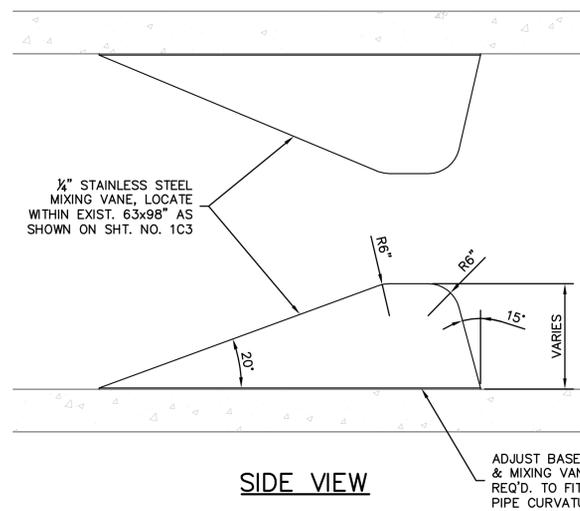


EXISTING 63"x98" SEWER MODIFICATIONS DETAIL

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

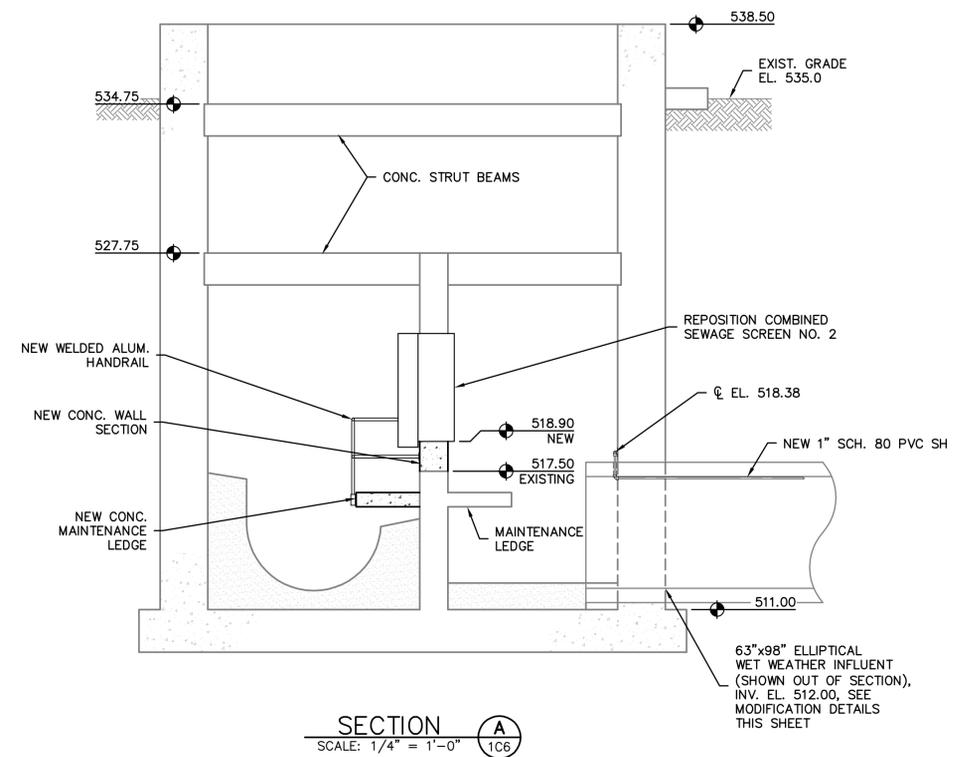


TOP VIEW

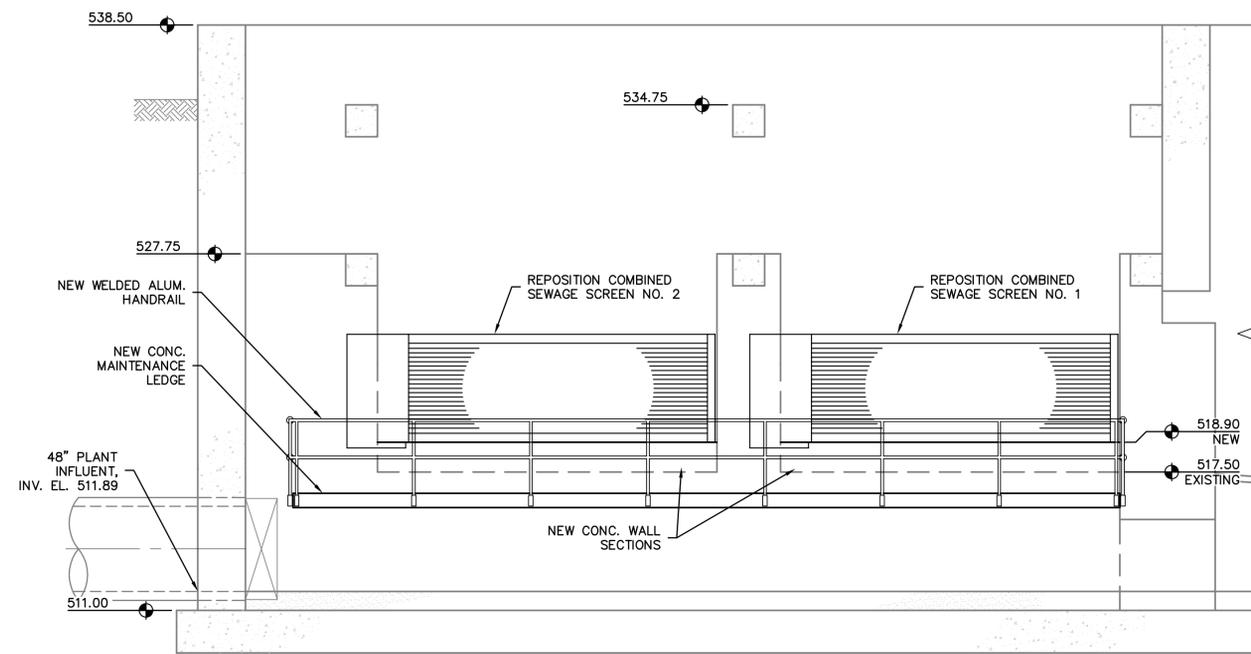


NEW FLOW MIXING VANES INSTALLATION DETAILS

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



SECTION A
SCALE: 1/4" = 1'-0" 1C6



SECTION B
SCALE: 1/4" = 1'-0" 1C6

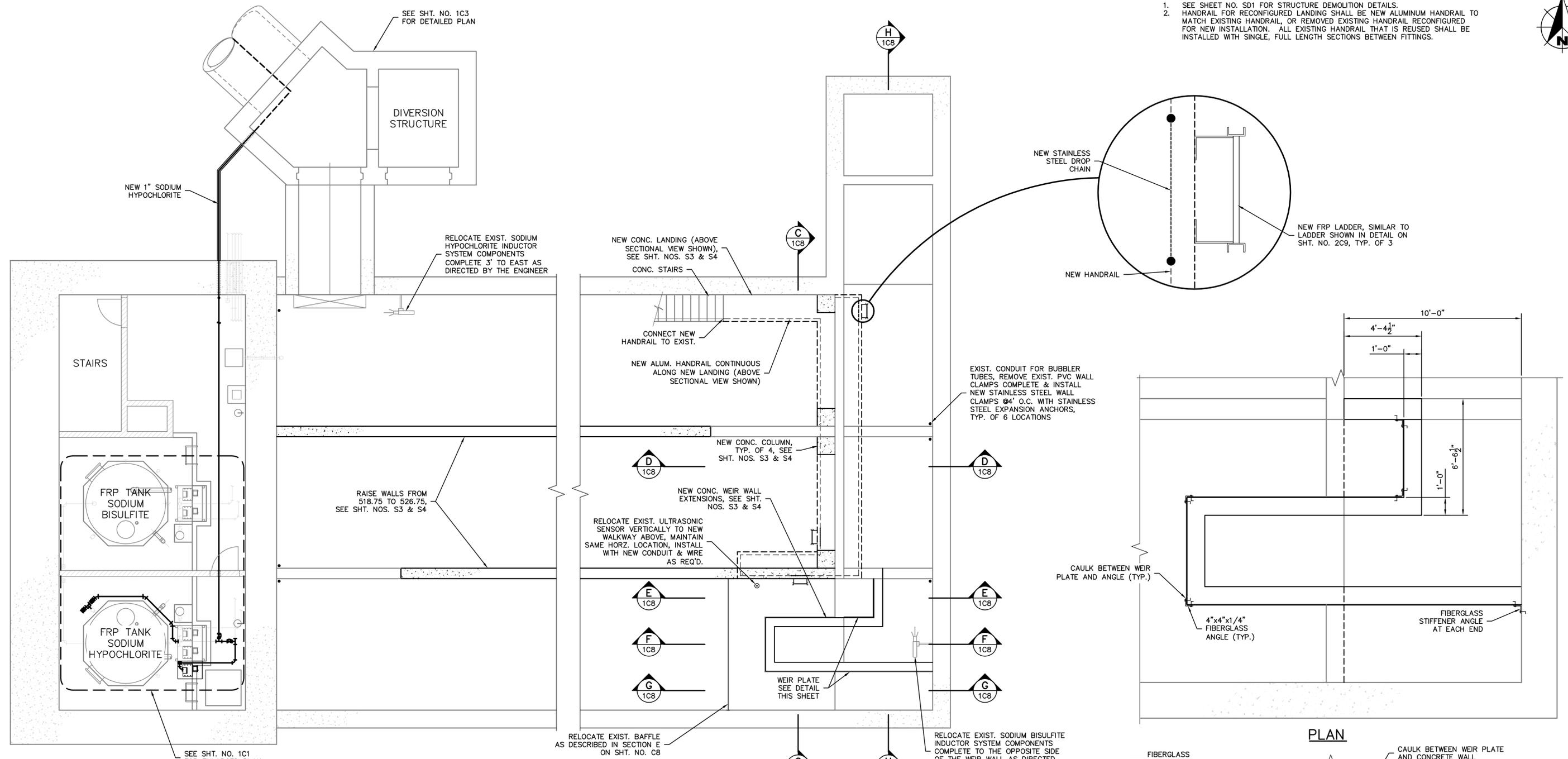
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DRAWING SCALE: 1/4" = 1'-0"						
ISSUE DATE: JULY 2014						
PROJECT NUMBER: 148912/158513						



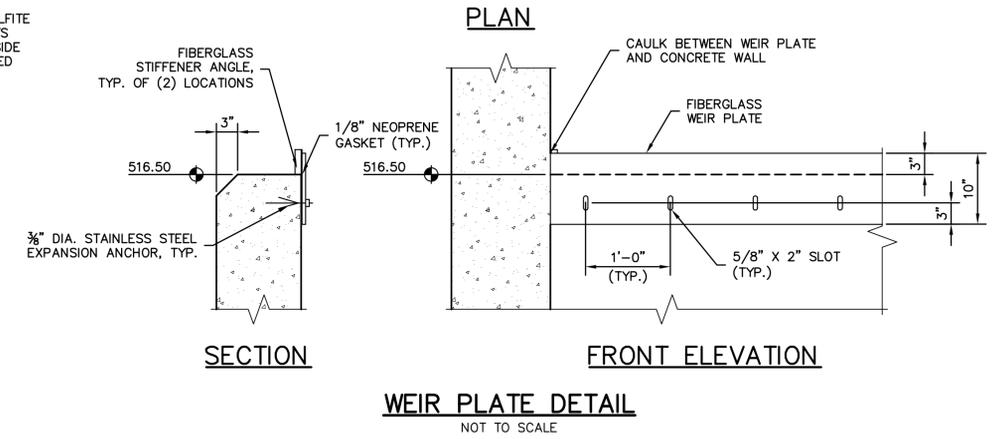
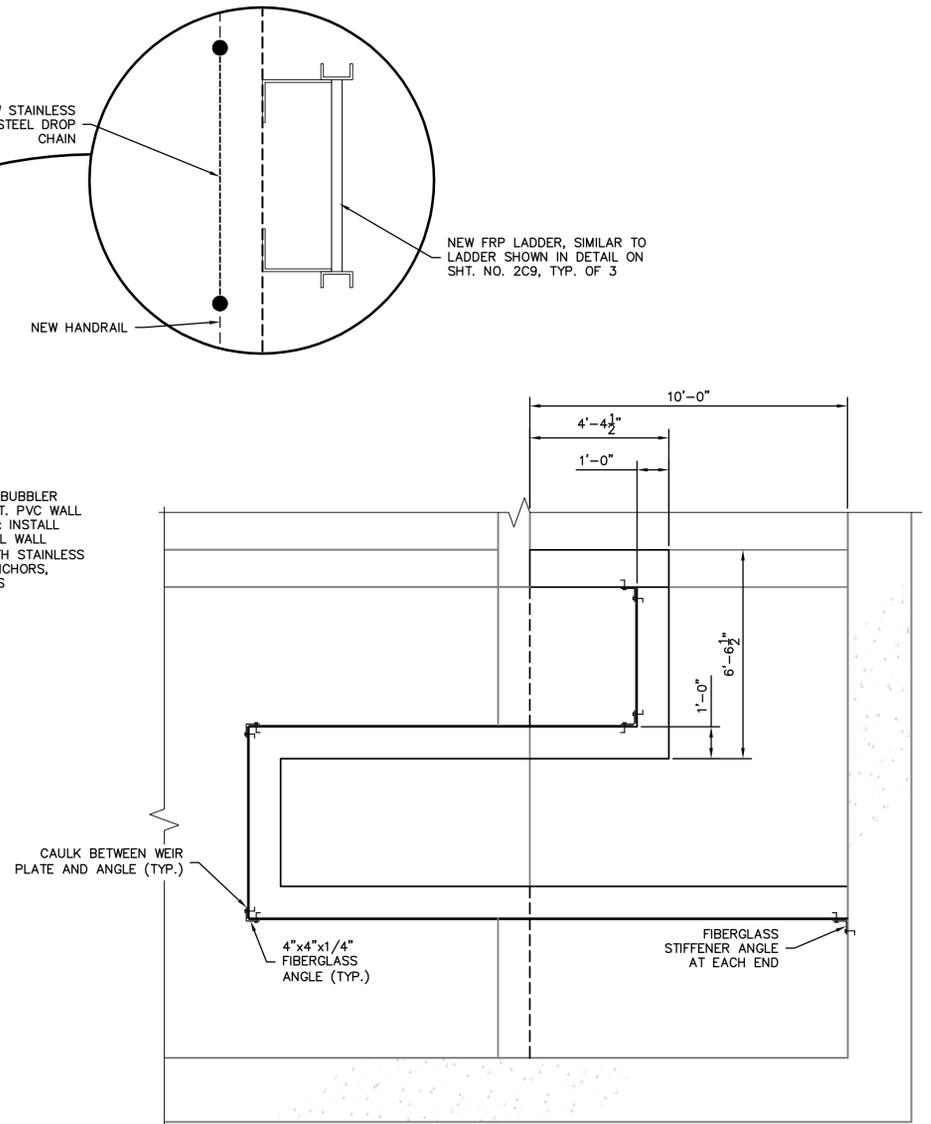
2014 WASTEWATER TREATMENT PLANT PROJECTS
 WASTEWATER TREATMENT UTILITY
 CITY OF WEST LAFAYETTE, INDIANA
AREA 1 - WET WEATHER FACILITY IMPROVEMENTS
EXISTING CONTROL CHAMBER SECTIONS
CHEMICAL DISTRIBUTION DETAILS

SHEET NO. **1C6**
 PAGE NO. **15**

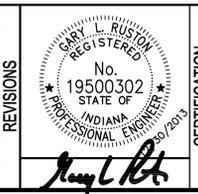
- GENERAL STRUCTURE NOTES:**
- SEE SHEET NO. SD1 FOR STRUCTURE DEMOLITION DETAILS.
 - HANDRAIL FOR RECONFIGURED LANDING SHALL BE NEW ALUMINUM HANDRAIL TO MATCH EXISTING HANDRAIL, OR REMOVED EXISTING HANDRAIL RECONFIGURED FOR NEW INSTALLATION. ALL EXISTING HANDRAIL THAT IS REUSED SHALL BE INSTALLED WITH SINGLE, FULL LENGTH SECTIONS BETWEEN FITTINGS.



**SECTIONAL PLAN
AT APPROXIMATE EL. 520.0**
SCALE: 3/16" = 1'-0"



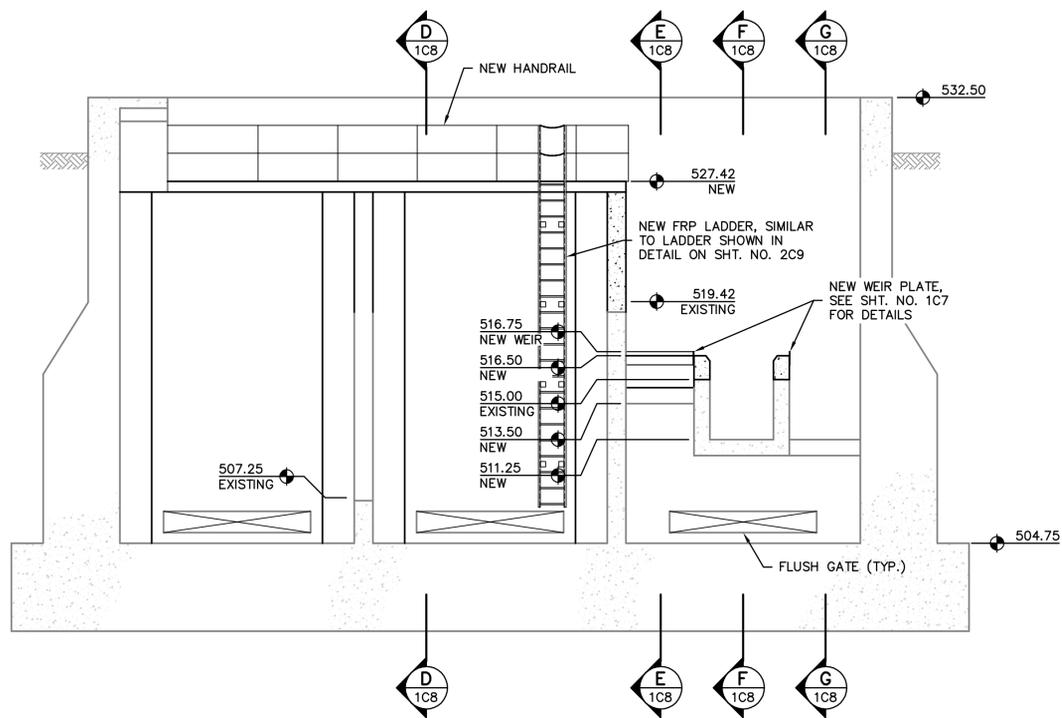
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DRAWING SCALE						
3/16" = 1'-0"						
ISSUE DATE						
JULY 2014						
PROJECT NUMBER						
148912/158513						



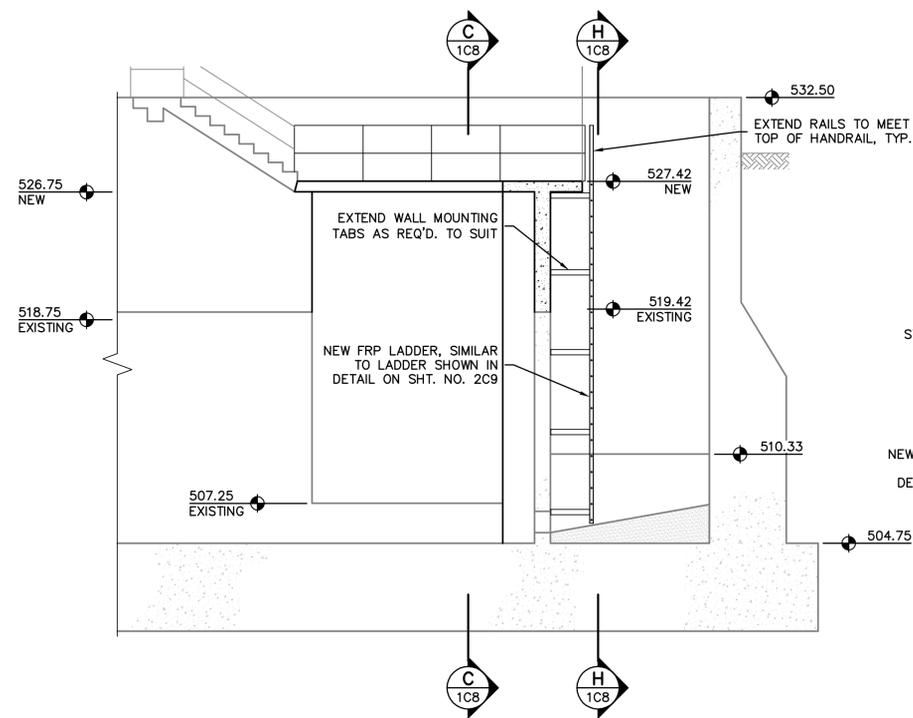
2014 WASTEWATER TREATMENT PLANT PROJECTS

WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA

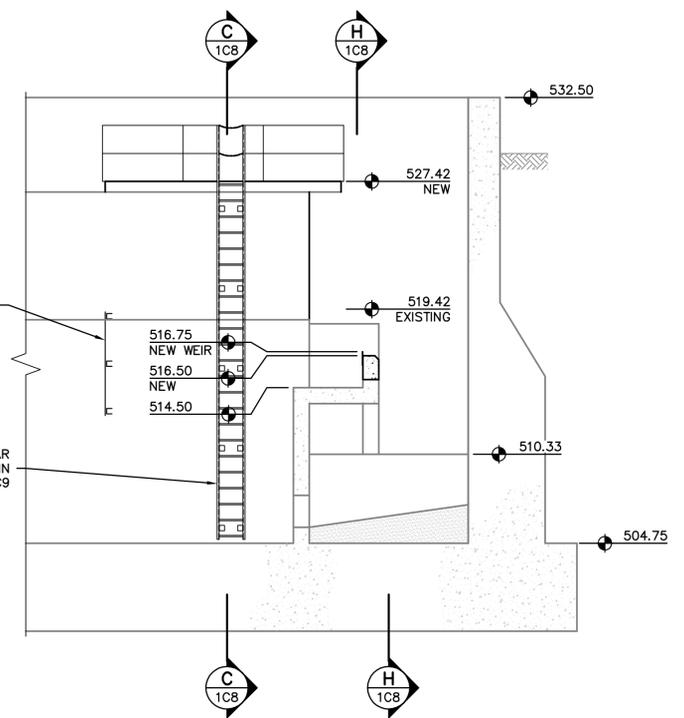
AREA 1 - WET WEATHER FACILITY IMPROVEMENTS
WET WEATHER BASIN - LOWER PLAN



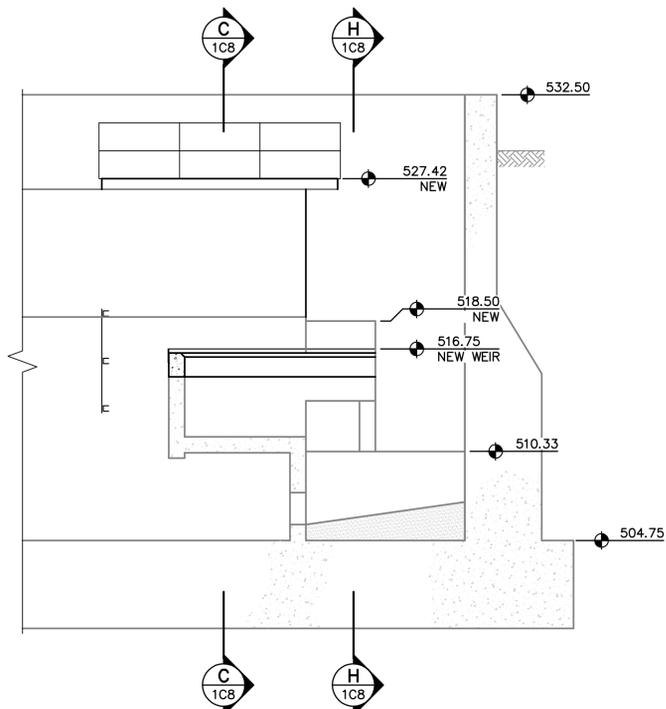
SECTION C-C
SCALE: 3/16" = 1'-0"



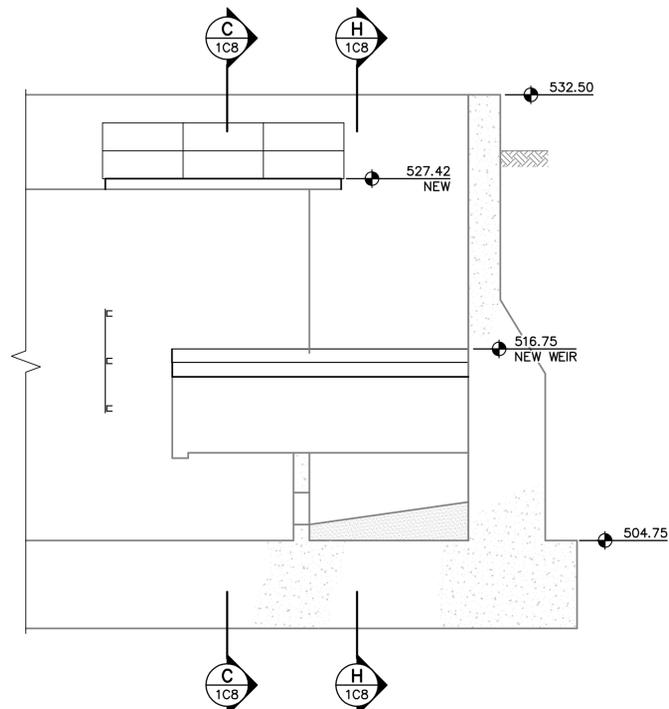
SECTION D-D
SCALE: 3/16" = 1'-0"



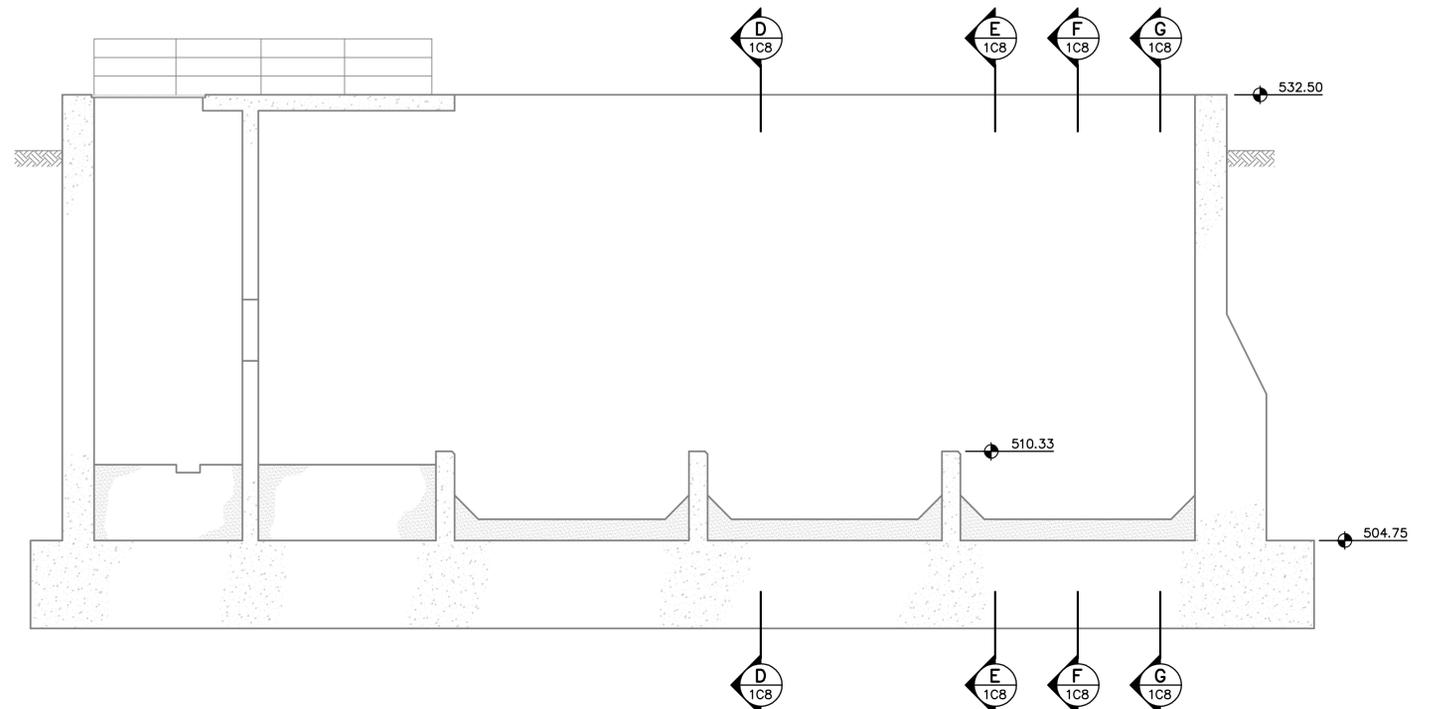
SECTION E-E
SCALE: 3/16" = 1'-0"



SECTION F-F
SCALE: 3/16" = 1'-0"



SECTION G-G
SCALE: 3/16" = 1'-0"

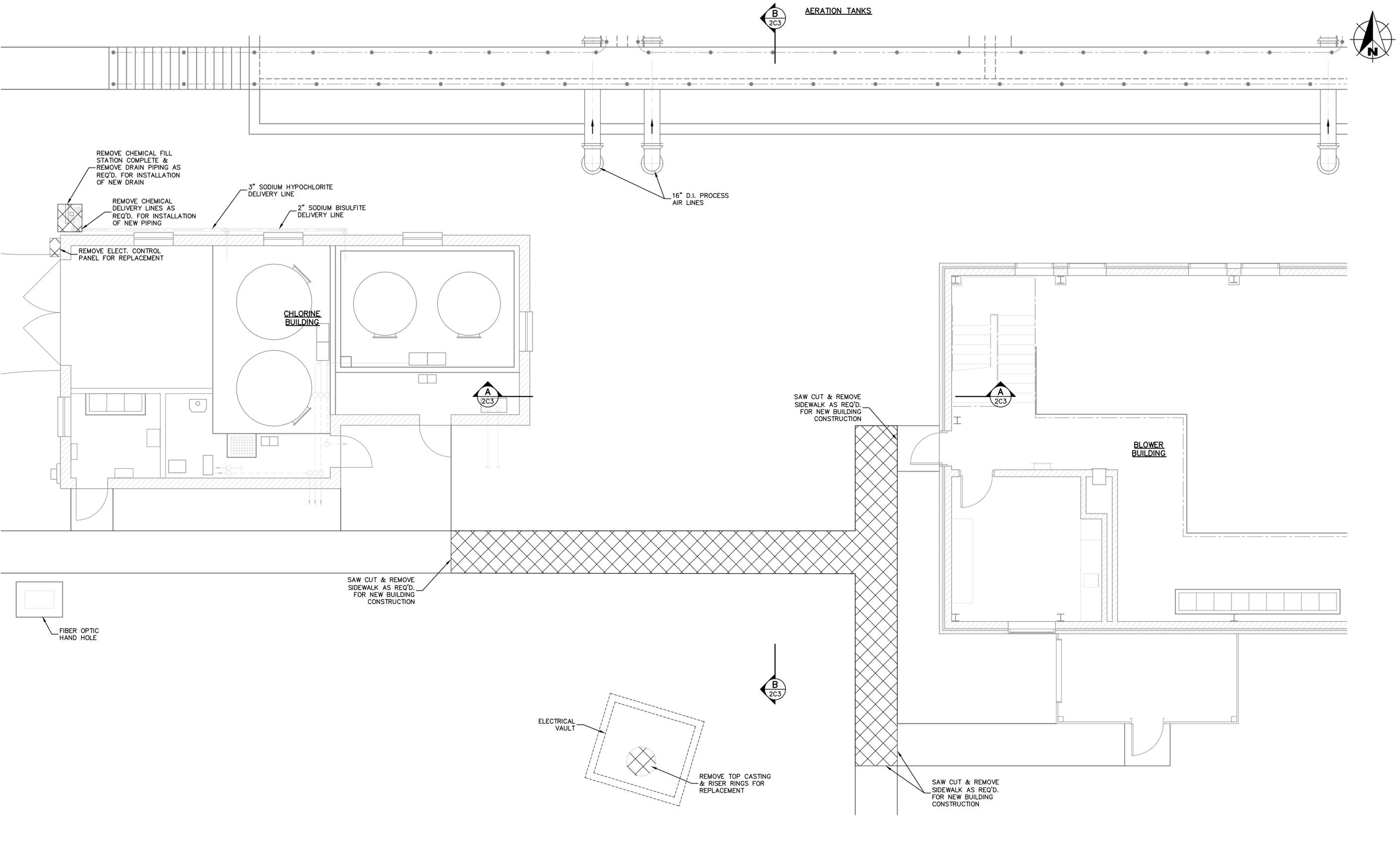


SECTION H-H
SCALE: 3/16" = 1'-0"

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DRAWING SCALE: 3/16" = 1'-0"						
ISSUE DATE: JULY 2014						
PROJECT NUMBER: 148912/158513						



2014 WASTEWATER TREATMENT PLANT PROJECTS
 WASTEWATER TREATMENT UTILITY
 CITY OF WEST LAFAYETTE, INDIANA
AREA 1 - WET WEATHER FACILITY IMPROVEMENTS
WET WEATHER BASIN - SECTIONS



SURFACE LEVEL DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

DRAWN BY	CHECKED BY	APPROVED BY	NO.	DATE	INITIALS	DESCRIPTION
W.B.J.	C.S.D.	GLR.				
DRAWING SCALE						
1/4" = 1'-0"						
ISSUE DATE						
JULY 2014						
PROJECT NUMBER						
148912/158513						



2014 WASTEWATER TREATMENT PLANT PROJECTS

WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA

AREA 2 - PHOSPHORUS REMOVAL - PHASE 1
NEW CHEMICAL FEED BUILDING LOCATION
SURFACE DEMOLITION PLAN

Drawing: J:\West Lafayette\Projects\158513 W Laf New Chemical Feed Facilities\CAD 04-001\DWG\Sheets\158513-04-01-C1.dwg | Layout: Sht 2C1 | Plotted: 07/07/14 @ 02:05:09 | User: Bill Jay | Project No.: 158513-04-01



B
2C3

AERATION TANKS

RELOCATE 4" PLANT WATER LINE FOR RELOCATION AS REQ'D. FOR NEW BUILDING CONSTRUCTION

4" D.I. PLANT WATER LINE

REMOVE 4" RISER PIPE & DRAIN AS REQ'D. FOR NEW FILL STATION DRAIN LINE INSTALLATION

24" D.I. PROCESS AIR LINE

12" D.I. DRAIN

REMOVE 10" CITY WATER LINE FOR RELOCATION AS REQ'D. FOR NEW BUILDING CONSTRUCTION

CHLORINE BUILDING

A
2C3

REMOVE 2" NATURAL GAS LINE FOR RELOCATION AS REQ'D. FOR NEW BUILDING CONSTRUCTION

6" D.I. CITY WATER LINE

BLOWER BUILDING

10" D.I. PROCESS AIR LINE (APPROX. LOCATION)

REMOVE SECTION OF 6" D.I. DRAIN AS REQ'D. FOR PIPE CONNECTION

REMOVE UNDERGROUND FIBER OPTIC LINE FOR RELOCATION AS REQ'D. FOR NEW BUILDING CONSTRUCTION

ELECTRICAL VAULT

B
2C3

LOWER LEVEL DEMOLITION PLAN

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

DRAWN BY	CHECKED BY	APPROVED BY	NO.	DATE	INITIALS	DESCRIPTION
W.B.J.	C.S.D.	GLR.				
DRAWING SCALE						
1/4" = 1'-0"						
ISSUE DATE						
JULY 2014						
PROJECT NUMBER						
148912/158513						



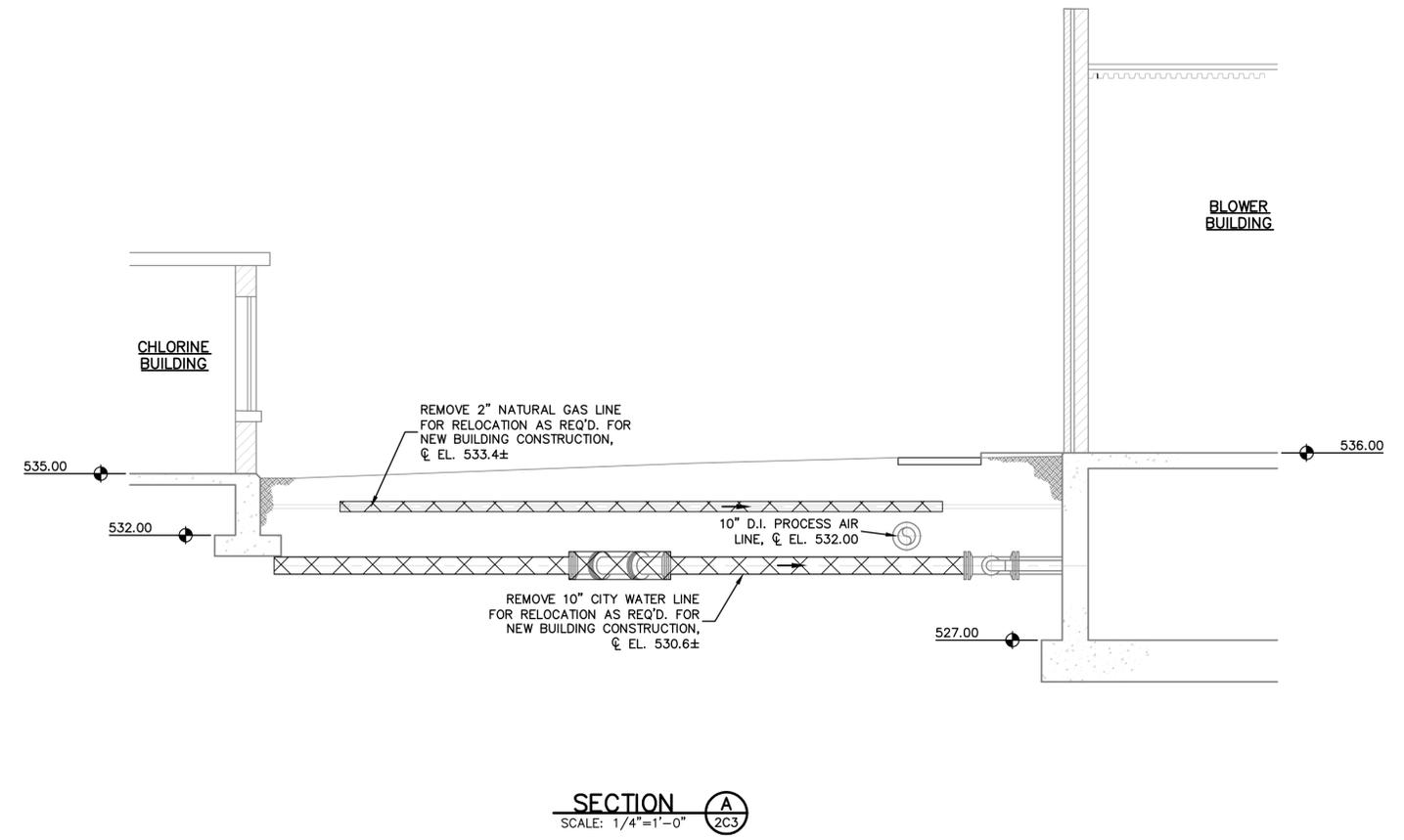
2014 WASTEWATER TREATMENT PLANT PROJECTS

WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA

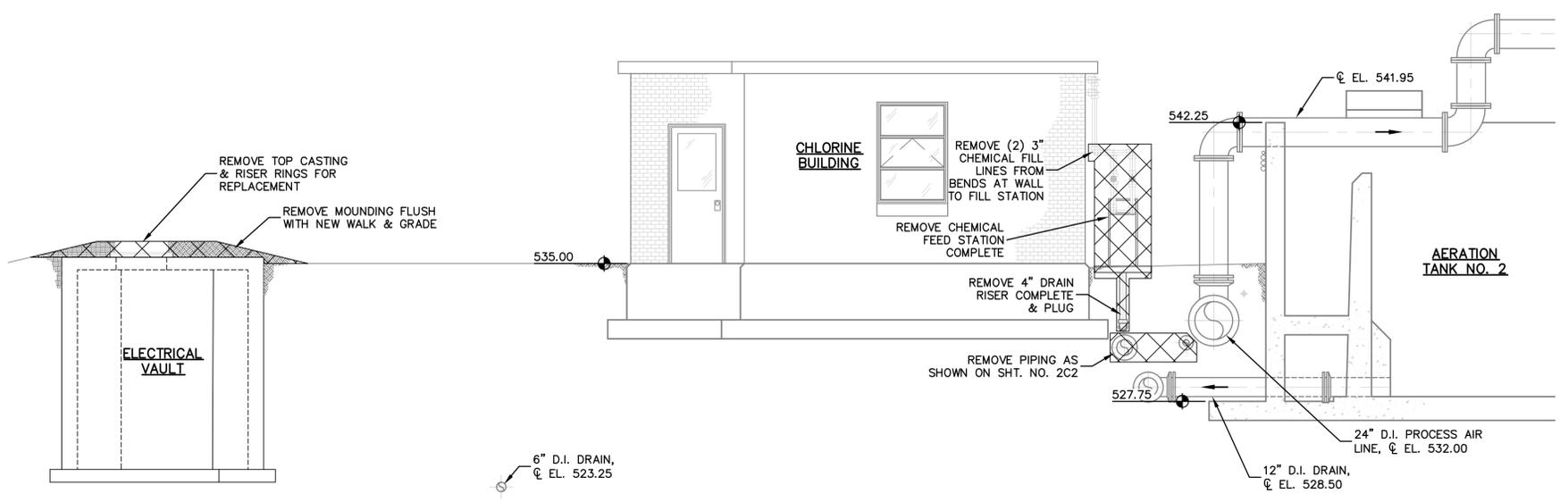
AREA 2 - PHOSPHORUS REMOVAL - PHASE 1
NEW CHEMICAL FEED BUILDING LOCATION
LOWER DEMOLITION PLAN

SHEET NO.
2C2

PAGE NO.
19



SECTION A
SCALE: 1/4"=1'-0" 2C3



SECTION B
SCALE: 1/4"=1'-0" 2C3

DRAWN BY	CHECKED BY	APPROVED BY	NO.	DATE	INITIALS	DESCRIPTION
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1/4"=1'-0"						
ISSUE DATE						
JULY 2014						
PROJECT NUMBER						
148912/158513						



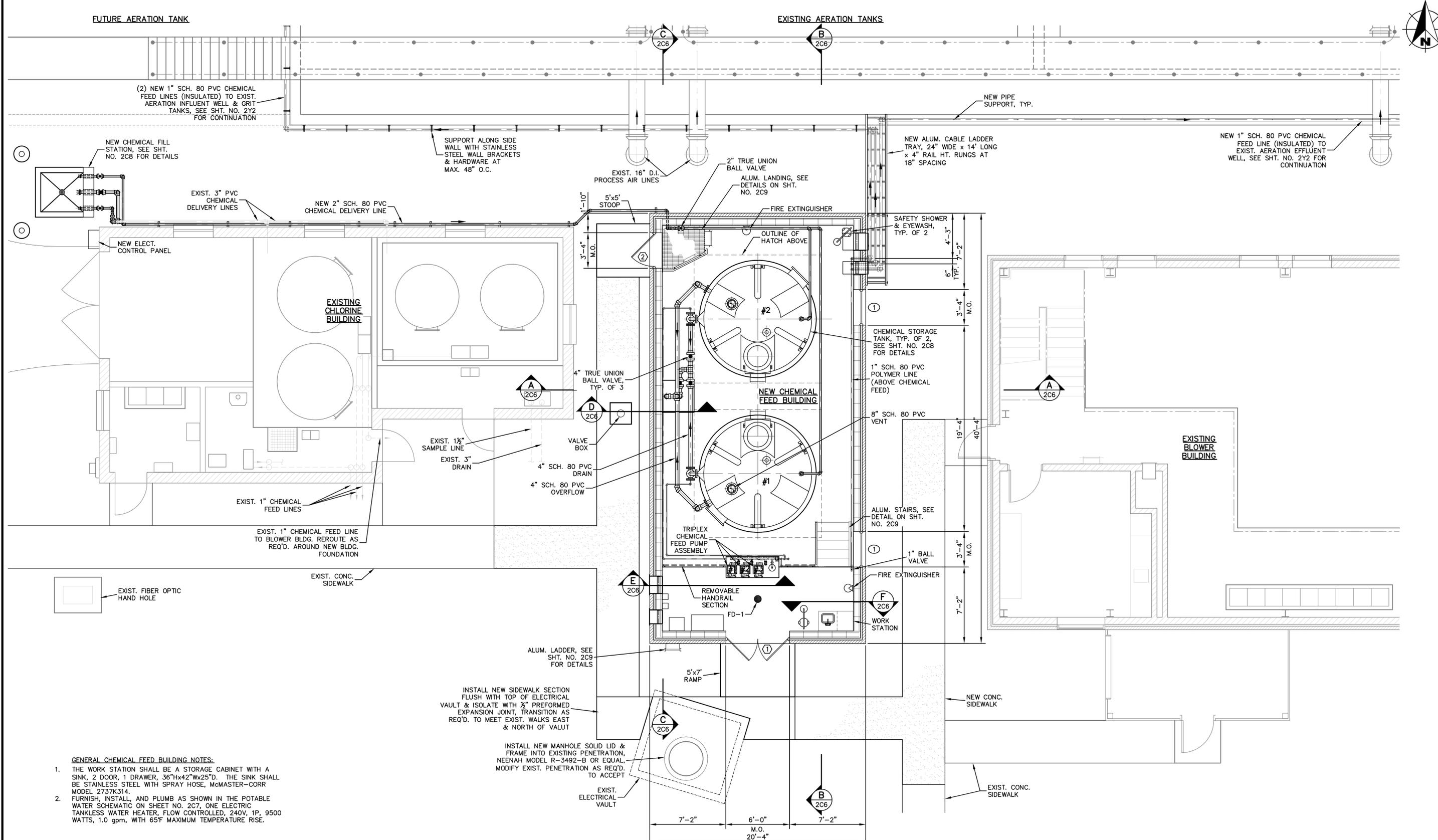
2014 WASTEWATER TREATMENT PLANT PROJECTS

WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA

**AREA 2 - PHOSPHORUS REMOVAL - PHASE 1
NEW CHEMICAL FEED BUILDING LOCATION
DEMOLITION SECTIONS**

SHEET NO.
2C3

PAGE NO.
20

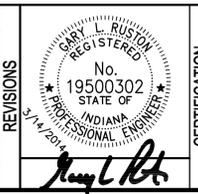


FINISHED FLOOR PLAN
SCALE: 1/4" = 1'-0"

- GENERAL CHEMICAL FEED BUILDING NOTES:**
1. THE WORK STATION SHALL BE A STORAGE CABINET WITH A SINK, 2 DOOR, 1 DRAWER, 36"Hx42"Wx25"D. THE SINK SHALL BE STAINLESS STEEL WITH SPRAY HOSE, McMASTER-CORR MODEL 2737K314.
 2. FURNISH, INSTALL, AND PLUMB AS SHOWN IN THE POTABLE WATER SCHEMATIC ON SHEET NO. 2C7, ONE ELECTRIC TANKLESS WATER HEATER, FLOW CONTROLLED, 240V, 1P, 9500 WATTS, 1.0 gpm, WITH 65°F MAXIMUM TEMPERATURE RISE.

* VERIFY ELEVATION AND/OR DIMENSION WITH EQUIPMENT MANUFACTURER.

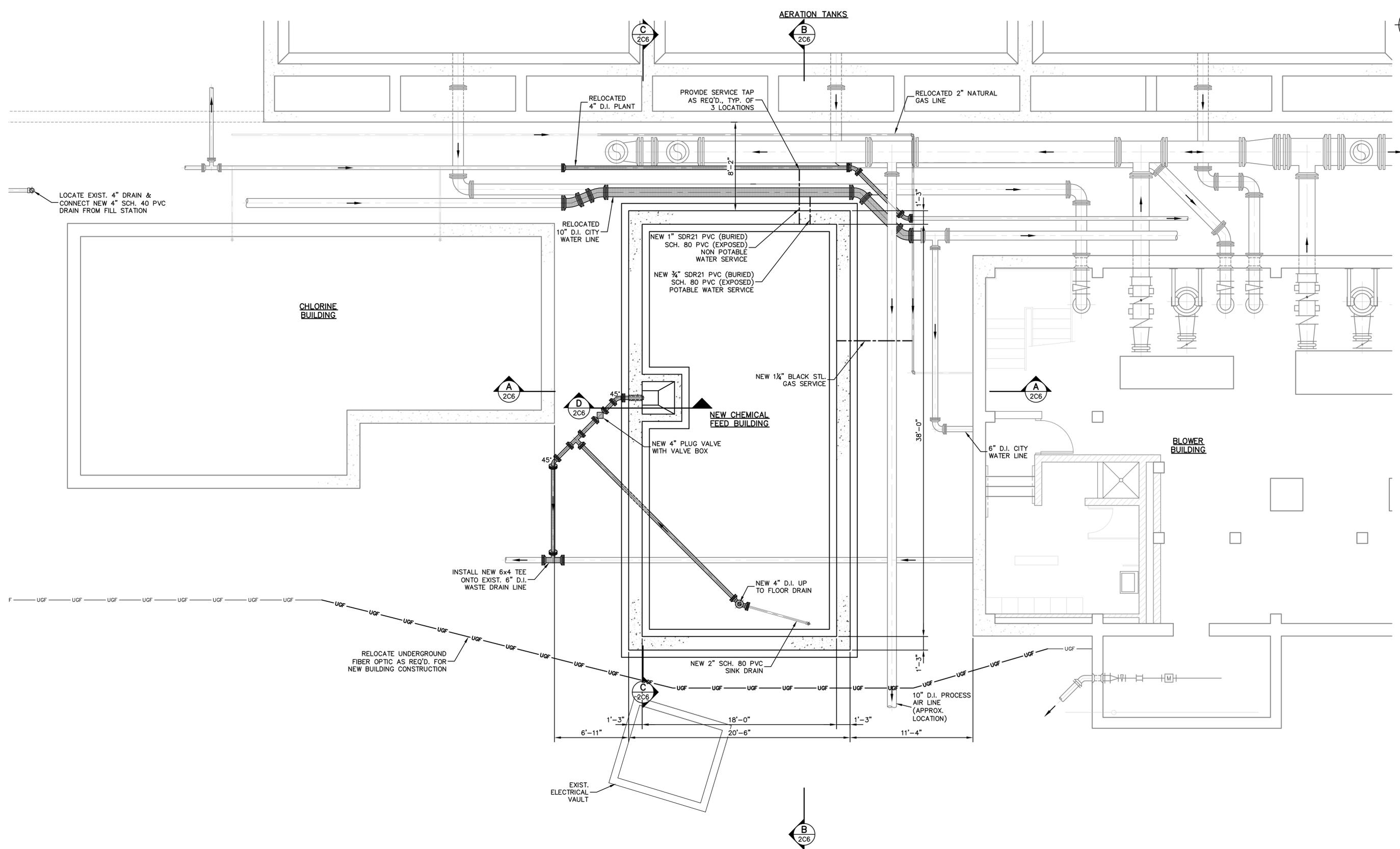
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1/4" = 1'-0"						
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JULY 2014						
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2014 WASTEWATER TREATMENT PLANT PROJECTS

WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA

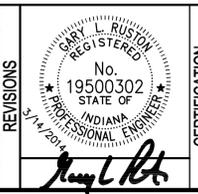
AREA 2 - PHOSPHORUS REMOVAL - PHASE 1
NEW CHEMICAL FEED BUILDING
FINISHED FLOOR PLAN



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

* VERIFY ELEVATION AND/OR DIMENSION WITH EQUIPMENT MANUFACTURER.

DRAWN BY	CHECKED BY	APPROVED BY	NO.	DATE	INITIALS	DESCRIPTION
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ISSUE DATE						
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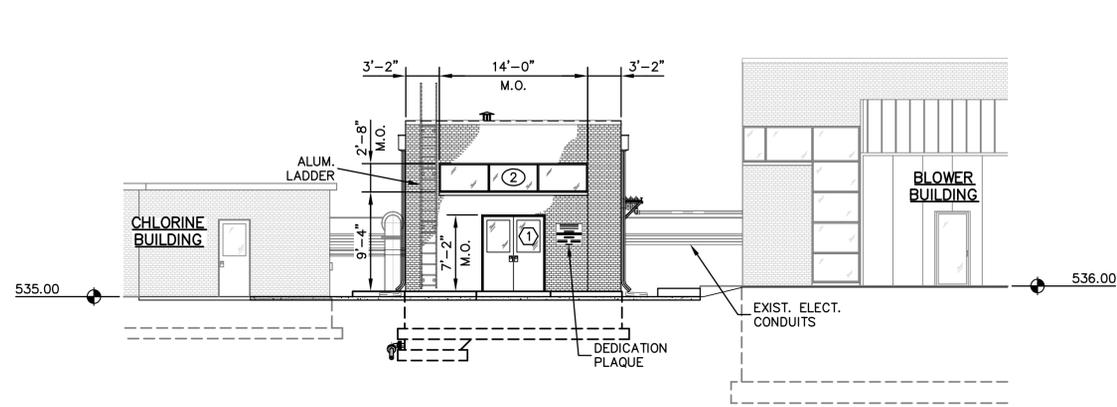
2014 WASTEWATER TREATMENT PLANT PROJECTS

WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA

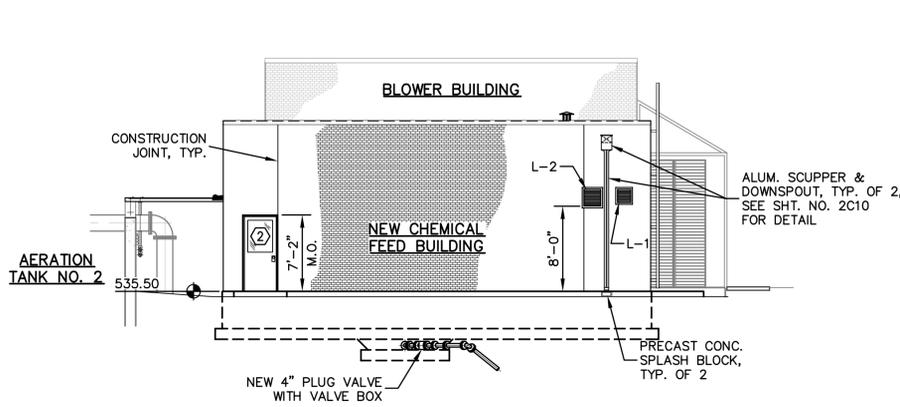
AREA 2 - PHOSPHORUS REMOVAL - PHASE 1
NEW CHEMICAL FEED BUILDING
FOUNDATION PLAN

SHEET NO.
2C5

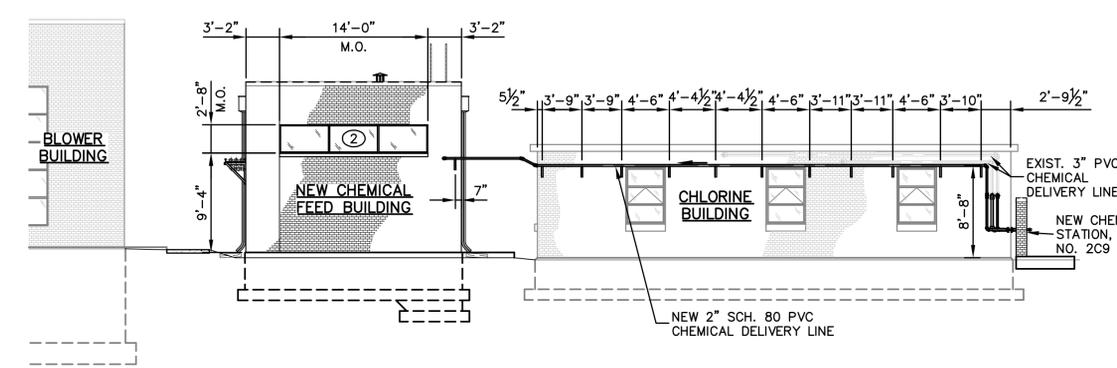
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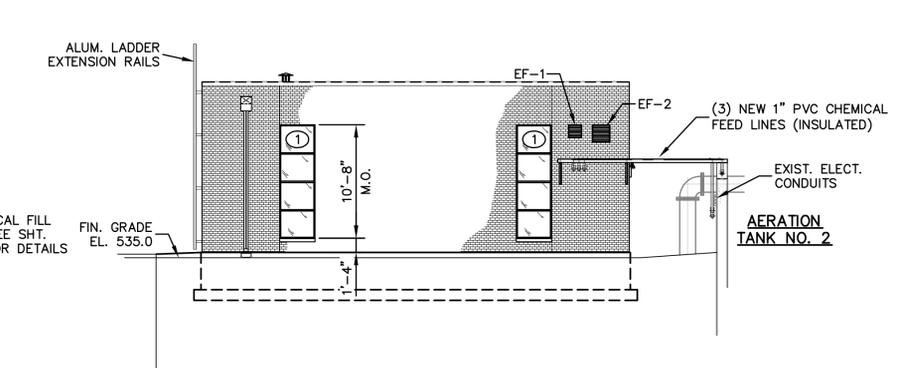
SOUTH ELEVATION
SCALE: 1/8" = 1'-0"



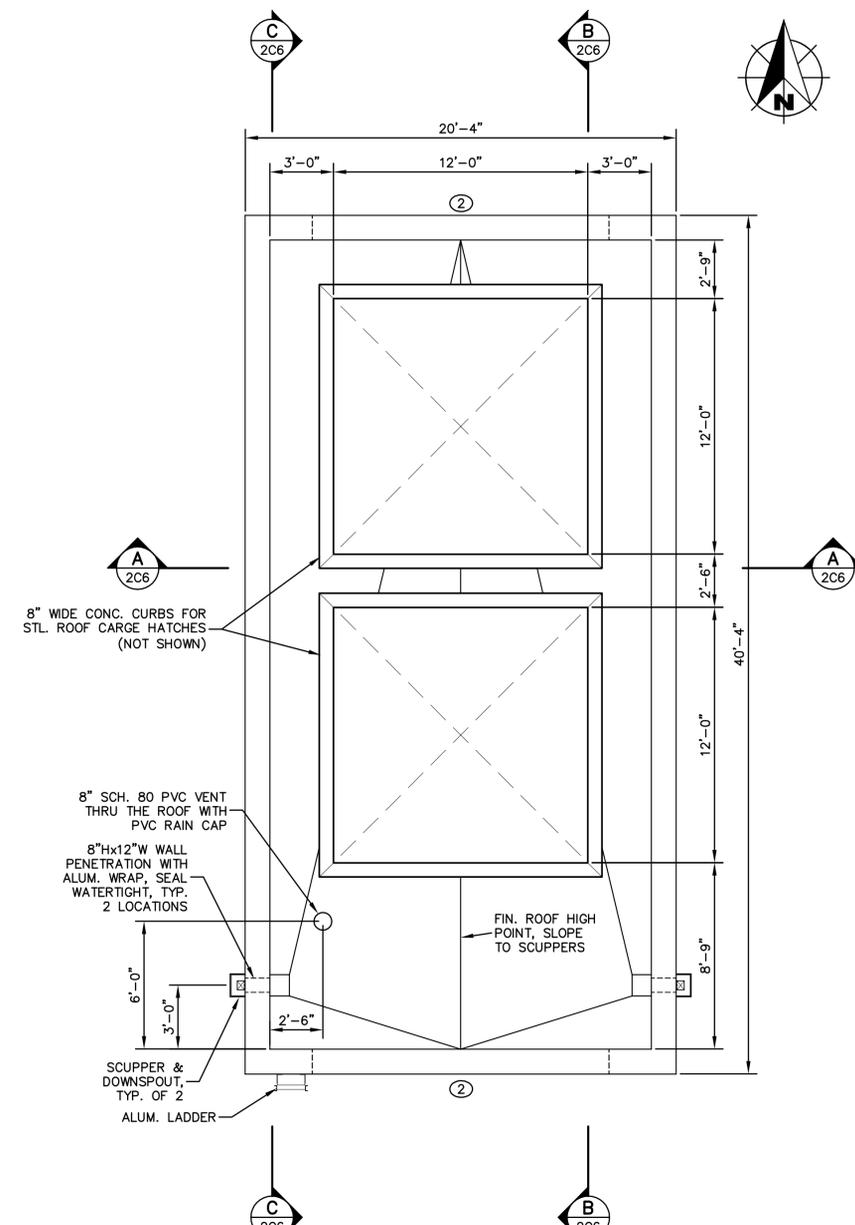
WEST ELEVATION
SCALE: 1/8" = 1'-0"



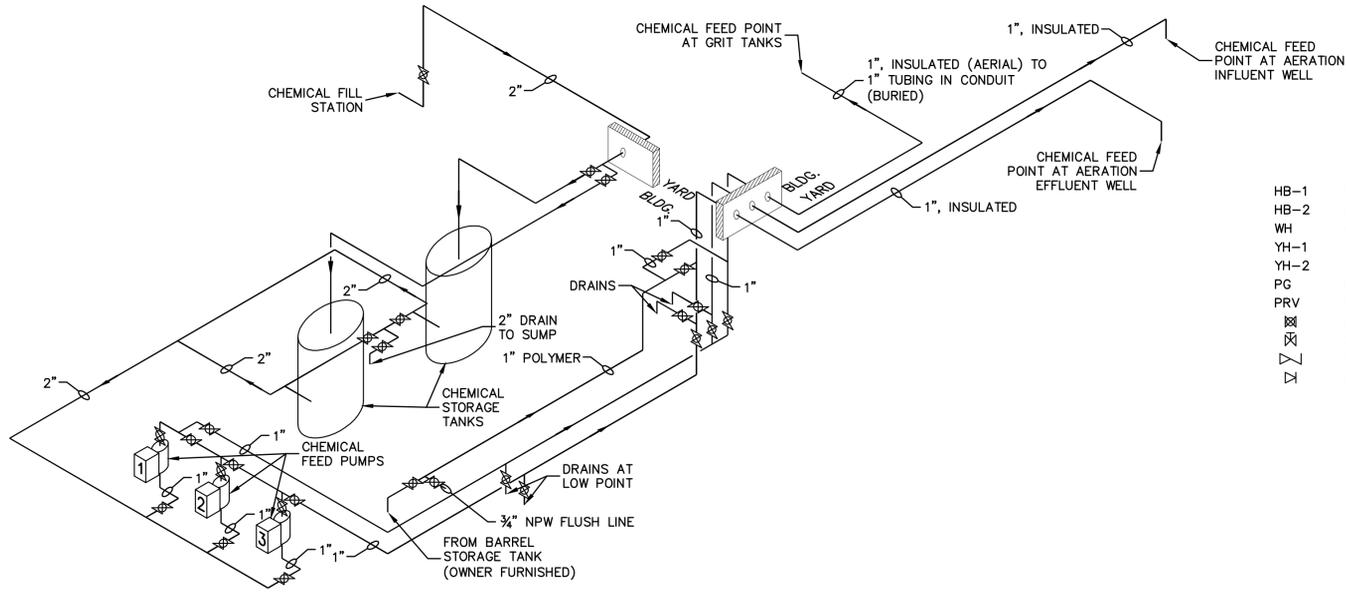
NORTH ELEVATION
SCALE: 1/8" = 1'-0"



EAST ELEVATION
SCALE: 1/8" = 1'-0"



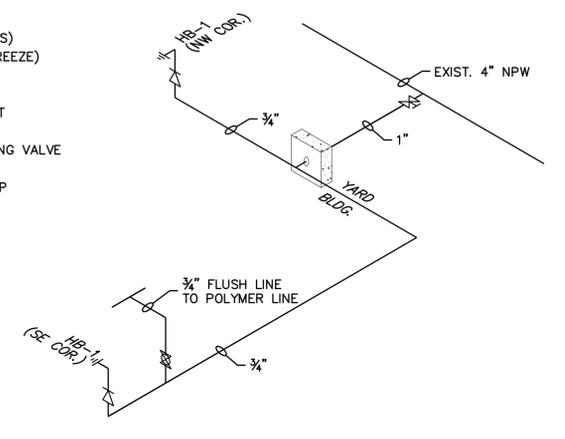
ROOF PLAN
SCALE: 1/4" = 1'-0"



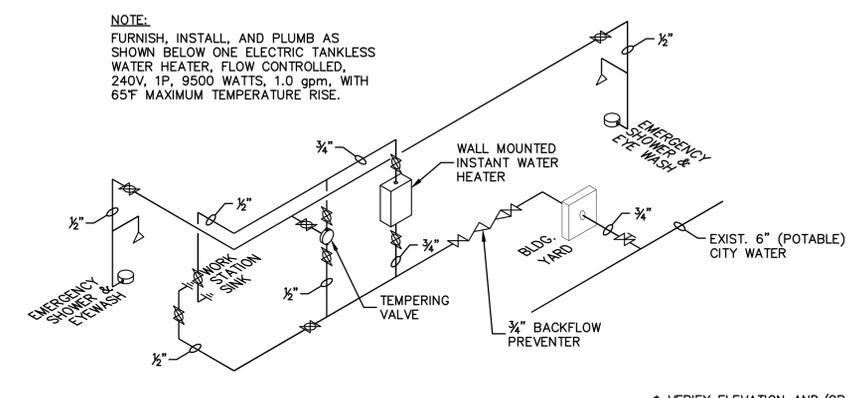
CHEMICAL FEED PIPING SCHEMATIC
NO SCALE

LEGEND

- HB-1 HOSE BIB (INDOORS)
- HB-2 HOSE BIB (NON FREEZE)
- WH WALL HYDRANT
- YH-1 1" YARD HYDRANT
- YH-2 1 1/2" YARD HYDRANT
- PG PRESSURE GAUGE
- PRV PRESSURE REDUCING VALVE
- ⊘ BALL VALVE
- ⊘ CORPORATION STOP
- ⊘ CHECK VALVE
- ⊘ REDUCER



NON POTABLE WATER (NPW) SCHEMATIC
NO SCALE

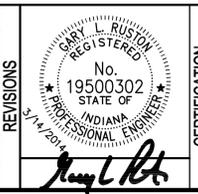


POTABLE WATER (CITY) SCHEMATIC
NO SCALE

NOTE:
FURNISH, INSTALL, AND PLUMB AS SHOWN BELOW ONE ELECTRIC TANKLESS WATER HEATER, FLOW CONTROLLED, 240V, 1P, 9500 WATTS, 1.0 gpm, WITH 65F MAXIMUM TEMPERATURE RISE.

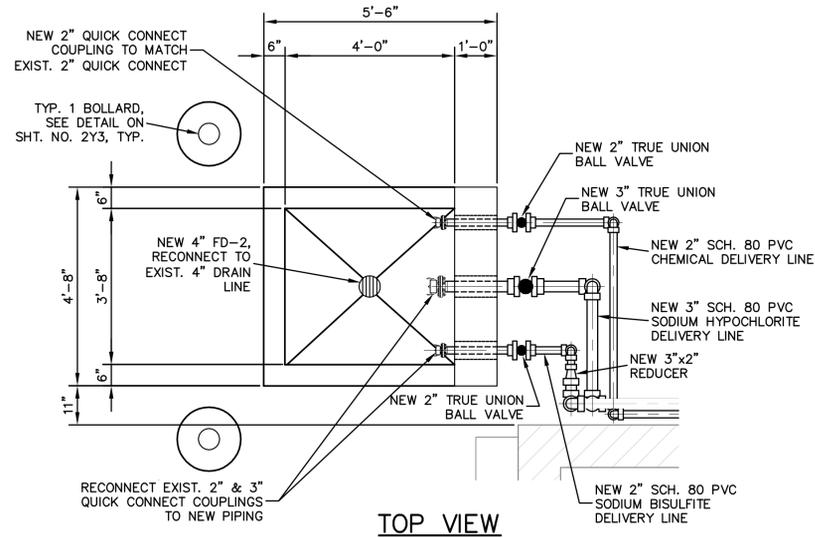
* VERIFY ELEVATION AND/OR DIMENSION WITH EQUIPMENT MANUFACTURER.

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DRAWING SCALE: AS NOTED						
ISSUE DATE: JULY 2014						
PROJECT NUMBER: 148912/158513						

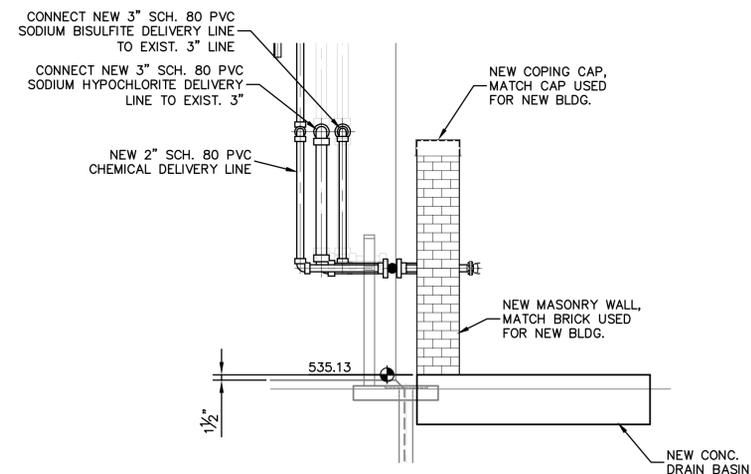


2014 WASTEWATER TREATMENT PLANT PROJECTS
WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA
AREA 2 - PHOSPHORUS REMOVAL - PHASE 1
NEW CHEMICAL FEED BUILDING
ROOF PLAN, ELEVATIONS & SCHEMATICS

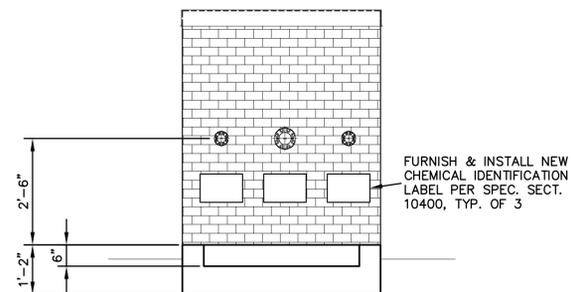
SHEET NO. **2C7**
PAGE NO. **24**



TOP VIEW



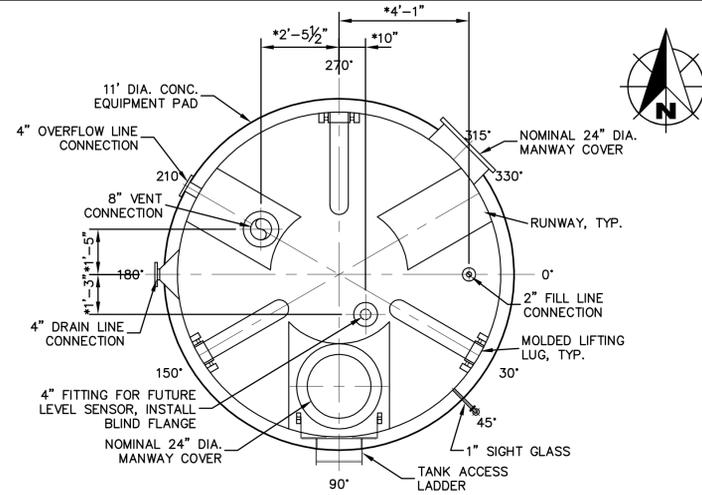
NORTH SIDE VIEW



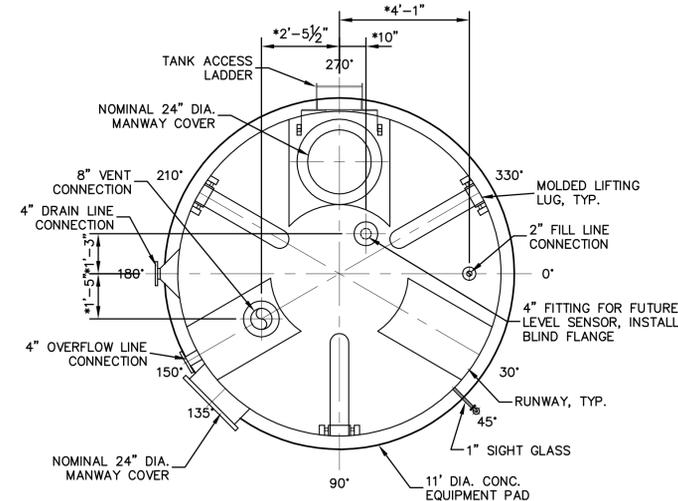
EAST SIDE VIEW

CHEMICAL FILL STATION DETAILS

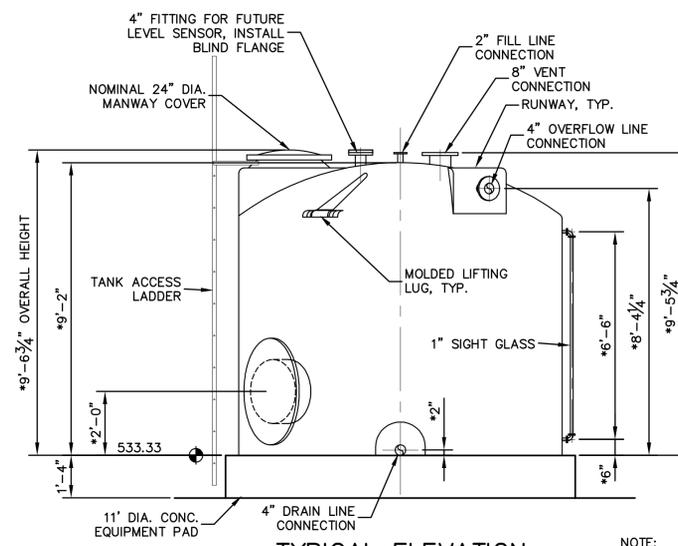
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TANK NO. 2 PLAN



TANK NO. 1 PLAN

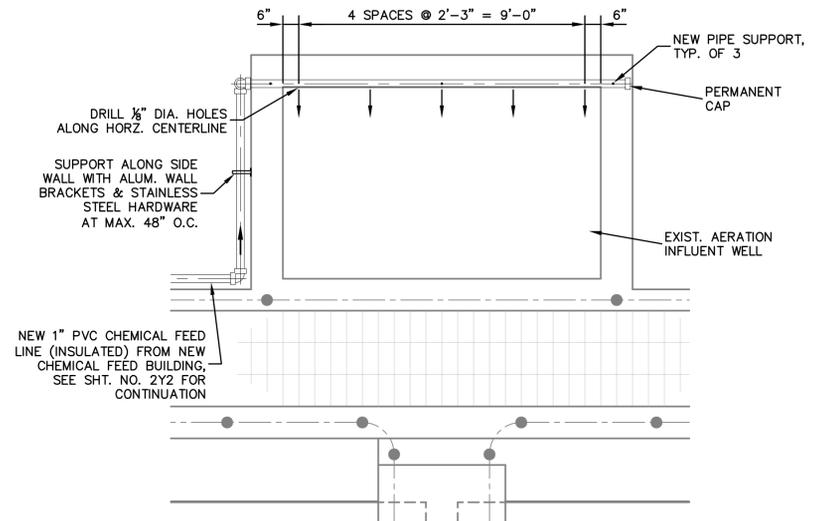


TYPICAL ELEVATION

CHEMICAL STORAGE TANK DETAILS

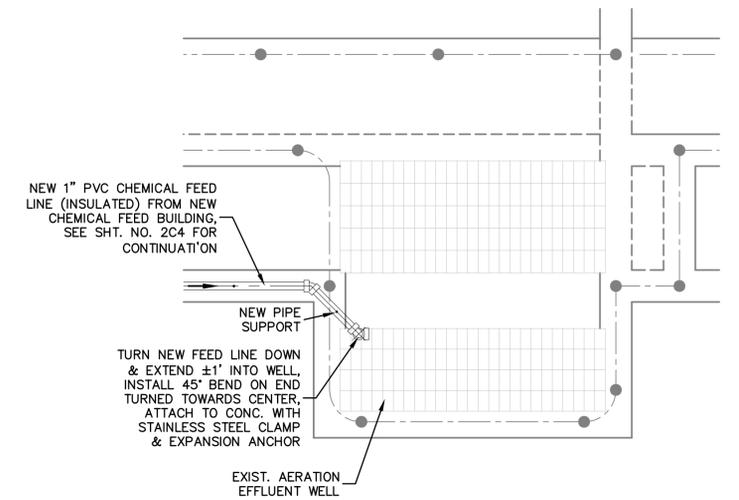
SCALE: 3/8"=1'-0"

NOTE:
TANK PENETRATIONS SHOWN IN SECTION ARE NOT TO TRUE ORIENTATION. SEE PLAN VIEWS.



AERATION INFLUENT WELL CHEMICAL FEED INSTALLATION DETAIL

SCALE: 3/8"=1'-0"



AERATION EFFLUENT WELL CHEMICAL FEED INSTALLATION DETAIL

SCALE: 3/8"=1'-0"

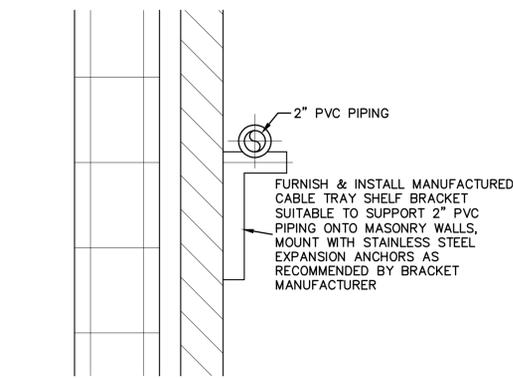
* VERIFY ELEVATION AND/OR DIMENSION WITH EQUIPMENT MANUFACTURER.

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W.B.J.	C.S.D.	GLR.				
DRAWING SCALE						
AS NOTED						
ISSUE DATE						
JULY 2014						
PROJECT NUMBER						
148912/158513						

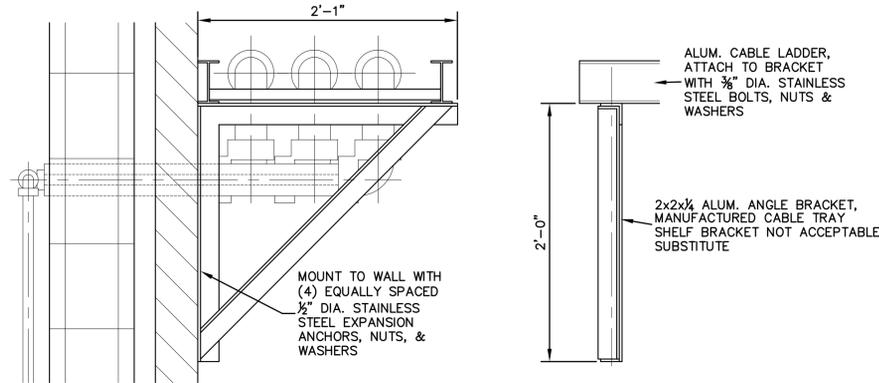


2014 WASTEWATER TREATMENT PLANT PROJECTS
WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA
AREA 2 - PHOSPHORUS REMOVAL - PHASE 1
NEW CHEMICAL FEED BUILDING
DETAILS

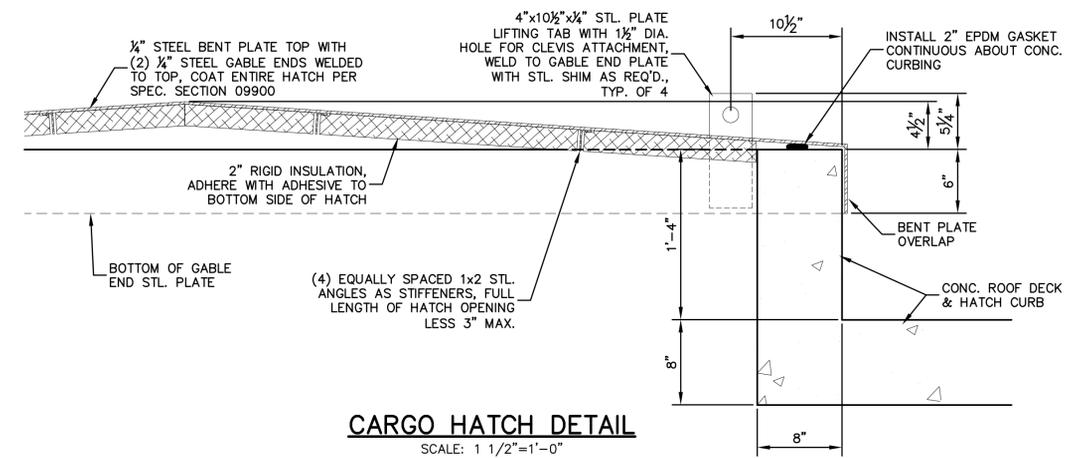
SHEET NO.
2C8
PAGE NO.
25



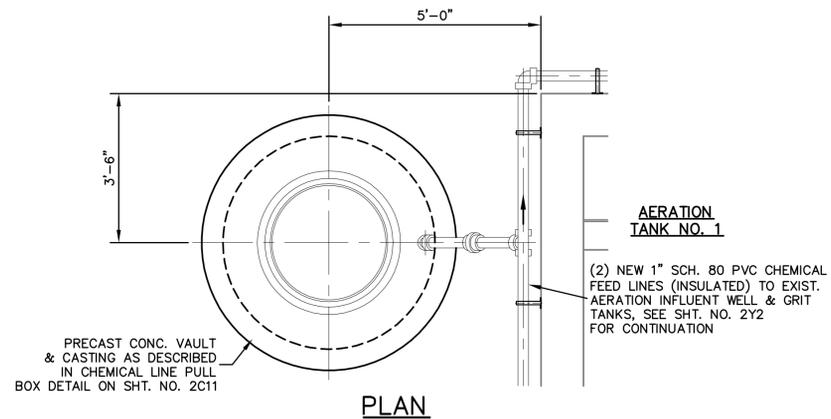
CHEMICAL DELIVERY LINE MOUNTING BRACKET DETAIL
SCALE: 1 1/2"=1'-0"



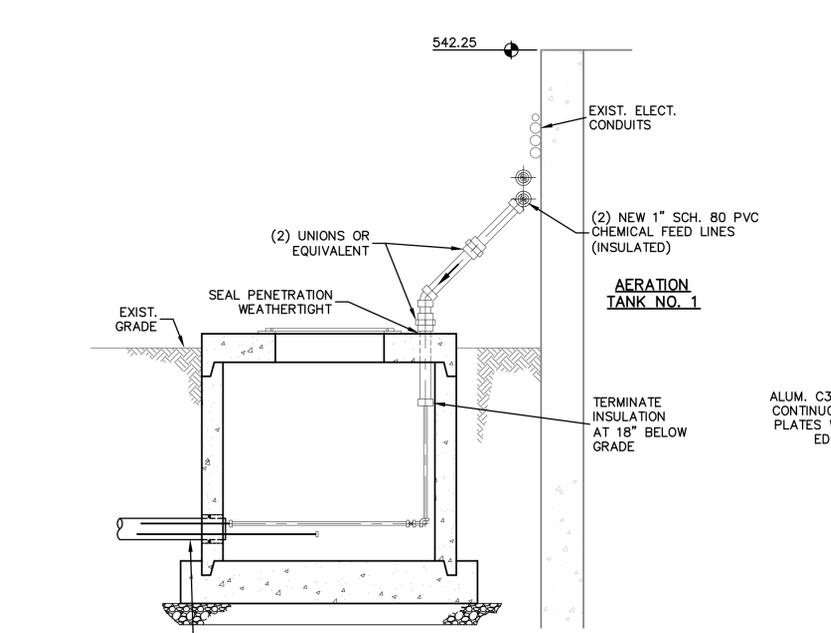
CABLE TRAY MOUNTING BRACKET DETAIL
SCALE: 1 1/2"=1'-0"



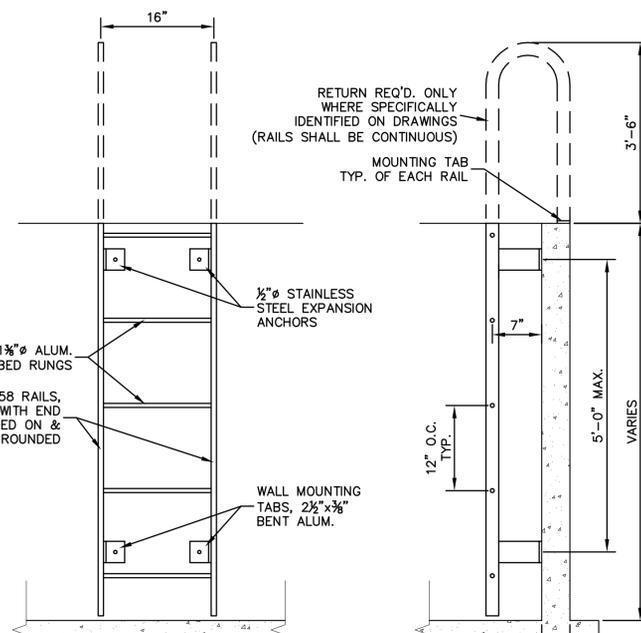
CARGO HATCH DETAIL
SCALE: 1 1/2"=1'-0"



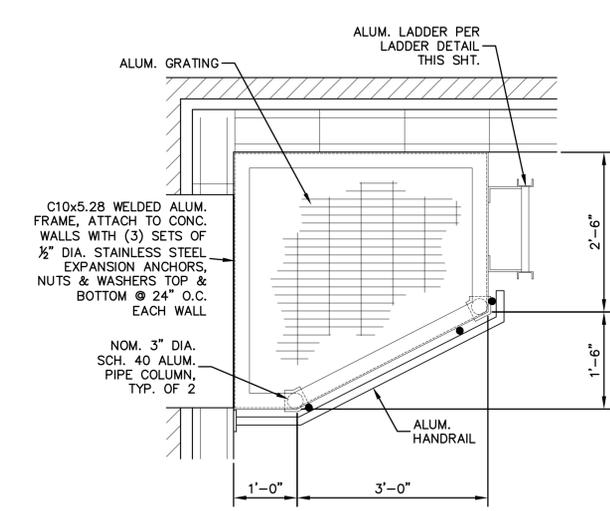
PLAN



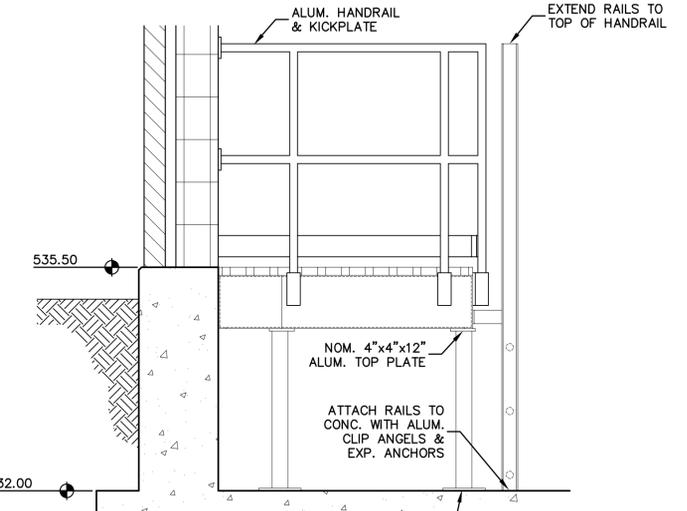
SECTION CHEMICAL LINE TRANSITION VAULT DETAIL
SCALE: 1/2"=1'-0"



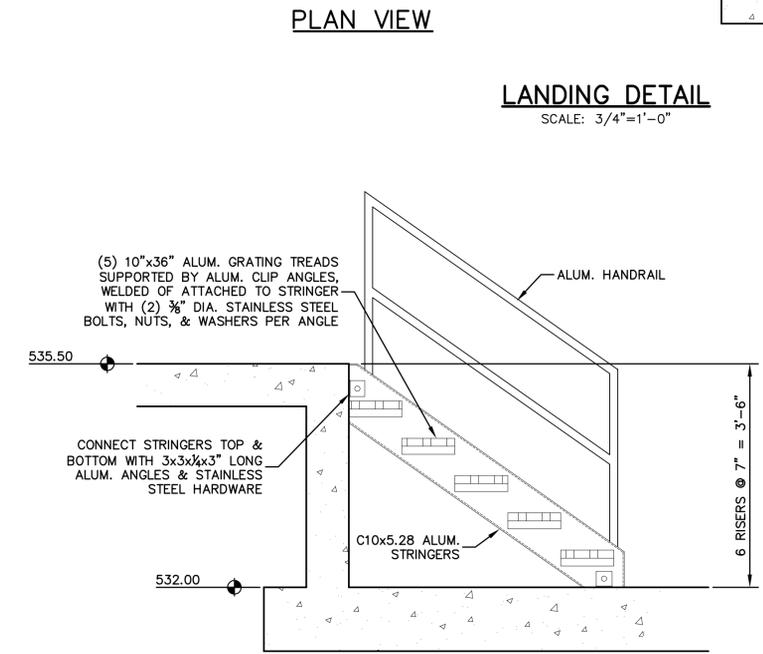
LADDER DETAIL
SCALE: NONE



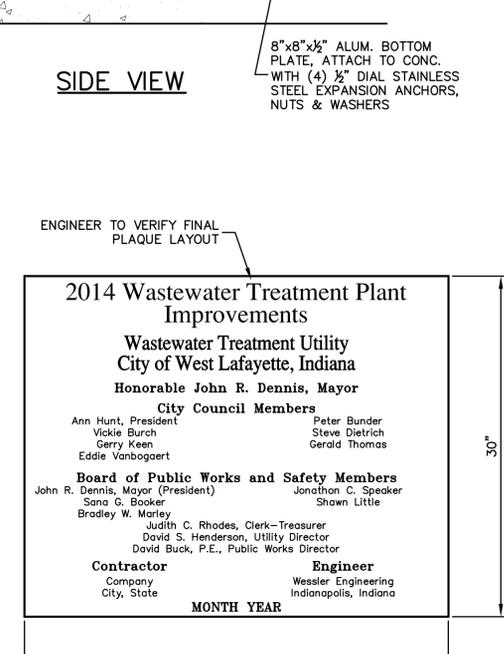
PLAN VIEW



SIDE VIEW

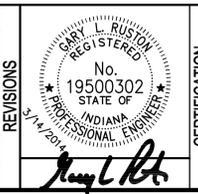


STAIR DETAIL
SCALE: 3/4"=1'-0"



DEDICATION PLAQUE DETAIL
NO SCALE

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PROJECT NUMBER: 148912/158513						



2014 WASTEWATER TREATMENT PLANT PROJECTS
WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA
AREA 2 - PHOSPHORUS REMOVAL - PHASE 1
NEW CHEMICAL FEED BUILDING
DETAILS

DOOR SCHEDULE

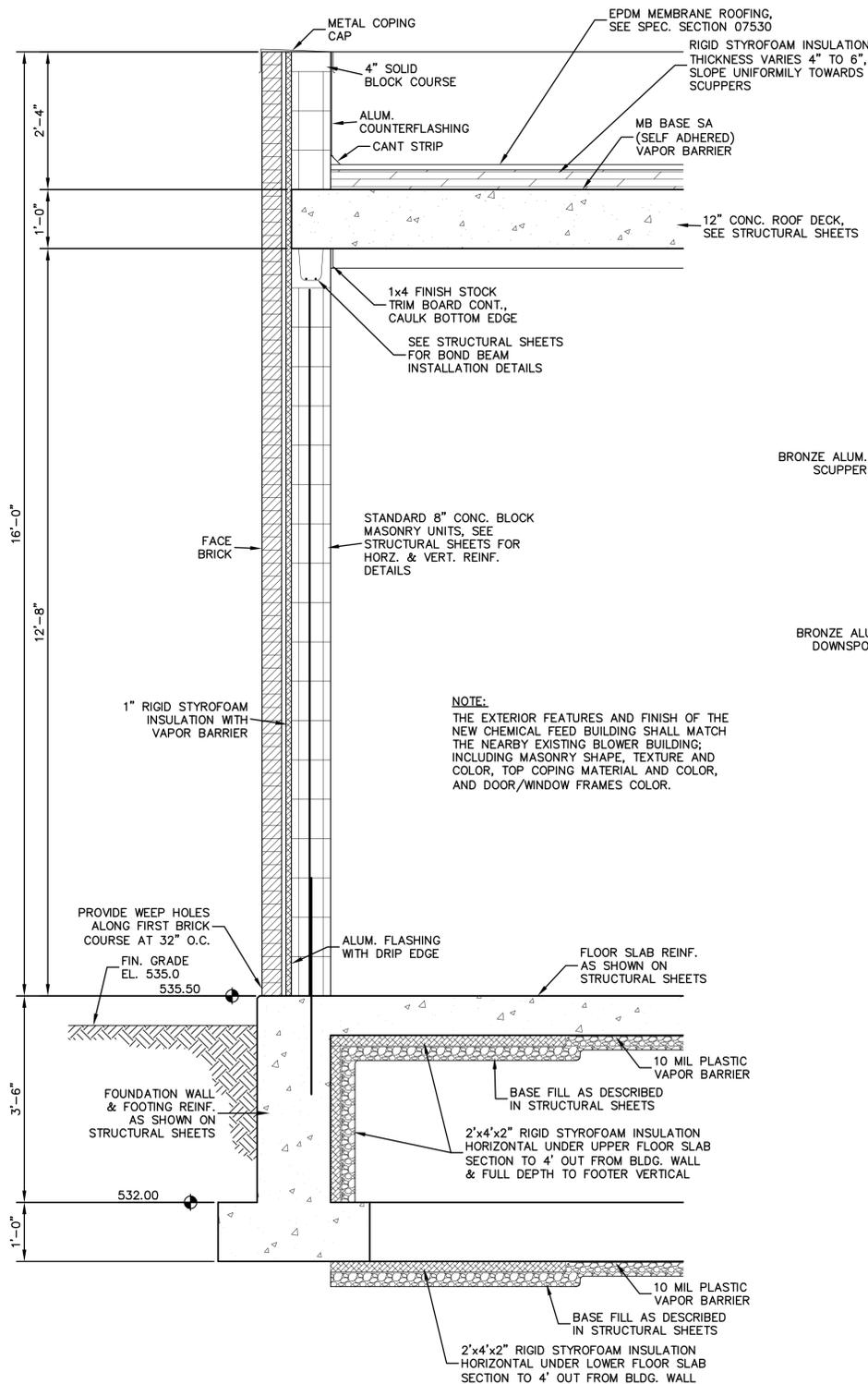
MARK	SIZE WIDTHxHT.xTHICK.	DOOR MATERIAL	FRAME MATERIAL	GLAZING	LOCATION	DOOR ELEVATION	DOOR DETAIL	COLOR	HARDWARE	REMARKS
1	(2) 2'-10"x7'-2"x1 1/2"	ALUM.	ALUM.	26"x36"	NEW CHEM. FEED BLDG.	1	1	BRONZE	1,2,3,5,8,9,10,14,15	FUNCTION 05, PROVIDE HARDWARE FOR EACH DOOR AS APPLICABLE
2	3'-0"x7'-2"x1 1/2"	ALUM.	ALUM.	28"x36"	NEW CHEM. FEED BLDG.	2	1	BRONZE	1,2,3,5,8,9,10,14	FUNCTION 05, PROVIDE HARDWARE FOR EACH DOOR AS APPLICABLE

FINISH HARDWARE REFERENCE NUMBERS:

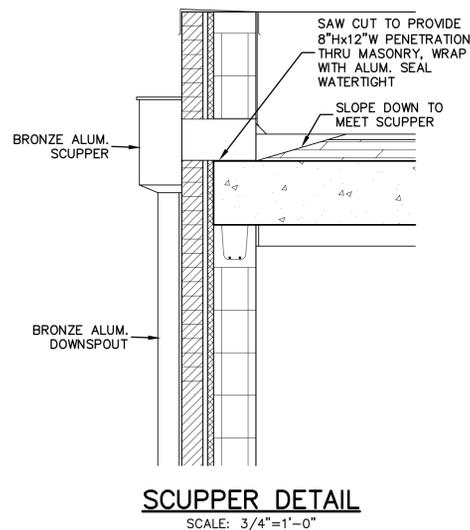
- | | |
|--------------------------------------|---------------------------|
| 1 (3) MORTISE HINGES PER DOOR | 9 SEAL BOTTOM SWEEP |
| 2 ALUM. KICKPLATE(S) | 10 WEATHERSTRIPPING |
| 3 1 CLOSER | 11 DOOR STOP |
| 4 OPERATING LEVER | 12 NOT USED |
| 5 PANIC DEVICE/LEVER | 13 LATCH BOLT |
| 6 FLUSH BOLTS | 14 THRESHOLD/DOOR SEAL |
| 7 MORTISE LOCK SET WITH LEVER HANDLE | 15 ASTRAGAL |
| 8 KICK DOWN FOOT DOOR HOLDER | 16 PUSH PLATE/PULL HANDLE |
| | 17 GASKETED |

DOOR SCHEDULE NOTES:

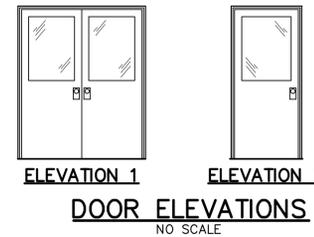
- BUILDING REFERENCE CODE: H = NEW HEADWORKS BUILDING
ALL DOORS ARE TO BE KEYPED ALIKE.



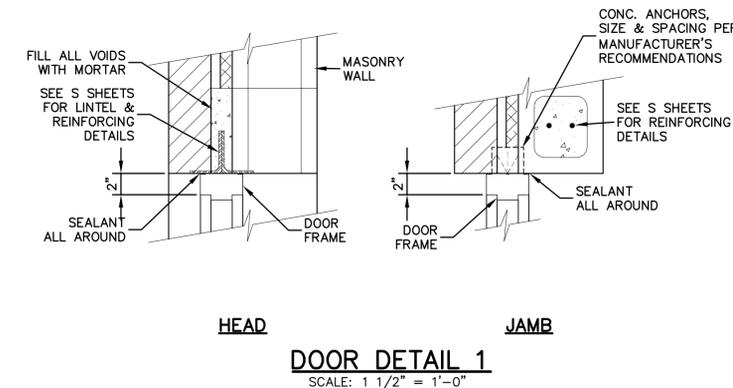
TYPICAL WALL SECTION
SCALE: 3/4"=1'-0"



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



DOOR ELEVATIONS
NO SCALE



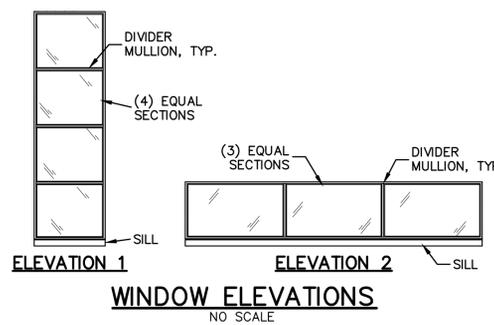
DOOR DETAIL 1
SCALE: 1 1/2" = 1'-0"

WINDOW SCHEDULE

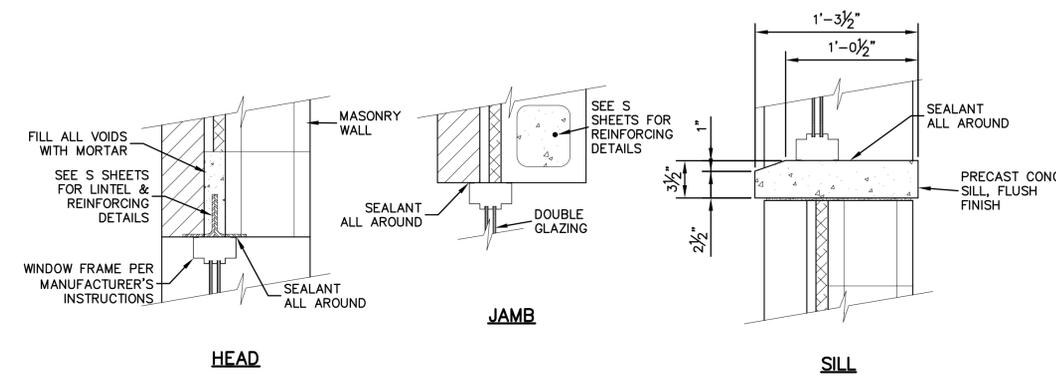
MARK	R.O. SIZE WIDTHxHT.	FRAME MATERIAL	FRAME COLOR	QUANTITY	LOCATION	STYLE	WINDOW ELEVATION	WINDOW DETAIL	REMARKS
1	3'-4"x11'-0"	ALUM.	BRONZE	2	NEW CHEM. FEED BLDG.	FIXED PANE	1	1	SEE WINDOW SCHEDULE NOTE 2
2	14'-0"x3'-0"	ALUM.	BRONZE	2	NEW CHEM. FEED BLDG.	FIXED PANE	2	1	SEE WINDOW SCHEDULE NOTE 2

WINDOW SCHEDULE NOTES:

- BUILDING REFERENCE CODE: H = NEW HEADWORKS BUILDING
VERTICAL MASONRY OPENING SHOWN INCLUDES HEIGHT REQUIRED FOR MASONRY SILL.
- EXTERIOR WINDOWS GLASS SHALL BE DOUBLE PANE.
- SEE ALUMINUM WINDOW SPECIFICATION 08520.



WINDOW ELEVATIONS
NO SCALE



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

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PROJECT NUMBER: 148912/158513						

REVISIONS

CERTIFICATION

More than a Project™

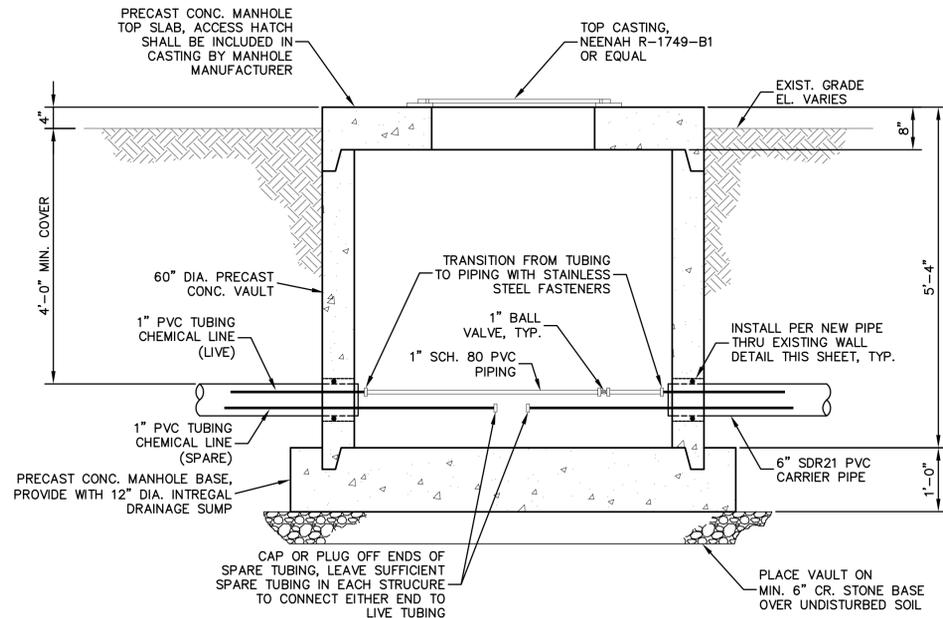
2014 WASTEWATER TREATMENT PLANT PROJECTS

WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA

AREA 2 - PHOSPHORUS REMOVAL - PHASE 1
NEW CHEMICAL FEED BUILDING
MISCELLANEOUS ARCHITECTURAL DETAILS

SHEET NO. **2C10**

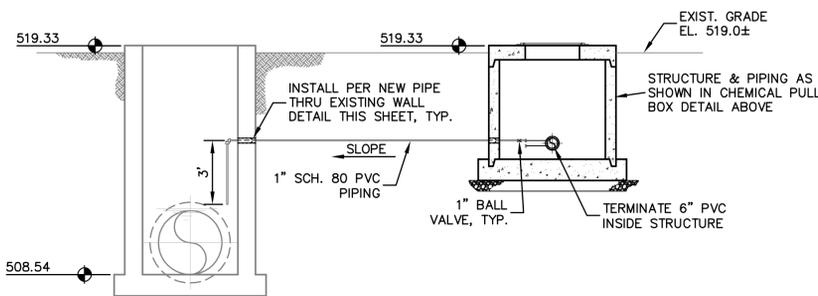
PAGE NO. **27**



- NOTES:**
1. THIS DETAIL SHOWS A TYPICAL PULL BOX INSTALLATION. ADDITIONAL PVC FITTINGS MAY BE REQUIRED, DEPENDING ON SPECIFIC INSTALLATION CONDITIONS. ALL BRANCHES OFF OF ANY TEE INSTALLATION SHALL BE INSTALLED WITH BALL VALVES.
 2. THE CONTRACTOR SHALL INSTALL THE (2) 1" PVC TUBING LINES SIDE BY SIDE IN THE 6" SDR21 PVC CONDUIT, UNTWISTED.

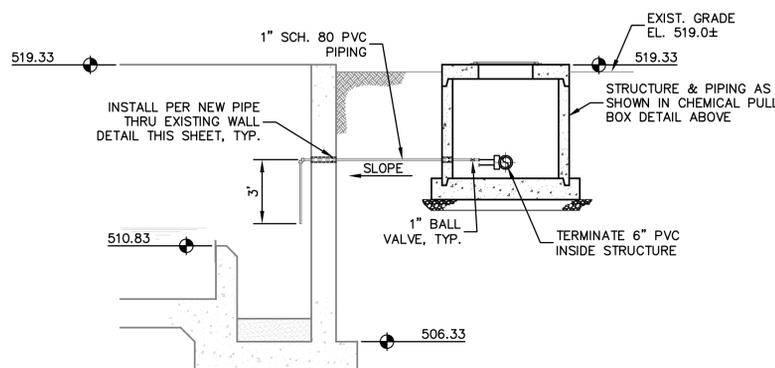
CHEMICAL LINE PULL BOX DETAIL

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



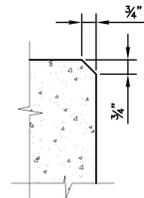
**EXISTING GRIT TANK NO. 1
CHEMICAL FEED INSTALLATION DETAIL**

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

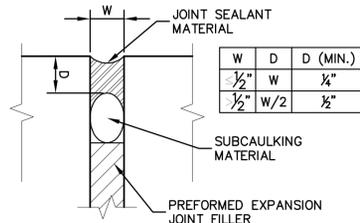


**EXISTING GRIT TANK NO. 2
CHEMICAL FEED INSTALLATION DETAIL**

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



- NOTES:**
1. CHAMFER DETAIL SHALL BE USED FOR ALL EXPOSED EDGES EXCEPT WHERE NOTED OTHERWISE.
 2. DELETE CHAMFER WHERE GRATING AND METAL LANDINGS MEET CONCRETE.
 3. DELETE CHAMFER WHERE MASONRY CONSTRUCTION BEGINS ALONG EDGE OF WALL OR SLAB.
- CHAMFER DETAIL**
SCALE: NONE

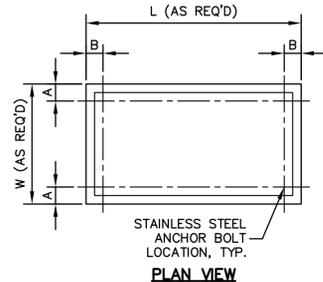


- NOTES:**
1. MATERIALS SHALL BE AS DESCRIBED IN THE DETAILED SPECIFICATIONS.
 2. "W" SHALL BE AS SHOWN ELSEWHERE ON THE DRAWINGS. IF NOT INDICATED ELSEWHERE "W" SHALL BE 1/2".
 3. DETAIL APPLIES TO BOTH HORIZONTAL OR VERTICAL JOINTS.

EXPANSION JOINT DETAIL

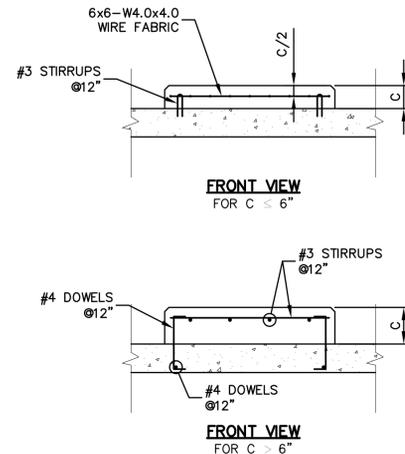
SCALE: NONE

- NOTES:**
1. "A" AND "B" SHALL BE AS REQUIRED BY THE EQUIPMENT, BUT NOT LESS THAN 6".
 2. "C" SHALL BE AS SHOWN ON THE PLANS, OR AS REQUIRED TO SET THE EQUIPMENT AT REQUIRED ELEVATION, BUT NOT LESS THAN 6" UNLESS SPECIFICALLY NOTED OTHERWISE.

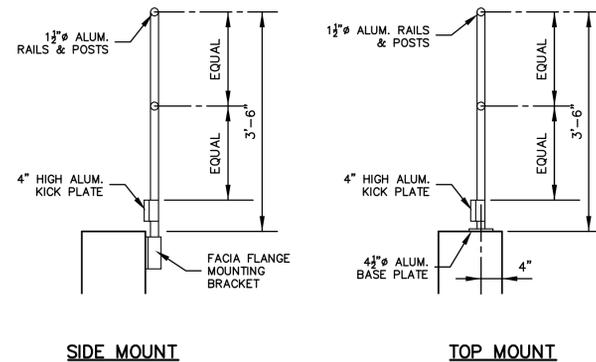


EQUIPMENT BASE DETAIL

SCALE: NONE
(TYPICAL FOR ALL EQUIPMENT)

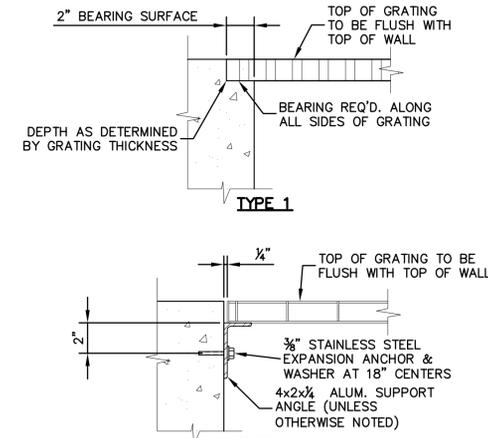


- NOTES:**
1. ALL HANDRAIL SHALL BE TOP MOUNTED OR SIDE MOUNTED AS INDICATED ON THE PLANS. MOUNT WITH STAINLESS STEEL EXPANSION ANCHORS, SIZED AS RECOMMENDED BY THE HANDRAIL MANUFACTURER.
 2. TOP MOUNTED HANDRAIL SHALL BE OFFSET FROM WALL EDGE, WHEN SHOWN OFFSET IN PLAN, AS DIMENSIONED IN THIS DETAIL. ALL OTHER TOP MOUNTED HANDRAIL, MOUNTED ON 6" TO 12" WALLS, SHALL BE CENTERED ON WALL.



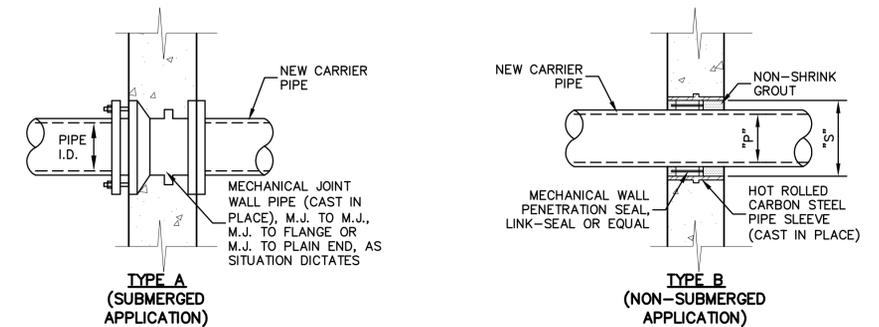
HANDRAIL DETAILS

NO SCALE



GRATING SUPPORT DETAILS

SCALE: NONE



NEW PIPE THRU NEW WALL DETAIL

NO SCALE

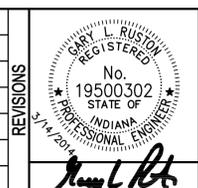
- NOTES:**
1. "S" DIMENSION FOR NEW PIPE THRU NEW WALL APPLICATION SHALL BE THE I.D. OF THE PIPE SLEEVE.
 2. "C" DIMENSION FOR NEW PIPE THRU EXISTING WALL APPLICATION SHALL BE THE DIAMETER OF THE CORE DRILLED HOLE REQUIRED.
 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE "S" OR "C" DIMENSION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

NEW PIPE THRU EXISTING WALL DETAIL

NO SCALE

NOTE:
WHERE NEEDED, DETAILS SHOWN ON THIS DRAWING SHALL APPLY TO WORK PERFORMED IN BOTH AREAS 1 AND 2.

DRAWN BY	CHECKED BY	APPROVED BY	NO.	DATE	INITIALS	DESCRIPTION
W.B.J.	C.S.D.	G.L.R.				
DRAWING SCALE AS NOTED						
ISSUE DATE JULY 2014						
PROJECT NUMBER 148912/158513						



2014 WASTEWATER TREATMENT PLANT PROJECTS
WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA
AREA 2 - PHOSPHORUS REMOVAL - PHASE 1
MISCELLANEOUS CIVIL DETAILS

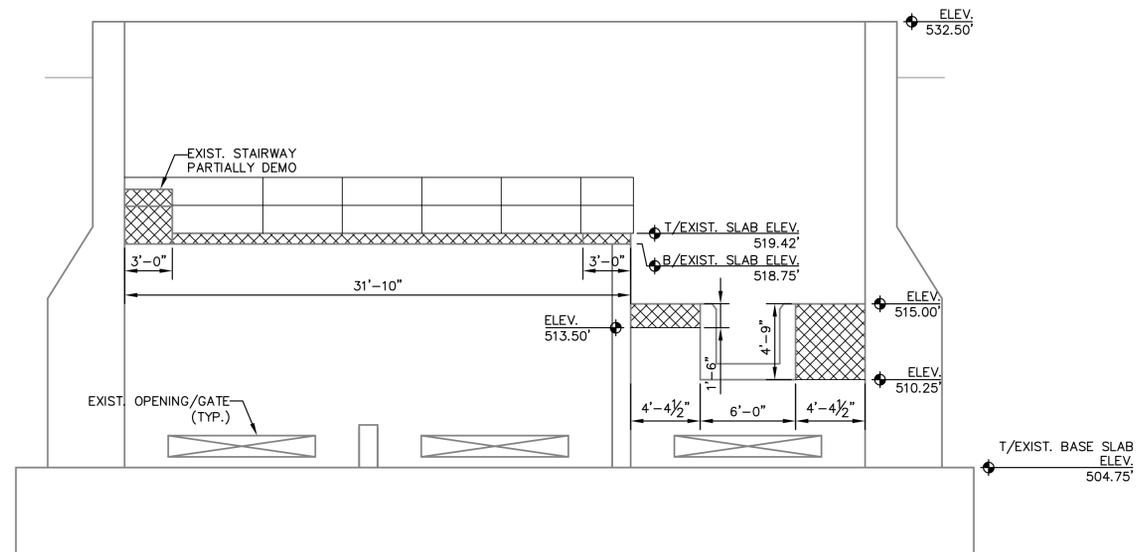
SHEET NO.
2C11
PAGE NO.
28

PLAN NOTES: ○ INDICATES NOTE REFERENCED ON PLAN

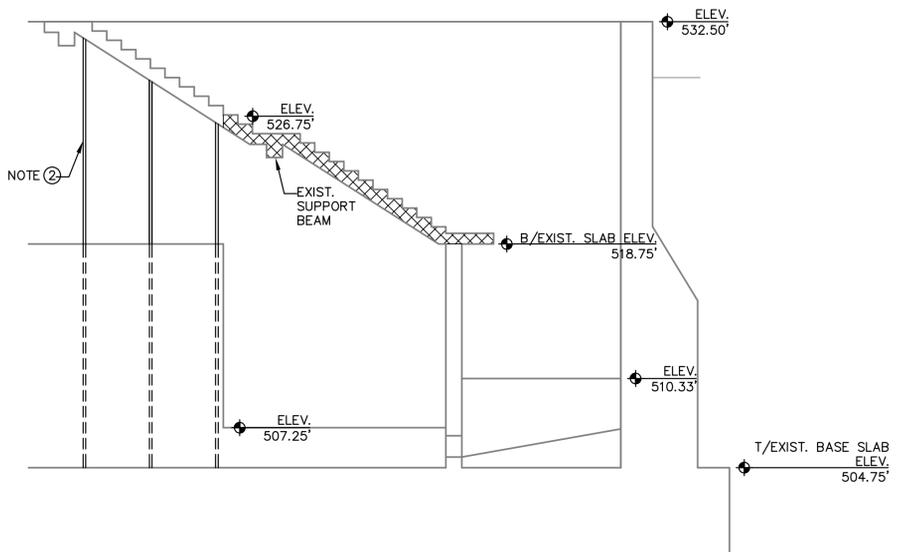
1. [Hatched Area] INDICATES AREA OF CONCRETE TO BE DEMOLISHED AND REMOVED.
2. PRIOR TO DEMOLITION, CONTRACTOR TO SUPPORT ENTIRE LENGTH OF STAIRWAY THAT IS NOT BEING REMOVED. SHORING MUST REMAIN UNTIL NEW CONCRETE SLAB HAS REACHED ITS 28 DAY COMPRESSIVE STRENGTH. SHORING DESIGN BY CONTRACTOR.
3. CONTRACTOR TO REMOVE AND RE-INSTALL ALUMINUM RAILING ON WALKWAY PER WESSLER DETAIL.
4. SAWCUT AND PATCH ALONG REMOVAL. RUB CONCRETE AS REQUIRED TO MATCH ADJACENT CONCRETE.
5. ALL EXIST. ELEVATIONS TO BE FIELD VERIFIED PRIOR TO DEMOLITION. ALL VARIANCES SHALL BE REPORTED TO THE ENGINEER FOR REVIEW BEFORE DEMOLITION MAY BEGIN.
6. SEE 1S5 FOR MORE INFORMATION ON WEIR DEMOLITIONS.



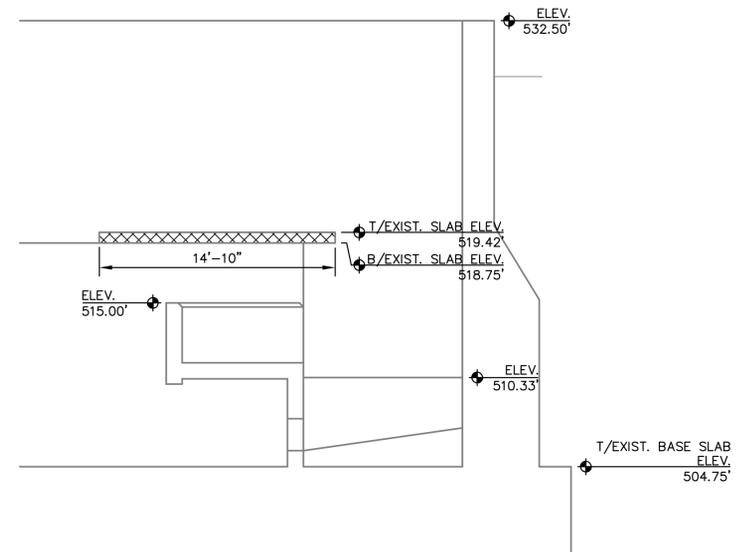
EXISTING WET WEATHER BASIN PLAN
SCALE: 1/8"=1'-0"



SECTION 1
SCALE: 3/16"=1'-0"

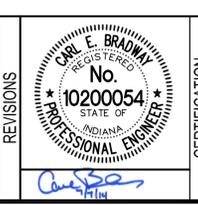


SECTION 2
SCALE: 3/16"=1'-0"



SECTION 3
SCALE: 3/16"=1'-0"

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DRAWING SCALE: AS NOTED						
ISSUE DATE: JULY 2014						
PROJECT NUMBER: 148912/158513						



2014 WASTEWATER TREATMENT PLANT PROJECTS
WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA
AREA 1 - WET WEATHER FACILITY IMPROVEMENTS
WET WEATHER BASIN DEMOLITION PLANS

GENERAL STRUCTURAL NOTES

All notes hereafter are typically applicable unless otherwise noted on plans, sections or details.

GENERAL

- The structure has been designed for the in-service loads only. The methods, procedures, and sequences of construction are the responsibility of the Contractor. Supporting formwork for the concrete construction shall not be removed before the concrete has gained sufficient strength to safely support the dead and superimposed loads which will be subsequently applied. The Contractor shall take all necessary precautions to maintain and ensure the integrity of the structure at all stages of construction. Shoring design is the responsibility of the Contractor.
- All work shall be performed in accordance with the Indiana Building Code, 2008 Edition (2006 International Building Code, first printing, with Indiana Amendments).
- Where new work is to be fitted to old work, the Contractor shall check all dimensions and conditions in the field, and report any errors or discrepancies to the Structural Engineer prior to the fabrication and erection of any new members.
- Do not determine dimensions by "scaling" off the plans. The Contractor shall accept all risk associated with "scaling" and shall be responsible for all inadequate work resulting therefrom. Questions regarding missing or conflicting dimensions shall be directed, in writing, to the Structural Engineer.
- Existing materials to be removed and reinstalled as part of this contract, but become damaged, shall be replaced with approved new material of equivalent quality and appearance at the Contractor's expense.
- All work shall be performed without damage to adjacent retained work. Adequate protection of areas nearby work against dust, dirt and debris accumulation shall be maintained at all times.
- Principal openings in the structure are indicated on the structural drawings. Refer to the process, architectural, mechanical and electrical drawings for sleeves, inserts, etc. not herein indicated. Openings in slabs with a maximum side dimension or diameter of 10 inches or less shall not require additional framing or reinforcement, unless noted otherwise. The location of sleeves or openings not shown in structural members shall be approved by the Structural Engineer.
- The location of sleeves or openings not shown in structural members shall be approved by the Structural Engineer.
- The Contractor shall relocate all mechanical piping, equipment, electrical conduits and wiring that interfere with the proposed construction. Service shall be maintained to all equipment that is served by mechanical, electrical or plumbing conduit being relocated.
- The Contractor shall relocate all utilities which interfere with the proposed construction. Service shall be maintained at all times during utility relocation unless otherwise noted.
- The Contractor shall verify the orientation, size, dimensions shown on the structural plans with the Architectural and Site plans prior to construction. All discrepancies shall be reported to the Structural Engineer immediately.

CONCRETE

- Reinforced concrete has been designed in accordance with the latest editions of the Building Code Requirements for Reinforced Concrete (ACI 318) and Environmental Engineering Concrete Structures (ACI 350R) by the American Concrete Institute (ACI).
- Slabs-on-grade shall be constructed in accordance with the latest edition of the Guide for Concrete Floor and Slab Construction (ACI 302.1R).
- Mixing, transporting, and placing of concrete shall conform to the latest edition of the Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete (ACI 211.1) and the Standard Specifications for Structural Concrete (ACI 301). Concrete curing shall conform to the latest editions of the Standard Practice for Concrete Curing (ACI 308) and the Standard Specification for Curing Concrete (ACI 308.1). In case of a discrepancy, the plans and specifications shall govern.
- Unless noted otherwise, concrete shall have natural sand fine aggregate and normal weight coarse aggregates conforming to ASTM C33, and Type I or III Portland Cement conforming to ASTM C150. The Contractor shall submit a mix design for each proposed class of concrete. Mix designs shall indicate proportions by weight, water-cement ratio, slump, air content, synthetic fiber size and quantity, sieve analyses of fine and coarse aggregates, standard deviation analysis, and required average strength and documentation of average strength verifying compliance with ACI 318. The Contractor shall not vary from the mix design without approval from the Structural Engineer.
- Unless noted otherwise, fly ash may be used as a pozzolan to replace a portion of the Portland Cement in a concrete mix. Fly ash, when used, shall conform to ASTM C618, Type C. Concrete mixes using fly ash shall be proportioned to account for the properties of the specific fly ash used and to account for the specific properties of the fly ash concrete thus resulting. The ratio of the amount of the fly ash to the total amount of fly ash plus cement in the mix shall not exceed 20 percent.
- Water-reducing admixtures conforming to ASTM C494 may be used in the concrete mix design. Maximum slump shall be 5 inches for mixes containing water-reducing admixtures and 5 to 8 inches for mixes containing high range water-reducing admixtures.
- Concrete compressive strength tests shall be performed in accordance with ASTM C39. Copies of the test results shall be forwarded to the Structural Engineer. One set of specimens shall be taken for each day's pour of appreciable size and for each 50 cubic yards in accordance with the latest edition of ASTM C31. Each set shall include one specimen tested at 7 days, 2 specimens tested at 28 days and one specimen retained in reserve. Two additional reserve specimens shall be retained for all mass concrete pours. These test cylinders shall be laboratory cured.

- When the ambient temperature is expected to fall below 40 degrees during the course of a concrete pour or subsequent curing period, it shall be placed and cured in accordance with the latest edition of Cold Weather Concrete (ACI 306R) and an additional set of concrete test cylinders shall be made. For mass concrete, this set of additional test cylinders shall consist of four specimens for each 200 cubic yards of concrete placed.
- Concrete mixed, transported, placed, and cured under conditions of high ambient temperature, low humidity, solar radiation, or high winds shall conform to the latest edition of Hot Weather Concrete (ACI 305R) and an additional set of concrete test cylinders shall be made.
- Slump tests shall be made prior to and following the addition of plasticizers. Where concrete is placed by pumping methods, concrete for test cylinders and slump tests shall be taken at the point of final placement. Slump test samples shall be taken at the 1/4 and 3/4 points of each load of concrete.
- Water shall not be added to the concrete at the job site. The Contractor is responsible for coordinating a pumpable and workable mix without the addition of water at the job site. The use of plasticizers, retardants and other additives shall be at the option of the Contractor subject to the approval of the Structural Engineer. Follow the recommendations of the manufacturer for the proper use of additives. Use of calcium chloride or other chloride bearing salts is prohibited.
- Place concrete in a manner so as to prevent segregation of the mix. Delay floating and troweling operations until the concrete has lost surface water sheen or all free water. Do not sprinkle free cement on the slab surface. Finishing of slab surfaces shall conform to the latest editions of ACI 302.1R and ACI 304R (Guide for Measuring, Mixing, Transporting and Placing Concrete).
- Where an epoxy adhesive is specified for bonding plastic concrete to hardened concrete, it shall conform to the latest edition of the Standard Specification for Bonding Plastic Concrete to Hardened Concrete with a Multi-Component Epoxy Adhesive (ACI 503.2).
- Maintain concrete in a moist condition for at least 5 days at ambient temperatures above 70 degrees, and at least 7 days at ambient temperatures above 50 degrees. Curing compounds or moisture retention covers shall be used for all non-formed surfaces. Formed surfaces shall be cured by leaving forms in place. During hot, dry weather, keep forms moist by sprinkling. When forms are removed prior to the end of the curing period, apply curing compound to the exposed surfaces.
- Refer to the specifications for information and location of concrete finishes.
- Protect finished concrete surfaces from damage, rain, hail, running water, other injurious effects.
- Protect the concrete surface between finishing operations on hot, dry days or any time plastic shrinkage cracks could develop by using wet burlap, plastic membranes or fogging.
- Horizontal and vertical joints are not permitted in concrete construction except where indicated.
- Construction and/or contraction joints at locations other than where indicated shall be submitted to the Structural Engineer for approval.
- Construction joints shall be prepared by roughening the contact surface in an approved manner to a full amplitude of approximately 1/4 inch leaving the contact surface clean and free of laitance.
- Provide 3/4 inch chamfers on all exposed corners of concrete except those abutting masonry.
- The Contractor shall verify the location of sleeves, openings, embedded items, etc. and shall ensure that they are in place prior to the placement of the concrete.
- Earth cuts shall not be used as forms ("bank forming") for vertical or sloping surfaces unless otherwise approved by the Structural Engineer. Where bank forming is permitted, the concrete element shall be increased at least 3 inches on all sides exposed to earth to account for possible soil contamination during concrete placement.
- Air tests shall be performed per ASTM C 173.
- Concrete failing to meet the specified compressive strength at 28-days (based on cylinder tests) may be subject to removal and replacement at the Owner's discretion, regardless of the ACI Acceptance criteria based on cored samples.

CONCRETE SCHEDULE

CLASS	28 DAY COMPRESSIVE STRENGTH	AIR CONTENT	CONCRETE LOCATION	REMARKS
H	4,500 psi	6% ± 1%	Retaining Walls, Weir, Structural Slabs, Columns, and Walls	
G	5,000 psi	6% ± 1%	High Volume Grout	

Minimum cement content shall be 611 lb/cys (6.5 sacks/cys) and maximum water-cement ratio shall be 0.45 for Class H concrete.

Minimum cement content shall be 611 lb/cys (6.5 sacks/cys) and maximum water-cement ratio shall be 0.40 for Class G concrete.

REINFORCING STEEL

- Reinforcing bar detailing, fabricating, and placing shall conform to the latest edition of the following standards: Specifications for Structural Concrete for Buildings (ACI 301), ACI Detailing Manual (SP66). The latest editions of Concrete Reinforcing Steel Institute's Reinforcing Bar Detailing and Placing Reinforcing Bars may also be used.
- Provide standard bar chairs, slab bolsters, spacers, etc. as required to maintain concrete protection specified. Reinforcing steel shall be tied to prevent displacement during concrete placement.
- Reinforcement bars shall not be tack welded, welded, heated or cut unless otherwise indicated or approved by the Structural Engineer.
- Welding of reinforcement bars, when approved by the Structural Engineer, shall conform to the latest edition of American Welding Society Standard D1.4. Electrodes for shop and field welding of reinforcement bars shall conform to ASTM A233, Class E90XX.
- Synthetic fibers shall be used for temperature and shrinkage reinforcement in concrete slabs-on-grade and where indicated in the Concrete Schedule. Synthetic fibers shall be virgin (non-recycled) nylon or polypropylene fibers conforming to ASTM C1116, Type III. Fibers shall be introduced into the mix at the plant in accordance with the manufacturer's recommendations. The Contractor shall submit the mix design, including the fiber size and quantity, to the Structural Engineer for approval prior to construction. The Contractor shall take adequate measures to manage any difficulty in concrete finishing associated with the use of the fibers.
- Concrete cover over reinforcement, unless otherwise noted, shall be as specified in the latest editions of ACI 318 and ACI 350 with the most stringent requirements governing.
- Unless noted otherwise, splicing of reinforcing bars shall conform to the latest edition of ACI 318.
- Horizontal bars in walls, masonry bond beams, continuous wall footings and grade beams shall be bent at corners and intersections in such a way that continuity is provided through the joint. Separate corner bars of the same size and spacing as the horizontal reinforcing may be substituted for the bent portion of the continuous bars.
- Unless noted otherwise, provide 2-#5 bars (one each face) around unframed openings and diagonally at reentrant corners of vertical height offsets in concrete walls. Place bars parallel to the sides of the opening and extend 24 inches beyond corners.
- The Contractor shall prepare detailed working or shop drawings to enable him to fabricate, erect and construct all parts of the work in accordance with the drawings and specifications and shall submit one reproducible copy and one blue line copy to the Structural Engineer for review prior to fabrication. These shop drawings will be reviewed for design concepts only. The Contractor shall be responsible for all dimensions, accuracy, and fit of work.

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

EXPANSION/ADHESIVE ANCHORS

- Anchors shall be Hilti type as manufactured by Hilti Fastening Systems or approved equivalent.
- Anchors shall be installed in accordance with the manufacturer's recommendations, plans and specifications. Anchors shall not be installed in a masonry mortar joint.
- Masonry cores receiving anchors shall be filled with course grout conforming to the requirements specified herein.
- The Contractor shall inspect the masonry or concrete surface at each proposed anchor location prior to installation. If the anchor locations align with mortar joints or the masonry or concrete is honeycombed or otherwise unsound, the anchors shall be repositioned so as to be located in sound material and be in accordance with the manufacturer's minimum spacing requirements.
- Anchors shall not be installed in concrete until it has attained its specified minimum 28 day compressive strength (f'c).

COORDINATION WITH OTHER TRADES

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

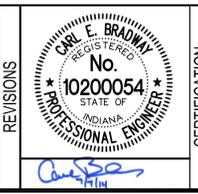
DESIGN

- Building Code: Indiana Building Code, 2008 edition (2006 International Building Code, first printing, with Indiana Amendments)
- For soil and foundations information, see Existing Drawings created by Malcom Pirnie May, 2001.
- Fluid Pressure:
Equivalent Fluid Press. on Basin Walls 90 psf/ft+water
- Concrete:
28 day compressive strength (f'c) See Schedule
- Reinforcing steel (deformed bars of new billet steel):
Stirrup and tie ASTM A615, Grade 60
Weldable (Low-Alloy) ASTM A706, Grade 60
Otherwise ASTM A615, Grade 60
- Non-shrink high volume grout:
28 day compressive strength 5,000 psi
- Live Loads:
Elevated Walkway 100 psf
- Wind loads:
Basic wind speed (3-second gust) 90 mph
Exposure C
- Seismic loads:
Seismic Occupancy Category III
Seismic Importance Factor, Ie 1.25
MCE Seismic Spectral Response Acceleration at Short Periods, Ss 17.6% g
MCE Seismic Spectral Response Acceleration at 1 Second, S1 7.8% g
Site Class D
Seismic Design Category B

SPECIAL NOTES TO THE OWNER

- Under normal conditions and for conventional buildings structures such as the subject structure, reinforced concrete as well as precast/prestressed concrete will develop cracks. The cracks are due to inherent shrinkage of the concrete, creep, ambient temperature variation, and restraining effects of vertical and other structural elements.
- The cracks formed are normally cosmetic. The concrete maintains its serviceability and strength requirements. It is possible that a number of hairline cracks, which would normally spread over a wide area, will integrate into a single crack with a width exceeding 0.01 inch. It is emphasized that although special effort is made to reduce the potential causes and number of such cracks, it is not practical to provide total articulation and thereby achieve complete inhibition of all cracks.
- The majority of these cracks develop within the first three years of service. Cracks which are wider than 0.01 inch may require sealing or epoxy injection.

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ISSUE DATE						
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PROJECT NUMBER						
148912/158513						



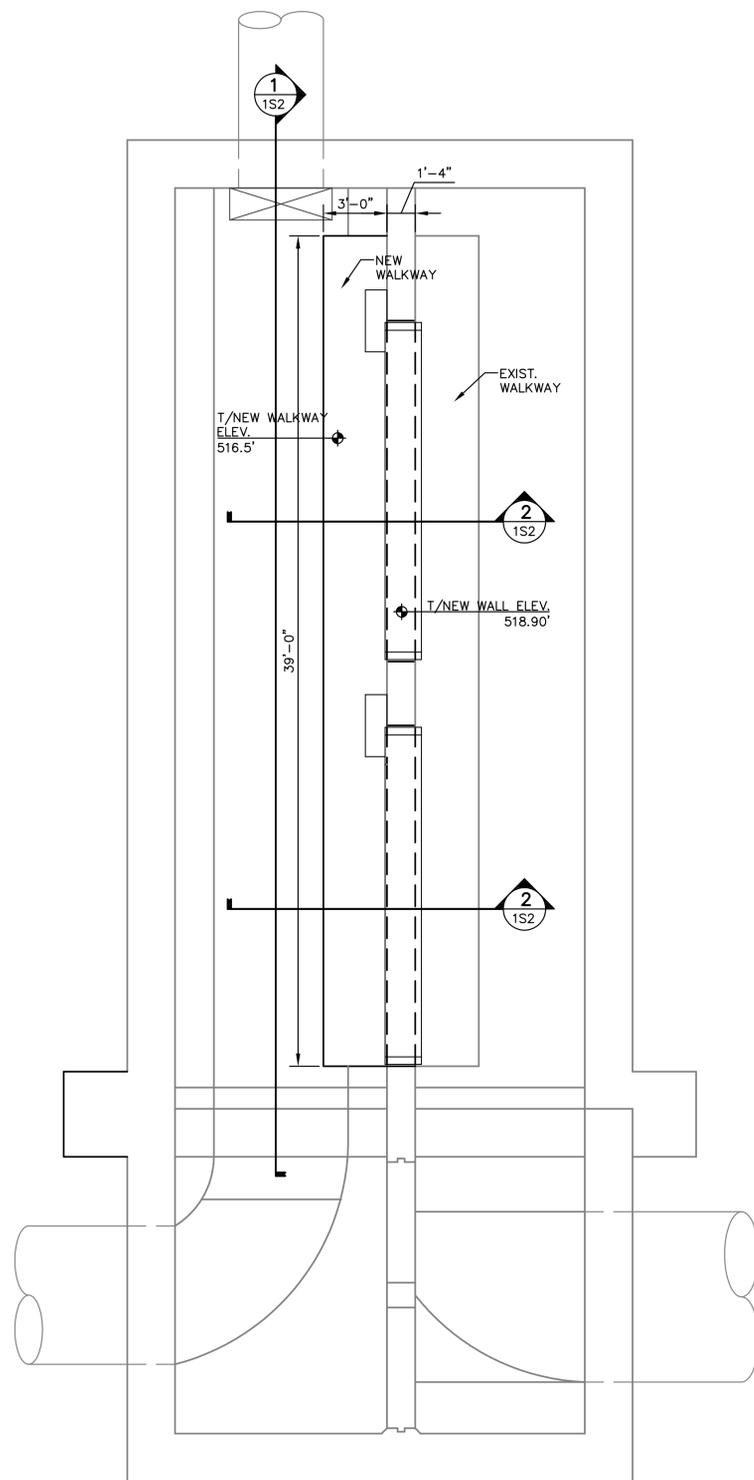
2014 WASTEWATER TREATMENT PLANT PROJECTS

WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA

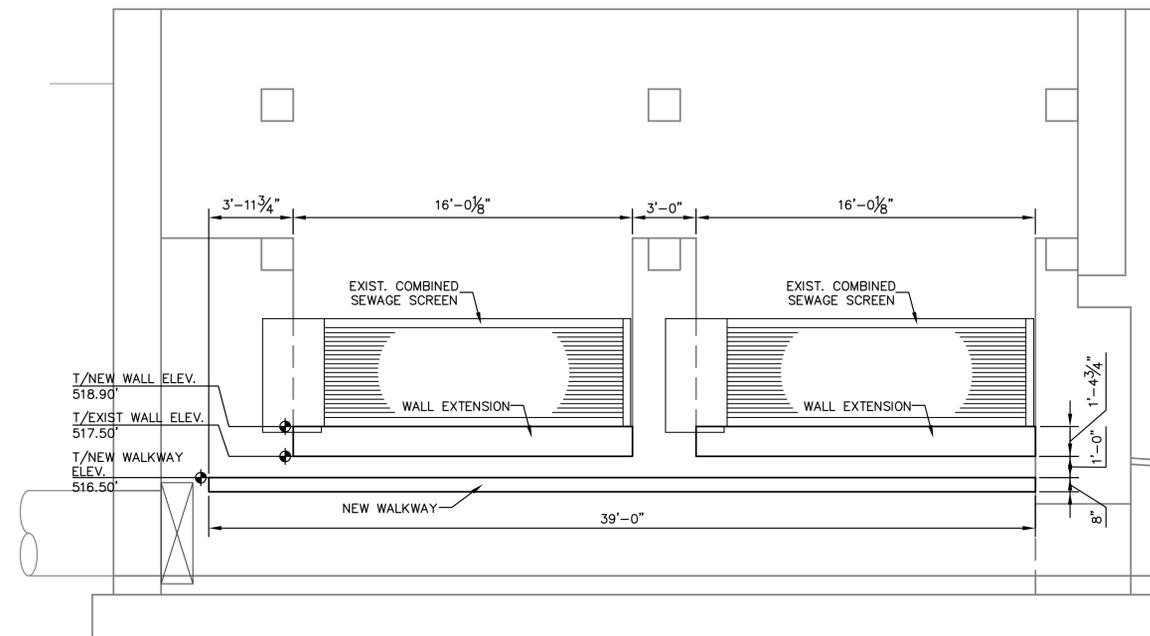
AREA 1 - WET WEATHER FACILITY IMPROVEMENTS
GENERAL STRUCTURAL NOTES

SHEET NO.
1S1

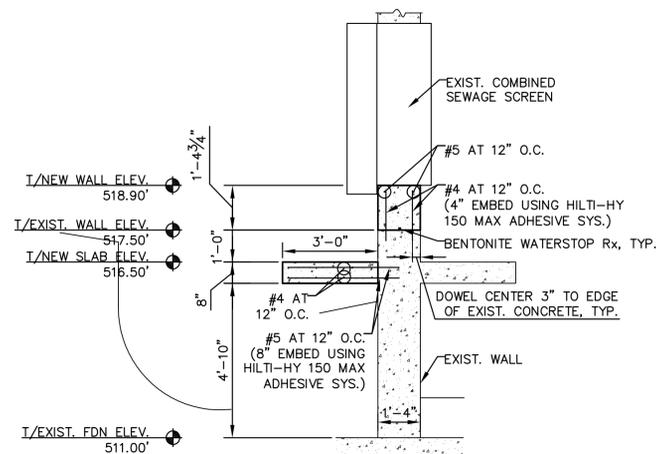
PAGE NO.
30



CONTROL CHAMBER PLAN
SCALE: 1/4"=1'-0"



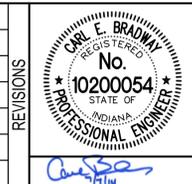
SECTION 1
SCALE: 1/4"=1'-0"



NEW MAINTENANCE LEDGE AND WALL EXTENSION
SCALE: 3/8" = 1'-0"

- PLAN NOTES: ○ INDICATES NOTE REFERENCED ON PLAN
- CONTRACTOR TO REMOVE AND RE-INSTALL COMBINED SEWAGE SCREENS.
 - CONTRACTOR TO LOCATE AND AVOID EXIST. REBAR WHEN DOWELING INTO EXIST. CONCRETE.
 - REFER TO 1S1 FOR CONCRETE, REBAR, AND GENERAL CONSTRUCTION NOTES.
 - ALL EXIST. ELEVATIONS TO BE FIELD VERIFIED PRIOR TO DEMOLITION. ALL VARIANCES SHALL BE REPORTED TO THE ENGINEER FOR REVIEW BEFORE DEMOLITION MAY BEGIN.

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ISSUE DATE						
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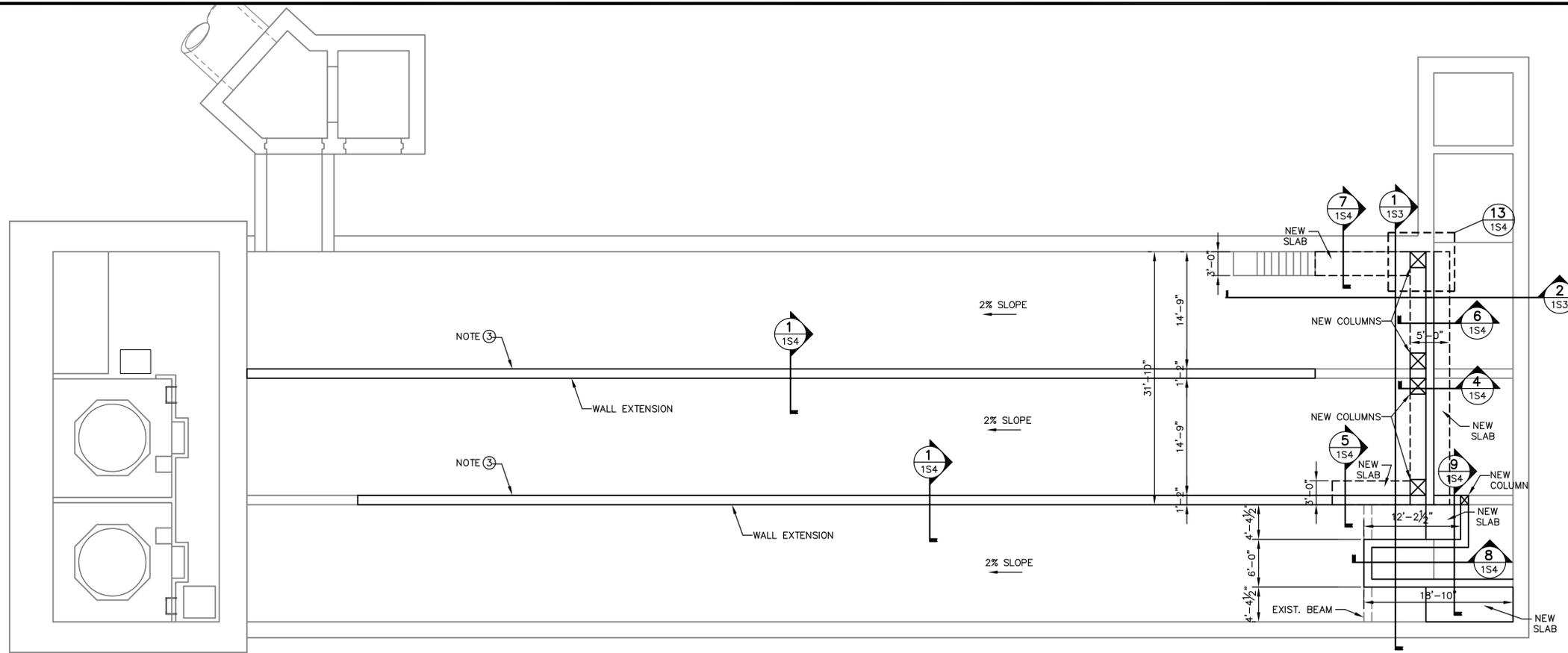


2014 WASTEWATER TREATMENT PLANT PROJECTS
WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA
AREA 1 - WET WEATHER FACILITY IMPROVEMENTS
CONTROL CHAMBER PLAN AND SECTIONS

SHEET NO.
1S2
PAGE NO.
31

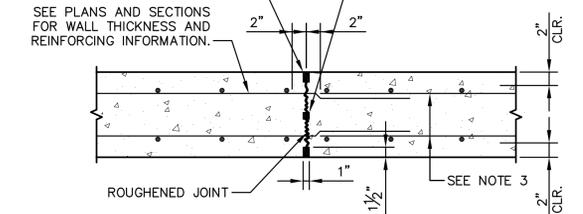
PLAN NOTES: ○ INDICATES NOTE REFERENCED ON PLAN

1. CONTRACTOR TO LOCATE AND AVOID EXIST. REBAR WHEN DOWELING INTO EXIST. CONCRETE.
2. ALL EXIST. ELEVATIONS TO BE FIELD VERIFIED PRIOR TO DEMOLITION. ALL VARIANCES SHALL BE REPORTED TO THE ENGINEER FOR REVIEW BEFORE DEMOLITION MAY BEGIN.
3. NEW WALL EXTENSIONS TO HAVE CONSTRUCTION JOINTS MATCHING EXISTING LOCATIONS (IF ANY). SEE DETAIL 3/1S3.



SEAL WITH CONCENTRATED DRY-PAC OF CEMENTITIOUS CRYSTALLINE WATERPROOFING (XYPEX OR EQUAL); JOINT DIMENSION TO BE VERIFIED BY INSTALLER (EA. FACE OF WALL).

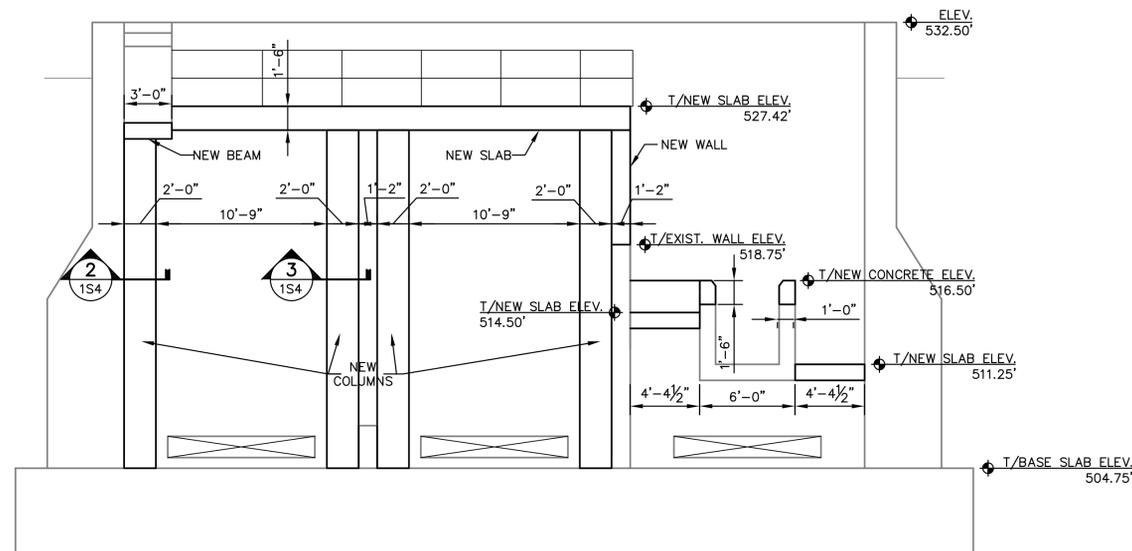
WATERSTOP Rx, TYPE 101T TYP. AT WALLS



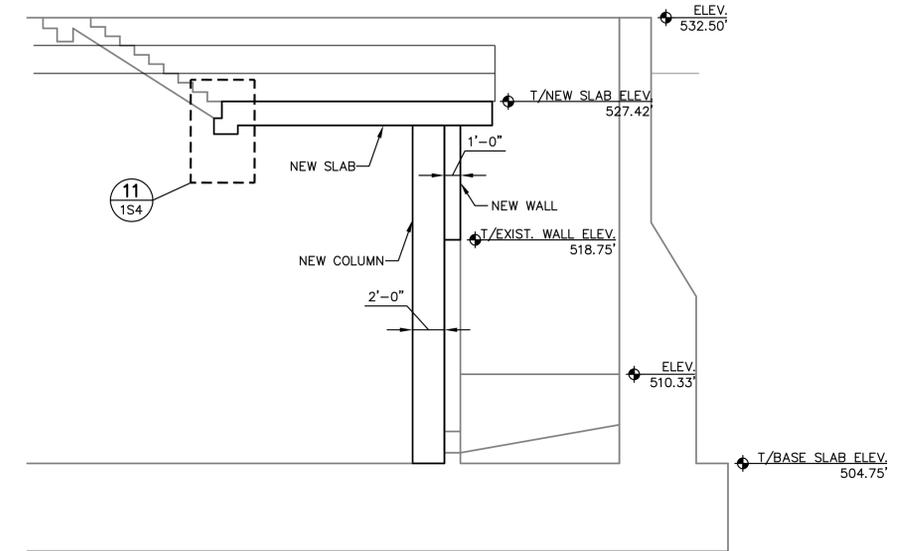
- NOTES:
1. UNLESS NOTED OTHERWISE, 50% OF THE HORIZ. REINF. STEEL SHALL BE CONTINUOUS THROUGH JOINT. HORIZONTAL BARS THAT STOP SHORT OF JOINT SHALL BE FABRICATED ACCORDINGLY AND SHALL NOT BE FIELD CUT. CONTINUOUS AND DISCONTINUOUS HORIZ. BARS SHALL BE ALTERNATED ALONG WALL HEIGHT.
 2. CONSTRUCTION JOINTS SHALL NOT OCCUR WITHIN 5'-0" OF A CORNER.
 3. SEE GENERAL STRUCTURAL NOTES FOR LAP SPLICE REQUIREMENTS.

TYP. WALL CONSTRUCTION JT. 3/1S3
SCALE: 1" = 1'-0"

WET WEATHER BASIN PLAN
SCALE: 1/8" = 1'-0"



SECTION 1 1/1S3
SCALE: 3/16" = 1'-0"



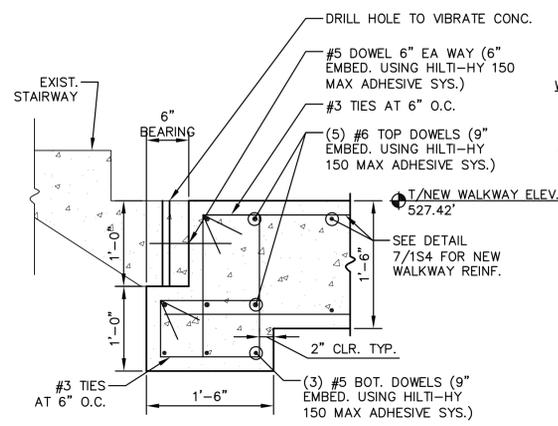
SECTION 2 1/1S3
SCALE: 3/16" = 1'-0"

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ISSUE DATE: JULY 2014						
PROJECT NUMBER: 148912/158513						

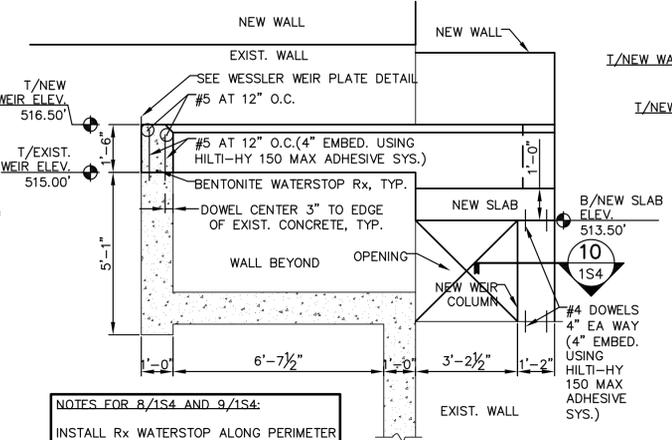


2014 WASTEWATER TREATMENT PLANT PROJECTS
WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA

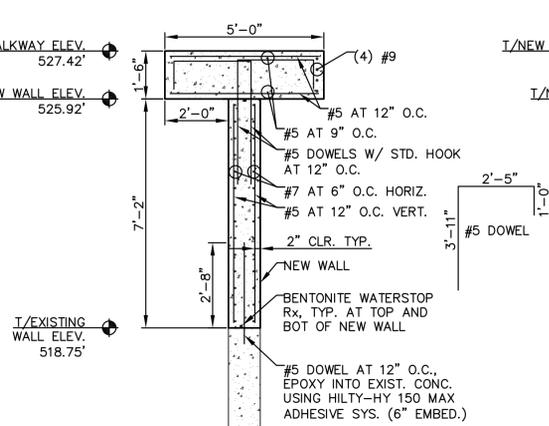
AREA 1 - WET WEATHER FACILITY IMPROVEMENTS
WET WEATHER BASIN PLAN AND SECTIONS



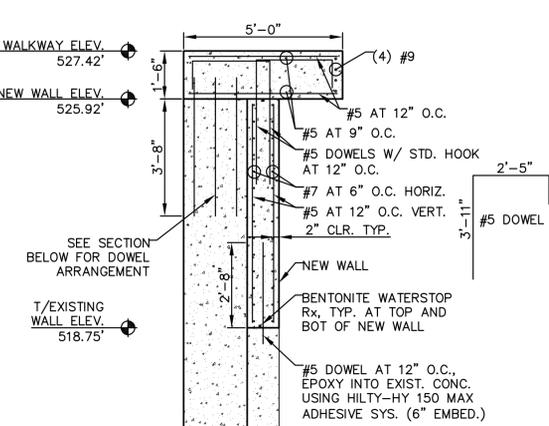
STAIRWAY BEAM
SCALE: 1" = 1'-0"



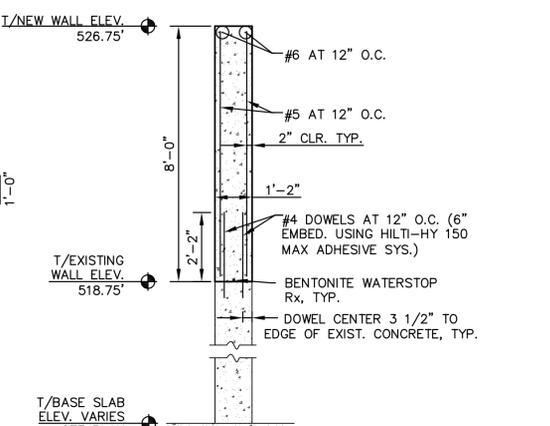
WEIR EXTENSION
SCALE: 3/8" = 1'-0"



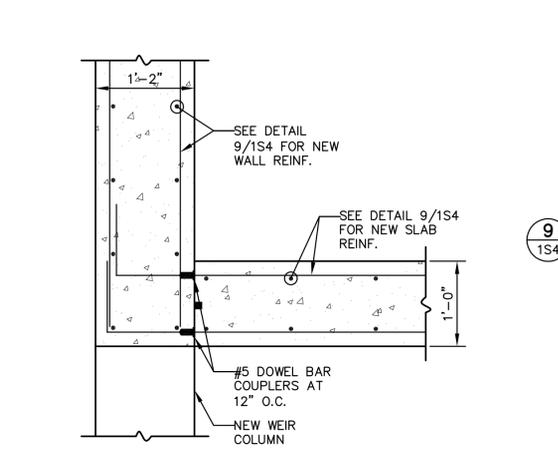
WALKWAY TO WALL
SCALE: 3/8" = 1'-0"



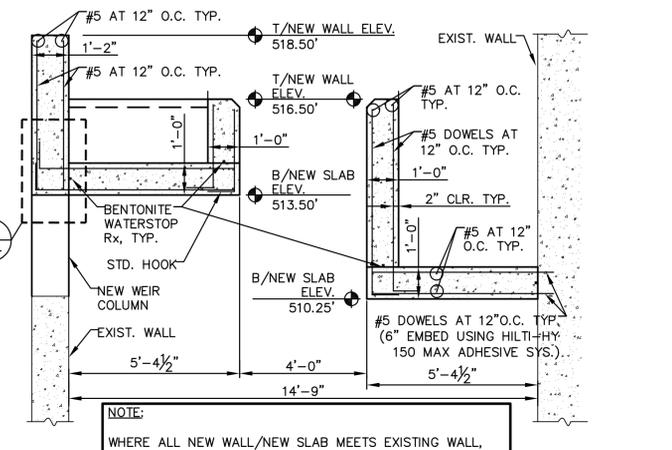
WALKWAY AND COLUMN TO WALL
SCALE: 3/8" = 1'-0"



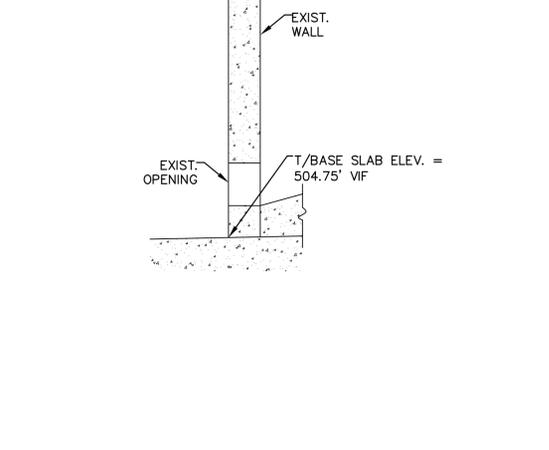
TYP. CORNER COLUMN REINF.
SCALE: 1" = 1'-0"



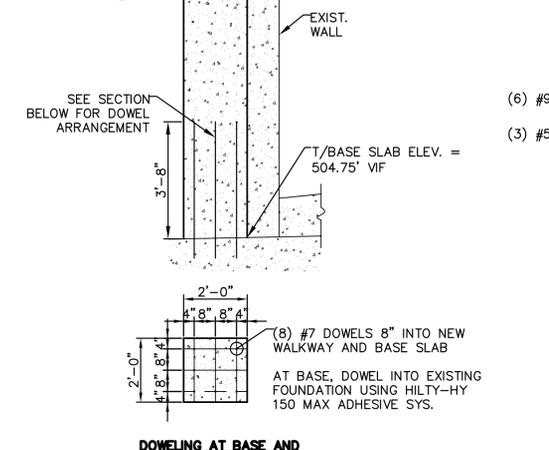
DOWEL BAR COUPLERS
SCALE: 1" = 1'-0"



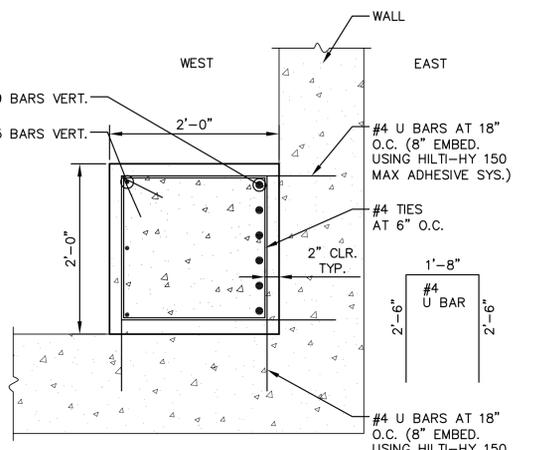
WEIR EXTENSION
SCALE: 3/8" = 1'-0"



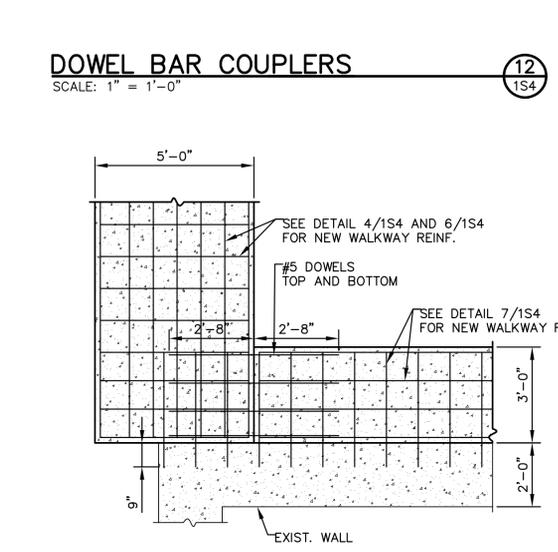
WALKWAY TO EXTERIOR WALL
SCALE: 1" = 1'-0"



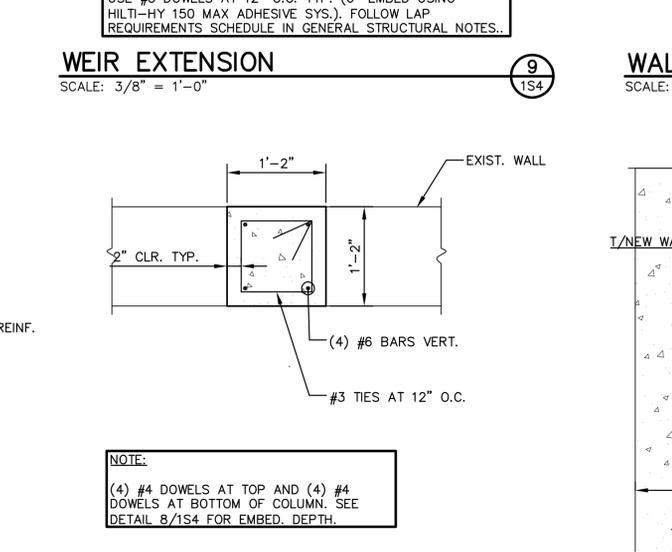
WALKWAY TO WALL
SCALE: 3/8" = 1'-0"



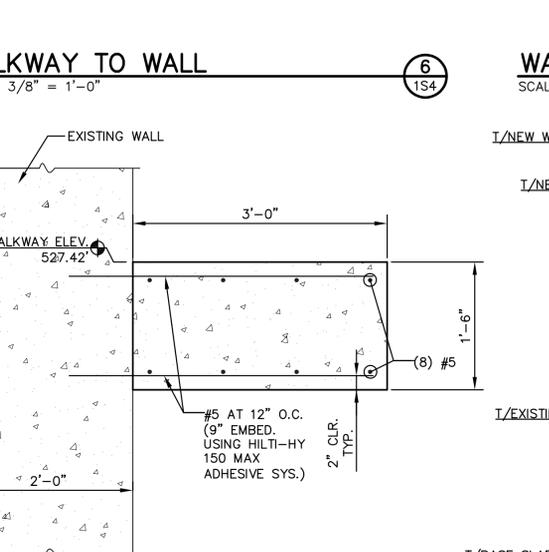
TYP. MIDDLE COLUMN REINF.
SCALE: 1" = 1'-0"



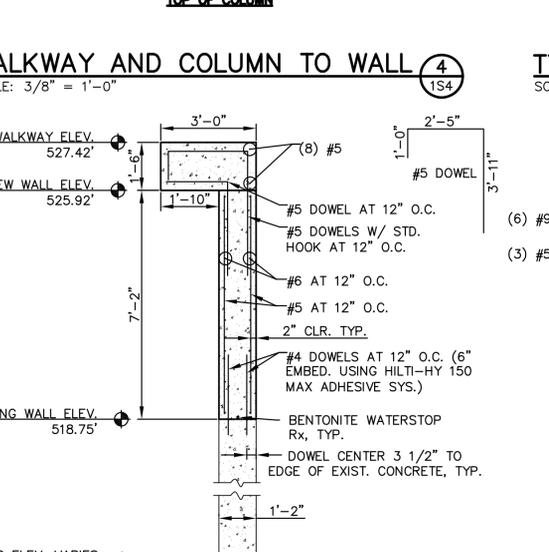
WALKWAY CONNECTION
SCALE: 3/8" = 1'-0"



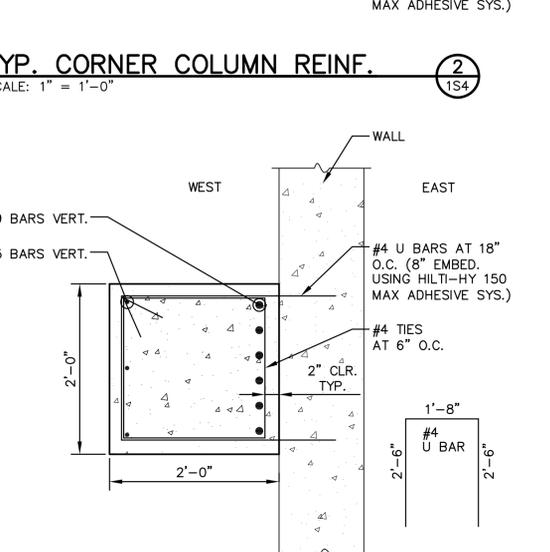
WEIR COLUMN REINFORCEMENT
SCALE: 1" = 1'-0"



WALKWAY TO EXTERIOR WALL
SCALE: 1" = 1'-0"

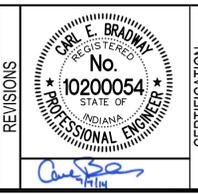


WALKWAY TO WALL
SCALE: 3/8" = 1'-0"

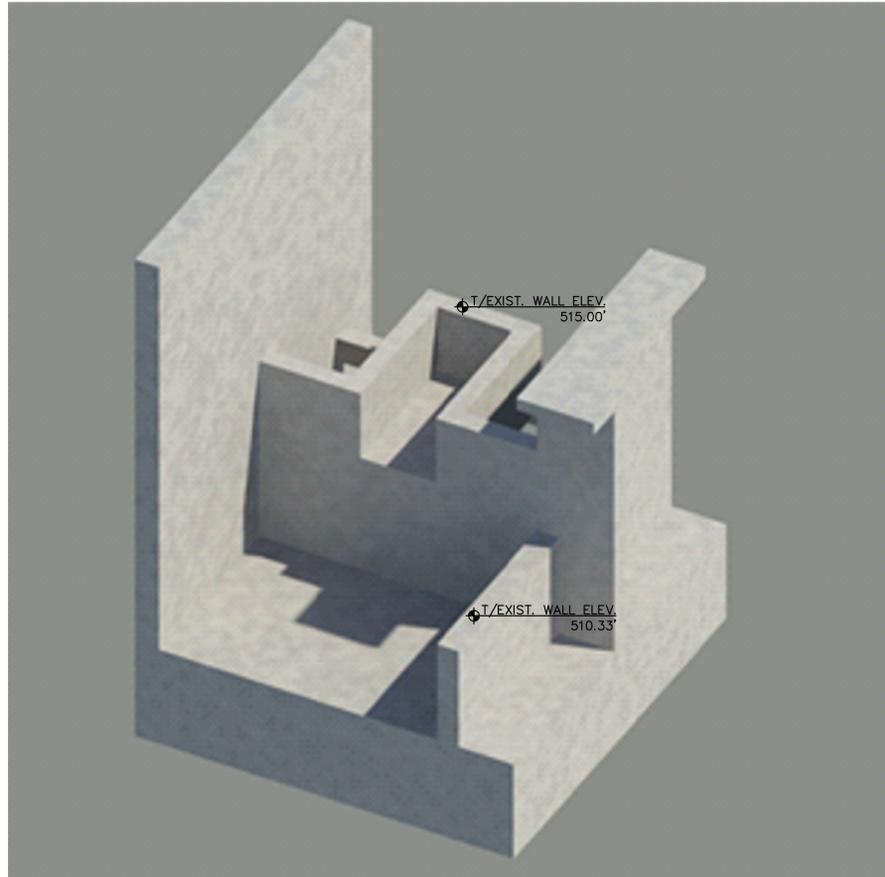


TYP. MIDDLE COLUMN REINF.
SCALE: 1" = 1'-0"

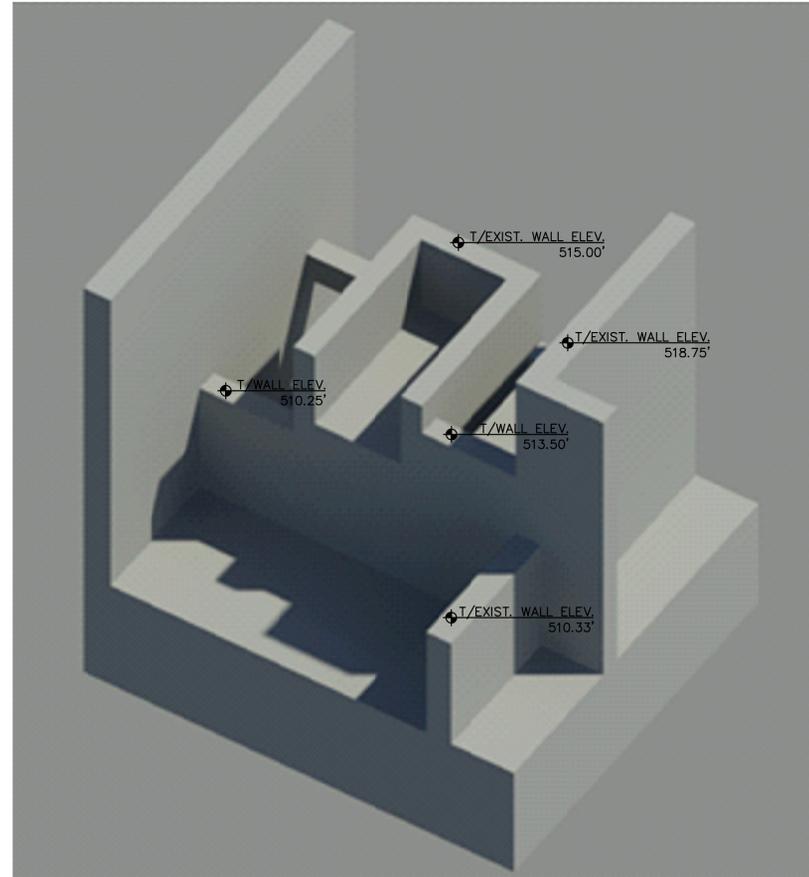
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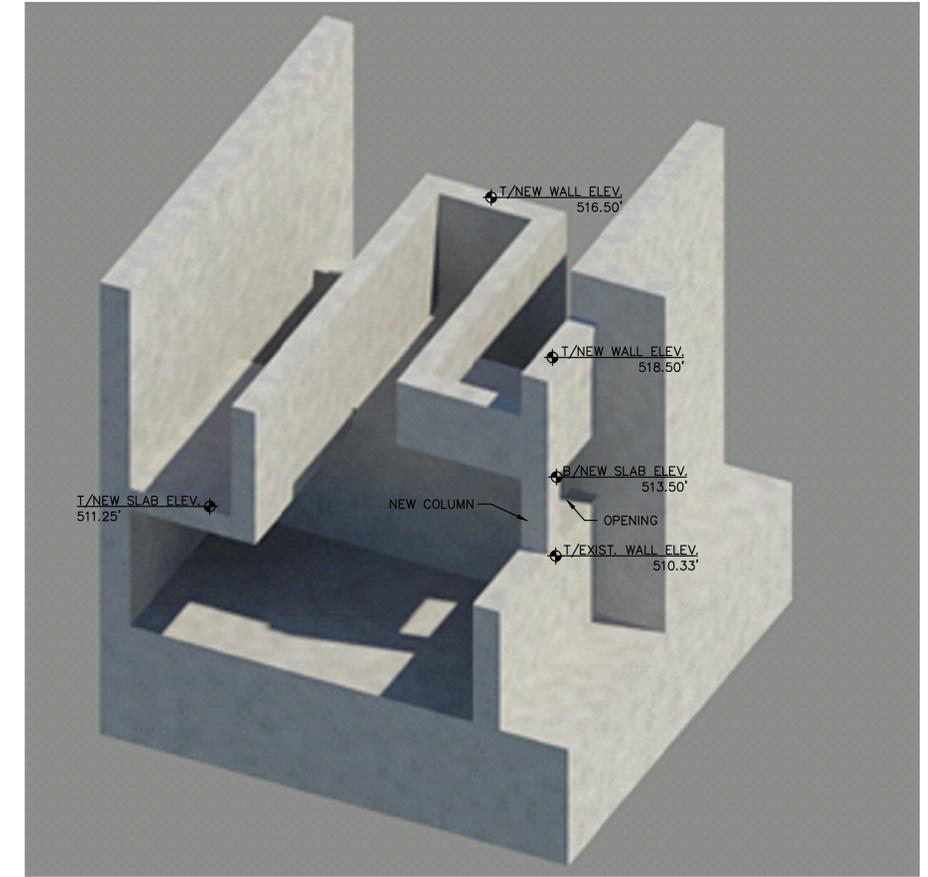
2014 WASTEWATER TREATMENT PLANT PROJECTS
WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA
AREA 1 - WET WEATHER FACILITY IMPROVEMENTS
STRUCTURAL DETAILS



EXISTING WEIR CONFIGURATION



WEIR CONFIGURATION AFTER DEMOLITION



NEW WEIR CONFIGURATION

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2014 WASTEWATER TREATMENT PLANT PROJECTS
 WASTEWATER TREATMENT UTILITY
 CITY OF WEST LAFAYETTE, INDIANA
AREA 1 - WET WEATHER FACILITY IMPROVEMENTS
3D MODEL OF WEIR

GENERAL STRUCTURAL NOTES

All notes hereafter are typically applicable unless otherwise noted on plans, sections or details.

GENERAL

- The structure has been designed for the in-service loads only. The methods, procedures, and sequences of construction are the responsibility of the Contractor. Supporting formwork for the concrete construction shall not be removed before the concrete has gained sufficient strength to safely support the dead and superimposed loads which will be subsequently applied. The Contractor shall take all necessary precautions to maintain and ensure the integrity of the structure at all stages of construction. Shoring design is the responsibility of the Contractor.
- All work shall be performed in accordance with the Indiana Building Code, 2008 Edition (2006 International Building Code, first printing, with Indiana Amendments).
- Where new work is to be fitted to old work, the Contractor shall check all dimensions and conditions in the field, and report any errors or discrepancies to the Structural Engineer prior to the fabrication and erection of any new members.
- Do not determine dimensions by "scaling" off the plans. The Contractor shall accept all risk associated with "scaling" and shall be responsible for all inadequate work resulting therefrom. Questions regarding missing or conflicting dimensions shall be directed, in writing, to the Structural Engineer.
- Existing materials to be removed and reinstalled as part of this contract, but become damaged, shall be replaced with approved new material of equivalent quality and appearance at the Contractor's expense.
- All work shall be performed without damage to adjacent retained work. Adequate protection of areas nearby work against dust, dirt and debris accumulation shall be maintained at all times.
- Principal openings in the structure are indicated on the structural drawings. Refer to the process, architectural, mechanical and electrical drawings for sleeves, inserts, etc. not herein indicated. Openings in slabs with a maximum side dimension or diameter of 10 inches or less shall not require additional framing or reinforcement, unless noted otherwise. The location of sleeves or openings not shown in structural members shall be approved by the Structural Engineer.
- The location of sleeves or openings not shown in structural members shall be approved by the Structural Engineer.
- The Contractor shall relocate all mechanical piping, equipment, electrical conduits and wiring that interfere with the proposed construction. Service shall be maintained to all equipment that is served by mechanical, electrical or plumbing conduit being relocated.
- The Contractor shall relocate all utilities which interfere with the proposed construction. Service shall be maintained at all times during utility relocation unless otherwise noted.
- The Contractor shall verify the orientation, sizes, dimensions shown on the structural plans with the Architectural and Site plans prior to construction. All discrepancies shall be reported to the Structural Engineer immediately.

CONCRETE

- Reinforced concrete has been designed in accordance with the latest editions of the Building Code Requirements for Reinforced Concrete (ACI 318) and Environmental Engineering Concrete Structures (ACI 350R) by the American Concrete Institute (ACI).
- Slabs-on-grade shall be constructed in accordance with the latest edition of the Guide for Concrete Floor and Slab Construction (ACI 302.1R).
- Mixing, transporting, and placing of concrete shall conform to the latest edition of the Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete (ACI 211.1) and the Standard Specifications for Structural Concrete (ACI 301). Concrete curing shall conform to the latest editions of the Standard Practice for Concrete Curing (ACI 308) and the Standard Specification for Curing Concrete (ACI 308.1). In case of a discrepancy, the plans and specifications shall govern.
- Unless noted otherwise, concrete shall have natural sand fine aggregate and normal weight coarse aggregates conforming to ASTM C33, and Type I or III Portland Cement conforming to ASTM C150. The Contractor shall submit a mix design for each proposed class of concrete. Mix designs shall indicate proportions by weight, water-cement ratio, slump, air content, synthetic fiber size and quantity, sieve analyses of fine and coarse aggregates, standard deviation analysis, and required average strength and documentation of average strength verifying compliance with ACI 318. The Contractor shall not vary from the mix design without approval from the Structural Engineer.
- Unless noted otherwise, fly ash may be used as a pozzolan to replace a portion of the Portland Cement in a concrete mix. Fly ash, when used, shall conform to ASTM C618, Type C. Concrete mixes using fly ash shall be proportioned to account for the properties of the specific fly ash used and to account for the specific properties of the fly ash concrete thus resulting. The ratio of the amount of the fly ash to the total amount of fly ash plus cement in the mix shall not exceed 20 percent.
- Water-reducing admixtures conforming to ASTM C494 may be used in the concrete mix design. Maximum slump shall be 5 inches for mixes containing water-reducing admixtures and 5 to 8 inches for mixes containing high range water-reducing admixtures.
- Concrete compressive strength tests shall be performed in accordance with ASTM C39. Copies of the test results shall be forwarded to the Structural Engineer. One set of specimens shall be taken for each day's pour of appreciable size and for each 50 cubic yards in accordance with the latest edition of ASTM C31. Each set shall include one specimen tested at 7 days, 2 specimens tested at 28 days and one specimen retained in reserve. Two additional reserve specimens shall be retained for all mass concrete pours. These test cylinders shall be laboratory cured.

- When the ambient temperature is expected to fall below 40 degrees during the course of a concrete pour or subsequent curing period, it shall be placed and cured in accordance with the latest edition of Cold Weather Concrete (ACI 306R) and an additional set of concrete test cylinders shall be made. For mass concrete, this set of additional test cylinders shall consist of four specimens for each 200 cubic yards of concrete placed.
- Concrete mixed, transported, placed, and cured under conditions of high ambient temperature, low humidity, solar radiation, or high winds shall conform to the latest edition of Hot Weather Concrete (ACI 305R) and an additional set of concrete test cylinders shall be made.
- Slump tests shall be made prior to and following the addition of plasticizers. Where concrete is placed by pumping methods, concrete for test cylinders and slump tests shall be taken at the point of final placement. Slump test samples shall be taken at the 1/4 and 3/4 points of each load of concrete.
- Water shall not be added to the concrete at the job site. The Contractor is responsible for coordinating a pumpable and workable mix without the addition of water at the job site. The use of plasticizers, retardants and other additives shall be at the option of the Contractor subject to the approval of the Structural Engineer. Follow the recommendations of the manufacturer for the proper use of additives. Use of calcium chloride or other chloride bearing salts is prohibited.
- Place concrete in a manner so as to prevent segregation of the mix. Delay floating and troweling operations until the concrete has lost surface water sheen or all free water. Do not sprinkle free cement on the slab surface. Finishing of slab surfaces shall conform to the latest editions of ACI 302.1R and ACI 304R (Guide for Measuring, Mixing, Transporting and Placing Concrete).
- Where an epoxy adhesive is specified for bonding plastic concrete to hardened concrete, it shall conform to the latest edition of the Standard Specification for Bonding Plastic Concrete to Hardened Concrete with a Multi-Component Epoxy Adhesive (ACI 503.2).
- Maintain concrete in a moist condition for at least 5 days at ambient temperatures above 70 degrees, and at least 7 days at ambient temperatures above 50 degrees. Curing compounds or moisture retention covers shall be used for all non-formed surfaces. Formed surfaces shall be cured by leaving forms in place. During hot, dry weather, keep forms moist by sprinkling. When forms are removed prior to the end of the curing period, apply curing compound to the exposed surfaces.
- Refer to the specifications for information and location of concrete finishes.
- Protect finished concrete surfaces from damage, rain, hail, running water, other injurious effects.
- Protect the concrete surface between finishing operations on hot, dry days or any time plastic shrinkage cracks could develop by using wet burlap, plastic membranes or fogging.
- Horizontal and vertical joints are not permitted in concrete construction except where indicated.
- Construction and/or contraction joints at locations other than where indicated shall be submitted to the Structural Engineer for approval.
- Construction joints shall be prepared by roughening the contact surface in an approved manner to a full amplitude of approximately 1/4 inch leaving the contact surface clean and free of laitance.
- Provide 3/4 inch chamfers on all exposed corners of concrete except those abutting masonry.
- The Contractor shall verify the location of sleeves, openings, embedded items, etc. and shall ensure that they are in place prior to the placement of the concrete.
- Earth cuts shall not be used as forms ("bank forming") for vertical or sloping surfaces unless otherwise approved by the Structural Engineer. Where bank forming is permitted, the concrete element shall be increased at least 3 inches on all sides exposed to earth to account for possible soil contamination during concrete placement.
- Air tests shall be performed per ASTM C 173.
- Concrete failing to meet the specified compressive strength at 28-days (based on cylinder tests) may be subject to removal and replacement at the Owner's discretion, regardless of the ACI Acceptance criteria based on cored samples.

CONCRETE SCHEDULE

CLASS	28 DAY COMPRESSIVE STRENGTH	AIR CONTENT	CONCRETE LOCATION	REMARKS
C	4,000 psi	optional	Foundation Walls, Footings, Base Slab	
H	4,500 psi	6% ± 1%	Exterior: Structural Slabs (Roof).	
J	4,500 psi	6% ± 1%	Exterior Slabs on Grade, Stoops, & Sidewalks	Synthetic Fibers (1.5 lbs/cyds)
G	5,000 psi	6% ± 1%	High Volume Grout	

Minimum cement content shall be 517 lb/cys (5.5 sacks/cys) and maximum water-cement ratio shall be 0.48 for Class C.

Minimum cement content shall be 611 lb/cys (6.5 sacks/cys) and maximum water-cement ratio shall be 0.45 for Class H concrete.

Minimum cement content shall be 611 lb/cys (6.5 sacks/cys) and maximum water-cement ratio shall be 0.40 for Class G concrete.

Minimum cement content shall be 611 lb/cys (6.5 sacks/cys) and maximum water-cement ratio shall be 0.40 for Class J concrete.

REINFORCING STEEL

- Reinforcing bar detailing, fabricating, and placing shall conform to the latest edition of the following standards: Specifications for Structural Concrete for Buildings (ACI 301), ACI Detailing Manual (SP66). The latest editions of Concrete Reinforcing Steel Institute's Reinforcing Bar Detailing and Placing Reinforcing Bars may also be used.
- Provide standard bar chairs, slab bolsters, spacers, etc. as required to maintain concrete protection specified. Reinforcing steel shall be tied to prevent displacement during concrete placement.
- Reinforcement bars shall not be tack welded, welded, heated or cut unless otherwise indicated or approved by the Structural Engineer.
- Welding of reinforcement bars, when approved by the Structural Engineer, shall conform to the latest edition of American Welding Society Standard D1.4. Electrodes for shop and field welding of reinforcement bars shall conform to ASTM A233, Class E90XX.
- Synthetic fibers shall be used for temperature and shrinkage reinforcement in concrete slabs-on-grade and where indicated in the Concrete Schedule. Synthetic fibers shall be virgin (non-recycled) nylon or polypropylene fibers conforming to ASTM C1116, Type III. Fibers shall be introduced into the mix at the plant in accordance with the manufacturer's recommendations. The Contractor shall submit the mix design, including the fiber size and quantity, to the Structural Engineer for approval prior to construction. The Contractor shall take adequate measures to manage any difficulty in concrete finishing associated with the use of the fibers.
- Concrete cover over reinforcement, unless otherwise noted, shall be as specified in the latest editions of ACI 318 and ACI 350 with the most stringent requirements governing.
- Unless noted otherwise, splicing of reinforcing bars shall conform to the latest edition of ACI 318.
- Horizontal bars in walls, masonry bond beams, continuous wall footings and grade beams shall be bent at corners and intersections in such a way that continuity is provided through the joint. Separate corner bars of the same size and spacing as the horizontal reinforcing may be substituted for the bent portion of the continuous bars.
- Unless noted otherwise, provide 2-#5 bars (one each face) around unframed openings and footings at reentrant corners of vertical height offsets in concrete walls. Place bars parallel to the sides of the opening and extend 24 inches beyond corners.
- The Contractor shall prepare detailed working or shop drawings to enable him to fabricate, erect and construct all parts of the work in accordance with the drawings and specifications and shall submit one reproducible copy and one blue line copy to the Structural Engineer for review prior to fabrication. These shop drawings will be reviewed for design concepts only. The Contractor shall be responsible for all dimensions, accuracy, and fit of work.

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

EXPANSION/ADHESIVE ANCHORS

- Anchors shall be Hilti type as manufactured by Hilti Fastening Systems or approved equivalent.
- Anchors shall be installed in accordance with the manufacturer's recommendations, plans and specifications. Anchors shall not be installed in a masonry mortar joint.
- Masonry cores receiving anchors shall be filled with course grout conforming to the requirements specified herein.
- The Contractor shall inspect the masonry or concrete surface at each proposed anchor location prior to installation. If the anchor locations align with mortar joints or the masonry or concrete is honeycombed or otherwise unsound, the anchors shall be repositioned so as to be located in sound material and be in accordance with the manufacturer's minimum spacing requirements.
- Anchors shall not be installed in concrete until it has attained its specified minimum 28 day compressive strength (f'c).

MASONRY

- Engineered concrete masonry has been designed in accordance with the latest edition of the ACI Building Code Requirements for Masonry Structures (ACI 530/ASCE 5).
- Concrete masonry construction shall conform to the latest edition of the ACI Specifications for Masonry Structures (ACI 530.1/ASCE 6).
- Mortar shall be type N for interior non-load bearing walls. For exterior and load bearing walls, mortar shall be type M below grade and type S above grade. Mortar shall conform to the requirements of the latest edition of ASTM C270. Portland Cement-lime without air entrainment shall be used in the mortar mix.
- Provide standard spacers, etc. as required to prevent reinforcing steel displacement during grout placement.
- Provide reinforcing steel in vertical cores as indicated. In addition, provide reinforcing steel in vertical cores on each side of all openings and each corner of all walls. Grout cores with reinforcing steel solid.
- Reinforcing steel lap splices in concrete masonry shall be 60 bar diameters (minimum) unless otherwise noted. All splices shall be wired together.
- Masonry cores (where specified) and bond beams shall be filled with coarse grout conforming to the requirements of the latest edition of ASTM C476 and having a minimum 28-day compressive strength of 3,000 psi, 3/4 inch maximum aggregate, and an 8 to 11 inch maximum slump.
- Bearings for beams, lintels, joists, etc. shall be bond beams or hollow masonry units with cores filled solid with grout. The minimum bearing length shall be 8 inches unless otherwise indicated.
- The Contractor shall prepare detailed working or shop drawings to enable him to fabricate, erect and construct all parts of the work in accordance with the drawings and specifications and shall submit one reproducible copy and one blue line copy to the Structural Engineer for review prior to fabrication. These shop drawings will be reviewed for design concepts only. The Contractor shall be responsible for all dimensions, accuracy, and fit of work.
- Unless otherwise noted, all masonry shall be laid out in a running bond pattern.

MASONRY REINFORCING STEEL LAP SPLICE SCHEDULE						
f'm = 1,500 psi						
BAR SIZE	#3	#4	#5	#6	#7	#8
8" CMU	1'-8"	2'-3"	2'-9"	4'-9"	6'-9"	9'-6"

FOUNDATIONS

- Exterior footings shall bear 3'-0" minimum below finish grade and shall bear on undisturbed soil.
- Foundation excavation and all other soils related work shall be performed in accordance with the geotechnical engineering report prepared by Earth Exploration, Inc. dated May 12, 2011 and all associated supplements.
- Foundation excavations shall be made to plan elevations. The Contractor shall have a qualified Geotechnical Engineer verify that the allowable soil bearing pressure meets or exceeds that assumed for the foundation design. If the underlying soils are found to be unacceptable, one of the following procedures shall be followed:
 - Remove the unacceptable soil and backfill with an engineered structural fill as directed by the Geotechnical Engineer.
 - Lower the footing to an acceptable soil. Contact Engineer for potential modifications to the foundation system.
- Subgrade structural elements subjected to differential lateral soil pressure shall be adequately braced until the structural elements which provide lateral restraint have been placed and allowed to cure for a minimum of 7 days.
- Excavations for spread footings, combined footings, continuous footings and/or mat foundations shall be cleaned and hand tamped to a uniform surface. Foundation excavations shall be adequately protected against detrimental change in condition from disturbance, rain, freezing, etc. and have the sides and bottoms temporarily lined with 6 mil visqueen if placement of concrete does not occur within 24 hours of the excavation. Surface runoff shall not be allowed to enter the excavation.
- Foundation conditions noted during construction, which differ from those described in the geotechnical report shall be reported to the Engineer before further construction is attempted.
- Center all column and wall footings under the column or wall above unless otherwise indicated.

COORDINATION WITH OTHER TRADES

- The Contractor shall coordinate and check all dimensions relating to architectural finishes, structural framing, mechanical openings, equipment, etc. The Structural Engineer shall be notified of any discrepancies before proceeding with work in an area under question.
- Opening dimensions shown on the plans and elevation views are nominal rough openings. It shall be the Contractor's responsibility to coordinate the specific clear opening dimension with the selected door manufacturer and door installer. Clear opening dimension shall account for any shimming and construction tolerances needed by the Contractor to complete their work. Refer to the Architectural/Civil plans for door locations and sizes.

DESIGN

- Building Code: Indiana Building Code, 2008 edition (2006 International Building Code, first printing, with Indiana Amendments)
- Soil Information
Allowable Bearing Pressure 2,000 psf
- Concrete:
28 day compressive strength (f'c) See Schedule
- Reinforcing steel (deformed bars of new billet steel):
Stirrup and tie ASTM A615, Grade 60
Weldable (Low-Alloy) ASTM A706, Grade 60
Otherwise ASTM A615, Grade 60
- Non-shrink high volume grout:
28 day compressive strength 5,000 psi
- Masonry f'm 1,500 psi
- Roof Live Load 20 psf
Floor Live Load 150 psf
- Snow Loads:
Roof Slab 22 psf + Drift
- Wind loads:
Basic wind speed (3-second gust) 90 mph
Exposure C
Importance Factor 1.15
- Seismic loads:
Seismic Occupancy Category III
Seismic Importance Factor, Ie 1.25
MCE Seismic Spectral Response Acceleration at Short Periods, Ss 17.6% g
MCE Seismic Spectral Response Acceleration at 1 Second, S1 7.8% g
Site Class D
Seismic Design Category B

SPECIAL NOTES TO THE OWNER

- Under normal conditions and for conventional buildings structures such as the subject structure, reinforced concrete as well as precast/prestressed concrete will develop cracks. The cracks are due to inherent shrinkage of the concrete, creep, ambient temperature variation, and restraining effects of vertical and other structural elements.
- The cracks formed are normally cosmetic. The concrete maintains its serviceability and strength requirements. It is possible that a number of hairline cracks, which would normally spread over a wide area, will integrate into a single crack with a width exceeding 0.01 inch. It is emphasized that although special effort is made to reduce the potential causes and number of such cracks, it is not practical to provide total articulation and thereby achieve complete inhibition of all cracks.
- The majority of these cracks develop within the first three years of service. Cracks which are wider than 0.01 inch may require sealing or epoxy injection.

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AS NOTED						
ISSUE DATE						
JULY 2014						
PROJECT NUMBER						
148912/158513						

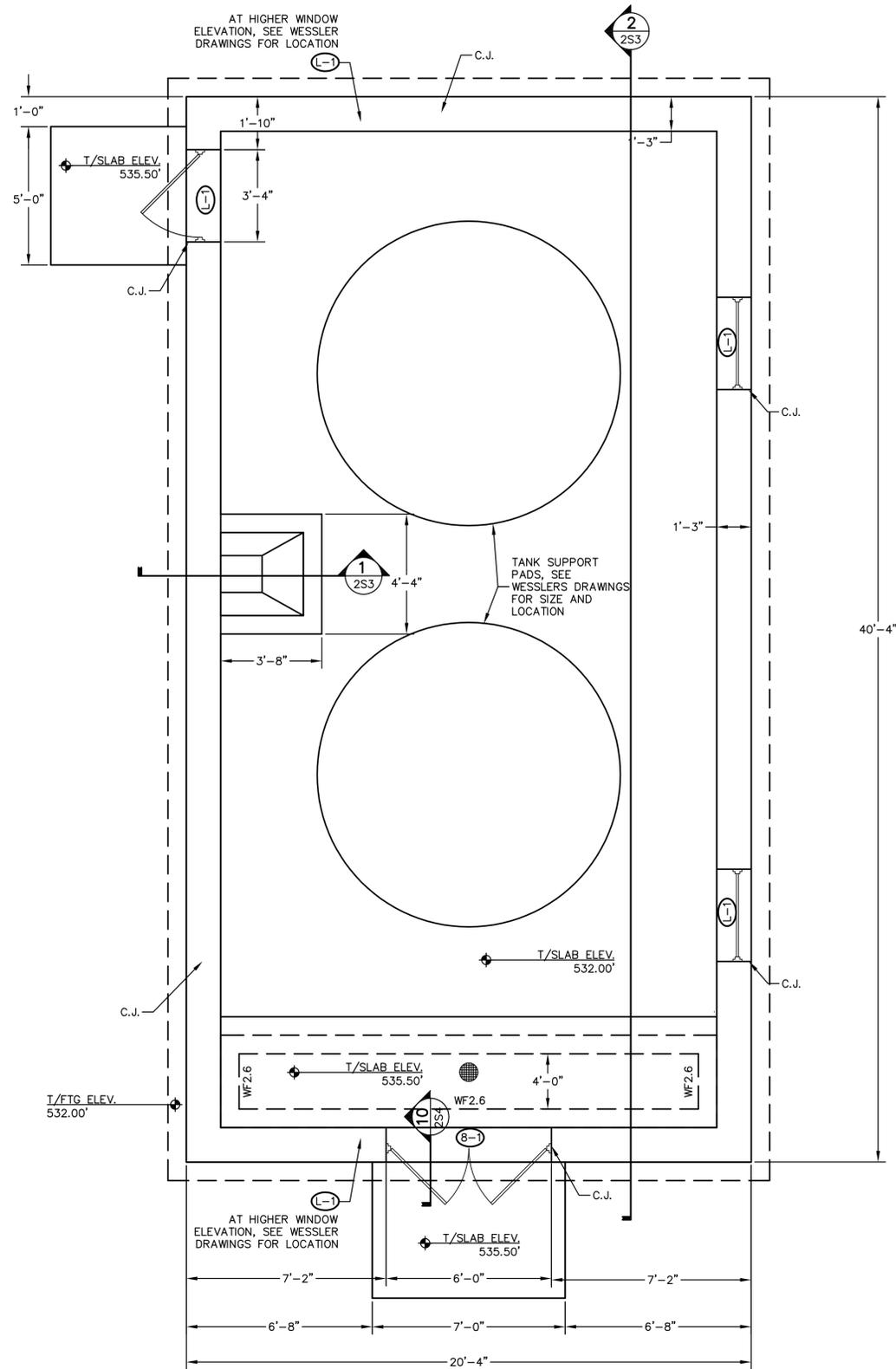


2014 WASTEWATER TREATMENT PLANT PROJECTS

WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA

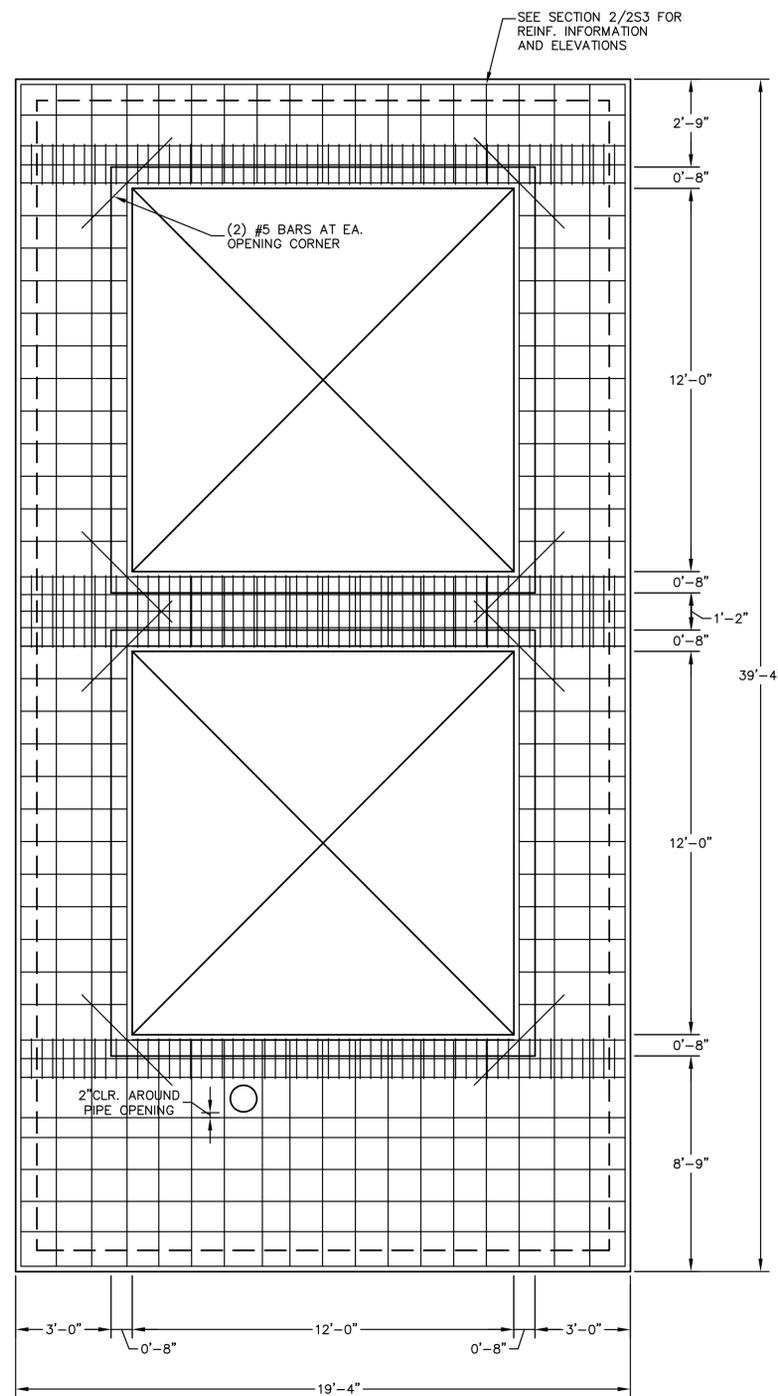
AREA 2 PHOSPHORUS REMOVAL - PHASE 1
GENERAL STRUCTURAL NOTES

SHEET NO. 2S1
PAGE NO. 35



CHEMICAL FEED FACILITIES FOUNDATION PLAN

SCALE: 3/8"=1'-0"



CHEMICAL FEED FACILITIES CONCRETE ROOF SLAB PLAN

SCALE: 3/8"=1'-0"



PLAN NOTES: ○ INDICATES NOTE REFERENCED ON PLAN

- SEE SHEET 2S1 FOR GENERAL STRUCTURAL NOTES. SEE SHEETS 2S4 TO 2S5 FOR TYPICAL STRUCTURAL DETAILS.
- REFER TO CIVIL PLANS FOR CONFIGURATION OF VENTS ON BUILDING.
- X DENOTES STEEL LINTEL. SEE LINTEL SCHEDULE ON SHEET 13/2S5.
- X DENOTES 8" CMU LINTEL. SEE LINTEL SCHEDULE ON SHEET 13/2S5.
- STEEL LINTELS SHALL BE HOT-DIP GALVANIZED.
- REFER TO CIVIL PLANS FOR OPENING SIZES AND LOCATIONS.
- SEE PROCESS DRAWINGS FOR ADDITIONAL REQUIREMENTS INCLUDING CONCRETE FILL, GROUT BEDS, PIPE PENETRATIONS, ETC.
- "C.J." INDICATES LOCATION OF MASONRY CONTROL JOINTS.

WALL FOOTING SCHEDULE					
MARK	FOOTING DIMENSION			REINFORCEMENT	
	W	L	T	W	L
WF2.6	2'-7"	CONT.	12"	#4 AT 48"	4 - #5 CONT.

FOUNDATION DESIGN VALUES:
ALLOWABLE BEARING PRESSURE = 2,000 PSF

MASONRY WALL REINFORCING SCHEDULE	
A	8-INCH CMU WALL 8-INCH NORMAL WEIGHT CMU BLOCK VERTICAL: #5 BARS AT 40-INCHES O.C. MAX. HORIZONTAL: (2) #5 BARS IN 8" BOND BEAM AT TOP OF WALL #9 TRUSS TYPE JOINT REINF. AT 16-INCHES O.C. (8" LAP)

MASONRY NOTES:

- REINFORCE ALL WALLS AS NOTED BY SCHEDULE EXCEPT AS NOTED ON PLANS AND/OR DETAILS.
- PROVIDE A 1'-0" HOOK AT TOP OF ALL VERTICAL BARS. 1'-0" MIN.
- SEE CIVIL DWGS. FOR LOCATION OF CMU WALLS.

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148912/158513						



2014 WASTEWATER TREATMENT PLANT PROJECTS

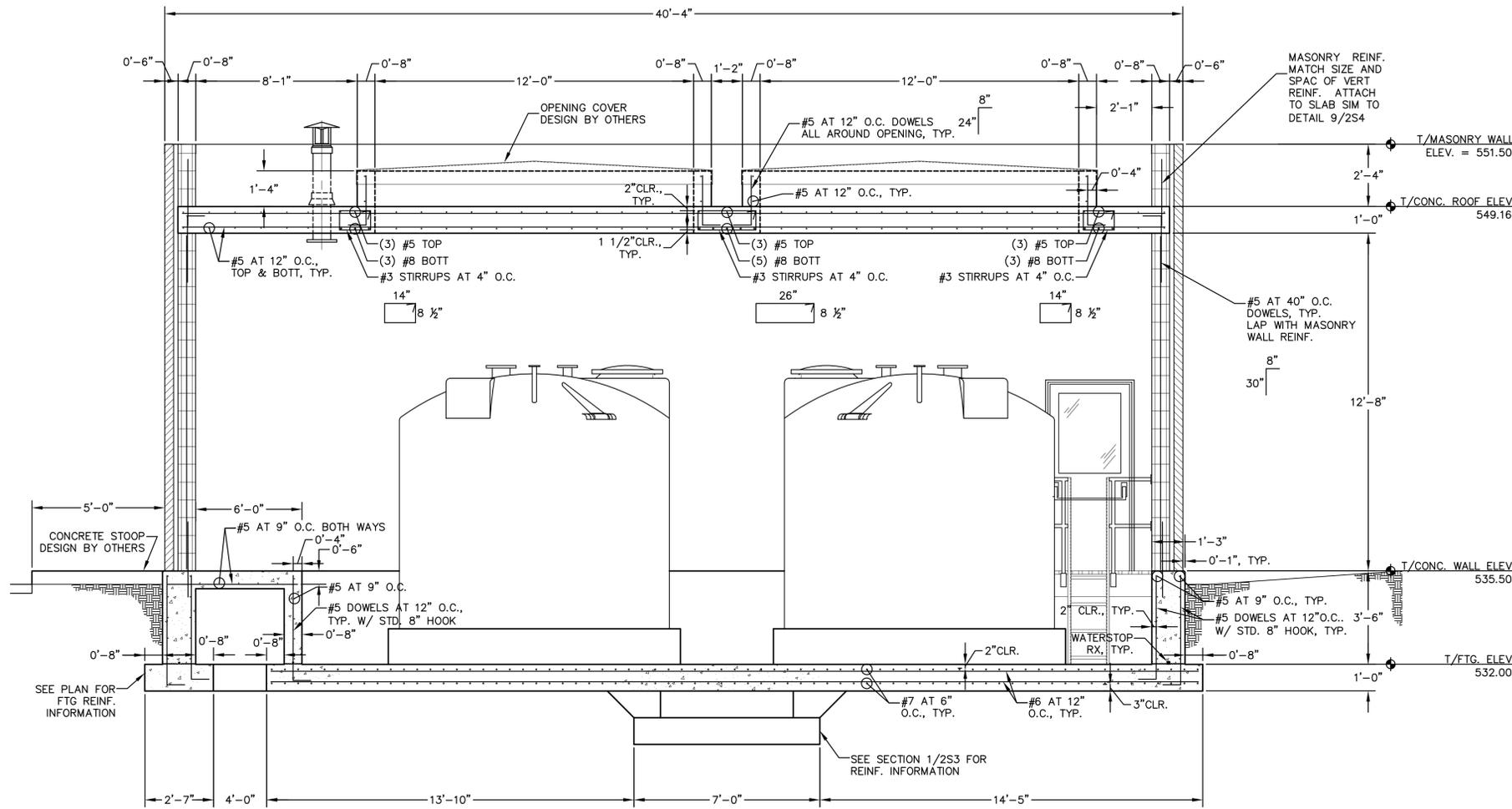
WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA

AREA 2 PHOSPHORUS REMOVAL - PHASE 1
FOUNDATION AND ROOF SLAB PLAN

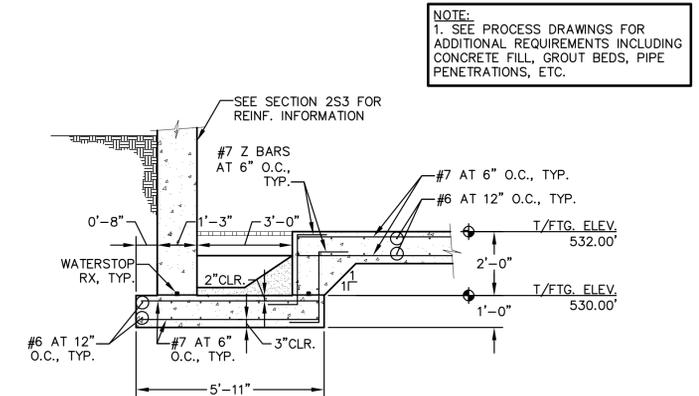
PLAN NOTES: ○ INDICATES NOTE REFERENCED ON PLAN

- SEE SHEET 2S1 FOR GENERAL STRUCTURAL NOTES. SEE SHEETS 2S4 TO 2S5 FOR TYPICAL STRUCTURAL DETAILS.
- REFER TO CIVIL PLANS FOR CONFIGURATION OF VENTS ON BUILDING.
- STEEL LINTELS SHALL BE HOT-DIP GALVANIZED.
- REFER TO CIVIL PLANS FOR OPENING SIZES AND LOCATIONS.
- SEE PROCESS DRAWINGS FOR ADDITIONAL REQUIREMENTS INCLUDING CONCRETE FILL, GROUT BEDS, PIPE PENETRATIONS, ETC.
- PROVIDE BRICK LINTELS AS FOLLOWS UNLESS NOTED OTHERWISE:
 - FOR SPANS ≤ 4'-0": L3½x3½x¾
 - FOR SPANS > 4'-0", ≤ 6'-0": L5x3½x¾ (LLV)
 - FOR SPANS > 6'-0", ≤ 8'-0": L6x3½x¾ (LLV)
 - FOR SPANS > 8'-0", ≤ 12'-0": L7x4x¾ (LLV)
 - FOR SPANS ≤ 14'-0": Bent PL 8x4x¾ (LLV)

ALL BRICK LINTELS TO HAVE 8-INCHES BEARING, EACH END.



SECTION 2
SCALE: 3/8"=1'-0"



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

NOTE:
1. SEE PROCESS DRAWINGS FOR ADDITIONAL REQUIREMENTS INCLUDING CONCRETE FILL, GROUT BEDS, PIPE PENETRATIONS, ETC.

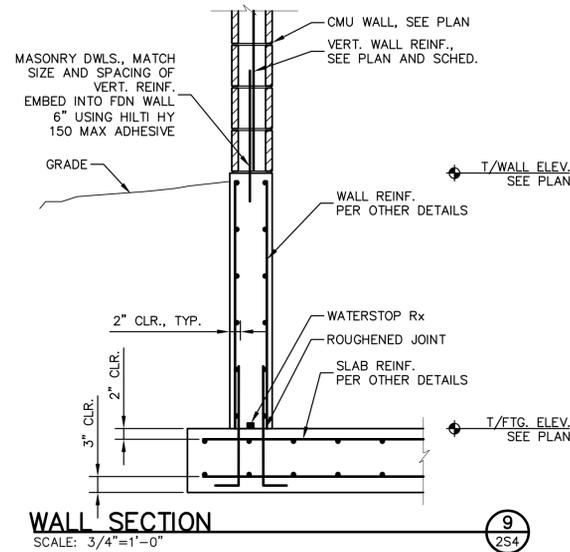
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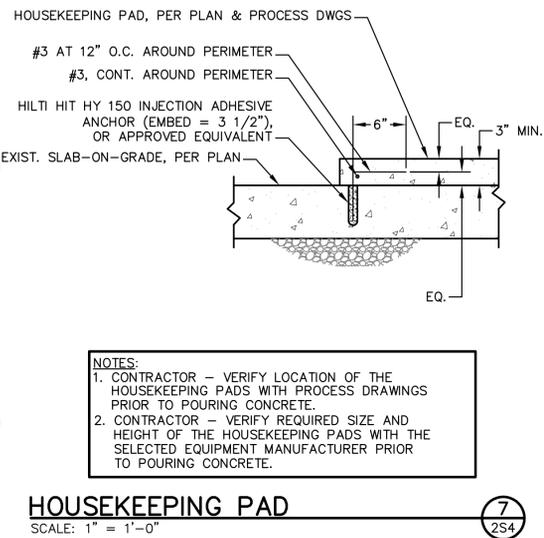
2014 WASTEWATER TREATMENT PLANT PROJECTS

WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA

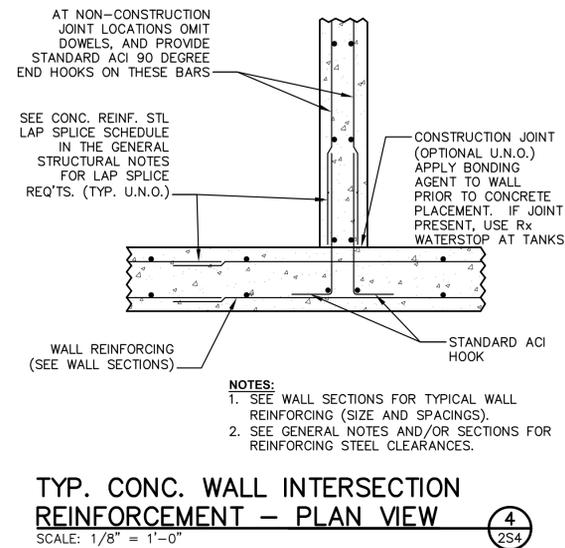
AREA 2 PHOSPHORUS REMOVAL - PHASE 1 BUILDING SECTIONS



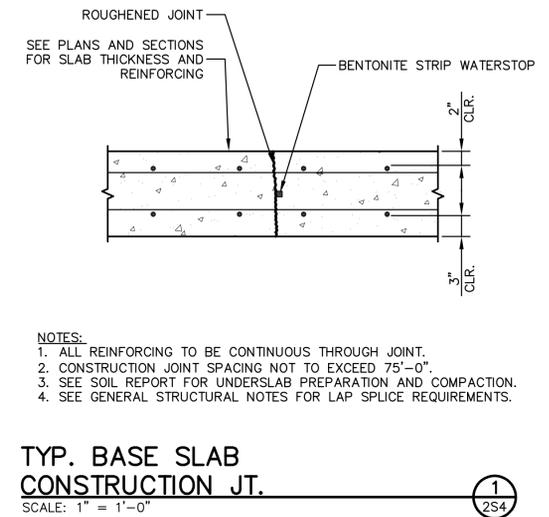
WALL SECTION 9
SCALE: 3/4" = 1'-0"



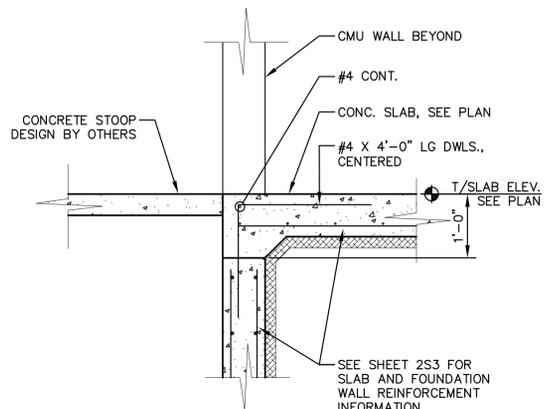
HOUSEKEEPING PAD 7
SCALE: 1" = 1'-0"



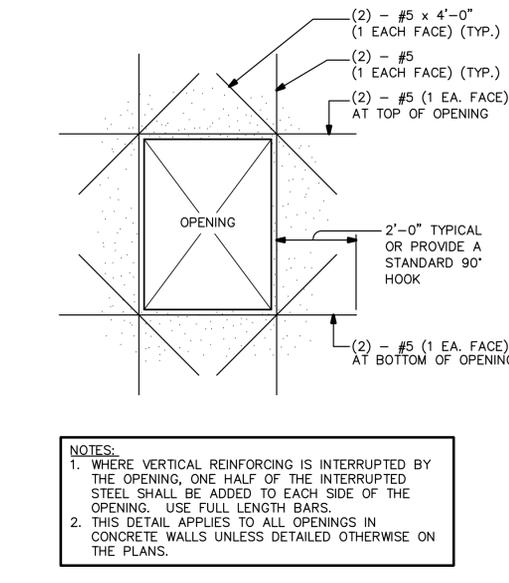
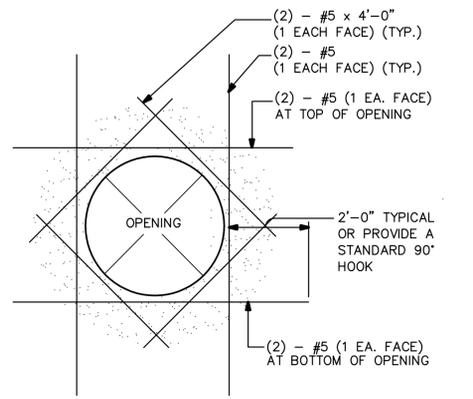
TYP. CONC. WALL INTERSECTION REINFORCEMENT - PLAN VIEW 4
SCALE: 1/8" = 1'-0"



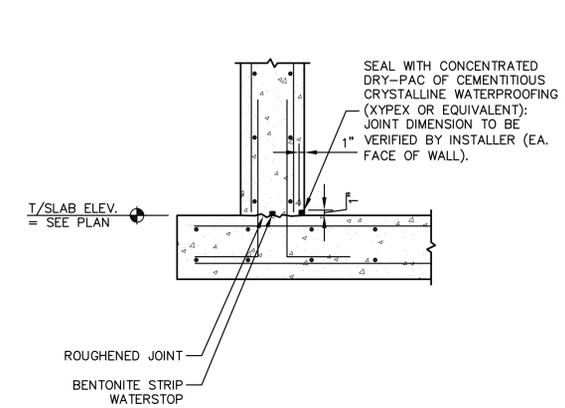
TYP. BASE SLAB CONSTRUCTION JT. 1
SCALE: 1" = 1'-0"



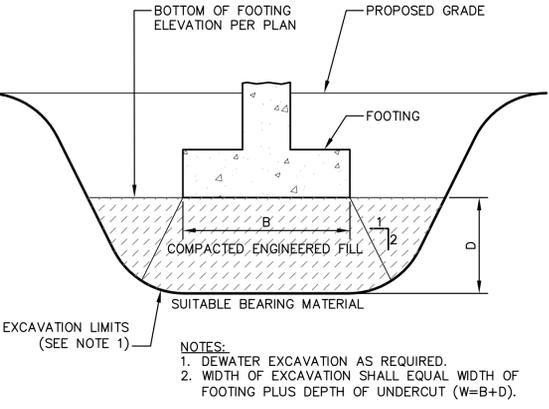
WALL SECTION 10
SCALE: 3/4" = 1'-0"



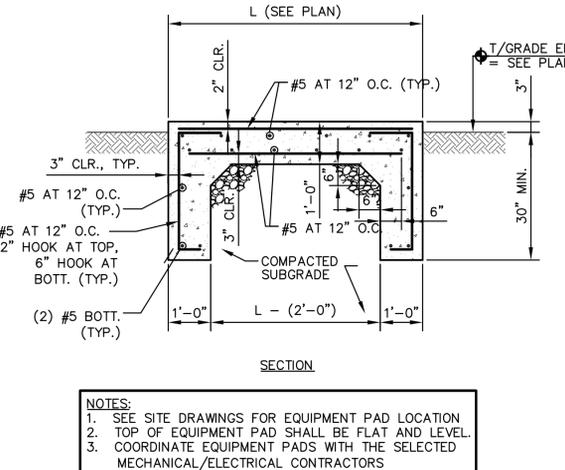
TYP. OPENING IN CONCRETE WALL 8
SCALE: 1/8" = 1'-0"



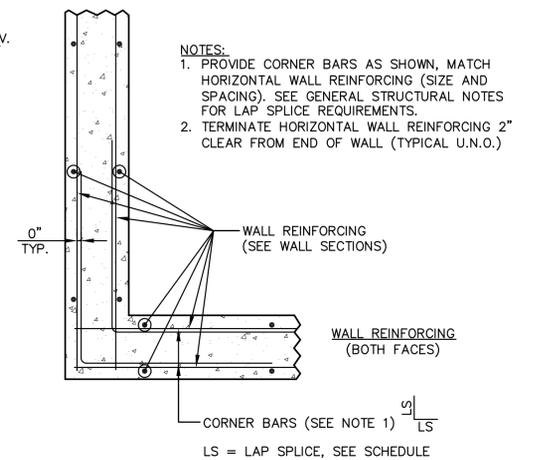
TYP. WALL TO BASE DETAIL 5
SCALE: 3/4" = 1'-0"



TYP. FOOTING IN UNDERCUT AREA 2
SCALE: 1" = 1'-0"

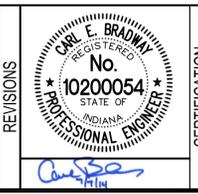


TYPICAL EXTERIOR EQUIP PAD 6
SCALE: 1/2" = 1'-0"



TYPICAL CONCRETE WALL CORNER REINFORCEMENT - PLAN VIEW 3
SCALE: 1/8" = 1'-0"

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ISSUE DATE: JULY 2014						
PROJECT NUMBER: 148912/158513						



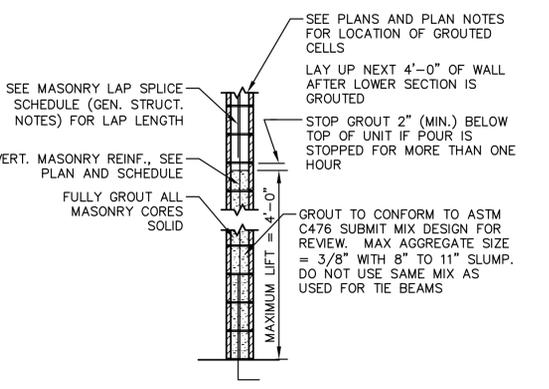
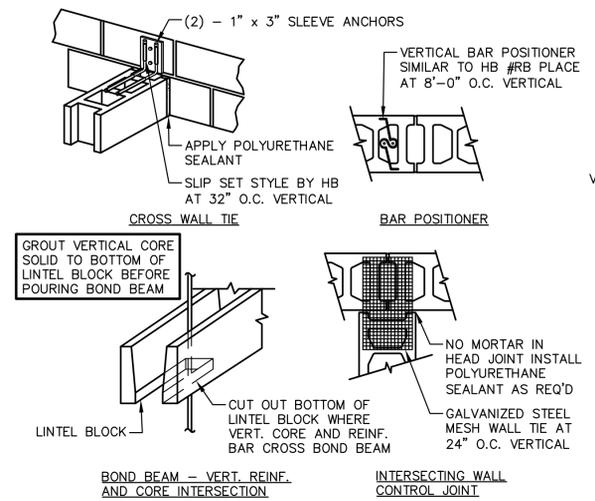
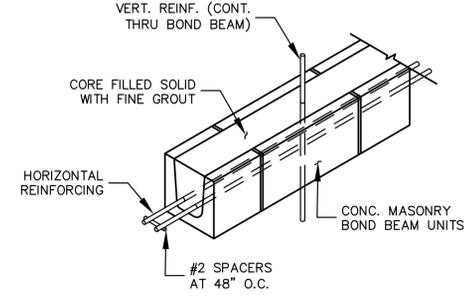
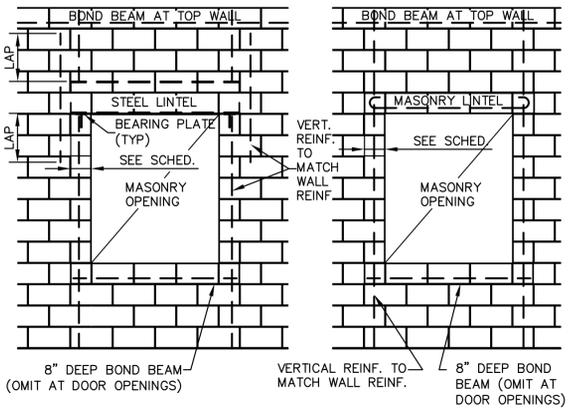
2014 WASTEWATER TREATMENT PLANT PROJECTS
WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA
AREA 2 PHOSPHORUS REMOVAL - PHASE 1
FOUNDATION DETAILS

LINTEL SCHEDULE						
LINTEL DESIGNATION	SIZE	BOTT. BARS	TOP BARS	EXTEND PAST OPNG.	TIES	SPAN
8-1	8"x8"	2-#6	-	8"	-	TYP. WALL ≤ 6'-0"
L-1	W8x28 WITH BOT. PL.					DETAIL 12/2S5

LINTEL TYPES:

NOTES:

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



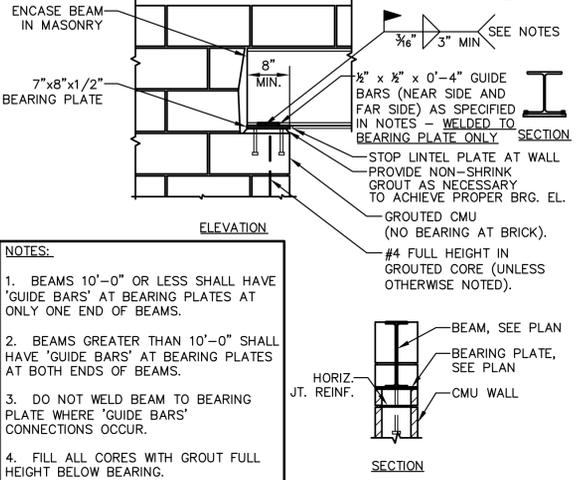
LINTEL SCHEDULE 13 2S5
SCALE: 1/2" = 1'-0"

TYP. WALL OPNG. REINFORCING 10 2S5
SCALE: 3/8" = 1'-0"

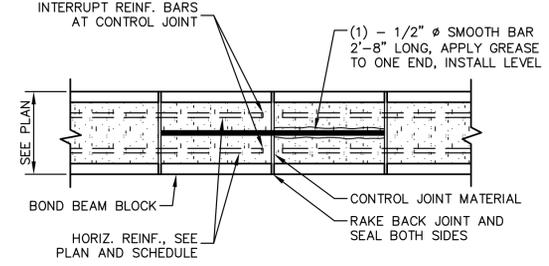
TYPICAL MASONRY BOND BEAM 7 2S5
SCALE: 1 1/2" = 1'-0"

MASONRY DETAILS 4 2S5
SCALE: 1" = 1'-0"

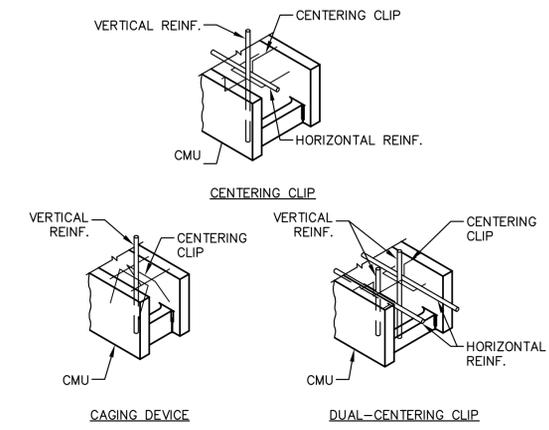
LOW LIFT GROUTING DETAIL 1 2S5
SCALE: 1/2" = 1'-0"



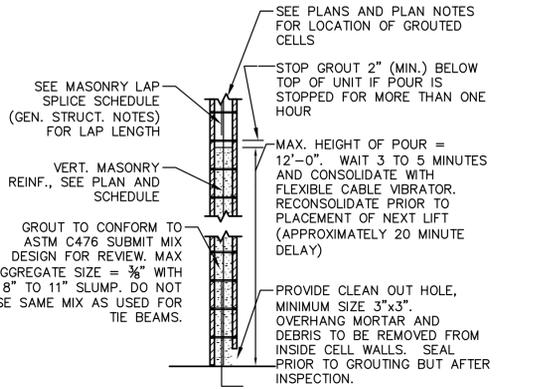
BEAM BEARING ON MASONRY 11 2S5
SCALE: 3/4" = 1'-0"



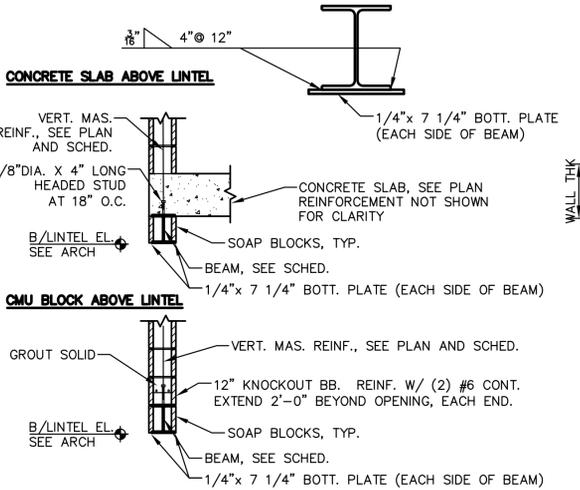
BOND BEAM DETAIL 8 2S5
SCALE: 1" = 1'-0"



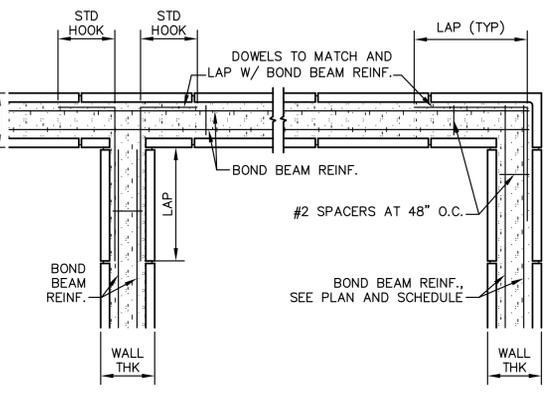
TYP. MASONRY REINF. CLIPS 5 2S5
SCALE: 1" = 1'-0"



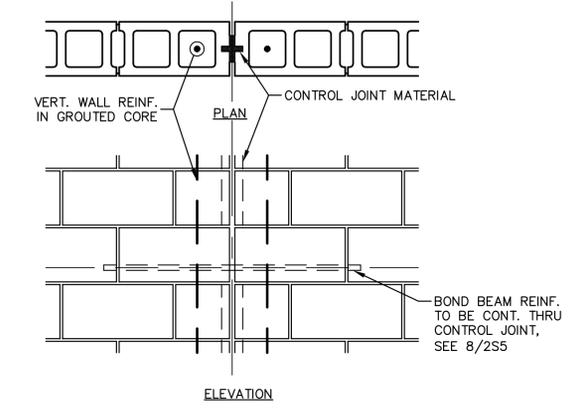
HIGH LIFT GROUTING DETAIL 2 2S5
SCALE: 1/2" = 1'-0"



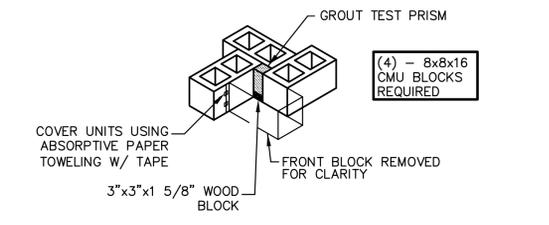
LINTEL DETAIL 12 2S5
SCALE: 1/2" = 1'-0"



TYP. BOND BEAM REINFORCEMENT 9 2S5
SCALE: 1" = 1'-0"

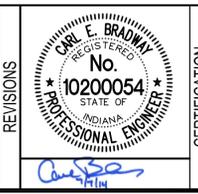


TYP. MASONRY CONTROL JOINT 6 2S5
SCALE: 1" = 1'-0"



MASONRY GROUT TEST MOLD (ASTM C-1019) 3 2S5
SCALE: 1/2" = 1'-0"

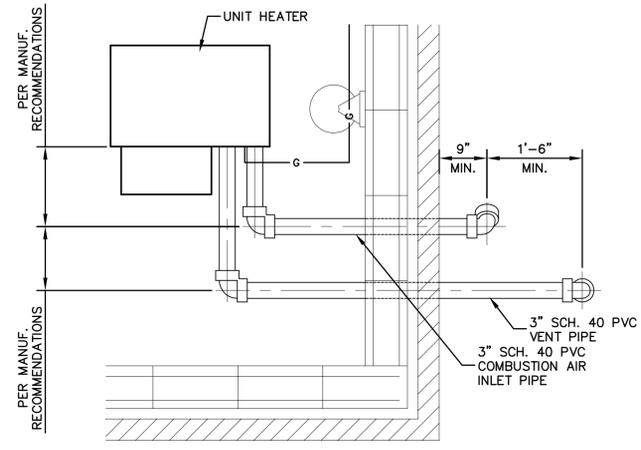
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DRAWING SCALE: AS NOTED						
ISSUE DATE: JULY 2014						
PROJECT NUMBER: 148912/158513						



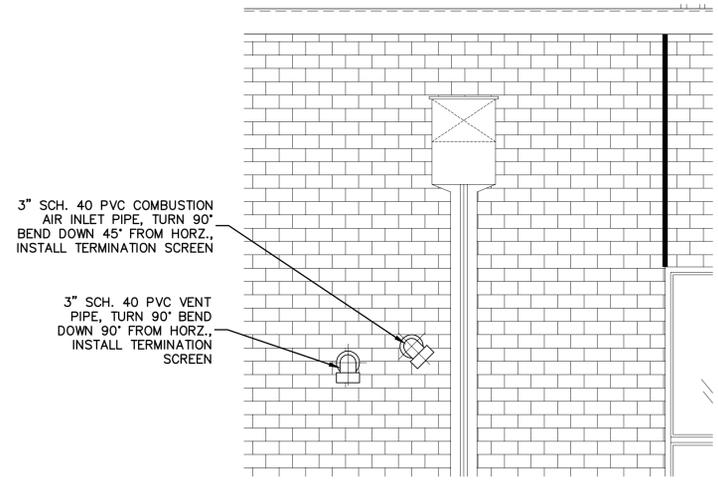
2014 WASTEWATER TREATMENT PLANT PROJECTS

WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA

AREA 2 PHOSPHORUS REMOVAL - PHASE 1
TYPICAL STRUCTURAL DETAILS MASONRY

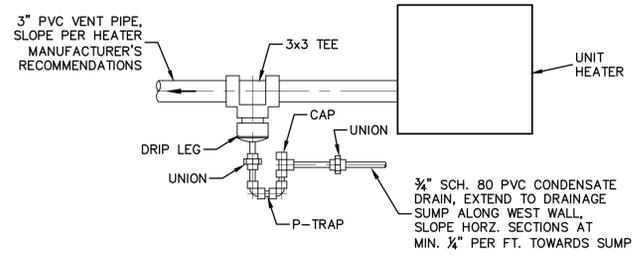


PLAN VIEW

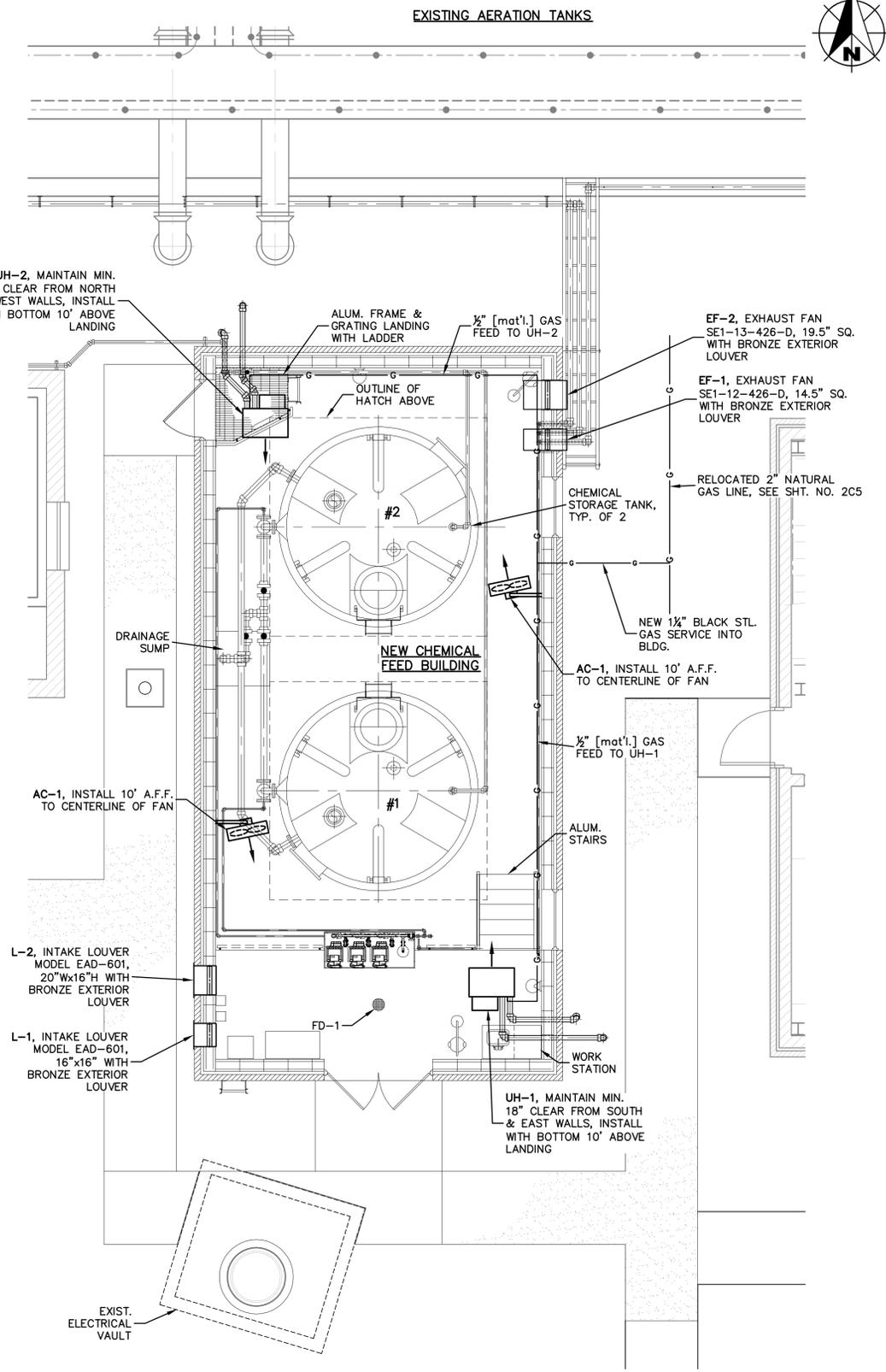


ELEVATION VIEW

TYPICAL UNIT HEATER VENT & COMBUSTION AIR CONNECTION DETAILS
SCALE: 3/4" = 1'-0"

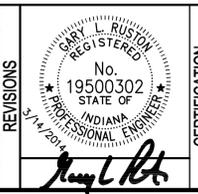


VENT PIPING CONDENSATE DRAIN CONNECTION DETAIL
SCALE: 3/4" = 1'-0"



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

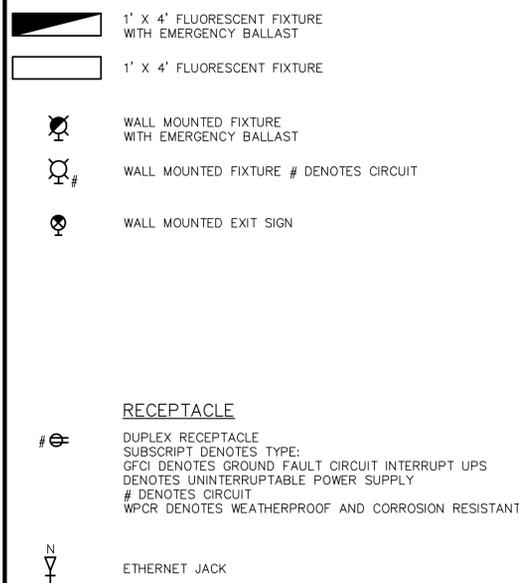
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WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA
AREA 2 - PHOSPHORUS REMOVAL - PHASE 1
NEW CHEMICAL FEED BUILDING
MECHANICAL PLAN & DETAILS

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PAGE NO. **40**

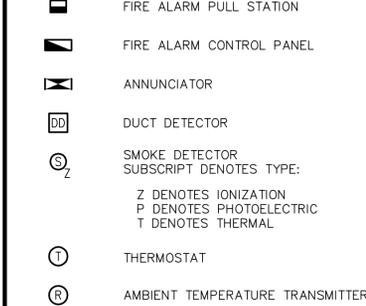
LIGHTING



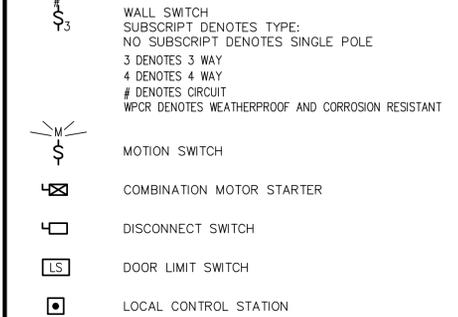
PANELS AND BOXES



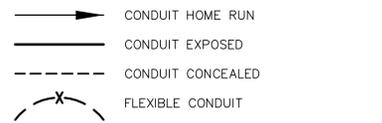
HVAC AND FIRE ALARM



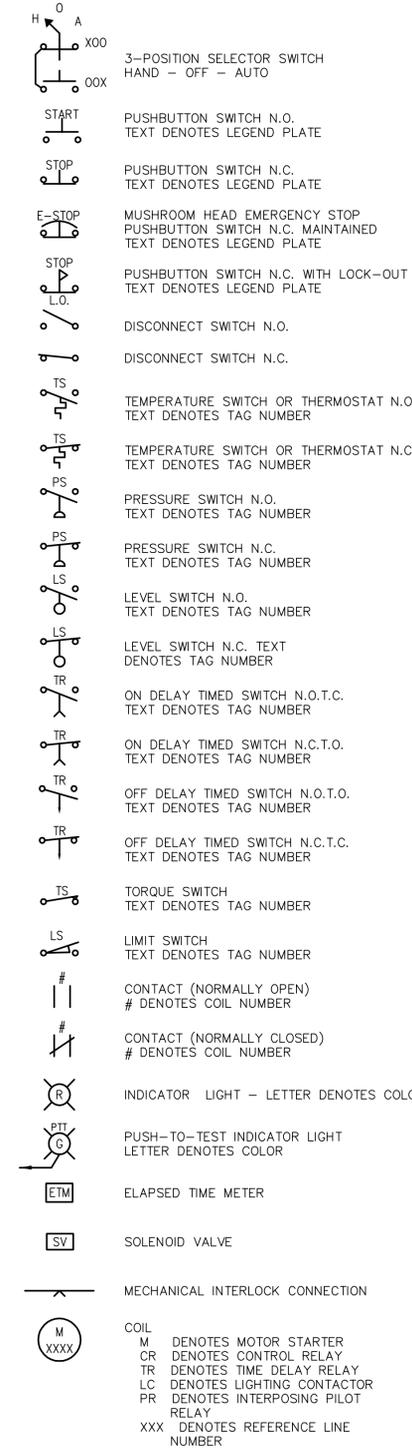
SWITCHES



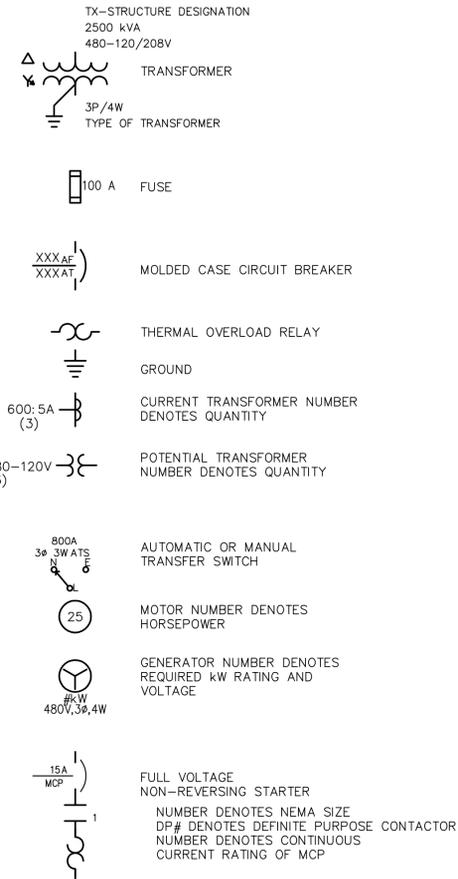
WIRING



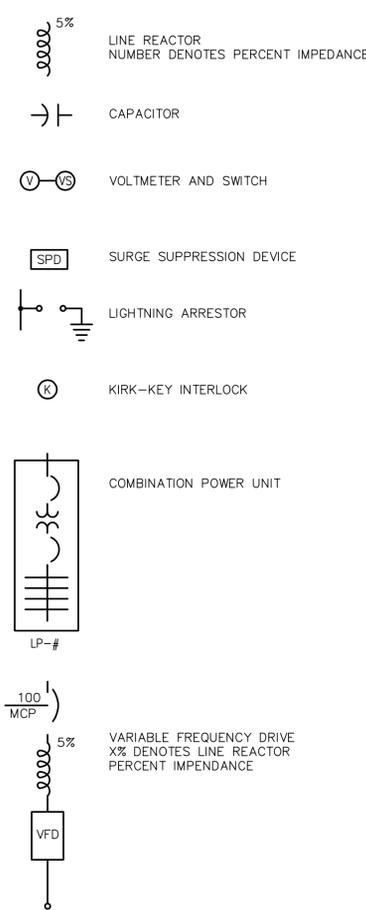
SCHEMATICS



SINGLE LINE



SINGLE LINE, CONT'D.



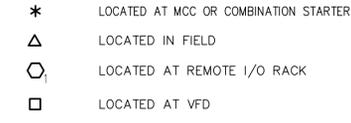
ABBREVIATIONS

AE	ANALYTICAL SENSOR
AIT	ANALYTICAL INDICATOR TRANSMITTER
CB	CIRCUIT BREAKER
FE	FLOW SENSOR
FIT	FLOW INDICATOR TRANSMITTER
FSS	FUSED SAFETY SWITCH
GFI	GROUND FAULT INTERRUPTING
H_O_A	HAND_OFF_AUTO
L_O_R	LOCAL_OFF_REMOTE
LE	LEVEL SENSOR
LIT	LEVEL INDICATING TRANSMITTER
MCC	MOTOR CONTROL CENTER
MOL	MOTOR OPERATED LOUVER
NFSS	NON-FUSED SAFETY SWITCH
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
PLC	PROGRAMMABLE LOGIC CONTROLLER
RCPT[S]	RECEPTACLE[S]
SP. C.	SPARE CONDUIT
SST	STAINLESS STEEL
TPS	TWISTED PAIR SHIELDED
VFD	VARIABLE FREQUENCY DRIVE

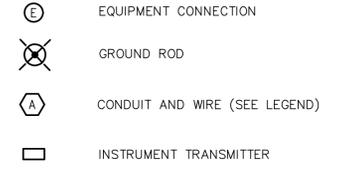
GENERAL NOTES:

- UNLESS SPECIFICALLY NOTED OTHERWISE, ALL UNDERGROUND ELECTRICAL CONDUITS SHALL BE PER STANDARD DETAIL.
- UNLESS OTHERWISE SPECIFIED OR NOTED, ALL WALL MOUNTED ELECTRICAL PANELS, ENCLOSURES, AND SIMILAR EQUIPMENT SHALL BE MOUNTED 6'-6" (MAX) FROM THE TOP OF THE PANEL TO FINISHED FLOOR OR GRADE.
- UNLESS OTHERWISE NOTED, ALL LIGHTING SWITCHES, CONTROL SWITCHES, AND SIMILAR EQUIPMENT SHALL BE MOUNTED WITH THEIR CENTERLINE APPROXIMATELY 4'-0" ABOVE FINISHED FLOOR, SLAB, OR GRADE. THERMOSTATS SHALL BE MOUNTED 4'-4" ABOVE FINISHED FLOOR.
- A SEPARATE EQUIPMENT GROUNDING CONDUCTOR SHALL BE PROVIDED FOR EACH CIRCUIT (SEPARATE CONDUCTOR IN THE CONDUIT). THE CONDUCTOR SHALL BE TERMINATED AT THE PROPER DEVICE, TERMINAL OR LUG AT THE POWER SOURCE (MCC GROUND BUS, PANELBOARD GROUND BUS, ETC.). GROUND CONDUCTOR SIZE SHALL BE PER THE LATEST EDITION OF THE NEC.
- UNLESS SPECIFICALLY NOTED OTHERWISE, EXISTING PAVEMENT AND CONCRETE SHALL BE SAW CUT AND REMOVED TO ALLOW FOR THE INSTALLATION OF NEW ELECTRICAL CONDUITS AND DUCTBANKS. AFTER INSTALLATION, REPLACE CONCRETE OR PAVEMENT WITH NEW TO MATCH ORIGINAL CONDITIONS.
- SEE CIVIL SHEETS FOR ADDITIONAL DEMOLITION WORK REQUIRED. ALL ELECTRICAL EQUIPMENT BEING DEMOLISHED SHALL HAVE THE CONDUIT AND WIRE REMOVED BACK TO THE SOURCE WHERE PRACTICABLE. CONDUITS INSTALLED IN CONCRETE SLABS AND WALLS SHALL BE CUT FLUSH AND FILLED WITH NON-SHRINK GROUT. SEE SPECIFICATIONS FOR ADDITIONAL DEMOLITION REQUIREMENTS.

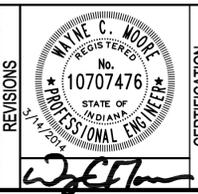
EQUIPMENT/DEVICE LOCATION SYMBOLS



MISC PLAN VIEW SYMBOLS



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148912/158513						



2014 WASTEWATER TREATMENT PLANT PROJECTS

WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA

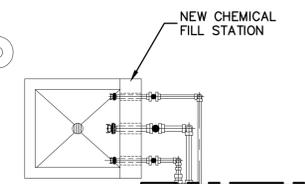
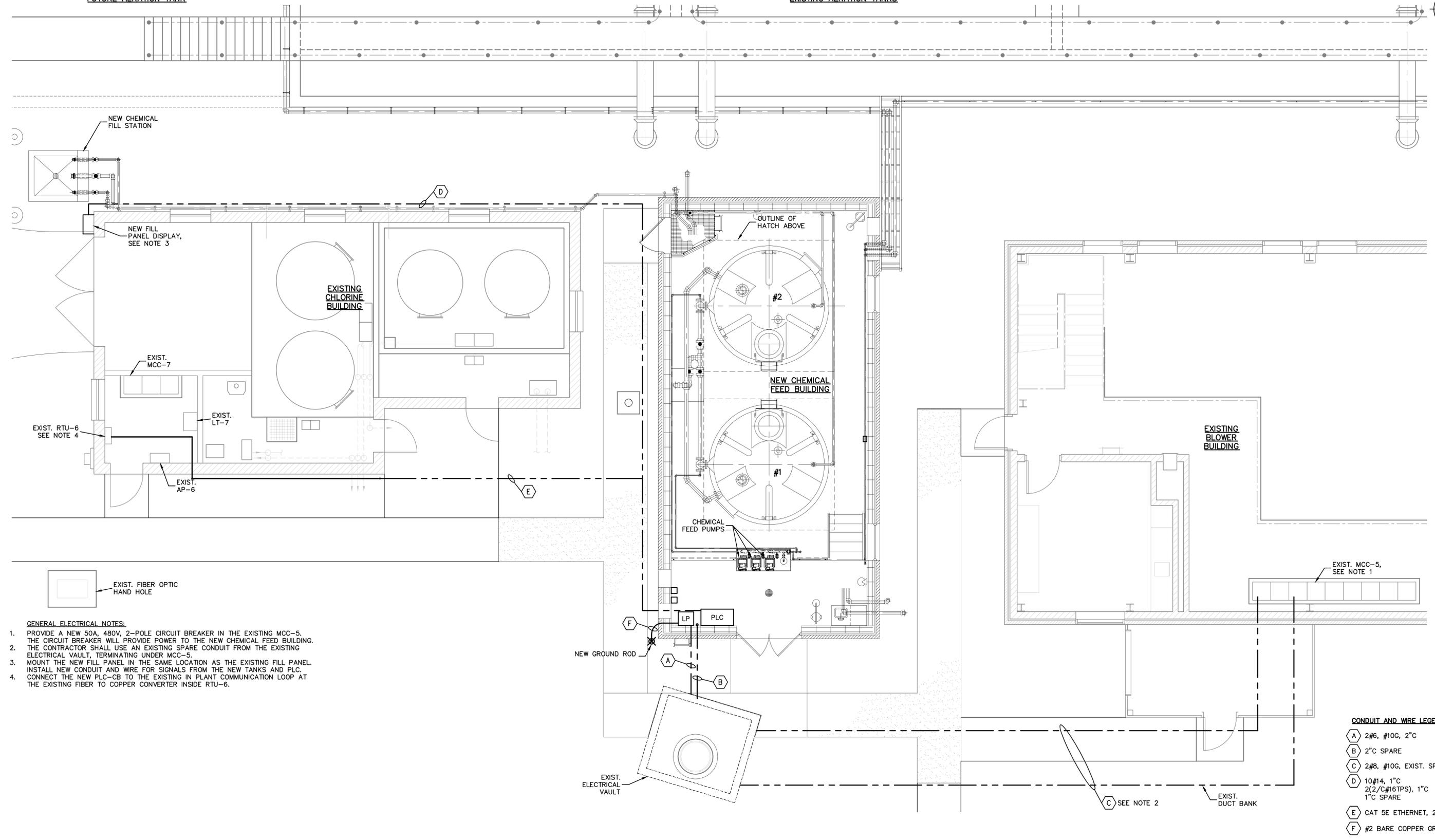
AREA 2 - PHOSPHORUS REMOVAL - PHASE 1
ELECTRICAL SYMBOLS & GENERAL NOTES

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FUTURE AERATION TANK

EXISTING AERATION TANKS



NEW FILL PANEL DISPLAY, SEE NOTE 3

EXISTING CHLORINE BUILDING

OUTLINE OF HATCH ABOVE

NEW CHEMICAL FEED BUILDING

EXISTING BLOWER BUILDING

EXIST. RTU-6 SEE NOTE 4

EXIST. LT-7

EXIST. AP-6

E

CHEMICAL FEED PUMPS

EXIST. MCC-5, SEE NOTE 1



GENERAL ELECTRICAL NOTES:

1. PROVIDE A NEW 50A, 480V, 2-POLE CIRCUIT BREAKER IN THE EXISTING MCC-5. THE CIRCUIT BREAKER WILL PROVIDE POWER TO THE NEW CHEMICAL FEED BUILDING. THE CONTRACTOR SHALL USE AN EXISTING SPARE CONDUIT FROM THE EXISTING ELECTRICAL VAULT, TERMINATING UNDER MCC-5.
2. MOUNT THE NEW FILL PANEL IN THE SAME LOCATION AS THE EXISTING FILL PANEL. INSTALL NEW CONDUIT AND WIRE FOR SIGNALS FROM THE NEW TANKS AND PLC.
3. CONNECT THE NEW PLC-CB TO THE EXISTING IN PLANT COMMUNICATION LOOP AT THE EXISTING FIBER TO COPPER CONVERTER INSIDE RTU-6.

NEW GROUND ROD

EXIST. ELECTRICAL VAULT

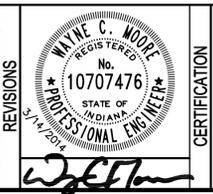
CONDUIT AND WIRE LEGEND

- A 2#6, #10G, 2"C
- B 2"C SPARE
- C 2#8, #10G, EXIST. SPARE
- D 10#14, 1"C
2(2/C#16TPS), 1"C
1"C SPARE
- E CAT 5E ETHERNET, 2"C
- F #2 BARE COPPER GROUND, 3/4"C

OVERALL ELECTRICAL PLAN

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

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148912/158513						



2014 WASTEWATER TREATMENT PLANT PROJECTS

WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA

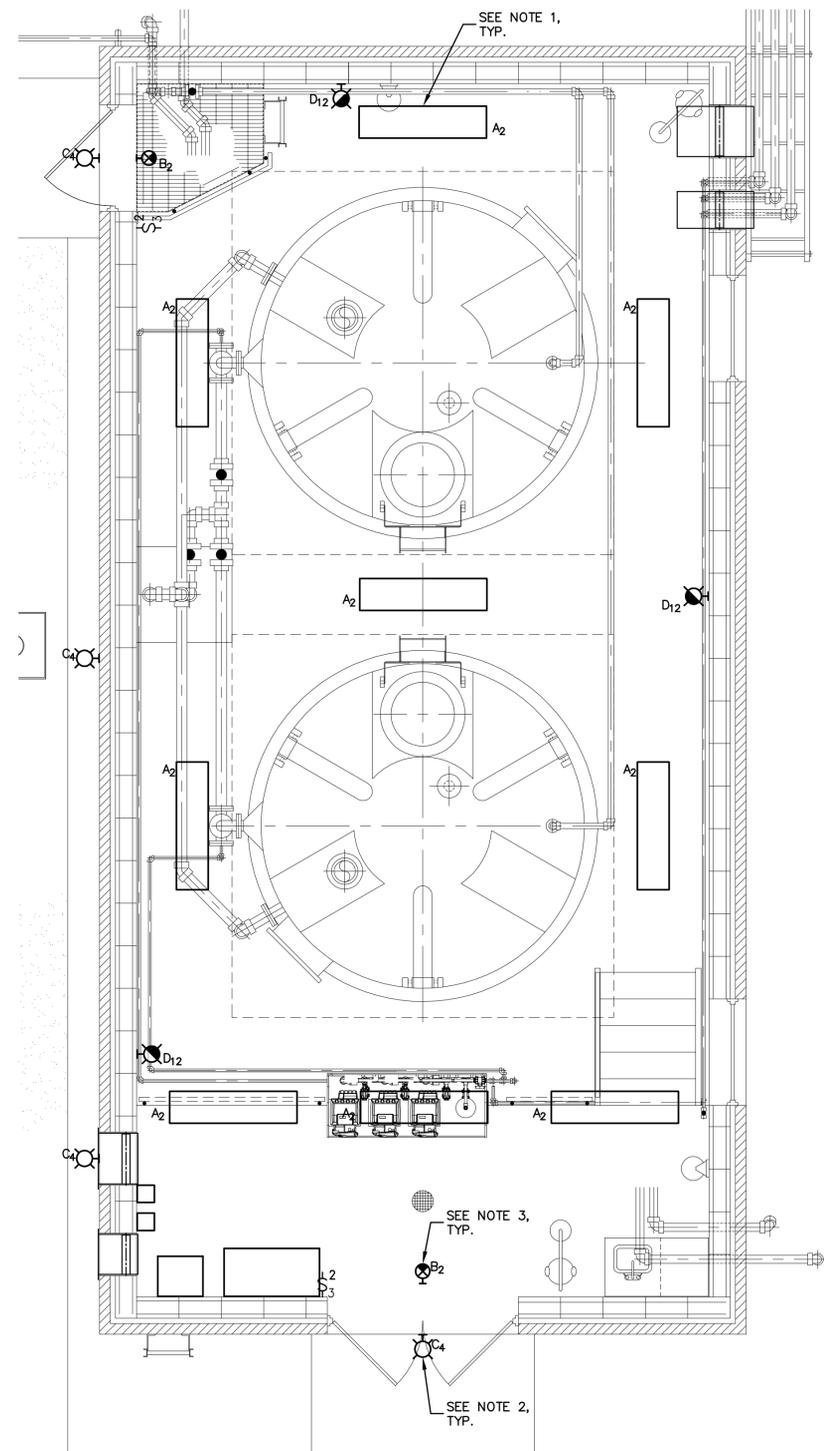
AREA 2 - PHOSPHORUS REMOVAL - PHASE 1
NEW CHEMICAL FEED BUILDING
OVERALL ELECTRICAL PLAN

SHEET NO.
2E2

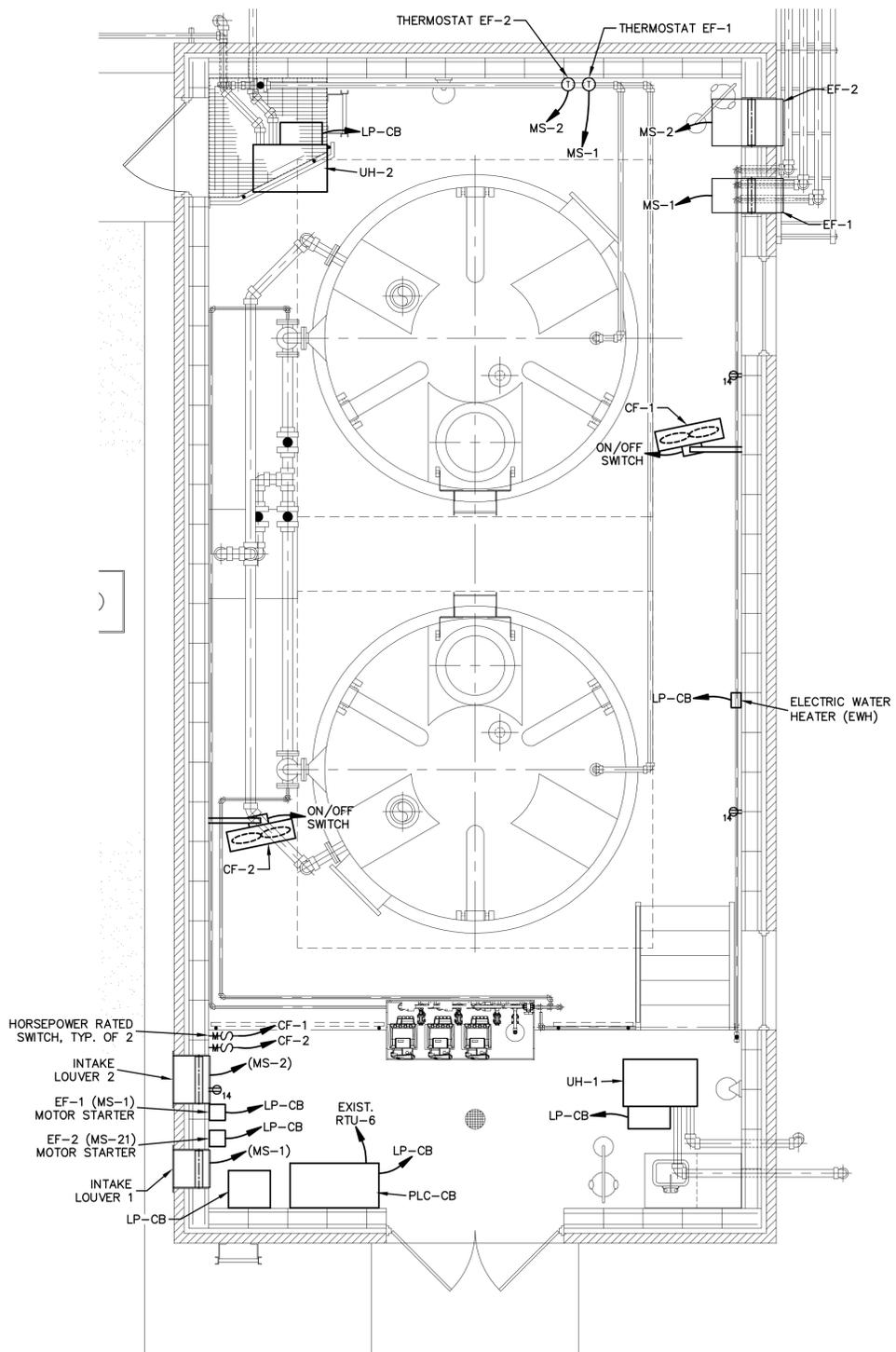
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42



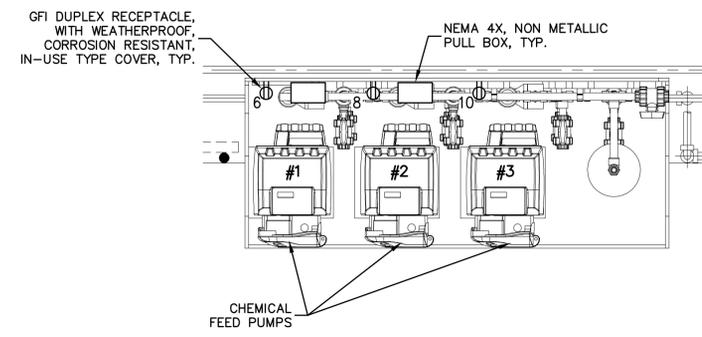
- NOTES:
1. MOUNT TYPE A LIGHT FIXTURES TO THE CEILING.
 2. MOUNT TYPE B AND D LIGHT FIXTURES 9'-0" ABOVE FINISHED FLOOR.
 3. MOUNT TYPE E LIGHT FIXTURES 8'-6" ABOVE FINISHED FLOOR.
 4. ALL RECEPTACLES SHALL BE DUPLEX TYPE, GFI, WITH CORROSION-RESISTANT, IN-USE TYPE COVERS.



LIGHTING PLAN
SCALE: 3/8" = 1'-0"

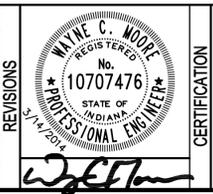


POWER PLAN
SCALE: 3/8" = 1'-0"



CHEMICAL PUMPS PLAN
SCALE: 1" = 1'-0"

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2014 WASTEWATER TREATMENT PLANT PROJECTS

WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA

AREA 2 - PHOSPHORUS REMOVAL - PHASE 1
NEW CHEMICAL FEED BUILDING
ELECTRICAL PLANS

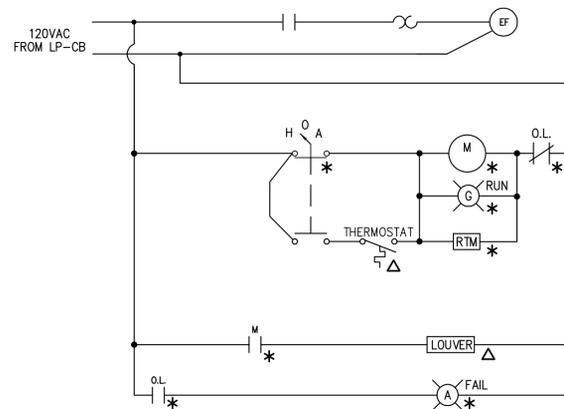
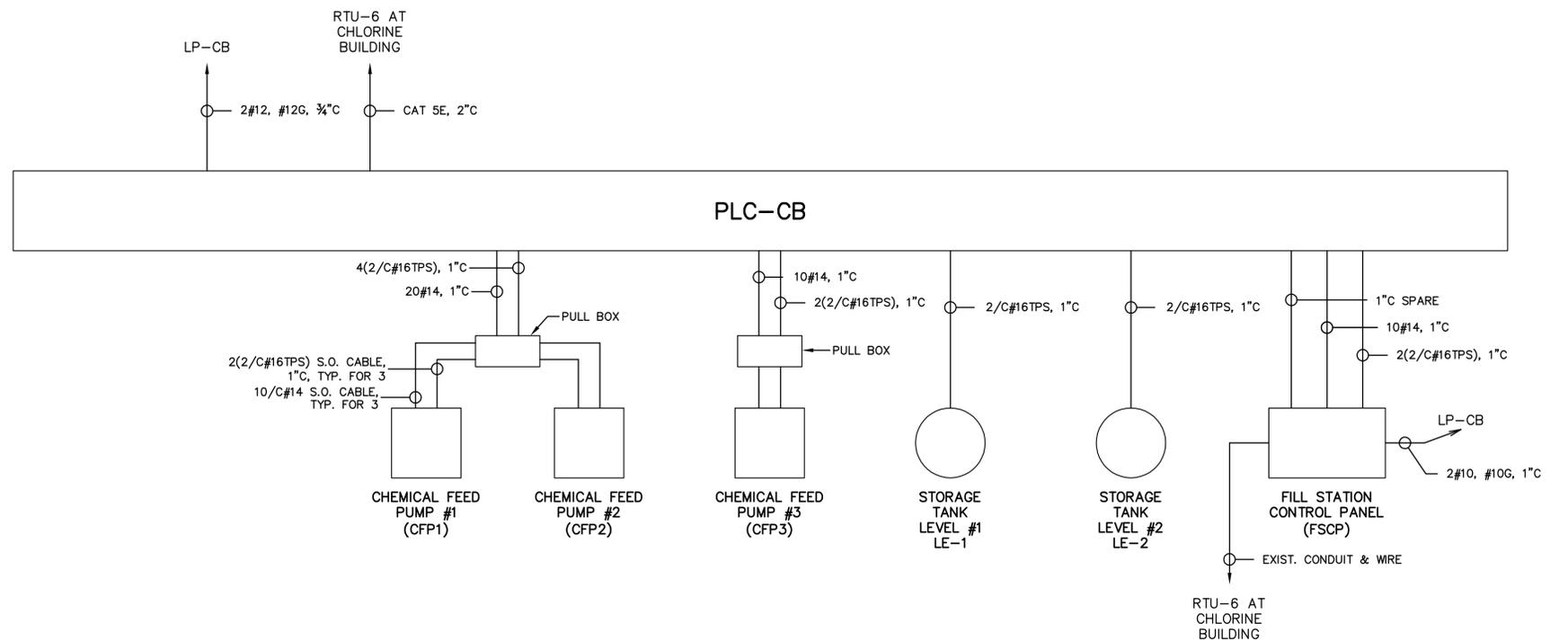
SHEET NO.
2E3

PAGE NO.
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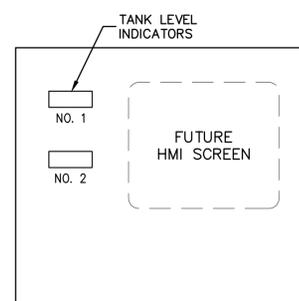
120/240 VOLTS 1Ø, 3 WIRE		LP - CB		TYPE: COMBO POWER UNIT MOUNT: SURFACE	
DESCRIPTION	CKT BKR	CKT	CKT BKR	DESCRIPTION	CKT BKR
PLC-CB	20	1	2	20	LIGHTING - INDOOR
SPARE	20	3	4	20	LIGHTING - OUTDOOR
EXHAUST FAN - EF1	20	5	6	20	CHEMICAL FEED PUMP 1
EXHAUST FAN - EF2	20	7	8	20	CHEMICAL FEED PUMP 2
UNIT HEATER - UH1	20	9	10	20	CHEMICAL FEED PUMP 3
UNIT HEATER - UH2	20	11	12	20	FILL STATION CP*
CIRCULATION FAN 1 - CF1	20	13	14	20	RECEPTACLES
CIRCULATION FAN 2 - CF2	20	15	16	20	SPARE
ELECTRIC WATER HEATER (2#8, #10G, 3/4"C)	40	17	18	40	SPARE
SPARE	20	21	22	20	SPARE
SPARE	20	23	24	30	SURGE PROTECTION DEVICE (3#10, #10G, 3/4"C) SPD-CIB
SPARE	20	25	26		

NEMA 12
ALL CIRCUITS SHALL BE 2#12, #12G, 3/4"C. UNLESS NOTED OTHERWISE

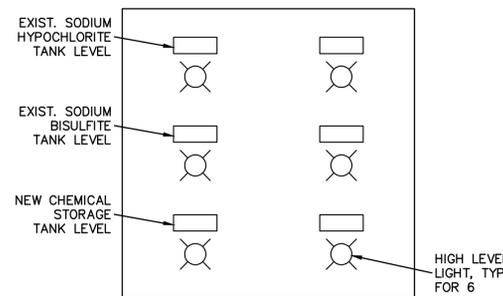
* 2#10, #10G, 1"C



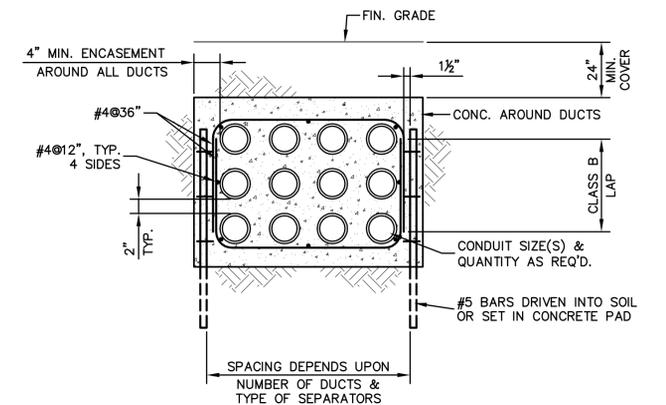
**EXHAUST FAN SCHEMATIC
WIRING DIAGRAM**
SCALE: NONE



**PLC-CB
ELEVATION**
SCALE: NONE

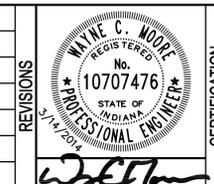


**FILL PANEL
ELEVATION**
SCALE: NONE



**REINFORCED CONCRETE ENCASED
DUCT BANKS DETAIL**
NO SCALE

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2014 WASTEWATER TREATMENT PLANT PROJECTS
WASTEWATER TREATMENT UTILITY
CITY OF WEST LAFAYETTE, INDIANA
AREA 2 - PHOSPHORUS REMOVAL - PHASE 1
**SCHEDULE, ONE-LINE DIAGRAM,
SCHEMATIC DIAGRAMS & DETAILS**

SHEET NO. **2E4**
PAGE NO. **44**