

WASTEWATER RECLAMATION PLANT SODIUM HYPOCHLORITE TANK REPLACEMENT

CARSON CITY, NEVADA
PROJECT 051301.1

BOARD OF SUPERVISORS

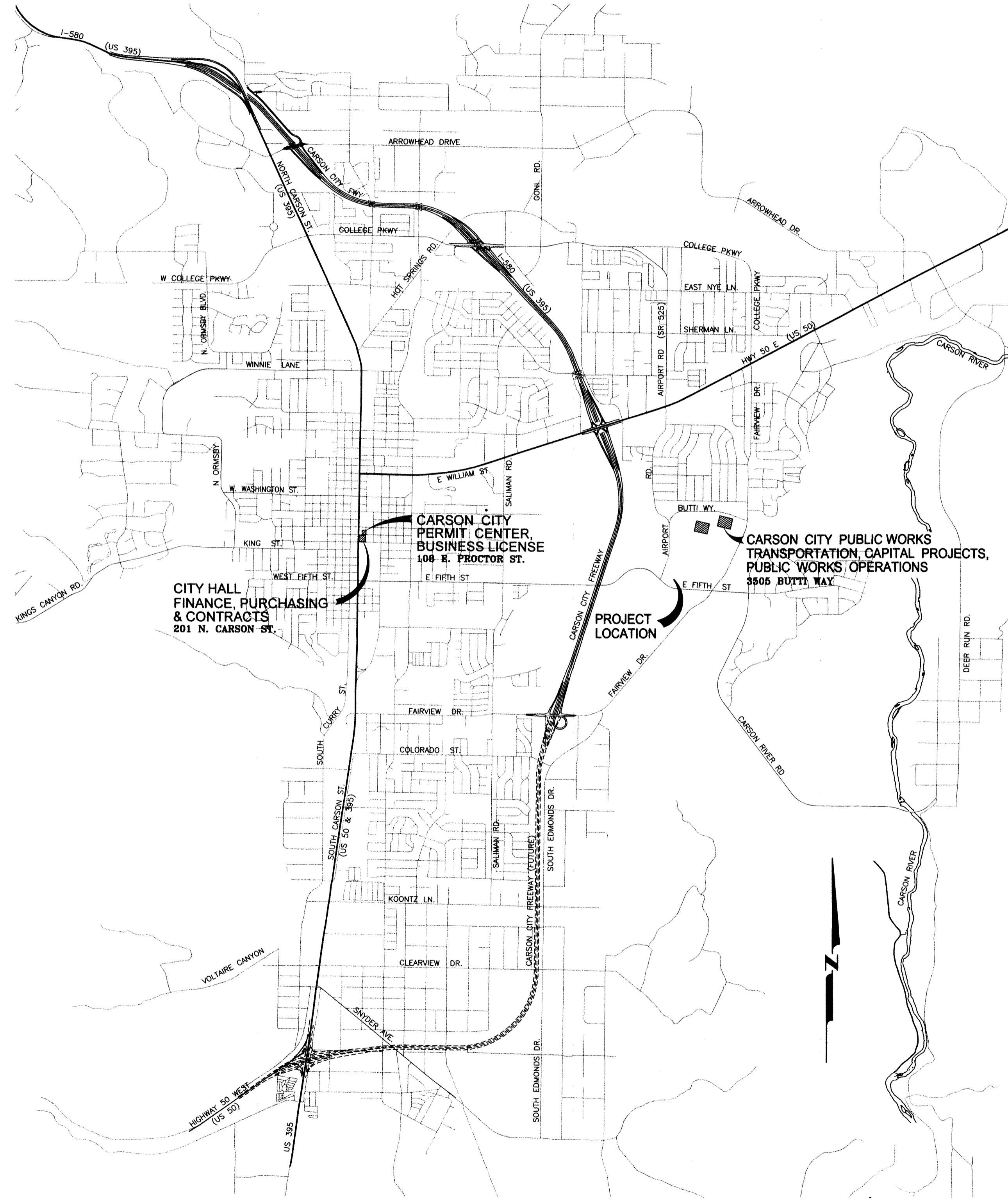
Bob Crowell	Mayor
Karen Abowd	Supervisor
Brad Bonkowski	Supervisor
John McKenna	Supervisor
Jim Shirk	Supervisor
Alan Glover	City Clerk

DESIGNED FOR:

CARSON CITY PUBLIC WORKS DEPARTMENT
OPERATIONS DIVISION
3505 BUTTI WAY
CARSON CITY, NV 89701
887-2355

GENERAL NOTES:

- ALL WORK SHALL CONFORM TO THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" (SSPWC) AND THE "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION" (SDPWC) AS ADOPTED BY CARSON CITY. THE CONTRACTOR SHALL OBTAIN A PERMIT FOR PUBLIC WORKS CONSTRUCTION FROM THE CARSON CITY PERMIT CENTER PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT "CALL BEFORE YOU DIG" (811) OR (1-800-227-2600) AT LEAST TWO (2) WORKING DAYS PRIOR TO START OF CONSTRUCTION AND COMPLY WITH THE REQUIREMENTS OF NRS AND NAC 455 THROUGHOUT THE COURSE OF THE WORK. SEWER SERVICE LATERALS ARE NOT OWNED OR MARKED BY CARSON CITY.
- THE CONTRACTOR SHALL CALL THE CARSON CITY ENGINEERING DIVISION (887-2300) TWO (2) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL CALL ONE (1) WORKING DAY PRIOR TO REQUIRED INSPECTIONS AND TESTING. THE REQUIRED INSPECTIONS AND TESTING ARE LISTED ON THE INSPECTION RECORD ISSUED WITH EACH PERMIT. THE CONTRACTOR MUST HAVE THE PERMIT NUMBER AND THE DESCRIPTION LISTED ON THE INSPECTION RECORD TO SCHEDULE REQUIRED INSPECTIONS AND TESTING. FOR CITY CONTRACTED PROJECTS, THE CONTRACTOR SHALL SCHEDULE INSPECTIONS PER THE CONTRACT DOCUMENTS.
- FINAL INSPECTIONS WILL BE PERFORMED BY CARSON CITY ENGINEERING DIVISION ACCORDING TO THE CARSON CITY INSPECTIONS AND TESTING PROCEDURES. NOTE: THESE PROCEDURES REQUIRE SUBMITTAL OF RECORD DRAWING PRINTS BY THE CONTRACTOR AND 10 WORKING DAYS TO PREPARE A FINAL PUNCH LIST. ALL CONDITIONS OF THE FINAL INSPECTION MUST BE COMPLETED PRIOR TO FINAL ACCEPTANCE OR ANY APPROVAL OF A CERTIFICATE OF OCCUPANCY BY THE CARSON CITY ENGINEERING DIVISION.
- MODIFICATIONS TO THE APPROVED PLANS REQUIRES REVIEW AND APPROVAL BY THE CARSON CITY ENGINEERING DIVISION. WORK PERFORMED WITHOUT WRITTEN APPROVAL BY CARSON CITY ENGINEERING WILL REQUIRE REMOVAL AT THE CONTRACTOR'S EXPENSE.
- THE APPROVED PLAN, PERMIT AND INSPECTION RECORD MUST BE ON THE JOB SITE AT ALL TIMES.
- THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR ACQUIRING A STORMWATER DISCHARGE PERMIT FROM THE NEVADA DIVISION OF ENVIRONMENTAL PROTECTION (NDEP) INCLUDING DEVELOPING, SUBMITTING AND IMPLEMENTING A STORM WATER POLLUTION PREVENTION PLAN (SWPPP). THE CONTRACTOR SHALL DEVELOP, PLACE AND MAINTAIN STORM WATER PROTECTION DEVICES IN COMPLIANCE WITH THE NEVADA CONTRACTORS FIELD GUIDE FOR CONSTRUCTION SITE BEST MANAGEMENT PRACTICES (JUNE 2008).
- THE LOCATION OF EXISTING UTILITIES SHOWN ON THESE DRAWINGS IS BASED ON THE BEST INFORMATION AVAILABLE TO THE ENGINEER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THESE LOCATIONS AT THE PROPOSED POINTS OF CONNECTIONS AND IN AREAS OF POSSIBLE CONFLICT WITH NEW UTILITY INSTALLATION. PRIOR TO BEGINNING CONSTRUCTION, POtholing IS REQUIRED. SHOULD THE CONTRACTOR FIND ANY DISCREPANCIES BETWEEN THE CONDITIONS EXISTING IN THE FIELD AND THE INFORMATION SHOWN ON THESE DRAWINGS, HE SHALL NOTIFY THE ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION.
- THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR THE CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF PROPER SHORING OF TRENCHES IN ACCORDANCE WITH OCCUPATIONAL SAFETY LAWS. THE DUTIES OF THE ENGINEER DO NOT INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY IN, ON, OR NEAR THE CONSTRUCTION SITE.
- SHOULD IT APPEAR THAT THE WORK TO BE DONE, OR ANY MATTER RELATIVE THERETO, IS NOT SUFFICIENTLY DETAILED OR EXPLAINED ON THESE PLANS, THE CONTRACTOR SHALL CONTACT THE ENGINEER FOR SUCH FURTHER EXPLANATIONS AS MAY BE NECESSARY.



VICINITY MAP
N.T.S.

CODE DATA:

2012 INTERNATIONAL BUILDING CODE
2012 INTERNATIONAL FIRE CODE
2012 UNIFORM PLUMBING CODE
2011 NATIONAL ELECTRIC CODE
2012 NORTHERN NEVADA AMMENDMENTS
LATERAL LOADS: SEISMIC DESIGN CATEGORY "F"
OCCUPANCY CLASSIFICATION: H4
OCCUPANT LOAD: 7
CONSTRUCTION TYPE: TYPE IIB
TOTAL BUILDING SQUARE FOOTAGE: 2080
SQUARE FOOTAGE ASSOCIATED WITH PROJECT: 800
FIRE ALARM AND SPRINKLERS: DEFERRED SUBMITTAL
DISTANCE FROM PROPERTY LINES:
NORTH: 440'
SOUTH: 685'
EAST: 1415'
WEST: 520'

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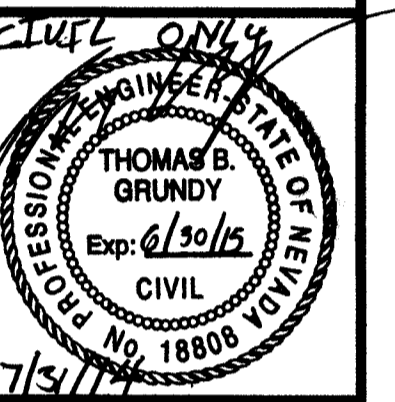


APPLICATION NO. _____
NDOT APPLICATION NO. _____

DESIGNED BY: DA
DRAWN BY: BD
CHECKED BY: TC
DWG NO.: 5.1301CHLOR-TS1
SCALE (HORIZ): N/A
SCALE (VERT): N/A
PLOT DATE: 2014 JULY 21

CARSON CITY
PUBLIC WORKS DEPARTMENT

3505 BUTTI WAY CARSON CITY, NEVADA 89701
PH: 887-2355 FAX: 887-2112



REV.	DATE	DESCRIPTION	BY	APP'D

WASTEWATER RECLAMATION PLANT
SODIUM HYPOCHLORITE TANK REPLACEMENT
PROJECT No. 051301.1

TITLE SHEET

SHEET
OF
14

PERMIT SET

8/15/14 - 14-801 - 3320 E FIFTH ST



CONTRACTOR STAGING AREA

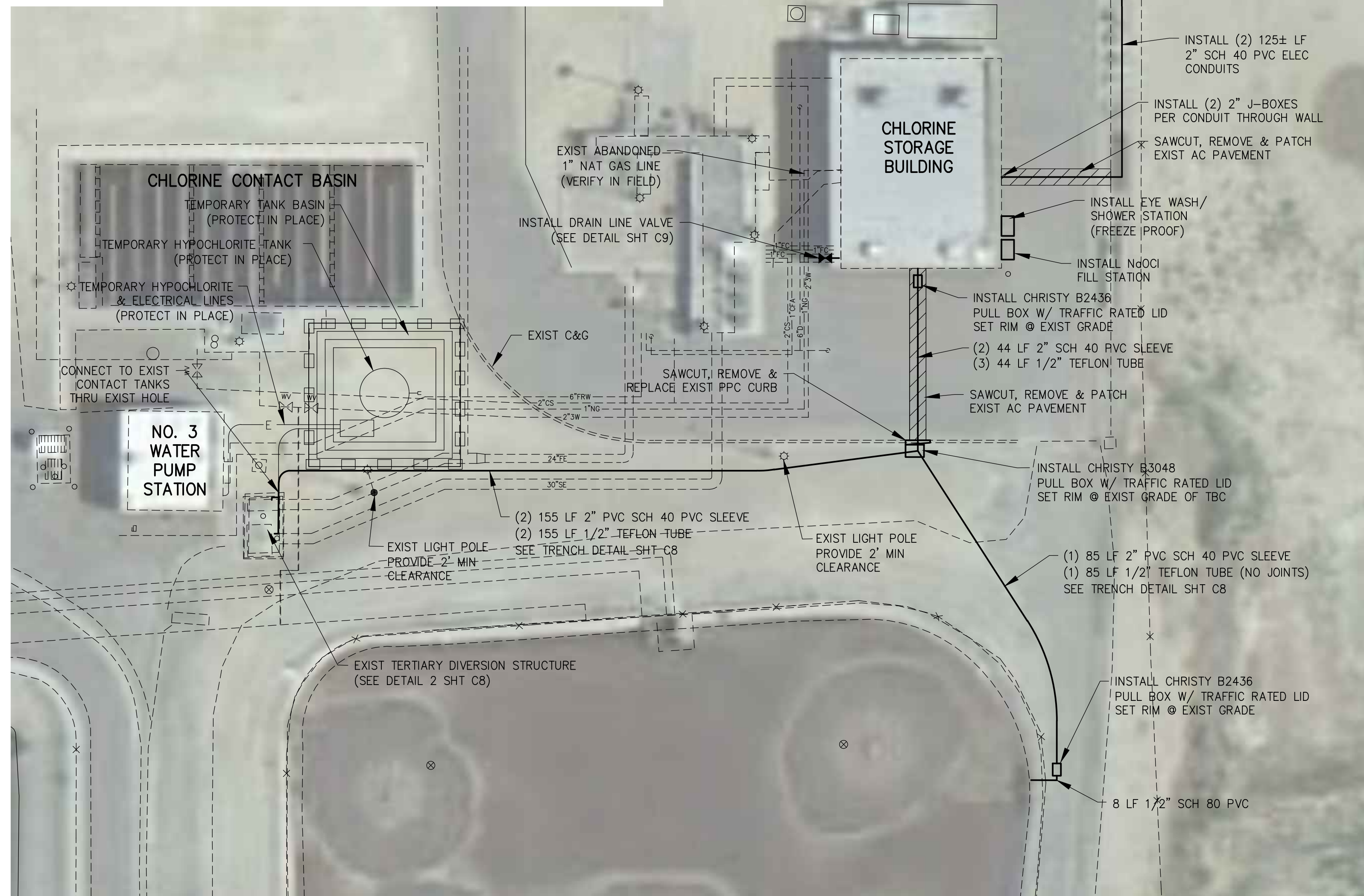
SCALE: 1"=50'

ABBREVIATIONS

AB	AGGREGATE BASE	N	NORTH
AC	ASPHALTIC CONCRETE	NoOCI	SODIUM HYPOCHLORITE
AGG	AGGREGATE	N.I.C.	NOT IN CONTRACT
APN	ASSESSORS PARCEL NUMBER	NTS	NOT TO SCALE
ASSY	ASSEMBLY	OC	ON CENTER
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS	O.D.	OUTSIDE DIAMETER
AWWA	AMERICAN WATER WORKS ASSOCIATION	OGL	ORIGINAL GROUND LINE
CB	CATCH BASIN	PCC	PORTLAND CEMENT CONCRETE
CI	CAST IRON	PE	POLYETHYLENE
CL	CENTER LINE, CLASS	PL	PROPERTY LINE
CO	CLEAN OUT	PRV	PRESSURE REDUCING VALVE
COMP	COMPACT/COMPACTED	PSI	POUNDS PER SQUARE INCH
CONC	CONCRETE	PVC	POLYVINYL CHLORIDE
C&G	CURB & GUTTER	PWMT	PAVEMENT
DI	DROP INLET/DUCTILE IRON	Q	FLOW (GFS)
DTL	DETAIL	R	RADIUS
DIA, Ø	DIAMETER	ROW	RIGHT OF WAY
DWG	DRAWING	RT	RIGHT
EXIST	EXISTING	S	SLOPE, SOUTH
E	EAST	SCH	SCHEDULE
EA	EACH	SD	STORM DRAIN
ELECT	ELECTRIC/ELECTRICAL	SDMH	STORM DRAIN MANHOLE
EL, ELEV	ELEVATION	SDR	STANDARD DIMENSION RATIO
EP	EDGE OF PAVEMENT	SF	SQUARE FEET
EW	EACH WAY	SHT	SHEET
F	FEET	SPKR	SPRINKLER
FCA	FLANGED COUPLING ADAPTOR	SS	SANITARY SEWER
FG	FINISH GRADE	SSMH	SANITARY SEWER MANHOLE
FL	FLOWLINE	SSPWC	STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION
FLG	FLANGED	STA	STATION
FRP	FIBER REINFORCED POLYMER	STD	STANDARD
FTG	FOOTING	STL	STEEL
G	GAS	SVC	SERVICE
GS	GAS SERVICE	T, TELE	TELEPHONE
GRD	GRADE	T&B	TOP & BOTTOM
GV	GAS VALVE/GATE VALVE	T.B.C.	TOP BACK OF CURB
HD	HEAVY DUTY	TOC	TOP OF CURB/TOP OF CONCRETE
HGL	HYDRAULIC GRADE LINE	TOP	TOP OF PIPE
HORIZ	HORIZONTAL	T.O.V.	TOP OF VAULT
HP	HIGH POINT/HORSEPOWER	TRANS	TRANSFORMER
HYD	HYDRANT	TYP	TYPICAL
I.D.	INSIDE DIAMETER	U/G	UNDERGROUND
IE, INV	INVERT ELEVATION	UGE	UNDERGROUND ELECTRIC
INC	INCLUDED/INCLUDING	UL	UNDERWRITERS LABORATORIES
INTK	INTERSECTION	VG	VALLEY GUTTER
IRR, IRRG	IRRIGATION LINE	VERT	VERTICAL
JCT	JUNCTION	W	WEST, WATER
L	LENGTH	W/	WITH
LAT	LATERAL	W/O	WITHOUT
LF	LINEAL FEET	WS	WATER SERVICE
LT	LEFT	WV	WATER VALVE
MAX	MAXIMUM		
MDD	MAXIMUM DRY DENSITY		
MH	MANHOLE		
MJ	MECHANICAL JOINT		
MIN	MINIMUM		
MMD	MAXIMUM MARSHAL DENSITY		

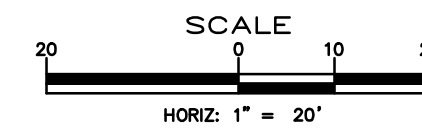
LEGEND

EXISTING		PROPOSED
	APPROX. PROPERTY LINE	
	CENTER LINE	
	EASEMENT	
	FENCE	
	EDGE OF PAVEMENT	
	CONSTRUCTION NOTE	
	PIPE	
	BALL VALVE	
	DIAPHRAGM VALVE	



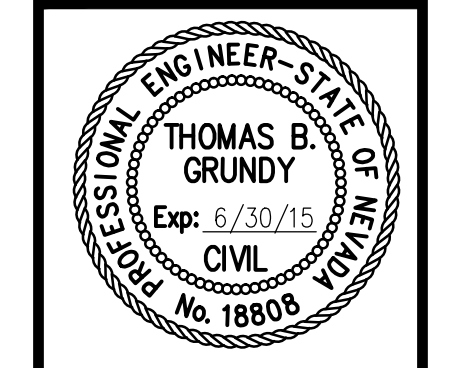
SITE PLAN

SCALE: 1"=20'



DESIGNED BY: DA
 DRAWN BY: BD
 CHECKED BY: TG
 DWG NO.: 5-1301CHOR-BSI
 SCALE (HORIZ): AS SHOWN
 SCALE (VERT): "X"="XX"
 PLOT DATE: 2014 JULY 21

CARSON CITY PUBLIC WORKS DEPARTMENT
 3505 BUTTLI WAY CARSON CITY, NEVADA 89701
 PH: 775-887-2355 FAX: 775-887-2112



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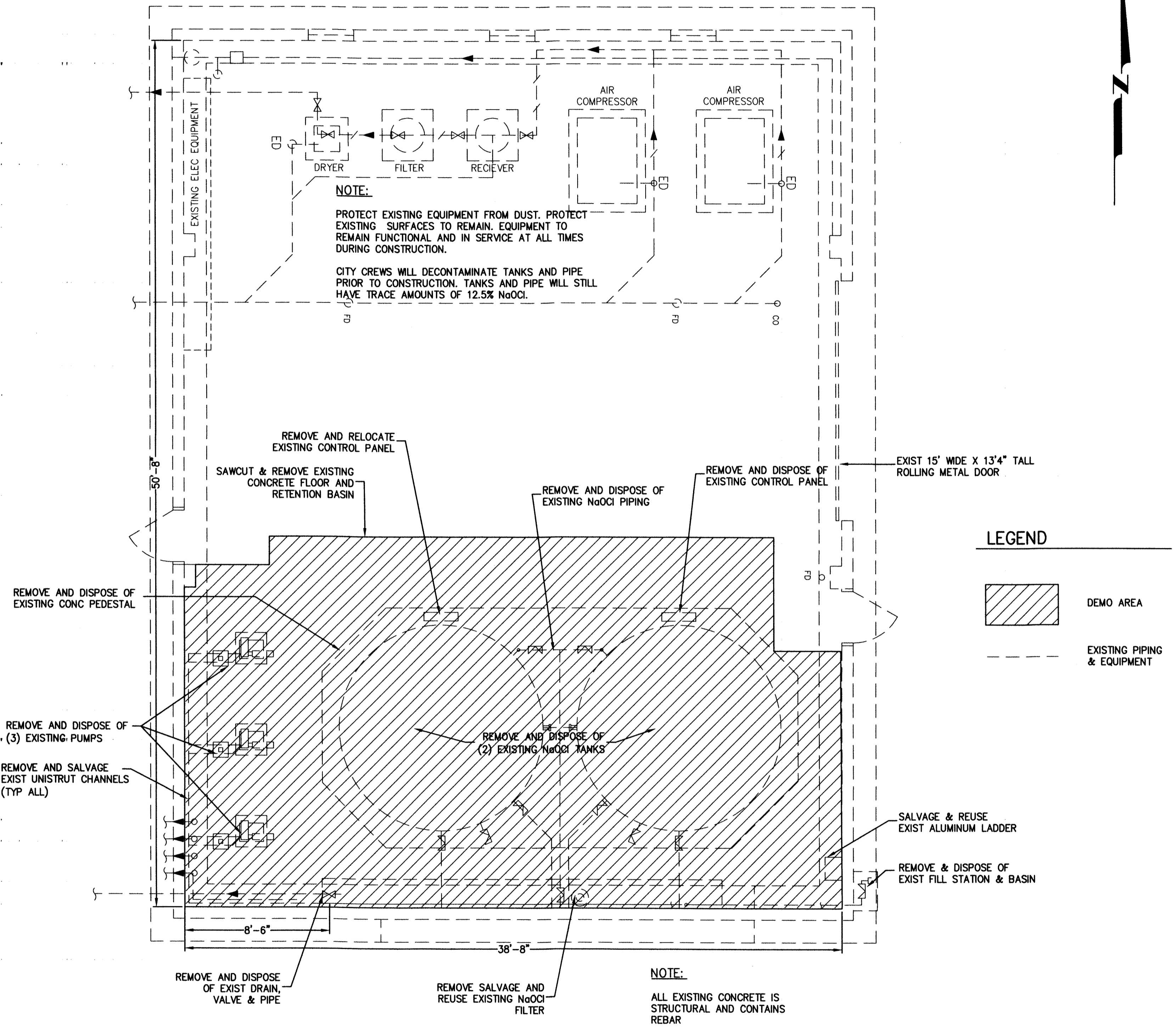
WASTEWATER RECLAMATION PLANT SODIUM HYPOCHLORITE TANK REPLACEMENT PROJECT No. 051301.1

SITE PLAN

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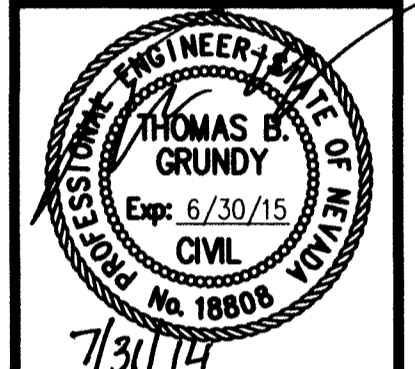


DEMOLITION PLAN

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

DESIGNED BY: DA
 DRAWN BY: BD
 CHECKED BY: TG
 DWG NO.: 5-1301CHLOR-BST
 SCALE (HORIZ): 1/4"=1'
 SCALE (VERT): X"=XX"
 PLOT DATE: 2014 JULY 21

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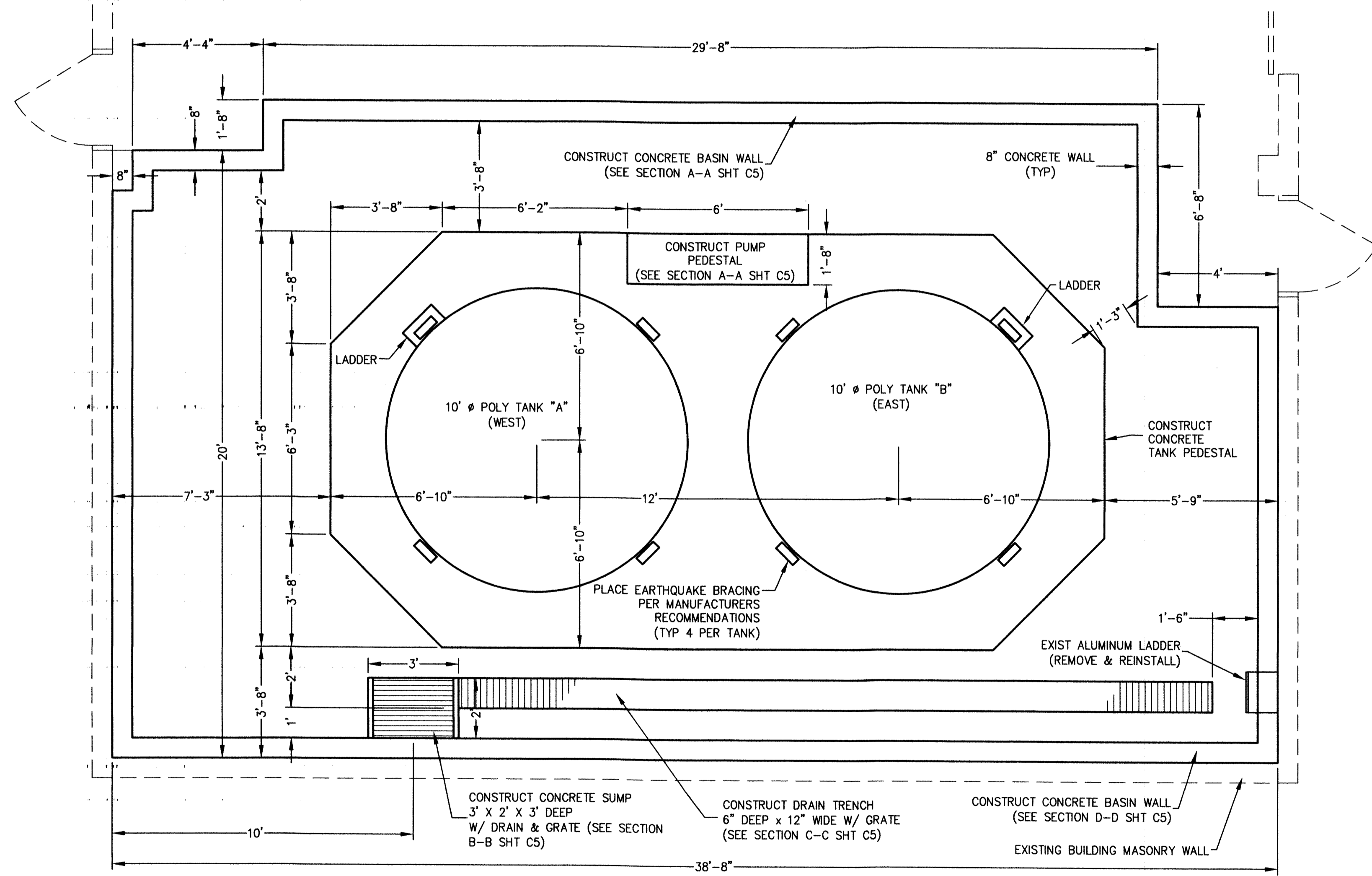
DEMOLITION PLAN



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FLOOR PLAN

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

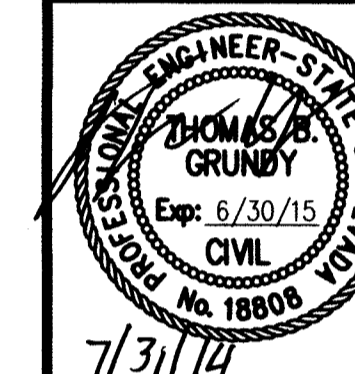


WASTEWATER RECLAMATION PLANT
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FLOOR PLAN

CARSON CITY
PUBLIC WORKS DEPARTMENT

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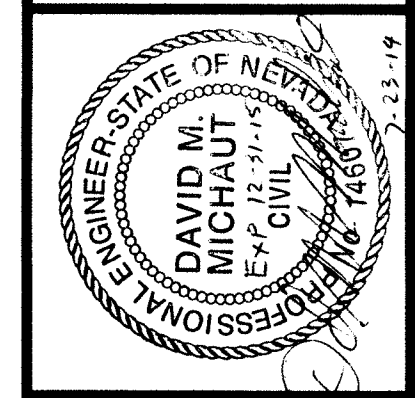
DESIGNED BY: DA
DRAWN BY: BD
CHECKED BY: TG
DWG NO.: 5-1301CHLOR-BS1
SCALE (HORZ): 3/8" = 1'
SCALE (VERT): X" = XX"
PLOT DATE: 2014 JULY 21

SHEET
C4
OF
14

PERMIT SET

DESIGNED BY: DA
 DRAWN BY: BD
 CHECKED BY: TC
 DWG NO.: 5-130(OR)-BS1
 SCALE (HORIZ): AS SHOWN
 SCALE (VERT): 1"=10'
 PLOT DATE: 2014 JULY 21

**CARSON CITY
 PUBLIC WORKS DEPARTMENT**
 3505 BUTTI WAY CARSON CITY, NEVADA 89701
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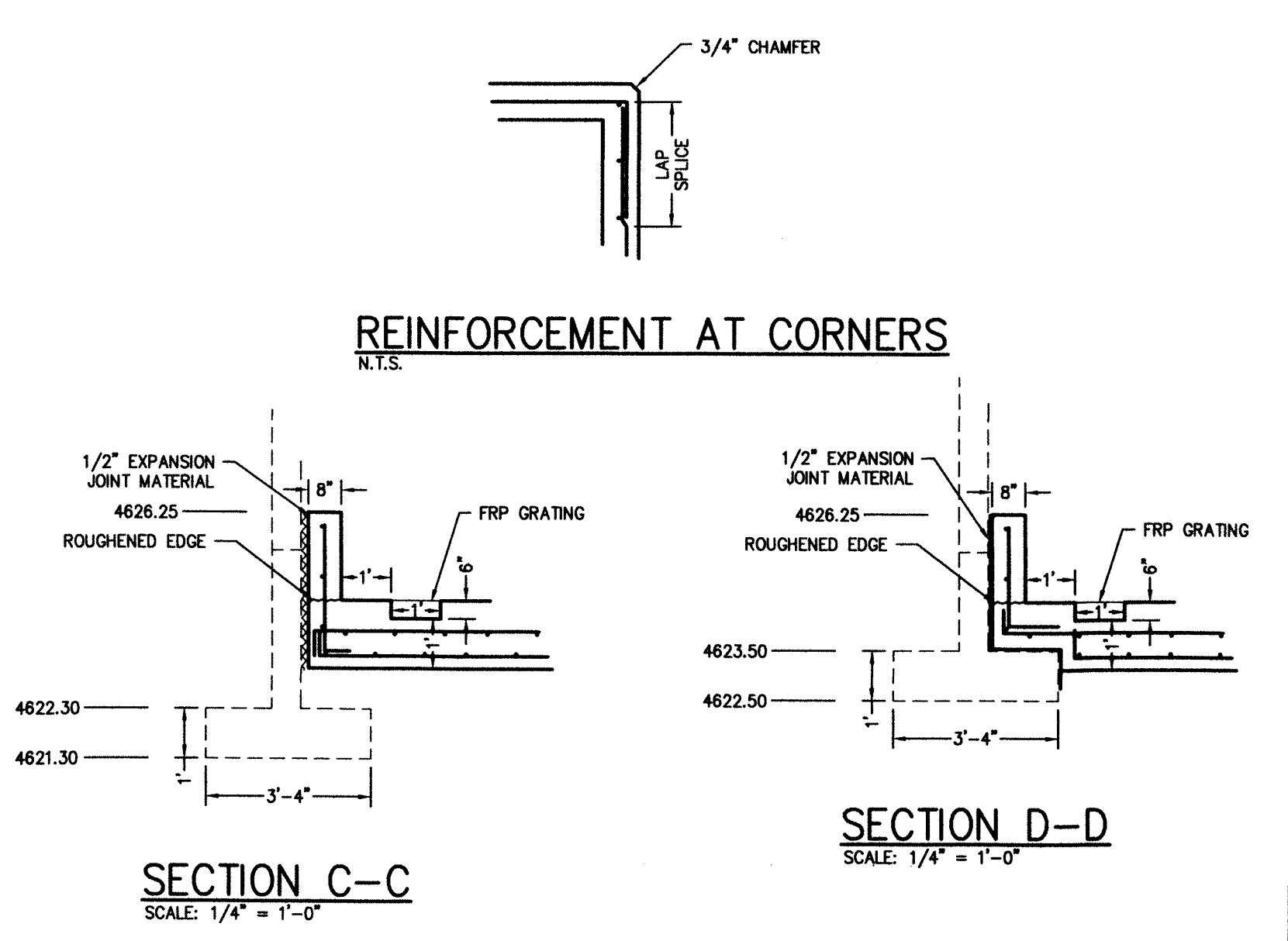
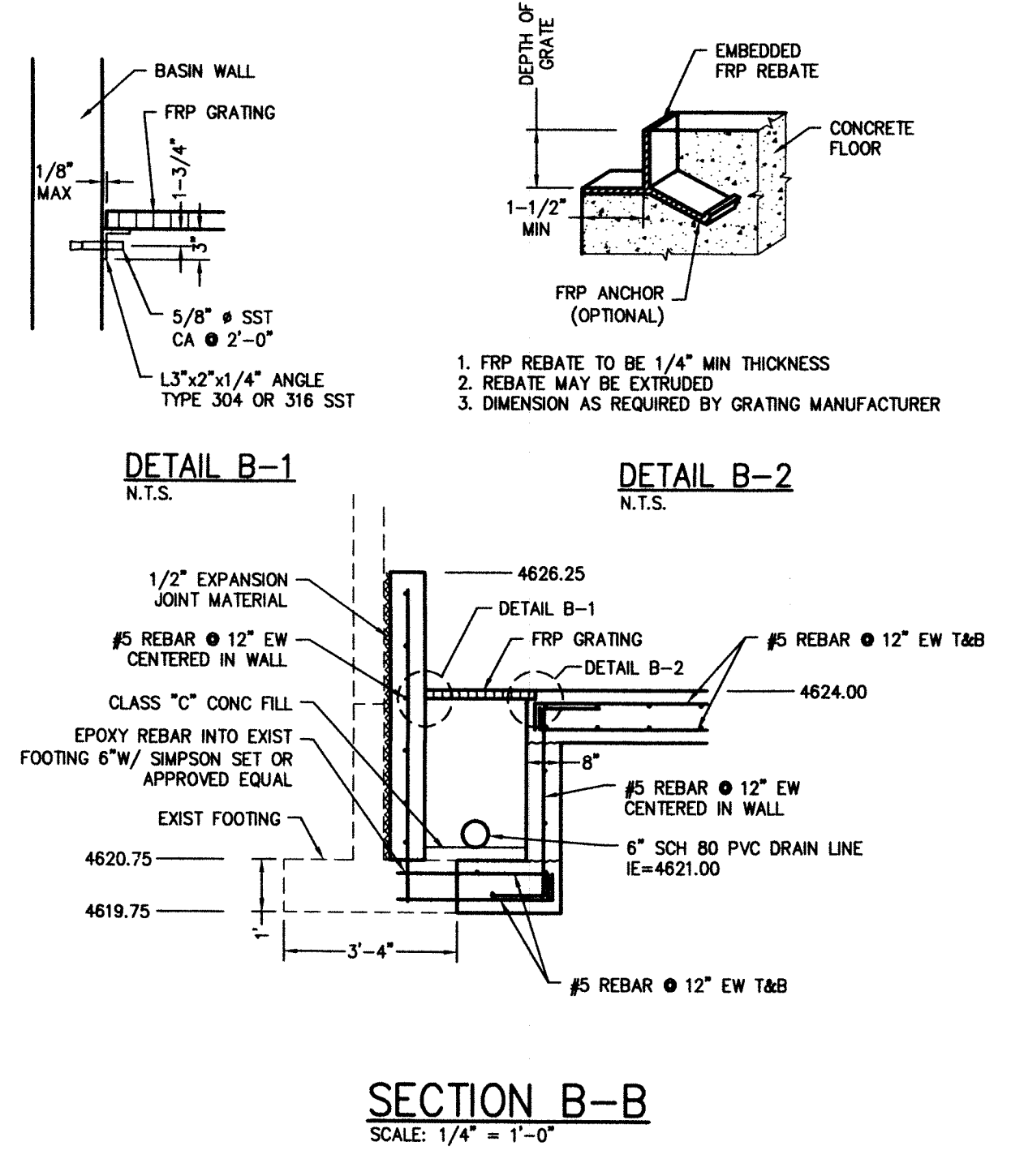
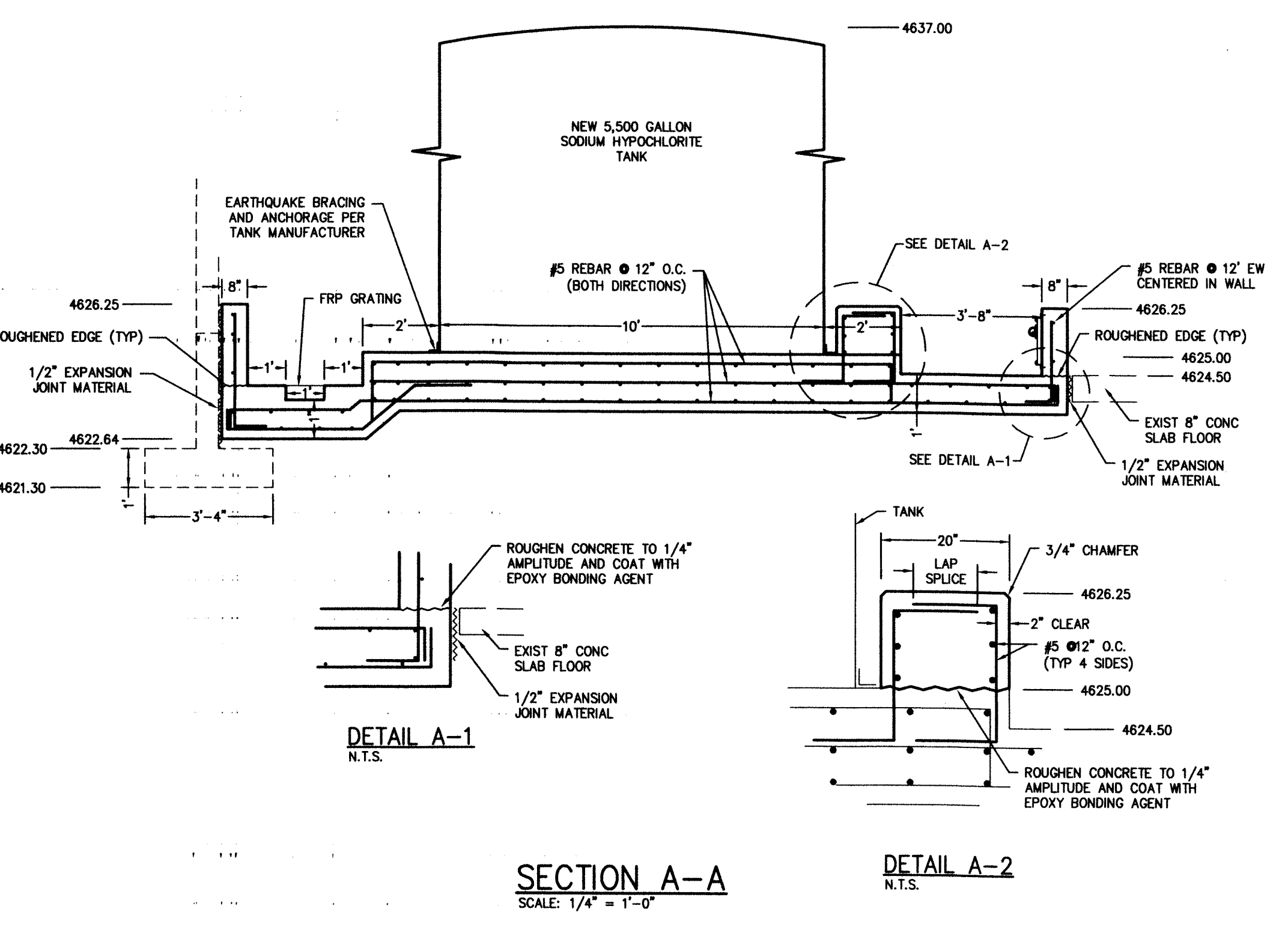
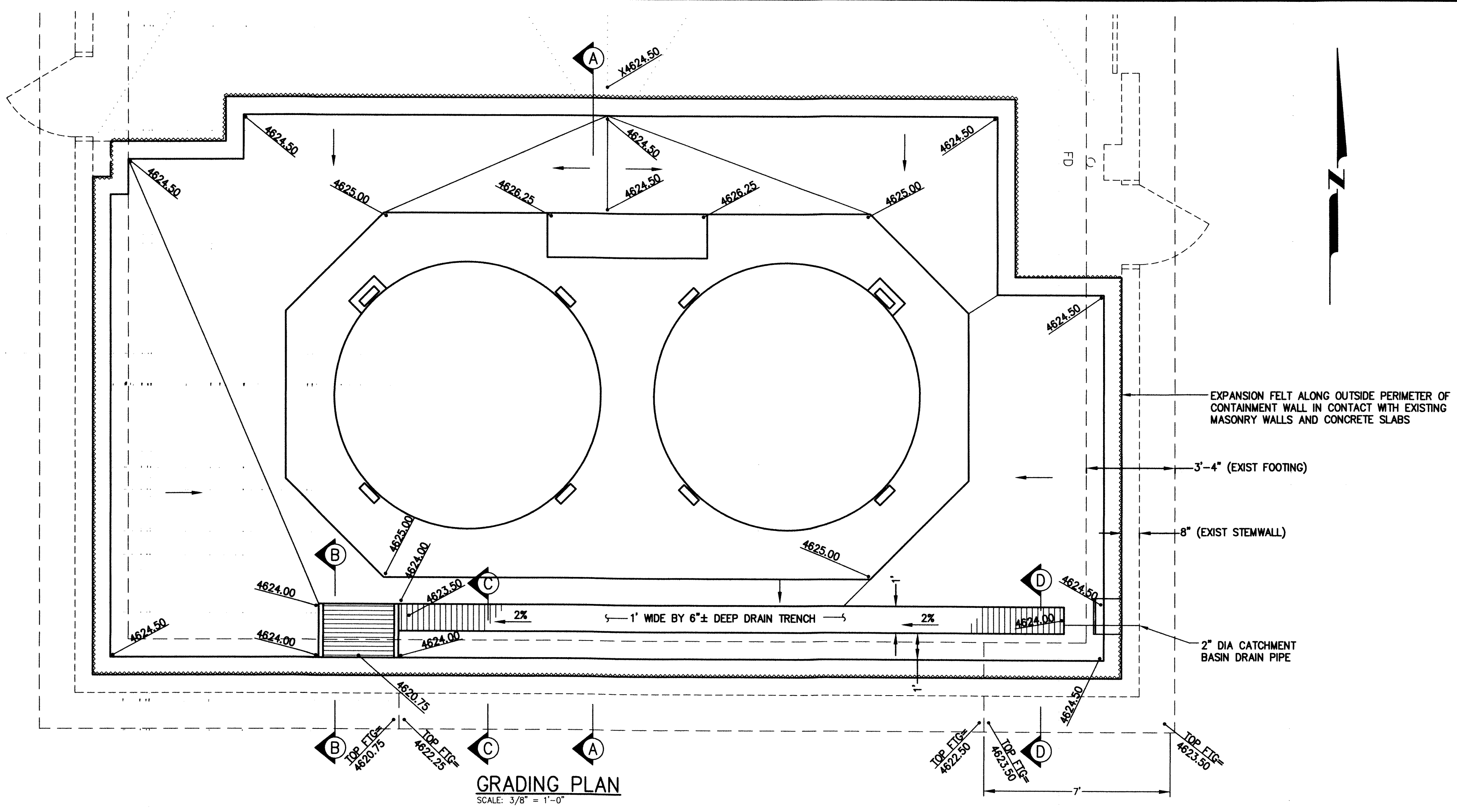
**WASTEWATER RECLAMATION PLANT
 SODIUM HYPOCHLORITE TANK REPLACEMENT
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STRUCTURAL SECONDARY CONTAINMENT
 SHEET
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 OF
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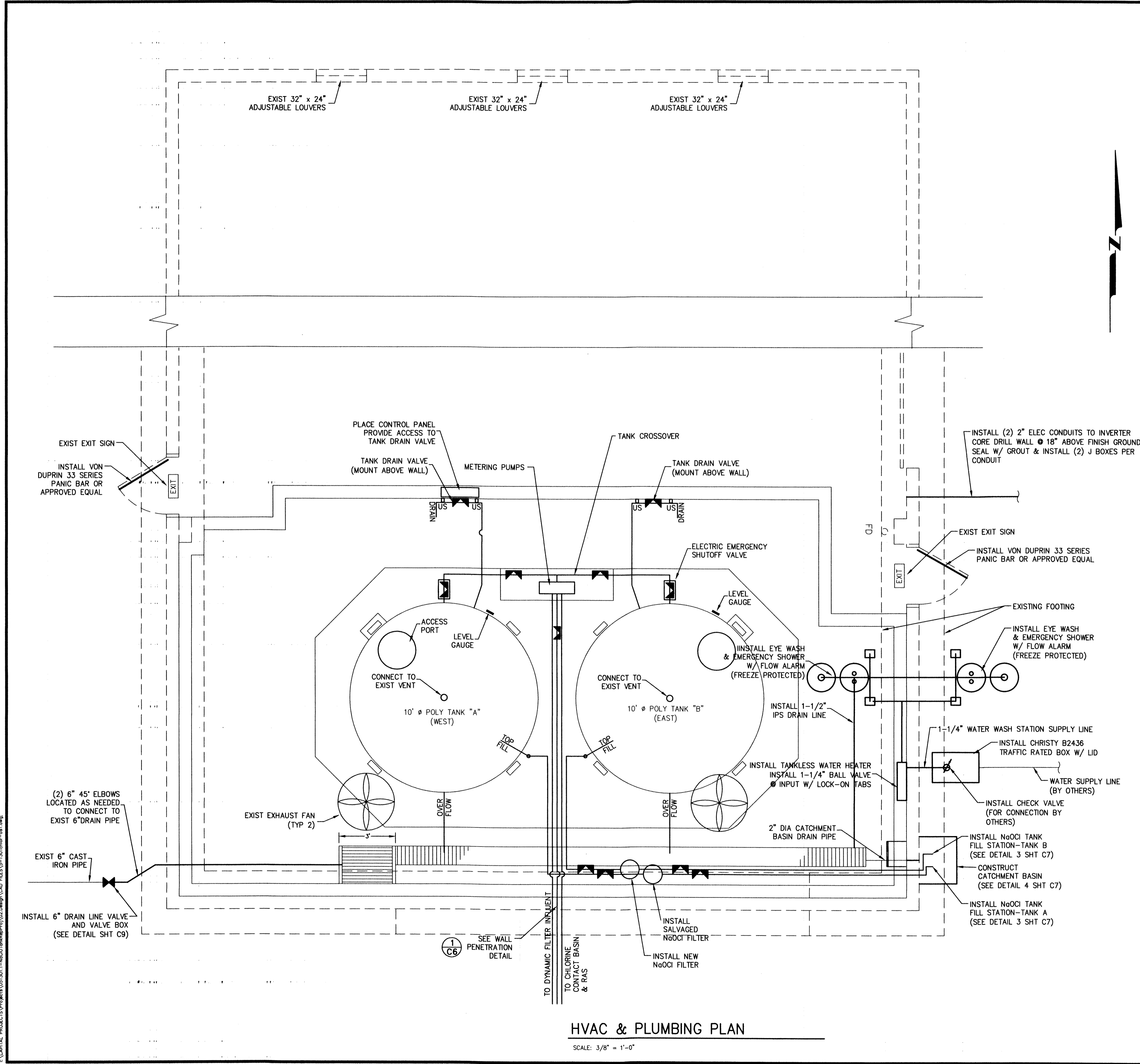
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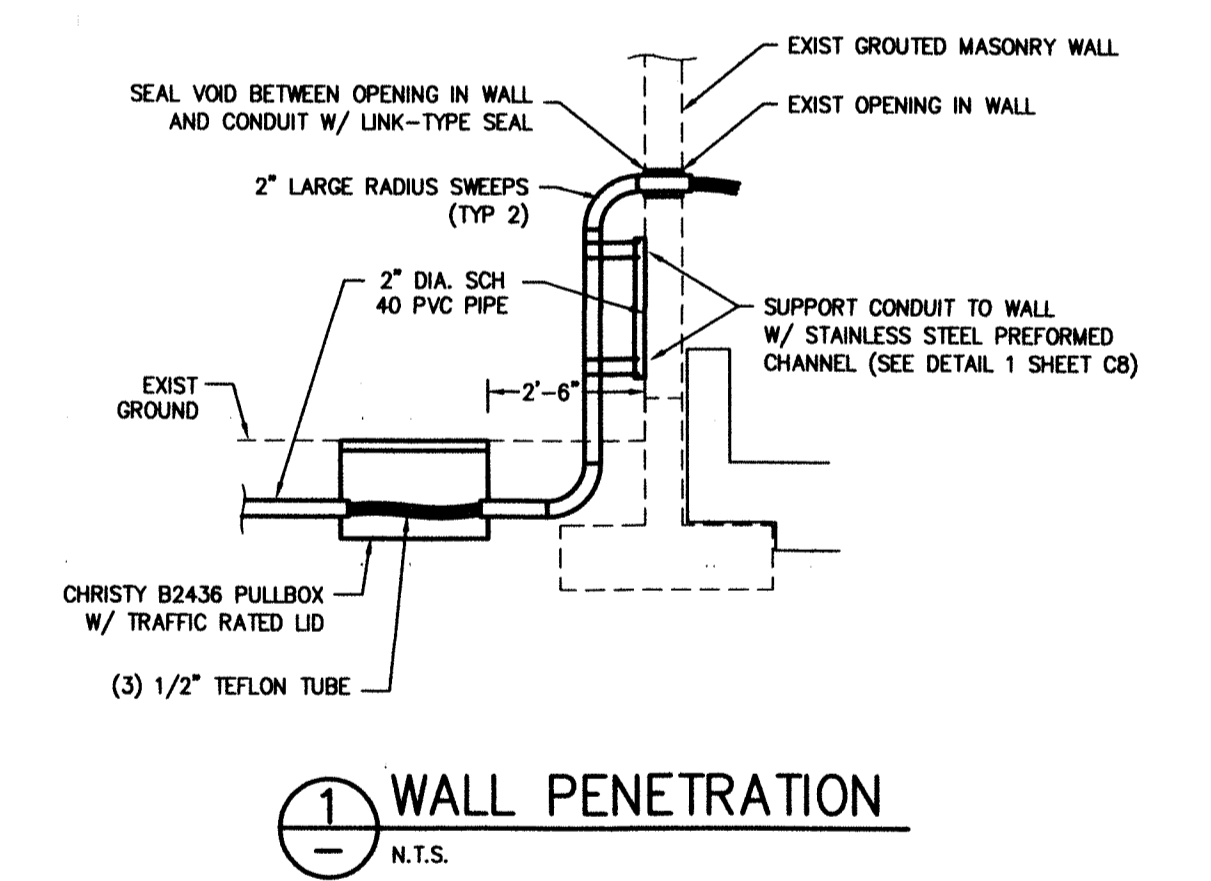
- WHERE NO CONSTRUCTION DETAILS ARE SHOWN OR NOTED FOR ANY PART OF WORK, DETAILS SHALL BE THE SAME AS FOR OTHER SIMILAR WORK.
- ENTIRE BOTTOM SLAB/FOOTINGS SHALL BEAR ON 6" OF COMPACTED 95% TYPE II CLASS B BASE. SUBGRADE TO BE COMPACTED TO 95%.
- CONTRACTOR TO PLACE 10 MIL VAPOR BARRIER UNDER CONCRETE THROUGHOUT ENTIRE AREA OF CONTAINMENT STRUCTURE.
- CONCRETE CONSTRUCTION SHALL COMPLY WITH ACI BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-08), UNLESS OTHERWISE INDICATED ON THE DRAWINGS. MINIMUM REINFORCEMENT OF CONCRETE WALLS OR SLAB SHALL BE:
 10" THICK OR LESS - USE #5 BARS @ 12" EW
 MORE THAN 10" THICK - USE #5 BARS @ 12" EW T&B
 REINFORCEMENT HOOKS, DEVELOPMENT AND SPLICES
 MIN. BEND DIAMETER: 3"
 MIN. EXTENSION FOR 180 DEG. BEND: 2"
 MIN. EXTENSION FOR 90 DEG. BEND: 6"
 MIN. LAP SPLICE: 24"
- WALL REINFORCEMENT AT CORNERS OR JUNCTIONS SHALL BE CONTINUOUS, LAPPED, OR TERMINATED IN AN ACI STANDARD 90 DEGREE HOOK.
- REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM SPECIFICATION A615 GRADE 60. PROVIDE SPACER BARS, SPREADERS, CHAIRS, BLOCKS, ETC., AS REQUIRED TO SECURELY HOLD STEEL IN PLACE. MAINTAIN A MINIMUM OF 3" CLEAR COVER FROM ALL SURFACES OF CONCRETE EXPOSED TO SOIL, 2" FOR ALL OTHER SURFACES. ALL REINFORCING STEEL BARS SHALL BE DEVELOPED BEYOND POINT OF TERMINATION AS SHOWN ON DRAWINGS. IF DEVELOPMENT IS NOT SHOWN, WHETHER HOOKED OR STRAIGHT, DEVELOPMENT LENGTH SHALL BE PER ACI 318-89.
- CONCRETE CONSTRUCTION SHALL COMPLY WITH ACI BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-08). ALL CONCRETE SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS, MINIMUM 6 SACKS OF CEMENT PER CUBIC YARD, W/MAXIMUM WATER-CEMENT RATIO OF 0.45, AIR ENTRAINED 6% +/- 1.5%, SLUMP 1-4 INCHES. SIDEWALK, CURB AND GUTTER SHALL HAVE MASTERFIBER MAC MATRIX MACRO FIBERS OR APPROVED EQUAL (AT A MINIMUM OF 3 POUNDS PER CUBIC YARD).
- ALL CONCRETE SHALL BE WATER CURED TO THE FOLLOWING SPECIFICATIONS:
 - KEEP SURFACES OF CONCRETE BEING WATER CURED CONSTANTLY AND VISIBLY MOIST DAY AND NIGHT FOR A PERIOD OF NOT LESS THAN SEVEN(7) DAYS.
 - EACH DAY FORMS REMAIN IN PLACE MAY COUNT AS 1 DAY OF WATER CURING.
 - NO FURTHER CURING CREDIT WILL BE ALLOWED FOR FORMS IN PLACE AFTER CONTACT HAS BEEN BROKEN BETWEEN CONCRETE SURFACE AND FORMS.
 - DO NOT LOOSEN FORM TIES DURING PERIOD WHEN CONCRETE IS BEING CURED BY LEAVING FORMS IN PLACE.
 - FLOOD TOP OF WALLS WITH WATER AT LEAST 3 TIMES PER DAY, AND KEEP CONCRETE SURFACES MOIST AT ALL TIMES DURING SEVEN (7) DAY CURING PERIOD.
- LOCATION OF CONSTRUCTION JOINTS SHALL BE APPROVED BY THE ENGINEER, IF NOT SHOWN ON DRAWINGS. CONSTRUCTION JOINTS SHALL BE SMOOTH AND CLEAN. REMOVE LOOSE AGGREGATE AND DAMAGED CONCRETE.
- PROVIDE 3/4" CHAMFER ON ALL EXPOSED EDGES.
- INSTALL 1/2" EXPANSION JOINT MATERIAL AROUND PERIMETER OF SECONDARY CONTAINMENT AGAINST EXISTING WALLS AND SLAB.
- EXPANSION MATERIAL SHALL BE USED BETWEEN ALL NEW AND EXISTING CONCRETE WALLS.
- ALL CONCRETE WITHIN CONTAINMENT AREA TO BE SEALED WITH A VINYL ESTER COATING (SEE TECHNICAL SPECIFICATIONS) CONTAINMENT FLOOR SHALL SLOPE TOWARDS DRAIN AT A MINIMUM OF 1%.



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- NOTES:**
- ALL SODIUM HYPOCHLORITE PIPE AND FITTINGS SHALL BE SCHEDULE 80 PVC WELDED WITH CPVC GLUE UNLESS SPECIFIED OTHERWISE.
 - WHERE SCHEMATIC DOES NOT AGREE WITH PIPING SHOWN ON OTHER DRAWINGS, PIPING SHALL BE INSTALLED AS INDICATED ON THE SCHEMATIC.
 - CONTRACTOR SHALL SUBMIT DETAILED PIPING LAYOUT TO ENGINEER FOR APPROVAL SHOWING ALL VALVES, APPURTENANCES AND SUPPORTS.
 - RIGID PIPING MAY NOT BE DIRECTLY PLUMBED TO TANK SIDEWALL CONNECTION. 2' OF BRAID REINFORCED FLEXIBLE PVC TUBING MUST BE USED AT THESE LOCATIONS.
 - ALL PIPING, VALVES, FITTINGS AND RELATED COMPONENTS SHALL BE OF MATERIALS COMPATIBLE WITH 12.5% NaOCl.
 - SLOPE DRAIN LINES 1/4" PER FOOT MINIMUM.
 - SUPPORT PIPES TO TANKS PER TANK MANUFACTURER'S REQUIREMENTS. ALL PLUMBING SHALL BE SUPPORTED AT A MAXIMUM OF 5' WITH STAINLESS STEEL PREFORMED CHANNEL.
 - BAG FILTER TO BE FLT SERIES SIMPLEX BAG FILTER WITH 7"x32" BAG BY HAYWARD OR APPROVED EQUAL.
 - MATERIALS LISTED BELOW TO MATCH SPECIFIED SUPPLIER OR APPROVED EQUAL:
 MANUAL VALVES - ASHII TYPE 21 DIAPHRAGM VALVE
 AUTO VALVES - ASHII SERIES 94 TYPE 21 AUTO VALVE
 - STORAGE TANKS TO BE SNYDER INDUSTRIES 5500 GALLON 120" DIAMETER FLAT BOTTOM TANKS OR APPROVED EQUAL MADE FROM HDPE RATED FOR A SPECIFIC GRAVITY OF 1.9. STORAGE TANK SHALL BE INSTALLED PER MANUFACTURERS GUIDELINES AND REQUIREMENTS
 TANK CONNECTION REQUIREMENTS:
 1 - 2" SUMO FITTING TO PUMPS (BY SNYDER INDUSTRIES OF APPROVED EQUAL)
 1 - 2" SUMO FITTING TO DRAIN TO SUMP (BY SNYDER INDUSTRIES OF APPROVED EQUAL)
 1 - 2" BULKHEAD FITTING FOR FILL LINE
 1 - 2" BULKHEAD FITTING FOR OVERFLOW LINE
 1 - 3" BULKHEAD FITTING FOR ROOF VENT
 ALL NECESSARY CONNECTIONS FOR SIGHT GAUGE ASSEMBLY
 ALL NECESSARY CONNECTIONS FOR SIGHT GAUGE ASSEMBLY
 SUMO FITTINGS BY SNYDER INDUSTRIES OR APPROVED EQUAL TO BE USED AT OUTFLOWING LOCATIONS ON THE TANKS. SUMO FITTINGS WILL REQUIRE A NOTCH IN THE CONCRETE SUPPORT PAD JUST IN FRONT OF THE FITTING FOR PIPING AND PIPING ACCESSORIES. SEE MANUFACTURERS REQUIREMENTS.
 - METERING PUMPS TO BE MODEL 5200JN/REL WATSON MARLOW METERING PUMPS WITH A FLOAT STYLE LEAK DETECTOR AND 9.6MM TUBE ELEMENT OR APPROVED EQUAL.
 - ALL EMERGENCY SHOWER AND EYEWASH COMPONENTS TO FOLLOW THE REQUIREMENTS OF ANS Z358.1. INTERIOR EMERGENCY EYEWASH AND SHOWER STATION TO BE CONSTRUCTED OF CORROSION RESISTANT MATERIAL. EMERGENCY EYEWASH AND SHOWER STATION SHALL BE FREEZE PROTECTED. INTERIOR AND EXTERIOR SHOWER HEAD AND EYEWASH BOWL TO BE ABS. ALL WATER LINES WITHIN THE BUILDING TO BE SCHEDULE 80 PVC. ALL FITTINGS, VALVES AND OTHER PLUMBING COMPONENTS TO BE RESISTANT TO CORROSION. ELECTRIC WATER HEATER TO BE Eemax MODEL: ED079480T12 OR APPROVED EQUAL (480V, CAPABLE OF PROVIDING 26 GPM WITH 20 DEG. TEMPERATURE RISE)
 - ALL WALL PENETRATIONS FOR PIPING WILL REQUIRE LINK-TYPE SEALS TO ACCOMMODATE DIFFERENTIAL SETTLEMENT BETWEEN NEW AND EXISTING CONCRETE AND TO PROVIDE AIR TIGHT PENETRATIONS.



BUILDING VENTILATION REQUIREMENTS:

MECHANICAL VENTILATION SHALL BE AT A RATE OF NOT LESS THAN 1 CUBIC FOOT PER MINUTE PER SQUARE FOOT OF FLOOR AREA OVER THE STORAGE AREA

EXISTING SQUARE FOOTAGE OF BUILDING: 52' x 40' = 2080 SQ FT

MECHANICAL VENTILATION NEEDED = 2080 SQ FT x 1 CFM = 2080 CFM

EXISTING VENTILATION EQUIPMENT:

3 - 32" x 24" ADJUSTABLE LOUVERS = 1200 CFM x 3 = 3600 CFM

2 - CENTRI MASTER PNN200E 115/1/60/ODP EXHAUST FANS = 1481 CFM x 2 = 2962 CFM

OCCUPANT LOAD:

ROOM NAME: CHLORINE BUILDING

SQUARE FOOTAGE: 2080

OCCUPANT LOAD FACTOR: 300

OCCUPANT LOAD: 7

EXIT WIDTH REQUIRED: 7 x 0.2 = 1.4

EXITS REQUIRED:

EXITS PROVIDED: 2 - 40" DOORS



DESIGNED BY: DA
 DRAWN BY: BD
 CHECKED BY: TG
 DWG NO.: 5-1301CHOR-BS1
 SCALE (HORIZ): 3/8" = 1'
 SCALE (VERT): X = XX"
 PLOT DATE: 2014 JULY 21

CARSON CITY PUBLIC WORKS DEPARTMENT

3505 BUTTI WAY CARSON CITY, NEVADA 89701
 PH: 775-887-2355 FAX: 775-887-2112

ENGINEER STATE OF NEVADA
THOMAS B. GRUNDY
 Exp: 6/30/15
 CIVIL
 No. 18808

7-31-14

REV.	DATE	DESCRIPTION	BY	APP'D

WASTEWATER RECLAMATION PLANT SODIUM HYPOCHLORITE TANK REPLACEMENT PROJECT No. 051301.1

HVAC, PLUMBING & EGRESS PLAN

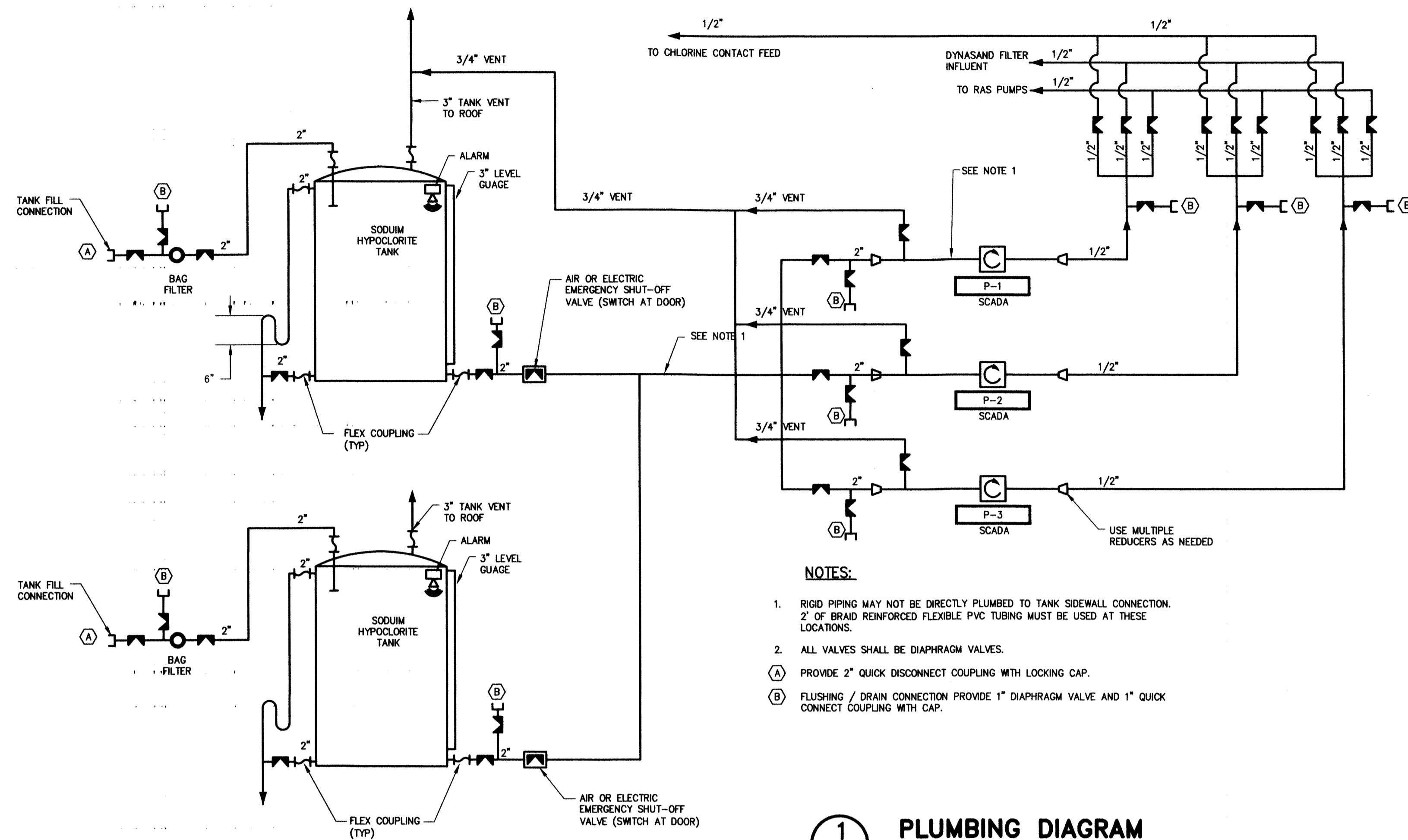
SHEET **C6** OF **14**

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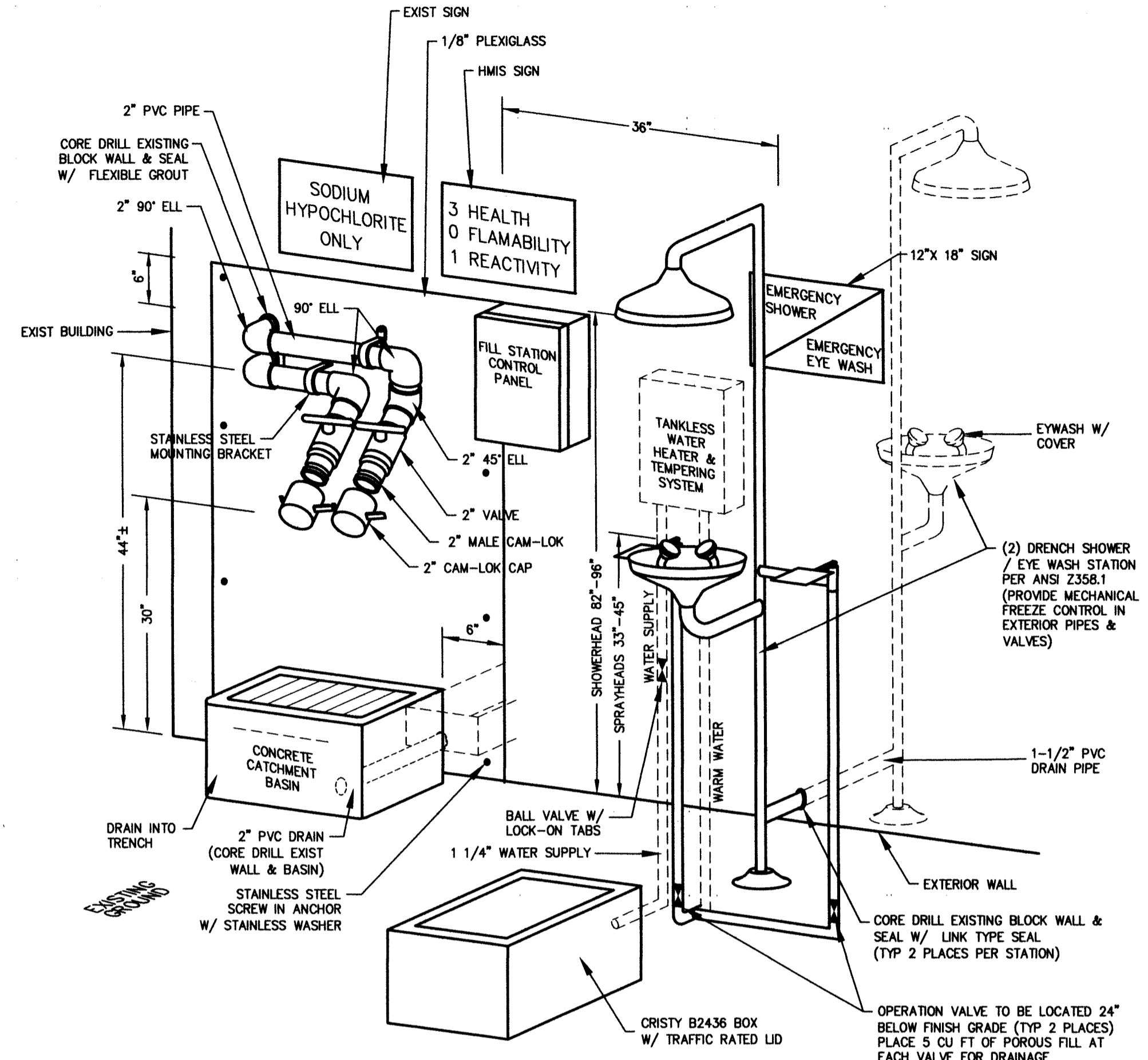
HVAC & PLUMBING PLAN

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

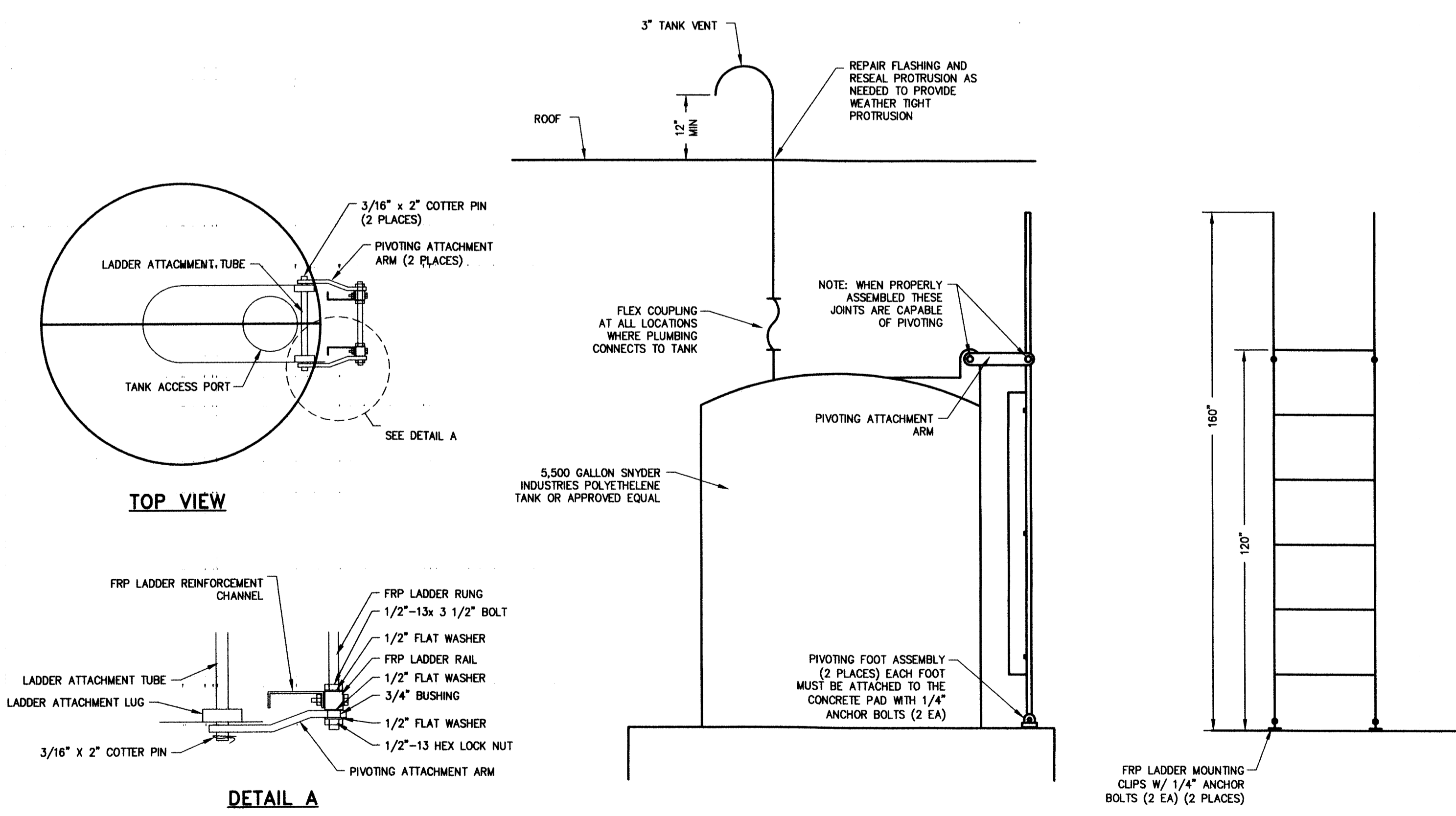
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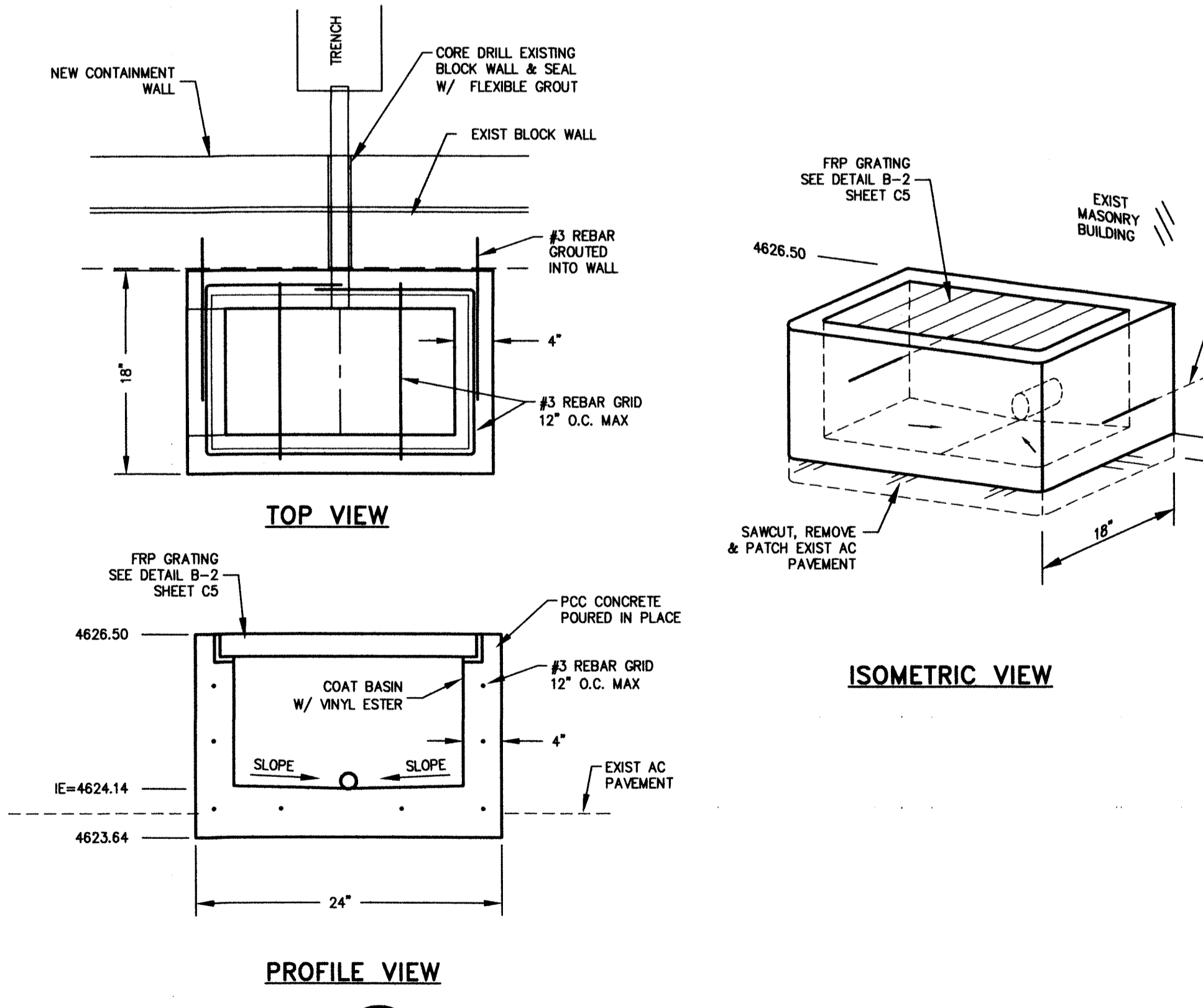
1 PLUMBING DIAGRAM
N.T.S.



3 SODIUM HYPOCHLORITE FILL STATION
N.T.S.



2 TANK ACCESS LADDER & VENT
N.T.S.



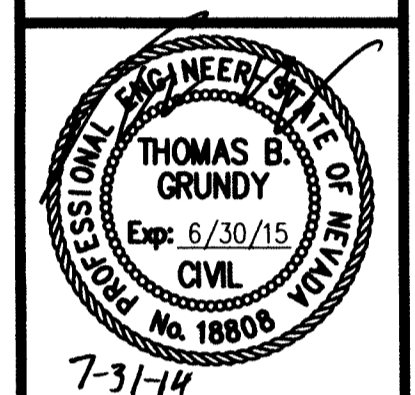
4 CATCHMENT BASIN
N.T.S.

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DESIGNED BY: DA
DRAWN BY: BD
CHECKED BY: TG
DWG NO.: 5-1301CH06-B51
SCALE (HORIZ): N.T.S.
SCALE (VERT): X"=X'
PLOT DATE: 2014 JULY 21

**CARSON CITY DEPARTMENT
PUBLIC WORKS DEPARTMENT**

3505 BUTTI WAY CARSON CITY, NEVADA 89701
PH: 775-887-2355 FAX: 775-887-2112



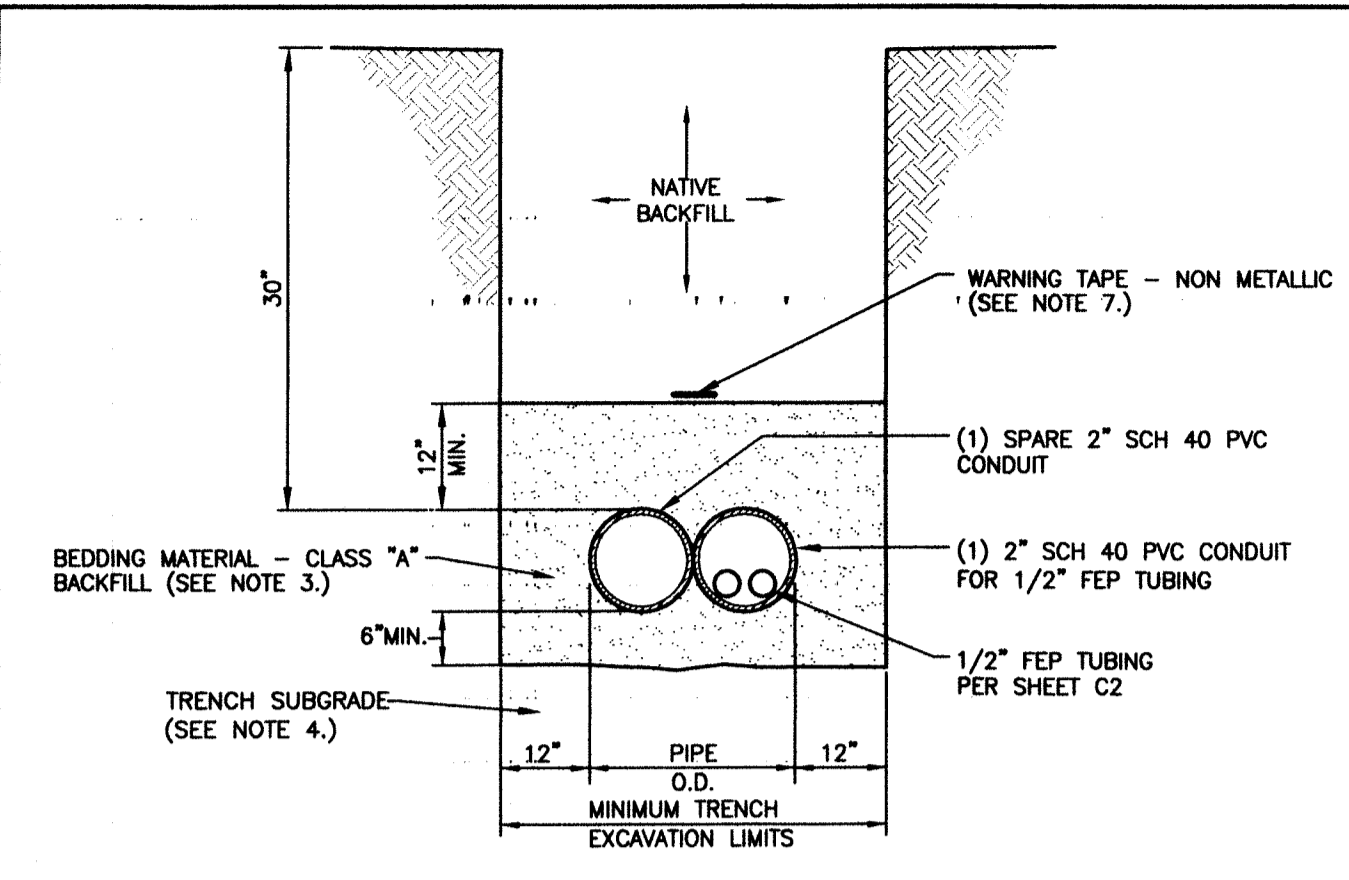
REV	DATE	DESCRIPTION	BY	APP'D

**WASTEWATER RECLAMATION PLANT
SODIUM HYPOCHLORITE TANK REPLACEMENT
PROJECT No. 051301.1**

SHEET
C7
OF
14

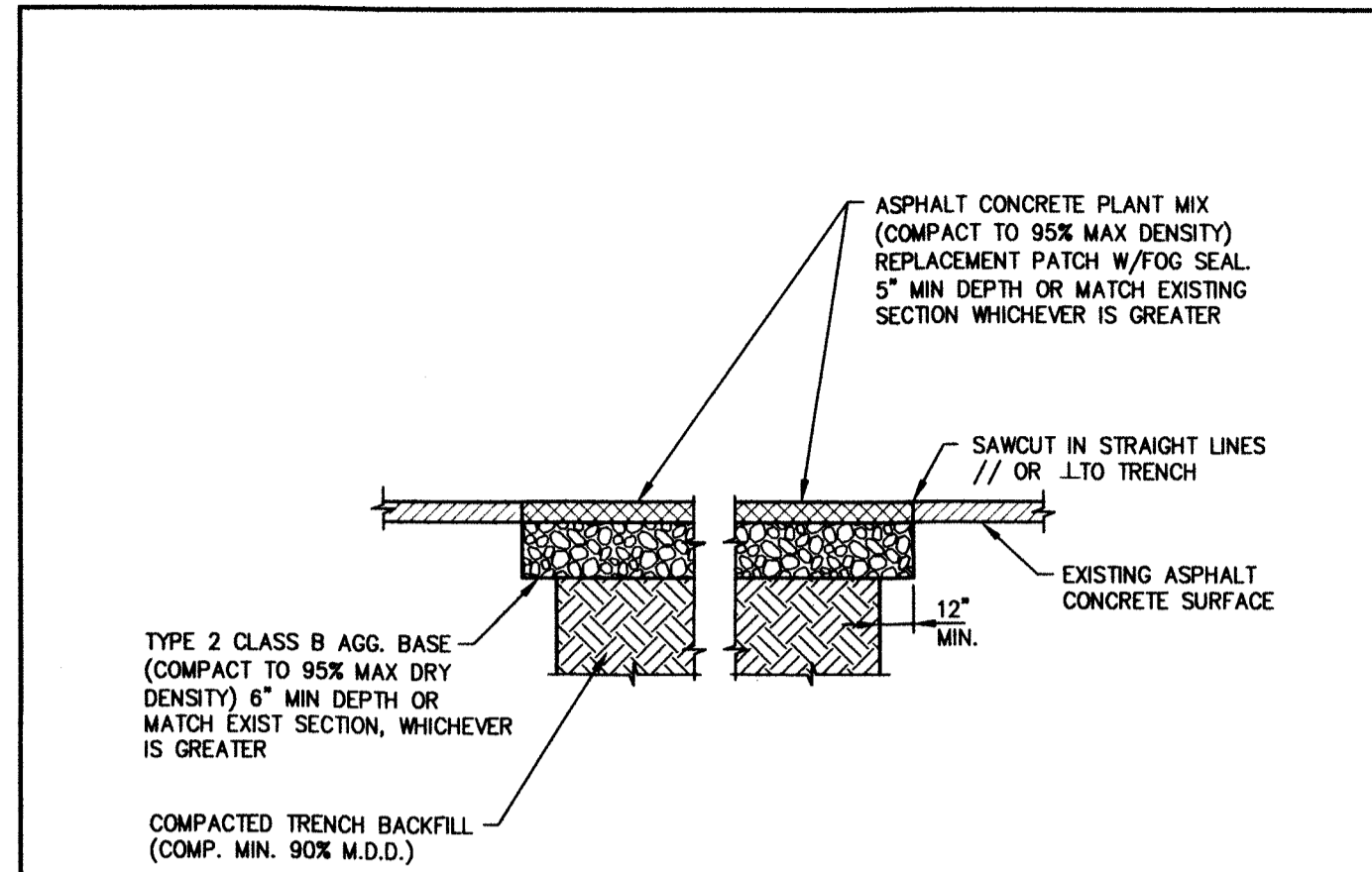


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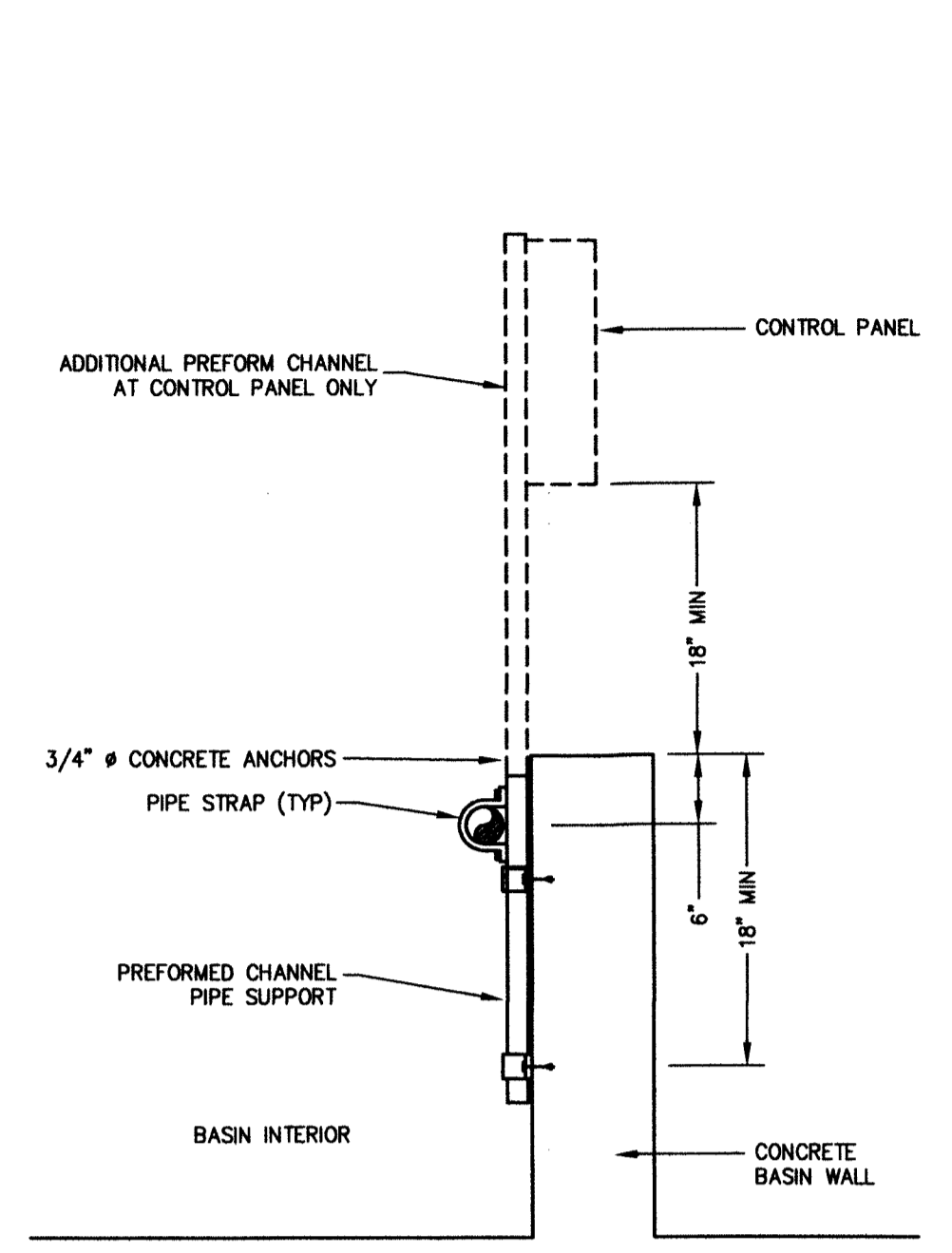
- NOTES:**
- BACKFILL SHALL CONFORM TO THE REQUIREMENTS OF CLASS E BACKFILL AS SPECIFIED IN SUBSECTION 200.03.06 OF THE SSPWC. MATERIAL SHALL BE PLACED IN LIFT THICKNESS SPECIFIED IN SUBSECTION 305.10 OF THE SSPWC AND DENSIFIED TO 90% RELATIVE COMPACTION.
 - BEDDING SHALL CONFORM TO THE REQUIREMENTS OF CLASS A BACKFILL AS SPECIFIED IN SUBSECTION 200.03.02 OF THE SSPWC. MATERIAL SHALL BE DENSIFIED TO 90% RELATIVE COMPACTION.
 - PLANS SHALL INCLUDE A DETAIL FOR SUBGRADE STABILIZATION INCLUDING BACKFILL MATERIAL, STRUCTURAL GEOTEXTILE FILTER FABRIC AND MODIFIED CUTOFF COLLARS WHEN POTENTIAL FOR UNSTABLE SUBGRADES EXIST, SUBJECT TO THE APPROVAL OF THE CARSON CITY PUBLIC WORKS DIRECTOR.
 - FOR TRENCHES IN ROADWAY SECTION, SEE PAVEMENT PATCH DETAIL (DWG. No. C-5.1.6).
 - FOR THE PURPOSE OF PAYMENT; EXCAVATION AND BACKFILL QUANTITIES ARE BASED ON THESE STANDARD DRAWINGS, AND NO ADDITIONAL COMPENSATION WILL BE MADE. SHORING OR SLOPED CUT SLOPES MAY BE NECESSARY, BUT THERE WILL BE NO ADDITIONAL PAYMENT. ALL EXCAVATIONS SHALL CONFORM TO THE LATEST O.S.H.A. REQUIREMENTS.
 - PLACE NON METALLIC WARNING TAPE 1 FOOT ABOVE ALL BURIED PIPES AND CONDUITS.
 - TRACER WIRE SHALL BE 12 GAUGE (MINIMUM THICKNESS) INSULATED SOLID COPPER OR COPPER-CLAD STEEL CORE WIRE. INSULATION SHALL BE 30 MIL HOPE. PLANS SHALL SPECIFY WIRE STRENGTH AND INSULATION THICKNESS FOR BORING APPLICATIONS. SPLICES SHALL BE CONNECTED BY WIRE NUTS, SEALED WITH AQUA SEAL OR SILICON FILLED, AND DOUBLE WRAPPED WITH U/L LISTED ELECTRICAL TAPE. TRACER WIRE COLOR SHALL BE, BLUE FOR WATER, PURPLE FOR RECLAIMED WATER, AND GREEN FOR SEWER.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION
			TRENCH EXCAVATION AND BACKFILL (MODIFIED)	CARSON CITY
				DRAWING NO. C-1.2.1 (MODIFIED)
				DATE



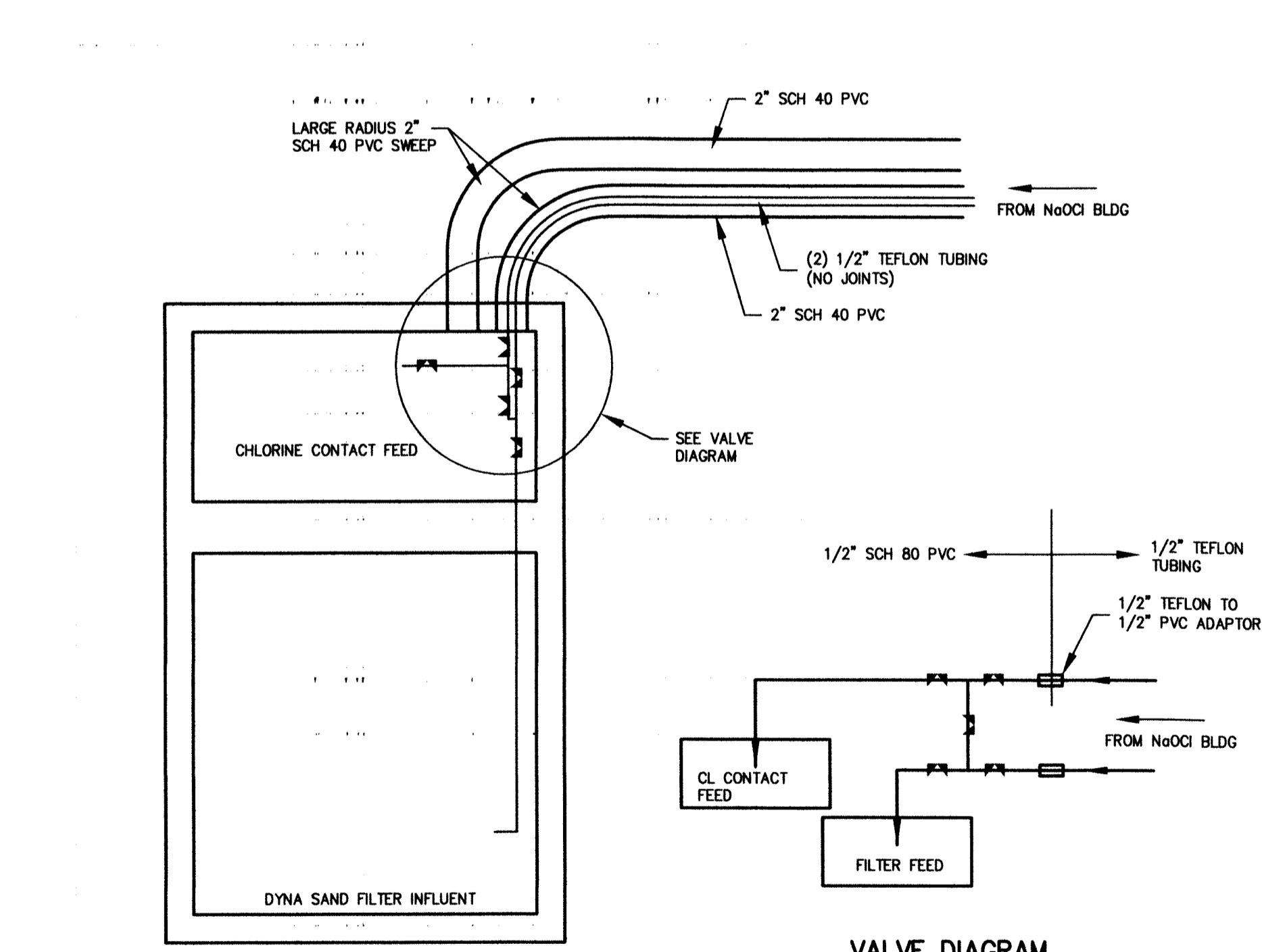
- NOTES:**
- IF SAWCUT IS WITHIN 24 INCHES OF EDGE OF A.C. PAVEMENT REMOVE EXISTING PAVEMENT TO THAT EDGE AND REPLACE ENTIRE SECTION.
 - BITUMINOUS MATERIAL SHALL MEET THE REQUIREMENTS OF SECTIONS 201 AND 320 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
 - MIXING, SPREADING, AND COMPACTING OF BITUMINOUS PAVEMENT SHALL BE DONE ONLY WHEN THE SURFACE ON WHICH THE MATERIALS ARE TO BE PLACED IS DRY AND WHEN THE ATMOSPHERIC TEMPERATURE IS ABOVE 50 DEGREES FAHRENHEIT AND HAS NOT BEEN BELOW 40 DEGREES FAHRENHEIT DURING THE PRECEDING 24 HOURS.
 - FINISHED SURFACE VARIATIONS SHALL BE 0 TO 0.25 INCHES ABOVE EXISTING SURFACE. ALL HUMPS EXCEEDING THIS TOLERANCE SHALL BE CORRECTED BY REMOVAL OF MATERIAL AND REPLACING IT WITH NEW MATERIAL. FINISHED SURFACE OF PATCH SHALL NOT BE BELOW EXISTING ADJACENT SURFACE.
 - PLANTMIX BITUMINOUS PAVEMENT SURFACE COURSE SHALL BE PG-64-22 TYPE 3 AND SUB SURFACE COURSES SHALL BE PG-64-22 TYPE 3 UNLESS OTHERWISE NOTED.
 - PLANTMIX BITUMINOUS PAVEMENT PATCHES SHALL MATCH EXISTING SECTION OR HAVE A MINIMUM THICKNESS OF 5 INCHES, WHICHEVER IS GREATER.
 - PLANS SHALL SPECIFY PAVEMENT PATCH AND AGGREGATE BASE DEPTHS AS SPECIFIED BY THE DESIGN ENGINEER.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION
1	5\"/>			



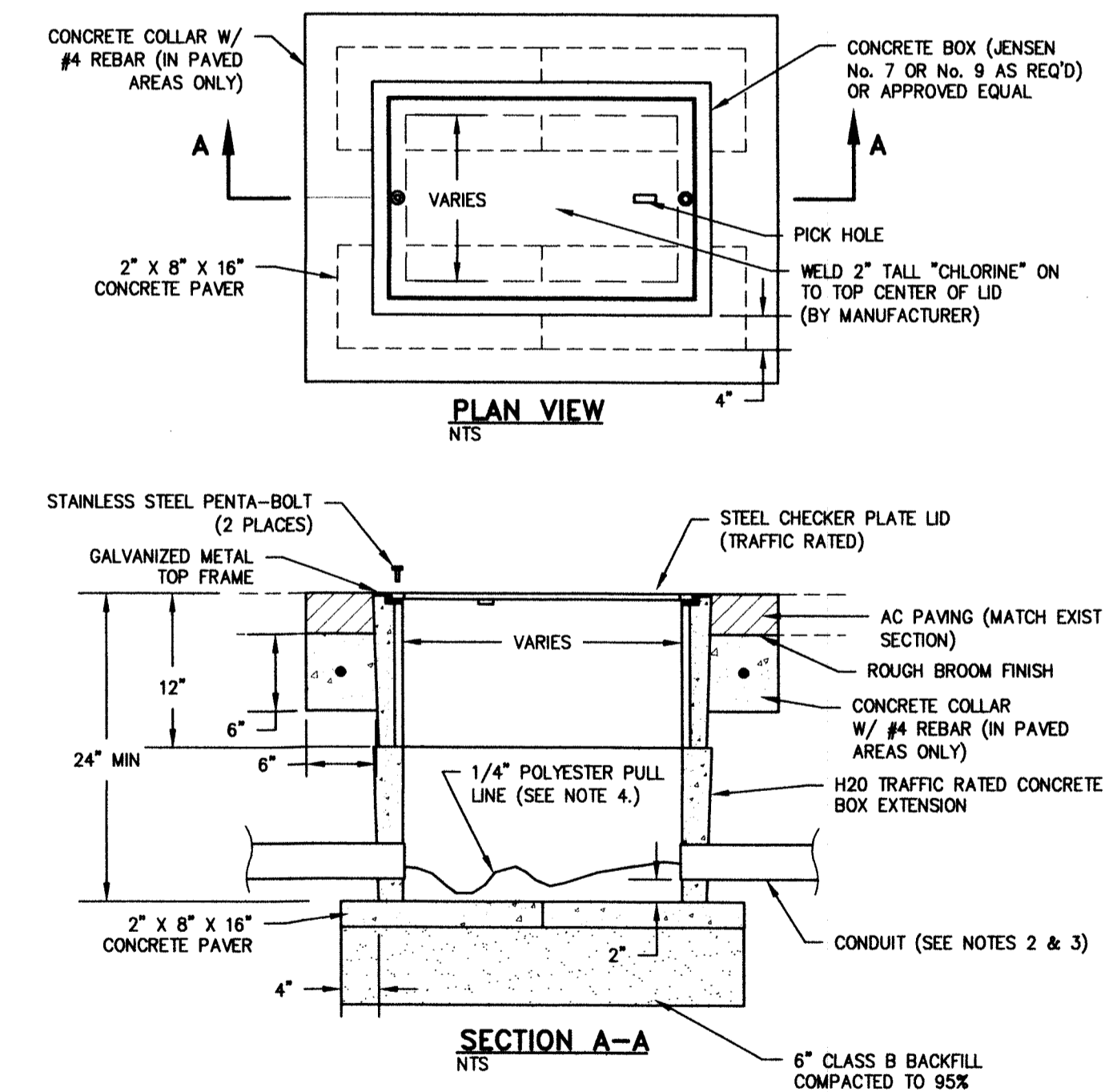
- NOTES:**
- ALL SUPPORT FITTINGS SHALL BE 316 SST FOR SUPPORTS IN CHEMICAL CONTAINMENT AREAS

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION
1			UNISTRUT-SUPPORTS	CARSON CITY
				DRAWING NO. C-5.1.6
				DATE 7/2009



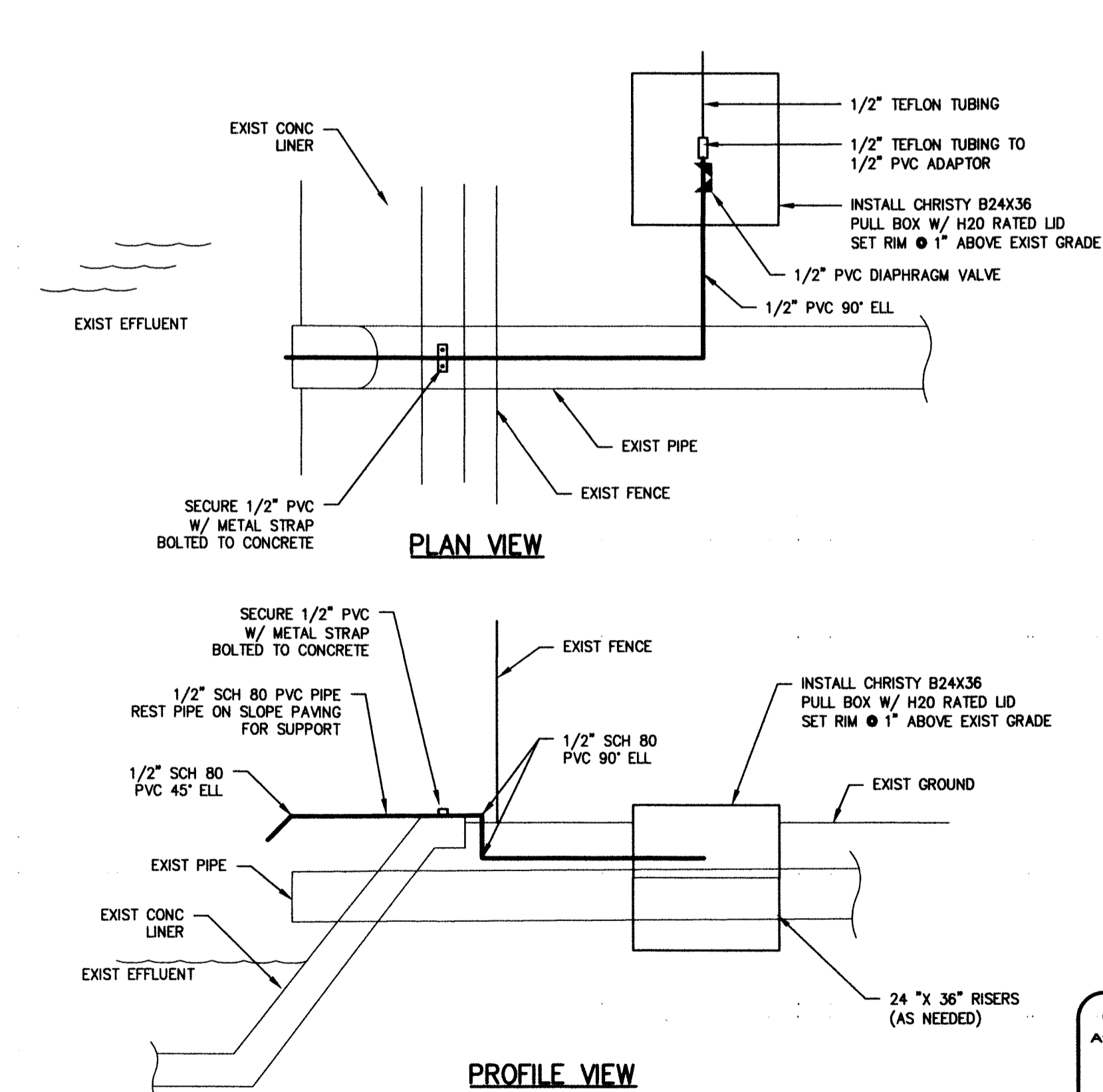
- NOTES:**
- ALL VALVES TO BE DIAPHRAGM VALVES UNLESS OTHERWISE NOTED.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION
2			CONTACT TANK CONNECTION	CARSON CITY
				DRAWING NO. C-1.2.1
				DATE



- NOTES:**
- PULL BOXES AND COVERS SHALL BE H-20 TRAFFIC RATED.
 - CONDUIT SHALL BE SCHEDULE 40 AND CONDUIT ENTERING A PULLBOX SHALL BE CAPPED WITH AN END BELL.
 - CONDUITS TO USE 3 FEET RADIUS SWEEPS UNLESS OTHERWISE NOTED. SWEEPS ARE NOT TO BE CUT.
 - CONDUITS SHALL HAVE 1/4\"/>

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION
3			PULL BOX & LID	CARSON CITY
				DRAWING NO. C-5.1.6
				DATE 7/2009

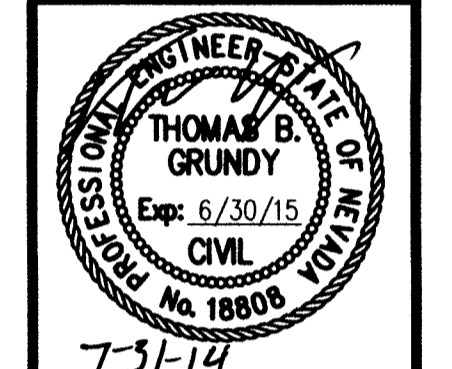


NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION
4			RAS OUTLET	CARSON CITY
				DRAWING NO. C-5.1.6
				DATE



DESIGNED BY: DA
 DRAWN BY: BD
 CHECKED BY: TG
 DWG NO.: 5-1301CHLOR-BST
 SCALE (HORIZ): N.T.S.
 SCALE (VERT): X"=8'
 PLOT DATE: 2014 JULY 21

CARSON CITY PUBLIC WORKS DEPARTMENT
 3505 BUTTI WAY CARSON CITY, NEVADA 89701
 PH: 775-887-2355 FAX: 775-887-2112

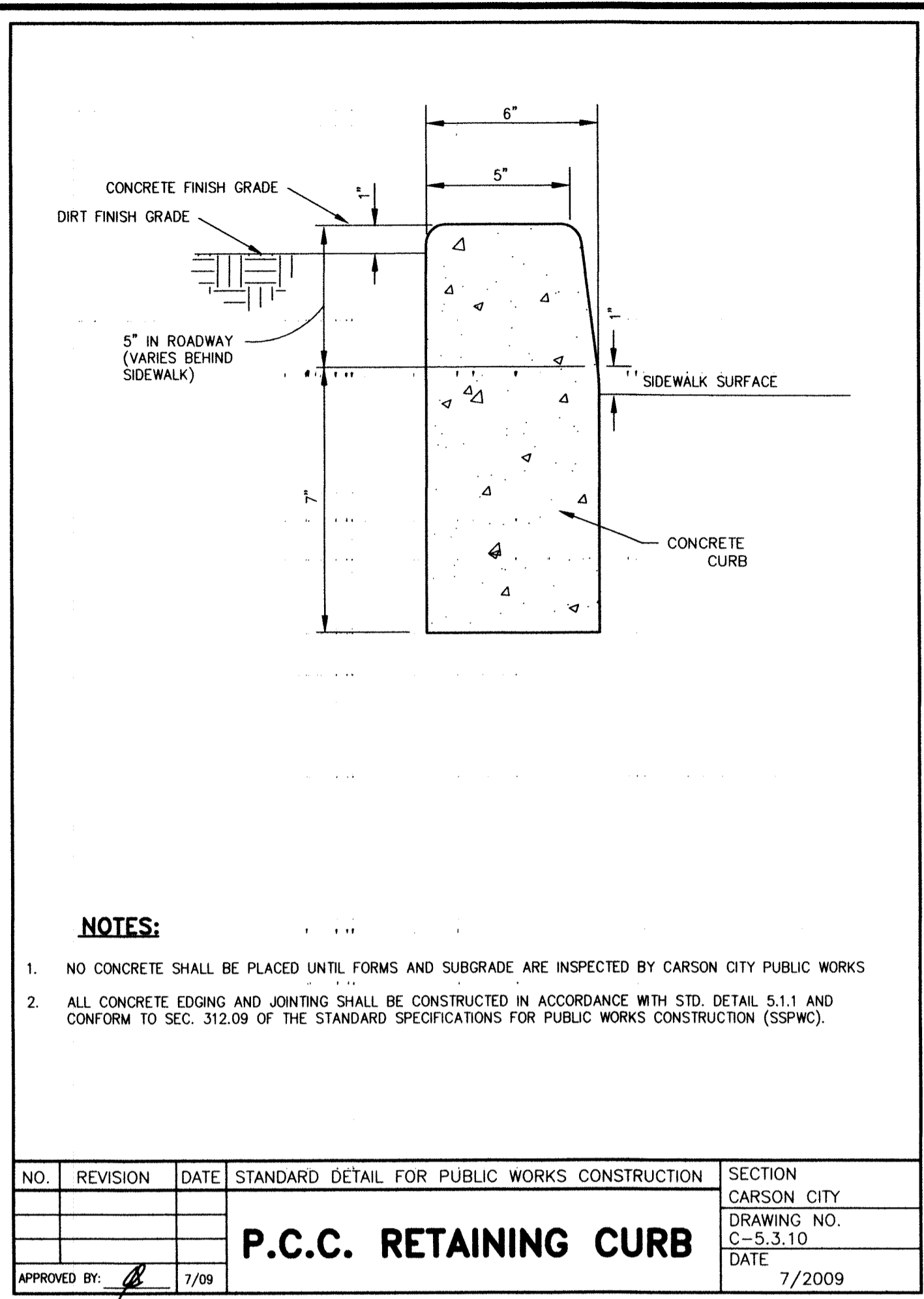


REV.	DATE	DESCRIPTION	BY	APP'D

WASTEWATER RECLAMATION PLANT SODIUM HYPOCHLORITE TANK REPLACEMENT PROJECT No. 051301.1

SHEET C8 OF 14

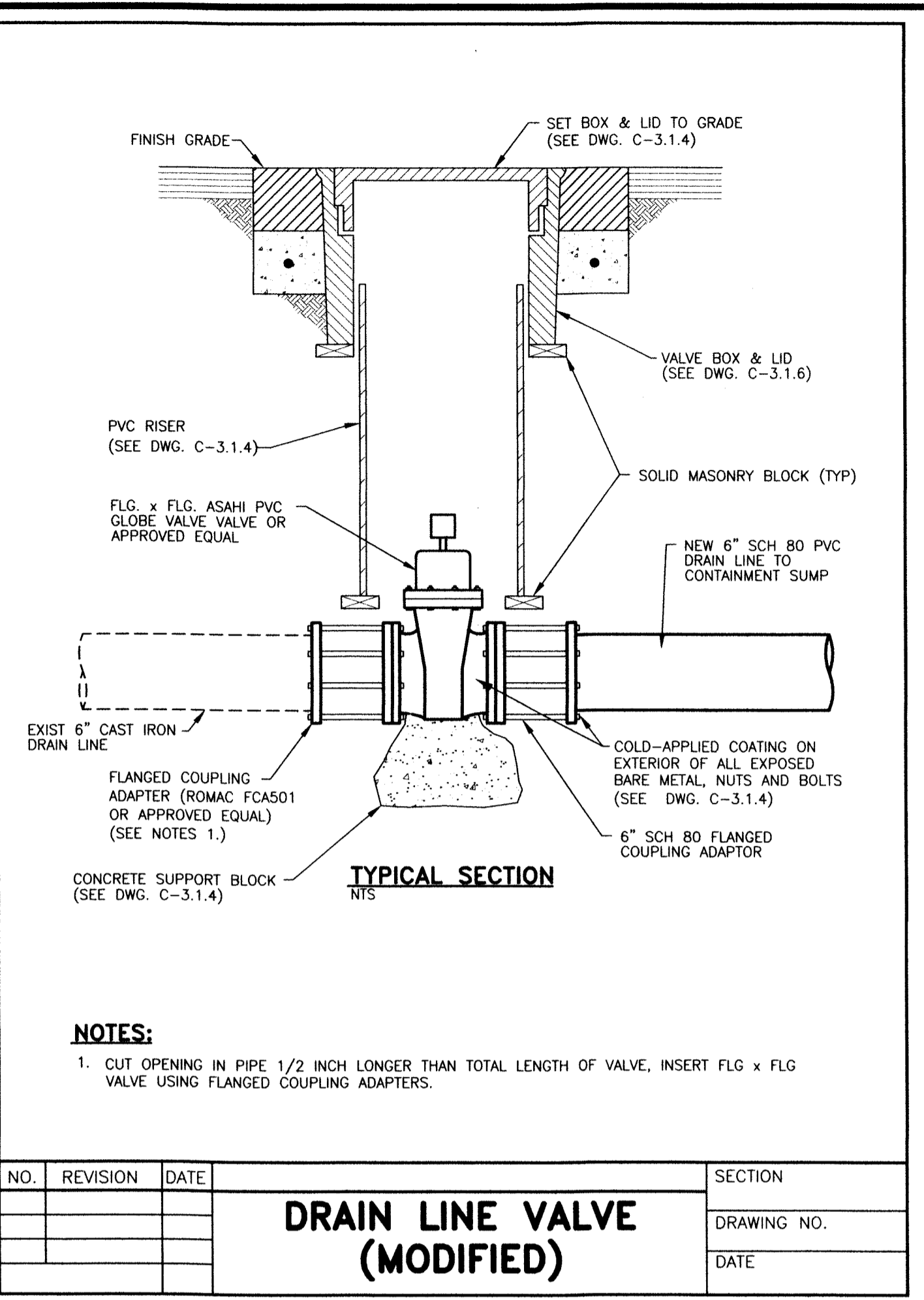
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- NOTES:**
- NO CONCRETE SHALL BE PLACED UNTIL FORMS AND SUBGRADE ARE INSPECTED BY CARSON CITY PUBLIC WORKS
 - ALL CONCRETE EDGING AND JOINTING SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. DETAIL 5.1.1 AND CONFORM TO SEC. 312.09 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (SSPWC).

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION
				CARSON CITY
				DRAWING NO. C-5.3.10
				DATE 7/2009

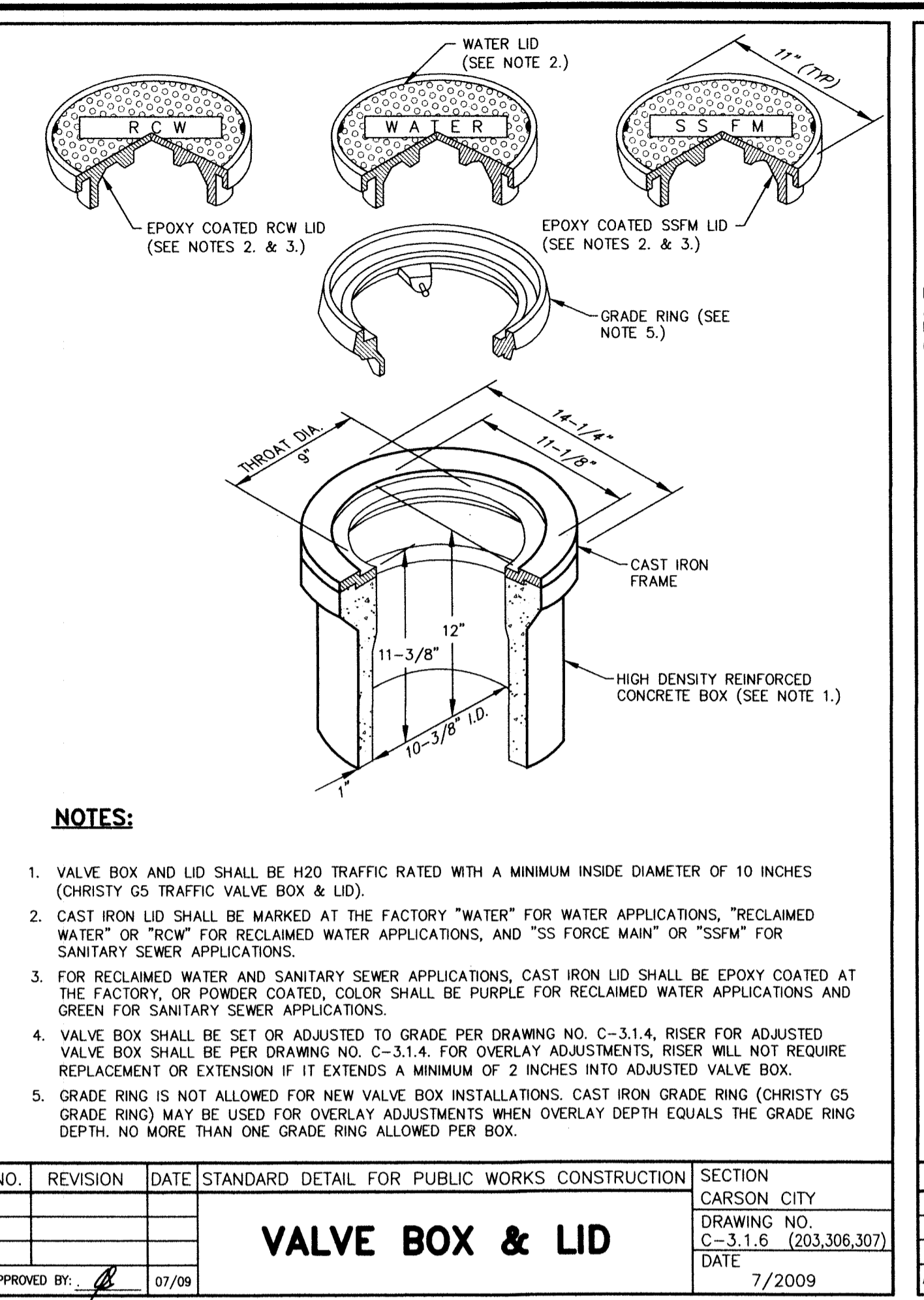
APPROVED BY: [Signature] 7/09



- NOTES:**
- CUT OPENING IN PIPE 1/2 INCH LONGER THAN TOTAL LENGTH OF VALVE. INSERT FLG x FLG VALVE USING FLANGED COUPLING ADAPTERS.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION
				CARSON CITY
				DRAWING NO. C-3.1.6 (203,306,307)
				DATE 7/2009

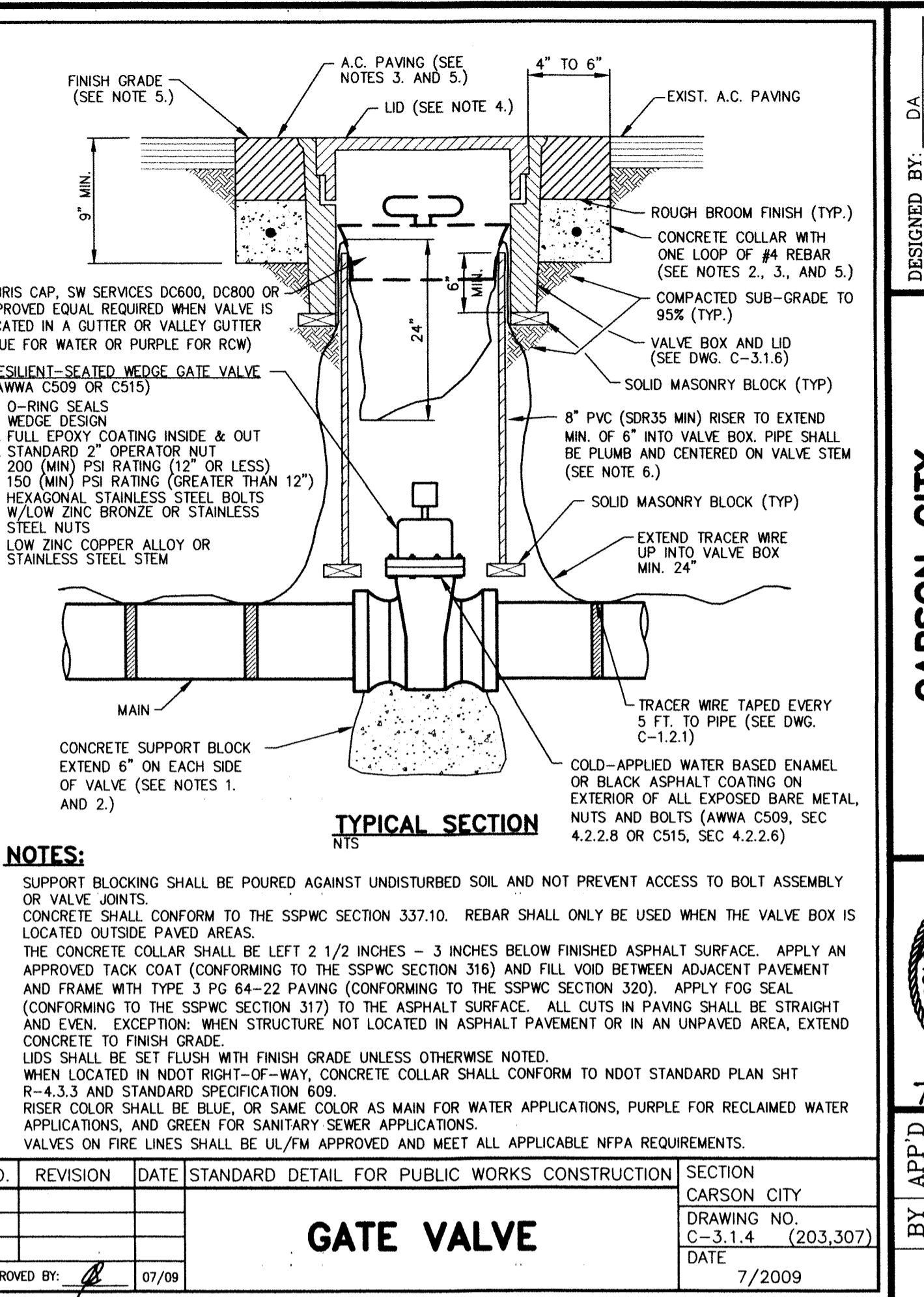
APPROVED BY: [Signature] 07/09



- NOTES:**
- VALVE BOX AND LID SHALL BE H20 TRAFFIC RATED WITH A MINIMUM INSIDE DIAMETER OF 10 INCHES (CHRISTY G5 TRAFFIC VALVE BOX & LID).
 - CAST IRON LID SHALL BE MARKED AT THE FACTORY "WATER" FOR WATER APPLICATIONS, "RECLAIMED WATER" OR "RCW" FOR RECLAIMED WATER APPLICATIONS, AND "SS FORCE MAIN" OR "SSFM" FOR SANITARY SEWER APPLICATIONS.
 - FOR RECLAIMED WATER AND SANITARY SEWER APPLICATIONS, CAST IRON LID SHALL BE EPOXY COATED AT THE FACTORY, OR POWDER COATED, COLOR SHALL BE PURPLE FOR RECLAIMED WATER APPLICATIONS AND GREEN FOR SANITARY SEWER APPLICATIONS.
 - VALVE BOX SHALL BE SET OR ADJUSTED TO GRADE PER DRAWING NO. C-3.1.4. RISER FOR ADJUSTED VALVE BOX SHALL BE PER DRAWING NO. C-3.1.4. FOR OVERLAY ADJUSTMENTS, RISER WILL NOT REQUIRE REPLACEMENT OR EXTENSION IF IT EXTENDS A MINIMUM OF 2 INCHES INTO ADJUSTED VALVE BOX.
 - GRADE RING IS NOT ALLOWED FOR NEW VALVE BOX INSTALLATIONS. CAST IRON GRADE RING (CHRISTY G5 GRADE RING) MAY BE USED FOR OVERLAY ADJUSTMENTS WHEN OVERLAY DEPTH EQUALS THE GRADE RING DEPTH. NO MORE THAN ONE GRADE RING ALLOWED PER BOX.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION
				CARSON CITY
				DRAWING NO. C-3.1.6 (203,306,307)
				DATE 7/2009

APPROVED BY: [Signature] 07/09



- NOTES:**
- SUPPORT BLOCKING SHALL BE POURED AGAINST UNDISTURBED SOIL AND NOT PREVENT ACCESS TO BOLT ASSEMBLY OR VALVE JOINTS.
 - CONCRETE SHALL CONFORM TO THE SSPWC SECTION 337.10. REBAR SHALL ONLY BE USED WHEN THE VALVE BOX IS LOCATED OUTSIDE PAVED AREAS.
 - THE CONCRETE COLLAR SHALL BE LEFT 2 1/2 INCHES - 3 INCHES BELOW FINISHED ASPHALT SURFACE. APPLY AN APPROVED TACK COAT (CONFORMING TO THE SSPWC SECTION 316) AND FILL VOID BETWEEN ADJACENT PAVEMENT AND FRAME WITH TYPE 3 PG 64-22 PAVING (CONFORMING TO THE SSPWC SECTION 320). APPLY FOG SEAL (CONFORMING TO THE SSPWC SECTION 317) TO THE ASPHALT SURFACE. ALL CUTS IN PAVING SHALL BE STRAIGHT AND EVEN. EXCEPTION: WHEN STRUCTURE NOT LOCATED IN ASPHALT PAVEMENT OR IN AN UNPAVED AREA, EXTEND CONCRETE TO FINISH GRADE.
 - LIDS SHALL BE SET FLUSH WITH FINISH GRADE UNLESS OTHERWISE NOTED.
 - WHEN LOCATED IN NDOT RIGHT-OF-WAY, CONCRETE COLLAR SHALL CONFORM TO NDOT STANDARD PLAN SHTR-4-3.3 AND STANDARD SPECIFICATION 609.
 - RISER COLOR SHALL BE BLUE, OR SAME COLOR AS MAIN FOR WATER APPLICATIONS, PURPLE FOR RECLAIMED WATER APPLICATIONS, AND GREEN FOR SANITARY SEWER APPLICATIONS.
 - VALVES ON FIRE LINES SHALL BE UL/FM APPROVED AND MEET ALL APPLICABLE NFPA REQUIREMENTS.

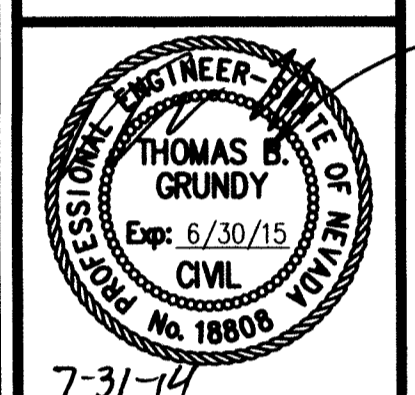
NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION
				CARSON CITY
				DRAWING NO. C-3.1.4 (203,307)
				DATE 7/2009

APPROVED BY: [Signature] 07/09

DESIGNED BY: DA
 DRAWN BY: BD
 CHECKED BY: TG
 DWG NO.: 5-1301CHLOE-B51
 SCALE (HORIZ): N.T.S.
 SCALE (VERT): X"=X'
 PLOT DATE: 2014 JULY 21

**CARSON CITY
 PUBLIC WORKS DEPARTMENT**

3505 BUTTI WAY CARSON CITY, NEVADA 89701
 PH: 775-887-2355 FAX: 775-887-2112



NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION
				CARSON CITY
				DRAWING NO. C-3.1.4 (203,307)
				DATE 7/2009

APPROVED BY: [Signature] 07/09

**WASTEWATER RECLAMATION PLANT
 SODIUM HYPOCHLORITE TANK REPLACEMENT
 PROJECT No. 051301.1**

DETAILS

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ELECTRICAL LEGEND	
SYMBOL	DESCRIPTION
	DETAIL IDENTIFICATION: TOP IS DETAIL/BOTTOM IS SHEET NUMBER
	NOTE IDENTIFICATION: NOTE NO. 1 ON SHEET E-1
	EQUIPMENT SCHEDULE IDENTIFICATION
	DUPLEX GFCI RECEPTACLE
	SINGLE-POLE TOGGLE SWITCH (VOLTAGE AS REQUIRED)
	MOTOR/PUMP (# INDICATES HORSEPOWER)
	METER
	LIMIT SWITCH
	CONTACTOR
	FLOW SWITCH
	FLOAT SWITCH
	CONTROL VALVE
	PRESSURE TRANSDUCER
	LEVEL TRANSDUCER
	INSTRUMENT TRANSMITTER
	SURVEILLANCE CAMERA
	JUNCTION BOX
	THERMOSTAT
	GROUND
	CIRCUIT BREAKER
	HAND/OFF/AUTO SWITCH
	COIL-DESIGNATION
	CONTACTOR
	TERMINAL LUG POINT
	FUSE
	SOLIDLY GROUNDED NEUTRAL BUS
	CONDUIT UP/DOWN
	PHASE CONDUCTOR; #12 THHN IN 3/4" C. U.O.N.
	CODE SIZE GROUND BONDING CONDUCTOR PER N.E.C. TABLE 250-95
	NEUTRAL CONDUCTOR; #12 THHN IN 3/4" C. U.O.N.
	UNDERGROUND FEEDER; (2)-#12 THHN IN 3/4" C. U.O.N.
	EXPOSED RUN, PARALLEL TO STRUCTURE IN UNFINISHED AREAS; (2)-#12 THHN IN 3/4" C. U.O.N.
	HOME RUN INDICATION. EX: 3-#12'S WITH 1-#12 NEUTRAL, AND 1-GROUND IN 3/4"C. TO PANELBOARD-LA, CIRCUITS 1,3,5
	BELDEN #8760 2/c #16 SHIELDED 300V CABLE IN 3/4"C.
	BELDEN #9946 16/10c + SHIELDED 300V CABLE IN 3/4"C.
	SLASHES INDICATE NO. OF #14 MTW STRANDED CONTROL CONDUCTORS IN CONDUIT.
	NOT TO SCALE
	CONDUIT
	TYPICAL
	BARE COPPER
	GALVANIZED RIGID STEEL CONDUIT
	EMPTY CONDUIT
	EXISTING
	RELOCATED
	DEMOLISH
	NEW
	NORMALLY CLOSED
	CARD READER
	ACCESS CONTROL PANEL
	RADIO FREQUENCY IDENTIFICATIONS
	ABOVE FINISHED GRADE
	UNLESS OTHERWISE NOTED
	RED-TRIANGLE SHUNT-TRIP BREAK-GLASS STATION

GENERAL ELECTRICAL REQUIREMENTS:

- A. FURNISH ALL LABOR, MATERIAL, EQUIPMENT, TOOLS, ACCESSORIES, ETC. REQUIRED FOR A COMPLETE ELECTRICAL SYSTEM.
- B. ALL WORK SHALL CONFORM WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE, NATIONAL BOARD OF FIRE UNDERWRITERS, APPLICABLE LOCAL CODES, AND POWER COMPANY STANDARDS.
- C. ALL MATERIAL SHALL BE NEW AND CONFORM WITH THE REQUIREMENT OF THE UNDERWRITER'S LABORATORIES, INC.
- D. WORKMANSHIP AND NEAT APPEARANCE SHALL BE OF THE SAME LEVEL OF IMPORTANCE AS ITS ELECTRICAL AND MECHANICAL EFFICIENCY.
- E. COORDINATE ALL WORK WITH THAT OF OTHER CONTRACTORS ON THE JOB AND ALSO WITH THAT OF THE OWNER. ANY COST FOR EXTRA WORK OR MATERIALS RESULTING FROM LACK OF COORDINATION, SHALL BE BORNE BY THIS CONTRACTOR.
- F. POWER CONDUCTORS SHALL BE COPPER #12 AWG MINIMUM. #8 AWG AND LARGER SHALL BE STRANDED. ALL CONDUCTORS TO BE TYPE XHHW-2. ALL WIRING SHALL BE INSTALLED IN CONDUIT. CONTROL CONDUCTORS TO BE #14 XHHW-2 STRANDED.
- G. ALL CONDUIT WITHIN 18" OF GRADE OR FINISHED FLOOR TO BE GALVANIZED RIGID STEEL. ALL CONDUIT BELOW 18" OF GRADE TO BE PVC-TYPE SCHEDULE-40. ALL UNDERGROUND ELBOWS TO BE GALVANIZED RIGID STEEL (GRS). ALL METALLIC CONDUITS IN CONTACT WITH EARTH TO BE EITHER PVC-GRSC OR HALF-LAP WRAPPED IN SCOTCH-50 ELECTRICAL TAPE. FOR CONDUITS INSTALLED OUTDOORS, PROVIDE A WATER-TIGHT CONDUIT SYSTEM, (IMC OR GRS ONLY) INCLUDING THREADED HUBS AT EQUIPMENT PENETRATIONS, LIQUID-TIGHT CONNECTORS, & SEALS. INCLUDE 'CGB' TYPE CONNECTORS WHERE CABLES LEAVE CONDUITS & EXTEND TO SENSORS.
- H. WIRING DEVICES SHALL BE HUBBELL, OR EQUAL. ALL DEVICES SHALL BE EQUAL TO THE FOLLOWING AND SHALL HAVE WHITE DEVICE PLATES:
 - ENCLOSURE SWITCHES:
 - A. SPST HUBBELL NO. 1221-1
 - ENCLOSURE RECEPTACLES:
 - A. GFCI DUPLEX 20A, 125V HUBBELL NO. GF5262-1
- I. THIS CONTRACTOR SHALL GUARANTEE TO THE OWNER ALL WORK PERFORMED UNDER THIS CONTRACT TO BE FREE FROM DEFECTS IN WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE.
- J. ALL CONDUCTOR CRIMPING ON CONDUCTORS #6 AWG OR GREATER TO BE HYDRAULICALLY CRIMPED, USING FULLY ANNULAR DIE-TYPE CRIMPER (MATCH COLOR TO EQUIPMENT RATING).
- K. PROVIDE NEW TYPED PANEL DIRECTORIES FOR ALL NEW AND MODIFIED 120/208/240V LOAD CENTERS AND PANELBOARDS. PROVIDE BLACK PHENOLIC NAMEPLATES FOR BREAKERS INSTALLED IN 277/480V PANELS.
- L. SUBMIT DIGITAL COPIES OF SHOP DRAWINGS AND/OR MANUFACTURERS DESCRIPTIVE DATA ON ALL PROPOSED ELECTRICAL EQUIPMENT, CABLING, CONDUIT, & ACCESSORIES FOR APPROVAL WITHIN THIRTY (30) DAYS AFTER AWARD OF CONTRACT. THE CONTRACTOR SHALL REVIEW ALL SHOP DRAWINGS PREPARED BY HIS SUPPLIERS AND SHALL MARK ALL COPIES AS ACCEPTABLE TO HIM. THE CONTRACTOR'S ACCEPTANCE SHALL INCLUDE CERTIFICATION THAT THE REQUIRED ELECTRICAL CONNECTIONS HAVE BEEN NOTED AND THAT EQUIPMENT CAN BE INSTALLED IN THE SPACE AVAILABLE.
- M. ELECTRICAL EQUIPMENT SHALL BE AS MANUFACTURED BY EATON, SIEMENS, ALLEN-BRADLEY, OR SQUARE-D.
- N. PROVIDE THE SERVICES OF A FULLY TRAINED AND EQUIPPED NETA-CERTIFIED TESTING COMPANY (TEST PERFORMED BY CONTRACTOR WILL NOT BE ACCEPTED) TO TEST, CALIBRATE, AND WHERE NECESSARY, PLACE IN OPERATION THE ELECTRICAL SYSTEM:
 - (A) PHASE OVER-CURRENT DEVICES ON ALL FEEDERS.
 - (B) GROUND FAULT PROTECTIVE DEVICES.
 - (C) GROUND RESISTANCE TEST FOR GROUNDING ELECTRODE SYSTEMS USING FALL OF POTENTIAL METHOD.
 - (D) CONDUCTOR INSULATION TESTING BY WAY OF 500VDC MEGGER.
- O. ALL SURFACE OUTLET BOXES TO BE "FS" CAST STEEL WITH MATCHING COVERS.
- P. ALL CONCRETE WORK TO BE PER CIVIL AND/OR STRUCTURAL DRAWINGS, SPECIFICATIONS, REQUIREMENTS, AND DIAGRAMS.
- Q. FINAL CONDUIT ROUTING FOR NEW CONDUIT SYSTEMS TO BE DETERMINED BY ELECTRICAL CONTRACTOR; HOWEVER SEPARATE DEDICATED CONDUITS SHALL BE PROVIDED FOR ANALOG, FIBER OPTIC, SIGNAL, DISCRETE SIGNAL, AND POWER. DO NOT USE EQUIPMENT ENCLOSURES AS PASS-THROUGH WIRE-WAY.
- R. INSTALL ALL EMPTY CONDUITS WITH PULL STRING.
- S. ALL COVER CONTROLS SHALL BE 30.5MM NEMA TYPE.
- T. FIBER OPTIC END TO END POWER METER & OPTICAL TIME DELAY REFLECTOMETER REPORTS FOR EACH STRAND SHALL BE PROVIDED TO THE OWNER. SPLICE LOSS AND OR CONNECTOR SHALL BE REQUIRED TO HAVE NO MORE THAN 0.3dB LOSS IN ACCORDANCE WITH EIA/TIA 568 STANDARDS.
- U. FIBER OPTIC CABLE SWITCH SHALL BE LASER OPTIMIZED OM4 12-STRAND TYPE. OPTICAL CABLE CORPORATION #DX012KALE9QP.

EQUIPMENT SCHEDULE

ITEM	QUANTITY	DESCRIPTION
1	2	SECURITY ACCESS CONTROL SYSTEM TO INCLUDE: <ul style="list-style-type: none"> - 24VDC ELECTRICALLY ACTUATED MOTOR DOOR LOCK SET, KEYED ON BOTH SIDES, WITH DOOR POSITION INDICATOR AND LATCH-BACK CONFIRMATION CONTACTS. - MATCHING CABLE-PASS DOOR HINGE ASSEMBLY - LOW PROFILE RFID READER STATION; HID THINLINE II SERIES, MODEL 5395 (GRAY) - POWER SUPPLY (120VACx5-16VDC); PHI ELR150 SERIES - SYSTEM CONTROLLER - ETHERNET LAN SERIAL NETWORK SERVER - NEMA-1 ENCLOSURES - DIN RAIL MOUNTED EQUIPMENT - OTHER EQUIPMENT NOT LISTED HERE REQUIRED FOR A FUNCTIONING ACCESS SYSTEM
2	1	150A 480V 3Ø NEMA-1 ENCLOSED MOTOR CONTROL CENTER CIRCUIT BREAKER UNITS WITH DISCONNECT HANDLE. ALLEN-BRADLEY #2193FB-BKC-150CB. EXISTING MOTOR CONTROL CENTER IS ALLEN-BRADLEY CENTERLINE 2100 SERIES.
3	1	IP-ADDRESSABLE PAN-TILT-ZOOM (PTZ) SURVEILLANCE CAMERA WITH PENDANT KIT (CONFORM LOCATIONS WITH ELECTRICAL ENGINEER). AXIS MODEL M3007-PV & T94F01D.
4	1	EYE-WASH STATION FLOW SWITCH.
5	1	CHLORINE CONTAINMENT FLOAT SWITCH. FLOAT SWITCH SHALL BE IMPERVIOUS TO SODIUM HYPOCHLORITE AND SHALL ALARM WHEN MORE THAN 1" OF FLUID IS WITHIN THE CONTAINMENT AREA.
6	2	4-20mA 2-WIRE LOOP POWERED ULTRA-SONIC CHLORINE TANK LEVEL TRANSMITTER WITH 20-FOOT TRANSDUCER RANGE, 1/2" NPT GLANDULAR CABLE INLET, ETFE COPOLYMER BODY, HART PROTOCOL, & 2" NPT TAPER PROCESS CONNECTION. SIEMENS SITRANS PROBLE LU #7ML5221-2BA11. CONTRACTOR SHALL SUPPLY ONE HANDHELD PROGRAMMER.
7	1	REPLACEMENT RTU CABINET COMPONENTS TO INCLUDE: <ul style="list-style-type: none"> - TOUCH SCREEN OPERATOR INTERFACE TERMINAL SCHNEIDER MAGELIS HMIGT02300 5.7" - PLC (SCHNEIDER M340) - ANALOG INPUT MODULES - DIGITAL INPUT MODULES INCLUDE ALL NECESSARY ACCESSORY COMPONENTS TO ENSURE A FUNCTIONING SCADA TERMINAL CABINET.
8	1	48VDC MULTI-MODE 2-TX, 2-RX, ETHERNET FIBER-OPTIC SIGNAL CONVERTER/GATEWAY FOR USE WITH SC-TYPE FIBER OPTIC CABLE CONNECTORS. INCLUDE A 120VACx48VDC 75W POWER SUPPLY. EQUIPMENT SHALL BE DIN-RAIL MOUNT TYPE. GARRETTCOM #6KL: SLOT-A #6KLP-48VDC, SLOT-B: #6KL-2GSFP, #SFP-SX (2 EACH), SLOT-C: #6KL4-RJ45, OPTIONS: #6KL, #08-CRM, #MNS-6K, & MOXA #DR-75-48.
9	1	FIBER OPTIC PATCH PANEL. DINSPEC #SNAP-12SC-MM.
10	1	480V 3Ø NEMA-1 DIGITAL POWER MONITOR UNIT WITH MOTOR CONTROL CENTER FOR 600A FEED, CURRENT TRANSFORMERS, POTENTIAL TRANSFORMERS, MODBUS TCP COMMUNICATIONS. ELECTRO INDUSTRIES SHARK #200-60-XX-V3-XX-IND100S-X-X. MOUNT ON A MATCHING MCC PANEL COVER. EXISTING MOTOR CONTROL CENTER IS ALLEN-BRADLEY CENTERLINE 2100 SERIES.
11	1	12"Hx10"Wx6"D HINGED & WINDOWED STAINLESS STEEL TANK LEVEL DISPLAY ENCLOSURE TO INCLUDE (2)-LOOP-POWERED PANEL-MOUNT REMOTE DIGITAL DISPLAYS WITH 4-20mA INPUT, 4-20mA OUTPUT, & 1-INCH LED DISPLAY. SIEMENS RD100 (2)-#7ML5741-1AA00-0 & (2)-#7ML1930-1BN (OR AS APPROVED BY PROJECT MANAGER) IN A HOFFMAN #LWC302515SS WITH #LP3025 BACKPANEL.
12	1	12"Hx10"Wx6"D HINGED, QUICK-RELEASE LATCH, SOLID COVER POLYCARBONATE TANK LEVEL DISPLAY ENCLOSURE TO INCLUDE (2)-LOOP-POWERED PANEL-MOUNT REMOTE DIGITAL DISPLAYS WITH 4-20mA INPUT, 4-20mA OUTPUT, & 1-INCH LED DISPLAY. SIEMENS RD100 (2)-#7ML5741-1AA00-0 & (2)-#7ML1930-1BN (OR AS APPROVED BY PROJECT MANAGER) IN A HOFFMAN #Q303018PCIQR WITH #Q30301P BACKPANEL & #Q1KH HINGE-KIT.

REMARKS: CONTRACTOR TO COORDINATE EQUIPMENT SCHEDULE QUANTITIES WITH ELECTRICAL DRAWINGS AND MODIFY AS REQUIRED. VERIFY PART NUMBERS AND OPTIONS WITH EXISTING CONDITIONS, DESCRIPTION, & DIAGRAMS.

DESIGNED BY: MAJ

DRAWN BY: SCB

CHECKED BY: MAJ

LFSJA

DWG NO.:

SCALE (HORIZ): SHOWN

SCALE (VERT): SHOWN

PLOT DATE: JULY 31, 2014

CARSON CITY PUBLIC WORKS DEPARTMENT

3505 BUTTI WAY CARSON CITY, NEVADA 89701
PH: 775-887-2355 FAX: 775-887-2112

REV.	DATE	DESCRIPTION	BY	APP'D

SODIUM HYPOCHLORITE TANK REPLACEMENT PROJECT No. 5.1501

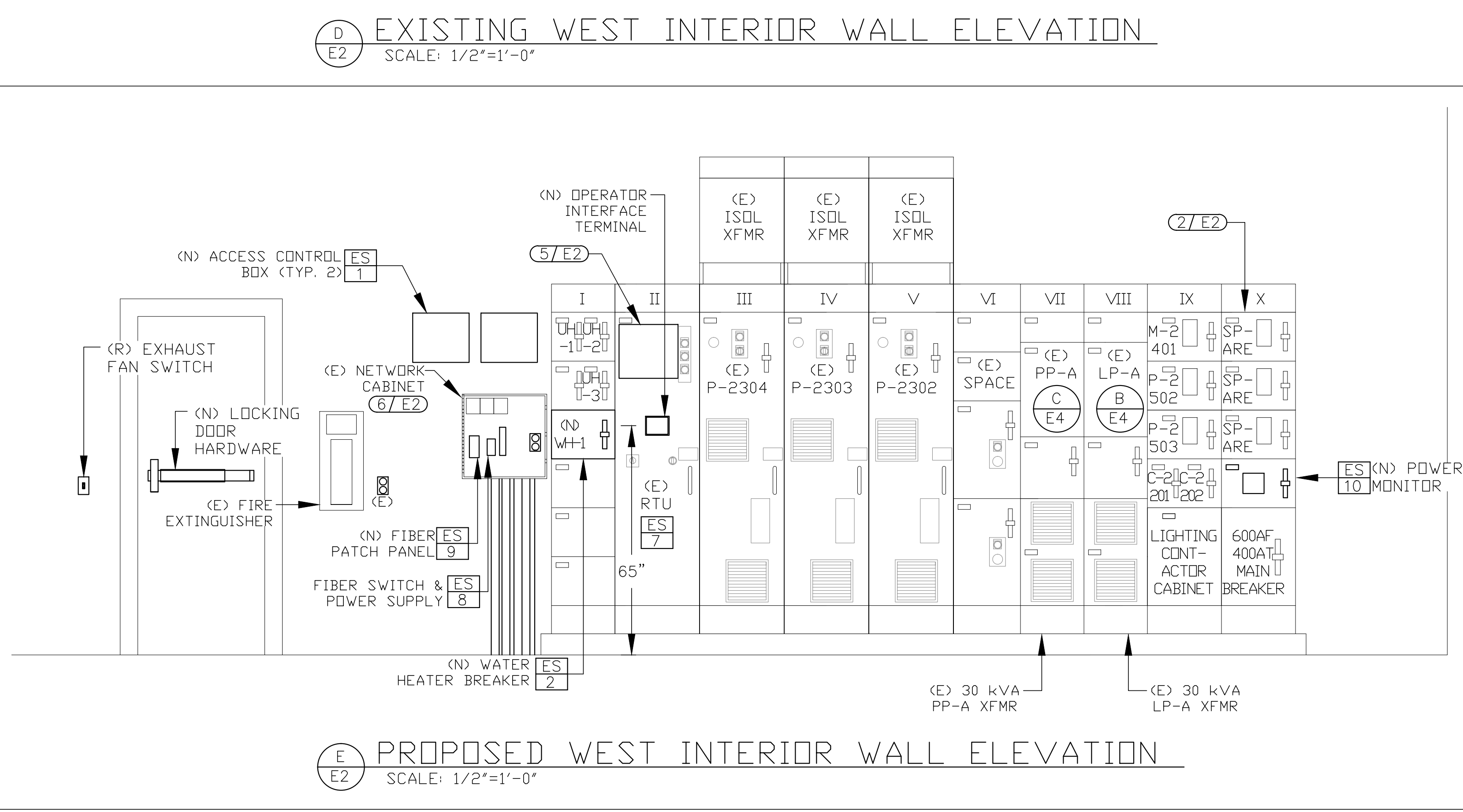
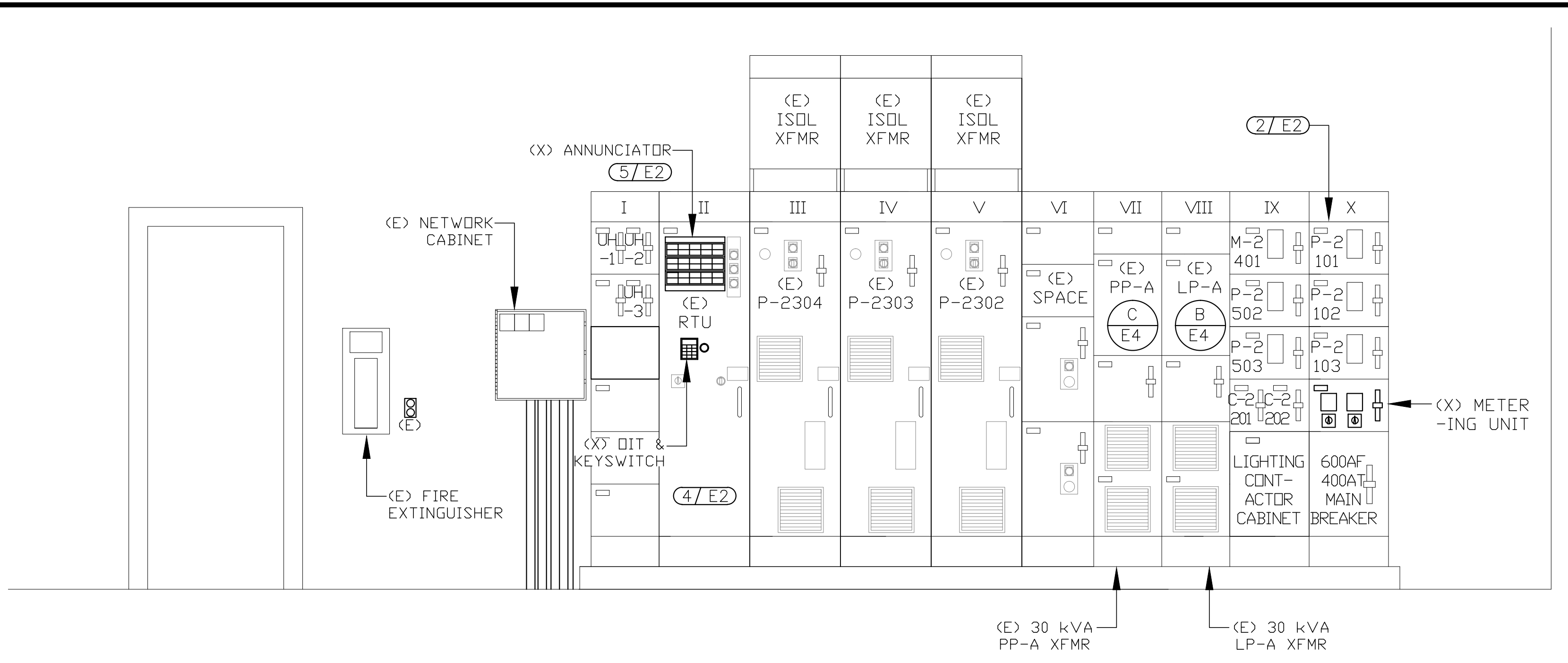
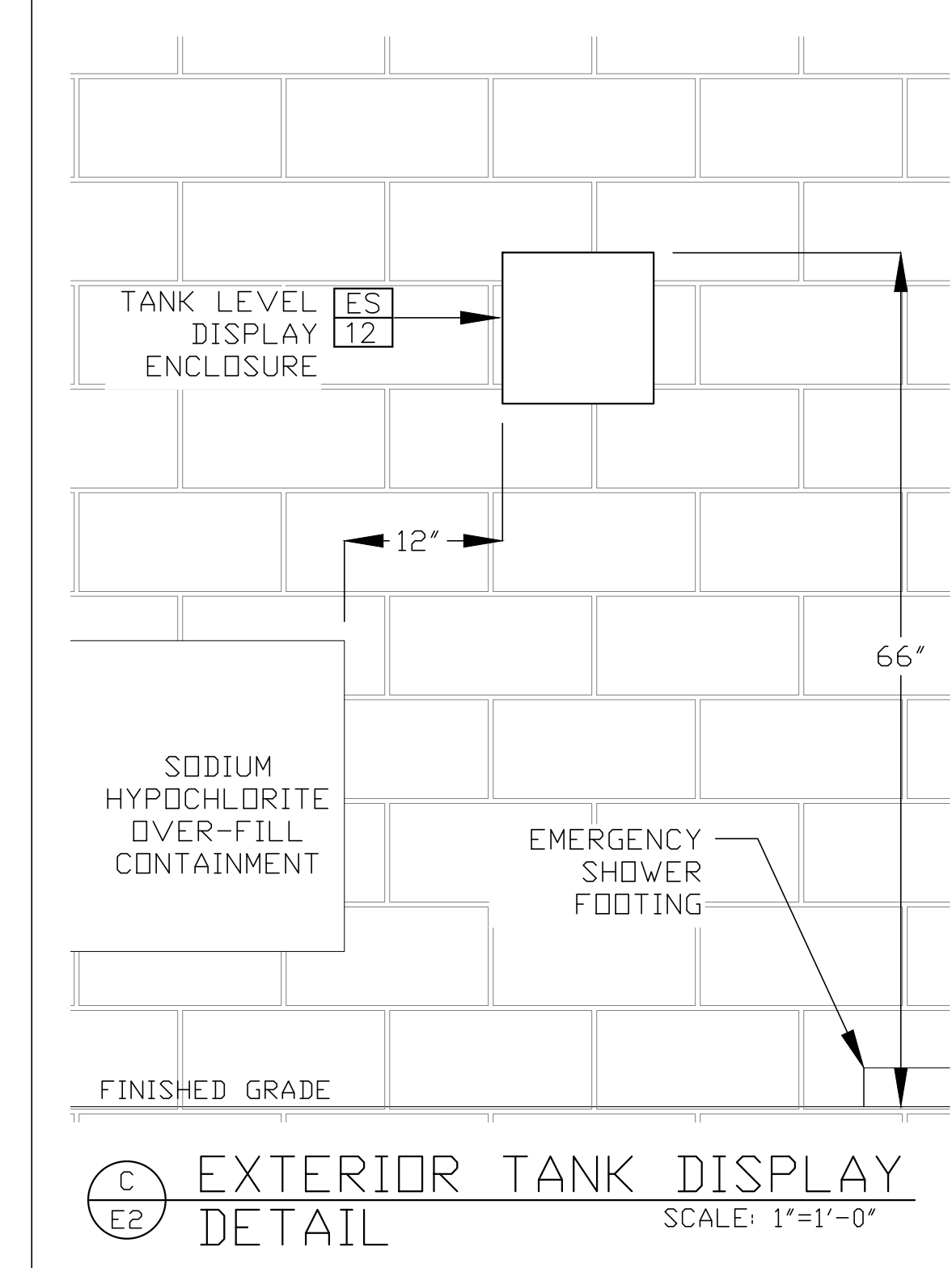
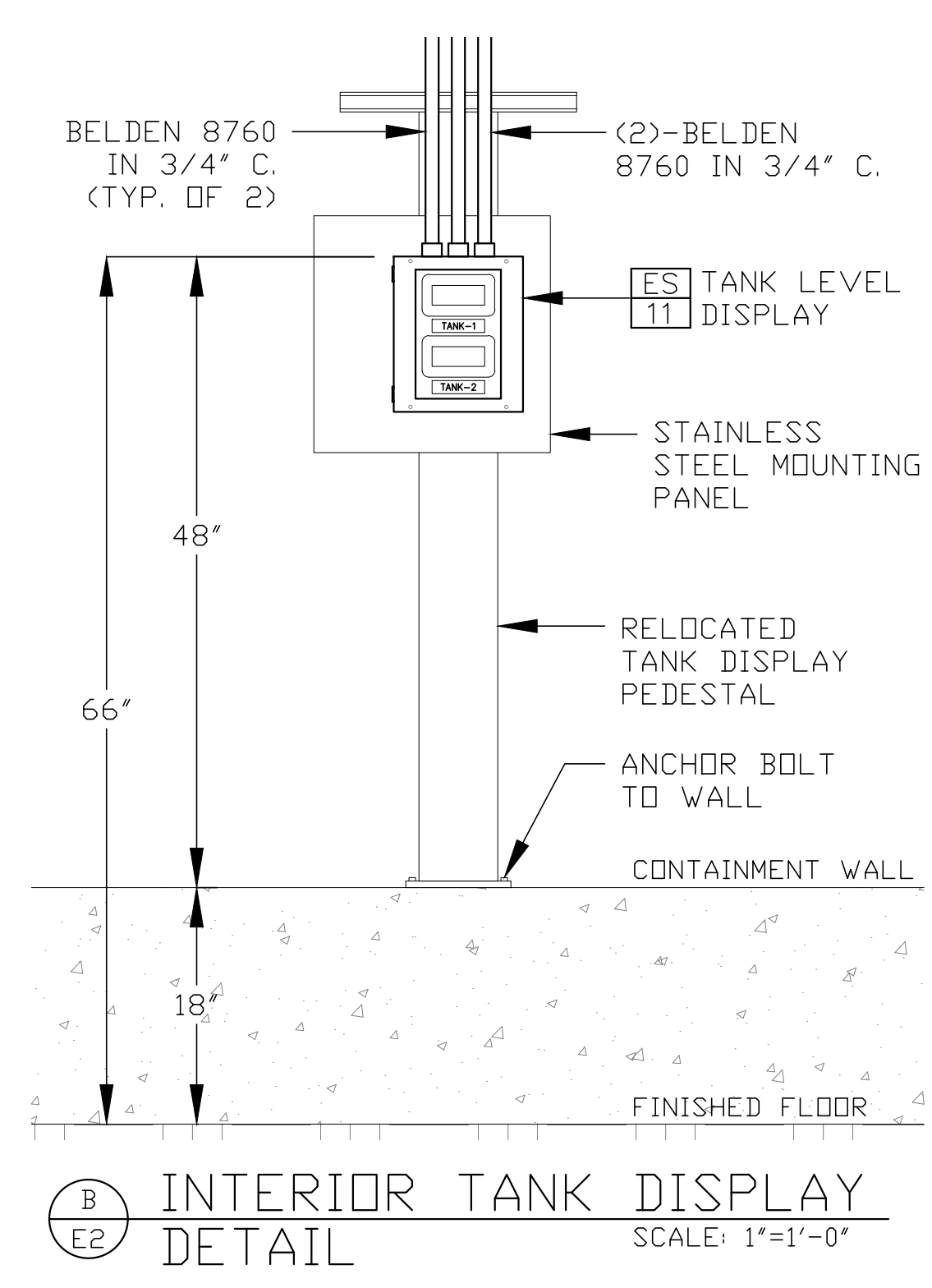
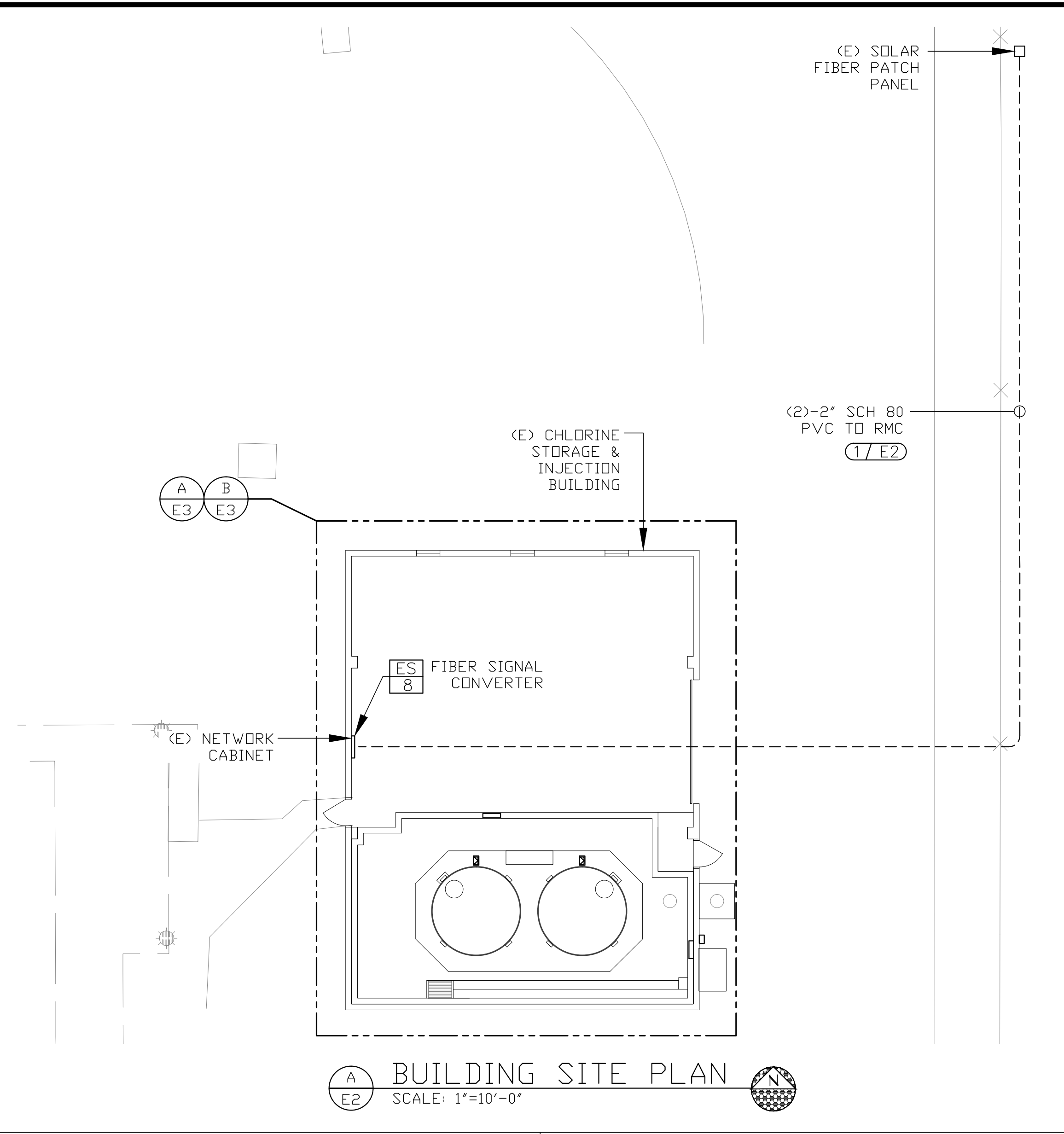
LEGEND, GENERAL REQUIREMENTS, & EQUIPMENT SCHEDULE

SHEET

E1

OF

5

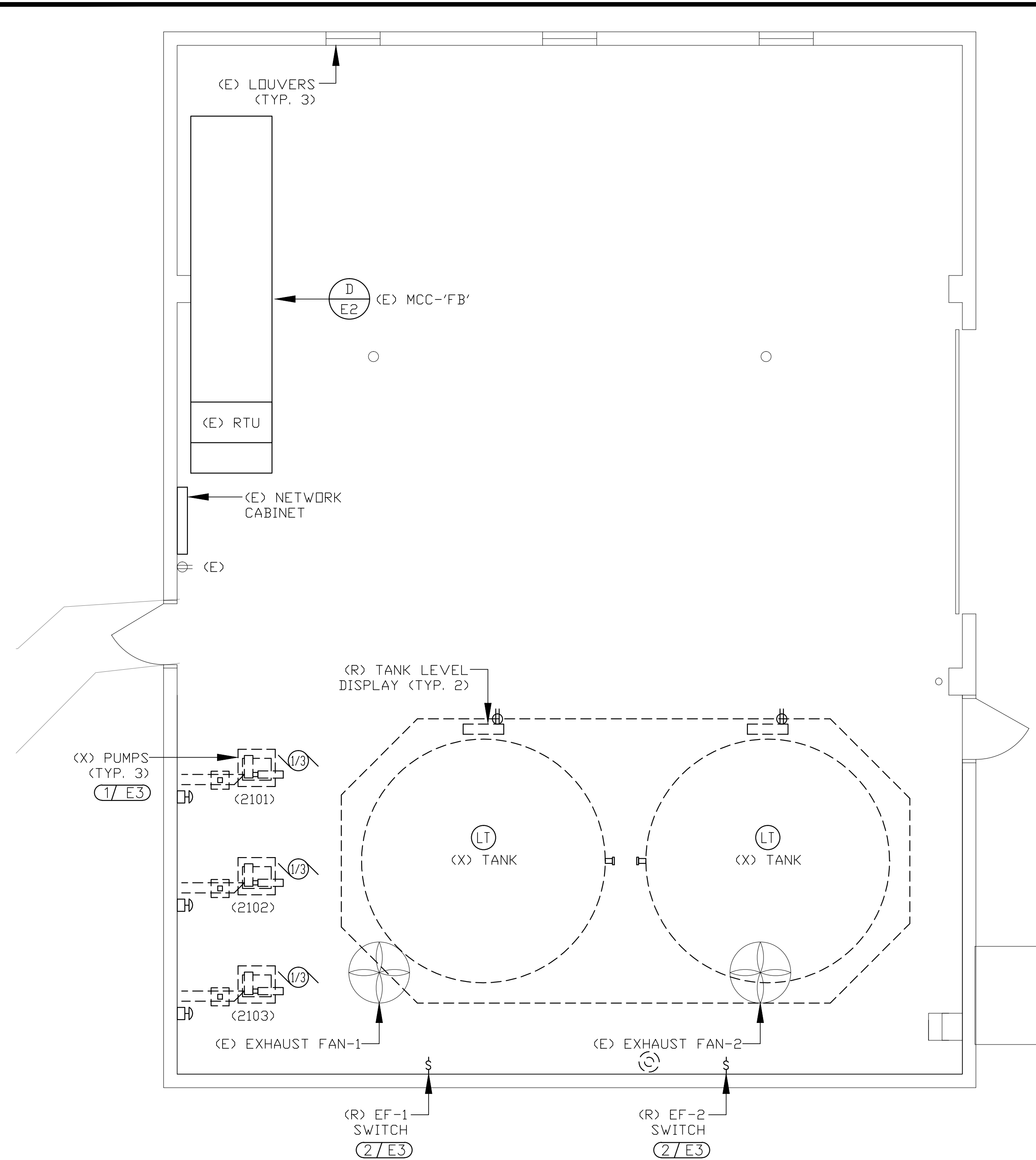


- 7 E2** SHEET NOTES
- INSTALL A NEW 12-STRAND LASER OPTIMIZED MULTI-MODE FIBER OPTIC CABLE BETWEEN EXISTING NETWORK CABINET & EXISTING SOLAR NETWORK CABINET IN NEW 2" C. TERMINATE CABLE ON EACH END WITH SC-TYPE CONNECTORS. PERFORM OPTICAL TESTS AND OBTAIN RESULTS IN COMPLIANCE WITH GENERAL REQUIREMENT 'T'.
 - EXISTING COAGULANT PUMP STARTERS, BREAKERS, & DISCONNECTS TO REMAIN AS SPARES.
 - INSTALL A NEW FIBER-OPTIC/ETHERNET SIGNAL CONVERTER IN EXISTING NETWORK EQUIPMENT CABINETS. INCLUDE ALL DIN-RAIL MOUNTED EQUIPMENT ACCESSORIES & CONNECT COMPLETE.
 - REMOVE EXISTING RTU EQUIPMENT SHALL BE SALVAGED TO OWNER.
 - REMOVE EXISTING PANALARM ANNUNCIATOR PANEL AS PART OF SCADA/RTU IMPROVEMENTS. INSTALL A PANEL CUT-OUT PLATE TO PATCH HOLE LEFT FROM REMOVING ANNUNCIATOR.
 - PROVIDE AND INSTALL A DUPLEX RECEPTACLE WITHIN THE NETWORK EQUIPMENT ENCLOSURE. CIRCUIT TO PANEL-'LP'-A.

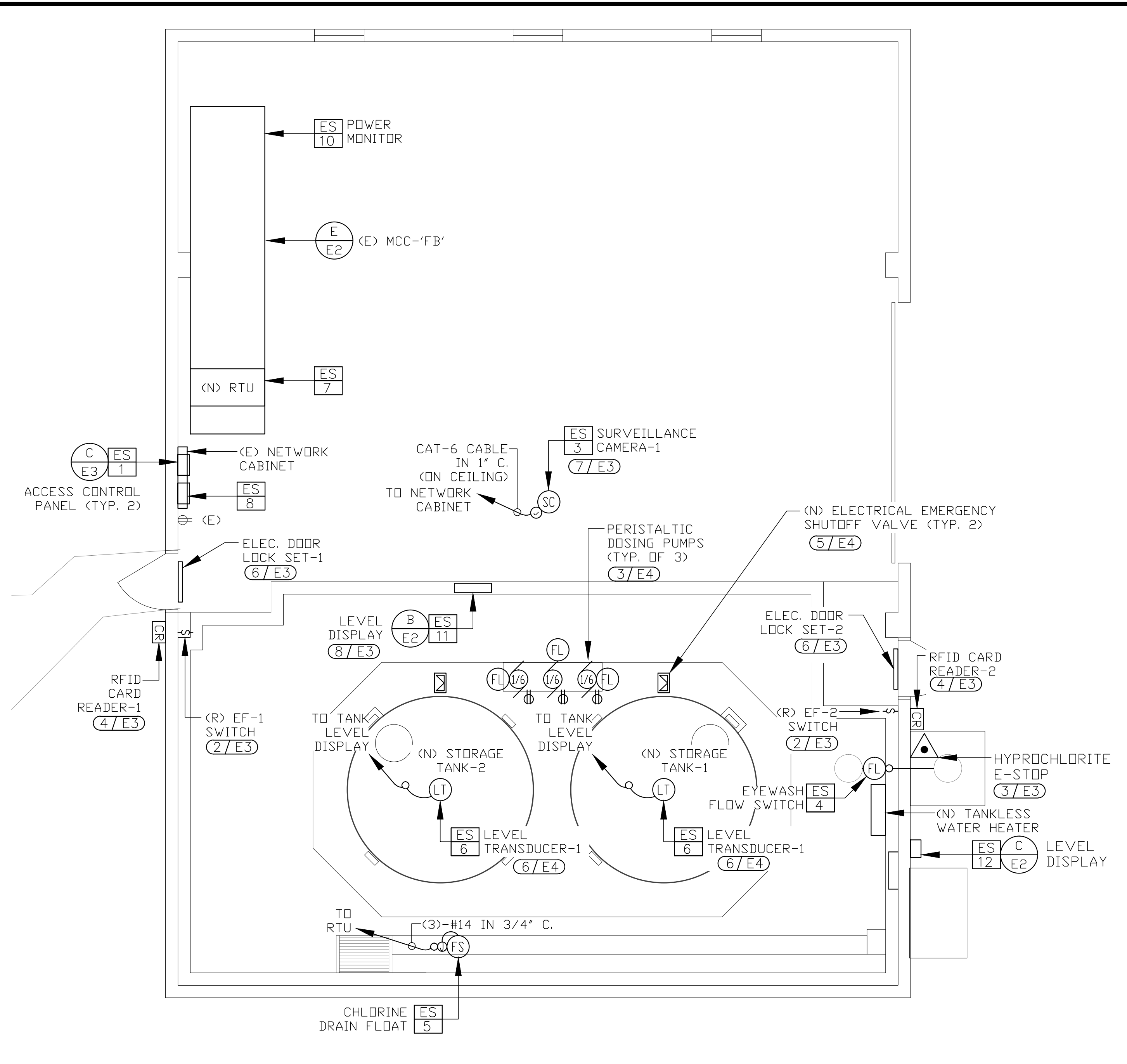
JENSEN ENGINEERING INC.
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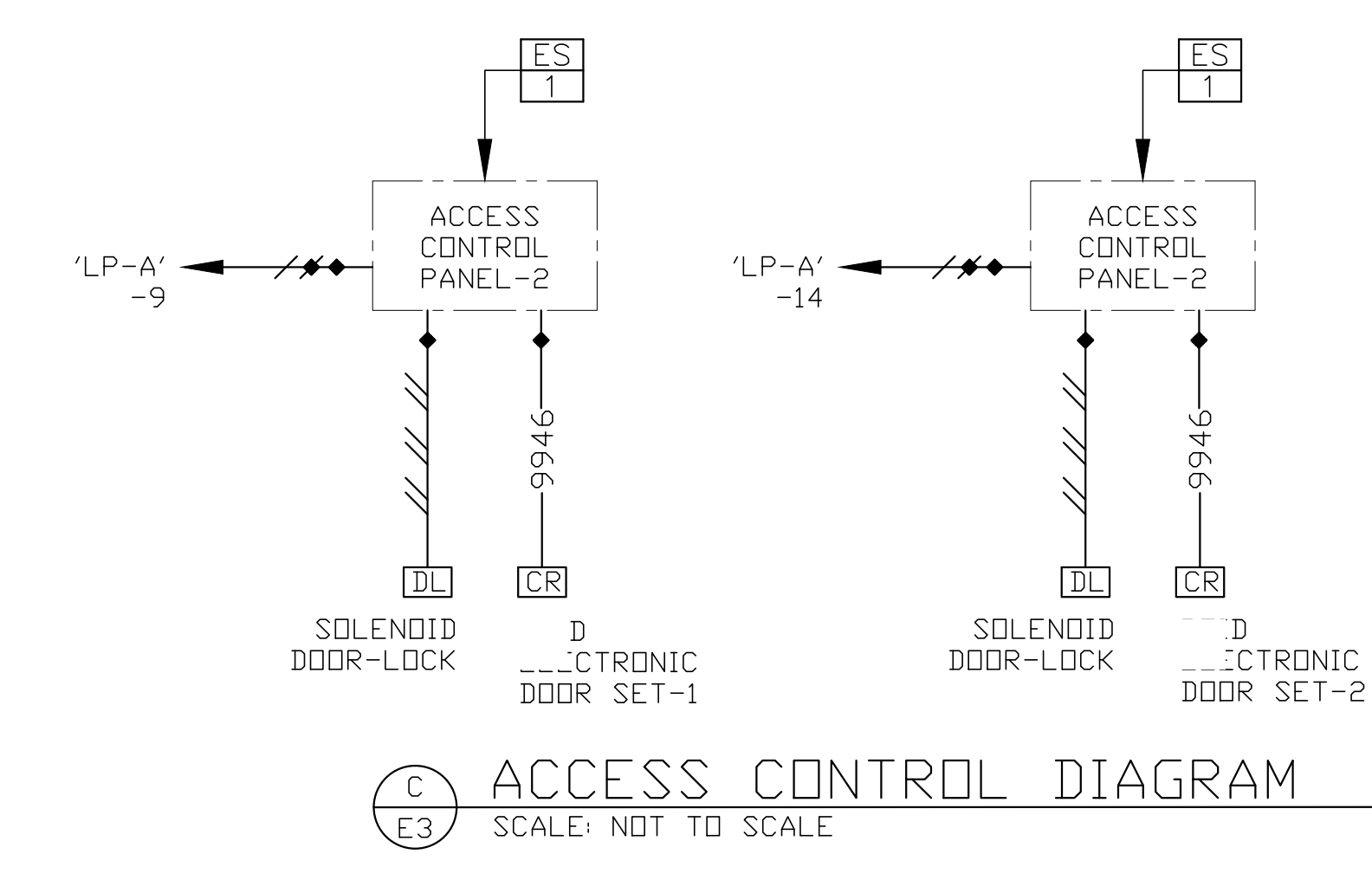
DESIGNED BY: MAJ	DRAWN BY: SCB	CHECKED BY: MAJ	DWG NO.: LFS3A	SCALE (HORIZ): SHOWN	SCALE (VERT): SHOWN	PILOT DATE: JULY 31, 2014
CARSON CITY PUBLIC WORKS DEPARTMENT						
BY APP'D	DESCRIPTION	DATE	REV.			
				SODIUM HYPOCHLORITE TANK REPLACEMENT PROJECT No. 5.1501		
				SITE PLAN & DETAILS		
				SHEET E2 OF 5		



(A) BUILDING DEMOLITION PLAN
SCALE: 1/4"=1'-0"



(B) BUILDING PROPOSED PLAN
SCALE: 1/4"=1'-0"



(C) ACCESS CONTROL DIAGRAM
SCALE: NOT TO SCALE

ACCESS CONTROL SYSTEM

SECURITY ACCESS CONTROL SYSTEM TO BE INSTALLED BY OTHERS; PROVIDE THE SERVICES OF A SECURITY CONTROL SYSTEM INTEGRATOR (SUCH AS STANLEY) TO PLACE INTO OPERATION A DOOR ACCESS CONTROL SYSTEM.

SHEET NOTES

- REMOVE ELECTRICAL CONNECTION TO EXISTING COAGULANT PUMP. (CONDUITS & CONDUCTORS) INCLUDING WALL-MOUNTED OPERATOR PUSHBUTTON STATIONS.
- RELOCATE EXISTING EXHAUST FAN SWITCHES AS SHOWN IN PROPOSED BUILDING POWER PLAN. CONNECT RELOCATED SWITCHES TO EXISTING EXHAUST FAN CIRCUIT BY EXTENDING (2)-#12 & #12 GND IN 3/2" C. TO NEW LOCATION.
- PROVIDE MINIMUM 12" RED IDENTIFICATION TRIANGLE AT 480V HYPOCHLORITE E-STOP. MOUNT HYPOCHLORITE E-STOP AT +84" A.F.G.
- INSTALL RFID CARD READER ON AN OUTDOOR RATED, SURFACE MOUNT, SINGLE GANG, WEATHER TIGHT ELECTRICAL BOX. CONNECT NEW RFID CARD READER TO ACCESS CONTROL PANEL WITH BELDEN #9946 16/10C +SHIELDING 300V CABLE IN 3/4"C.
- CONNECT NEW TANKLESS WATER HEATER TO NEW MCC CIRCUIT BREAKER WITH (3)-#3/0 & #6 GND IN 2"C.
- PROVIDE (6)-#14 & #14 GND IN 3/4"C. TO ACCESS CONTROL PANEL.
- COORDINATE MOUNTING LOCATION WITH PROJECT MANAGER PRIOR TO INSTALLATION. PROGRAMMING BY OWNER.
- RELOCATE EXISTING STAINLESS STEEL TANK LEVEL DISPLAY PEDESTAL FROM CURRENT LOCATION TO LOCATION SHOWN. INSTALL NEW EQUIPMENT ON EXISTING MOUNTING PANEL. MODIFY LABEL CHEMICAL LEVEL DISPLAYS WITH BLACK PHENDLIC NAMEPLATES ENGRAVED WITH 1/2" WHITE LETTERS READING: "TANK-1" & "TANK-2".

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DESIGNED BY: MAJ
DRAWN BY: SCB
CHECKED BY: MAJ
DWG NO.: LFS3A
SCALE (HORIZ): SHOWN
SCALE (VERT): SHOWN
PLOT DATE: JULY 31, 2014

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MICHAEL J. JENSEN
Exp. 6/30/15
ELECTRICAL
Lic. No. E 021568
7/31/14

REV.	DATE	DESCRIPTION	BY	APP'D

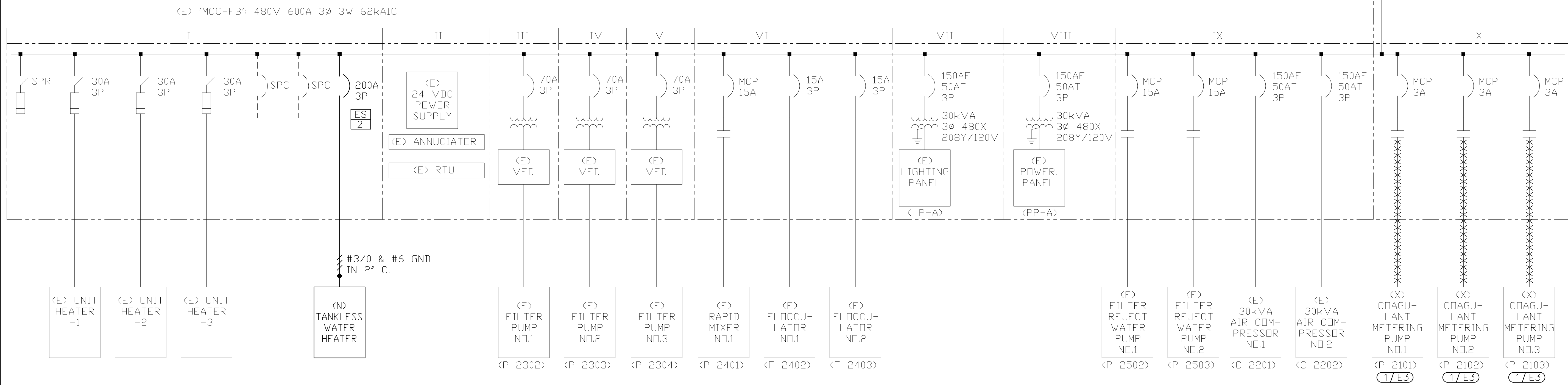
SODIUM HYPOCHLORITE TANK REPLACEMENT PROJECT No. 5.1301

BUILDING DEMOLITIONS & PROPOSED PLANS

SHEET **E3** OF **5**

SHEET NOTES

- REMOVE EXISTING AMMETER AND VOLTMETER. INSTALL NEW POWER MONITOR IN PLACE. PROVIDE NECESSARY MCC PANEL C
- USE EXISTING SPARE BREAKER IN PANEL-'LP-A', CKT-9, FOR NEW ACCESS CONTROL PANEL POWER. CONNECT WITH (2)-#12 & #12 GND IN 3/4"C.
- USE EXISTING SPARE BREAKERS IN PANEL-'LP-A', CKT-13,15, & 17, FOR NEW HYPOCHLORITE METERING PUMP POWER. CONNECT WITH (2)-#12 & #12 GND IN 3/4"C. (EACH).
- USE EXISTING SPARE BREAKER IN PANEL-'LP-A', CKT-19, FOR NEW NETWORK EQUIPMENT ENCLOSURE RECEPTACLE. CONNECT WITH (2)-#12 & #12 GND IN 3/4"C.
- CONNECT ELECTRICAL EMERGENCY SHUTOFF VALVE TO RTU WITH (3)-#14 IN 3/4" CONDUIT.
- CONNECT LEVEL TRANSMITTER TO LEVEL DISPLAY WITH BELDEN #8760 IN 3/4" CONDUIT.



A SINGLE-LINE DIAGRAM
SCALE: NOT TO SCALE

PANELBOARD SCHEDULE												
PANEL-'LP-A'					LOCATION: MCC-FB							
208Y/120V					3-PHASE, 4-WIRE							
MOUNTING: MCC					BUS AMPERES: 100A							
CKT	LOAD KVA			BREAKER	DESCRIPTION	DESCRIPTION	BREAKER	LOAD KVA			CKT	
	A-Ø	B-Ø	C-Ø					AMP	P	A-Ø		B-Ø
				100	3	MAIN BREAKER						
1	1.06			20	1	FILTER BLDG. LIGHTS					2	
3		0.67		20	1	FILTER BLDG. LIGHTS					4	
5			0.02	20	1	LIGHTING CONTACTOR					6	
7	0.28			20	1	FILTER BLDG. EMER. LTS.				0.54	8	
9		0.30		20	1	ACCESS CONTROL PANEL				0.72	10	
11			0.34	20	1	FILTER BLDG. OUTS. LTS.				0.72	12	
13	0.30			20	1	HYPD. METERING PUMP 1				0.00	14	
15		0.30		20	1	HYPD. METERING PUMP 2				0.00	16	
17			0.30	20	1	HYPD. METERING PUMP 3				0.00	18	
19	0.25			20	1	NETWORK CAB. POWER				0.00	20	
21						SPACE					22	
23						SPACE					24	
25						SPACE					26	
27						SPACE					28	
29						SPACE					30	
	1.89	1.27	0.66			KVA (SUBTOTAL)				1.52	1.64	1.26
	3.41	2.91	1.92			KVA (TOTAL)						
	29	24	16			AMPERES						

B PANEL-'LP-A' SCHEDULE
SCALE: NOT TO SCALE

PANELBOARD SCHEDULE												
PANEL-'PP-A'					LOCATION: MCC-FB							
208Y/120V					3-PHASE, 4-WIRE							
MOUNTING: MCC					BUS AMPERES: 100A							
CKT	LOAD KVA			BREAKER	DESCRIPTION	DESCRIPTION	BREAKER	LOAD KVA			CKT	
	A-Ø	B-Ø	C-Ø					AMP	P	A-Ø		B-Ø
				100	3	MAIN BREAKER						
1	1.38			20	1	GAS HEATING UNIT					2	
3		1.38		20	1	LCP-1 (FILTER PANEL)				0.05	4	
5			1.40	20	1	LCP-2 (FILTER PANEL)				0.05	6	
7				20	1	LCP-3 (FILTER PANEL)				0.05	8	
9	0.25			20	1	DRYER					10	
11		0.20		20	1	ANNUNCIATOR				0.35	12	
13			0.25	20	1	EXHAUST FAN 1 (EF-1)				0.35	14	
15	0.05			20	1	EXHAUST FAN 2 (EF-2)				0.10	16	
17			0.00	20	1	PLC				0.10	18	
19	0.00		0.00	20	1	24VDC POWER SUPPLY				0.06	20	
21				20	1	24VDC POWER SUPPLY				0.10	22	
23				20	1	SPARE					24	
25				20	1	SPARE					26	
27				20	1	SPARE					28	
29				20	1	SPARE					30	
	1.68	1.58	1.65			KVA (SUBTOTAL)				0.46	0.50	0.20
	2.14	2.08	1.85			KVA (TOTAL)						
	18	17	15			AMPERES						

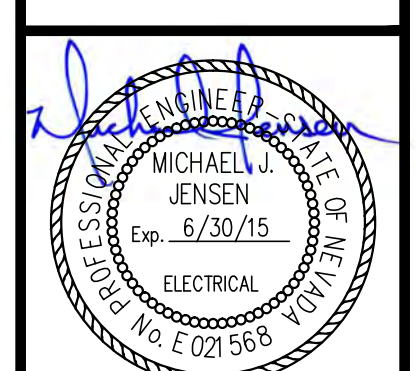
C PANEL-'PP-A' SCHEDULE
SCALE: NOT TO SCALE

SINGLE-LINE LOAD (kVA) SUMMARY:

- UNIT HEATER NO.1 = 10.00
- UNIT HEATER NO.2 = 10.00
- UNIT HEATER NO.3 = 10.00
- TANKLESS WATER HEATER = 79.00
- 30HP FILTER PUMP NO.1 = 33.26
- 30HP FILTER PUMP NO.2 = 33.26
- 30HP FILTER PUMP NO.3 = 33.26
- 5HP RAPID MIXER NO.1 = 6.32
- 1HP FLOCCULATOR NO.1 = 1.50
- 1HP FLOCCULATOR NO.2 = 1.50
- 5HP REJECTED WATER PUMP NO.1 = 6.32
- 5HP REJECTED WATER PUMP NO.2 = 6.32
- 30kVA AIR COMPRESSOR NO.1 = 30
- 30kVA AIR COMPRESSOR NO.2 = 30
- 30kVA LIGHTING PANEL = 4.99
- 30kVA POWER PANEL = 4.99

kVA TOTAL = 300.72

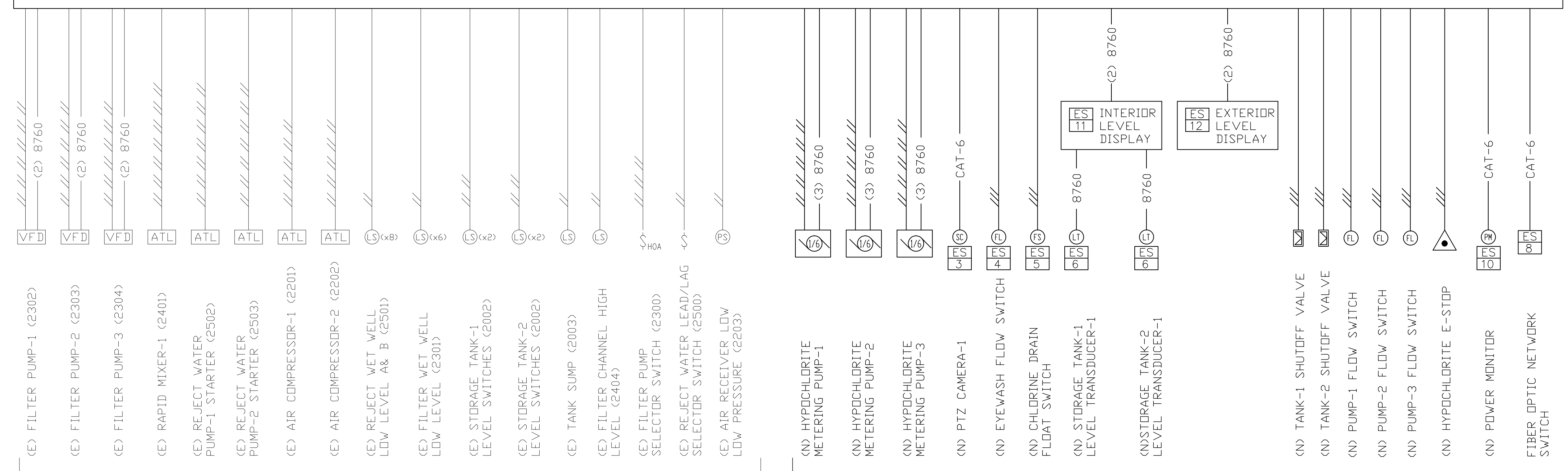
AVERAGE LINE AMPS = 362.
@480V, 3-PHASE



REV.	DATE	DESCRIPTION	BY	APP'D

'PP-A'
-9,11

SCADA / RTU



EXISTING INSTRUMENTATION / SIGNALS

NEW INSTRUMENTATION / SIGNALS

A SCADA/RTU DIAGRAM
E5 SCALE: NOT TO SCALE

SCADA LEGEND: (SHEET E5 ONLY)

(EXISTING)	
FP-1	FILTER PUMP-1
FP-2	FILTER PUMP-2
FP-3	FILTER PUMP-3
RM	RAPID MIXER
RWP-1	REJECT WATER PUMP-1
RWP-2	REJECT WATER PUMP-2
AC-1	AIR COMPRESSOR-1
AC-2	AIR COMPRESSOR-2
RWW	REJECT WET WELL
FWW	FILTER WET WELL
ST-1	STORAGE TANK-1
ST-2	STORAGE TANK-2
FSS	FILTER PUMP SELECTOR SWITCH
RSS	REJECT WATER SELECTOR SWITCH
ARP	AIR RECEIVER LOW LOW PRESSURE
(NEW)	
HMP-1	HYPOCHLORITE METERING PUMP-1
HMP-2	HYPOCHLORITE METERING PUMP-2
HMP-3	HYPOCHLORITE METERING PUMP-3
TS	TANK SUMP
FC	FILTER CHANNEL
C-1	PTZ CAMERA-1
EFS	EYE WASH FLOW SWITCH
CD	CHLORINE DRAIN FLOAT SWITCH
LT-1	STORAGE TANK-1 LEVEL TRANSDUCER
LT-2	STORAGE TANK-2 LEVEL TRANSDUCER
TSV-1	TANK SHUTOFF VALVE-1
TSV-2	TANK SHUTOFF VALVE-2
PFS-1	PUMP FLOW SWITCH-1
PFS-2	PUMP FLOW SWITCH-2
PFS-3	PUMP FLOW SWITCH-3
ES	EMERGENCY STOP
PM	POWER MONITOR

SCADA RTU SIGNAL REQUIREMENTS: (SHEET E5 ONLY)

A. MONITOR:	B. CONTROL:	C. ALARMS:
(EXISTING)	(EXISTING)	(EXISTING)
1. FP-1 'RUN'	1. FP-1 'MANUAL START/STOP'	1. FP-1 'FAIL'
2. FP-1 'RUNNING SPEED'	2. FP-1 'COMMAND SPEED'	2. RM-1 'FAIL'
3. FP-2 'RUN'	3. FP-1 'AUTO START/STOP'	3. RWP-1 'FAIL'
4. FP-2 'RUNNING SPEED'	4. FP-2 'MANUAL START/STOP'	4. RWP-2 'FAIL'
5. FP-3 'RUN'	5. FP-2 'COMMAND SPEED'	5. AC-1 'RUN'
6. FP-3 'RUNNING SPEED'	6. FP-2 'AUTO START/STOP'	6. AC-1 'FAIL'
7. RWP-1 'RUN'	7. FP-3 'MANUAL START/STOP'	7. AC-2 'RUN'
8. RWP-2 'RUN'	8. FP-3 'COMMAND SPEED'	8. AC-2 'FAIL'
(NEW)	9. FP-3 'AUTO START/STOP'	9. RWW-A 'LOW LEVEL'
1. HMP-1 'RUN/STOP'	10. RWP-1 'MANUAL START/STOP'	10. RWW-B 'LOW-LOW LEVEL'
2. HMP-2 'RUN/STOP'	11. RWP-1 'AUTO START/STOP'	11. RWW-B 'HIGH-HIGH LEVEL'
3. HMP-3 'RUN/STOP'	12. RWP-2 'MANUAL START/STOP'	12. RWW-A 'LOW-LOW LEVEL'
4. HMP-1 'AUTO/MANUAL'	13. RWP-2 'AUTO START/STOP'	13. RWW-A 'HIGH-HIGH LEVEL'
5. HMP-2 'AUTO/MANUAL'	14. RWW-A&B 'LOW-LOW LEVEL'	14. RWW-A 'HIGH LEVEL'
6. HMP-3 'AUTO/MANUAL'	15. FWW-A 'LOW LEVEL'	15. FWW-A 'LOW LEVEL'
7. HMP-1 'REF SPEED'	16. FWW-B 'LOW LEVEL'	16. FWW-B 'LOW LEVEL'
8. HMP-2 'REF SPEED'	17. FSS 'FILTER PUMP COMBINATION (x6)'	17. FWW-A 'HIGH LEVEL'
9. HMP-3 'REF SPEED'	18. RSS 'LEAD/LAG'	18. FWW-B 'HIGH LEVEL'
10. LT-1 'TANK LEVEL'	(NEW)	19. ST-1 'HIGH LEVEL'
11. LT-2 'TANK LEVEL'	1. HMP-1 'START/STOP'	20. ST-1 'LOW LEVEL'
12. PFS-1 'ON/OFF'	2. HMP-2 'START/STOP'	21. ST-2 'HIGH LEVEL'
13. PFS-2 'ON/OFF'	3. HMP-3 'START/STOP'	22. ST-2 'LOW LEVEL'
14. PFS-3 'ON/OFF'	4. HMP-1 'COMMAND SPEED'	23. ARP 'LOW LEVEL'
15. PM 'AMPS/VOLTS/KW'	5. HMP-2 'COMMAND SPEED'	24. FC 'HIGH LEVEL'
	6. HMP-3 'COMMAND SPEED'	
	7. HMP-1 'SCALING INPUT'	
	8. HMP-2 'SCALING INPUT'	
	9. HMP-3 'SCALING INPUT'	
	10. TSV-1 'OPEN/CLOSE'	
	11. TSV-2 'OPEN/CLOSE'	

SHEET NOTES

- MODIFY EXISTING RTU COMPONENTS AS FOLLOWS:
 - REMOVE EXISTING PANALARM ANNUNCIATOR AND CONNECTIONS.
 - REPLACE SLC500 PLC WITH NEW SCHNEIDER M340 SERIES PLC
 - CONVERT EXISTING SOFTWARE TO UNITY FORMAT AND INCLUDE NEW INSTRUMENTATION/SIGNALS.
 - EXISTING I/O SHALL BE REPLACED UTILIZING SCHNEIDER QUICK WIRING ADAPTERS FOR SLC500.
 - PROGRAM SHALL BE CONVERTED UTILIZING SLC500 MIGRATION AND SOFTWARE CONVERSION SERVICES PROVIDED BY SCHNEIDER.
 - PROVIDE ADDITIONAL ANALOG AND DISCRETE I/O MODULES (AS NECESSARY) FOR NEW INSTRUMENTATION/SIGNALS WHILE MAINTAINING SPARE I/O EQUIVALENT TO 10% OF THE OCCUPIED I/O. PROVIDE 1 SPARE MODULE OF EACH TYPE UTILIZED.
 - PROVIDE PROCESS DISPLAY SCREENS FOR NEW OPERATOR INTERFACE TERMINAL.
 - INCORPORATE EXISTING AND NEW SIGNALS INTO NEW TOUCHSCREEN INTERFACE PROGRAMMED BY VIJED DESIGNER. CONTRACTOR SHALL FURNISH A LICENSED COPY OF VIJED DESIGNER FOR PROGRAMMING THE OIT.
 - PLC SHALL CONNECT TO EXISTING SCADA NETWORK VIA ETHERNET AND MODBUS-TCP COMMUNICATIONS.
 - CONTRACTOR SHALL WORK WITH OWNER TO INTERFACE EXISTING WONDERWARE HMI.
 - PROGRAMMING OF HMI TO BE PERFORMED BY OWNER.
 - MANAGED SWITCH TO BE PROGRAMMED BY OWNER.
 - CONTRACTOR SHALL PROVIDE A FULL LIST OF DATA LOCATIONS AND SCALING FOR INTERFACE WITH HMI.
 - CONTRACTOR SHALL PROGRAM LOCAL OIT TO DISPLAY ALL INFORMATION THAT WAS DISPLAYED BY THE PANALARM ANNUNCIATOR SYSTEM.
 - PROVIDE ETHERNET COMMUNICATIONS WITH NEW FIBER OPTIC SWITCH AND EXISTING NETWORK INFRASTRUCTURE.
 - POWER MONITOR SHALL CONNECT VIA ETHERNET AND COMMUNICATE VIA MODBUS/TCP.
- VERIFY EXACT SCADA/RTU REQUIREMENTS WITH OWNER/ENGINEER. PROVIDE SCREEN LAYOUTS AND I/O SCHEDULE FOR OWNER AND ENGINEER APPROVAL.
- PROVIDE CONDUCTORS AND CABLES, INSTALLED IN CONDUIT (1" CONDUIT U.D.N.) AS LISTED ABOVE IN THE SCADA/RTU CABINET DIAGRAM.

DESIGNED BY: MAJ
DRAWN BY: SCB
CHECKED BY: MAJ
DWG NO.: LF53A
SCALE (HORIZ): SHOWN
SCALE (VERT): SHOWN
PLOT DATE: JULY 31 2014

CARSON CITY PUBLIC WORKS DEPARTMENT

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Michael Jensen
ELECTRICAL ENGINEER
Exp. 6/30/15
No. E 021568
7/31/14

REV.	DATE	DESCRIPTION	BY	APP'D

SODIUM HYPOCHLORITE TANK REPLACEMENT PROJECT No. 5.1301

SCADA/RTU DIAGRAM

SHEET **E5** OF **5**