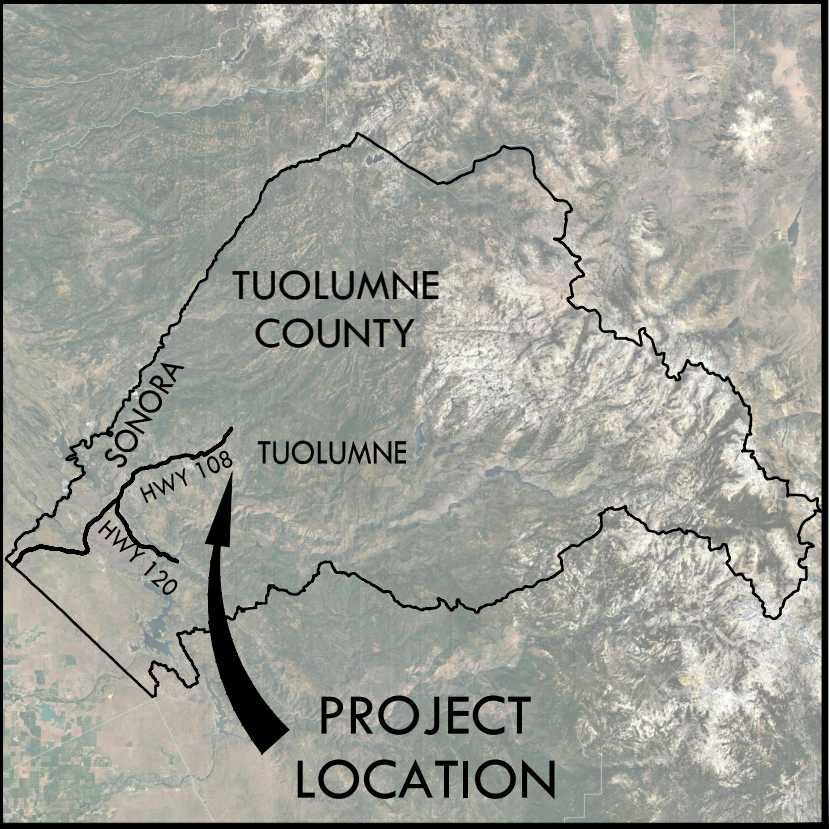


TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT UPGRADES
TUOLUMNE CITY, CALIFORNIA

BID SET



VICINITY MAP

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| G-02 | ABBREVIATIONS AND GENERAL NOTES |
| C-01 | KEY MAP |
| C-02 | EXISTING TOPOGRAPHY & DEMOLITION PLAN |
| C-03 | EXISTING TOPOGRAPHY & DEMOLITION PLAN |
| C-04 | EXISTING TOPOGRAPHY & DEMOLITION PLAN |
| C-05 | PIPING PLAN AND PROFILE ADDITIVE BID ITEM D |
| C-06 | GRADING AND DRAINAGE PLAN |
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| D-02 | DETAILS |
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APPROVALS

| | |
|---|------------|
| APPROVED BY THE TUOLUMNE CITY SANITARY DISTRICT, GENERAL MANAGER | |
| BY _____ | DATE _____ |

BLACKWATER
CONSULTING ENGINEERS, INC.
602 LYLELL DRIVE, MODESTO, CA 95356 PH. 209.322.1820



| REV | DATE | DESCRIPTION | APP |
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| PROJECT NO. J14068 |
| DESIGNED BY JMB |
| DRAWN BY SPD |
| CHECKED BY JMB |
| DATE MARCH 2021 |



TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT UPGRADES

COVER SHEET

VERIFY SCALES

BAR IS ONE INCH ON
ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS
SHEET, ADJUST SCALES
ACCORDINGLY

DRAWING NO.
G-01

SHEET NO.
01 OF 36

CONTACTS

ENGINEER:

BLACK WATER CONSULTING ENGINEERS, INC.

602 LYELL DRIVE

MODESTO, CA 95356

ENGINEER: JEFF BLACK, P.E.

T:209.322.1820

ACTING GENERAL MANAGER:

TUOLUMNE CITY SANITARY DISTRICT

18050 BOX FACTORY ROAD

TUOLUMNE, CA 95379

ACTING GENERAL MANAGER: DAVE ANDRIES

T:209.928.3517

CONSTRUCTION MANAGEMENT:

FORSGREN ASSOCIATES INC.

3110 GOLD CANAL DRIVE, STE. C

RANCHO CORDOVA, CA 95670

ENGINEER: ALAN DRISCOLL, P.E.

T:916.638.1119

GENERAL NOTES

1. CONTRACTOR SHALL CONSIDER THE INFORMATION PRESENTED AS "GENERAL NOTES" AS PART OF THE CONSTRUCTION DOCUMENTS.

2. PRIOR TO ANY WORK BEING PERFORMED, THE CONTRACTOR SHALL CONTACT THE APPROPRIATE REGULATORY AGENCIES FOR A PRE-CONSTRUCTION CONFERENCE. CONTRACTOR SHALL ALSO NOTIFY THE OWNERS AND ENGINEER SEVENTY-TWO (72) HOURS PRIOR TO MEETING DATE.

3. ENGINEER OF RECORD MUST APPROVE ANY SUBSTITUTIONS. IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS BETWEEN THE DRAWINGS AND OTHER DETAILS; OR EXISTING CONDITIONS NOT SHOWN OR DIFFERENT FROM THOSE SHOWN ON THE DRAWINGS PRIOR TO COMMENCEMENT OF WORK. MATERIALS PROCURED PRIOR TO RESOLUTION OF CONFLICTS SHALL BE AT THE CONTRACTOR'S RISK.

4. ALL WORK IS NEW UNLESS INDICATED AS EXISTING.

THE CONTRACTOR SHALL EXERCISE DUE CAUTION AND SHALL CAREFULLY PRESERVE BENCHMARKS, REFERENCE POINTS AND ALL SURVEY STAKES, AND SHALL BEAR ALL EXPENSE FOR REPLACEMENT AND/OR ERRORS CAUSED BY THEIR UNNECESSARY LOSS OR DISTURBANCE.

5. THE CONTRACTOR AGREES TO BE RESPONSIBLE FOR:

A. CLEANING THE JOB SITE AT THE END OF EACH PHASE OF WORK.

B. REMOVING AND DISPOSING OF ALL TRASH, SCRAP AND UNUSED MATERIAL IN A TIMELY MANNER.

C. MAINTAINING THE SITE IN A NEAT, SAFE AND ORDERLY MANNER AT ALL TIMES.

D. KEEPING MATERIALS, EQUIPMENT AND TRASH OUT OF THE WAY OF OTHER CONTRACTORS SO AS TO NOT DELAY THE JOB.

E. PROVIDING THEIR OWN SAFETY, TRAFFIC CONTROL PERMITS, RETESTING AND REINSPECTION.

F. PROVIDING ALL WATER, POWER, SANITARY FACILITIES AND TELEPHONE SERVICES AS REQUIRED FOR THE CONTRACTOR'S USE DURING CONSTRUCTION.

G. SCHEDULING INSPECTION AND TESTING OF ALL FACILITIES CONSTRUCTED UNDER THIS CONTRACT. ALL TESTING SHALL CONFORM TO TUOLUMNE CITY SANITARY DISTRICT STANDARD SPECIFICATIONS.

H. FIELD CHANGES MADE WITHOUT WRITTEN AUTHORIZATION FROM THE ENGINEER.

I. THE CONTRACTOR SHALL PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FLAGMEN, OR OTHER DEVICES NECESSARY FOR PUBLIC SAFETY IN ACCORDANCE WITH THE CURRENT ISSUE OF "MANUAL OF TRAFFIC CONTROLS, WARNING SIGNS, LIGHTS, AND DEVICES FOR USE IN PERFORMANCE OF WORK UPON HIGHWAY" PUBLISHED BY THE STATE OF CALIFORNIA BUSINESS AND TRANSPORTATION AGENCY.

J. THE CONTRACTOR SHALL TRENCH PLATE DAILY.

6. THE CONTRACTOR SHALL MAINTAIN A NEATLY MARKED SET OF FULL-SIZE AS-BUILT RECORD DRAWINGS SHOWING THE FINAL LOCATION AND LAYOUT OF ALL PIPING AND CONDUITS, STRUCTURES AND OTHER FACILITIES. AS-BUILT RECORD DRAWINGS SHALL REFLECT CHANGE ORDERS, ACCOMMODATIONS AND ADJUSTMENTS TO ALL IMPROVEMENTS CONSTRUCTED. WHERE NECESSARY, SUPPLEMENTAL DRAWINGS SHALL BE PREPARED AND SUBMITTED BY THE CONTRACTOR.

7. ALL FERROUS METALS THAT ARE NOT GALVANIZED SHALL BE PREPARED, PRIMED, AND EPOXY COATED. THE PRIMER AND COATING SHALL BE OF THE SAME MANUFACTURER AND APPLIED AS A SYSTEM. THE COATING SYSTEM AND COLOR SHALL BE APPROVED BY THE ENGINEER AND THE OWNER PRIOR TO APPLICATION.

8. THE INFORMATION SHOWN ON THE PLANS WITH REGARD TO THE EXISTING UTILITIES AND/OR IMPROVEMENTS WAS DERIVED FROM FIELD INVESTIGATIONS AND/OR RECORD INFORMATION. THE ENGINEER DOES NOT GUARANTEE THESE LOCATIONS TO BE EITHER TRUE OR EXACT. PRIOR TO CONSTRUCTION, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL EXISTING IMPROVEMENTS AND TO EXPOSE UNDERGROUND UTILITIES RELATED TO THE PROJECT; INCLUDING BUT NOT LIMITED TO SEWER, STORM DRAIN, WATER, IRRIGATION, GAS, ELECTRICAL, ETC. AND SHALL NOTIFY THE ENGINEER AND OWNER IN WRITING FORTY-EIGHT (48) HOURS IN ADVANCE OF EXPOSING THE UTILITIES SO THAT THE EXACT LOCATION AND ELEVATION CAN BE VERIFIED AND DOCUMENTED. IF LOCATION AND/OR ELEVATION DIFFERS FROM THAT SHOWN ON THE DESIGN

PLANS, PROVISIONS TO ACCOMMODATE NEW LOCATION/ELEVATION MUST BE MADE PRIOR TO CONSTRUCTION.

9. ALL DIMENSIONS SHOWN ON DRAWINGS SHALL BE VERIFIED WITH EXISTING CONDITIONS. DO NOT SCALE DRAWINGS. ENGINEER OF RECORD MUST APPROVE ANY SUBSTITUTIONS. IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS BETWEEN THE DRAWINGS AND OTHER DETAILS; OR EXISTING CONDITIONS NOT SHOWN OR DIFFERENT FROM THOSE SHOWN ON THE DRAWINGS PRIOR TO COMMENCEMENT OF WORK. MATERIALS PROCURED PRIOR TO RESOLUTION OF CONFLICTS SHALL BE AT THE CONTRACTOR'S RISK.

10. THE CONTRACTOR SHALL CONTROL DUST AT ALL TIMES. DUST CONTROL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE IMPLEMENTED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL GUIDELINES.

11. EQUIPMENT AND MATERIALS SHALL BE NEW AND WITHOUT IMPERFECTIONS AND SHALL BE CONSTRUCTED IN A NEAT AND WORKMANLIKE MANNER; ALIGNED, LEVELED, CLEANED AND DUSTED FOR SATISFACTORY OPERATION. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND BEST STANDARD PRACTICES FOR THIS TYPE OF WORK.

12. PRIOR TO REMOVAL OF EXISTING STRUCTURES AND MATERIALS, THE CONTRACTOR SHALL PHOTOGRAPH AND DOCUMENT THE SURROUNDING AREA AND SHALL RESTORE THE AREA TO ITS ORIGINAL STATE OR BETTER.

13. FENCES THAT NEED TO BE REMOVED DURING CONSTRUCTION SHALL BE REMOVED TO THE NEAREST POST BEYOND THE AREA OF CONSTRUCTION. CONTRACTOR SHALL MATCH REPLACEMENT FENCE WITH THE EXISTING FENCE.

14. CONTRACTOR SHALL CONSTRUCT TEMPORARY FENCING WHERE EXISTING FENCE IS REMOVED TO PREVENT UNWANTED CROSSING OF THE PREVIOUS FENCE LINE. ALL UNSUPERVISED EQUIPMENT OR OPEN TRENCHES SHALL ALSO BE FENCED OFF WITH TEMPORARY FENCING.

15. CONTRACTORS SHALL COMPLY WITH THE MITIGATION MONITORING AND REPORTING PLAN INCLUDED IN THE ENVIRONMENTAL DOCUMENTS.

TCSD GENERAL NOTES

1. ALL NEW WORK REQUIRES PRIOR APPROVAL FROM TCSD AND INSPECTION BY TCSD DURING CONSTRUCTION. ALL WORK SHALL COMPLY WITH CURRENT TCSD STANDARDS, DRAWINGS, AND SPECIFICATIONS.

2. TCSD & ITS DISTRICT ENGINEER CAN ASSUME NO RESPONSIBILITY FOR THE COMPLETENESS OR ACCURACY OF THE DELINEATION OF THESE UTILITIES NOR FOR THE EXISTENCE OF OTHER BURIED OBJECTS OR UTILITIES WHICH MAY BE ENCOUNTERED BUT WHICH ARE NOT SHOWN ON THESE PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS OF UTILITIES SHOWN AND ANY THAT MAY EXIST AND ARE NOT SHOWN PRIOR TO BEGINNING ANY WORK. CONTRACTOR SHALL EXPOSE ALL UNDERGROUND UTILITIES THAT ARE TO BE CONNECTED TO OR THAT ARE IN THE PATH OF THE PROPOSED IMPROVEMENTS PRIOR TO BEGINNING WORK.

3. CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT (U.S.A.) AT 1-800-642-2444, (2) WORKING DAYS PRIOR TO ANY EXCAVATION AND SHALL NOTIFY THE FOLLOWING PARTIES BY THE TIME SPECIFIED PRIOR TO BEGINNING WORK WITHIN THEIR JURISDICTION:

A. PROJECT ENGINEER

5 DAYS

B. TUOLUMNE COUNTY DEPARTMENT OF PUBLIC WORKS

48 HOURS

C. DISTRICT ENGINEER FOR TCSD

48 HOURS

D. HOME OWNERS AFFECTED BY CONSTRUCTION

24 HOURS

4. CONTRACTOR SHALL EXCAVATE IN SUCH A MANNER AS TO AVOID ANY DAMAGE TO EXISTING STRUCTURES AND TREES IF POSSIBLE. ANY DAMAGED STRUCTURES SHALL BE RESTORED OR REPLACED IN A MANNER ACCEPTABLE TO TCSD'S DISTRICT ENGINEER. REDUCED COVER OVER EXISTING PIPELINES DUE TO CONTRACTOR'S ACTIVITIES WILL REQUIRE RECONSTRUCTION ON PROTECTION SATISFACTORY TO DISTRICT ENGINEER AT SOLE COST OF CONTRACTOR.

5. ALL STATIONING AND DIMENSIONING IS REFERENCED TO THE CENTERLINE OF THE PIPELINE UNLESS OTHERWISE NOTED.

6. ALL PIPELINE SECTIONS SHALL BE TESTED TO TCSD SPECIFICATIONS.

SECTION AND DETAIL NUMBERING SYSTEM

SECTION CUT ON PLAN

SECTION LETTER

A

C2.02

DRAWING WHERE THE SECTION IS SHOWN

SECTION TITLE WITH REFERENCE

SECTION LETTER

A

C5.05

TITLE SECTION

SCALE: NTS

DRAWING WHERE THE SECTION IS CUT

DETAIL CALL-OUT

DETAIL NUMBER

1

C7.02

DRAWING WHERE DETAIL IS SHOWN

DETAIL TITLE WITH REFERENCE

DETAIL NUMBER

1

C6.03

TITLE DETAIL

SCALE: NTS

DRAWING WHERE DETAIL IS CALLED OUT. SEE NOTES 1 AND 2

NOTES

1. "VAR" IN THE DRAWING DESIGNATION AREA INDICATES DETAIL APPLIES TO MORE THAN ONE DRAWING.

2. " - " IN THE DRAWING AREA INDICATES THAT SECTION OR DETAIL IS SHOWN ON THE SAME DRAWING THAT IT IS CUT FROM OR REFERRED TO.

3. WHEN REFERRED TO IN A NOTE: "SEE DET 1/C7.02" "1" IS THE DETAIL NUMBER "C6.03" IS THE DRAWING WHERE DETAIL IS SHOWN.

ABBREVIATIONS

AA

AERATION AIR

AB

AGGREGATE BASE

ALT

ALTERNATE

AVE

AVENUE

BFP

BACK FLOW PREVENTER

BTWVN

BETWEEN

BV

BUTTERFLY VALVE

CIP

CAST IN PLACE

CMP

CORRUGATED METAL PIPE

CONC OR CC

CONCRETE

DIA

DIAMETER

DIP

DUCTILE IRON PIPE

DR

DRAIN

DRR

DRAIN RETURN

EX

EXISTING

FDN

FOUNDATION

FE

FINAL EFFLUENT

FF

FINISH FLOOR

FG

FINISH GRADE

FH

FIRE HYDRANT

FM

FLOW METER

GR

GRATE

GV

GATE VALVE

HORIZ

HORIZONTAL

HT

HEIGHT

ICB

IRRIGATION CONTROL BOX

ID

INSIDE DIAMETER

INV

INVERT

IRR

IRRIGATION

LE

LAGOON EFFLUENT

LF

LINEAL FEET OR LINEAR FEET

LT

LEFT

MAX

MAXIMUM

MFR

MANUFACTURER

MGD

MILLION GALLONS PER DAY

MIN

MINIMUM

ML

MIXED LIQUOR

N

NORTH / NEW

NIC

NOT INCLUDED

NPW

NON-POTABLE WATER

NTS

NOT TO SCALE

OC

ON CENTER

OHE

OVERHEAD ELECTRIC

OF

OVERFLOW

P.C.

POINT OF CURVATURE

PCC

PORTLAND CEMENT CONCRETE

PG&E

PACIFIC GAS AND ELECTRIC

PL

PROPERTY LINE

PT

POINT

P.T.

POINT OF TANGENT

R

RADIUS

RCP

REINFORCED CONCRETE PIPE

RAS

RETURN ACTIVATED SLUDGE

R.D.

RELEIVE DENSITY

RD

ROAD

REINF

REINFORCED

REQ'D

REQUIRED

RT

RIGHT

S

SLOPE / SOUTH

SC

SCUM

SD

STORM DRAIN

SE

SECONDARY EFFLUENT

SHT

SHEET

SIM

SIMILAR

SL

SLUDGE

SLD

SLUDGE LAGOON DRAIN

SPE

SETTLING POND EFFLUENT

SS

SANITARY SEWER

SSD

SANITARY SEWER DRAIN

SSFM

SANITARY SEWER FORCE MAIN

SST

STAINLESS STEEL

ST

STREET

STD

STANDARD

STL

STEEL

TEMP

TEMPORARY

TG

TOP OF GRATE

THRU

THROUGH

TYP

TYPICAL

UON

UNLESS OTHERWISE NOTED

VERT

VERTICAL

1W

POTABLE WATER

2W

NON-POTABLE WATER

W

WEST/WATER

WAS

WASTE ACTIVATED SLUDGE

WM

WATER METER

BLACK WATER CONSULTING ENGINEERS, INC.

602 LYELL DRIVE, MODESTO, CA 95356 PH. 209.322.1820

811

Know what's below. Call before you dig.

REGISTERED PROFESSIONAL ENGINEER

JEFFREY M. BLACK

No. C66645

Exp. 06-30-22

JEFF BLACK

CIVIL

STATE OF CALIFORNIA

REV

DATE

DESCRIPTION

APP

PROJECT NO.

J14068

DESIGNED BY

JMB

DRAWN BY

SPD

CHECKED BY

JMB

DATE

MARCH 2021

TC SD

Tuolumne City

Sanitary District

TUOLUMNE CITY SANITARY DISTRICT

WASTEWATER TREATMENT PLANT UPGRADES

ABBREVIATIONS AND GENERAL NOTES

VERIFY SCALES

BAR IS ONE INCH ON ORIGINAL DRAWING

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1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NO.

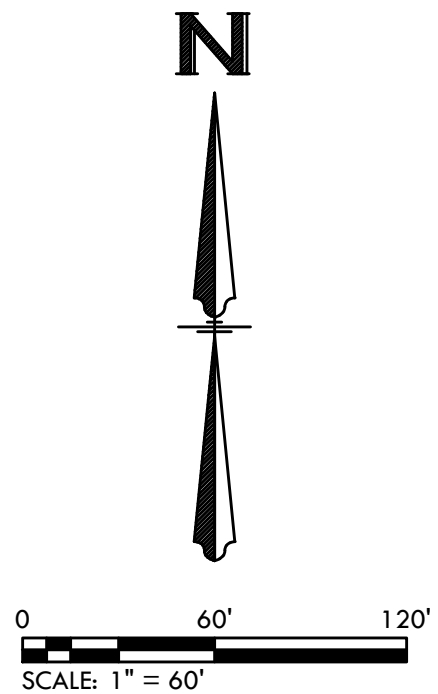
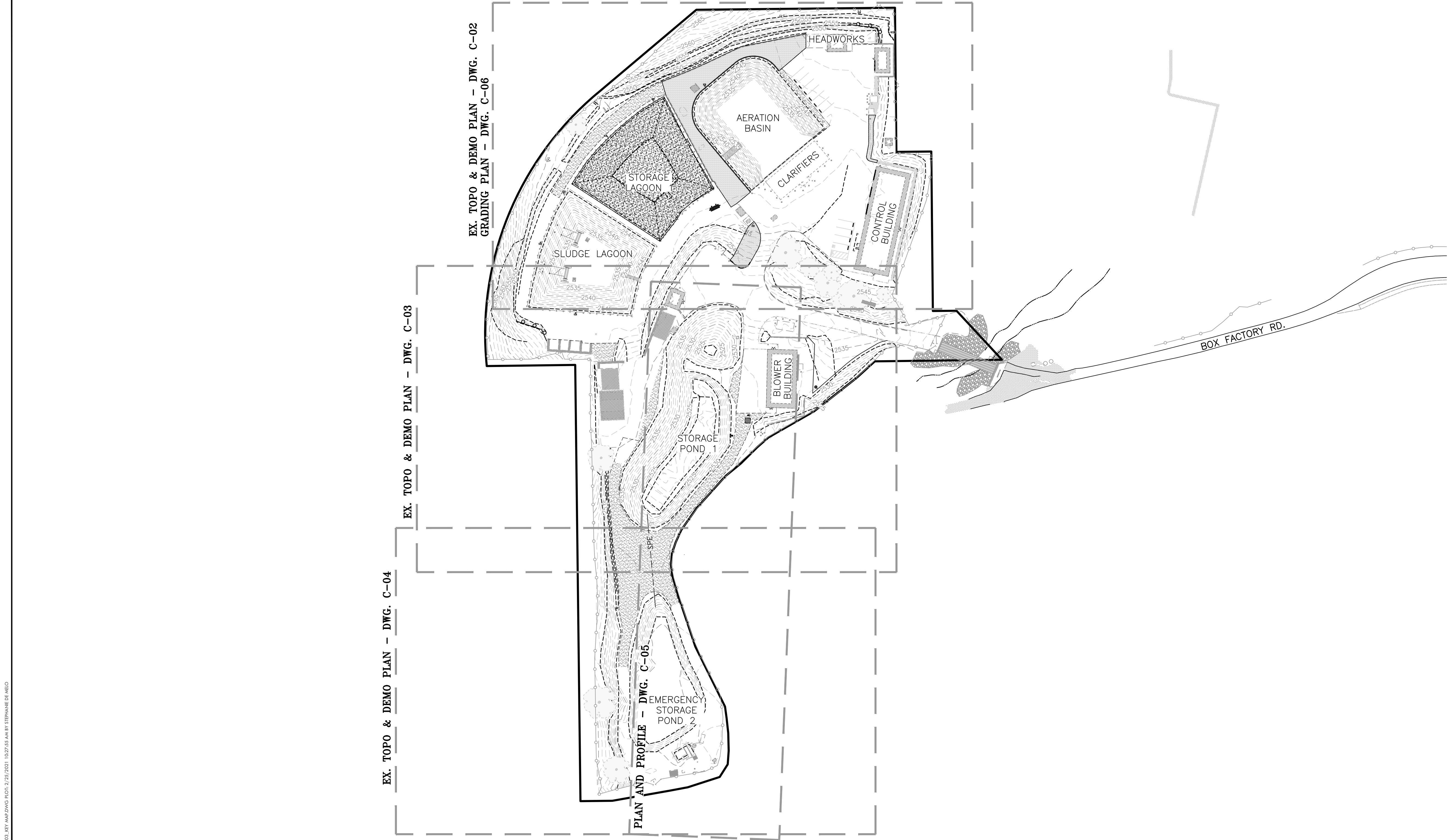
G-02

SHEET NO.

02 OF 36

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\\C:\Users\jblack\OneDrive\Documents\Projects\811\811.dwg (2/2/2021) 12:27:55 AM BY STEPHANIE DE WELD



BLACKWATER
CONSULTING ENGINEERS, INC.
602 LYELL DRIVE, MODESTO, CA 95356 PH. 209.322.1820



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PROJECT NO.
J14068
DESIGNED BY
JMB
DRAWN BY
SPD
CHECKED BY
JMB
DATE
MARCH 2021



TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT UPGRADES

KEY MAP

VERIFY SCALES
BAR IS ONE INCH ON
ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS
SHEET, ADJUST SCALES
ACCORDINGLY

DRAWING NO.
C-01
SHEET NO.
03 OF 36



LEGEND



- NOTES:
1. TO ABANDON THE EXISTING DISCHARGE PIPE, CUT THE PIPE FLUSH WITH THE SURFACE AND FILL WITH 2-SACK CONCRETE, MINIMUM OF 10 FEET.
 2. WHERE AGGREGATE BASE IS SPECIFIED TO BE REMOVED, THE CONTRACTOR AT HIS OPTION MAY REPURPOSE THE MATERIAL FOR SUBGRADE OF THE NEW CONCRETE PAVEMENT. REPURPOSED MATERIAL SHALL MEET THE REQUIREMENTS OF SPECIFICATION SECTION 02050 2.01(B).
 3. FLOATING BRUSH AERATORS SHALL BE REMOVED BY TCSD STAFF. CONTRACTOR SHALL COORDINATE THE TIMING OF THE FLOATING BRUSH AERATOR INSTALLATION WORK WITH THE TCSD OPERATIONS STAFF. A MINIMUM NOTICE OF 14 DAYS SHALL BE PROVIDED BY THE CONTRACTOR PRIOR TO STARTING THE WORK ON THE SLUDGE LAAGOON.



FOR CONTINUATION SEE SHEET C-03

BLACKWATER
CONSULTING ENGINEERS, INC.
602 LYLELL DRIVE, MODESTO, CA 95356 PH. 209.322.1820



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| PROJECT NO. J14068 |
| DESIGNED BY JMB |
| DRAWN BY SPD |
| CHECKED BY JMB |
| DATE MARCH 2021 |



TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT UPGRADES

EXISTING TOPOGRAPHY &
DEMOLITION PLAN

VERIFY SCALES

BAR IS ONE INCH ON
ORIGINAL DRAWING



IF NOT ONE INCH ON THIS
SHEET, ADJUST SCALES
ACCORDINGLY

DRAWING NO.

C-02

SHEET NO.

04 OF 36

LEGEND

NOTES:

- FOR CONTINUATION SEE SHEET C-04



**Know what's below.
Call before you dig.**

[illegible]

Tuolumne City
Sanitary District

EXISTING TOPOGRAPHY & DEMOLITION PLAN

| | |
|---------------|--|
| VERIFY SCALES | |
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ORIGINAL DRAWING



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ACCORDINGLY

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C-03

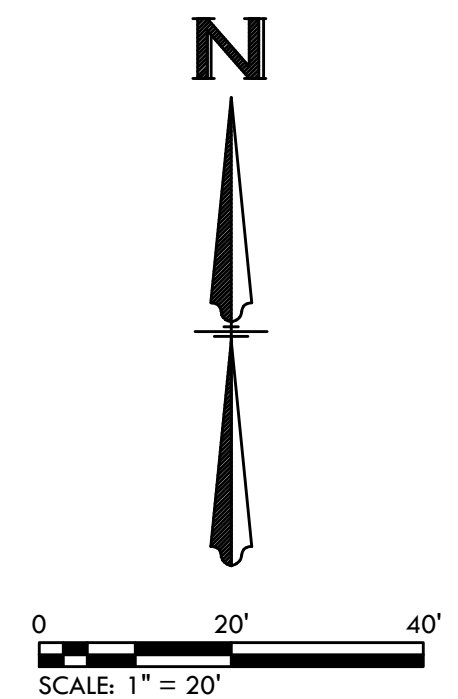
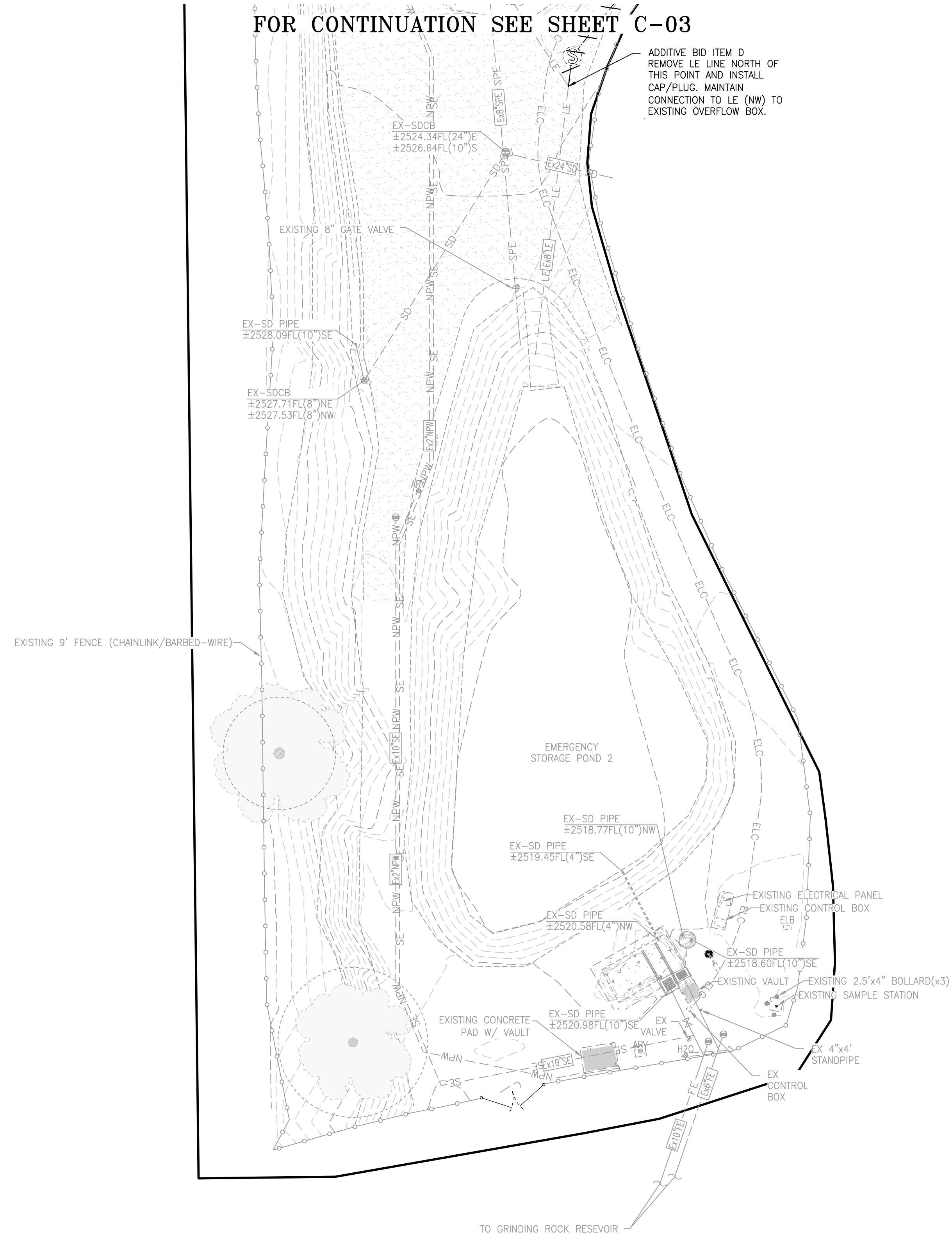
EET NO.

5 OF 36

FOR CONTINUATION SEE SHEET C-03

LEGEND

- \ \ \ \ \ - UTILITIES TO BE REMOVED



BLACKWATER
CONSULTING ENGINEERS, INC.
602 LYLELL DRIVE, MODESTO, CA 95356 PH. 209.322.1820

[illegible]

PROJECT NO.
J14068
DESIGNED BY
JMB
DRAWN BY
SPD
CHECKED BY
JMB
DATE
MARCH 2021



TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT UPGRADES

EXISTING TOPOGRAPHY & DEMOLITION PLAN

| | |
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| VERIFY SCALES | |
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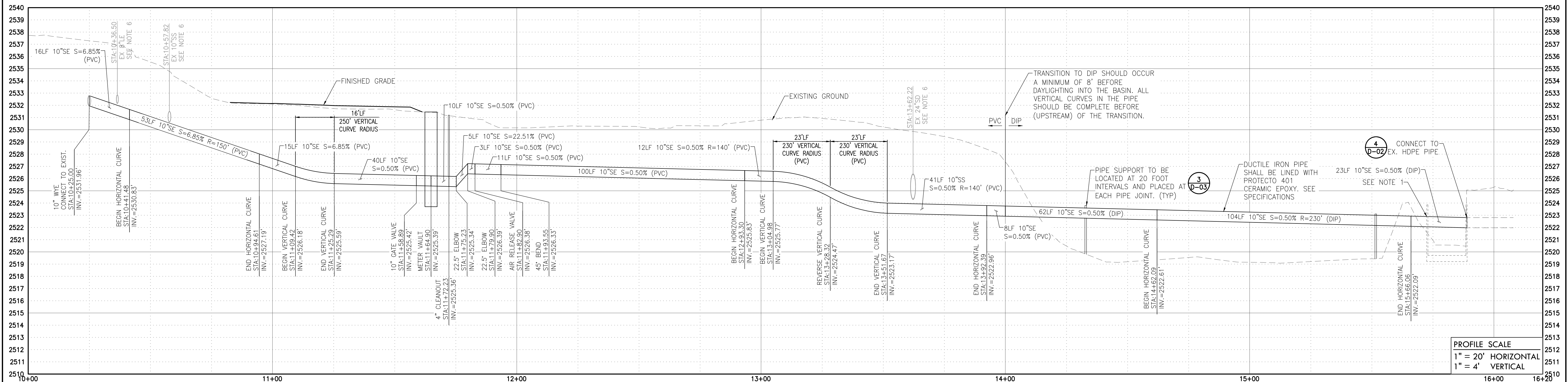
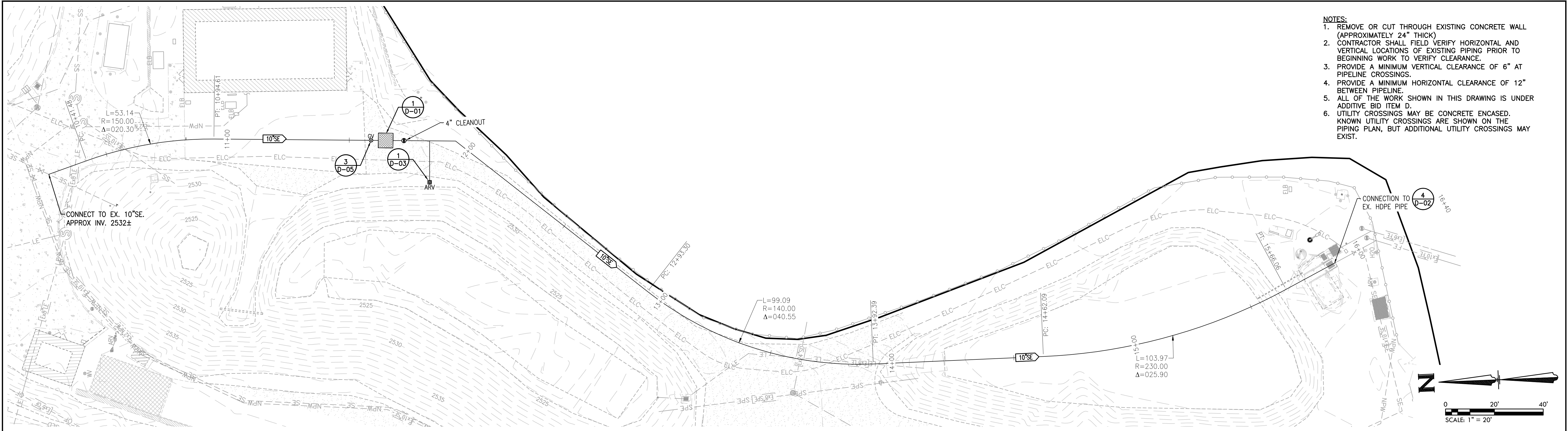
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ACCORDINGLY

DRAWING NO.

C-04

SHEET NO.

06 OF 36



BLACKWATER
CONSULTING ENGINEERS, INC.
602 LYELL DRIVE, MODESTO, CA 95356 PH. 209.322.1820

Know what's below.
Call before you dig.

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PROJECT NO.
J14068

DESIGNED BY
JMB

DRAWN BY
SPD

CHECKED BY
JMB

DATE
MARCH 2021

TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT UPGRADES

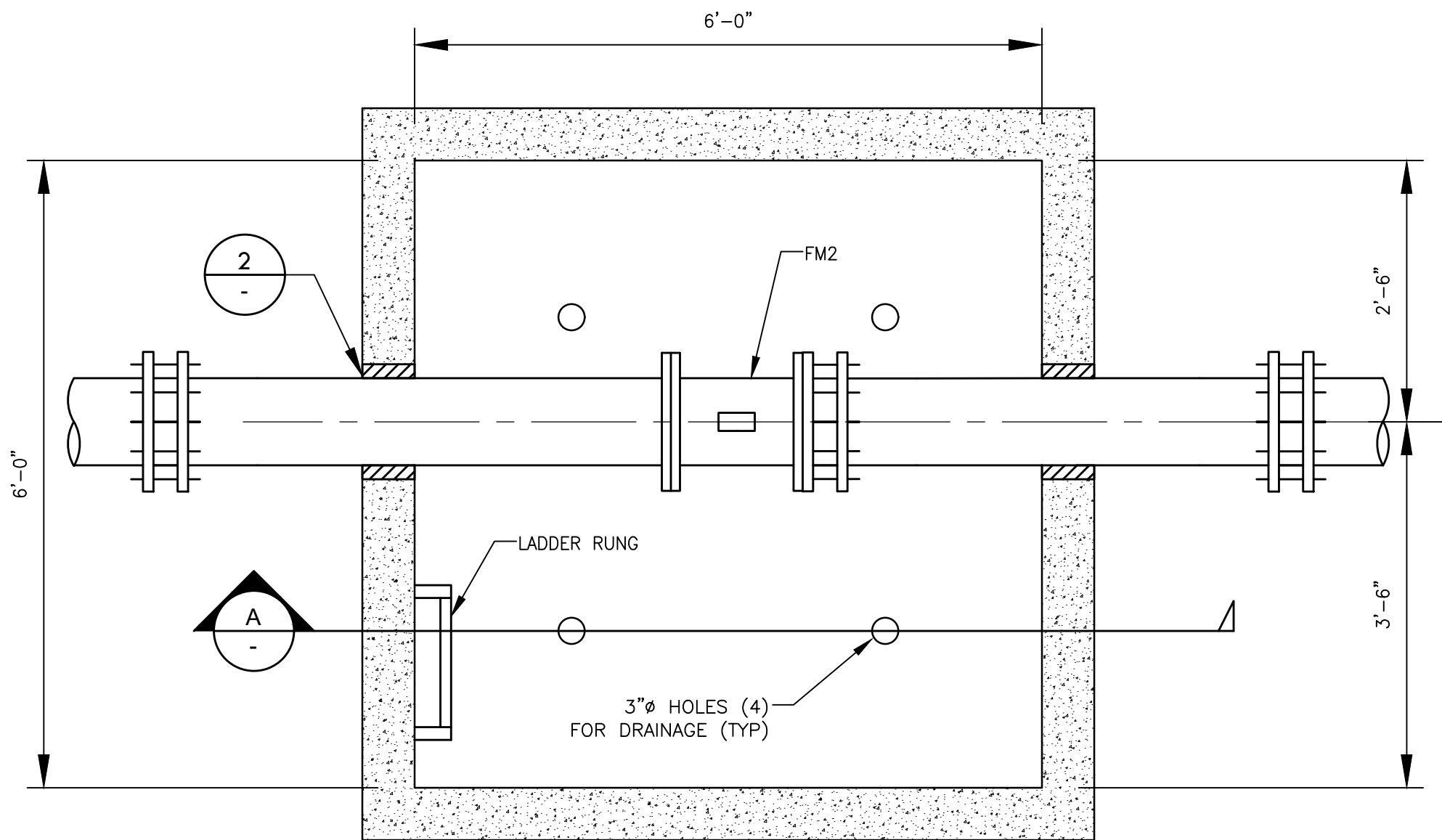
PIPING PLAN AND PROFILE
ADDITIVE BID ITEM D

VERIFY SCALES
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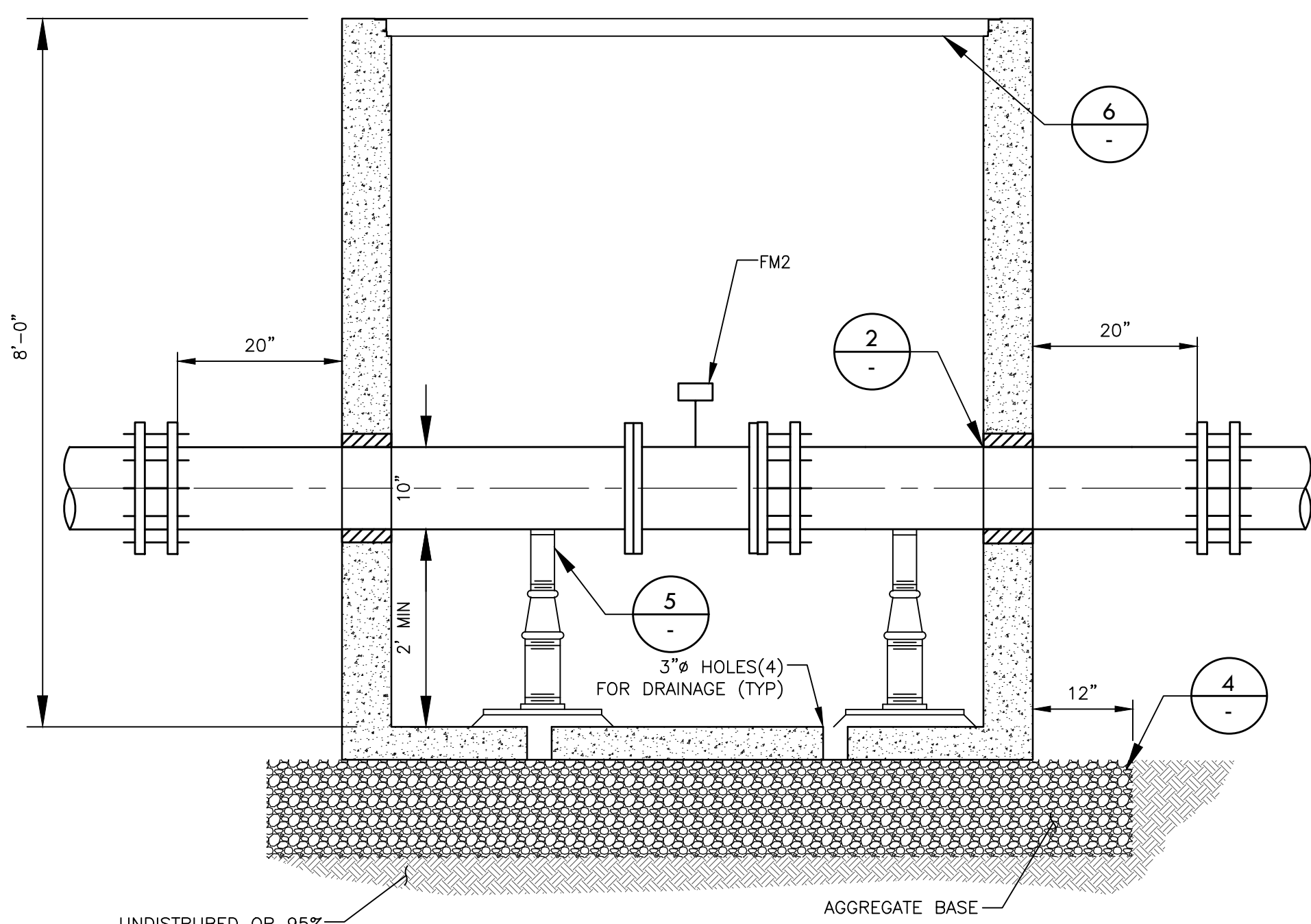
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DRAWING NO.
C-05

SHEET NO.
07 OF 36



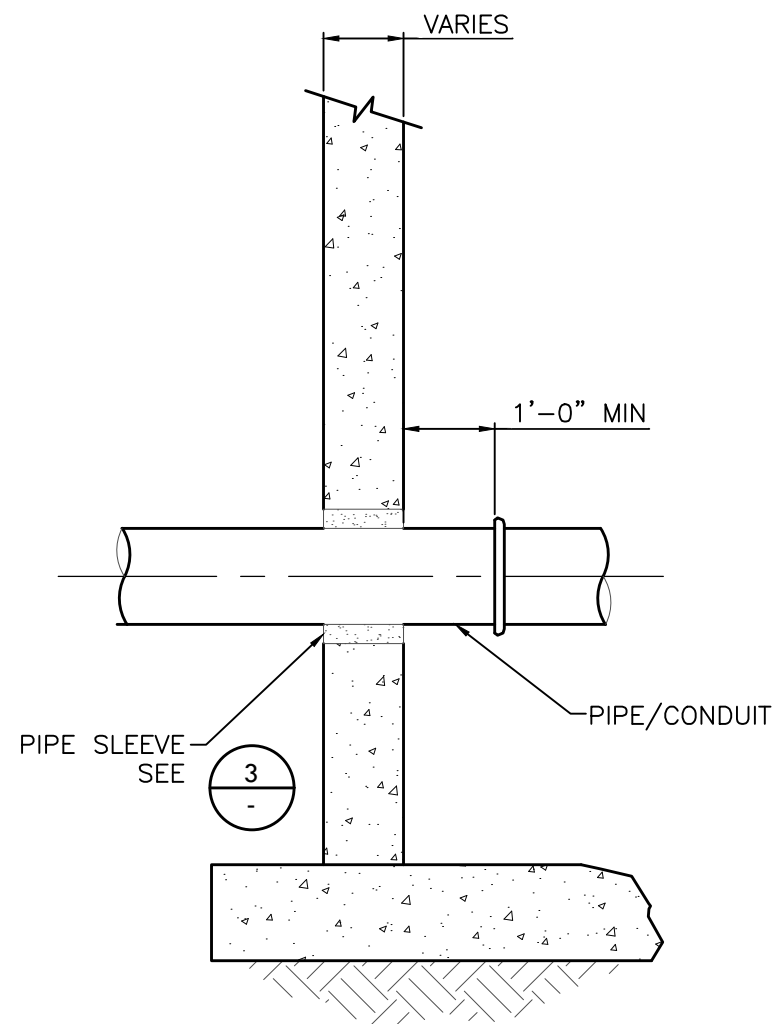
PLAN



SECTION A-A

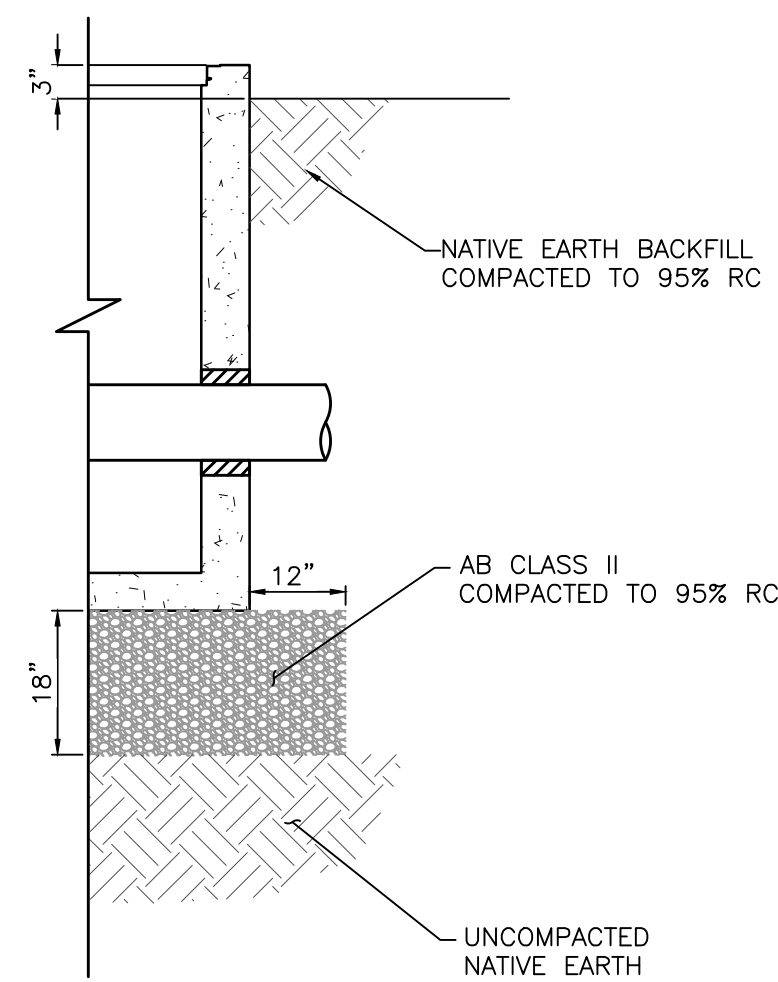
1 FLOW METER VAULT
C-05

SCALE: NTS



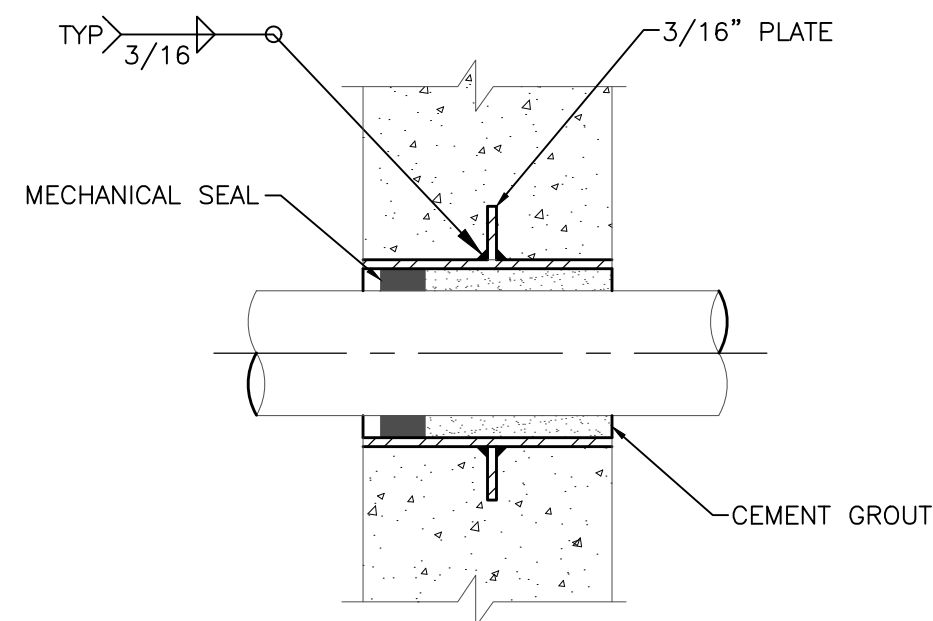
2 PIPE PENETRATION
VAR

SCALE: NTS



4 BACKFILL DETAILS
VAR

SCALE: NTS



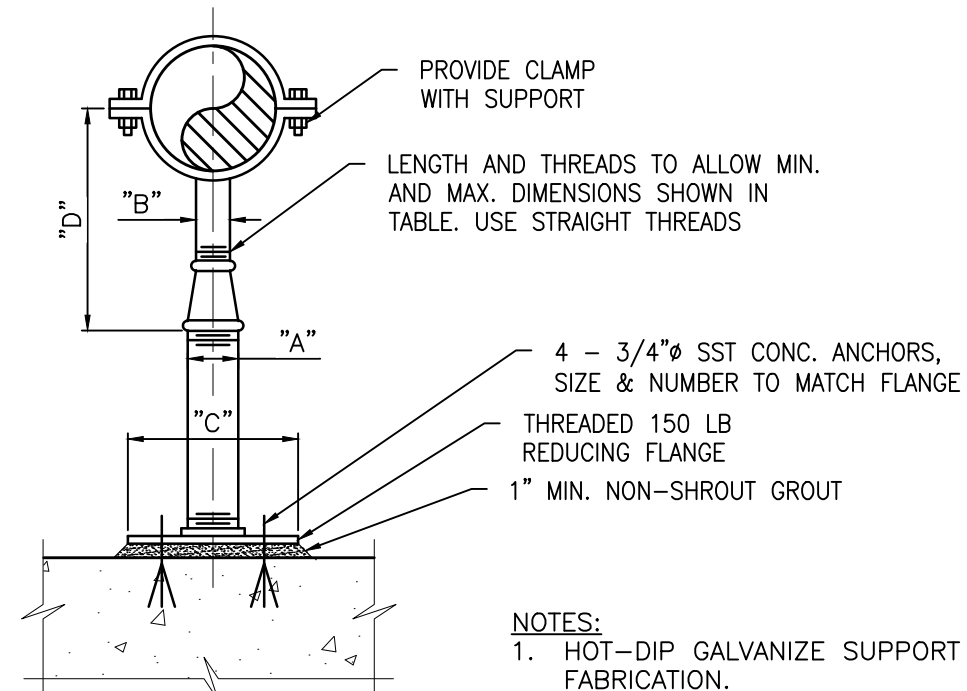
NOTES:
SLEEVE DIAMETER AND PIPE SCHEDULE SHALL BE AS RECOMMENDED BY THE MECHANICAL SEAL MANUFACTURER.

3 MECHANICAL PIPE SLEEVE
VAR

SCALE: NTS

| ADJUSTABLE PIPE SADDLE SUPPORT SCHEDULE | | | | | |
|---|---------------|---------------|-----|---------|---------|
| DIMENSIONS IN INCHES | | | | | |
| SIZE OF SUPPORTED PIPE | PIPE SIZE "A" | PIPE SIZE "B" | "C" | "D" | |
| | | | | MINIMUM | MAXIMUM |
| 2 1/2 * | 2 1/2 | 1 1/2 | 9 | 8 | 13 |
| 3 | 2 1/2 | 1 1/2 | 9 | 8 1/2 | 13 1/2 |
| 3 1/2 | 2 1/2 | 1 1/2 | 9 | 8 1/2 | 13 1/2 |
| 4 | 3 | 2 1/2 | 9 | 9 1/2 | 14 |
| 6 | 3 | 2 1/2 | 9 | 10 1/2 | 15 1/2 |
| 8 | 3 | 2 1/2 | 9 | 11 1/2 | 16 1/2 |
| 10 | 3 | 2 1/2 | 9 | 13 1/2 | 18 1/2 |
| 12 | 3 | 2 1/2 | 9 | 15 | 19 1/2 |

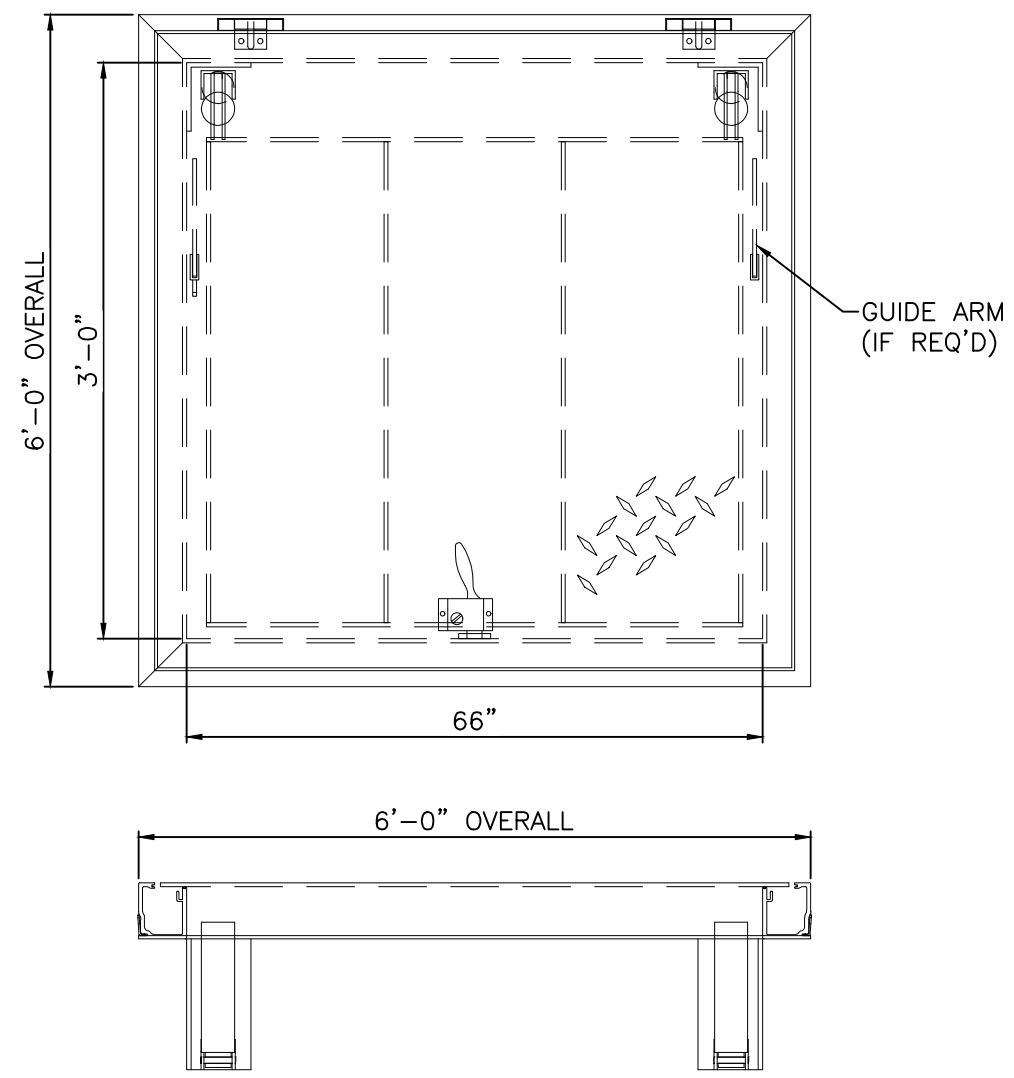
* USE 2 1/2" SUPPORTS FOR PIPES LESS THAN 2 1/2"Ø.



NOTES:
1. HOT-DIP GALVANIZE SUPPORT AFTER FABRICATION.
2. PIPE SHALL BE SCHEDULE 40.

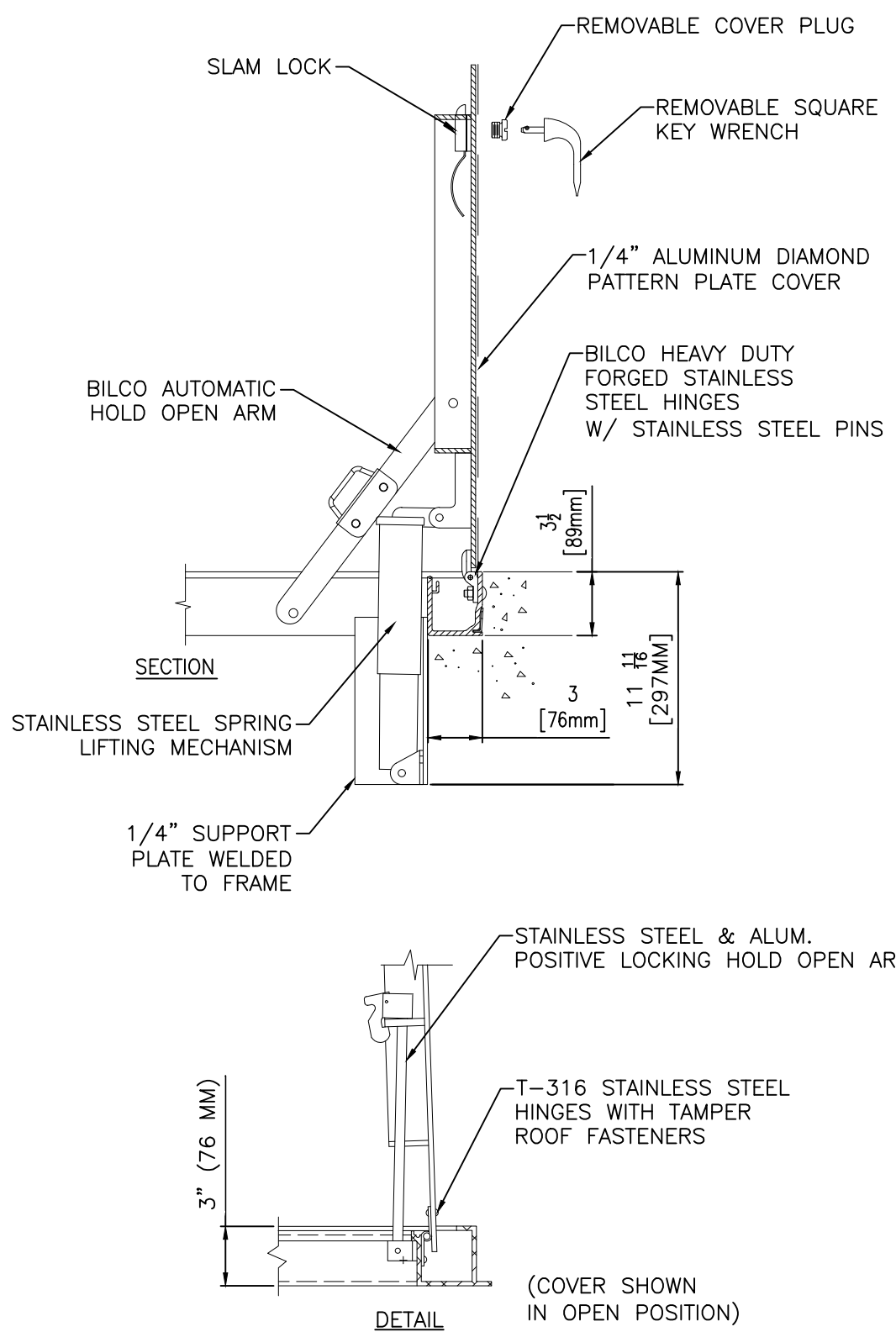
5 PIPE SUPPORT
VAR

SCALE: NTS



6 W1R3636 ACCESS HATCH
VAR

SCALE: NTS



NOTES:
PROVIDE SAFETY GRATE, NOT SHOWN FOR CLARITY

BLACKWATER
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602 LYELL DRIVE, MODESTO, CA 95356 PH. 209.322.1820



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PROJECT NO.
J14068
DESIGNED BY
JMB
DRAWN BY
SPD
CHECKED BY
JMB
DATE
MARCH 2021



TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT UPGRADES

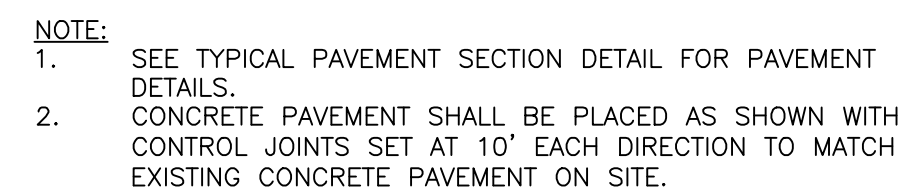
DETAILS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NO.
D-01
SHEET NO.
09 OF 36

J:\14068\TCD\CAD\ASB\18A\WWT\IMP\DESIGN\IMP\TRANS\PLANSET\07-DTS\SD.DWG PLOT: 3/1/2021 2:27:16 PM BY: STEPHANIE DE ASEO



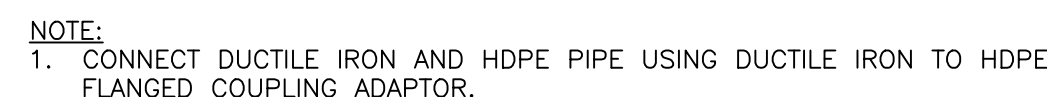
SCALE: NTS



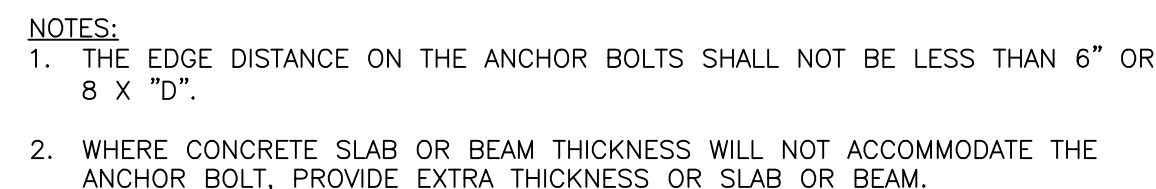
SCALE: NTS



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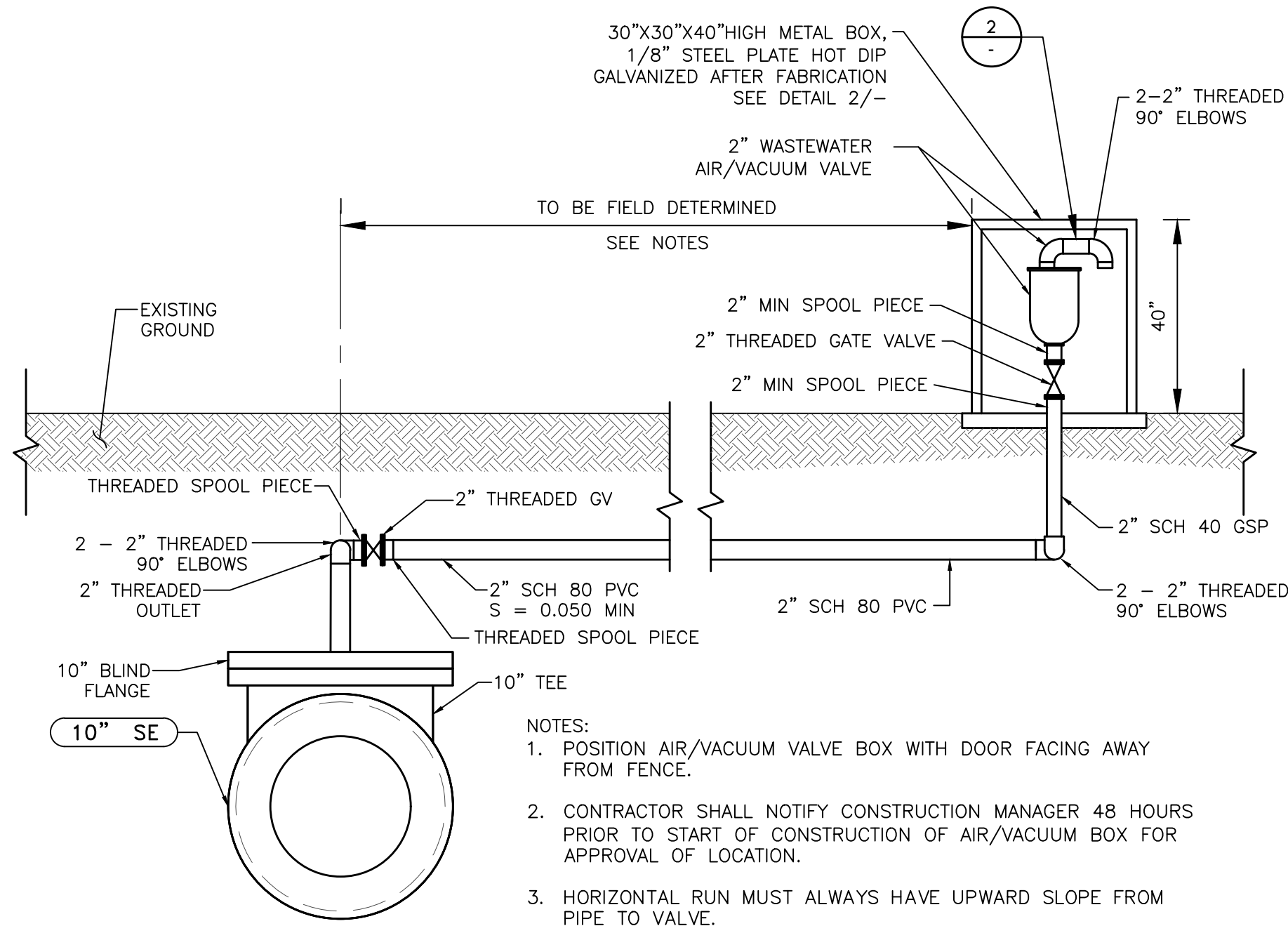
SCALE: NTS



SCALE: NTS



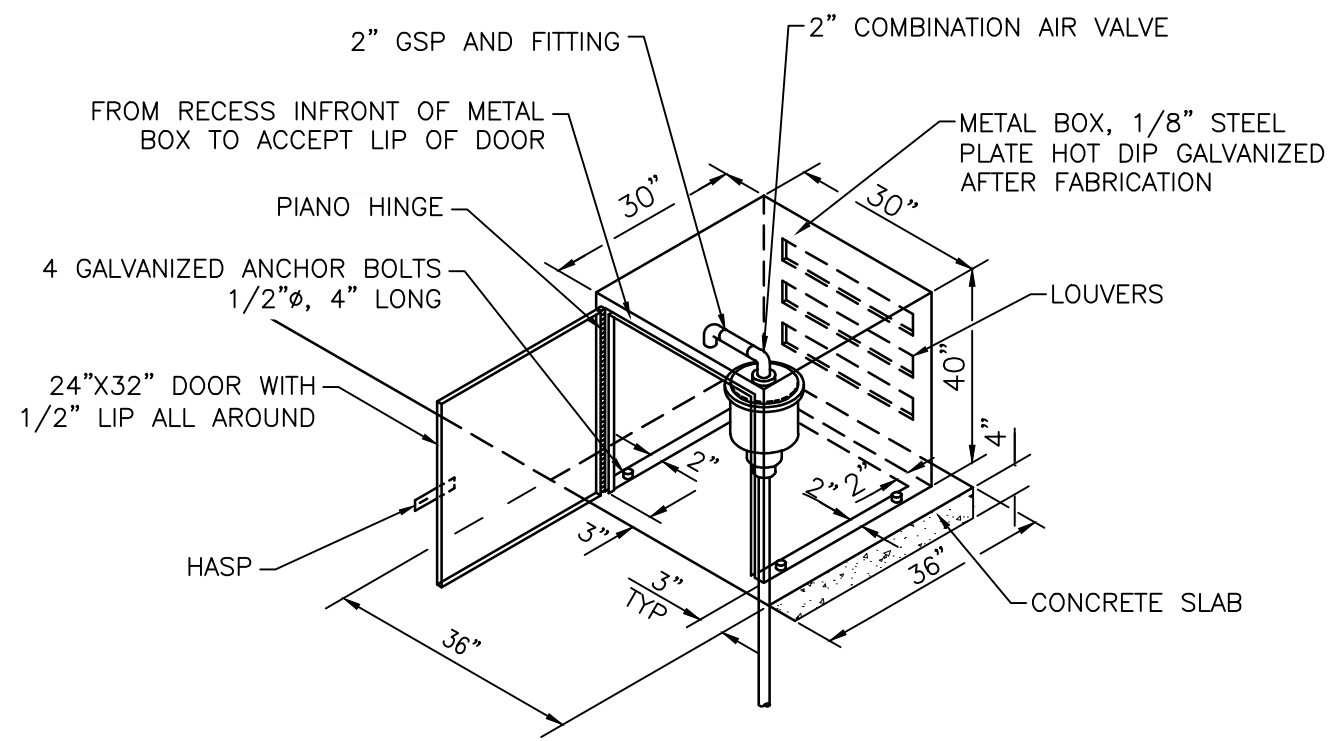
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1
C-05

WASTEWATER AIR/VACUUM VALVE

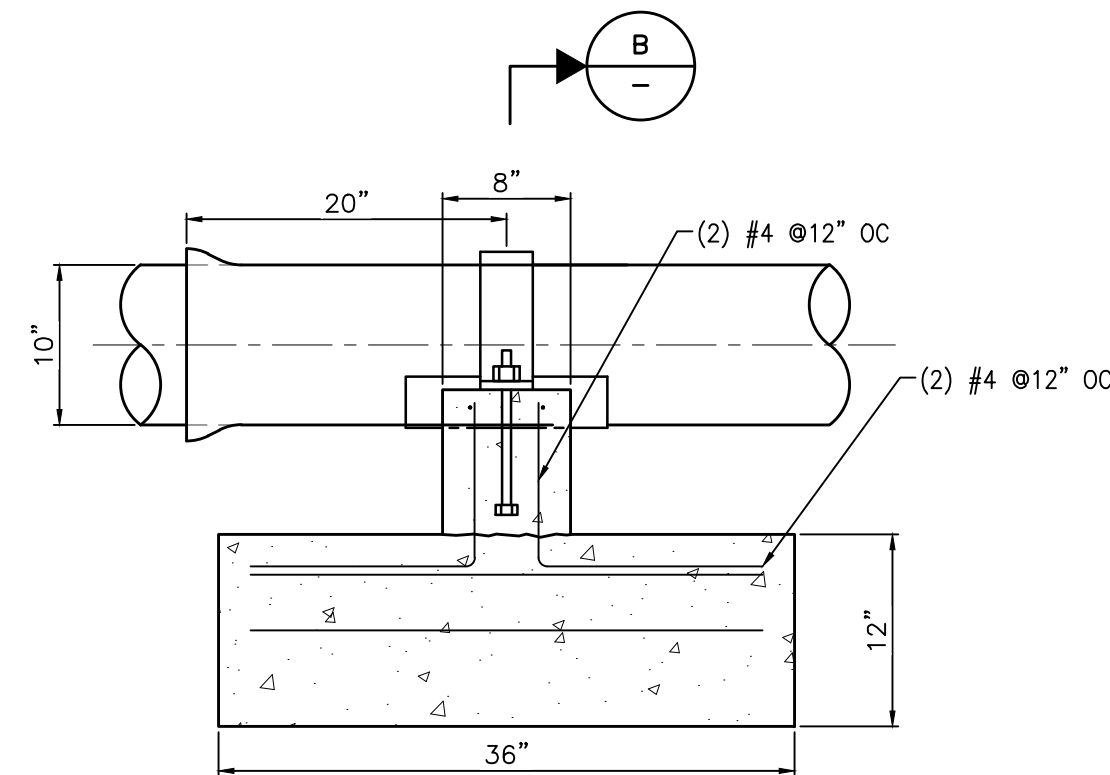
SCALE: NTS



2
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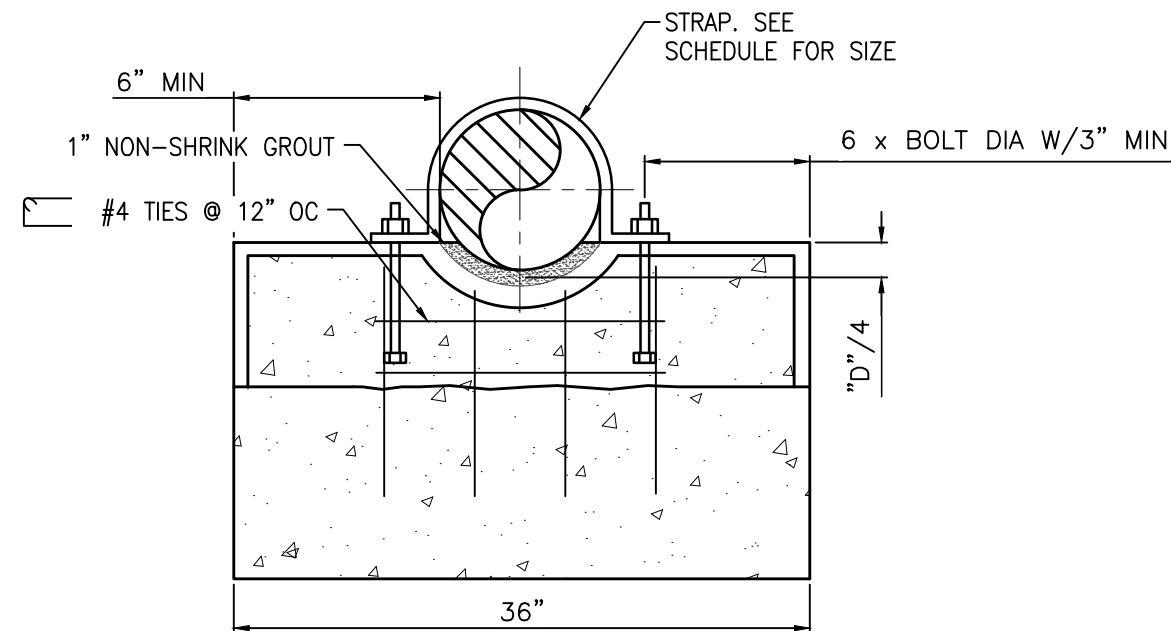
30" X 30" X 40" METAL BOX

SCALE: NTS



A
-

SECTION-SUPPORT AT STRUCTURE



B
-

SECTION

| SCHEDULE | | |
|-----------|------------|-----------------|
| PIPE SIZE | STRAP SIZE | ANCHOR BOLT DIA |
| 8"-12" | 1/4" x 4" | 1/2"Ø |
| 14"-24" | 5/16" x 4" | 5/8"Ø |
| 26"-36" | 3/8" x 4" | 3/4"Ø |

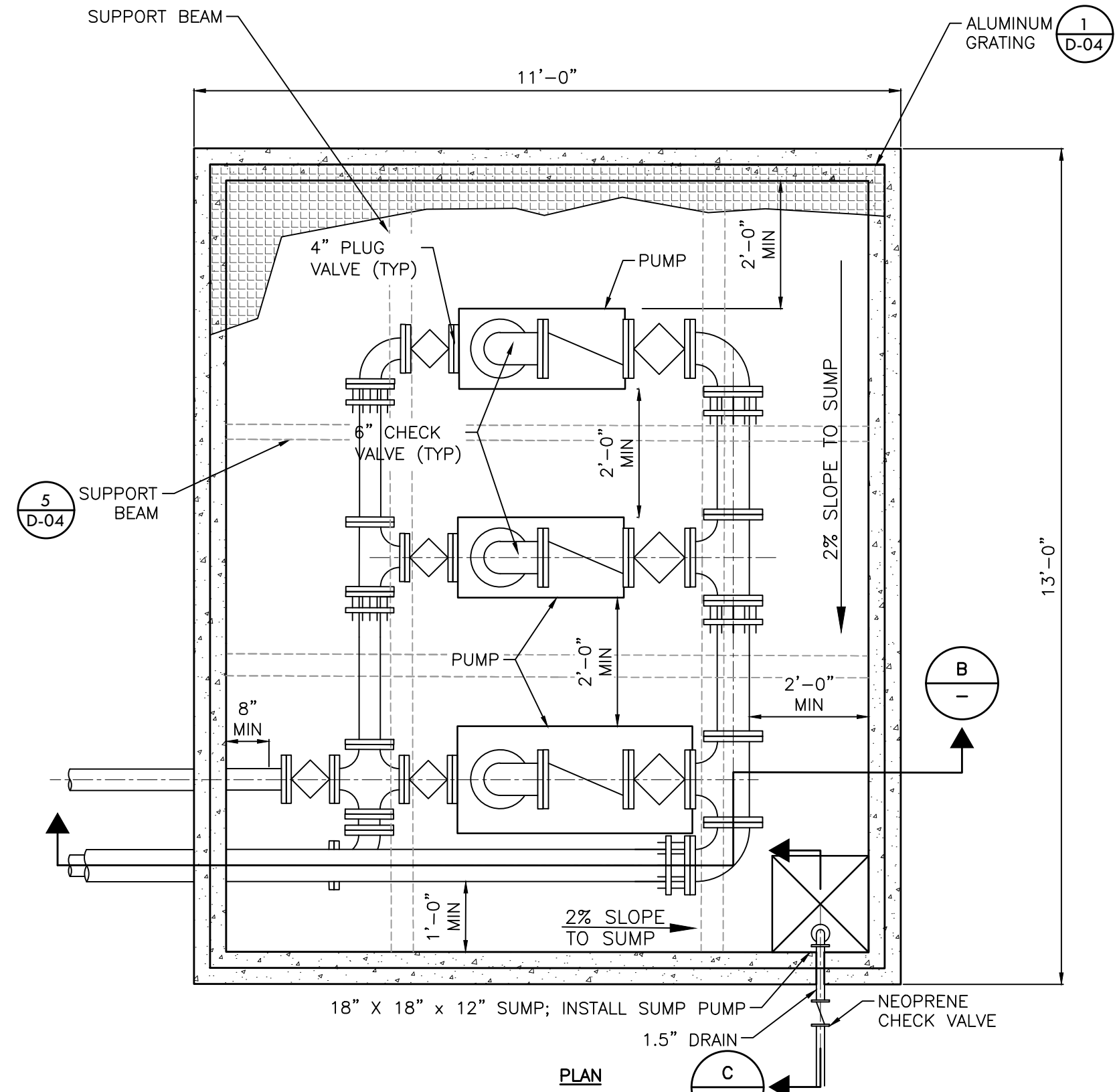
NOTES:

1. IF SUPPORT IS SUBMERGED OR LOCATED BELOW THE TOP OF WALL IN WATER BEARING STRUCTURE, MATERIAL FOR ANCHOR BOLTS AND STRAP SHALL BE STAINLESS STEEL. IN ALL OTHER AREAS, THE MATERIAL FOR ANCHOR BOLTS AND STRAP SHALL BE HOT-DIP GALVANIZED STEEL UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

3
C-05

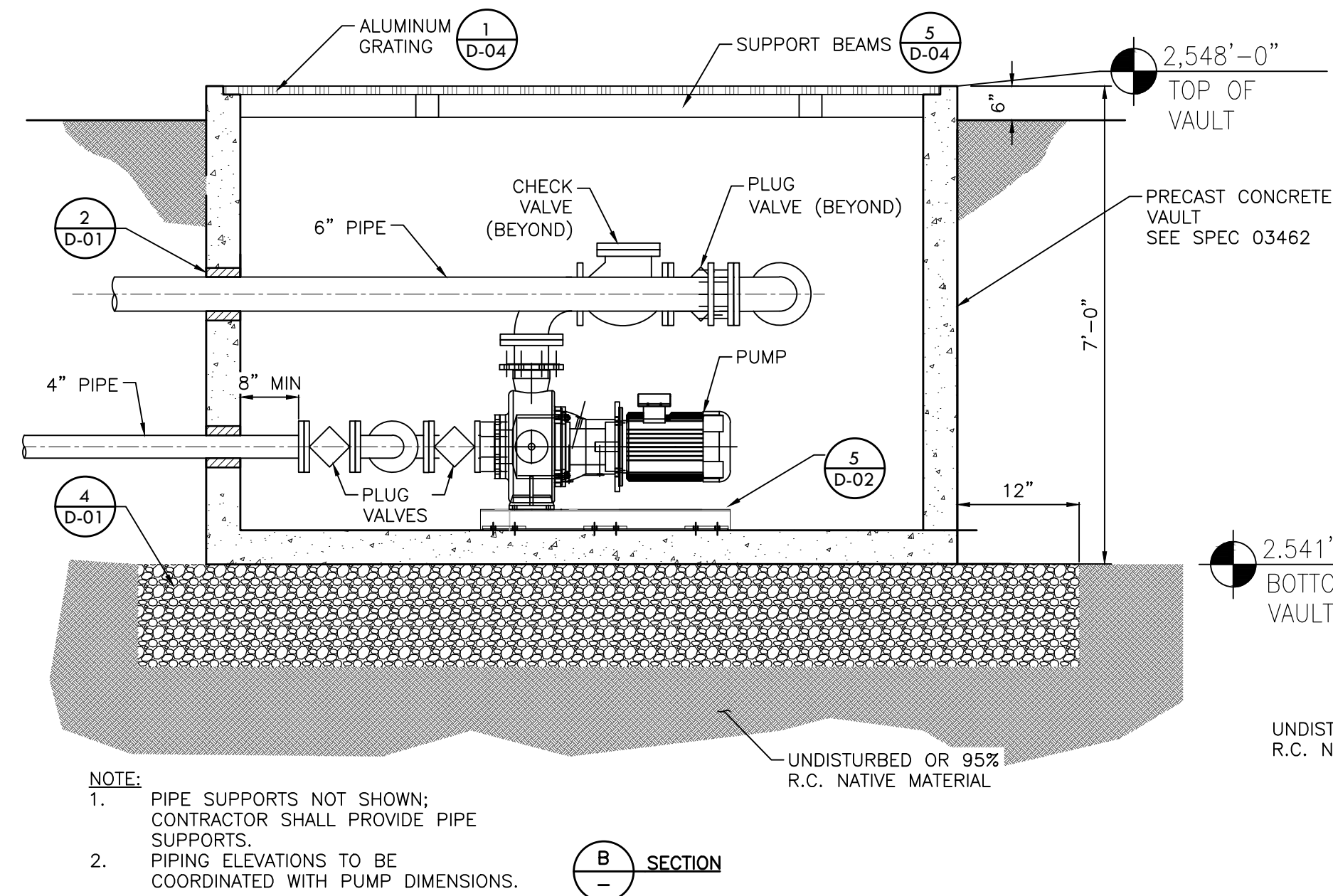
CONCRETE PIPE SUPPORT

SCALE: NTS



NOTE:

1. CONTRACTOR SHALL PROVIDE PIPE SUPPORT



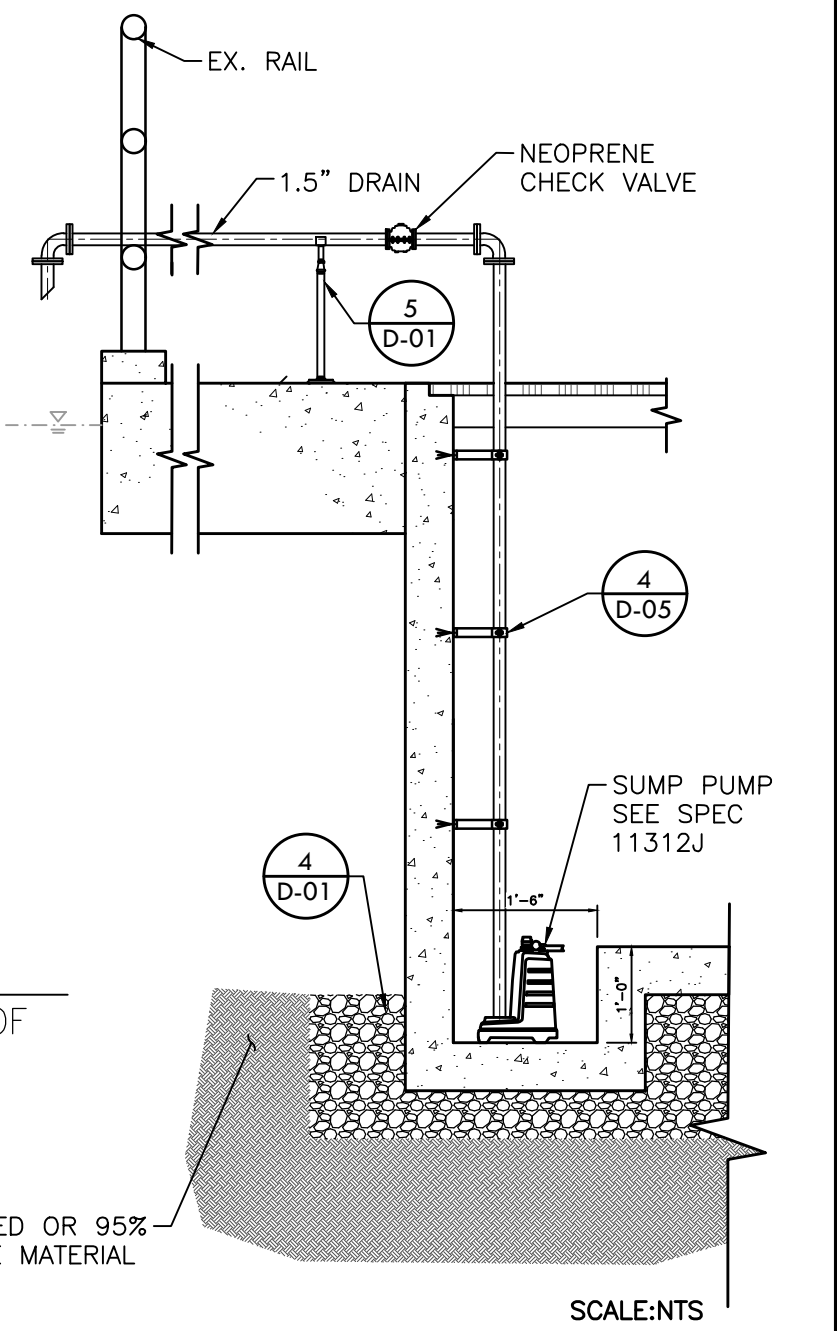
NOTE:

1. PIPE SUPPORTS NOT SHOWN; CONTRACTOR SHALL PROVIDE PIPE SUPPORTS.
2. PIPING ELEVATIONS TO BE COORDINATED WITH PUMP DIMENSIONS.

4
M-03

PUMP PIPING

SCALE: 1"=2'-0"



C
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SECTION

BLACKWATER
CONSULTING ENGINEERS, INC.
602 LYELL DRIVE, MODESTO, CA 95356 PH. 209.322.1820



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PROJECT NO.
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DESIGNED BY
JMB
DRAWN BY
SPD
CHECKED BY
JMB
DATE
MARCH 2021



TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT UPGRADES

DETAILS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NO.
D-03
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STRUCTURAL ALUMINUM

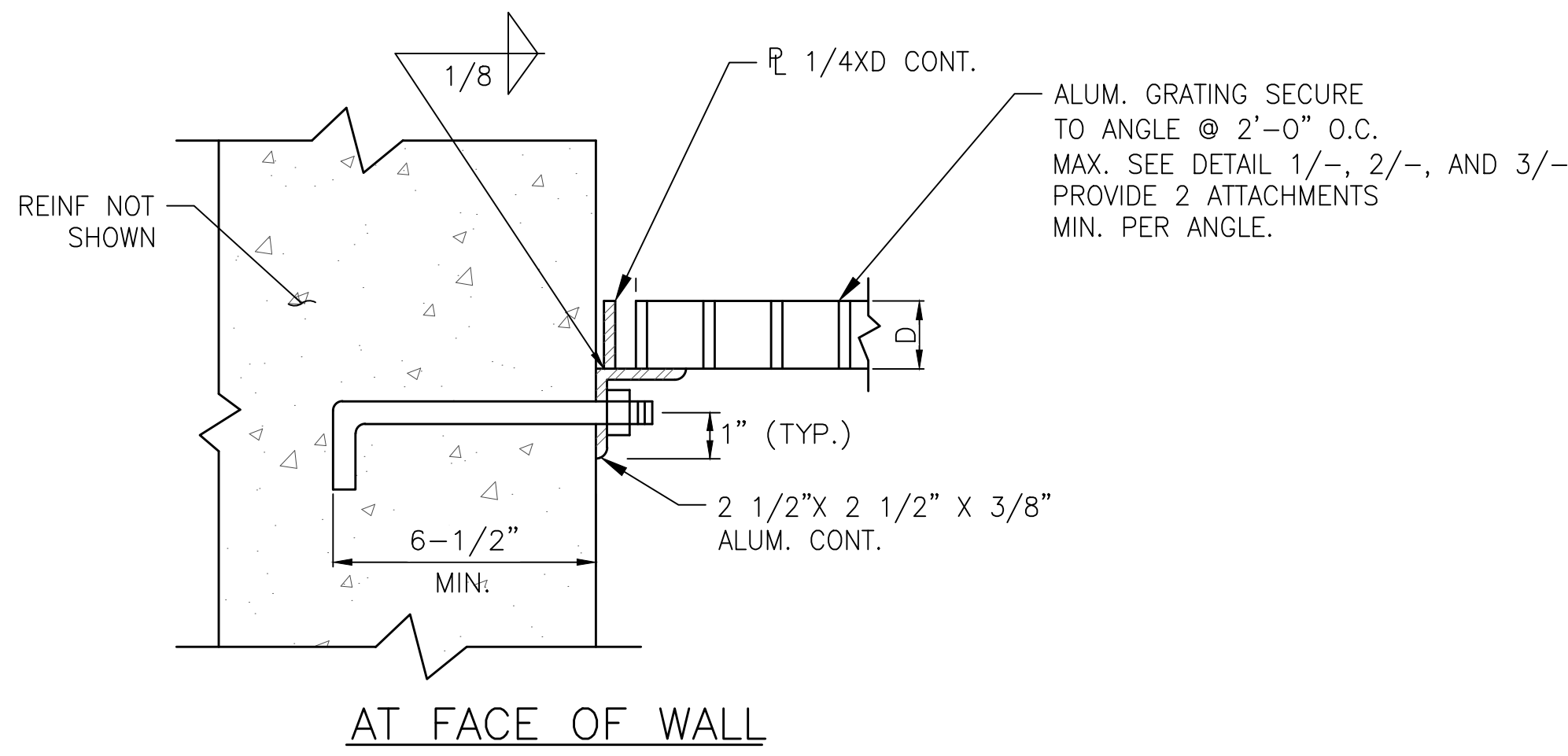
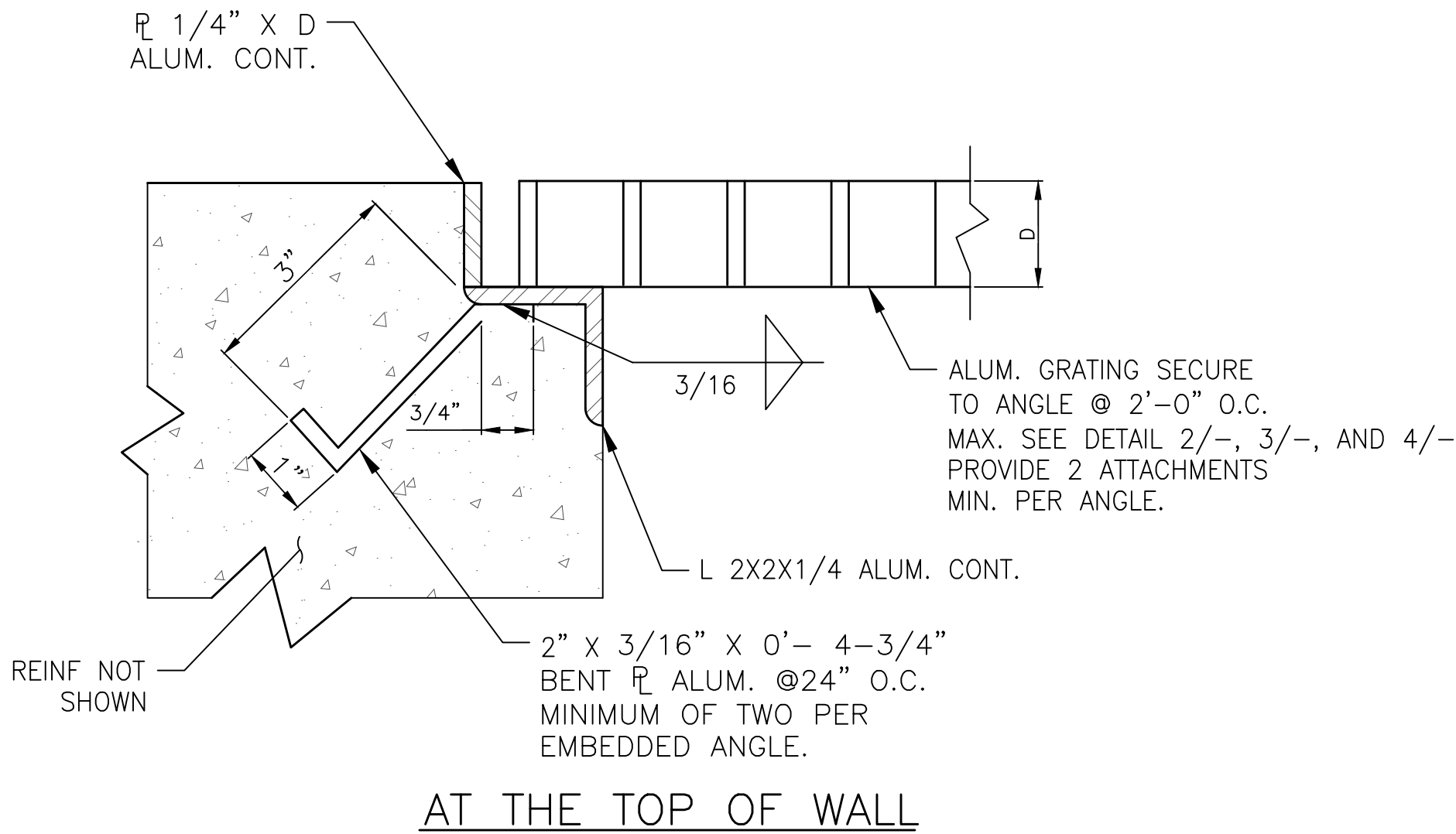
- 1. ALL ALUMINUM WORK SHALL BE PREFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CALIFORNIA BUILDING CODE, CHAPTER 20, "LIGHT WEIGHT METALS"
- 2. ALL ALUMINUM SHALL BE 6061-T6 OR 6063-T6 ALLOY CONFORMING TO ASTM B308.
- 3. WHERE BOLTS ARE NOT SPECIFIED, USE 5/8"Ø ASTM A320, TYPE 316 SST MACHINE BOLTS. ANCHOR BOLTS NOT SPECIFIED SHALL BE 5/8"Ø ASTM A320, TYPE 316 SST.
- 4. COAT ALUMINUM SURFACES IN CONTACT WITH CONCRETE PER THE CONTRACT SPECIFICATIONS.

STRUCTURAL ALUMINUM WELDING

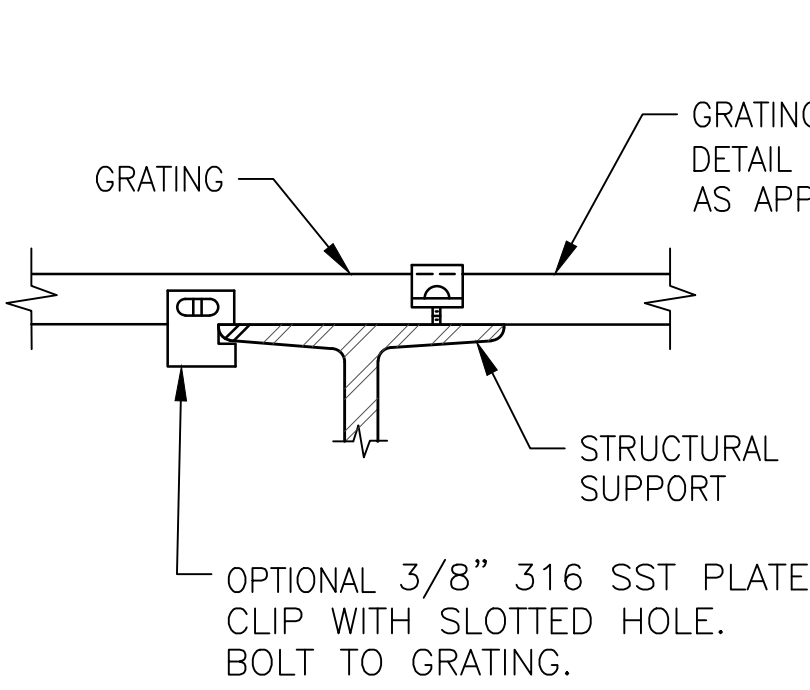
- 1. ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS.
- 2. ALL WELDING OF STRUCTURAL ALUMINUM SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF THE AMERICAN WELDING SOCIETY CODE, AWS D1.2-LATEST EDITION.
- 3. ONLY FILLERS ALLOYS PER 5183, ER 5356, ER 5554, OR ER5556 SHALL BE USED FOR WELDING OF ALUMINUM MEMBERS.
- 4. FIELD WELDING OF ALUMINUM MEMBERS IS PROHIBITED

FIBERGLASS GRATING

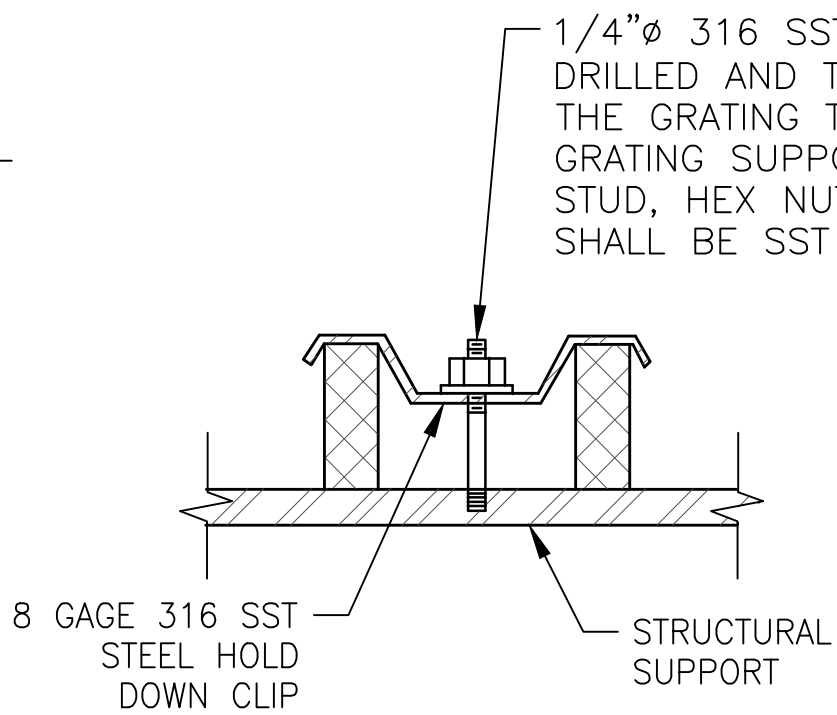
- 1. DETAILS 1,2,3,4 OR THIS SHEET ALSO APPLY TO FIBERGLASS GRATING, EXCEPT ALUMINUM ANGLES IN DETAIL 1 SHALL BE REPLACED WITH FIBERGLASS ANGLES OR SEATS PER THE MANUFACTURER'S RECOMMENDATION.



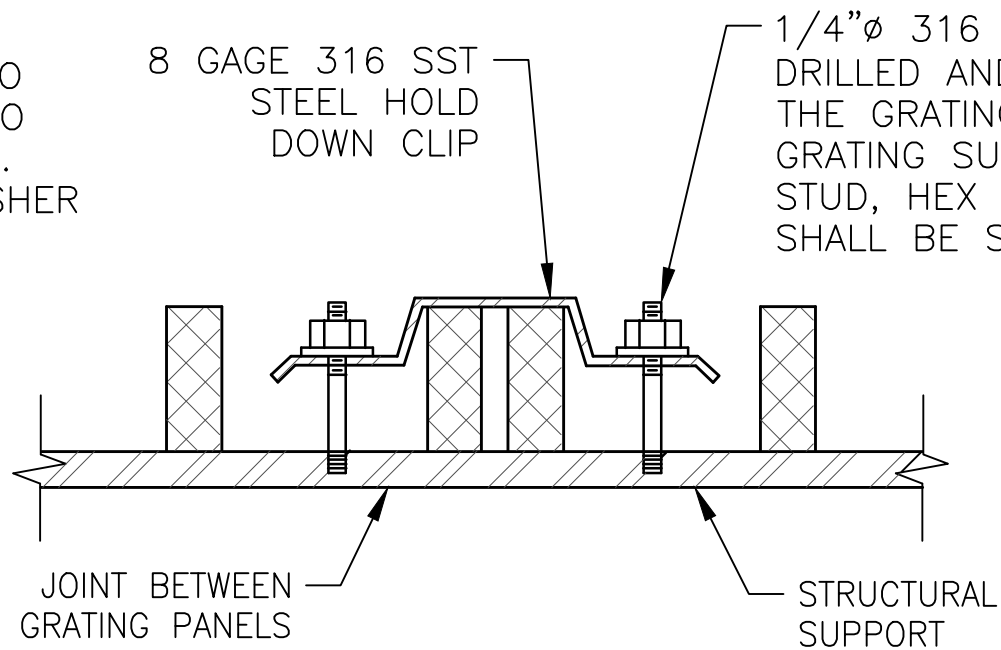
1 GRATING SUPPORT DETAIL SCALE: N.T.S.



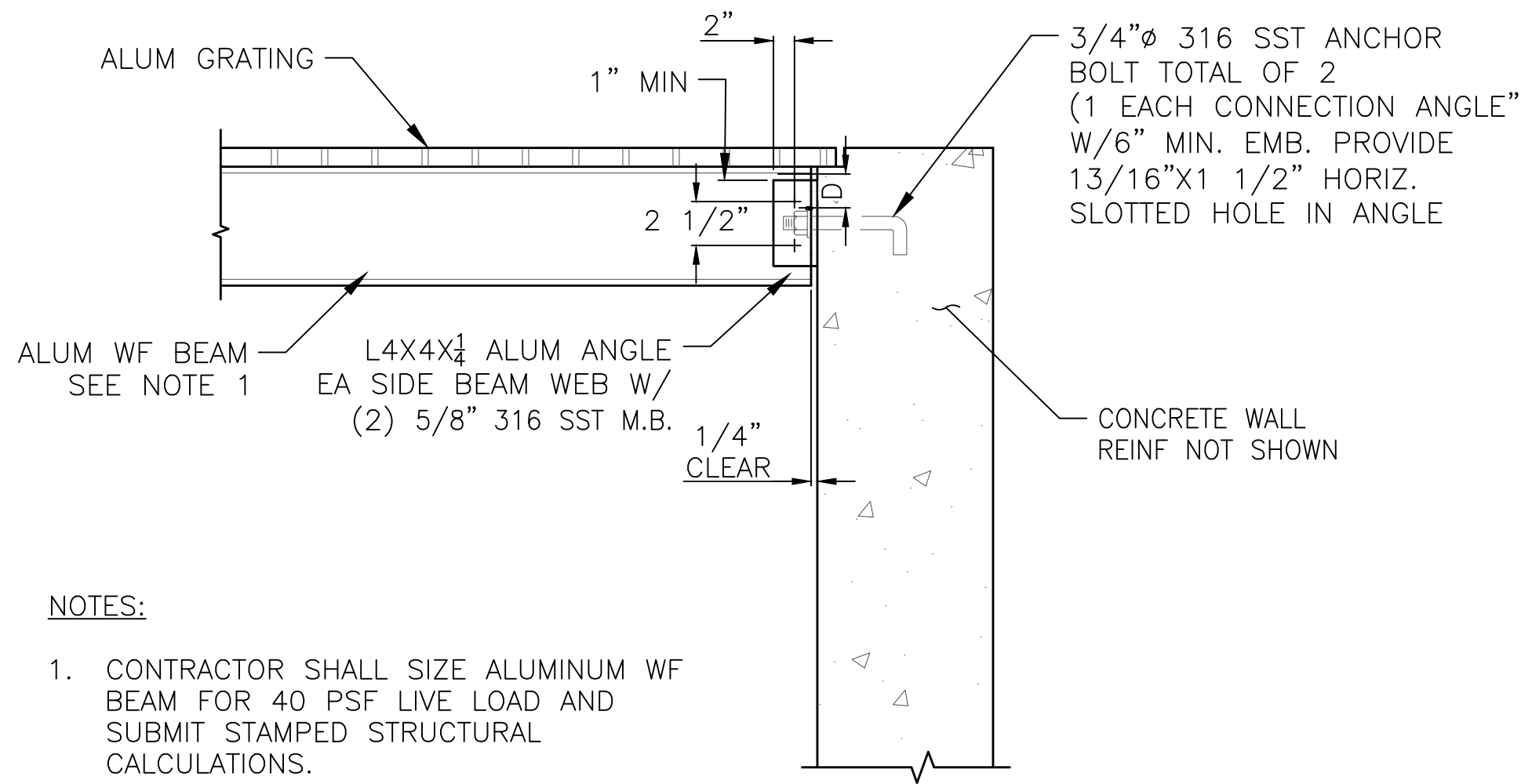
2 GRATING DETAIL SCALE: NTS



3 GRATING DETAIL SCALE: NTS



4 GRATING DETAIL SCALE: NTS



NOTES:

- 1. CONTRACTOR SHALL SIZE ALUMINUM WF BEAM FOR 40 PSF LIVE LOAD AND SUBMIT STAMPED STRUCTURAL CALCULATIONS.

5 GRATING SUPPORT BEAM SCALE: NTS

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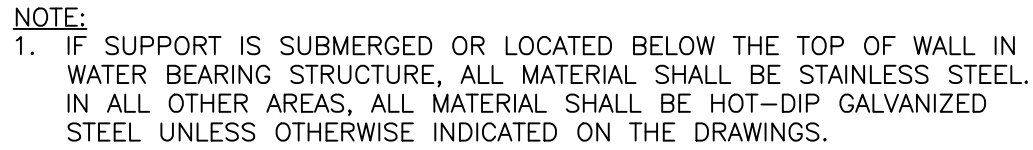
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| PROJECT NO. J14068 |
| DESIGNED BY JMB |
| DRAWN BY SPD |
| CHECKED BY JMB |
| DATE MARCH 2021 |



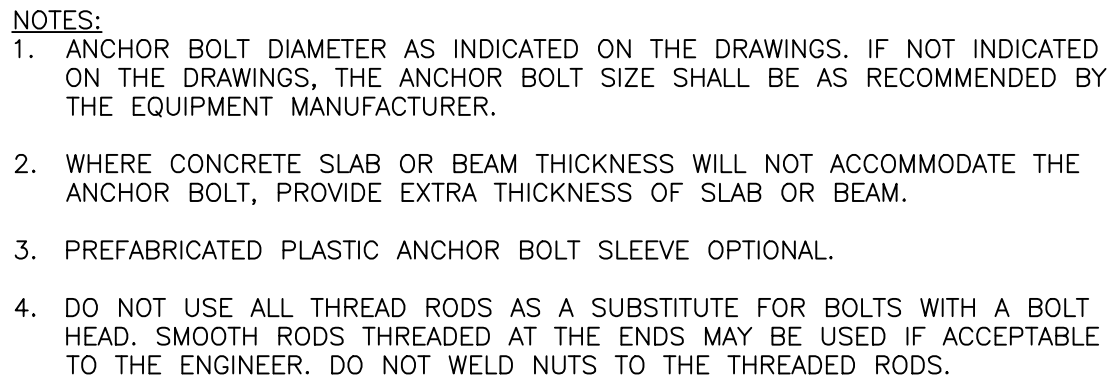
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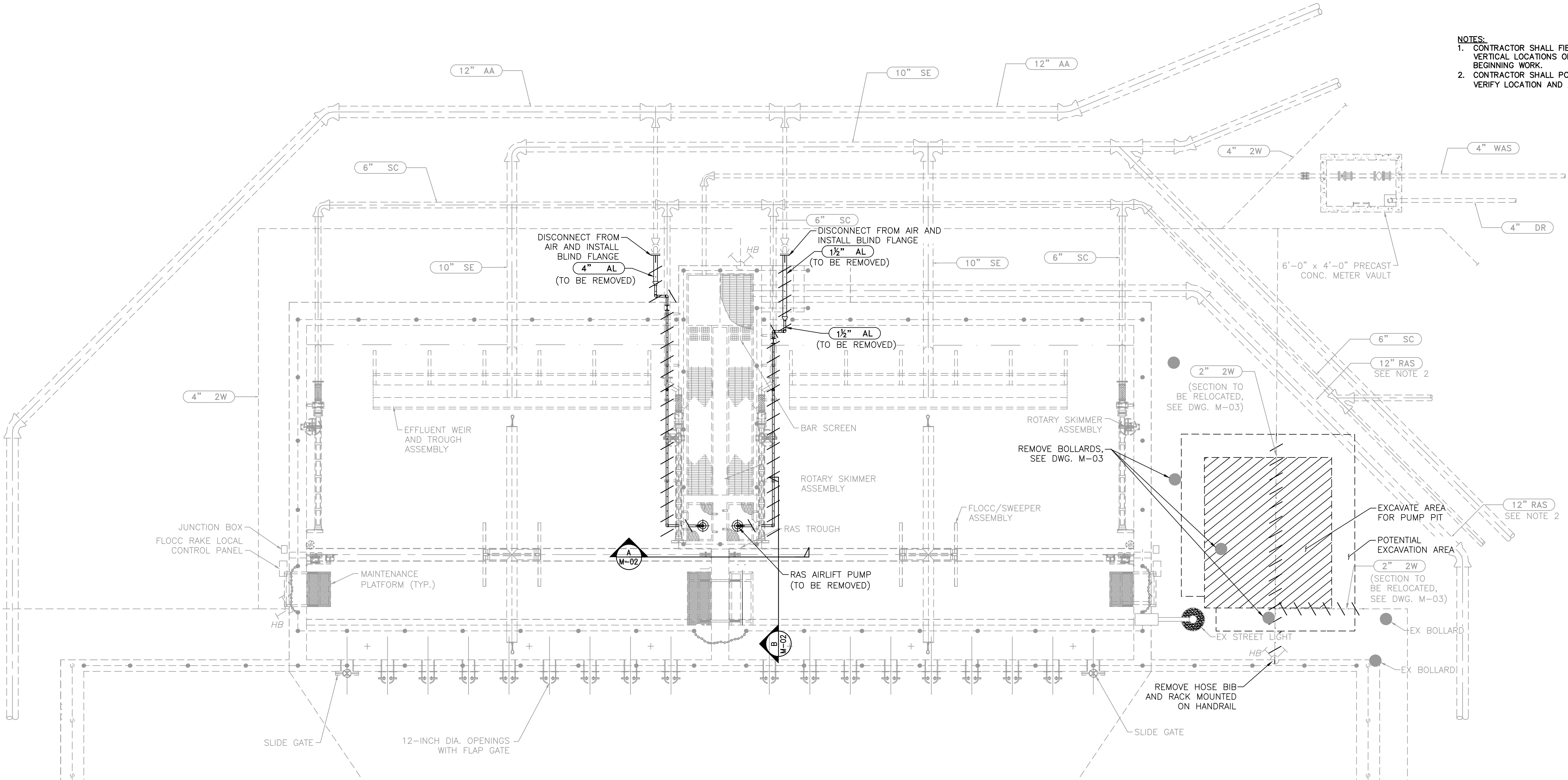


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- NOTES:
1. CONTRACTOR SHALL FIELD VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING PIPING PRIOR TO BEGINNING WORK.
 2. CONTRACTOR SHALL POTHOLE TWO (2) PLACES TO VERIFY LOCATION AND ALIGNMENT OF EX 12" RAS.

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DESIGNED BY
JMB
DRAWN BY
SPD
CHECKED BY
JMB
DATE
MARCH 2021



TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT UPGRADES

INTEGRAL CLARIFIER DEMOLITION PLAN

VERIFY SCALES

BAR IS ONE INCH ON
ORIGINAL DRAWING



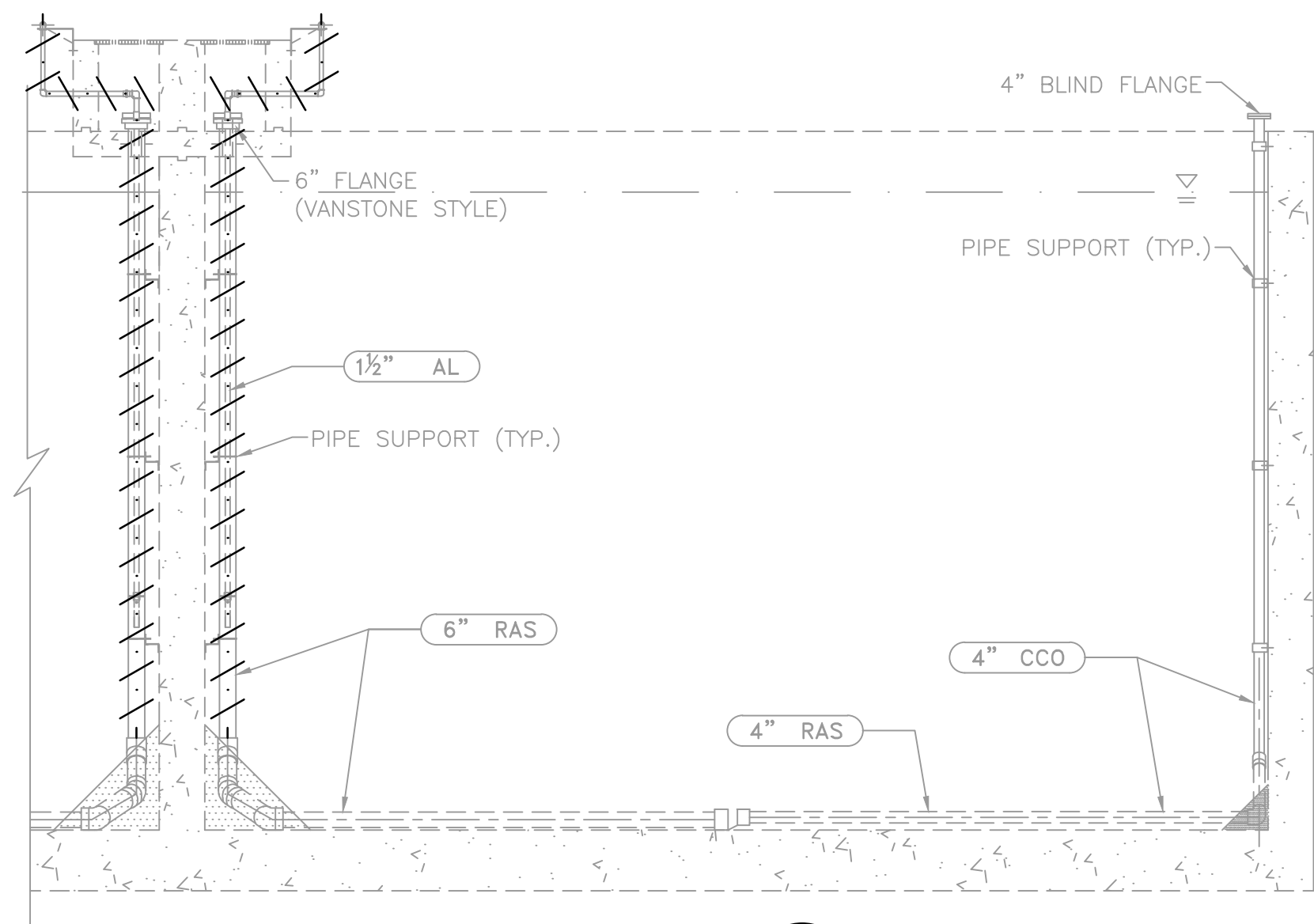
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ACCORDINGLY

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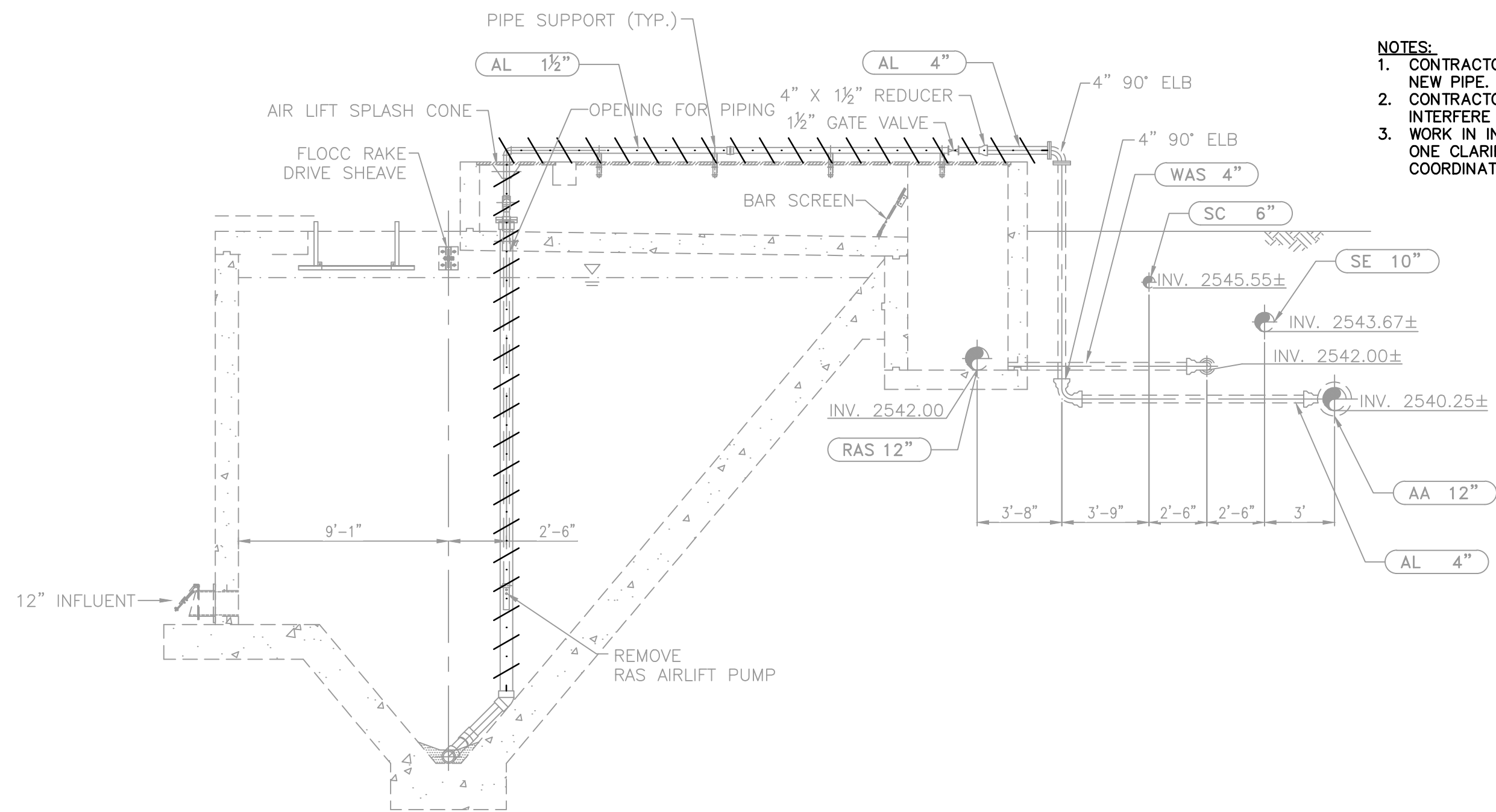
M-01

SHEET NO.

14 OF 36

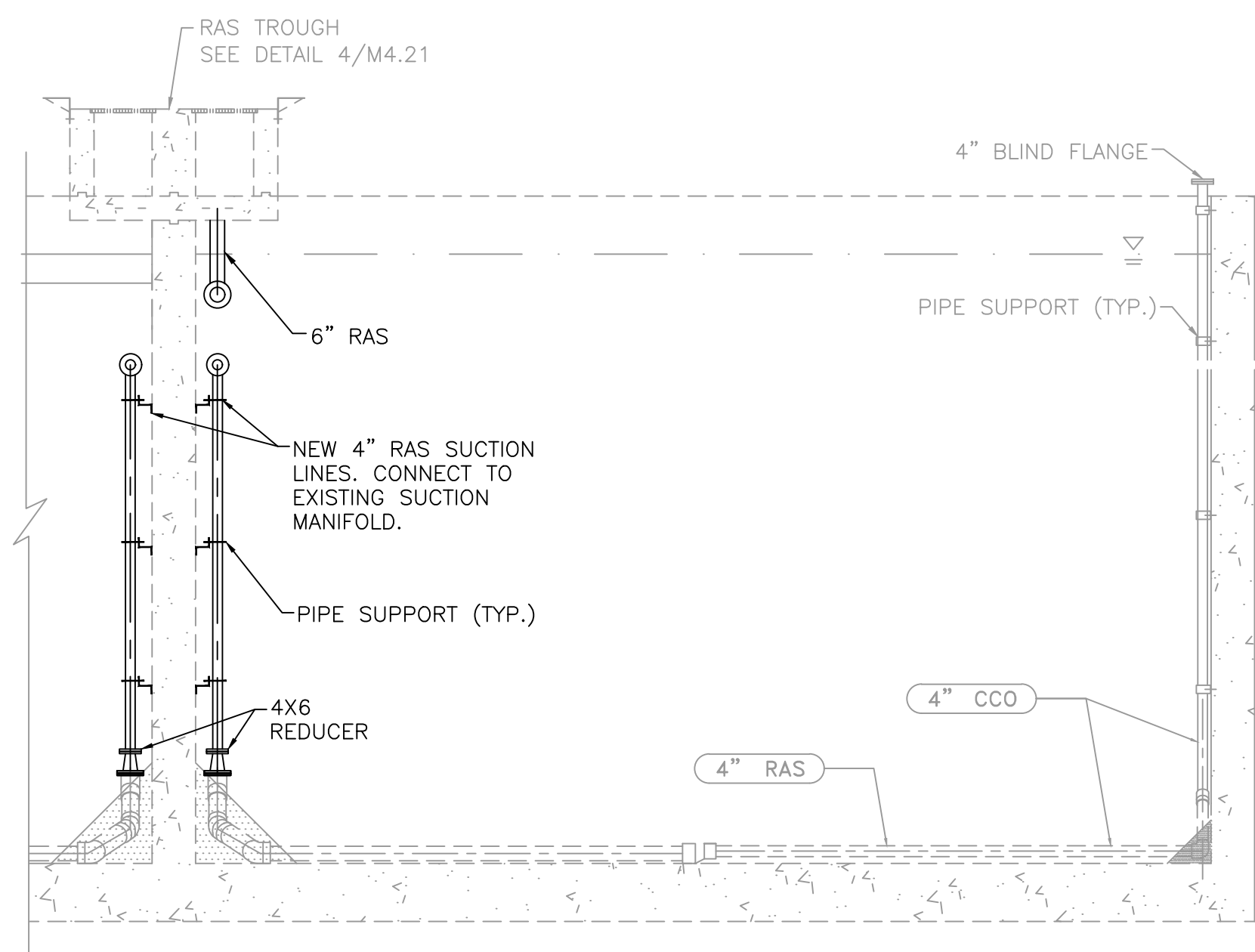


SECTION-DEMO A
SCALE: 1"=5'
M-01

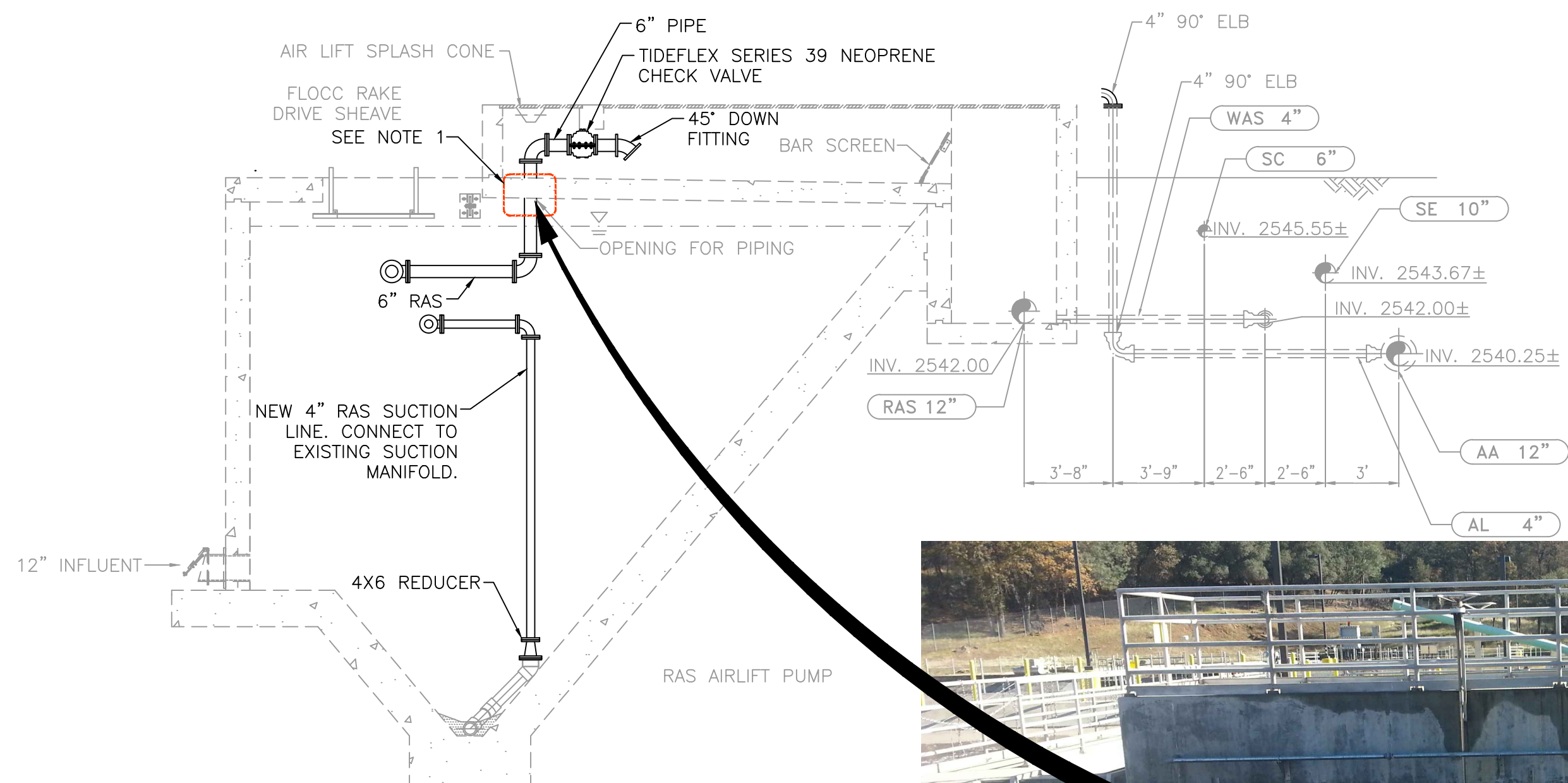


SECTION-DEMO B
SCALE: 1"=5'
M-01

- NOTES:
1. CONTRACTOR MAY USE THE EXISTING OPENING FOR THE NEW PIPE.
 2. CONTRACTOR TO VERIFY THAT NEW PIPING WILL NOT INTERFERE WITH CURRENT SYSTEM.
 3. WORK IN INTEGRAL CLARIFIERS MUST BE SEQUENCED. ONE CLARIFIER MUST BE OPERATIONAL AT ALL TIMES. COORDINATE WORK WITH TCSD.



SECTION-NEW A
SCALE: 1"=5'
M-03



SECTION-NEW B
SCALE: 1"=5'
M-03



BLACKWATER
CONSULTING ENGINEERS, INC.
602 LYELL DRIVE, MODESTO, CA 95356 PH. 209.322.1820



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JMB
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JMB
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MARCH 2021



TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT UPGRADES

RAS DEMOLITION AND PIPING SECTIONS

VERIFY SCALES

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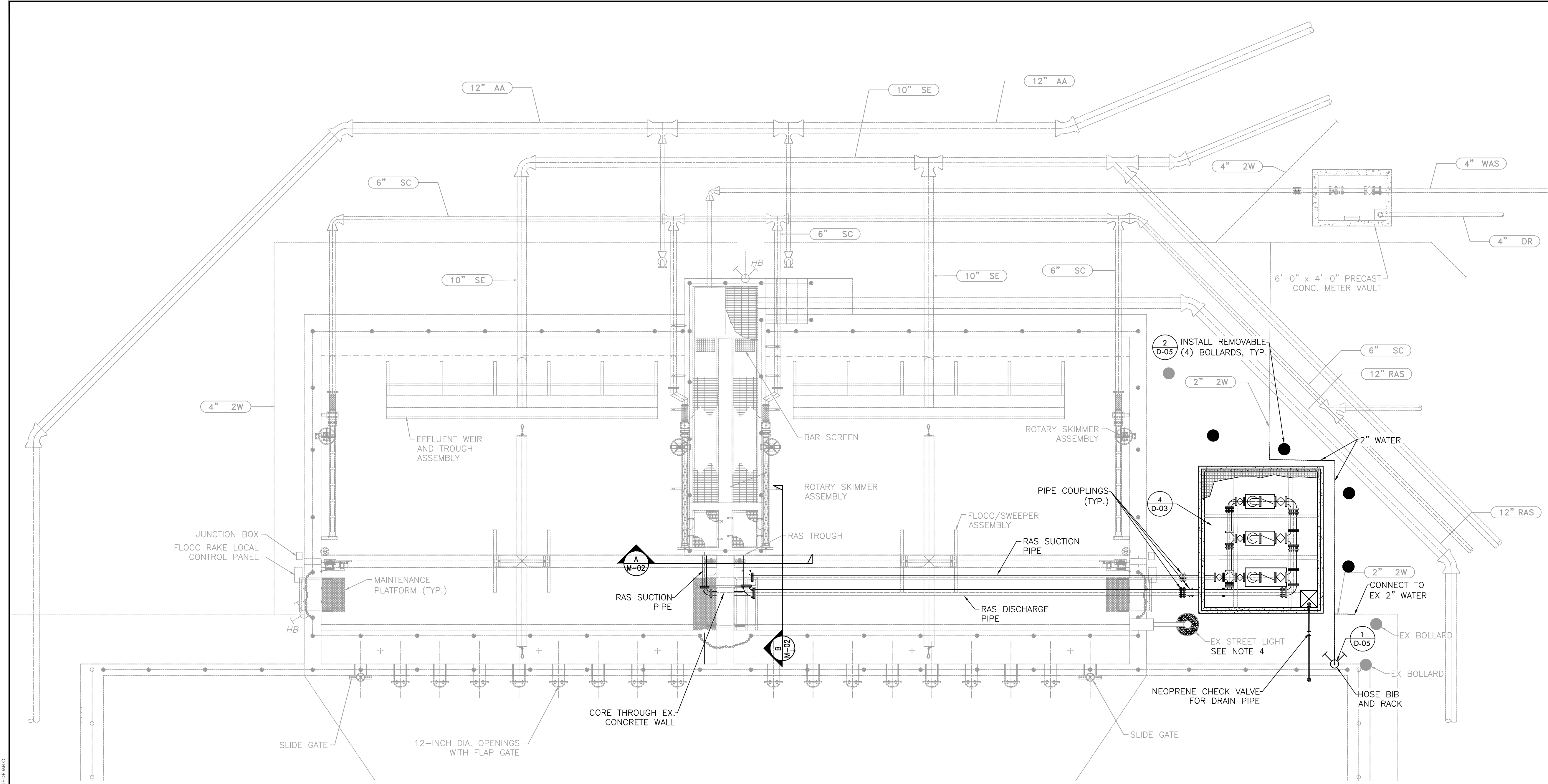
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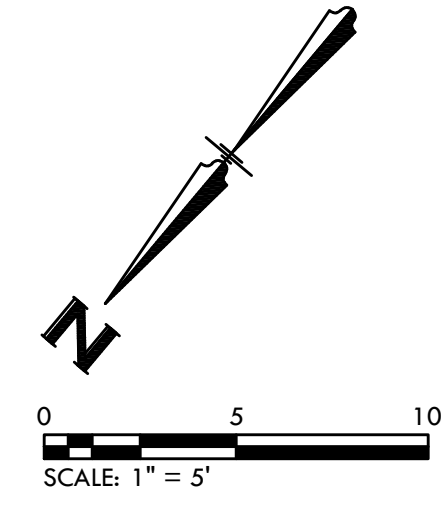
15 OF 36

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1:11 10:08 TESP CADT JASD LBA VVWTH WAP DESIGNING PLANS PLANSHEET 03B INTEGRAL CLUMBER PLANDWG PLOT 31 / 2021 3:10:51 PM BY STEPHANE DE WEO



- NOTES:
1. CONTRACTOR SHALL FIELD VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING PIPING AND ELECTRICAL CONDUIT PRIOR TO BEGINNING WORK.
 2. PROVIDE A MINIMUM VERTICAL CLEARANCE OF 6" AT PIPELINE CROSSINGS.
 3. PROVIDE A MINIMUM HORIZONTAL CLEARANCE OF 12" BETWEEN PIPELINE.
 4. CONTRACTOR SHALL PROVIDE PROPER SUPPORT TO THE EXISTING STREET LIGHT DURING CONSTRUCTION AND RE-ROUTE EXISTING ELECTRICAL CONDUIT AS NEEDED. SEE ELECTRICAL SPECIFICATIONS.
 5. CONTRACTOR SHALL INSTALL PIPE SUPPORTS AT 8-FOOT INTERVALS AND AT BENDS.
 6. WORK IN INTEGRAL CLARIFIERS MUST SEQUENCED. ONE CLARIFIER MUST BE OPERATIONAL AT ALL TIMES. COORDINATE WORK WITH TCSD. SEE SPECIFICATIONS.
 7. CONCRETE ENCASE PIPE IF SPECIFIED CLEARANCES NOT PROVIDED AND IF WITHIN 2" OF STRUCTURE.



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TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT UPGRADES

RAS PUMPING/PIPING PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

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M-03
SHEET NO.
16 OF 36

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| SINGLE LINE DIAGRAM SYMBOLS | SINGLE LINE DIAGRAM SYMBOLS (CONT.) | SCHEMATIC DIAGRAM SYMBOLS | SCHEMATIC DIAGRAM SYMBOLS (CONT.) | LIGHTING SYMBOLS |
|--|---|---|--|---|
| <p>THERMAL MAGNETIC CIRCUIT BREAKER</p> <p>AMP TRIP 30AT 100AF AMP FRAME</p> <p>MCP CIRCUIT BREAKER</p> <p>TRIP SETTING BASED ON MOTOR HORSEPOWER 30AT 100AF CONTINUOUS AMPS</p> <p>LOW VOLTAGE DRAWOUT CIRCUIT BREAKER</p> <p>20AT 100AF (L-S-I-G) L = LONG TIME S = SHORT TIME I = INSTANTANEOUS G = GROUND FAULT</p> <p>COMBINATION NEMA RATED STARTER X = NEMA SIZE Y = TYPE (FVNR, FVR)</p> <p>NEMA X</p> <p>VARIABLE FREQUENCY DRIVE X = HP RATING</p> <p>REDUCED VOLTAGE SOLID STATE STARTER X = HP RATING</p> <p>PACKAGED EQUIPMENT X = EQUIPMENT SIZE Y = TYPE (KW, KVA, OR HP AS INDICATED)</p> <p>KEY INTERLOCK</p> <p>TRANSFER SWITCH (MANUAL OR AUTOMATIC)</p> <p>AMMETER SWITCH</p> <p>CONTROL SWITCH</p> <p>SHORTING BLOCK</p> <p>VOLTMETER SWITCH</p> <p>METERING DEVICE X = METER TYPE</p> <p>WHM — WATT HOUR METER WM — WATT METER AM — AMMETER VM — VOLTMETER PFM — POWER FACTOR METER</p> <p>POTENTIAL TRANSFORMER RATIO AND NUMBER OF PT'S AS INDICATED</p> <p>CURRENT TRANSFORMER RATIO AND NUMBER OF CT'S AS INDICATED</p> <p>FUSE 5A SIZE AS INDICATED</p> <p>FLA MOTOR SFA X = HORSEPOWER</p> <p>DELTA-WYE TRANSFORMER WITH SECONDARY KVA SIZE AND VOLTAGE RATIO AS INDICATED</p> | <p>FUSED CONTROL POWER TRANSFORMER</p> <p>ELECTRICAL MOTOR OPERATED VALVE, WITH INTEGRAL REVERSING STARTER</p> <p>DISCONNECT SWITCH SIZE AS INDICATED</p> <p>DISCONNECT SWITCH WITH EMERGENCY STOP SIZE AS INDICATED</p> <p>FUSED DISCONNECT SWITCH SIZE AS INDICATED</p> <p>CAPACITOR</p> <p>SURGE PROTECTIVE DEVICE</p> <p>SOLID STATE METERING DEVICE</p> <p>LIGHTNING ARRESTOR AND SURGE CAPACITOR</p> <p>POWER FILTER/CONDITIONER</p> <p>CONDUIT AND RACEWAY SYMBOLS</p> <p>EXPOSED OR CONCEALED CONDUIT</p> <p>CONDUIT RUN (UNDERGROUND OR IN CONCRETE)</p> <p>CONDUIT RUN (CHANGE IN ELEVATION)</p> <p>CONDUIT TURNING UP</p> <p>CONDUIT TURNING DOWN</p> <p>CONDUIT GROUPED TOGETHER AND SHOWN AS SINGLE LINE FOR CLARITY</p> <p>CONDUIT FROM FLOOR ABOVE TO FLOOR BELOW</p> <p>CONDUIT CAPPED, OR SEALED</p> <p>HOMERUN TO EQUIPMENT INDICATED (3/4" CONDUIT 2#12, 1#12GND UNLESS INDICATED OTHERWISE)</p> <p>MISCELLANEOUS SYMBOLS</p> <p>JUNCTION BOX OR FITTING</p> <p>POWER PANEL</p> <p>MOTOR</p> <p>THERMOSTAT</p> <p>FIELD DEVICE</p> <p>COMBINATION STARTER</p> <p>GROUNDING SYMBOLS</p> <p>GROUND ROD AND GROUND WELL</p> <p>GROUND ROD (3/4" X 10'-0")</p> <p>GROUND CONNECTION - BOLTED TYPE</p> <p>GROUND CONNECTION - EXOTHERMIC TYPE</p> <p>BARE COPPER GROUND TO GROUND WIRE IN SLAB, OR UNDERGROUND GROUND GRID</p> <p>EARTH GROUNDING</p> | <p>SINGLE POLE TOGGLE SWITCH</p> <p>VACUUM OR PRESSURE SWITCH CLOSE ON RISING PRESSURE</p> <p>VACUUM OR PRESSURE SWITCH OPEN ON RISING PRESSURE</p> <p>FLOAT LEVEL SWITCH CLOSE ON RISING LEVEL</p> <p>FLOAT LEVEL SWITCH OPEN ON RISING LEVEL</p> <p>NORMALLY OPEN</p> <p>NORMALLY CLOSED</p> <p>NORMALLY OPEN HELD CLOSED</p> <p>NORMALLY CLOSED HELD OPEN</p> <p>MAINTAINED POSITION</p> <p>TEMPERATURE SWITCH CLOSE ON RISING TEMPERATURE</p> <p>TEMPERATURE SWITCH OPEN ON RISING TEMPERATURE</p> <p>FLOW SWITCH CLOSE ON INCREASING FLOW</p> <p>FLOW SWITCH OPEN ON INCREASING FLOW</p> <p>TORQUE SWITCH OPEN ON INCREASING TORQUE</p> <p>SOLENOID VALVE</p> <p>E-STOP PUSHBUTTON</p> <p>DIGITAL INPUT TO PLC/RTU/DCS</p> <p>DIGITAL OUTPUT FROM PLC/RTU/DCS NORMALLY OPEN</p> <p>DIGITAL OUTPUT FROM PLC/RTU/DCS NORMALLY CLOSED</p> <p>ANALOG INPUT TO PLC/RTU/DCS 4-20 mA (UNLESS INDICATED OTHERWISE)</p> <p>ANALOG OUTPUT FROM PLC/RTU/DCS 4-20 mA (UNLESS INDICATED OTHERWISE)</p> <p>THREE - POSITION SELECTOR SWITCH</p> <p>TWO - POSITION SELECTOR SWITCH</p> <p>THREE - POSITION SPRING RETURN-TO-CENTER MOMENTARY CONTACT SWITCH</p> | <p>CONTROL RELAY OR COIL X = DEVICE</p> <p>CR — CONTROL RELAY TD — TIME DELAY RELAY (TIMING RANGE AS INDICATED) M — MOTOR STARTER PC — PHOTOCELL</p> <p>NORMALLY OPEN CONTACT</p> <p>NORMALLY CLOSED CONTACT</p> <p>NORMALLY OPEN CONTACT LINE REFERENCE</p> <p>NORMALLY CLOSED CONTACT LINE REFERENCE</p> <p>TIMED CONTACTS</p> <p>CONTACT ACTION IS DELAYED AFTER COIL IS: ENERGIZED</p> <p>TD1 NORMALLY OPEN WITH TIME DELAY CLOSING</p> <p>TD1 NORMALLY CLOSED WITH TIME DELAY OPENING</p> <p>DE-ENERGIZED</p> <p>TD1 NORMALLY OPEN WITH INSTANT CLOSING AND TIME DELAY OPENING</p> <p>TD1 NORMALLY CLOSED WITH INSTANT OPENING AND TIME DELAY CLOSING</p> <p>START NORMALLY OPEN PUSHBUTTON</p> <p>STOP NORMALLY CLOSED PUSHBUTTON</p> <p>NO/NC MAINTAINED PUSHBUTTON</p> <p>PILOT LIGHT X = LENS COLOR R — RED G — GREEN A — AMBER W — WHITE</p> <p>PILOT LIGHT (PUSH-TO-TEST) X = LENS COLOR (SEE ABOVE)</p> <p>HORN</p> <p>ELAPSED TIME METER</p> <p>HEATER</p> <p>GROUND CONNECTION</p> <p>CROSSING OF CONDUCTORS - NOT CONNECTED</p> <p>CROSSING OF CONDUCTORS - CONNECTED</p> <p>FUSE</p> <p>VOLTAGE SURGE SUPPRESSOR</p> | <p>LUMINAIRE X = LIGHTING PANEL DESIGNATION # = CIRCUIT NUMBER a = SWITCH DESIGNATION</p> <p>WALL MOUNTED LUMINAIRE</p> <p>POLE, BRACKET, ARM, AND STREETLIGHT</p> <p>FLUORESCENT LUMINAIRE</p> <p>EMERGENCY LUMINAIRE BATTERY OPERATED</p> <p>EXIT LIGHT, SHOWN WITH TWO ILLUMINATED SIDES, ARROWS INDICATE DIRECTION OF EXIT</p> <p>LUMINAIRE CALLOUT A = LUMINAIRE TYPE # = APPROXIMATE MOUNTING HEIGHT AFF CLG = CEILING MOUNT (SEE LUMINAIRE SCHEDULE FOR MORE DETAILS)</p> <p>LIGHT SWITCH X = LIGHTING PANEL DESIGNATION # = CIRCUIT DESIGNATION a = SWITCH DESIGNATION * = SWITCH TYPE</p> <p>3 — 3 WAY 4 — 4 WAY D — DIMMER M — MANUAL MOTOR STARTER</p> <p>120V DUPLEX RECEPTACLE, NEMA CONFIGURATION 5-20R (WALL MOUNT) X = PANELBOARD DESIGNATION # = CIRCUIT DESIGNATION * = TYPE</p> <p>WP — WEATHERPROOF XP — EXPLOSION PROOF GFCI — GROUND FAULT CIRCUIT INTERRUPTER</p> <p>120V DUPLEX RECEPTACLE, NEMA CONFIGURATION 5-20R (FLOOR MOUNT)</p> <p>WELDING RECEPTACLE X = AMPERAGE</p> <p>SPECIAL PURPOSE RECEPTACLE, 480 VAC X = AMPERAGE</p> |

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| ELECTRICAL ABBREVIATIONS | | | | GENERAL ELECTRICAL NOTES | GENERAL ELECTRICAL NOTES (CONT.) |
|---|---|---|---|---|--|
| A AC AF AHF AM ANN ASD AT ATS AUTO AWG BATT BC BKR C CB CKT CLF CLG COM COMM COMP CP CPT CR CT DCS DISC DISTR DP DPDT DPST E EMT ENCL ETM EUPS F FDR FLA FLUOR FM FO FPR FVR FVNR GEN GFCI GFP GND H HH HID HOA HPS HRN HS HZ IMC INCAND IND INST I/O Isc ISO JJB KA KAIC KMIL KV KVA KW LCP LCS LOC LOR LOS LP LRA LS LTCP LTG LTS | AMPERE, AUTOMATIC ALTERNATING CURRENT CIRCUIT BREAKER FRAME SIZE ACTIVE HARMONIC FILTER AMMETER ANNUNCIATOR ADJUSTABLE SPEED DRIVE AMPERE TRIP AUTOMATIC TRANSFER SWITCH AUTOMATIC AMERICAN WIRE GAUGE BATTERY BARE COPPER BREAKER CONDUIT, CLOSED CIRCUIT BREAKER CIRCUIT CURRENT LIMITING FUSE CEILING COMMON COMMUNICATIONS COMPARTMENT CONTROL PANEL CONTROL POWER TRANSFORMER CONTROL RELAY, CARD READER CURRENT TRANSFORMER DISTRIBUTED CONTROL SYSTEM DISCONNECT DISTRIBUTION DISTRIBUTION PANEL DOUBLE POLE DOUBLE THROW DOUBLE POLE SINGLE THROW EMERGENCY ELECTRICAL METALLIC TUBING ENCLOSURE ELAPSED TIME METER ENGINE UTILITY PARALLELING SYSTEM FREQUENCY, FUSE, FIXED FEEDER FULL LOAD AMPS FLUORESCENT FREQUENCY METER FIBER OPTIC FEEDER PROTECTION RELAY FULL VOLTAGE REVERSING FULL VOLTAGE NON-REVERSING GENERATOR GROUND FAULT CIRCUIT INTERRUPTER GROUND FAULT PROTECTION GROUND HAND HAND HOLE HIGH INTENSITY DISCHARGE HAND-OFF-AUTOMATIC HIGH PRESSURE SODIUM HORN HAND SWITCH HERTZ INTERMEDIATE METALLIC CONDUIT INCANDESCENT INDICATION INSTANTANEOUS INPUT/OUTPUT SHORT CIRCUIT CURRENT, AMPS ISOLATION JUNCTION BOX KILO AMPERES KILO AMP INTERRUPTING CURRENT KILO CIRCULAR MILS KILOVOLT KILOVOLT AMPERE KILOWATT LOCAL CONTROL PANEL LOCAL CONTROL STATION LOCAL LOCAL-OFF-REMOTE LOCKOUT STOP PUSHBUTTON LIGHTING PANEL LOCKED ROTOR AMPS LEVEL SWITCH LIGHTING CONTROL PANEL LIGHTING LIGHTS | M mA MCC MCP MLO MOV MSC MTS NEUT NP O OL PA PB PC PCM PF PFM PH PL PLC PNLBD PP POS POT PRI PT PTZ PWR R RECPT RGS RMS RTU RVSS SEL SW SEQ SHLD SIG SP SP HTR SPD SPDT SPST SSM SSMP ST, SH STB STR SSTU SW SWBD SWGR TB TERM TM TD TS UPR UPS V VA VAR VM VP W WM WP XFMR XMTR XP | MOTOR CONTACTOR COIL MILLIAMPERE MOTOR CONTROL CENTER MOTOR CIRCUIT PROTECTOR MAIN LUGS ONLY MOTOR OPERATED VALVE MANUFACTURER SUPPLIED CABLE MANUAL TRANSFER SWITCH NEUTRAL NAMEPLATE OPEN, OFF OVERLOAD PUBLIC ADDRESS PUSHBUTTON, PULLBOX PHOTOCELL PROCESS CONTROL MODULE POWER FACTOR POWER FACTOR METER PHASE PILOT LIGHT PANELBOARD PROGRAMMABLE LOGIC CONTROLLER POWER PANELBOARD POSITION POTENTIOMETER PRIMARY POTENTIAL TRANSFORMER PAN-TILT-ZOOM POWER REMOTE RECEPTACLE RIGID GALVANIZED STEEL ROOT MEAN SQUARE REMOTE TERMINAL UNIT REDUCED VOLTAGE SOLID STATE SELECTOR SWITCH SEQUENCE SHIELDED SIGNAL SPARE SPACE HEATER SURGE PROTECTIVE DEVICE SINGLE POLE DOUBLE THROW SINGLE POLE SINGLE THROW SOLID STATE METER SOLID STATE MOTOR PROTECTOR SHUNT TRIP STANDBY STARTER SOLID STATE TRIP UNIT SWITCH SWITCHBOARD SWITCHGEAR TERMINAL BOX TERMINAL REPEAT CYCLE TIMER TIME DELAY RELAY TEMPERATURE SWITCH UTILITY PROTECTION RELAY UNINTERRUPTIBLE POWER SUPPLY VOLTAGE, VOLTS VOLT AMPERE VOLT AMPERE REACTIVE VOLTMETER VAPOR PROOF WATTS, WIRE WATT METER WEATHERPROOF TRANSFORMER TRANSMITTER EXPLOSION PROOF | 1. ALL RACEWAYS AND EQUIPMENT SHALL BE INSTALLED AND GROUNDED IN ACCORDANCE WITH THE 2020 EDITION OF THE NATIONAL ELECTRICAL CODE AND APPLICABLE LOCAL CODES. 2. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF TERMINAL BOXES AND CONDUIT ENTRANCES OF ALL EQUIPMENT AGAINST APPROVED SHOP DRAWINGS BEFORE STUBBING UP CONDUITS. 3. REFER TO SPECIFICATION SECTION 16110 FOR REQUIREMENTS RELATED TO FLEXIBLE CONDUIT INSTALLATION. 4. CONDUIT RUNS ARE SHOWN DIAGRAMMATICALLY ONLY AND SHALL BE INSTALLED IN A MANNER TO PREVENT CONFLICTS WITH EQUIPMENT OR STRUCTURAL CONDITIONS. EXPOSED CONDUIT SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO BEAMS AND WALLS. 5. CONDUIT STUB-UPS SHALL NOT BE MORE THAN 6 INCHES FROM THE CENTERLINE OF TERMINAL BOXES. 6. IN THE EVENT OF INTERFERENCE BETWEEN ELECTRICAL EQUIPMENT SHOWN ON THE DRAWINGS AND OTHER EQUIPMENT, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING. 7. LOCATION OF PULLBOXES ARE APPROXIMATE. THE CONTRACTOR SHALL COORDINATE EXACT LOCATION WITH MECHANICAL PIPING AND SHALL BE 6 INCHES (MINIMUM) AWAY FROM MECHANICAL PIPING FLOW LINES. 8. ONLY MAJOR PULLBOXES ARE SHOWN. THE CONTRACTOR SHALL PROVIDE ADDITIONAL PULLBOXES WHERE REQUIRED TO MAKE A WORKABLE INSTALLATION. 9. THE WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE DETAILS WHETHER OR NOT THEY ARE REFERENCED ON THE DRAWINGS. 10. ALL CONDUIT RUNS CROSSING EXPANSION JOINTS SHALL HAVE EXPANSION OR EXPANSION AND DEFLECTION TYPE FITTINGS. FOR LOCATIONS OF EXPANSION JOINTS, REFER TO THE STRUCTURAL DWGS. 11. LUMINAIRES SHALL BE MOUNTED ACCORDING TO THE MOUNTING HEIGHT GIVEN ON THE DRAWINGS, WITH THE DISTANCE BEING MEASURED FROM THE BOTTOM OF THE LUMINAIRE TO THE FINISHED FLOOR. THE APPROPRIATE MOUNTING BRACKETS AND HARDWARE SHALL BE SUPPLIED. 12. THE WIRING DIAGRAMS, QUANTITY AND SIZE OF WIRES AND CONDUIT REPRESENT A SUGGESTED ARRANGEMENT BASED UPON SELECTED STANDARD COMPONENTS OF ELECTRICAL EQUIPMENT. MODIFICATIONS ACCEPTABLE TO THE ENGINEER MAY BE MADE BY THE CONTRACTOR TO ACCOMMODATE EQUIPMENT ACTUALLY PURCHASED. THE BASIC SEQUENCE AND METHOD OF CONTROL MUST BE MAINTAINED AS INDICATED ON THE DRAWINGS AND/OR SPECIFICATIONS. 13. CONNECTIONS BETWEEN RIGID CONDUIT AND MOTOR TERMINAL BOXES OR SIMILAR EQUIPMENT SUBJECT TO VIBRATION SHALL BE FLEXIBLE LIQUID-TIGHT CONDUIT. 14. CONDUITS SHALL BE TERMINATED SO AS TO PERMIT NEAT CONNECTION TO MOTORS AND OTHER EQUIPMENT. 15. CONDUITS FOR FUTURE EQUIPMENT OR EXTENSIONS SHALL BE TERMINATED AS SHOWN IN DETAIL OR AS SPECIFIED. 16. MCC COMPARTMENT DESIGNATIONS SHALL BE AS FOLLOWS: BLANK/SPACE: CONTAINS NECESSARY BUS AND HARDWARE FOR FUTURE ADDITION OF BREAKERS OR STARTERS. SPARE: CONTAINS A COMPLETE INSTALLED BREAKER OR STARTER AVAILABLE FOR FUTURE USE. 17. ALL MOTOR STARTER CONTROL POWER TRANSFORMERS SHALL BE SIZED TO PROVIDE SUFFICIENT VOLT-AMPERE CAPACITY FOR OPERATING ALL LOCAL AND REMOTE ELECTRICAL DEVICES ASSOCIATED WITH CONTROL OF THE MOTOR IN ADDITION TO THE STARTER COIL. 18. MOTOR CONTROL CENTERS AND ALL FREE STANDING PANELS SHALL BE SET ON CONCRETE HOUSEKEEPING PADS WITH LEVELING CHANNELS EMBEDDED IN THE PAD. 19. ALL RECEPTACLES IN OUTDOOR AND ANTICIPATED WET AREAS SHALL BE GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLES WITH WEATHERPROOF COVERS. | 20. ELECTRICAL CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING THE PROJECT TO VERIFY THE SCOPE OF WORK WITH FIELD CONDITIONS. PARTICULAR ATTENTION SHOULD BE GIVEN TO NEW CONDUIT RUNS IN EXISTING BUILDINGS. 21. EQUIPMENT LOCKOUTS SHALL BE IN STRICT ACCORDANCE WITH OWNER'S REQUIREMENTS. 22. FOR LIGHTING AND RECEPTACLE SYSTEMS, ONLY CIRCUIT NUMBERS ARE SHOWN. CONTRACTOR SHALL PROVIDE ALL NECESSARY CONDUITS, WIRES, FITTINGS, JUNCTION BOXES AND ALL NECESSARY COMPONENTS SHOWN OR NOT SHOWN ON THE DRAWINGS, TO MAKE THE ELECTRICAL INSTALLATION COMPLETE AND OPERATIONAL. ALL CONDUIT RUNS SHALL BE CONCEALED UNLESS INDICATED OTHERWISE. CIRCUIT LOADING SHALL BE AS INDICATED IN THE PANEL SCHEDULES. ALL LIGHTING AND RECEPTACLE CIRCUITS SHALL INCLUDE GROUND WIRE. 23. CONTRACTOR SHALL BE ADVISED THAT EVERY ATTEMPT HAS BEEN MADE TO INCLUDE ALL CONDUITS IN THE DUCTBANK SCHEDULES AND CONDUIT DEVELOPMENT DRAWINGS FOR SPECIFIC FACILITIES, HOWEVER THE CONTRACTOR IS RESPONSIBLE FOR ANY CONDUIT/WIRE THAT IS NOT SHOWN. 26. ALL UNDERGROUND FACILITIES SHALL BE PROTECTED FROM DAMAGE. IF ANY UNDERGROUND FACILITIES ARE DAMAGED, IT SHALL BE REPORTED TO THE ENGINEER AND CONTRACTOR SHALL REPLACE OR REPAIR FACILITIES AT NO COST TO THE OWNER. |
| | | | | ELECTRICAL DEMOLITION NOTES | |
| | | | | 1. BIDDING CONTRACTORS SHALL VISIT THE SITE TO ASSESS THE SCOPE OF DEMOLITION, REMOVAL AND MODIFICATION WORK. 2. THE ELECTRICAL CONTRACTOR AND THE OWNER SHALL DE-ENERGIZE ALL WIRING PRIOR TO REMOVAL OF EQUIPMENT. DEVICES, MOTORS INSTRUMENTATION, CONTROL PANELS, ETC. CONTRACTOR SHALL OBTAIN PRIOR APPROVAL FROM THE OWNER. 3. EXPOSED RACEWAYS: REMOVE CONDUIT, WIRES, AND BOXES. PATCH TO MATCH EXISTING. FINISH-ALL OPENINGS IN WALLS AND FLOORS. 4. CONCEALED CONDUITS IN THE SLAB: REMOVE EXISTING WIRES TO THE EXTENT POSSIBLE AND ABANDON CONDUITS IN THE SLAB. CUT CONDUIT FLUSH AND PATCH THE FLOOR TO MATCH EXISTING. | |

BLACKWATER
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| PROJECT NO. J14068 |
| DESIGNED BY JF |
| DRAWN BY JF |
| CHECKED BY JP |
| DATE MARCH 2021 |



TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT UPGRADES

ELECTRICAL ABBREVIATIONS
AND GENERAL NOTES

VERIFY SCALES

BAR IS ONE INCH ON
ORIGINAL DRAWING



IF NOT ONE INCH ON THIS
SHEET, ADJUST SCALES
ACCORDINGLY

DRAWING NO.

E-02

SHEET NO.

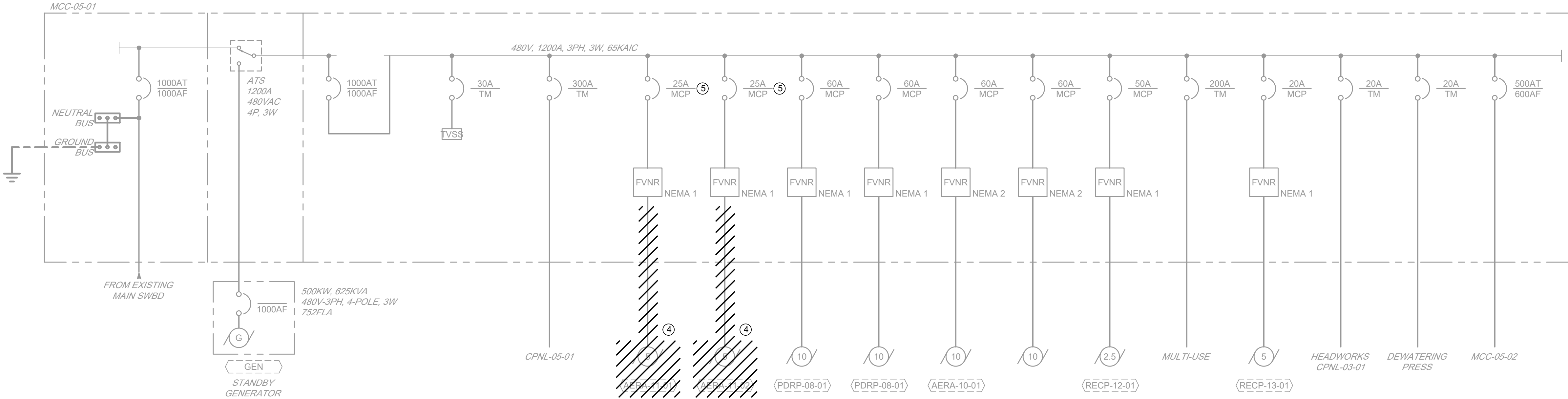
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GENERAL NOTES

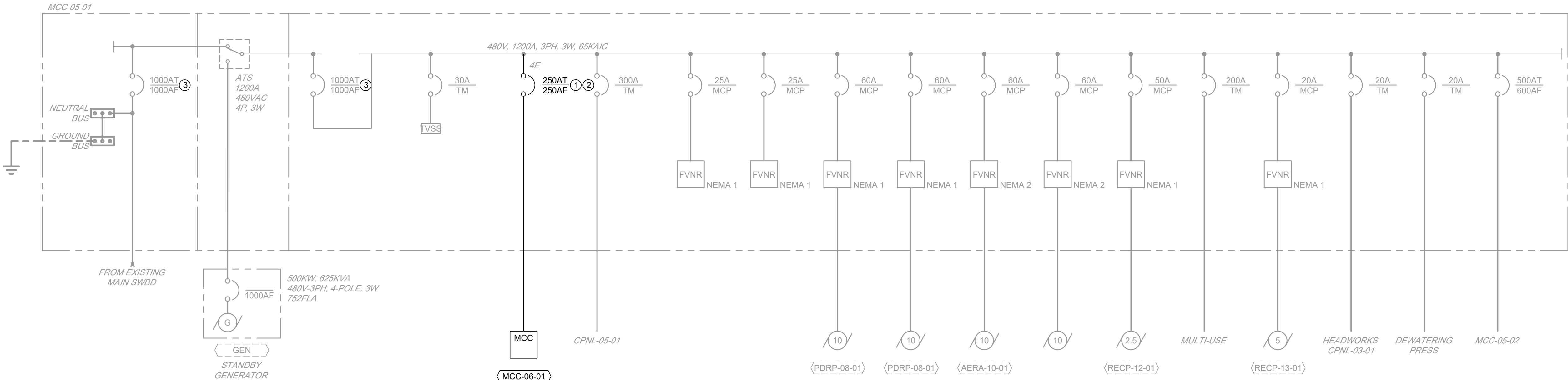
- A. ALL FIELD EQUIPMENT SHALL BE RATED AS NOTED BY ELECTRICAL SPECIFICATIONS AND ELECTRICAL SITE PLANS UNLESS NOTED OTHERWISE BY THIS DRAWING.

SHEET NOTES

- FURNISH AND INSTALL CB WITH PERMANENT LOCKOUT PROVISIONS.
- FURNISH AND INSTALL 250AF CB FOR MCC-06-01 IN (E) MCC-05-01 SECTION 4. CONTRACTOR SHALL PROVIDE ALL REQUIRED PROVISIONS TO INSTALL CB.
- CONTRACTOR SHALL ADJUST MAIN CB TRIP SETTING IN ACCORDANCE WITH COORDINATION STUDY.
- REMOVE AND WASTE (E) CONDUCTORS BETWEEN BRUSH AERATORS AERA-11-01 & AERA-11-02 AND MCC CONTROL BUCKET. EXISTING WIRING BETWEEN NEMA 1 STARTER AND CONTROL PANEL. TERMINAL BLOCKS TO REMAIN FOR FUTURE USE. REMOVE WIRING BETWEEN TERMINAL BLOCKS AND PLC I/O.
- REMOVE (E) NAME PLATE AND REPLACE WITH "NEMA 1 - SPARE STARTER" NAME PLATE.



DETAIL 1 EXISTING MCC-05-01
SINGLE LINE DEMO
SCALE: NONE



DETAIL 2 EXISTING MCC-05-01
SINGLE LINE MODIFICATIONS
SCALE: NONE

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| PROJECT NO. J14068 |
| DESIGNED BY JF |
| DRAWN BY JF |
| CHECKED BY JP |
| DATE MARCH 2021 |



TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT UPGRADES

EXISTING MCC-05-01 SINGLE LINES

VERIFY SCALES

BAR IS ONE INCH ON ORIGINAL DRAWING



IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

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SHEET NO.

19 OF 36

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- GENERAL NOTES
- A.

ALL FIELD EQUIPMENT SHALL BE RATED AS NOTED BY ELECTRICAL SPECIFICATIONS AND ELECTRICAL SITE PLANS UNLESS NOTED OTHERWISE BY THIS DRAWING.
- B.

EXISTING MCC-05-01 IS AN EATON FREEDOM SERIES 2100 MOTOR CONTROL CENTER RATED FOR 480VAC, 3PH 3W 1200A HORIZONTAL BUS, 65KAIC.
- SHEET NOTES
1.

FURNISH AND INSTALL CB WITH PERMANENT LOCKOUT PROVISIONS.
2.

FURNISH AND INSTALL 250AF CB FOR MCC-06-01 IN (E) MCC-05-01 SECTION 4. CONTRACTOR SHALL PROVIDE ALL REQUIRED PROVISIONS TO INSTALL CB.
3.

CONTRACTOR SHALL ADJUST MAIN CB TRIP SETTING IN ACCORDANCE WITH COORDINATION STUDY.
4.

REMOVE EXISTING NAME PLATE AND REPLACE WITH "NEMA 1 - SPARE STARTER" NAME PLATE.

| LOAD CALCULATION | | | | | | | | | |
|-------------------------|--------|---------------|-------------------------|---------------------------|-----|------------|----------|------------|----------|
| LOAD CENTER: MCC-05-01 | | | | 480 VAC, 3 PHASE SERVICE | | | 3-WIRE | | |
| FED FROM: MAIN SWBD | | | | CONNECTED | | UTILITY | | GENERATOR | |
| EQUIPMENT NUMBER | HP KVA | MOTOR CONTROL | EQUIPMENT DESCRIPTION | LOAD (AMPS) | QTY | LOAD (KVA) | LOAD QTY | LOAD (KVA) | LOAD QTY |
| CPNL-05-01 | | CB | BLOWER BLDG CPNL | 300.1 | 1 | 249.5 | 1 | 249.5 | 1 |
| (F) CPNL-05-02 | | CB | (F) BLOWER BLDG CPNL | 0.0 | 1 | - | 1 | - | 0 |
| AERA-10-01 | 10 | FVNR | FLOATING AERATOR 1 | 14.0 | 1 | 11.6 | 1 | 11.6 | 1 |
| AERA-11-01, 02 | 5 | FVNR | BRUSH AERATOR 1, 2 | 7.6 | 2 | 12.6 | 2 | 12.6 | 1 |
| PDRP-08-01, 02 | 10 | FVNR | PLANT DRAIN PUMP 1, 2 | | 2 | 15.5 | 1 | 15.5 | 1 |
| PBOX-01-01 | 10 | FVNR | | 14.0 | 1 | 11.6 | 1 | 11.6 | 1 |
| RECP-12-01 | 3 | FVNR | SETTLING RECIRC PUMP 1 | 4.8 | 1 | 4.0 | 1 | 4.0 | 1 |
| RECP-13-01 | 5 | FVNR | POLISHING RECIRC PUMP 1 | 7.6 | 1 | 6.3 | 1 | 6.3 | 1 |
| CPNL-03-01 | | CB | | 20.1 | 1 | 16.7 | 1 | 16.7 | 1 |
| CPNL-06-01 | | CB | DEWATERING PRESS | 20.1 | 1 | 16.7 | 1 | 16.7 | 1 |
| MCC-05-02 | | CB | | 227.3 | 1 | 189.0 | 1 | 189.0 | 1 |
| MCC-06-01 | | CB | MOTOR CONTROL CENTER | 92.8 | 1 | 77.1 | 1 | 77.1 | 1 |
| SUBTOTAL | | | | | | 610.7 | | 610.7 | |
| LARGEST MOTOR @ 25% | | | | 10 | HP | | | 62.4 | |
| TOTAL | | | | | | | | 673.1 | |
| 3 PHASE CURRENT | | | | 810 AMPS | | | | | |
| CALCULATED SERVICE SIZE | | | | 100% MAXIMUM LOAD CURRENT | | | | | |
| MAIN BREAKER SIZE | | | | 810 AMPS | | | | | |
| % MAIN BREAKER LOAD | | | | 1,000 AMPS | | | | | |
| | | | | 81% | | | | | |

DETAIL

1

EXISTING MCC-05-01
ELEVATION MODIFICATIONS

SCALE: NONE

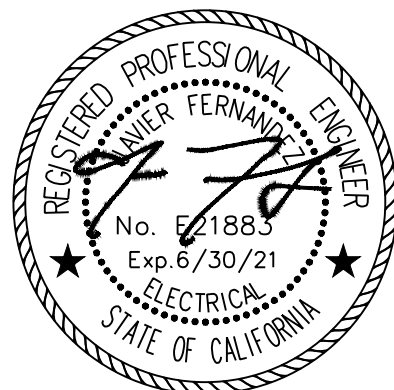
SCHEDULE

2

EXISTING MCC-05-01
LOAD CALCULATIONS

SCALE: NONE

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PROJECT NO.
J14068
DESIGNED BY
JF
DRAWN BY
JF
CHECKED BY
JP
DATE
MARCH 2021



TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT UPGRADES

EXISTING MCC-05-01 ELEVATION
AND LOAD SCHEDULE

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

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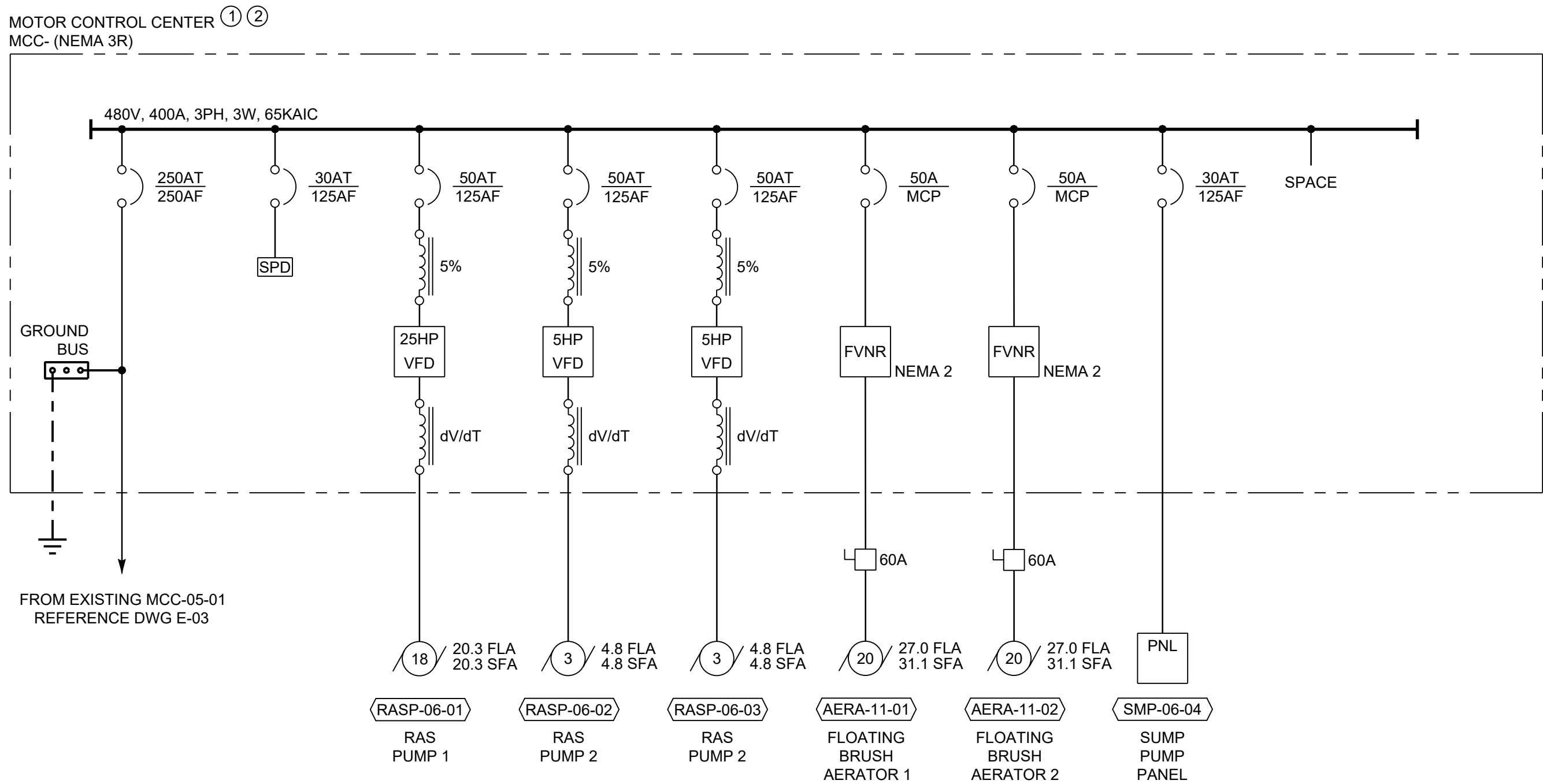
- GENERAL NOTES
- A.

ALL FIELD EQUIPMENT SHALL BE RATED AS NOTED BY ELECTRICAL SPECIFICATIONS AND ELECTRICAL SITE PLANS UNLESS NOTED OTHERWISE BY THIS DRAWING.

- SHEET NOTES
1.

FURNISH AND INSTALL CB WITH PERMANENT LOCKOUT PROVISIONS.
2.

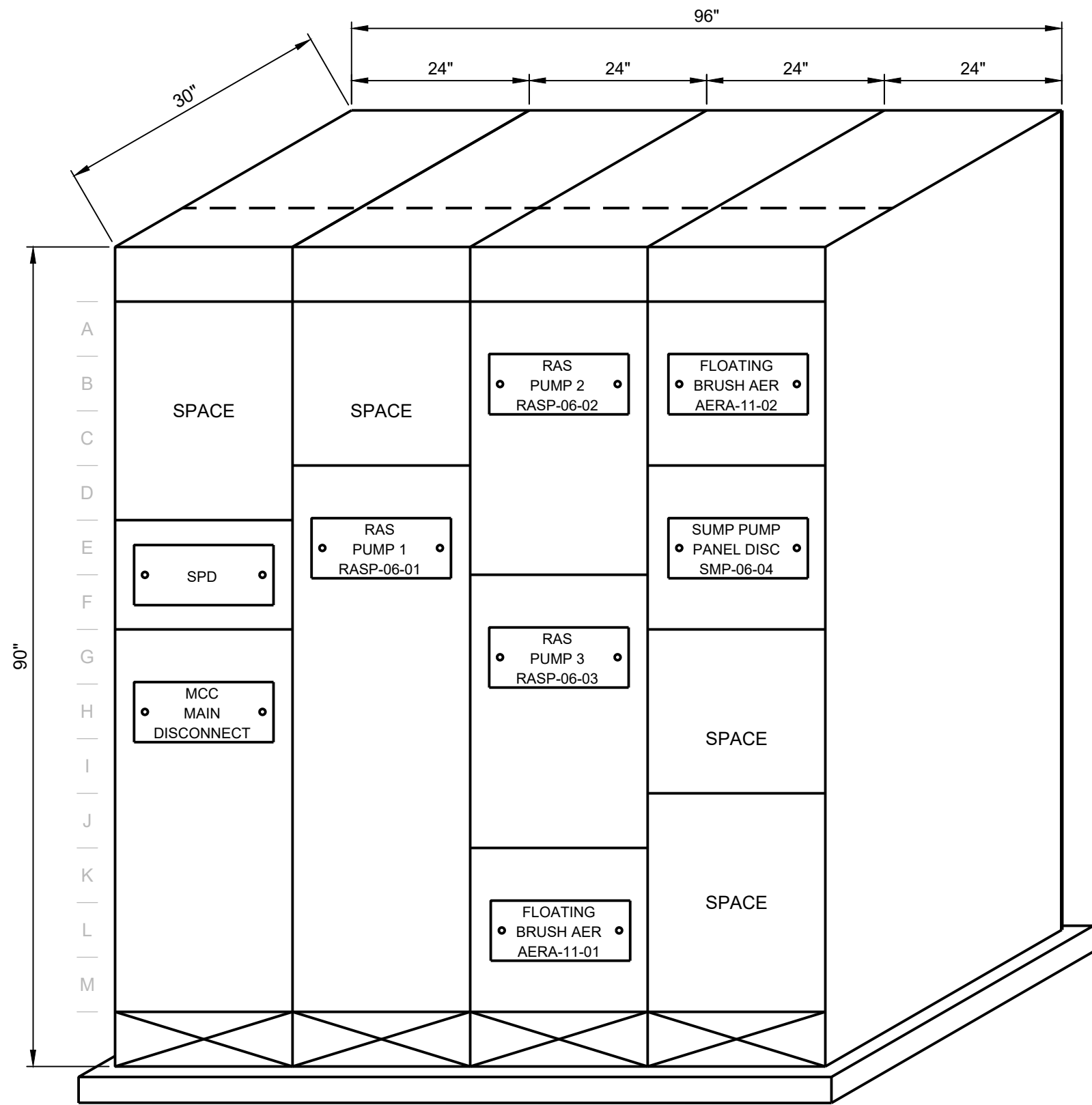
FURNISH MCC-06-01 IN NEMA 3R ENCLOSURE WITH VENTILATION UNITS SIZED AS RECOMMENDED BY SUPPLIER. INSTALL PANEL HEATER UNITS AS REQUIRED TO REDUCE CONDENSATION.



DETAIL 1 MCC-06-01
SINGLE LINE DIAGRAM
SCALE: NONE

| LOAD CALCULATION | | | | | | | | | | |
|--------------------------|----|---------------|-------------------------|---------------------------|-----|------------|----------|------------|----------|------------|
| LOAD CENTER: MCC-06-01 | | | | | | | | | | |
| 480 VAC, 3 PHASE SERVICE | | | | | | | | | | |
| 3-WIRE | | | | | | | | | | |
| FED FROM: MCC-05-01 | | | | CONNECTED | | UTILITY | | GENERATOR | | |
| EQUIPMENT NUMBER | HP | MOTOR CONTROL | EQUIPMENT DESCRIPTION | LOAD (AMPS) | QTY | LOAD (KVA) | LOAD QTY | LOAD (KVA) | LOAD QTY | LOAD (KVA) |
| RASP-06-01 | 20 | VFD | RAS PUMP 1 | 27.0 | 1 | 22.4 | 1 | 22.4 | 1 | 22.4 |
| RASP-06-01, 02 | 3 | VFD | RAS PUMP 2, 3 | 4.8 | 2 | 8.0 | 2 | 8.0 | 2 | 8.0 |
| AERA-11-01, 02 | 20 | FVNR | AERATOR | 27.0 | 2 | 44.9 | 2 | 44.9 | 2 | 44.9 |
| PNL-06-04 | 1 | CB | SUMP PUMP CONTROL PANEL | 2.1 | 1 | 1.7 | 1 | 1.7 | 1 | 1.7 |
| SUBTOTAL | | | | | | 77.1 | | 77.1 | | 77.1 |
| LARGEST MOTOR @ 25% | | | | 20 | HP | | | 5.6 | | |
| TOTAL | | | | | | | | 82.7 | | 77.1 |
| 3 PHASE CURRENT | | | | 99 AMPS | | | | | | |
| CALCULATED SERVICE SIZE | | | | 100% MAXIMUM LOAD CURRENT | | | | | | |
| MAIN BREAKER SIZE | | | | 99 AMPS | | | | | | |
| % MAIN BREAKER LOAD | | | | 250 AMPS | | | | | | |
| | | | | 40% | | | | | | |

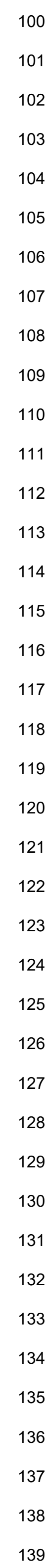
SCHEDULE 2 MCC-06-01
LOAD CALCULATIONS
SCALE: NONE




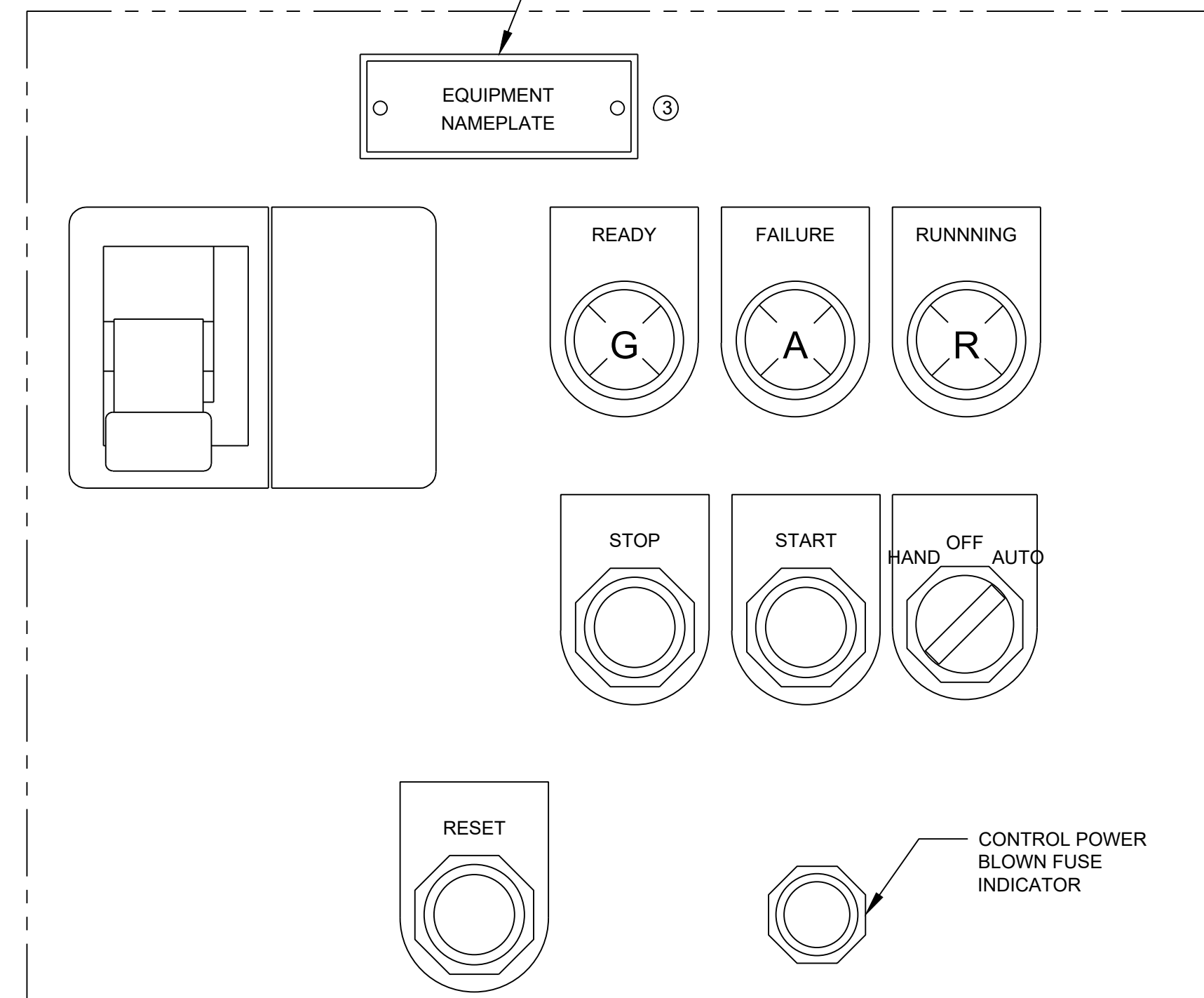
DETAIL 3 MCC-06-01
ELEVATION
SCALE: NONE

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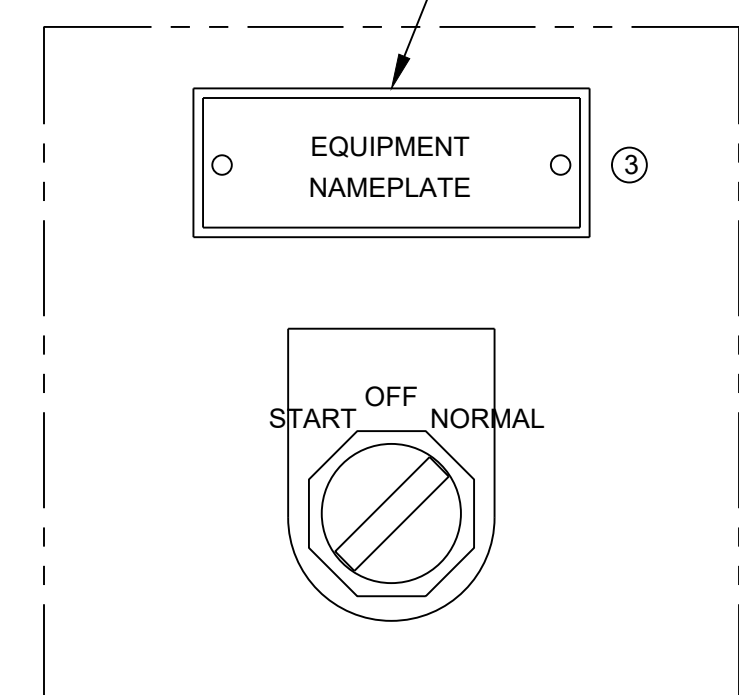
PROJECT NO.
J14068
DESIGNED BY
JF
DRAWN BY
JF
CHECKED BY
JP
DATE
MARCH 2021




DETAIL 



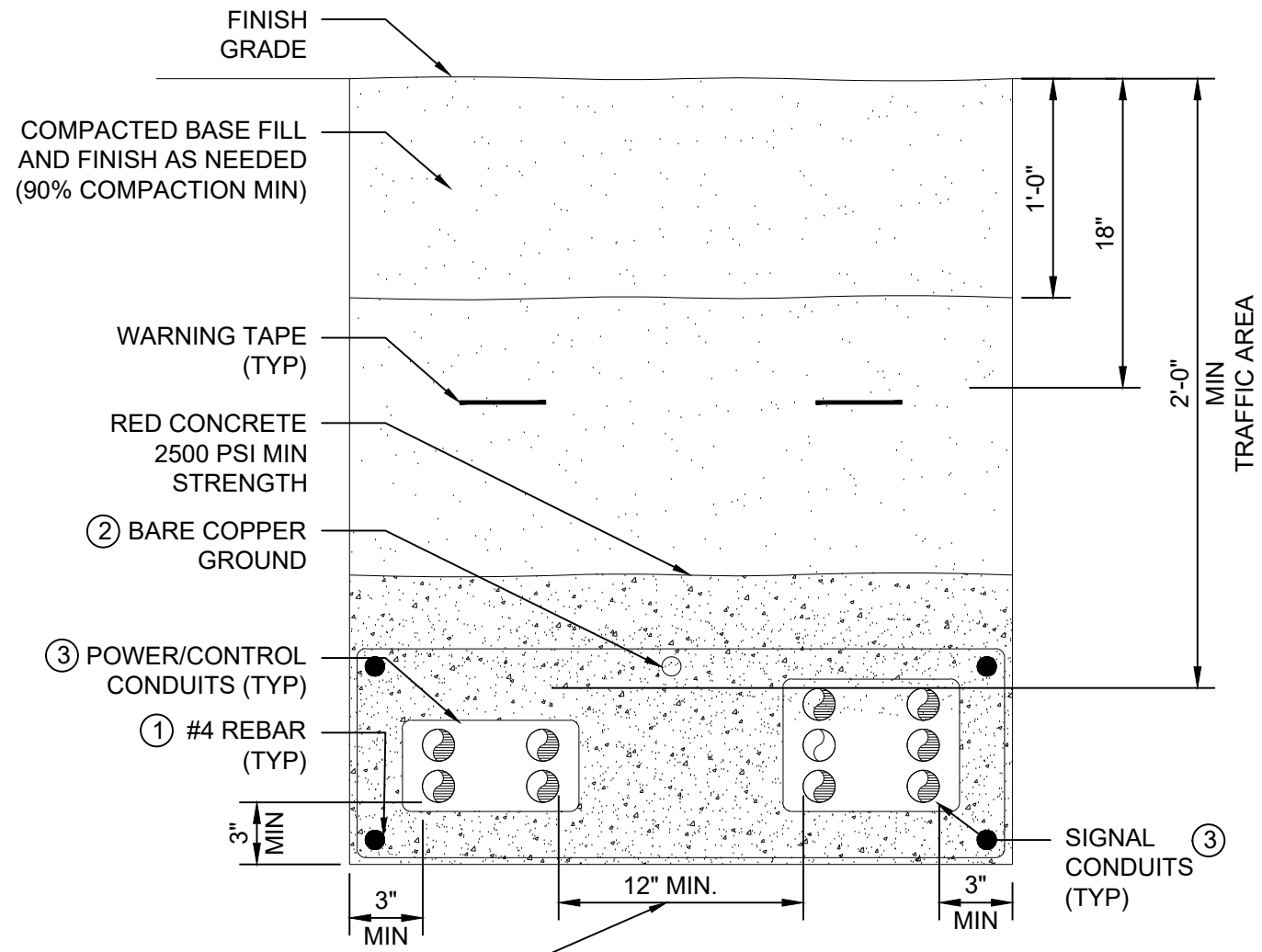
DETAIL 



DETAIL 

- ## ○ SHEET NOTES
1. REMOTE SHUTDOWN (XS => LSLL, ZSSH, PSSH, ETC. PER P&ID) ARE TO BE CONTACTS OFF AUXILIARY RELAYS AND CONTACTS LOCATED IN MCC CONTROL PANEL DRIVEN BY FIELD DEVICES.
 2. JUMPER DEVICE IF NOT REQUIRED.
 3. EQUIPMENT NAMEPLATES TO CONTAIN EQUIPMENT DESCRIPTION AND EQUIPMENT NUMBER AS INDICATED.
 4. INSTALL MOISTURE RELAYS AND ASSOCIATED DEVICES SUPPLIED WITH PUMP AND WIRING INSIDE MCC OR VENDOR PACKAGE PANEL WHEN INDICATED ON P&ID.
 5. ELECTRONIC OVERLOAD WITH PHASE LOSS PROTECTION, DIGITAL CURRENT SETTING, GROUND FAULT TRIP, SELECTABLE TRIP CLASS SIZED PER SINGLE LINE DIAGRAM.

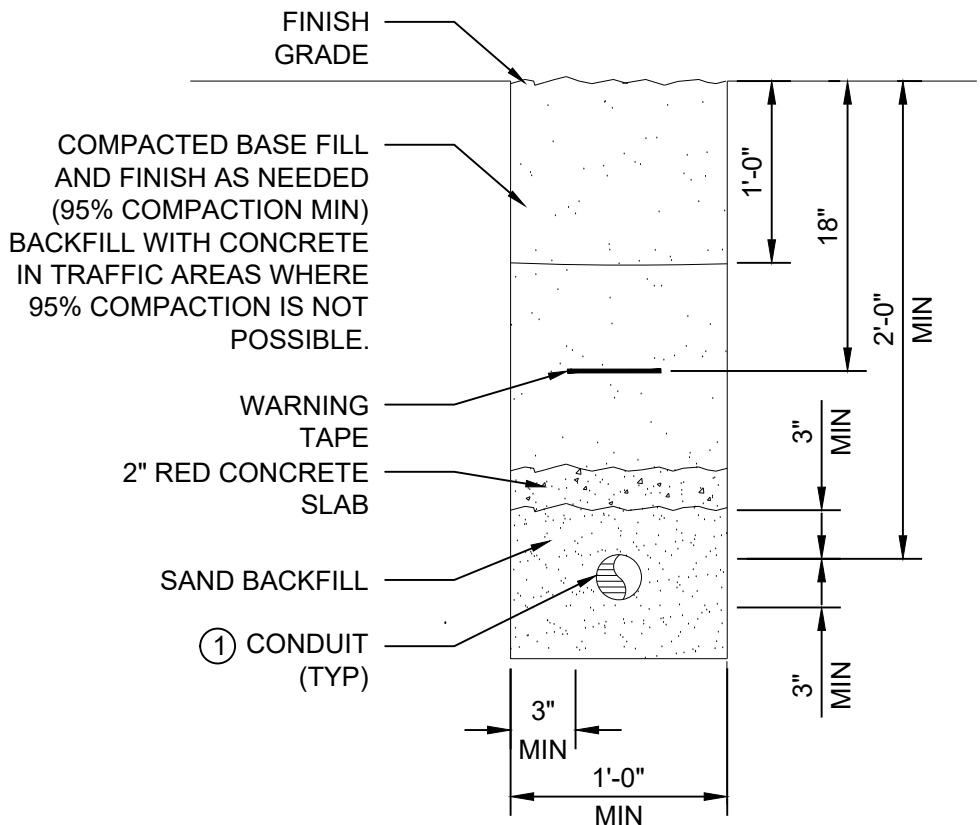
C:\PROJECTS\ACTIVE\CS20A-001 - WWTU IMPROVEMENTS DESIGN\AUTOCAD\FIG_1\CS20A-011_ELECTRICAL FIG 2-1.dwg 2/1/2021 3:59:20 PM BY JAVIER FERNANDEZ



- DETAIL NOTES
- #4 REBAR HOOPS ON 24" CENTERS.
 - DUCT BANK GROUND SHALL BE CARRIED TO REMOTE SITES AND TIED BACK TO MAIN GROUND LOOP AND GROUND ROD AT PULLBOX/VAULT. GROUND WIRE SIZE SHALL BE MIN #4/0.
 - REFER TO SITE PLAN AND CONDUIT AND CONDUCTOR SCHEDULE FOR QUANTITY.

TYPICAL DUCT BANK
INSTALLATION DETAIL

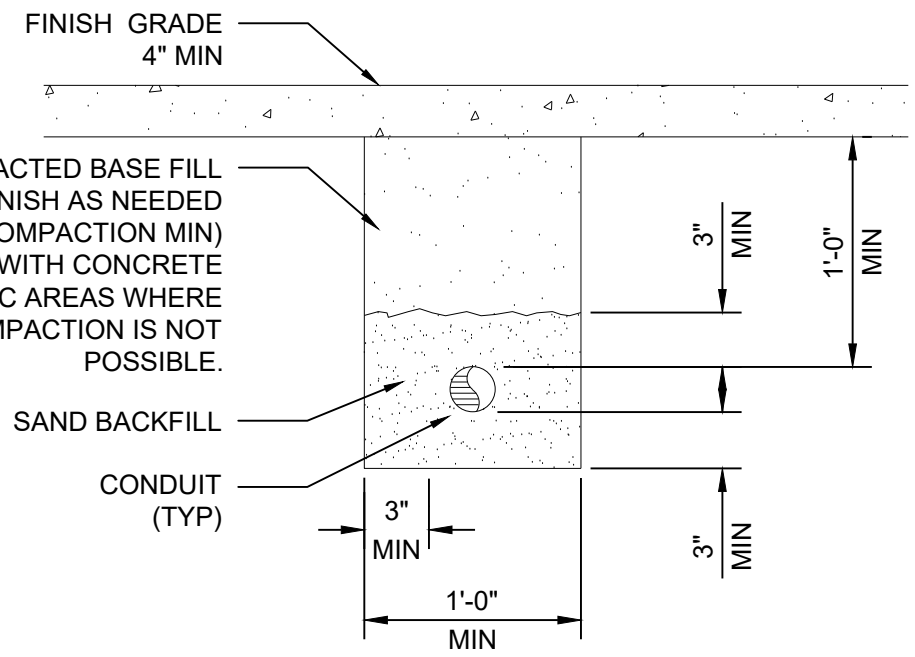
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TYP



- DETAIL NOTES
- REFER TO SITE PLAN AND CONDUIT AND CONDUCTOR SCHEDULE FOR QUANTITY.

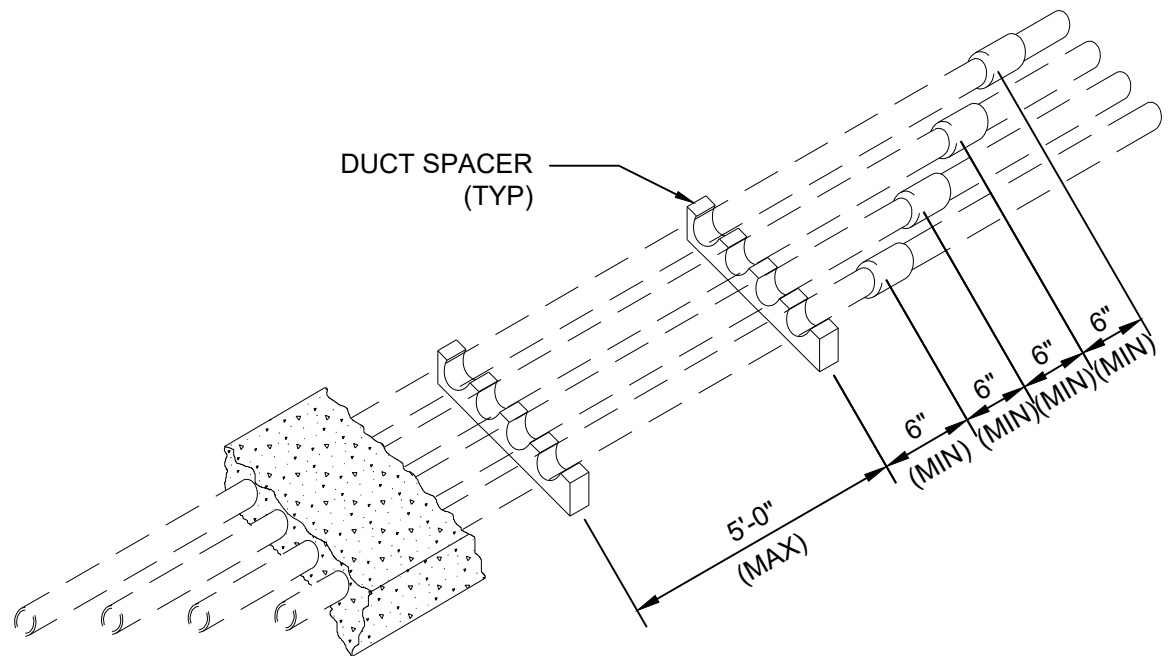
CONDUIT TRENCH DETAIL

B
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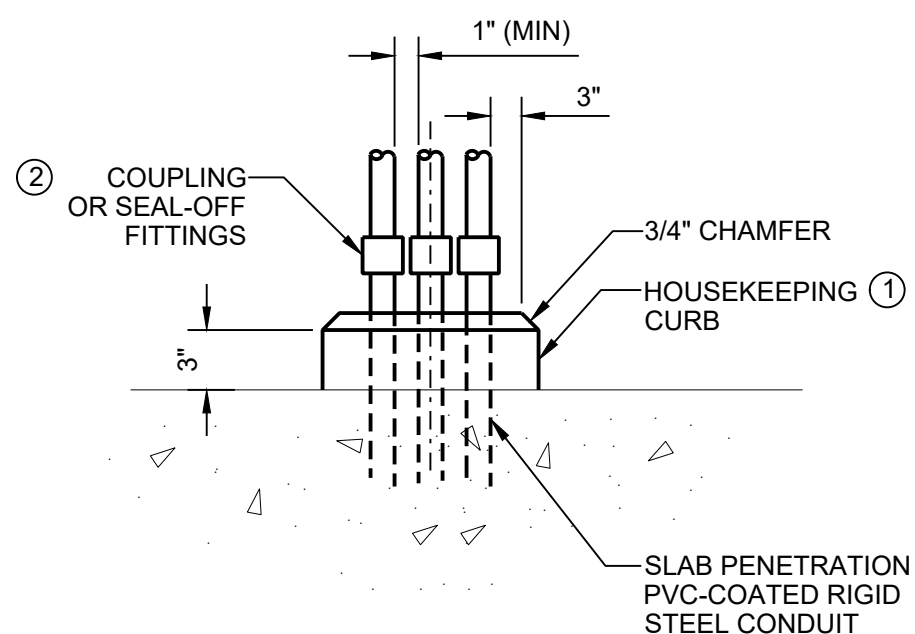
UNDER SLAB CONDUIT TRENCH DETAIL

C
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TYPICAL DUCT BANK
JOINT SUPPORTS AND SPACERS

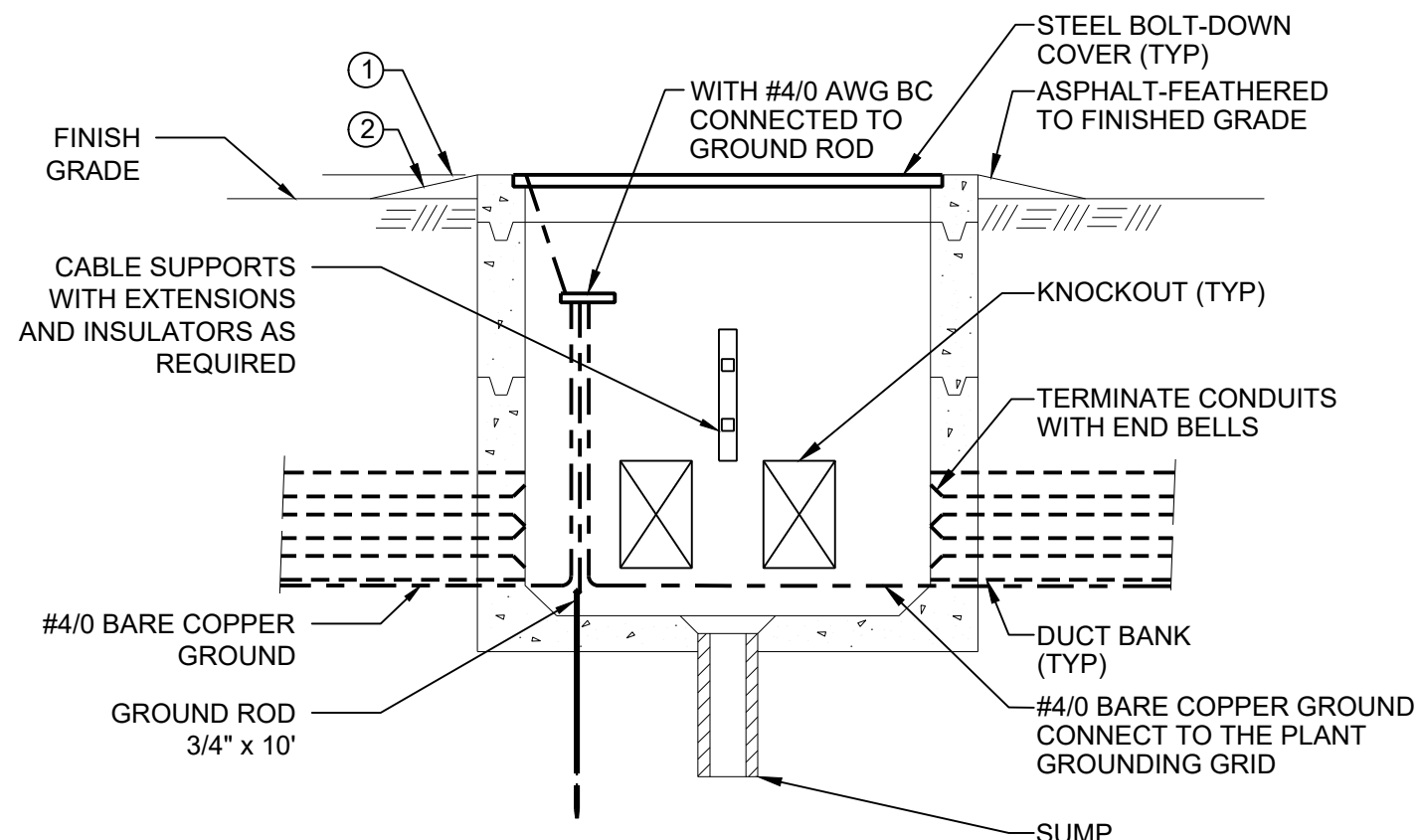
D
TYP



- DETAIL NOTES
- HOUSEKEEPING CURB REQUIRED AT ALL LOCATIONS FOR SINGLE AND MULTIPLE RISERS.
 - FURNISH AND INSTALL SEAL-OFF FITTING AS REQUIRED WHEN EXITING/ENTERING HAZARDOUS LOCATION.

CONCRETE HOUSEKEEPING CURB

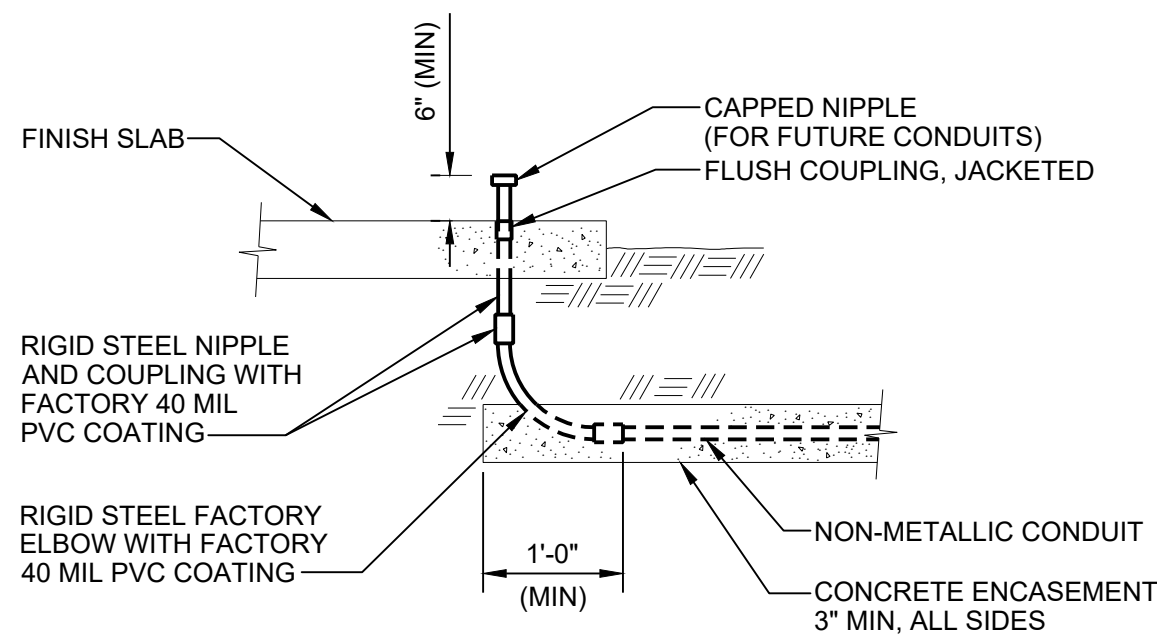
E
TYP



- DETAIL NOTES
- ELEVATION AT PAVED AREAS.
 - ELEVATION AT UNPAVED AREAS.
 - PULL BOX INSTALLATION TO BE WATERTIGHT AFTER CONDUITS HAVE BEEN INSTALLED BY USING DUCT SEALING.
 - FOR PULL BOX NOT SHOWN WITH DRAINAGE PIPING ON CIVIL DRAWINGS, PROVIDE A MINIMUM 4" DIAMETER PVC PIPE TO A 3'x3'x3' DRAIN ROCK PIT.

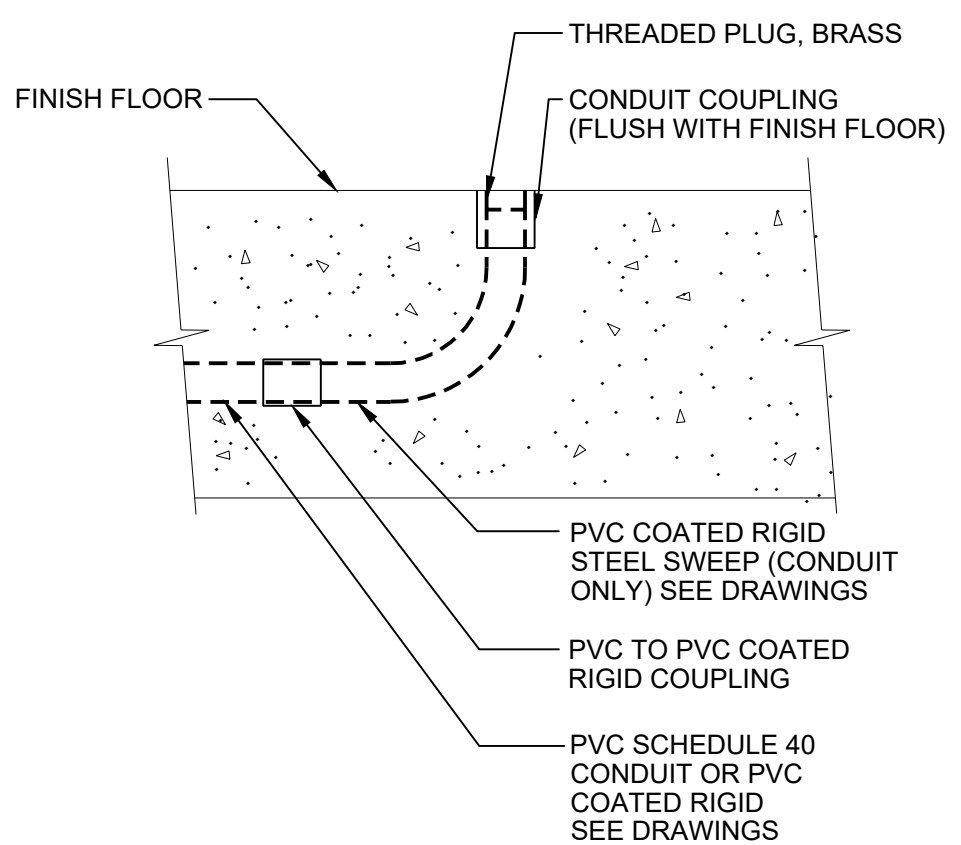
TYPICAL PULLBOX

F
TYP



RISER FROM NON-METALLIC DUCT

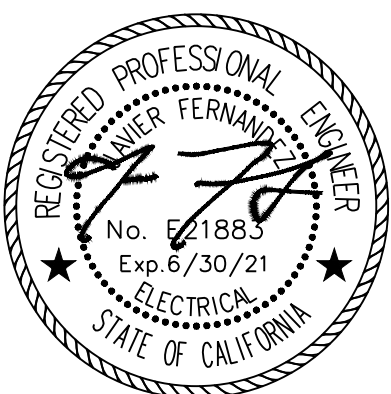
G
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CONDUIT TERMINATION FOR
FUTURE EQUIPMENT

H
TYP

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CONSULTING ENGINEERS, INC.
602 L YELL DRIVE, MODESTO, CA 95356 PH. 209.322.1820



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| DESIGNED BY | JF |
| DRAWN BY | JF |
| CHECKED BY | JP |
| DATE | MARCH 2021 |



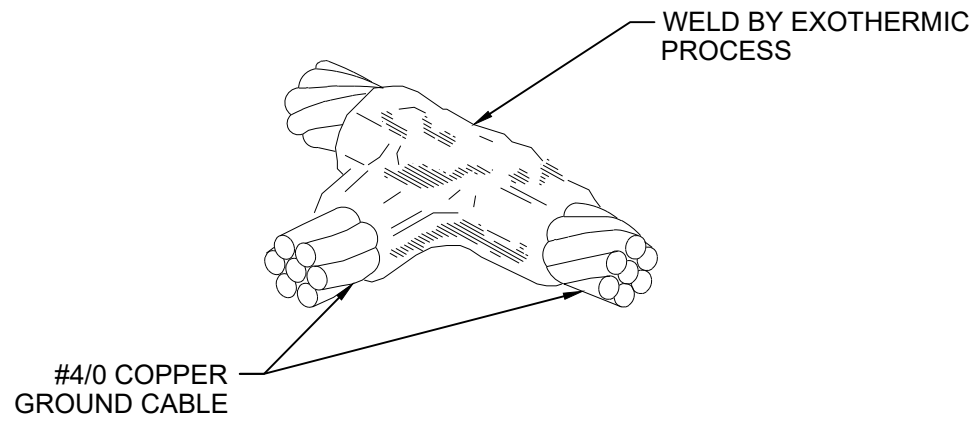
TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT UPGRADES

ELECTRICAL DETAILS 1

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

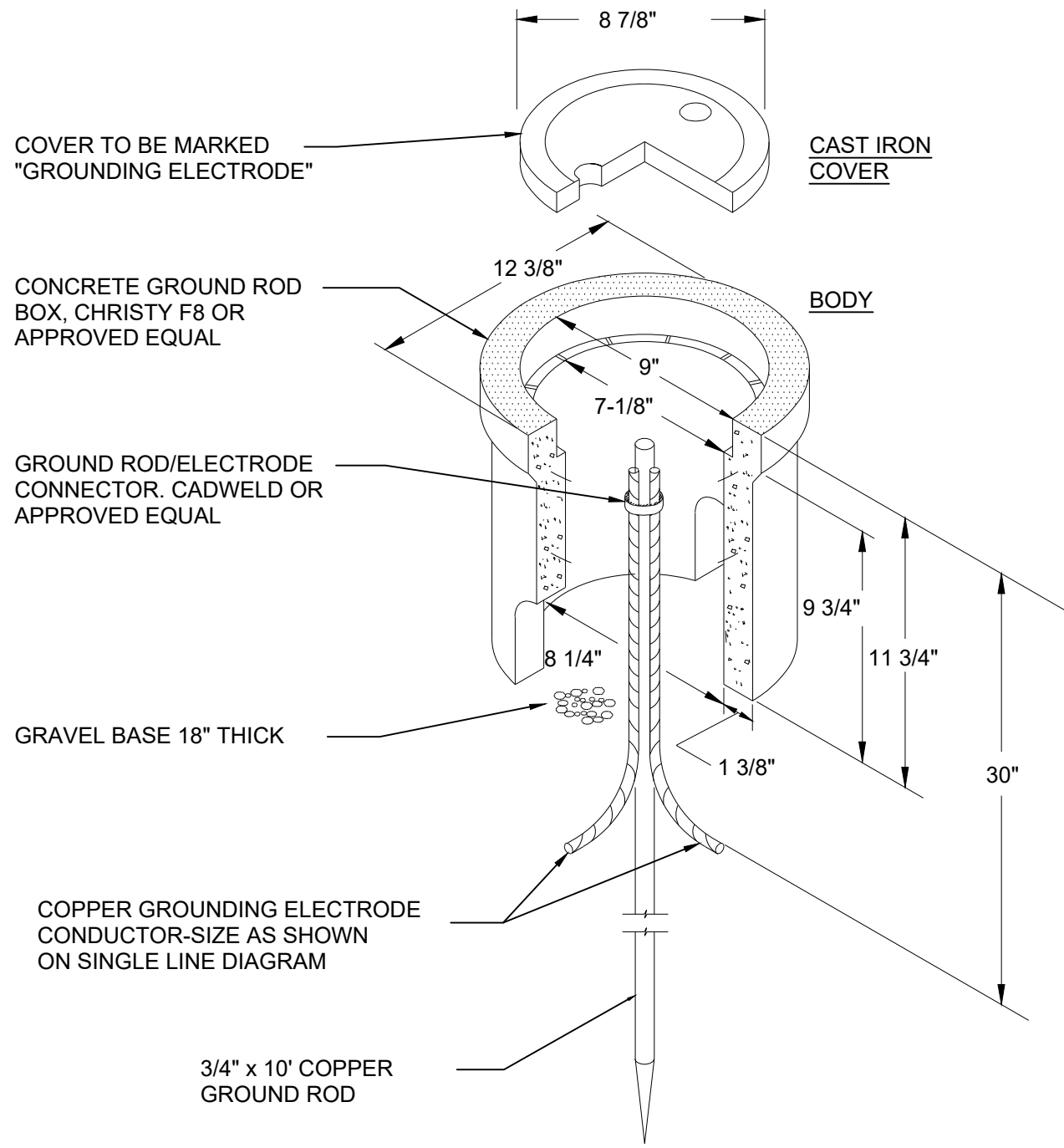
DRAWING NO.
E-08
SHEET NO.
24 OF 36

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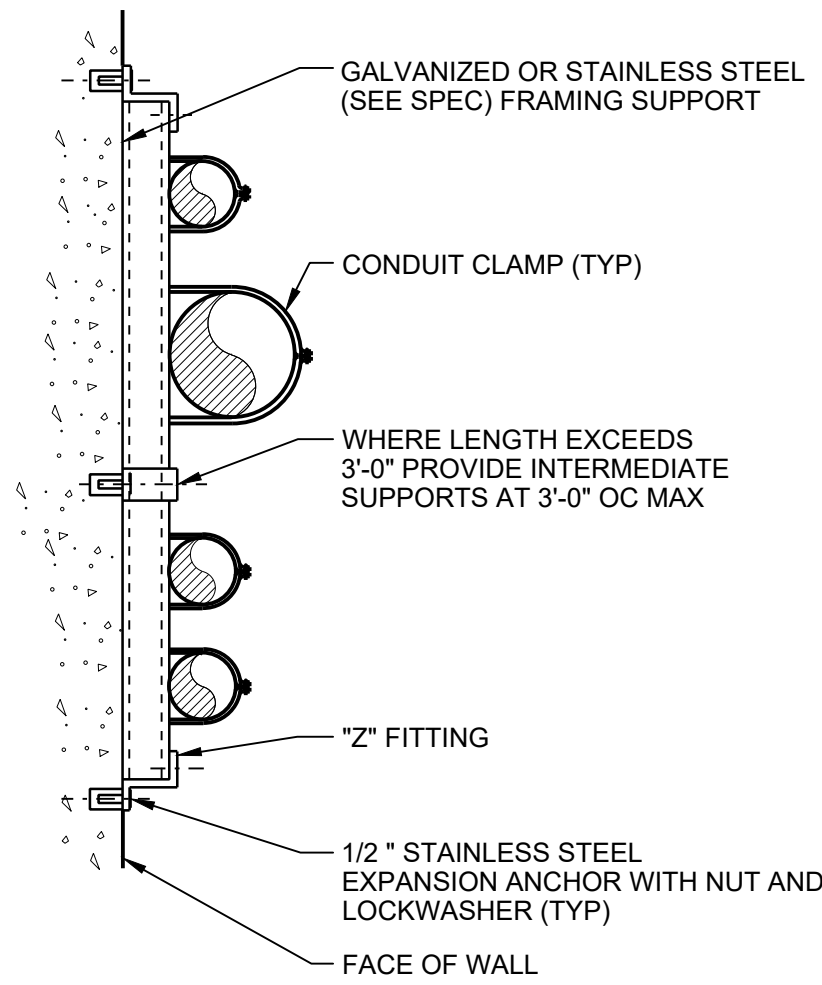
GROUND CONNECTION DETAIL
SCALE: NONE

A
TYP



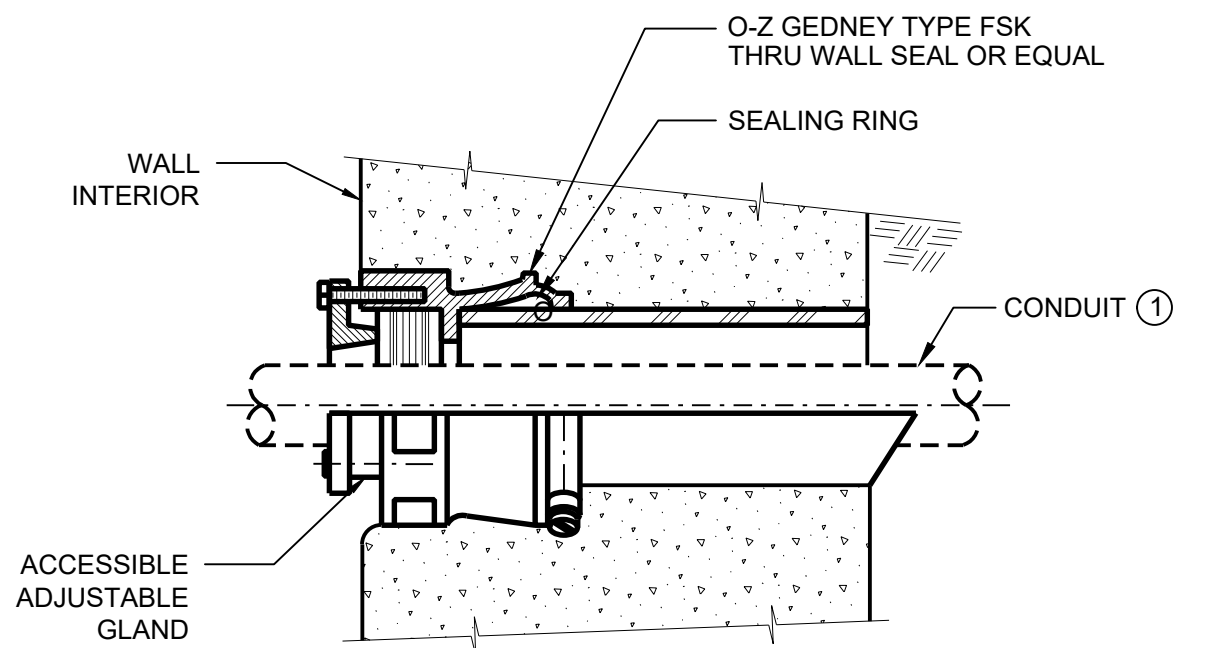
CONCRETE GROUND ROD BOX DETAIL
SCALE: NONE

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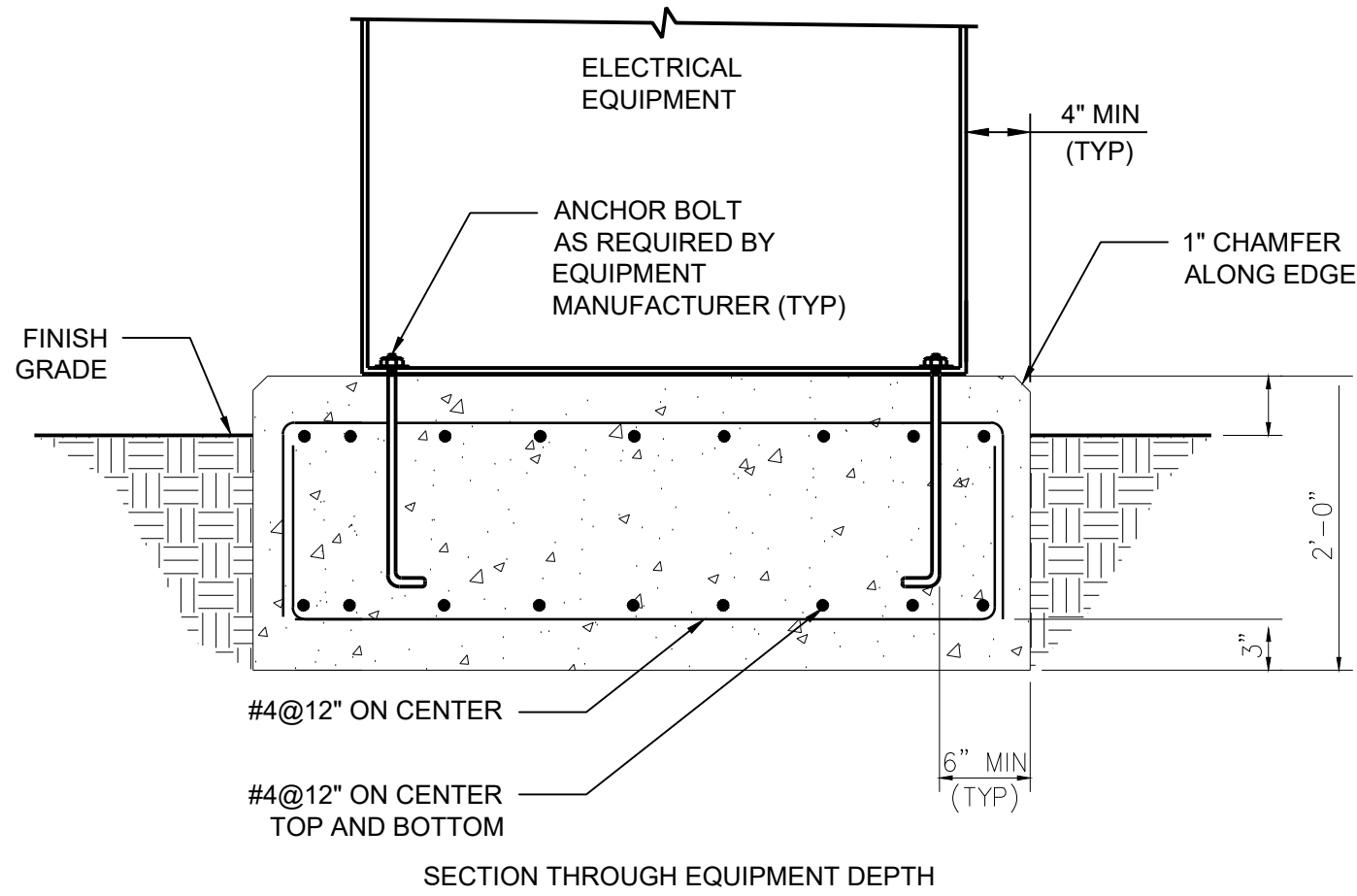
FLUSH MOUNTED FLUSH MOUNTED
SCALE: NONE

C
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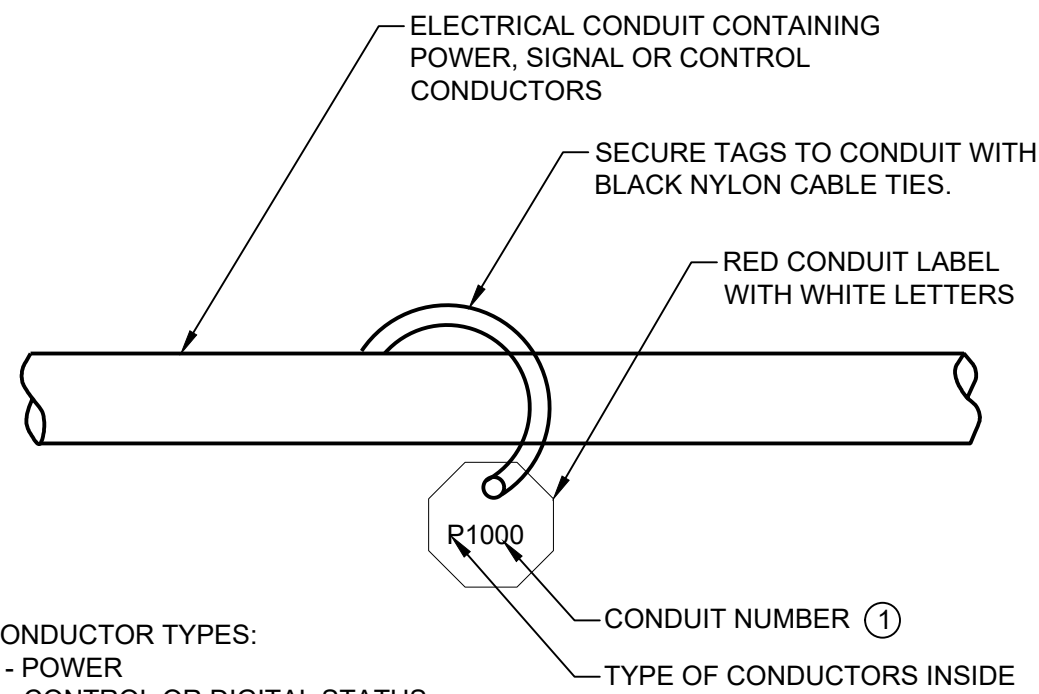
WATERTIGHT CONDUIT SEAL
BELOW GRADE EXTERIOR WALLS
SCALE: NONE

D
TYP



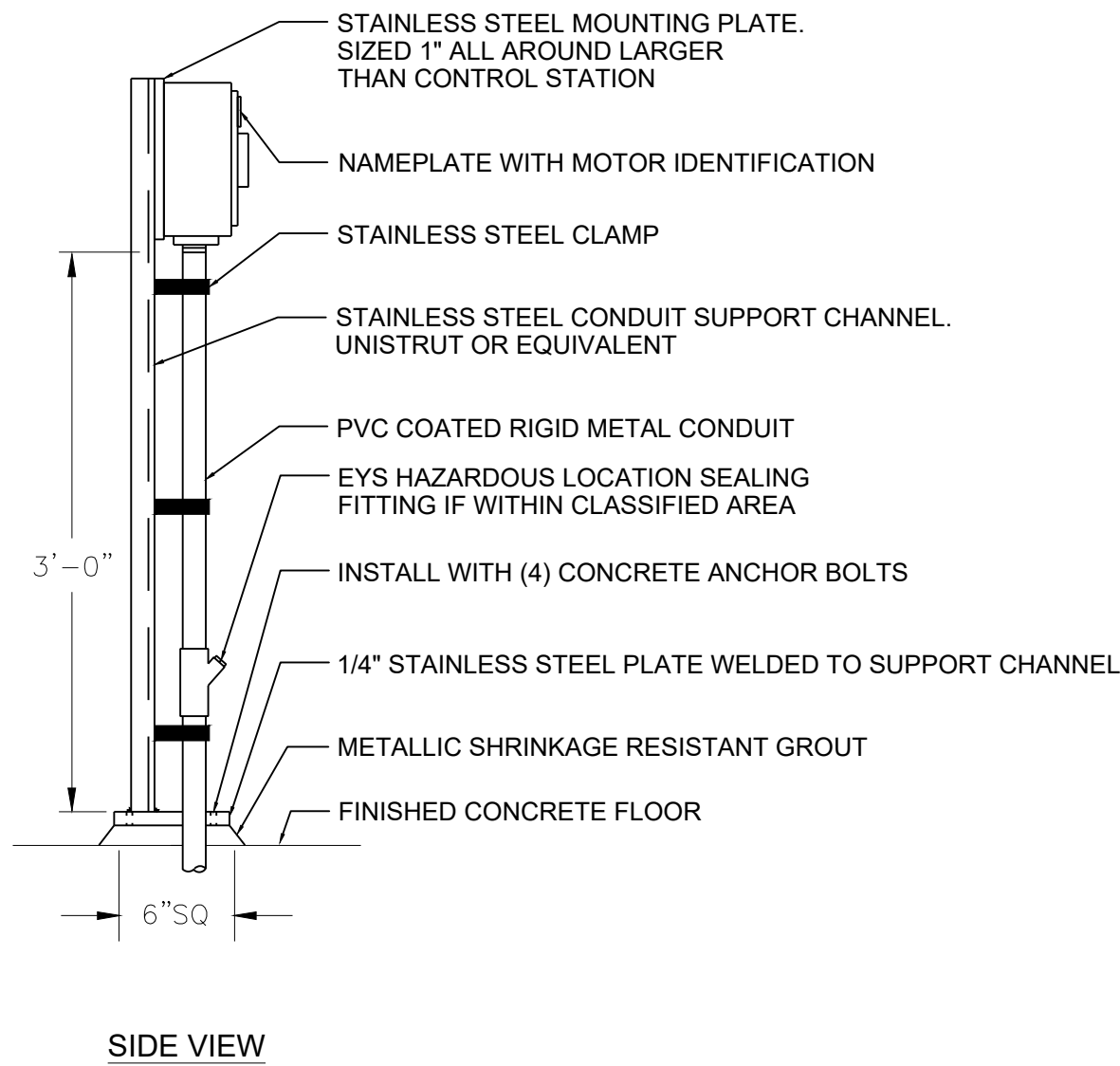
EQUIPMENT FOUNDATION
SCALE: NONE

E
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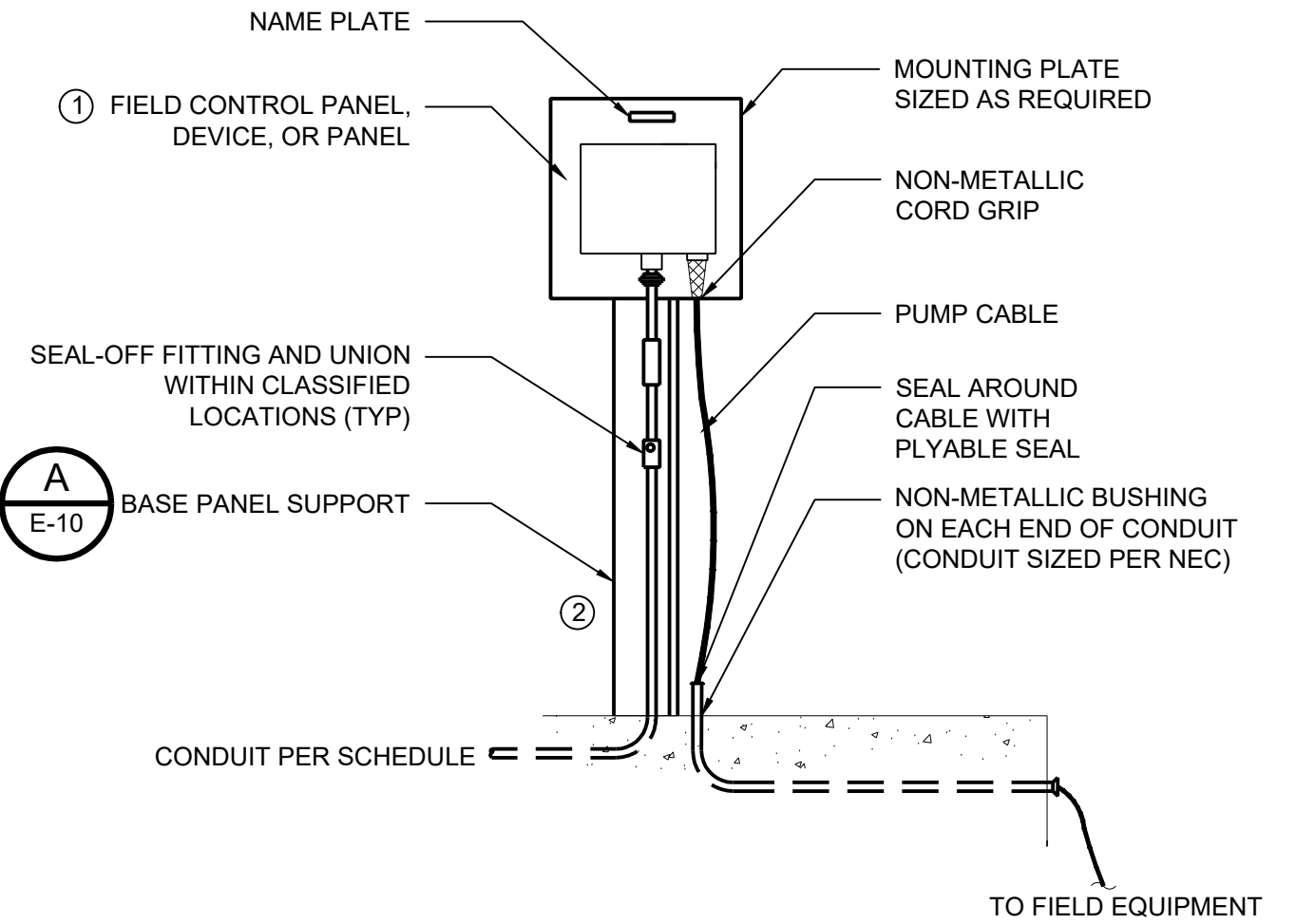
CONDUIT IDENTIFICATION TAG
SCALE: NONE

F
TYP



FIELD CONTROL STATION
MOUNTING REQUIREMENTS
SCALE: NONE

G
TYP



PUMP CABLE ISOLATION DETAIL
SCALE: NONE

H
TYP

- DETAIL NOTES
- EQUIPMENT BASE TOP SHALL BE LEVEL.
 - PRIOR TO EQUIPMENT BASE INSTALLATION, COMPACT SOIL UNDER AND 6" BEYOND THE BASE TO 96% RELATIVE COMPACTION.
 - EQUIPMENT FOUNDATION SHALL CONFORM TO SEISMIC REQUIREMENT PER SPECIFICATION 16070.

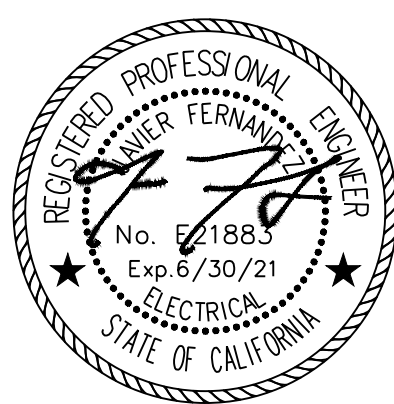
- DETAIL NOTES
- CONDUIT TAGS SHALL BE AFFIXED TO CONDUITS:

AFTER ALL WORKING DRAWINGS ARE APPROVED AND ALL FIELD MODIFICATIONS HAVE BEEN MADE.

BEFORE FINAL ACCEPTANCE TESTING HAS STARED.

- DETAIL NOTES
- PANELS IN NEMA 4X AREAS SHALL BE STAINLESS STEEL. NEMA 12 AREA CAN BE PAINTED STEEL.
 - INSTALL CONDUIT SUPPORT UNISTRUTS AS REQUIRED.

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| DESIGNED BY JF |
| DRAWN BY JF |
| CHECKED BY JP |
| DATE MARCH 2021 |



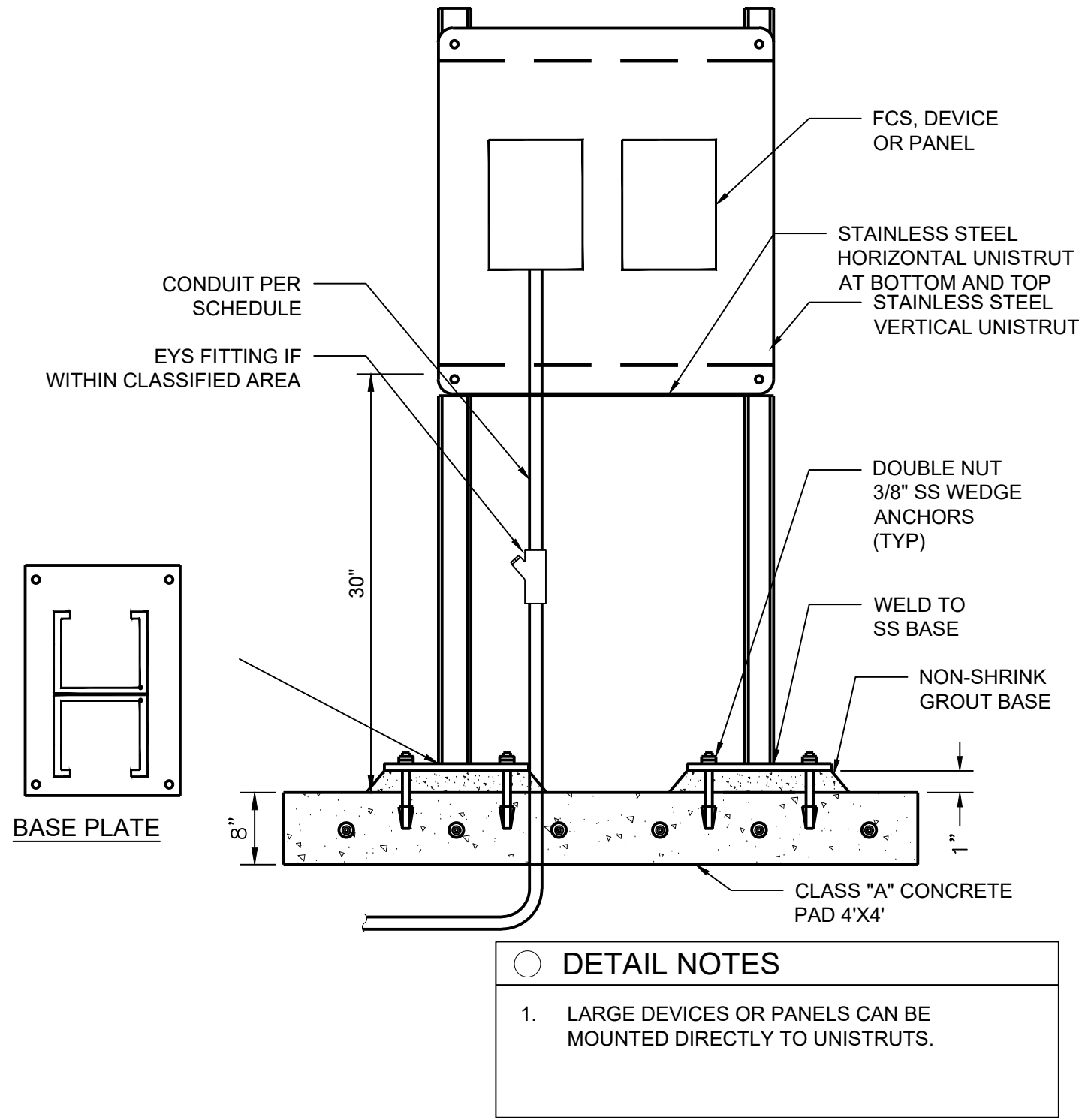
TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT UPGRADES

ELECTRICAL DETAILS 2

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

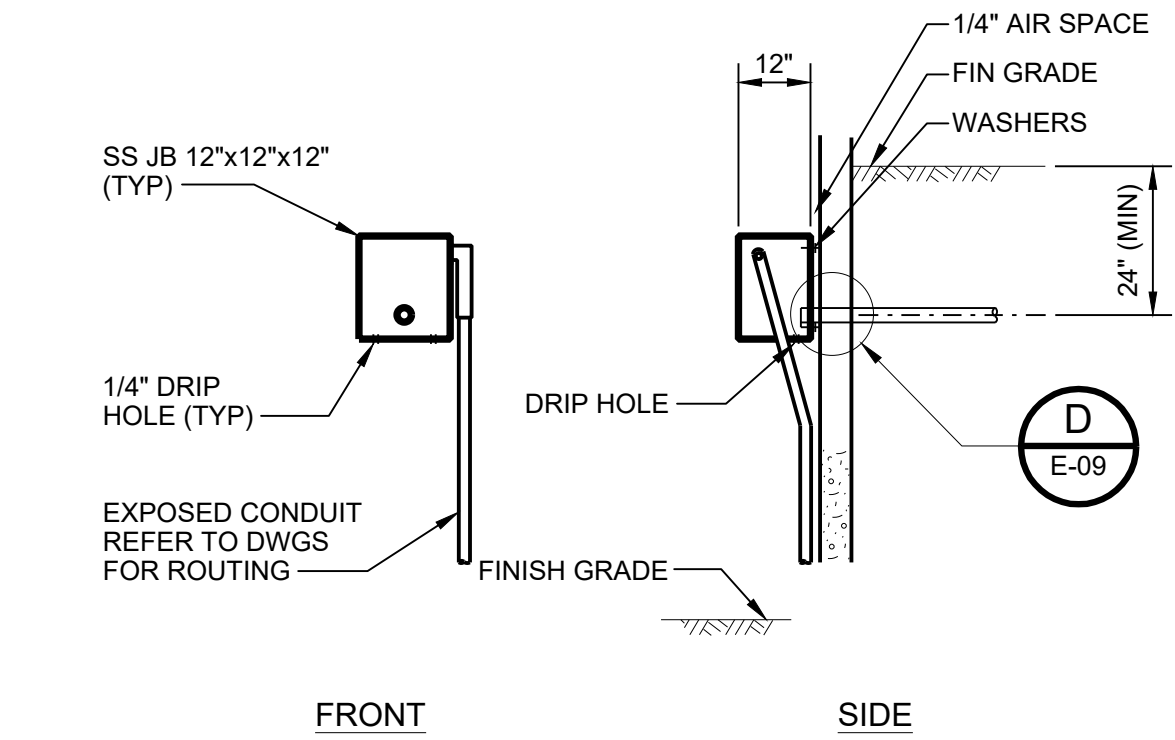
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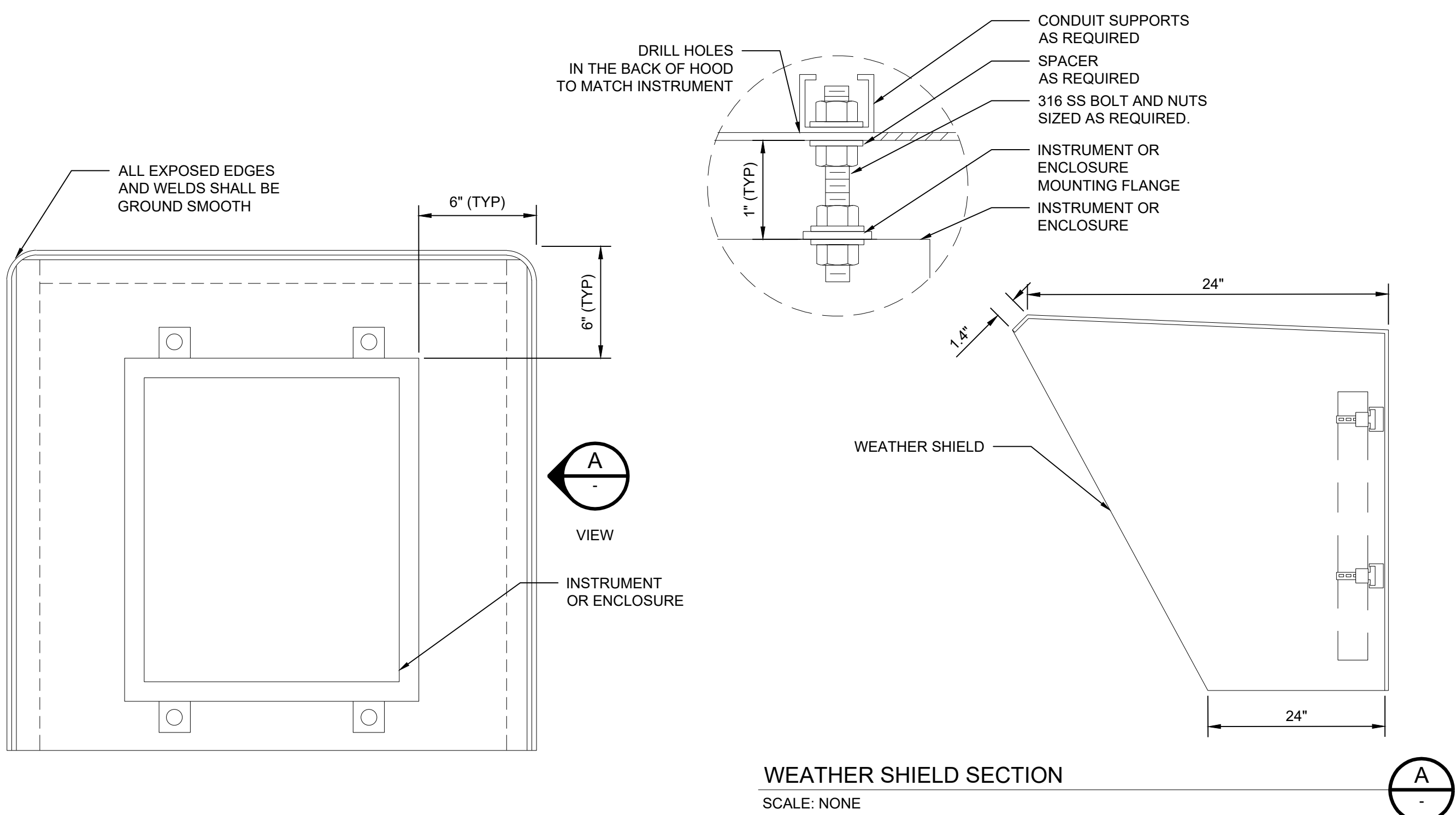
PANEL SUPPORT INSTALLATION

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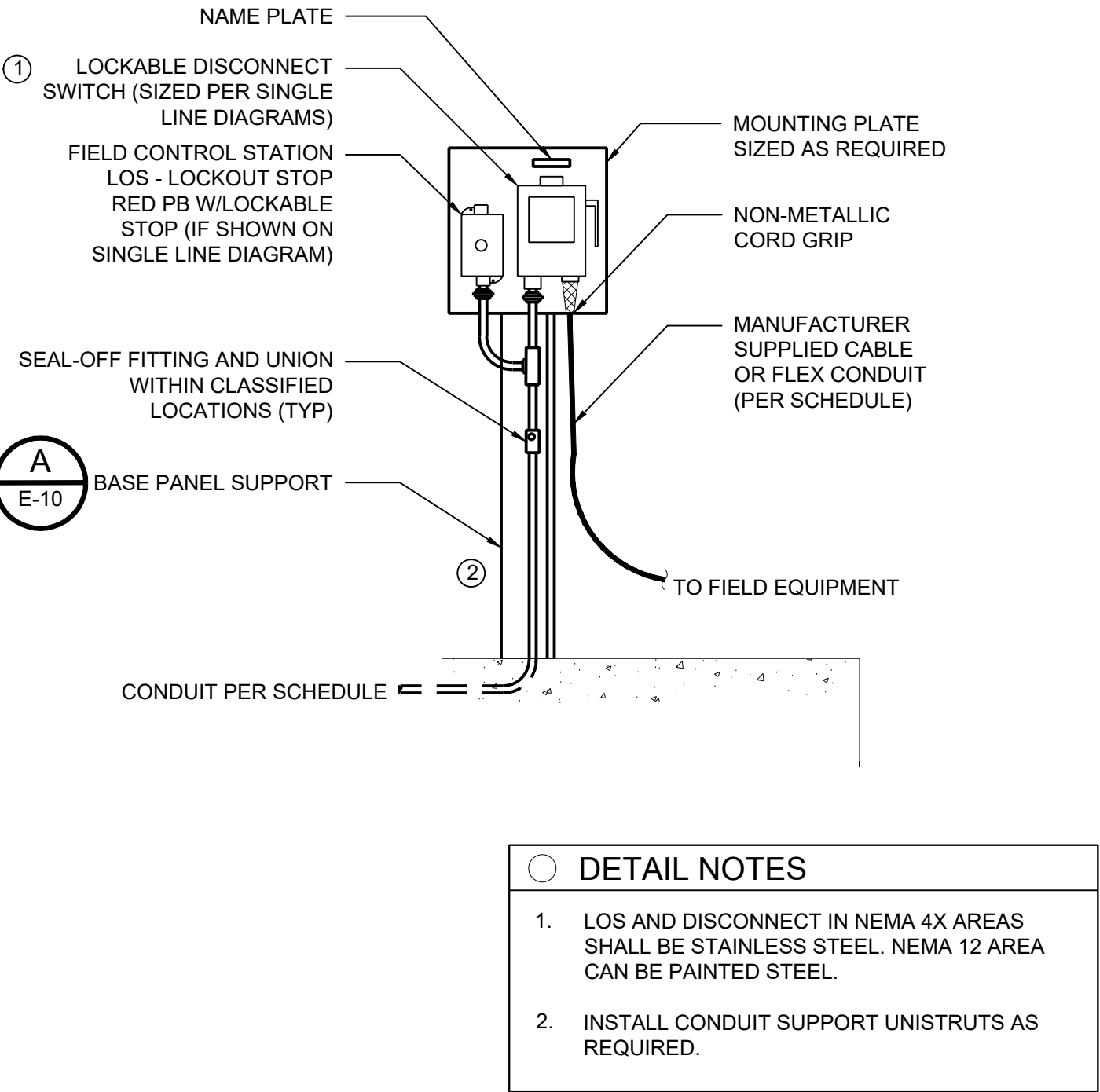
CONDUIT ENTRANCE BELOW GRADE

B
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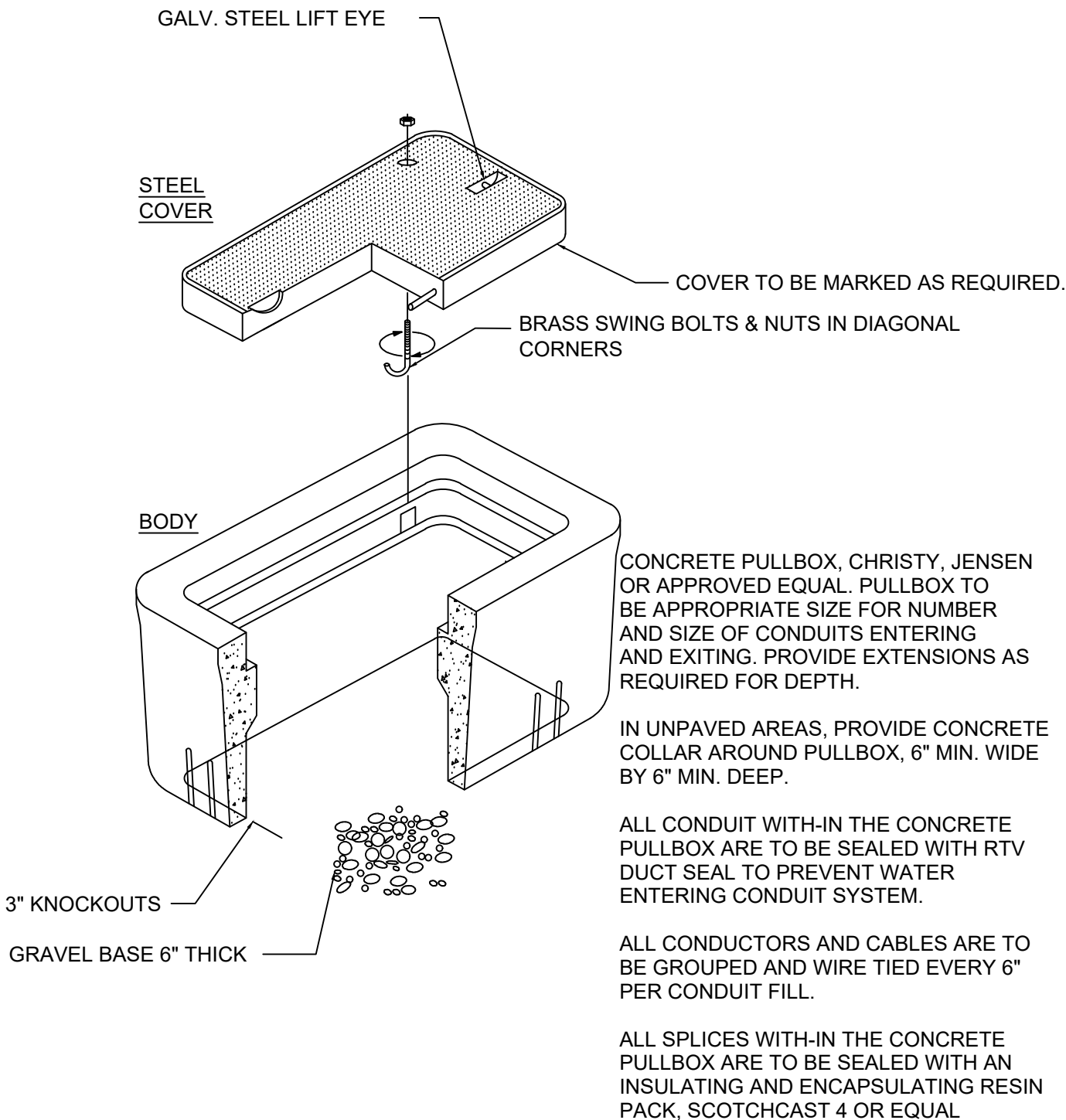
INSTRUMENTATION WEATHER SHIELD

C
TYP



FIELD CONTROL STATION

D
TYP



SMALL CONCRETE PULLBOX

E
TYP

NOT USED

SCALE: NONE

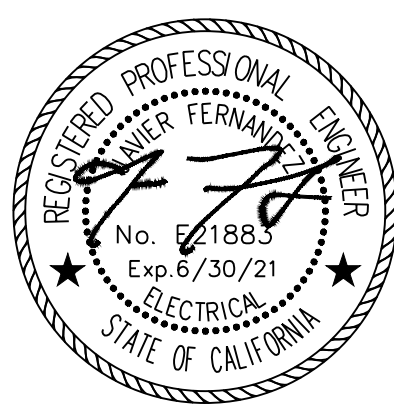
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NOT USED

SCALE: NONE

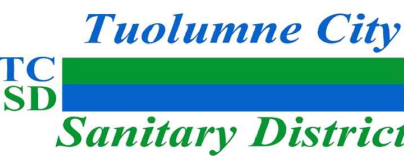
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DATE
MARCH 2021

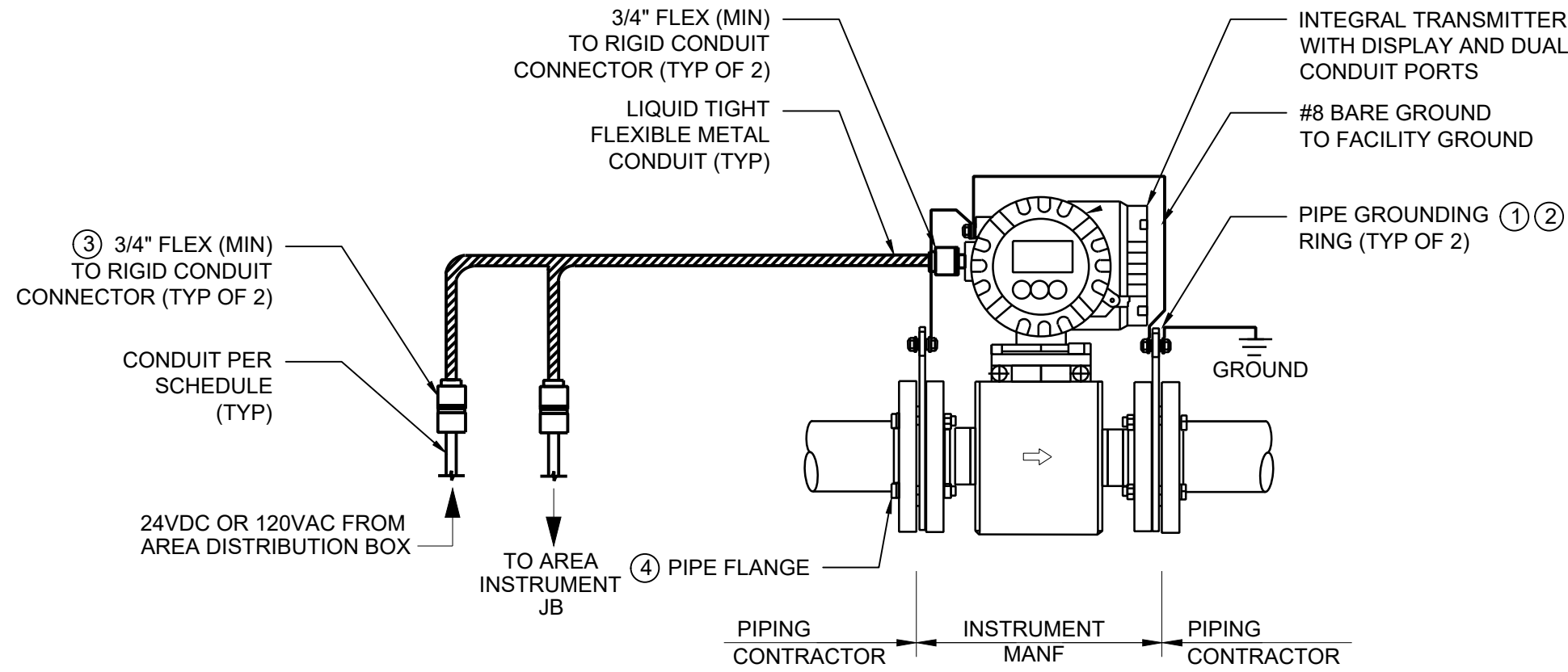


TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT UPGRADES

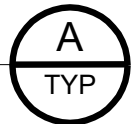
ELECTRICAL DETAILS 3

VERIFY SCALES
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0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

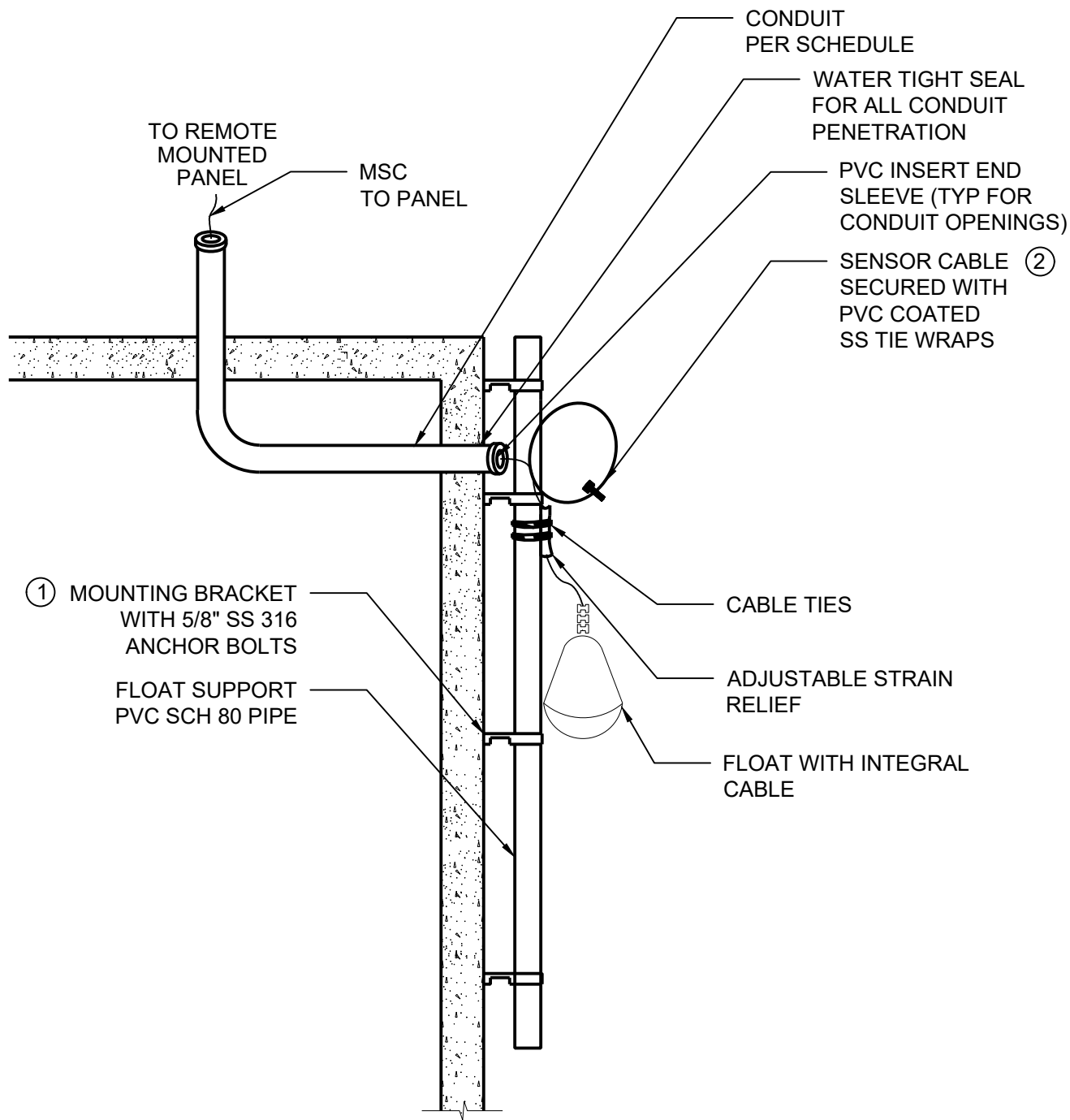
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SHEET NO.
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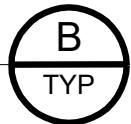
MAGNETIC FLOW METER
WITH INTEGRAL TRANSMITTER
SCALE: NONE



- DETAIL NOTES
- GROUND RINGS ARE REQUIRED FOR METALLIC AND NON-METALLIC PIPE INSTALLATION.
 - GROUND RING MATERIAL SHALL MATCH MEASURING ELECTRODE MATERIAL.
 - FURNISH AND INSTALL CONDUIT SUPPORTS FOR ALL CONDUITS AS REQUIRED.
 - MECHANICAL PIPE SHALL BE SIZED IN ACCORDANCE WITH MECHANICAL/CIVIL DRAWINGS.

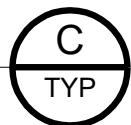


FLOAT LEVEL DETECTION SWITCH
SCALE: NONE

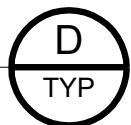


- DETAIL NOTES
- FURNISH AND INSTALL SS 316 SUPPORT BRACKETS EVERY 3-FT OF PIPE LENGTH.
 - MAINTENANCE LOOP SHALL INCLUDE 2FT LENGTH OF CABLE SECURED WITH PVC-COATED SS TIE WRAPS, BEND RADIUS NO LESS THAN 8".

SCALE: NONE



SCALE: NONE



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CHECKED BY
JP
DATE
MARCH 2021



TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT UPGRADES

INSTRUMENTATION DETAILS 1

VERIFY SCALES
BAR IS ONE INCH ON
ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS
SHEET, ADJUST SCALES
ACCORDINGLY

DRAWING NO.
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| RACK | MODULE NO. | POINT TYPE | POINT NO. | SIGNAL TAG NO. | SIGNAL DESCRIPTION |
|------|------------|------------|-----------|----------------|--------------------------------|
| 1 | 2 | AI | 0 | - | WIRED SPARE |
| 1 | 2 | AI | 1 | - | WIRED SPARE |
| 1 | 2 | AI | 2 | - | RAS FLOW |
| 1 | 2 | AI | 3 | - | WAS FLOW |
| 1 | 2 | AI | 4 | - | HEADWORKS INLET FLOW |
| 1 | 2 | AI | 5 | - | PLANT DRAIN FLOW |
| 1 | 2 | AI | 6 | - | EFFLUENT FLOW |
| 1 | 2 | AI | 7 | - | AERATION BASIN DO |
| 1 | 3 | AI | 0 | S06-01 | RAS PUMP NO.1 - SPEED FEEDBACK |
| 1 | 3 | AI | 1 | S06-02 | RAS PUMP NO.2 - SPEED FEEDBACK |
| 1 | 3 | AI | 2 | S06-03 | RAS PUMP NO.3 - SPEED FEEDBACK |
| 1 | 3 | AI | 3 | - | CHLORINE ANALYZER |
| 1 | 3 | AI | 4 | F06-01 | RAS PS FLOW |
| 1 | 3 | AI | 5 | - | WIRED SPARE |
| 1 | 3 | AI | 6 | - | WIRED SPARE |
| 1 | 3 | AI | 7 | - | WIRED SPARE |
| 1 | 4 | AO | 0 | SC06-01 | RAS PUMP NO.1 - SPEED CONTROL |
| 1 | 4 | AO | 1 | SC06-02 | RAS PUMP NO.2 - SPEED CONTROL |
| 1 | 4 | AO | 2 | SC06-03 | RAS PUMP NO.3 - SPEED CONTROL |
| 1 | 4 | AO | 3 | - | WIRED SPARE |

ADDITIVE BID ITEM D

② ① PLC I/O MODIFICATION
REQUIRED (TYP)

| RACK | MODULE NO. | POINT TYPE | POINT NO. | SIGNAL TAG NO. | SIGNAL DESCRIPTION |
|------|------------|------------|-----------|----------------|--------------------|
| 1 | 11 | DO | 1 | - | WIRED SPARE |
| 1 | 11 | DO | 2 | - | RASP 06-01 STT/STP |
| 1 | 11 | DO | 3 | - | RASP 06-02 STT/STP |
| 1 | 11 | DO | 4 | - | RASP 06-03 STT/STP |
| 1 | 11 | DO | 5 | - | WIRED SPARE |
| 1 | 11 | DO | 6 | - | WIRED SPARE |
| 1 | 11 | DO | 7 | - | WIRED SPARE |
| 1 | 11 | DO | 8 | - | WIRED SPARE |
| 1 | 11 | DO | 9 | - | WIRED SPARE |
| 1 | 11 | DO | 10 | - | WIRED SPARE |
| 1 | 11 | DO | 11 | - | WIRED SPARE |
| 1 | 11 | DO | 12 | - | WIRED SPARE |
| 1 | 11 | DO | 13 | - | WIRED SPARE |
| 1 | 11 | DO | 14 | - | WIRED SPARE |
| 1 | 11 | DO | 15 | - | WIRED SPARE |

| RACK | MODULE NO. | POINT TYPE | POINT NO. | SIGNAL TAG NO. | SIGNAL DESCRIPTION |
|------|------------|------------|-----------|----------------|--------------------------------------|
| 1 | 6 | DI | 0 | - | AERA 10-01 READY |
| 1 | 6 | DI | 1 | - | AERA 10-01 RUNNING |
| 1 | 6 | DI | 2 | - | AERA 10-01 IN HAND |
| 1 | 6 | DI | 3 | - | AERA 10-01 IN AUTO |
| 1 | 6 | DI | 4 | - | AERA 10-01 HIGH TEMP |
| 1 | 6 | DI | 5 | - | WIRED SPARE |
| 1 | 6 | DI | 6 | - | WIRED SPARE |
| 1 | 6 | DI | 7 | - | WIRED SPARE |
| 1 | 6 | DI | 8 | - | WIRED SPARE |
| 1 | 6 | DI | 9 | - | WIRED SPARE |
| 1 | 6 | DI | 10 | - | AERA 11-01 READY |
| 1 | 6 | DI | 11 | - | AERA 11-01 RUNNING |
| 1 | 6 | DI | 12 | - | AERA 11-01 IN HAND |
| 1 | 6 | DI | 13 | - | SPARE |
| 1 | 6 | DI | 14 | - | AERA 11-01 FAILURE |
| 1 | 6 | DI | 15 | - | AERA 11-02 READY |
| 1 | 6 | DI | 16 | - | AERA 11-02 RUNNING |
| 1 | 6 | DI | 17 | - | AERA 11-02 IN HAND |
| 1 | 6 | DI | 18 | - | SPARE |
| 1 | 6 | DI | 19 | - | AERA 11-02 FAILURE |
| 1 | 6 | DI | 20 | - | ATS IN NORMAL |
| 1 | 6 | DI | 21 | - | ATS IN EMERGENCY |
| 1 | 6 | DI | 22 | - | EMERGENCY GENERATOR RUNNING |
| 1 | 6 | DI | 23 | - | EMERGENCY GENERATOR FAIL TO RUN |
| 1 | 6 | DI | 24 | - | EMERGENCY GENERATOR LOW FUEL |
| 1 | 6 | DI | 25 | - | EMERGENCY GENERATOR ALARM - SHUTDOWN |
| 1 | 6 | DI | 26 | - | EMERGENCY GENERATOR LOW BATTERY |
| 1 | 6 | DI | 27 | - | WIRED SPARE |
| 1 | 6 | DI | 28 | - | WIRED SPARE |
| 1 | 6 | DI | 29 | - | WIRED SPARE |
| 1 | 6 | DI | 30 | - | PDRP 08-01 READY |
| 1 | 6 | DI | 31 | - | PDRP 08-01 RUNNING |

| RACK | MODULE NO. | POINT TYPE | POINT NO. | SIGNAL TAG NO. | SIGNAL DESCRIPTION |
|------|------------|------------|-----------|----------------|------------------------------------|
| 1 | 8 | DI | 0 | - | RECP 13-01 READY |
| 1 | 8 | DI | 1 | - | RECP 13-01 RUNNING |
| 1 | 8 | DI | 2 | - | RECP 13-01 IN HAND |
| 1 | 8 | DI | 3 | - | RECP 13-01 IN AUTO |
| 1 | 8 | DI | 4 | - | RECP 13-01 HIGH TEMP |
| 1 | 8 | DI | 5 | - | RECP 13-01 HIGH DISCHARGE PRESSURE |
| 1 | 8 | DI | 6 | - | DISSINFECTION METERING PUMP 1 |
| 1 | 8 | DI | 7 | - | DISSINFECTION METERING PUMP 2 |
| 1 | 8 | DI | 8 | - | RELAY FOR PHONE? |
| 1 | 8 | DI | 9 | - | APPLE COLONY LEVEL FLOATS |
| 1 | 8 | DI | 10 | - | APPLE COLONY LEVEL FLOATS |
| 1 | 8 | DI | 11 | - | APPLE COLONY LEVEL FLOATS |
| 1 | 8 | DI | 12 | - | APPLE COLONY LEVEL FLOATS |
| 1 | 8 | DI | 13 | ESL06-00 | MCC 06-01 POWER FAIL |
| 1 | 8 | DI | 14 | UST06-00 | MCC 06-01 SPD TROUBLE |
| 1 | 8 | DI | 15 | ZS06-00 | MCC 06-01 MCCPANEL INTRUSION |
| 1 | 8 | DI | 16 | N06-04 | SUMP PUMP RUNNING |
| 1 | 8 | DI | 17 | UA06-04 | SUMP PUMP FAILURE |
| 1 | 8 | DI | 18 | - | WIRED SPARE |
| 1 | 8 | DI | 19 | - | WIRED SPARE |
| 1 | 8 | DI | 20 | - | WIRED SPARE |
| 1 | 8 | DI | 21 | - | CPNL 05-02 RUNNING |
| 1 | 8 | DI | 22 | CPNL 05-02 | FAULT |
| 1 | 8 | DI | 23 | N06-01 | RASP 06-01 RUNNING |
| 1 | 8 | DI | 24 | UA06-01 | RASP 06-01 FAILURE |
| 1 | 8 | DI | 25 | Y06-01 | RASP 06-01 READY |
| 1 | 8 | DI | 26 | N06-02 | RASP 06-02 RUNNING |
| 1 | 8 | DI | 27 | UA06-02 | RASP 06-02 FAILURE |
| 1 | 8 | DI | 28 | Y06-02 | RASP 06-02 READY |
| 1 | 8 | DI | 29 | N06-03 | RASP 06-03 RUNNING |
| 1 | 8 | DI | 30 | UA06-03 | RASP 06-03 FAILURE |
| 1 | 8 | DI | 31 | Y06-03 | RASP 06-03 READY |

SCHEDULE 1 PLANT PLC I/O MODIFICATIONS

SCALE: NONE

| CONDUIT TAG | FROM | TO | PARALLEL RACEWAY QTY | SIZE | CONDUIT TYPE | POWER QTY | SIZE | GROUND WIRE | CONTROL QTY | SIZE | SIGNAL QTY | SIZE | REMARKS |
|-------------|---------------------------|---------------------------|----------------------|------|--------------|-----------|--------|-------------|-------------|------|------------|--------|---------------------------------|
| A600A | EXISTING PLANT PLC | MCC-06-01 (VIA PPB-6A/6B) | 1 | 2" | PVC40/GRSPVC | - | - | #12 | - | - | 6 | #16TSP | |
| A601A | EXISTING PLANT PLC | FIT-06-01 | 1 | 1" | PVC40/GRSPVC | - | - | #12 | - | - | 1 | #16TSP | FIT SIGNAL - ADDITIVE BID ITEM |
| C600A | EXISTING PLANT PLC | MCC-06-01 (VIA PPB-6A/6B) | 1 | 2" | PVC40/GRSPVC | - | - | #12 | 46 | #14 | - | - | |
| C601A | EXISTING PLANT PLC | FIT-06-01 | 1 | 1" | PVC40/GRSPVC | 2 | #12 | #12 | - | - | - | - | FIT POWER - ADDITIVE BID ITEM |
| C604A | EXISTING PLANT PLC | SUMP CONTROL PANEL | 1 | 1" | PVC40 | - | - | #12 | 4 | #14 | - | - | SUMP PUMP CONTROL WIRING |
| C604B | SUMP CONTROL PANEL | LSHH-06-04 | 1 | 1" | PVC40/GRSPVC | - | - | - | 1 | MSC | - | - | |
| C611A | MCC-06-01 | AERA-11-01 - FCS | 1 | 1" | PVC40/GRSPVC | 1 | - | #12 | 8 | #14 | - | - | |
| C612A | MCC-06-01 | AERA-11-02 - FCS | 1 | 1" | PVC40/GRSPVC | 1 | - | #12 | 8 | #14 | - | - | |
| P600A | MCC-05-01 | MCC-06-01 (VIA PPB-6A/6B) | 1 | 3" | PVC40/GRSPVC | 3 | #4/0 | #4 | - | - | - | - | |
| P601A | MCC-06-01 (VIA PPB-6B) | RASP-06-01 | 1 | 1.5" | PVC40/GRSPVC | 1 | 3C/#8 | #10 | 2 | #14 | - | - | 1000V RATED VFD CABLE W/ GROUND |
| P602A | MCC-06-01 (VIA PPB-6B) | RASP-06-02 | 1 | 1.5" | PVC40/GRSPVC | 1 | 3C/#12 | #10 | 2 | #14 | - | - | 1000V RATED VFD CABLE W/ GROUND |
| P603A | MCC-06-01 (VIA PPB-6B) | RASP-06-03 | 1 | 1.5" | PVC40/GRSPVC | 1 | 3C/#12 | #10 | 2 | #14 | - | - | 1000V RATED VFD CABLE W/ GROUND |
| P604A | MCC-06-01 (VIA PPB-6B) | SUMP CONTROL PANEL | 1 | 1" | PVC40/GRSPVC | 3 | #12 | #12 | - | - | - | - | |
| P604B | SUMP CONTROL PANEL | SMP-06-04 | 1 | 1.5" | PVC40/GRSPVC | 1 | MSC | - | - | - | - | - | |
| P611A | MCC-06-01 | AERA-11-01 | 1 | 1" | PVC40/GRSPVC | 3 | #8 | #10 | 4 | #14 | - | - | |
| P612A | MCC-06-01 | AERA-11-02 | 1 | 1" | PVC40/GRSPVC | 3 | #8 | #10 | 4 | #14 | - | - | |
| XA600A | MCC-06-01 (VIA PPB-6A/6B) | ELECTRICAL BUILDING | 4 | 1" | PVC40 | - | - | - | - | - | - | - | WITH PULL ROPE |
| XA600B | SPB-6B | RAS PUMP AREA | 2 | 1" | PVC40 | - | - | - | - | - | - | - | WITH PULL ROPE |
| XA600C | SPB-6B | WET WELL AREA | 1 | 2" | PVC40 | - | - | - | - | - | - | - | WITH PULL ROPE |
| XP600A | MCC-06-01 (VIA PPB-6A/6B) | ELECTRICAL BUILDING | 4 | 2" | PVC40 | - | - | - | - | - | - | - | WITH PULL ROPE |
| XP600B | PPB-6B | RAS PUMP AREA | 2 | 2" | PVC40 | - | - | - | - | - | - | - | WITH PULL ROPE |

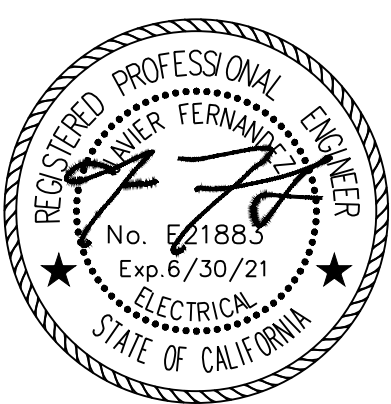
SCHEDULE 2 CONDIT AND CABLE

SCALE: NONE

- GENERAL NOTES
- A. REFERENCE E-02 FOR ADDITIONAL ELECTRICAL GENERAL NOTES.
- B. AREA CLASSIFICATION SHALL APPLY UNLESS OTHERWISE NOTED ON THE PLANS AND SPECIFICATIONS.
- SHEET NOTES
1. CONTROL PANEL AND PLC ARE EXISTING. CONTRACTOR SHALL TERMINATE I/O TO RESPECTIVE I/O MODULES PER DRAWINGS AND SIGNAL SCHEDULES.
2. PROVIDE NEW TERMINAL BLOCKS AND INTERFACE RELAYS AND/OR INTRINSICALLY SAFE RELAYS AS REQUIRED TO INSTALL NEW I/O.

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BLACKWATER
CONSULTING ENGINEERS, INC.
602 LYLELL DRIVE, MODESTO, CA 95356 PH. 209.322.1820



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| DRAWN BY JF |
| CHECKED BY JP |
| DATE MARCH 2021 |



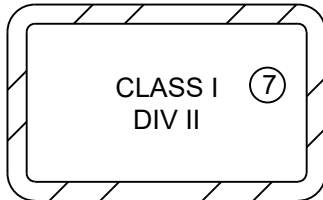
TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT UPGRADES

CONDUIT/CABLE
AND I/O MODIFICATION SCHEDULE

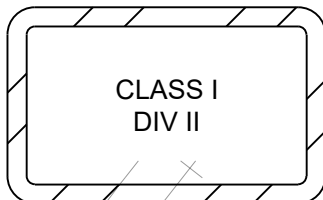
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SHEET NO.
28 OF 36

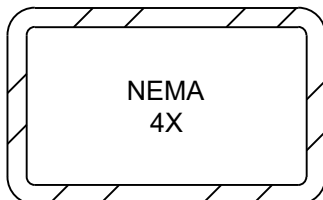
AREA CLASSIFICATION



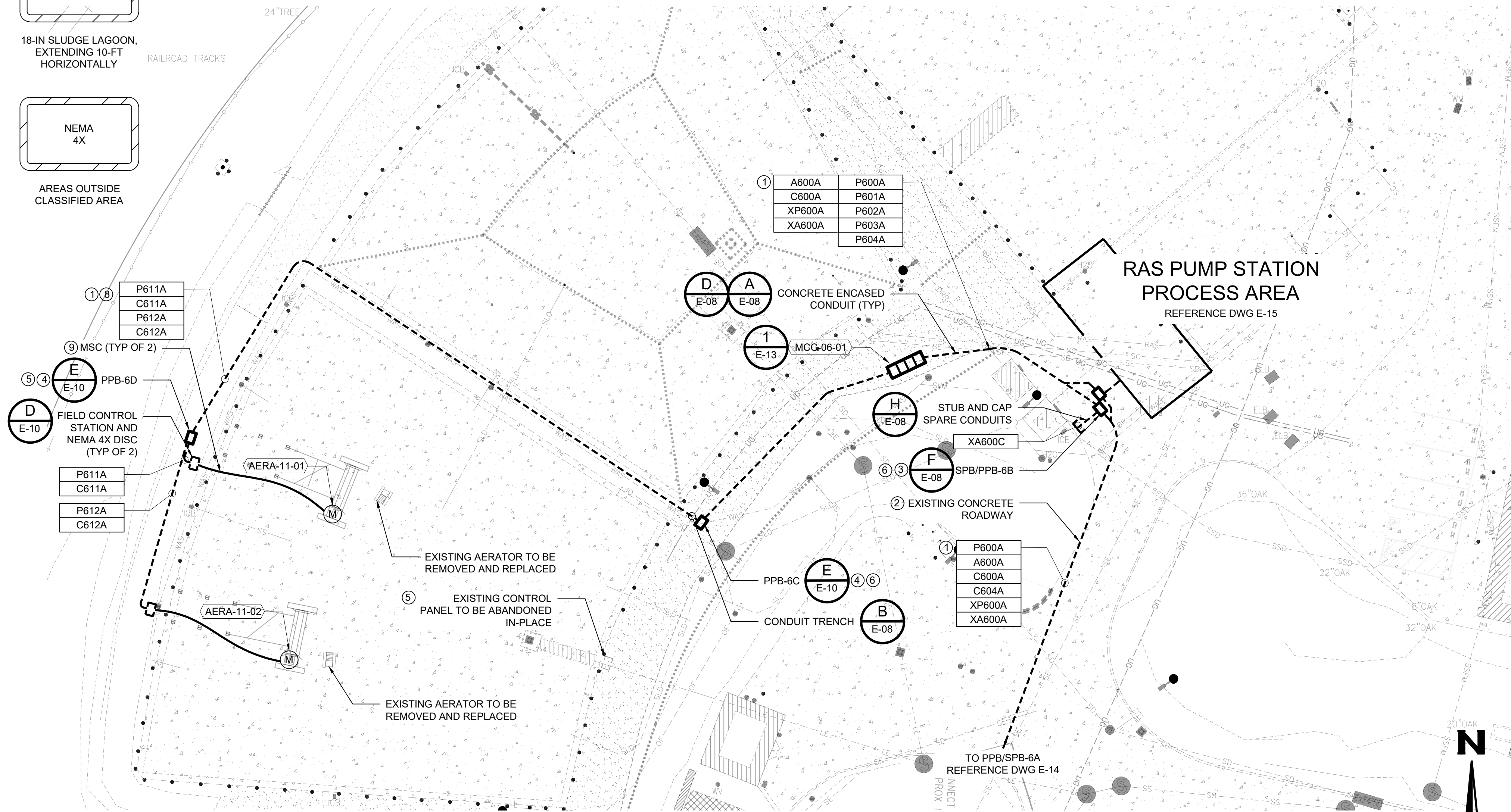
18-IN ABOVE BASIN AND CLARIFIER WALL, EXTENDING 10-FT HORIZONTALLY



18-IN SLUDGE LAGOON, EXTENDING 10-FT HORIZONTALLY



AREAS OUTSIDE CLASSIFIED AREA



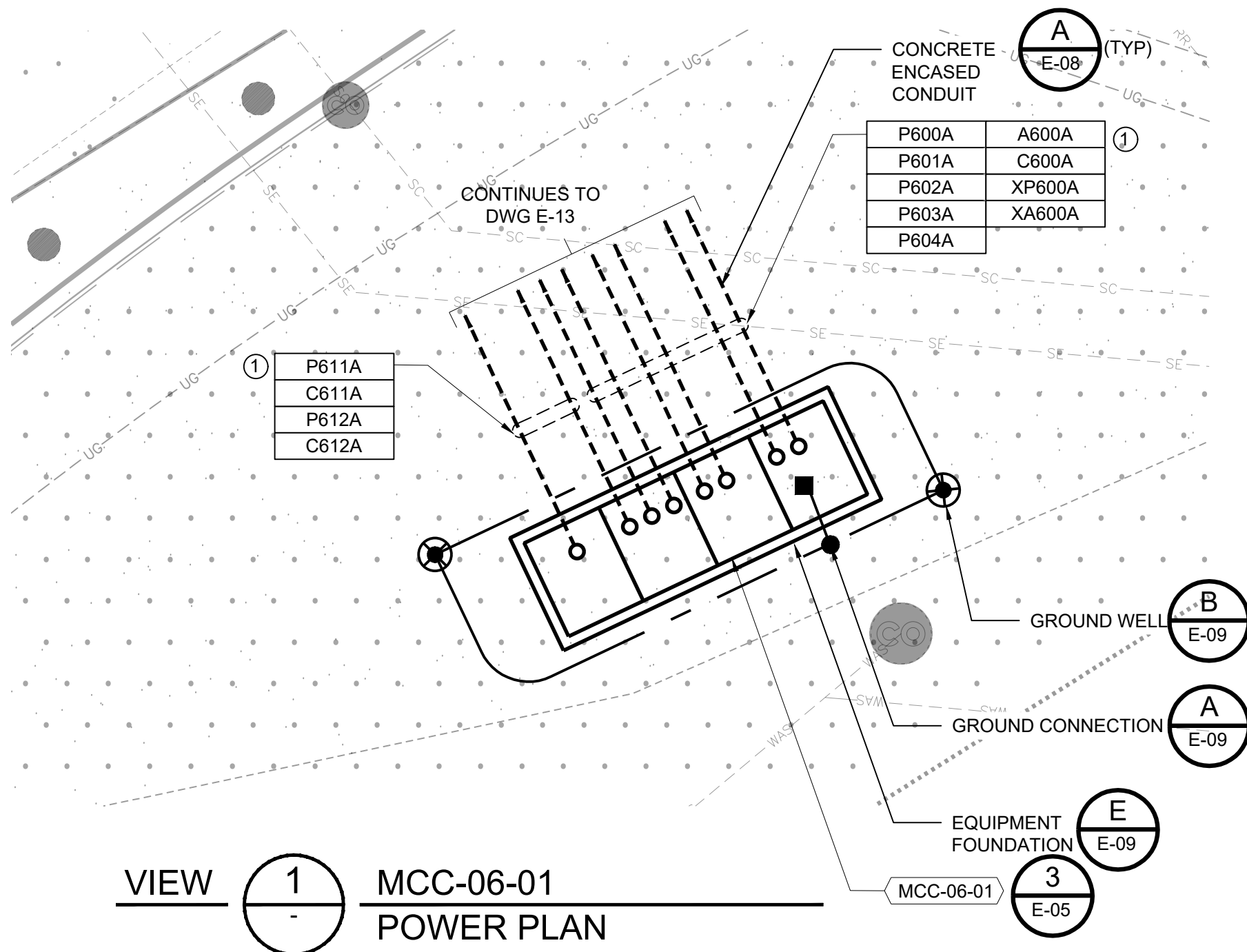
ELECTRICAL SITE PLAN 1

GENERAL NOTES

- A. REFERENCE E-02 FOR ADDITIONAL ELECTRICAL GENERAL NOTES.
- B. AREA CLASSIFICATION SHALL APPLY UNLESS OTHERWISE NOTED ON THE PLANS AND SPECIFICATIONS.

SHEET NOTES

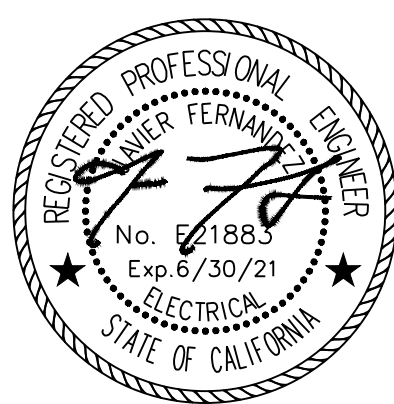
- 1. BELOW GRADE CONDUITS SHALL BE INSTALLED A MINIMUM OF 18" BELOW THE FINISHED FLOOR OR 12" (MIN.) BELOW ANY PIPE CROSSING THE CONDUIT PATH.
- 2. INSTALL NEW CONDUIT AS REQUIRED BY CONDUIT SCHEDULE. SAW CUT EXISTING CONCRETE ROADWAY AND REPLACE TO THE NEAREST EXPANSION JOINT TO MATCH EXISTING.
- 3. PROVIDE 24"X36" H20 RATED PULLBOX .
- 4. PROVIDE 10"X17" H20 RATED PULLBOX .
- 5. REMOVE AND WASTE EXISTING CONDUCTOR BETWEEN CONTROL PANEL AND MOTOR CONTROL CENTER MCC-05-01.
- 6. PULL BOXES SHALL BE INSTALLED OUTSIDE CLASSIFIED AREA.
- 7. FURNISH AND INSTALL SEAL-OFF FITTINGS FOR ALL CONDUITS ENTERING CLASSIFIED LOCATIONS.
- 8. CONTRACTOR SHALL COORDINATE EXISTING UNDERGROUND UTILITIES WITH FACILITY PRIOR TO TRENCHING IN AREA. ELECTRICAL CONDUITS SHALL BE INSTALLED MINIMUM OF 12-INCH SEPARATION BETWEEN WATER AND ELECTRICAL LINES.
- 9. PROVIDE PROVISION REQUIRED TO PROPERLY SECURE THE CABLE TO MECHANISM AS RECOMMENDED BY VENDOR.



VIEW 1 MCC-06-01 POWER PLAN
SCALE: 1" = 3'-0"

0 20' 40'
SCALE: 1" = 20'

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JP
DATE
MARCH 2021



TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT UPGRADES

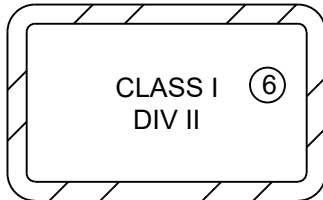
ELECTRICAL SITE PLAN 1

VERIFY SCALES

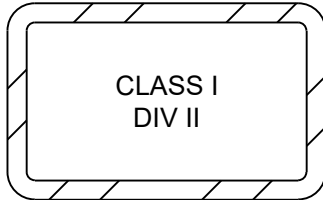
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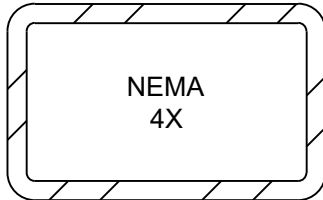
AREA CLASSIFICATION



18-IN ABOVE BASIN AND CLARIFIER WALL, EXTENDING 10-FT HORIZONTALLY



18-IN ABOVE SLUDGE LAGOON, EXTENDING 10-FT HORIZONTALLY



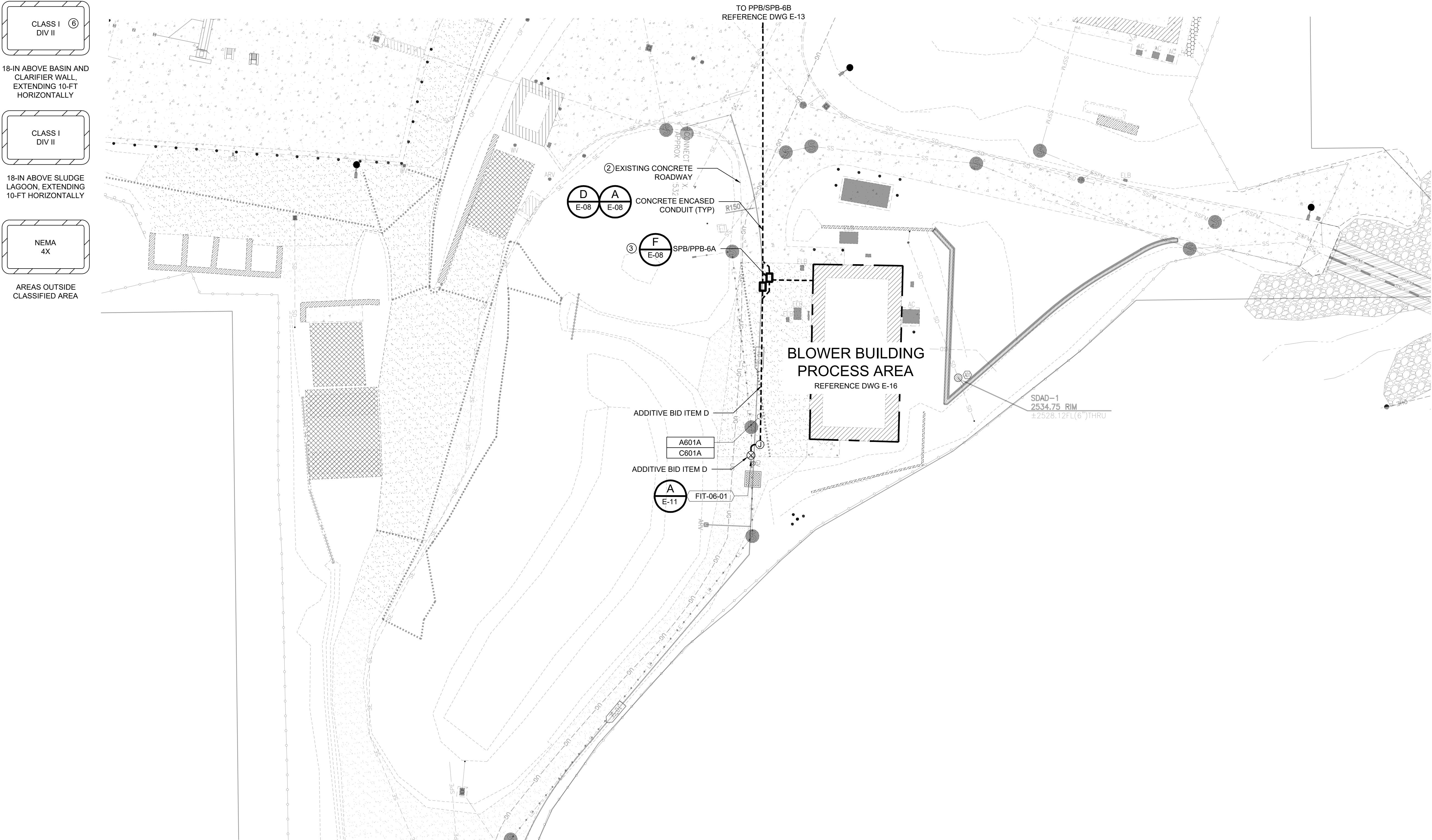
AREAS OUTSIDE CLASSIFIED AREA

GENERAL NOTES

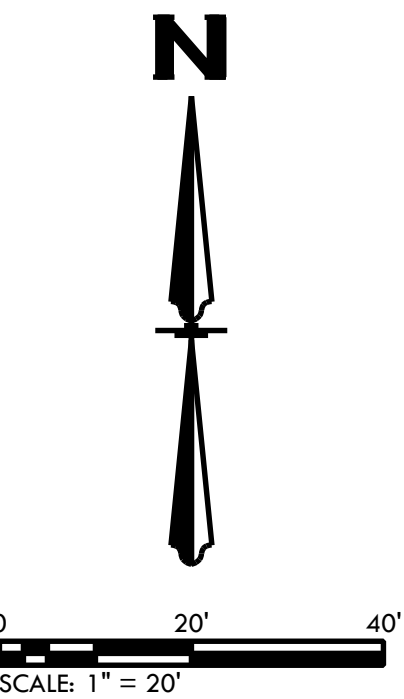
- A. REFERENCE E-02 FOR ADDITIONAL ELECTRICAL GENERAL NOTES.
- B. AREA CLASSIFICATION SHALL APPLY UNLESS OTHERWISE NOTED ON THE PLANS AND SPECIFICATIONS.

SHEET NOTES

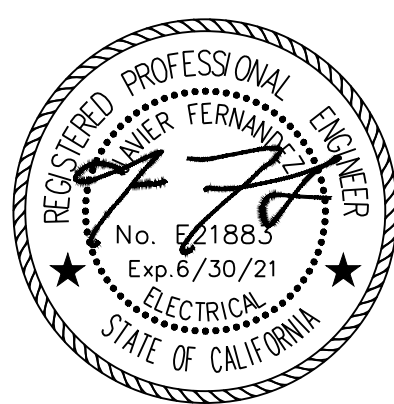
1. BELOW GRADE CONDUITS SHALL BE INSTALLED A MINIMUM OF 18" BELOW THE FINISHED FLOOR OR 12" (MIN.) BELOW ANY PIPE CROSSING THE CONDUIT PATH.
2. INSTALL NEW CONDUIT AS REQUIRED BY CONDUIT SCHEDULE. SAW CUT EXISTING CONCRETE ROADWAY AND REPLACE TO THE NEAREST EXPANSION JOINT. NEW CONCRETE SHALL MATCH EXISTING.
3. PROVIDE 24"X36" H20 RATED PULLBOX .
4. PROVIDE 10"X17" H20 RATED PULLBOX .
5. PULL BOXES SHALL BE INSTALLED OUTSIDE CLASSIFIED AREA.
6. FURNISH AND INSTALL SEAL-OFF FITTINGS FOR ALL CONDUITS ENTERING CLASSIFIED LOCATIONS.



ELECTRICAL SITE PLAN 2



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MARCH 2021



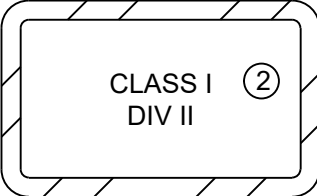
TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT UPGRADES

ELECTRICAL SITE PLAN 2

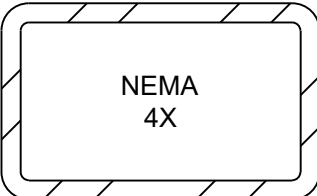
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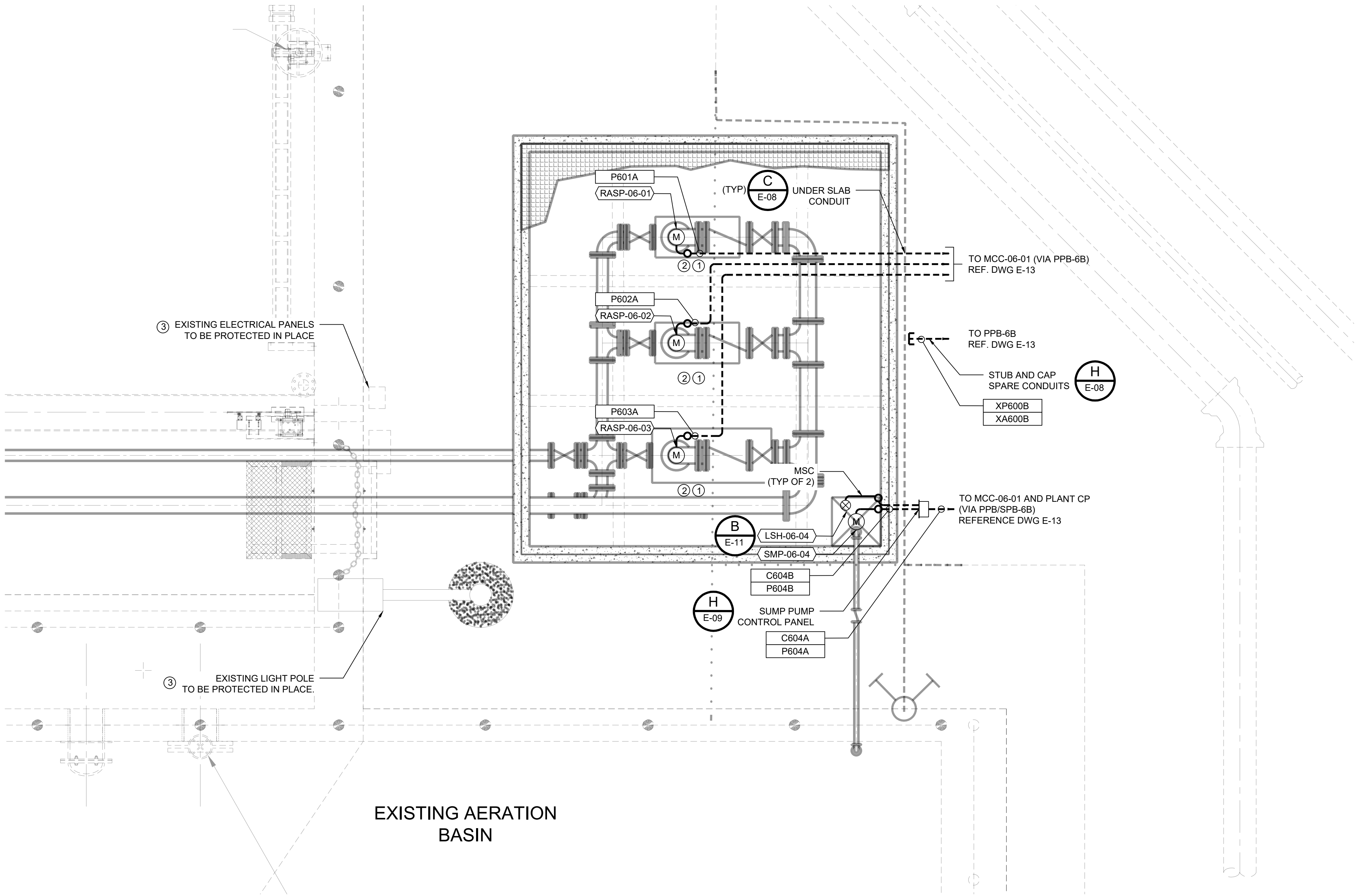
AREA CLASSIFICATION



18-IN ABOVE BASIN AND
CLARIFIER WALL,
EXTENDING 10-FT
HORIZONTALLY



AREAS OUTSIDE
CLASSIFIED AREA



VIEW **1** RAS PUMP STATION
POWER PLAN
SCALE: 1" = 2'-0"

GENERAL NOTES

- A. REFERENCE E-02 FOR ADDITIONAL ELECTRICAL GENERAL NOTES.
- B. AREA CLASSIFICATION SHALL APPLY UNLESS OTHERWISE NOTED ON THE PLANS AND SPECIFICATIONS.

SHEET NOTES

1. TRANSITION CONDUITS FROM UNDERGROUND TO ABOVE GRADE AND INSTALL CONDUIT SUPPORTS AS REQUIRED.
2. FURNISH AND INSTALL SEAL-OFF FITTINGS FOR ALL CONDUITS ENTERING CLASSIFIED LOCATIONS.
3. CONTRACTOR SHALL COORDINATE EXISTING UNDERGROUND UTILITIES WITH FACILITY PRIOR TO TRENCHING IN AREA. RELOCATE UNDERGROUND CONDUITS AND CONDUCTORS AS REQUIRED TO CONTINUE SERVICING EXISTING ELECTRICAL PANELS AND LIGHT POLE.

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MARCH 2021



TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT UPGRADES

RAS PUMP STATION
POWER PLAN

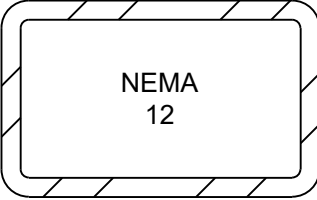
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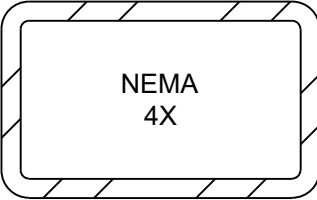
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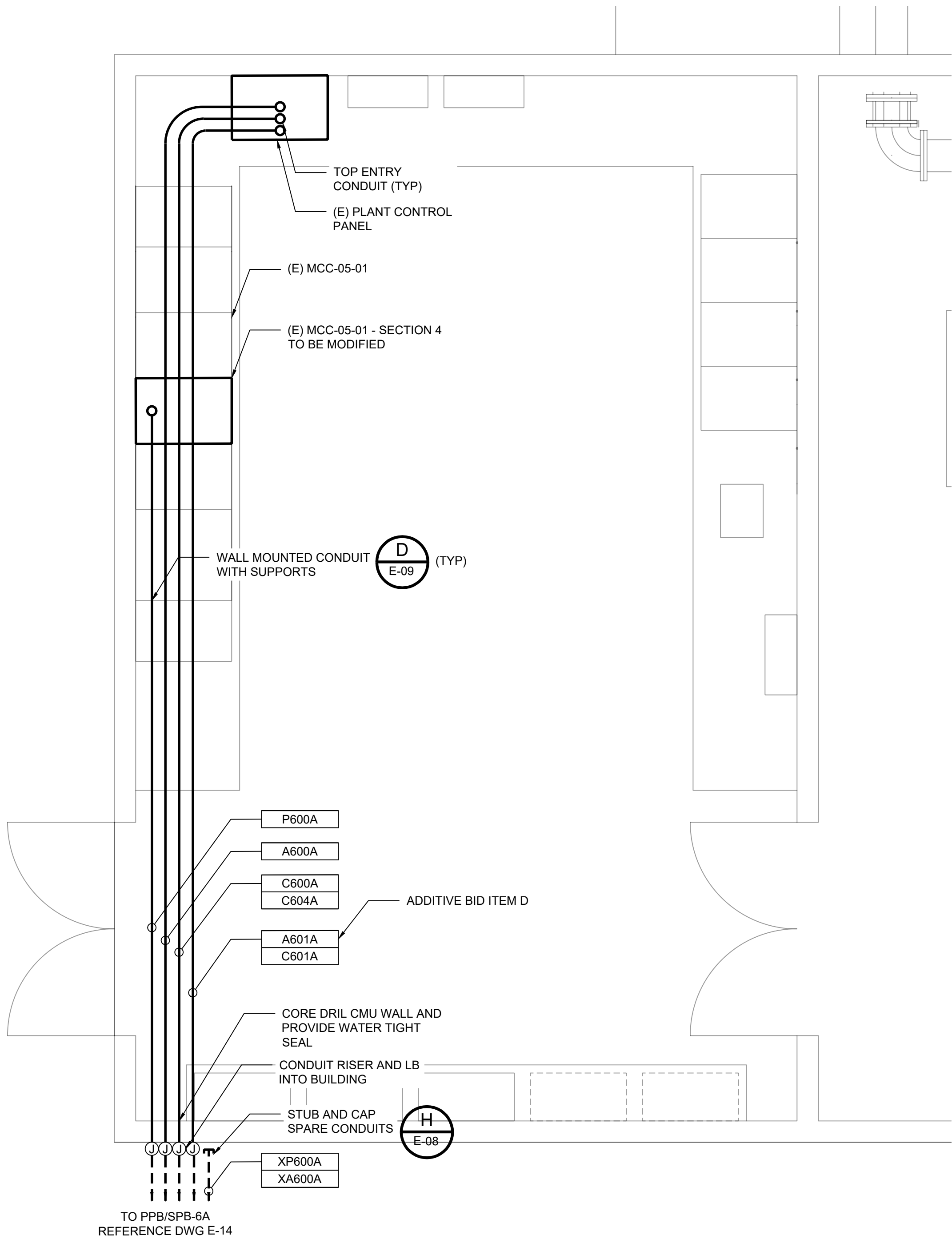
AREA CLASSIFICATION



INSIDE BLOWER
BUILDING ELECTRICAL
ROOM



OUTSIDE DEWATERING
BUILDING



VIEW 1 BLOWER BUILDING
POWER PLAN
SCALE: 1" = X'-X"

GENERAL NOTES

- A. REFERENCE E-02 FOR ADDITIONAL ELECTRICAL GENERAL NOTES.
- B. AREA CLASSIFICATION SHALL APPLY UNLESS OTHERWISE NOTED ON THE PLANS AND SPECIFICATIONS.

SHEET NOTES

1. BELOW GRADE CONDUITS SHALL BE INSTALLED A MINIMUM OF 18" BELOW THE FINISHED FLOOR OR 12" (MIN.) BELOW ANY PIPE CROSSING THE CONDUIT PATH.
2. FURNISH AND INSTALL ADDITIONAL TERMINAL BLOCKS AND INTERFACE RELAYS FOR NEW I/O AS REQUIRED. TERMINAL (N) I/O TO SPARE MODULES.

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| TUOLUMNE CITY SANITARY DISTRICT WASTEWATER TREATMENT PLANT UPGRADES | BLOWER BUILDING POWER PLAN |
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INSTRUMENT SYMBOLS

ABBREVIATIONS

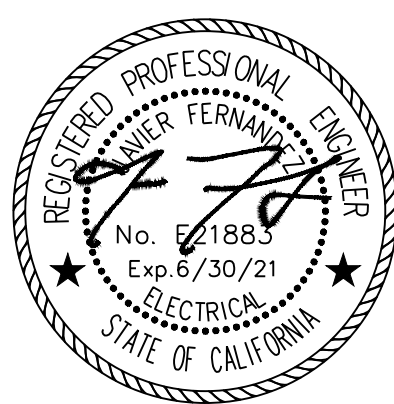
P & I DIAGRAM INSTRUMENT FUNCTIONAL IDENTIFICATION

| SYMBOL | DESCRIPTION | SYMBOL | DESCRIPTION | SYMBOL | DESCRIPTION |
|--------|---|--------|----------------------------------|--------|---|
| | FIELD MOUNTED INSTRUMENT | | HARDWIRE CONNECTION | | DIAPHRAGM VALVE |
| | FACE MOUNTED INSTRUMENT ON LOCAL PANEL, OPERATOR ACCESSIBLE | | EXISTING ELECTRIC SIGNAL | | VALVE ACTUATOR |
| | INSTRUMENT MOUNTED IN LOCAL PANEL, OPERATOR INACCESSIBLE | | ELECTRICAL SIGNAL | | VALVE POSITIONER |
| | FACE MOUNTED INSTRUMENT ON FIELD PANEL, OPERATOR ACCESSIBLE | | ELECTRIC POWER/CONTROL | | GLOBE VALVE |
| | INSTRUMENT MOUNTED IN FIELD PANEL, OPERATOR INACCESSIBLE | | PNEUMATIC SIGNAL | | GATE VALVE OR PINCH VALVE (NORMALLY OPEN) |
| | OPERATION PERFORMED WITH LOGIC OR HARDWIRED DEVICES - REFERENCE ELEMENTARY DWG. # | | CAPILLARY TUBING (FILLED SYSTEM) | | GATE VALVE OR PINCH VALVE (NORMALLY CLOSED) |
| | LAMP INDICATION (STATUS OR ALARM) | | HYDRAULIC SIGNAL | | PLUG VALVE (NORMALLY OPEN) |
| | ANNUNCIATOR WINDOW R - ROW # C - COLUMN # | | SONIC OR ELECTROMAGNETIC SIGNAL | | PLUG VALVE (NORMALLY CLOSED) |
| | COMMUNICATIONS POINT | | LOGIC OR DATA SIGNAL | | BALL VALVE (NORMALLY OPEN) |
| | DISCRETE INPUT | | MAIN PROCESS LINE | | BALL VALVE (NORMALLY CLOSED) |
| | DISCRETE OUTPUT | | SECONDARY PROCESS LINE | | BALL CHECK VALVE |
| | ANALOG INPUT | | AUXILIARY PROCESS LINE | | BUTTERFLY VALVE |
| | ANALOG OUTPUT | | DIRECTION OF FLOW | | CHECK VALVE |
| | INSTRUMENT PANEL MOUNTED WITH COMPUTING, CONVERTING FUNCTION | | MANUFACTURER'S PRE-WIRING | | SLUICE GATE (NORMALLY OPEN) |
| | CONVERT | | ELECTRIC SUPPLY OR AIR SUPPLY | | SLUICE GATE (NORMALLY CLOSED) |
| | COMPUTE | | MOTOR | | SLIDE GATE (NORMALLY OPEN) |
| | | | CENTRIFUGAL PUMP | | SLIDE GATE (NORMALLY CLOSED) |
| | | | BLOWER OR FAN | | |
| | | | COMPRESSOR | | |
| | | | SUBMERSIBLE PUMP | | |
| | | | VERTICAL PUMP | | |
| | | | ROTARY LOBE OR GEAR PUMP | | |
| | | | METERING PUMP | | |
| | | | MIXER | | |
| | | | PROGRESSIVE CAVITY PUMP | | |
| | | | SOLENOID VALVE | | |
| | | | AUDIBLE ALARM (BUZZER OR HORN) | | |
| | | | DRAIN | | |
| | | | PAGE THAT LINE IS CONTINUED ON | | |
| | | | REDUCER | | |
| | | | BLIND FLANGED END | | |
| | | | CAPPED END | | |
| | | | TELEPHONE | | |

| | | | |
|--------|----------------------------|----------|-------------------------------------|
| A | AMPERES, AMBER | mA | MILLIAMPERES |
| AC | ALTERNATING CURRENT | MIN | MINIMUM |
| ACU | AIR CONDITIONING UNIT | MOA | MANUAL-OFF-AUTO |
| ADR | AIR DRYER | MOT | MOTOR OVERTEMP SENSOR |
| AER | AERATOR | MOV | MOTOR OPERATED VALVE |
| AGR | AGITATOR | MTU | MODULAR TREATMENT UNIT |
| AI | ANALOG INPUT | MUX | MULTIPLEXER |
| AO | ANALOG OUTPUT | MWR | MOTORIZED WEIR |
| B | BLUE | MXR | MIXER |
| BLR | BLOWER | N | NEUTRAL |
| C | CLOSE, CONTROL | NC | NORMALLY CLOSED |
| CFE | CLEARWELL FILTER EFFLUENT | NO | NORMALLY OPEN |
| CLR | CLARIFIER | O | OPEN |
| CMP | COMPRESSOR | OAC | OPEN-AUTO-CLOSE |
| CR | CONTROL RELAY | OCA | OPEN-CLOSE-AUTO |
| CTF | CENTRIFUGE | PB | PUSHBUTTON |
| d | DIFFERENTIAL | pH | HYDROGEN ION CONCENTRATION |
| DC | DIRECT CURRENT | PID | PROPORTIONAL/INTEGRAL/DERIVATIVE |
| (DDM) | DIGITAL DISPLAY MODULE | PLC | PROGRAMMABLE LOGIC CONTROLLER |
| DI | DIGITAL INPUT | PMP | PUMP |
| DO | DIGITAL OUTPUT | PNL | PANEL |
| DPDT | DOUBLE POLE DOUBLE THROW | POT | POTENTIOMETER |
| DRV | DRIVE | POV | PNEUMATIC OPERATED VALVE |
| (E) | EXISTING | PS | PRESSURE SWITCH |
| ETM | ELAPSED TIME METER | PRV | PRESSURE RELIEF VALVE |
| (F) | FUTURE | PTT | PUSH TO TEST |
| FAN | FAN | PV | PROCESS VARIABLE |
| FC | FAIL CLOSED | R | RED |
| FE | FLOW METER ELEMENT | (R) | EXISTING TO BE REMOVED OR RELOCATED |
| FLC | FLOCCULATOR | REF | REFERENCE |
| FLP | FAIL LAST POSITION | RVSS | REDUCED VOLTAGE SOLID STATE |
| FLT | FILTER | S | SWITCH |
| FO | FAIL OPEN | (SIM) | SIGNAL INPUT MODULE |
| FS | FLOAT SWITCH | SCR | SILICON CONTROLLED RECTIFIER |
| FVNR | FULL VOLTAGE NON REVERSING | (SOM) | SIGNAL OUTPUT MODULE |
| G | GREEN | SMP | TYPICAL |
| G, GND | GROUND | SP | SET POINT |
| GNR | MACERATOR/GRINDER | SS | SURGE SUPPRESSOR |
| HMI | HUMAN MACHINE INTERFACE | TDD, TDE | TIME DELAY RELAY |
| HP AIR | HIGH PRESSURE AIR | TWP | TWISTED PAIR |
| HOA | HAND-OFF-AUTO | TWSP | TWISTED SHIELDED PAIR |
| HOG | HYDRAULIC OPERATED GATE | TYP | TYPICAL |
| I | INTERLOCK | UVC | ULTRAVIOLET CHANNEL |
| I/O | INPUT/OUTPUT | V | VOLTS, VOLTAGE |
| ISR | INTRINSICALLY SAFE RELAY | VFD | VARIABLE FREQUENCY DRIVE |
| LOR | LOCAL/OFF/REMOTE | VLV | VALVE |
| LOS | LOCK-OUT STOP | | |
| LP AIR | LOW PRESSURE AIR | | |

| CODE LETTER | FIRST LETTER(S) | | SUCCEEDING LETTER(S) | | | | | | |
|-------------|---------------------------------|---------------------|-----------------------------|-----------------|---------------------------|----------------|---------------|--------------------------|----------------|
| | MEASURED OR INITIATING VARIABLE | MODIFIER | READOUT OR PASSIVE FUNCTION | OUTPUT FUNCTION | MODIFIER | | | | |
| A | ANALYSIS | DIFFERENTIAL | ALARM | CONTROL | AUTO | | | | |
| B | BURNER FLAME | | RATIO | | DIRECTION ELEMENT, SENSOR | CLOSE | | | |
| C | CHLORINE | | | | | VIEWING DEVICE | HIGH/HAND | | |
| D | DENSITY | | | | | | | | |
| E | VOLTAGE | INDICATE | | CONTROL STATION | | | | | |
| F | FLOW | | PILOT LIGHT | | LOW/LOCAL | | | | |
| G | GAUGING | | | | | MOTOR | MIDDLE/MANUAL | | |
| H | HAND | | | | | | | MOMENTARY | OPEN/OVERLOAD |
| I | CURRENT | TOTALIZE | | RUNNING/REMOTE | | | | | |
| J | POWER | | SAFETY | | STOP/SPEED | | | | |
| K | TIME | | | | | TEST | SWITCH | | |
| L | LEVEL | | | | | | | MULTIFUNCTION | TRANSMIT |
| M | MOISTURE/MOTOR | WELL | | VALVE | | | | | |
| N | STATUS | | COMPUTE/RELAY/ CONVERTER | | POSITION | | | | |
| O | OPERATOR | | | | | | | | |
| P | PRESSURE | | | | | | | | |
| Q | EVENT | | | | | | | | |
| R | RESET | TIME RATE OF CHANGE | PILOT LIGHT | MOTOR | MIDDLE/MANUAL | | | | |
| S | SPEED | | | | | MOMENTARY | OPEN/OVERLOAD | | |
| T | TEMPERATURE | | | | | | | TOTALIZE | RUNNING/REMOTE |
| U | MULTIVARIABLE | | | | | | | | |
| V | VIBRATION/VALVE | TEST | SWITCH | | | | | | |
| W | FORCE, WEIGHT | | | MULTIFUNCTION | TRANSMIT | | | | |
| X | TELEMETRY INTERFACE | | | | | WELL | VALVE | | |
| Y | COMPUTER INTERFACE | | | | | | | COMPUTE/RELAY/ CONVERTER | POSITION |
| Z | POSITION | ACTUATE | POSITION | | | | | | |

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CONSULTING ENGINEERS, INC.
602 LYLELL DRIVE, MODESTO, CA 95356 PH. 209.322.1820



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| PROJECT NO. J14068 |
| DESIGNED BY JF |
| DRAWN BY JF |
| CHECKED BY JP |
| DATE MARCH 2021 |

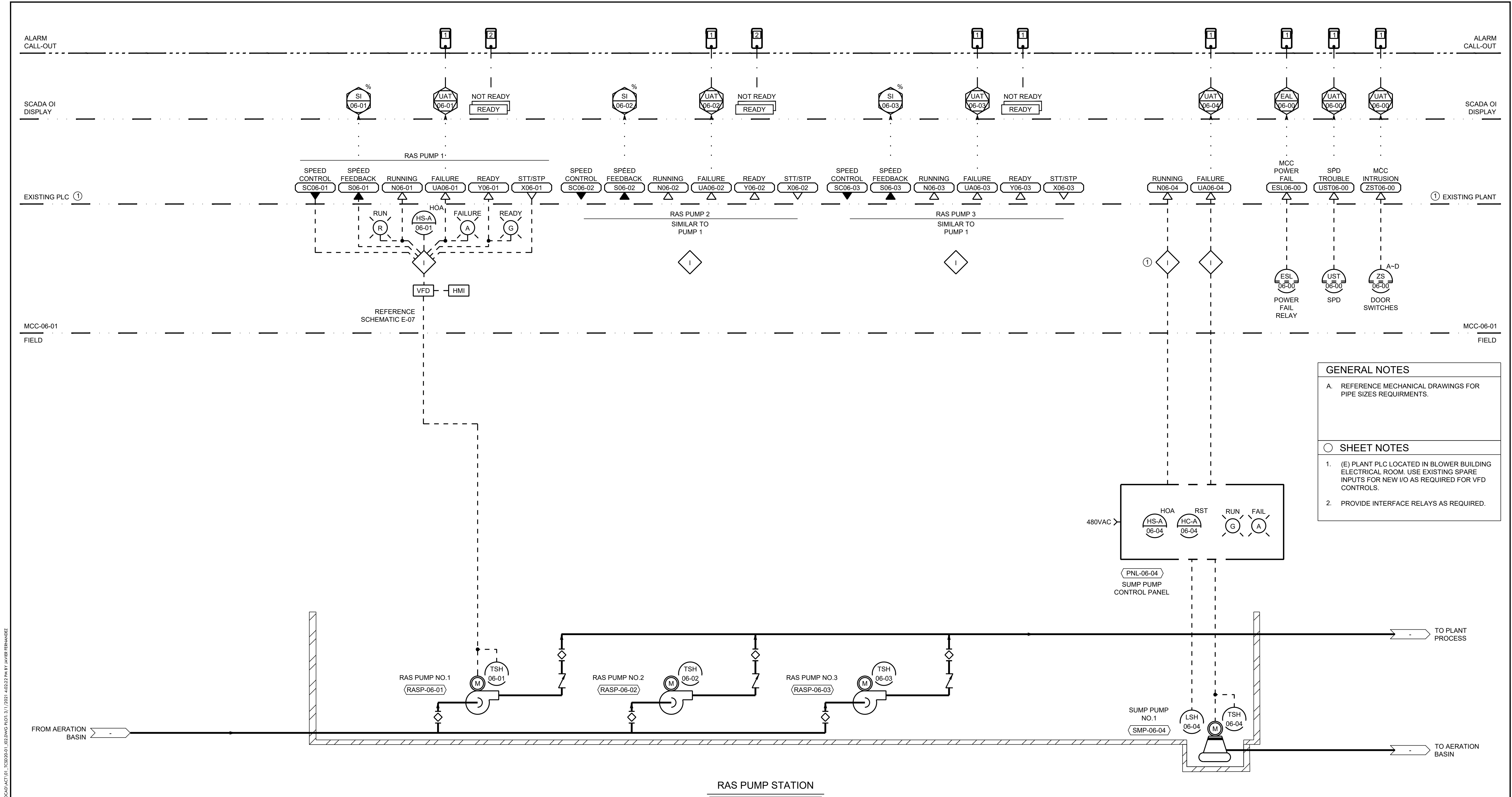


TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT UPGRADES

INSTRUMENTATION SYMBOLS AND ABBREVIATIONS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DRAWING NO.
I-01
SHEET NO.
33 OF 36



- GENERAL NOTES**
A. REFERENCE MECHANICAL DRAWINGS FOR PIPE SIZES REQUIREMENTS.
- SHEET NOTES**
1. (E) PLANT PLC LOCATED IN BLOWER BUILDING ELECTRICAL ROOM. USE EXISTING SPARE INPUTS FOR NEW I/O AS REQUIRED FOR VFD CONTROLS.
2. PROVIDE INTERFACE RELAYS AS REQUIRED.

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DRAWN BY
JF
CHECKED BY
JP
DATE
MARCH 2021



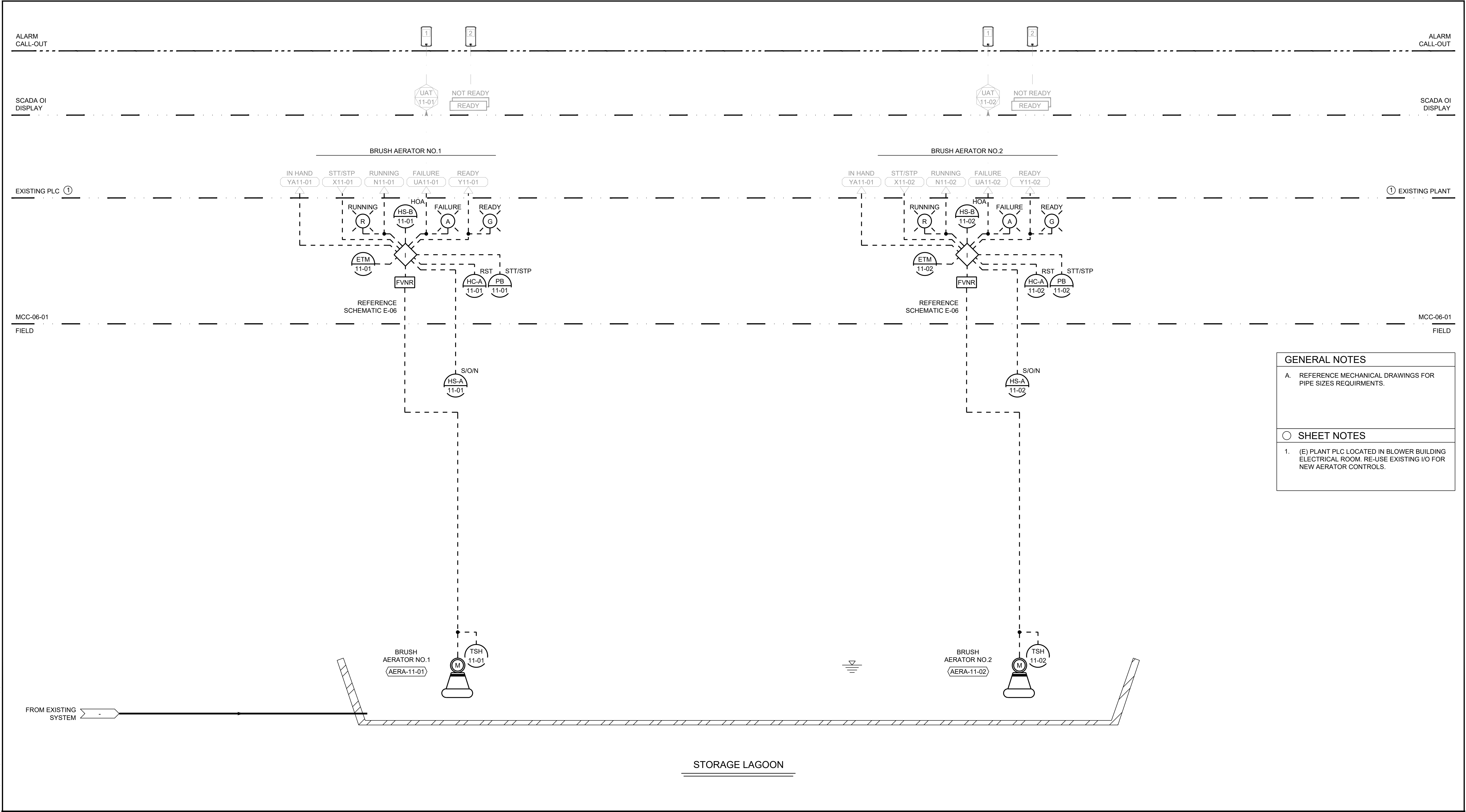
**TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT UPGRADES**

RAS PUMP STATION P&ID

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**TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT UPGRADES**

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SHEET NO.
35 OF 36

ALARM
CALL-OUT

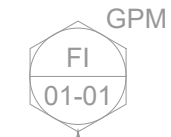
ALARM
CALL-OUT

SCADA OI
DISPLAY

SCADA OI
DISPLAY

EXISTING PLC
FIELD

EXISTING PLANT
FIELD



①

120VAC



FM-06-01

FROM EXISTING
STORAGE POND

TO PLANT
DISPOSAL

GENERAL NOTES

- A. REFERENCE MECHANICAL DRAWINGS FOR PIPE SIZES REQUIREMENTS.

SHEET NOTES

1. (E) PLANT PLC LOCATED IN BLOWER BUILDING ELECTRICAL ROOM. RE-USE EXISTING I/O FOR NEW FLOW METER.

FLOW METER REPLACEMENT

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TUOLUMNE CITY SANITARY DISTRICT
WASTEWATER TREATMENT PLANT UPGRADES

FLOW METER REPLACEMENT P&ID
ADDITIVE BID ITEM D

VERIFY SCALES

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ORIGINAL DRAWING



IF NOT ONE INCH ON THIS
SHEET, ADJUST SCALES
ACCORDINGLY

DRAWING NO.

I-04

SHEET NO.

36 OF 36

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