

CITY OF SPARKS MARINA LAKE LEVEL CONTROL PIPELINE PWP #WA-2021-275

APRIL 2021


ENGINEER


CITY OF SPARKS OFFICIALS

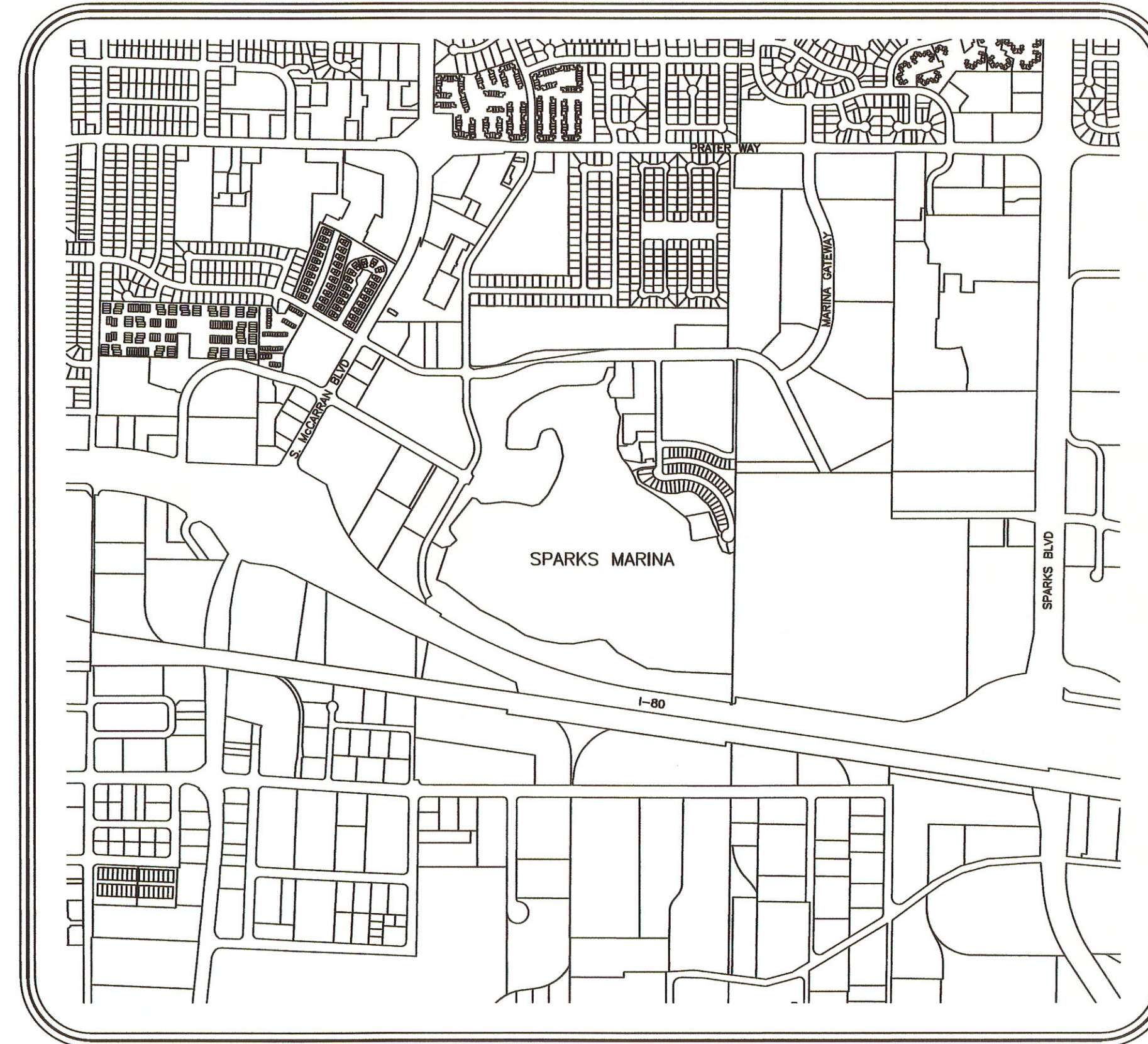
ED LAWSON	.....	MAYOR
DONALD ABBOTT	.....	COUNCIL MEMBER WARD 1
DIAN VANDERWELL	.....	COUNCIL MEMBER WARD 2
PAUL ANDERSON	.....	COUNCIL MEMBER WARD 3
CHARLENE BYBEE	.....	COUNCIL MEMBER WARD 4
KRISTOPHER DAHIR	.....	COUNCIL MEMBER WARD 5
NEIL KRUTZ	.....	CITY MANAGER



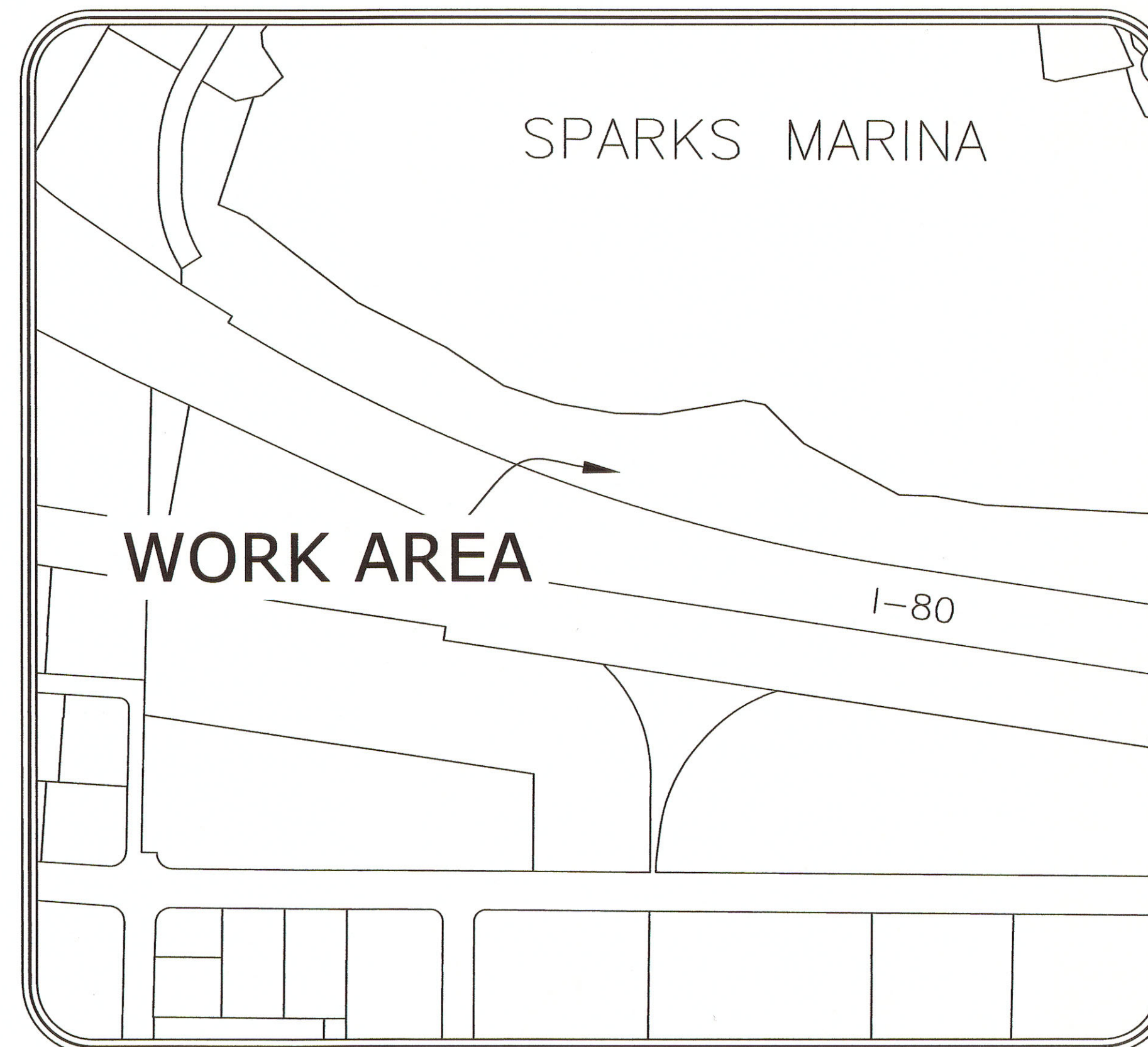
BID# 20/21-019

APPROVED BY:  DATE: 4/22/2021
 JON R. ERICSON, P.E., P.T.O.E.
 CITY ENGINEER

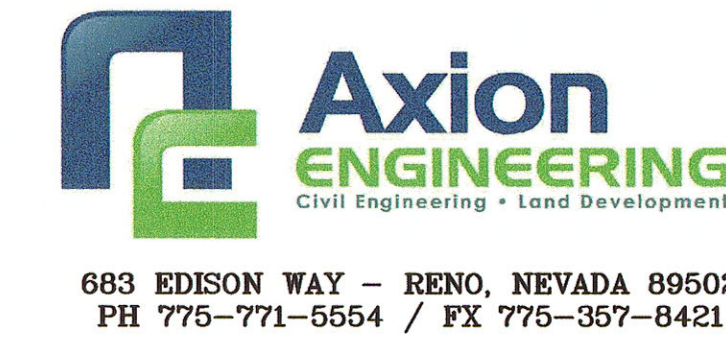
APPROVED BY:  DATE: 4.22.2021
 KEVIN PORTER, P.E.
 UTILITY MANAGER



VICINITY MAP



SITE PLAN



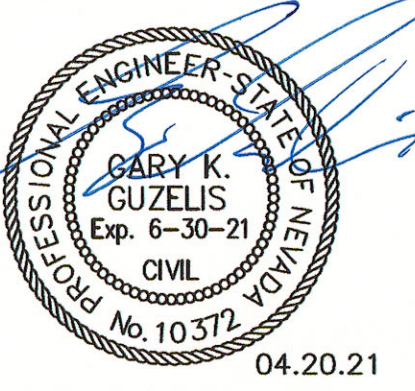
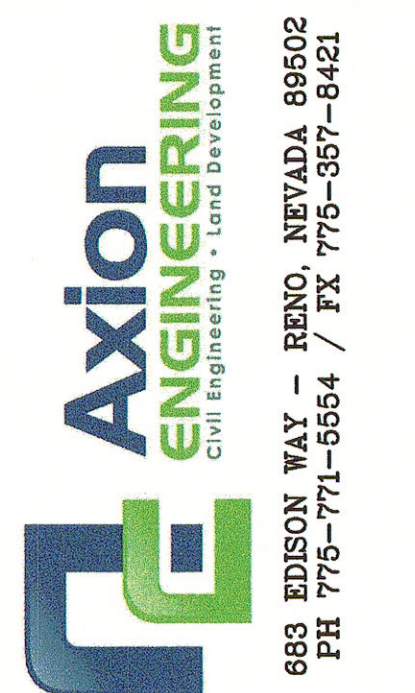
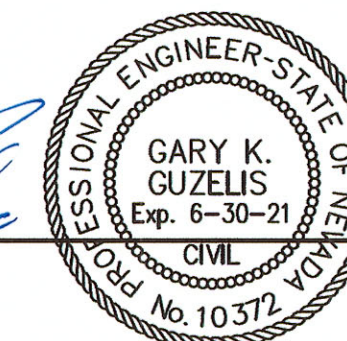
SHEET INDEX

- C-1 TITLE SHEET
- C-2 PIPING PLAN & PROFILE
- C-3 PIPING PLAN & PROFILE
- C-4 PIPING PLAN & PROFILE
- C-5 PIPING PLAN & PROFILE
- C-6 RETAINING WALL PLAN
- C-7 RETAINING WALL PLAN
- C-8 DETAIL SHEET
- SW0.1..... RETAINING WALL DETAILS

ABBREVIATIONS

AC ASPHALT CEMENT	LF LINEAR FEET
BC BEGINNING OF CURVE	LP LOW POINT
BF BOTTOM OF FOOTING	M.D.D..... MAXIMUM DRY DENSITY
BFC BACK FACE OF CURB	MIN. MINIMUM
BVC BEGINNING OF VERTICAL CURVE	MPOC MID POINT OF CURVE
CB CATCH BASIN	MW MONITORING WELL
CL CENTERLINE	PI POINT OF INTERSECTION
DI DROP INLET	PCC POINT OF COMPOUND CURVATURE
DIP DUCTILE IRON PIPE	PRC POINT OF REVERSE CURVATURE
ELEV..... ELEVATION	PVC POLYVINYL CHLORIDE
EC END OF CURVE	R RADIUS
EP EDGE OF PAVEMENT	REF. REFERENCE
EVC END OF VERTICAL CURVE	RET. RETURN
EXIST..... EXISTING	RCP REINFORCED CONCRETE PIPE
(e) EXISTING	RMJ RESTRAINED MECHANICAL JOINT
FCA FLANGED COUPLING ADAPTER	RT. RIGHT
FF FINISH FLOOR	R/W RIGHT OF WAY
FFC FRONT FACE OF CURB	SD STORM DRAIN
FG FINISH GRADE	SS SANITARY SEWER
FHA FIRE HYDRANT ASSEMBLY	SF SQUARE FEET
FL FLANGE	SSMH SANITARY SEWER MANHOLE
FTG FITTING	SDMH STORM DRAIN MANHOLE
G GAS	S SLOPE
GB GRADE BREAK	SL STREET LIGHT
HORIZ..... HORIZONTAL	SOWF SLIP ON WELD FLANGE
IE INVERT ELEVATION	STA. STATION
LAT. LATERAL	TC TOP OF CURB
LT. LEFT	VC VERTICAL CURB
	VPI VERTICAL POINT OF INTERSECTION
	WSP WELDED STEEL PIPE

APPROVED BY:  DATE: 04.20.21
 GARY K. GUZELIS, P.E.
 AXION ENGINEERING



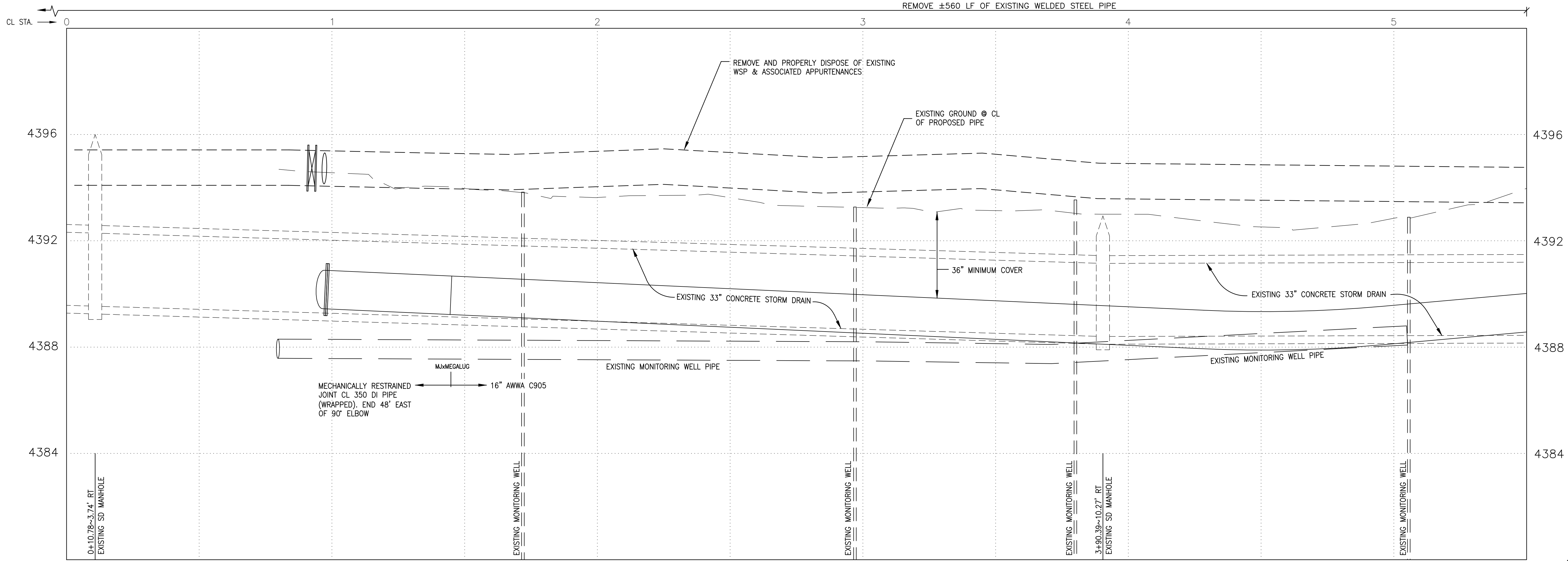
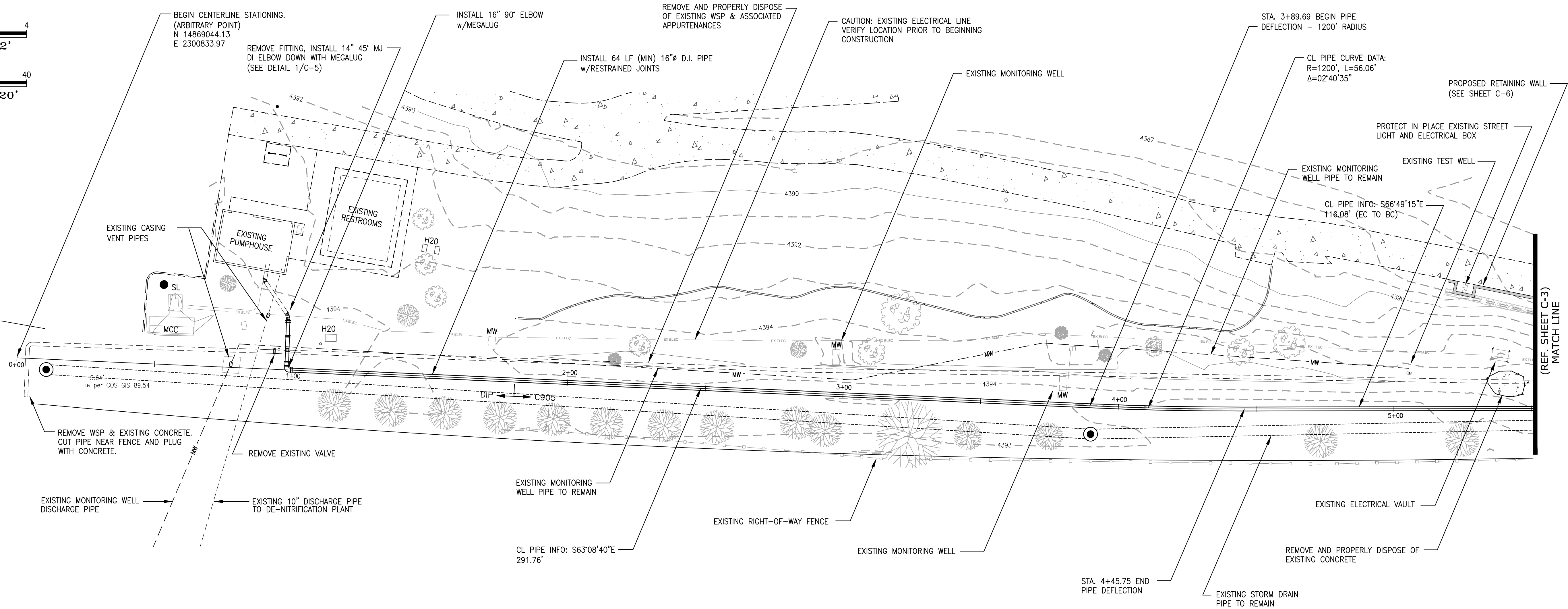
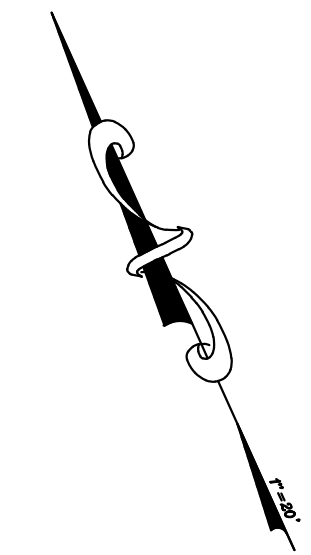
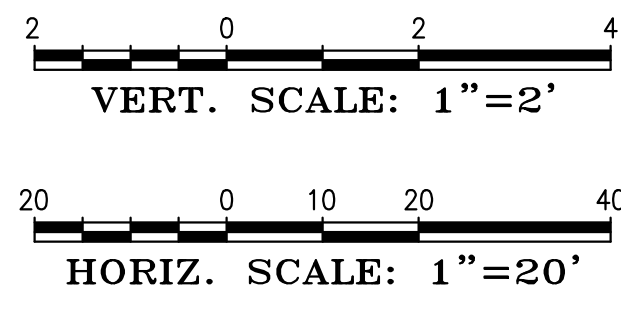
**MARINA LAKE LEVEL CONTROL PIPELINE
CIVIL IMPROVEMENT PLANS
TITLE SHEET
SPARKS, NEVADA**

revisions	

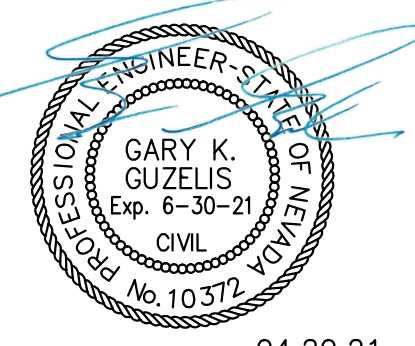
drawn:	GKG
checked:	GKG
date:	APRIL 2021
scale:	
project no:	19029

TITLE SHEET

C-1



PLAN & PROFILE



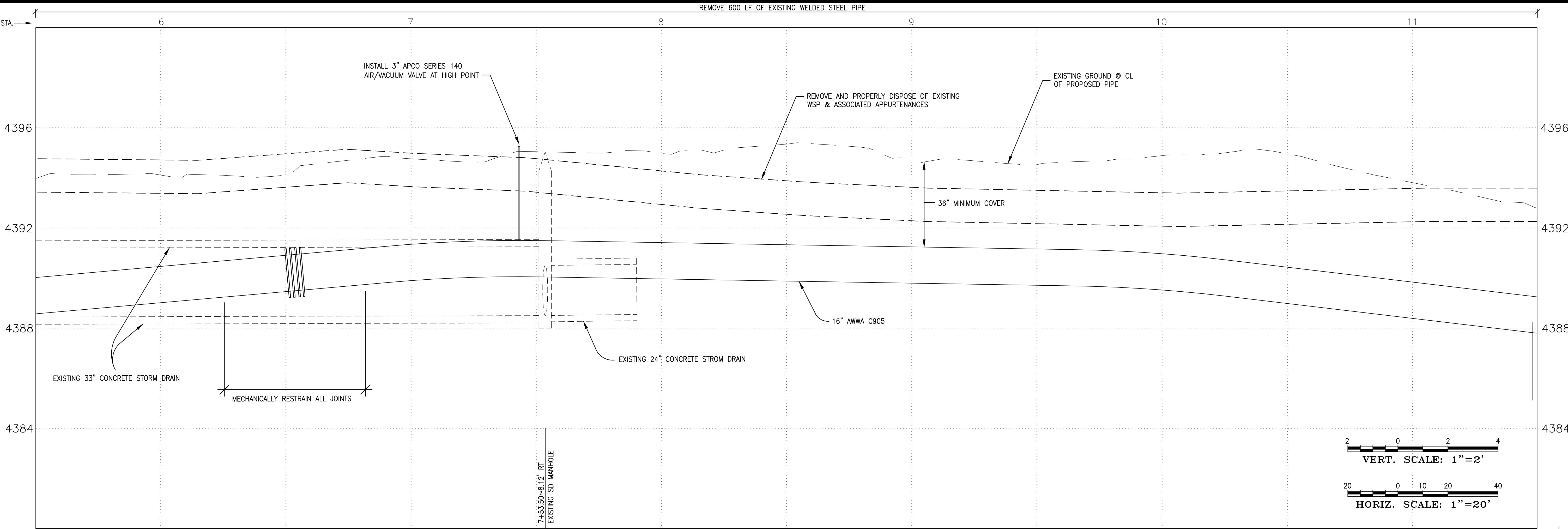
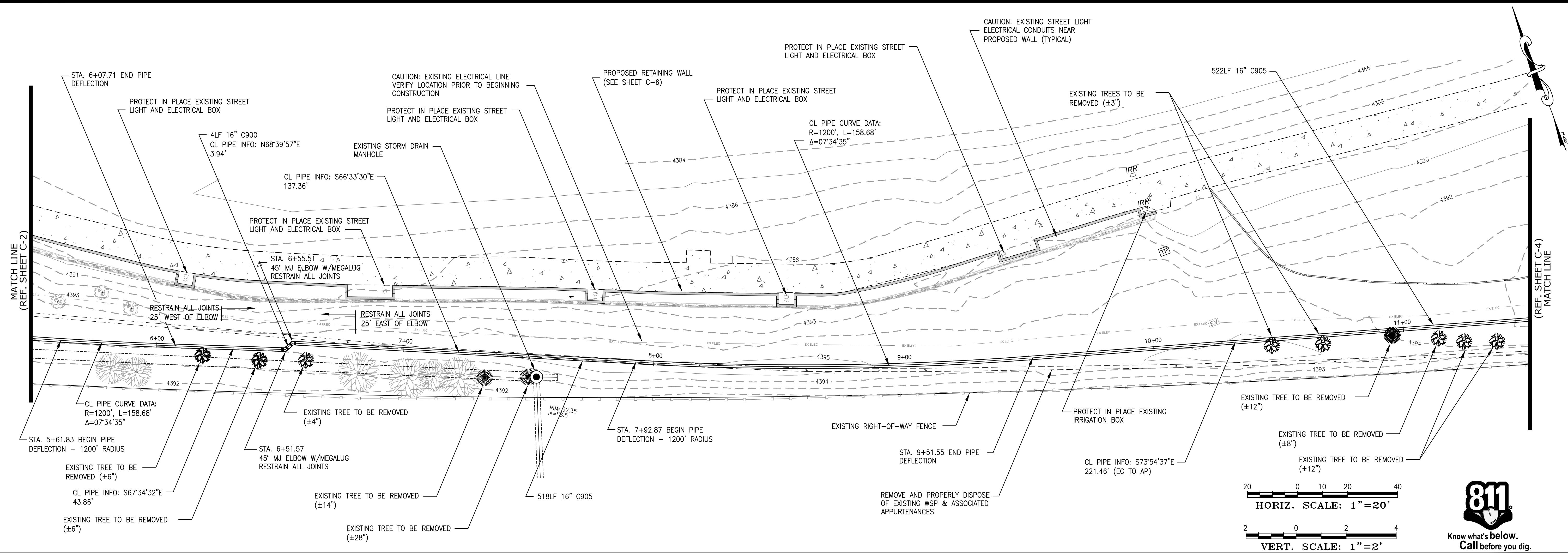
04.20.21

**MARINA LAKE LEVEL CONTROL PIPELINE
CIVIL IMPROVEMENT PLANS
PIPING PLAN & PROFILE
SPARKS, NEVADA**

revisions	

drawn: GKG
checked: GKG
date: APRIL 2021
scale: 1"=20'
project no: 19029

C-2

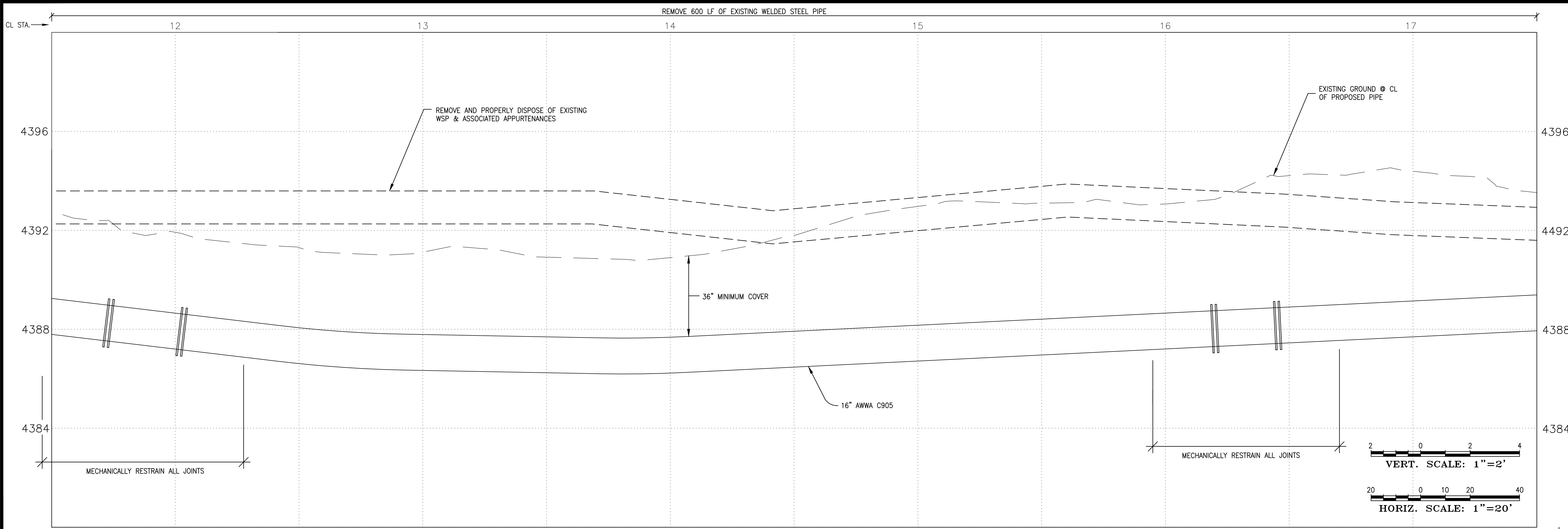
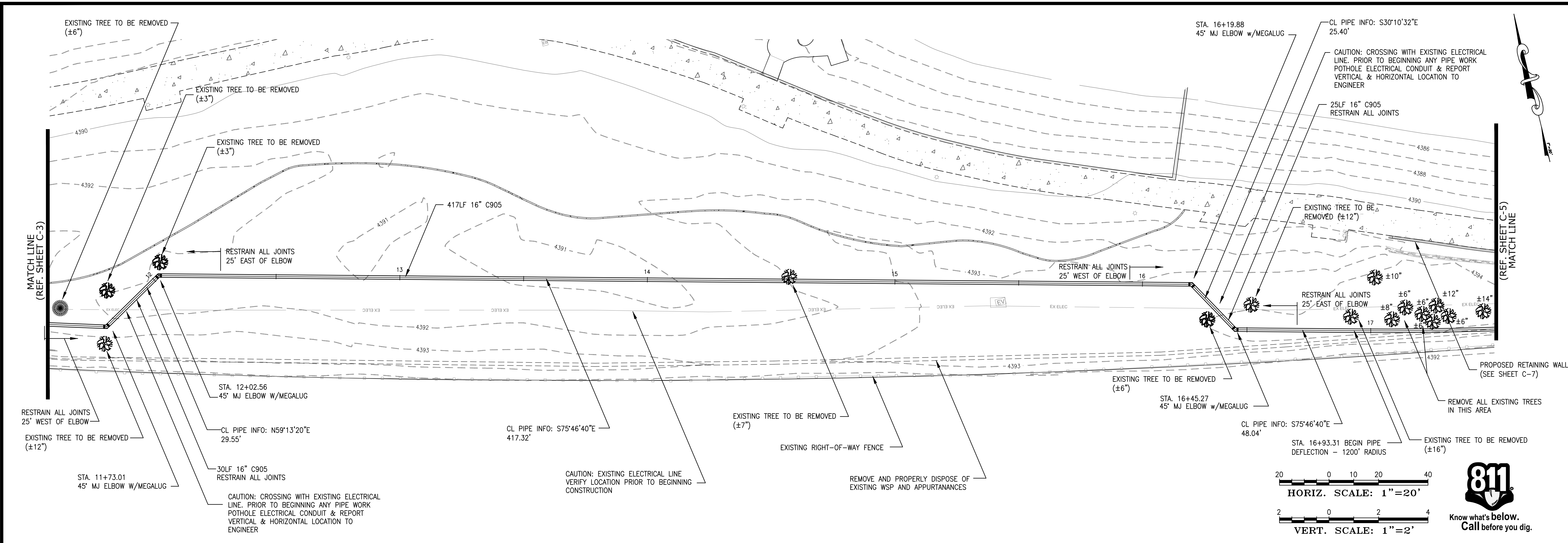


PLAN & PROFILE

**MARINA LAKE LEVEL CONTROL PIPELINE
 CIVIL IMPROVEMENT PLANS**
 PIPING PLAN & PROFILE
 SPARKS, NEVADA

revisions	

drawn: GKG
 checked: GKG
 date: APRIL 2021
 scale: 1"=20'
 project no: 19029



PLAN & PROFILE

**MARINA LAKE LEVEL CONTROL PIPELINE
 CIVIL IMPROVEMENT PLANS**
 PIPING PLAN & PROFILE
 SPARKS, NEVADA

revisions

NO.	DESCRIPTION

drawn: GKG
 checked: GKG
 date: APRIL 2021
 scale: 1"=20'
 project no: 19029

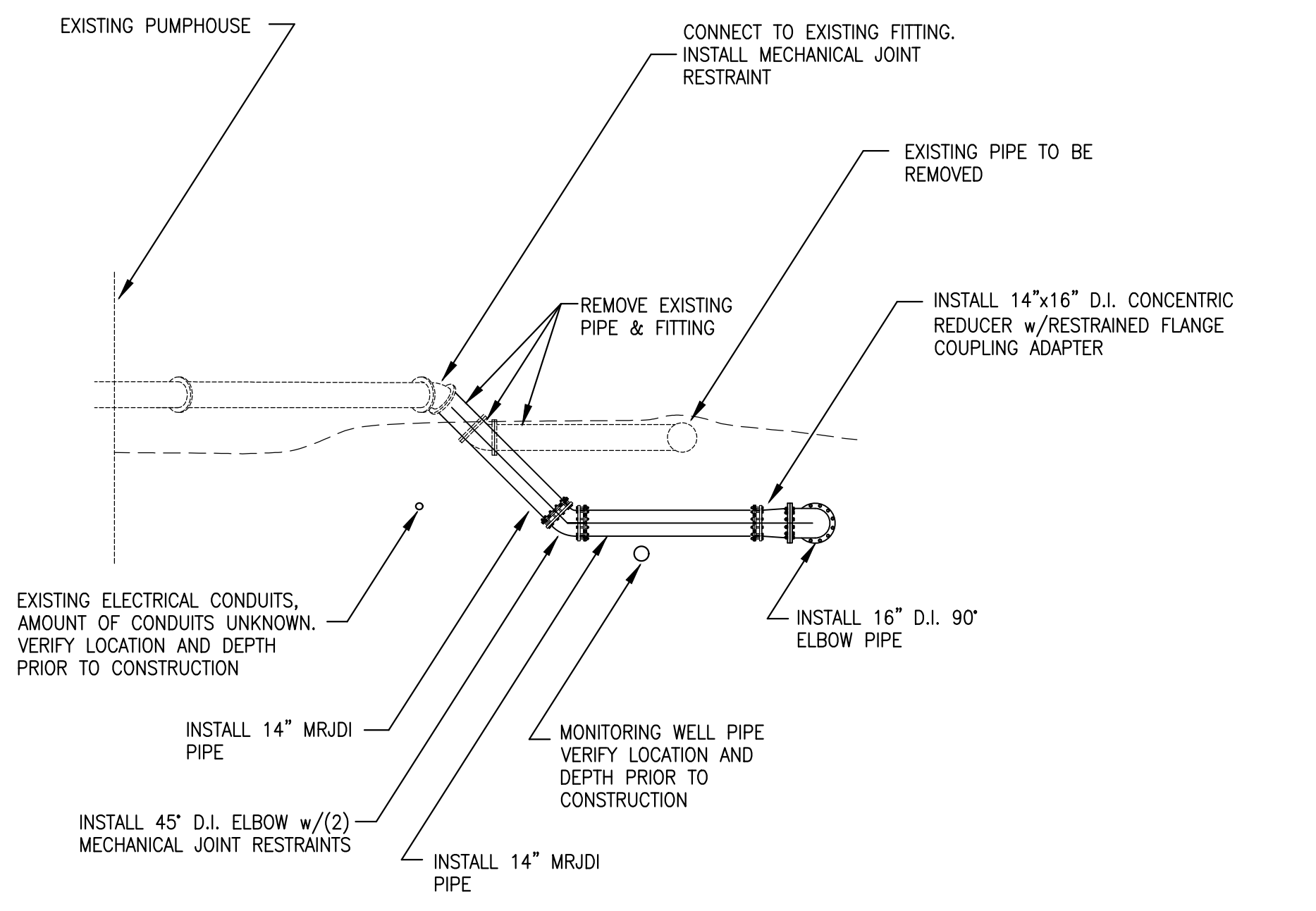
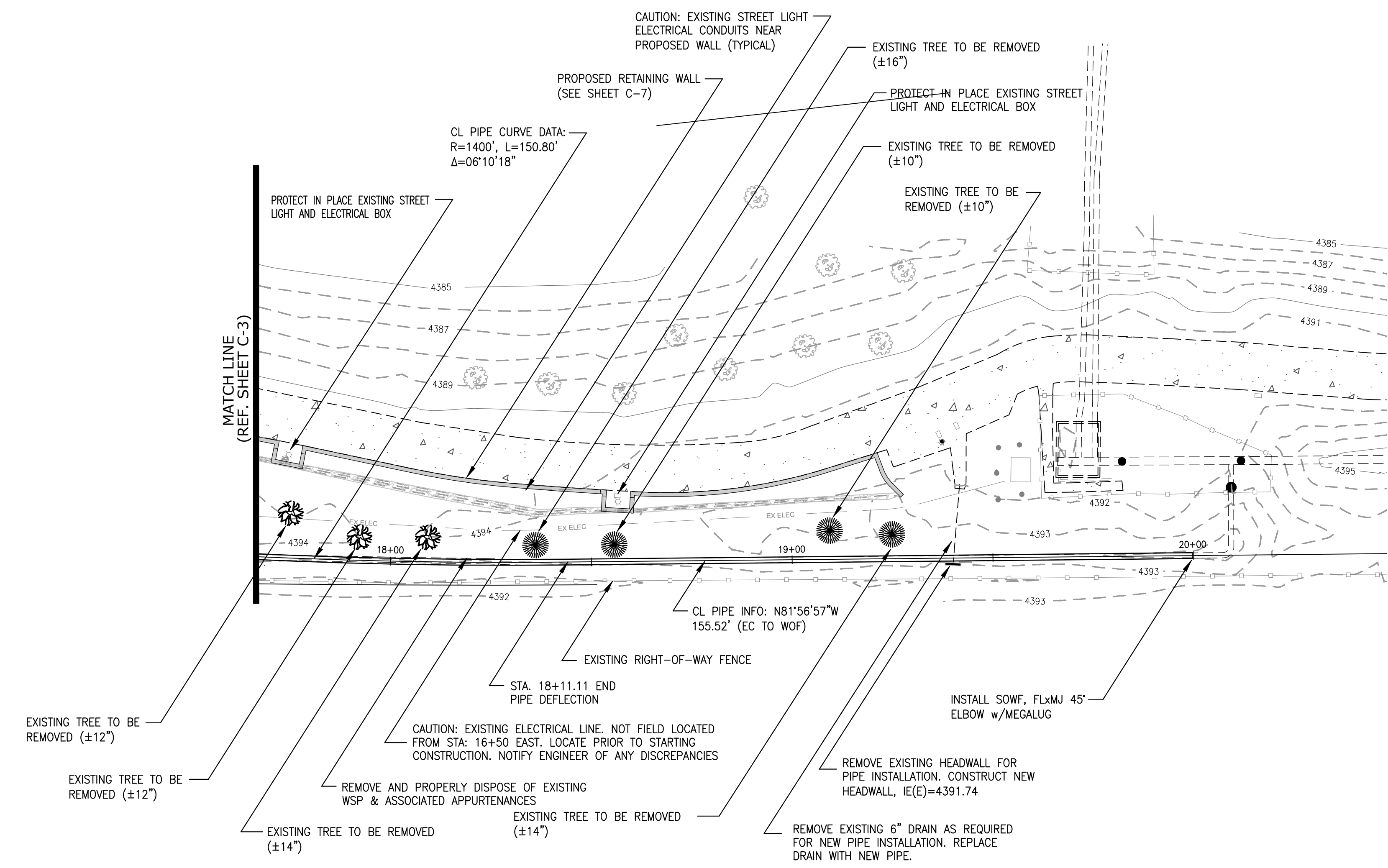
**MARINA LAKE LEVEL CONTROL PIPELINE
 CIVIL IMPROVEMENT PLANS
 PIPING PLAN & PROFILE
 SPARKS, NEVADA**



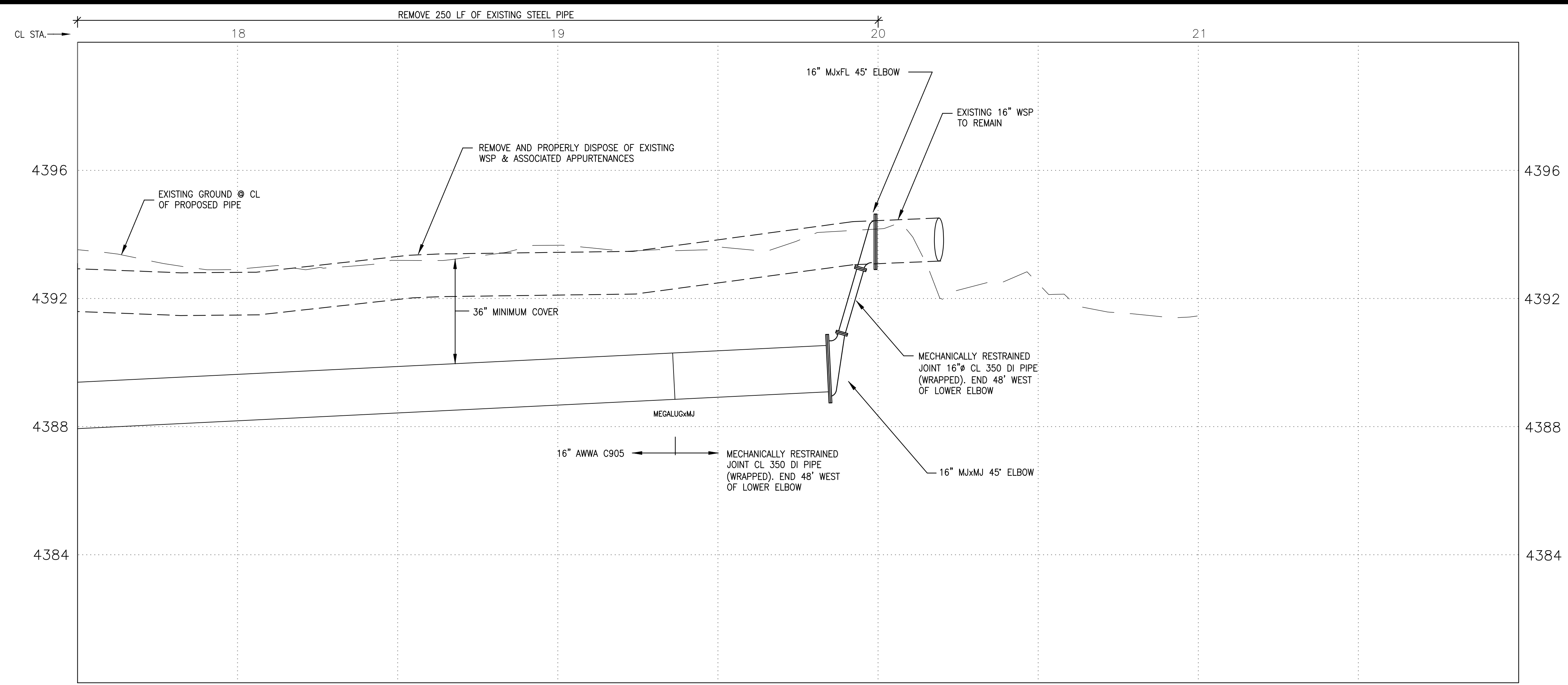
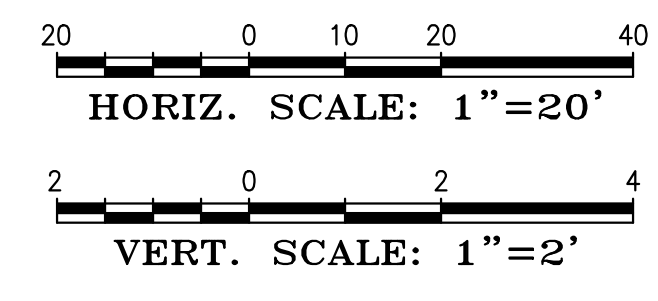
Know what's below.
 Call before you dig.

revisions	

drawn: GKG
 checked: GKG
 date: APRIL 2021
 scale: 1"=20'
 project no: 19029

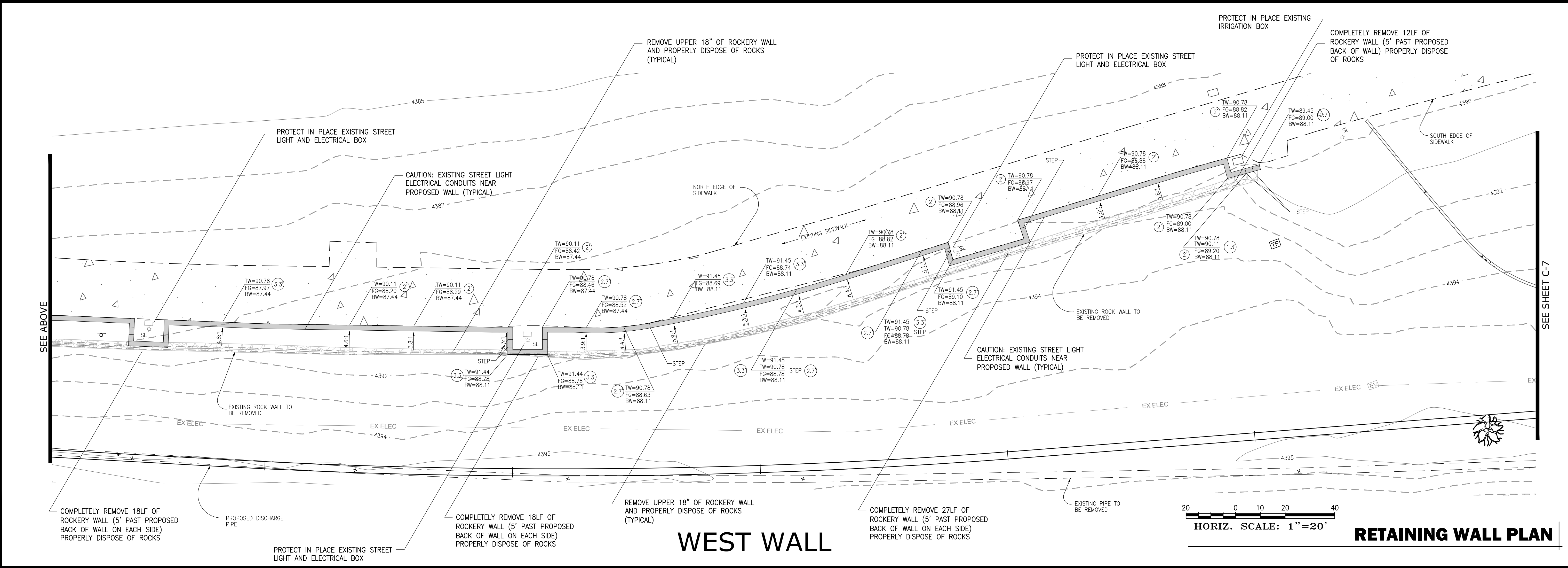
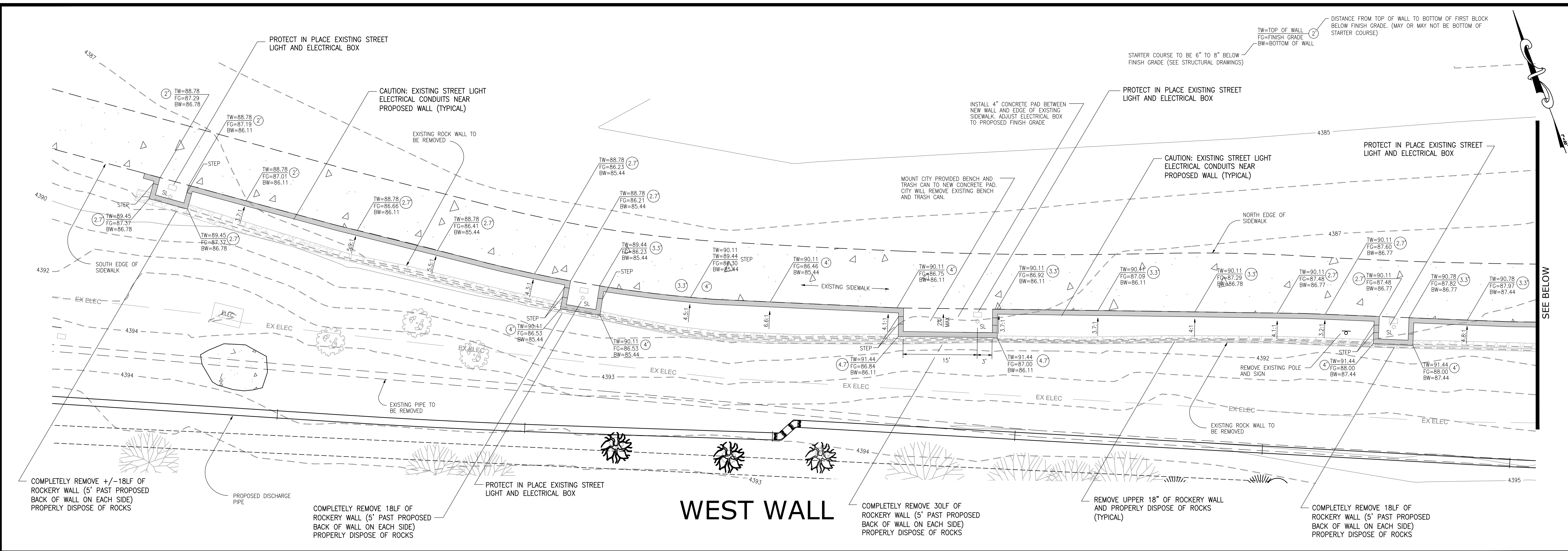


DETAIL 1
 NTS C5



PLAN & PROFILE

N:\Axion Engineering\Projects\AE\City of Sparks\Sparks Marina Piping\Drawings\MARINA Base.dwg

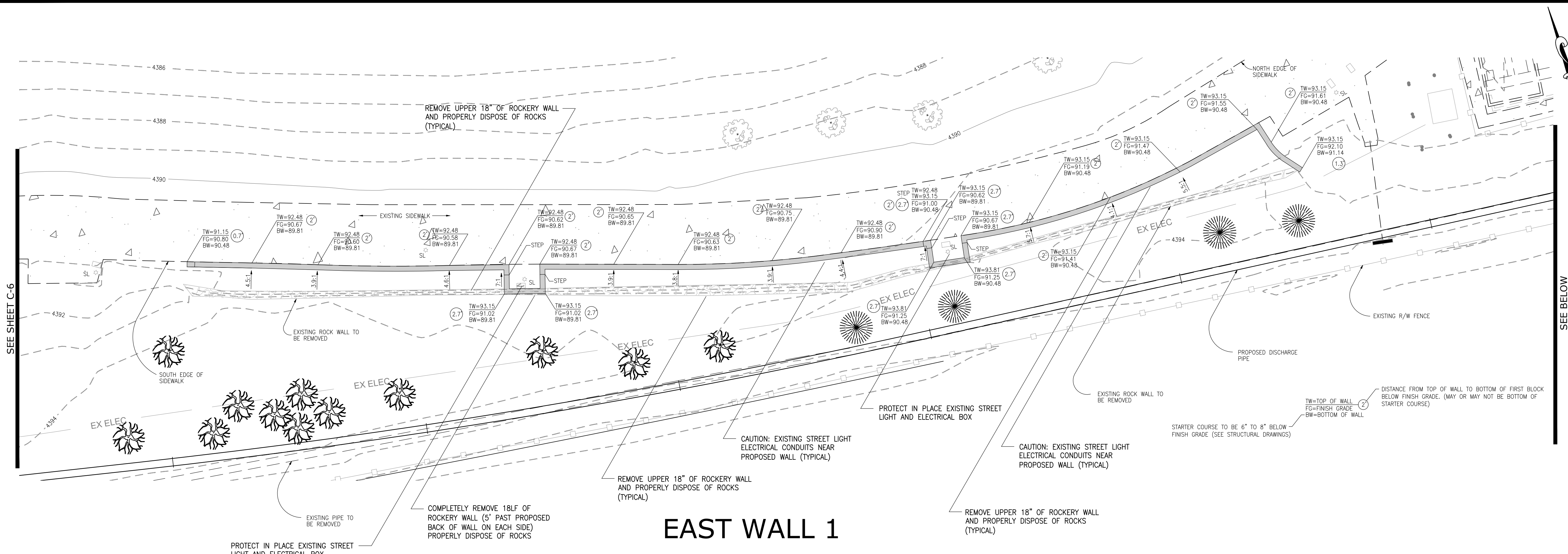


**MARINA LAKE LEVEL CONTROL PIPELINE
CIVIL IMPROVEMENT PLANS
RETAINING WALL PLAN
SPARKS, NEVADA**

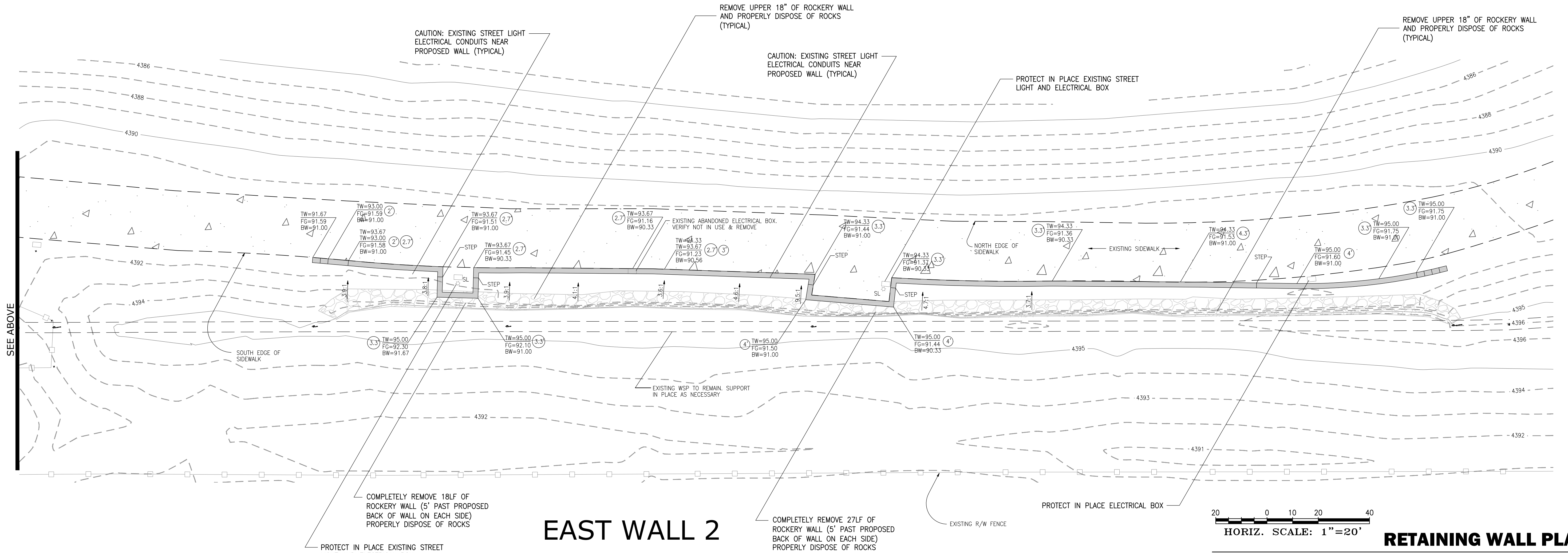
revisions

NO.	DESCRIPTION	DATE

drawn: GK
checked: GK
date: APRIL 2021
scale: 1"=20'
project no: 19029



EAST WALL 1



EAST WALL 2

HORIZ. SCALE: 1"=20'

RETAINING WALL PLAN

04.20.21

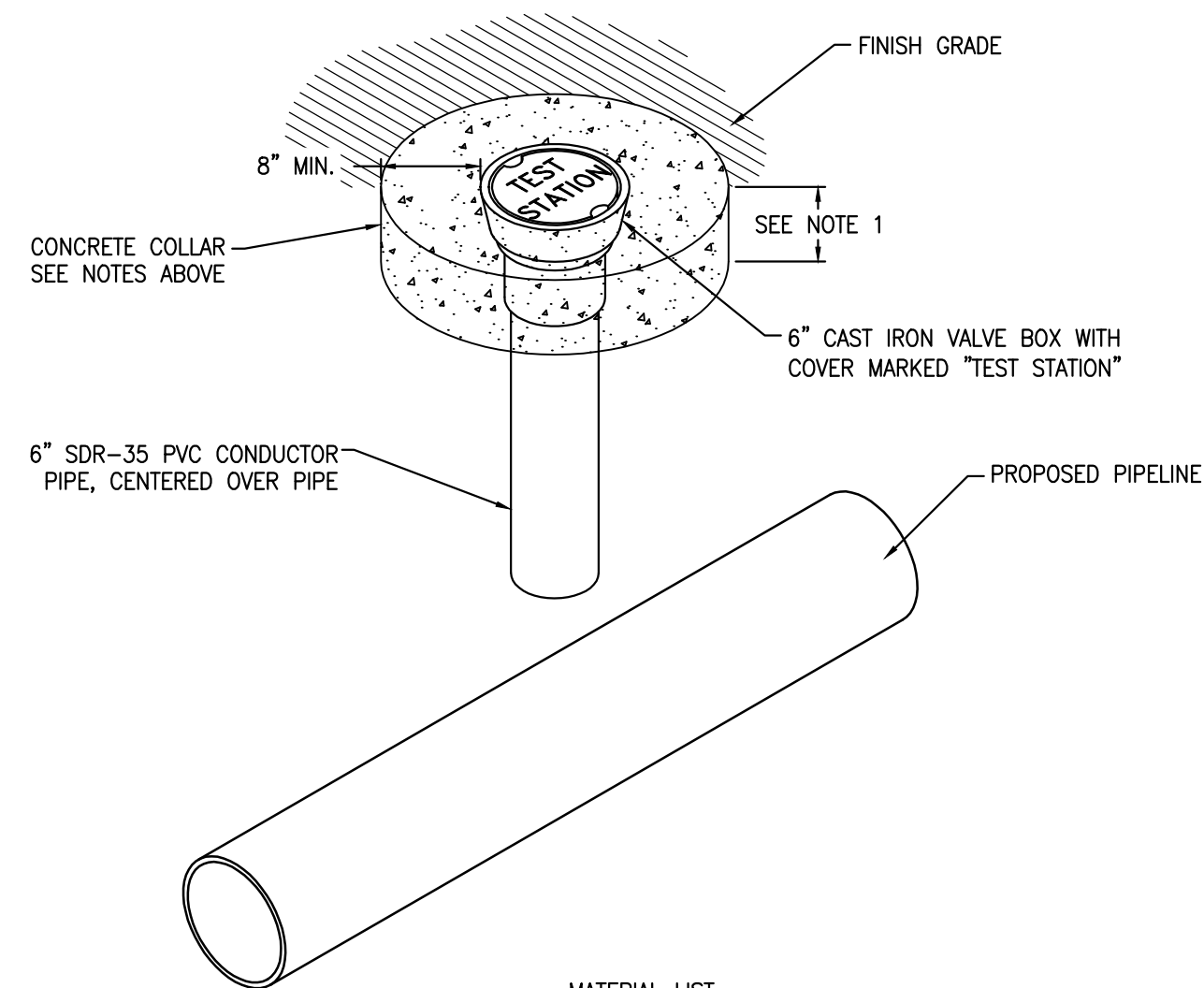
MARINA LAKE LEVEL CONTROL PIPELINE CIVIL IMPROVEMENT PLANS RETAINING WALL PLAN SPARKS, NEVADA

revisions	

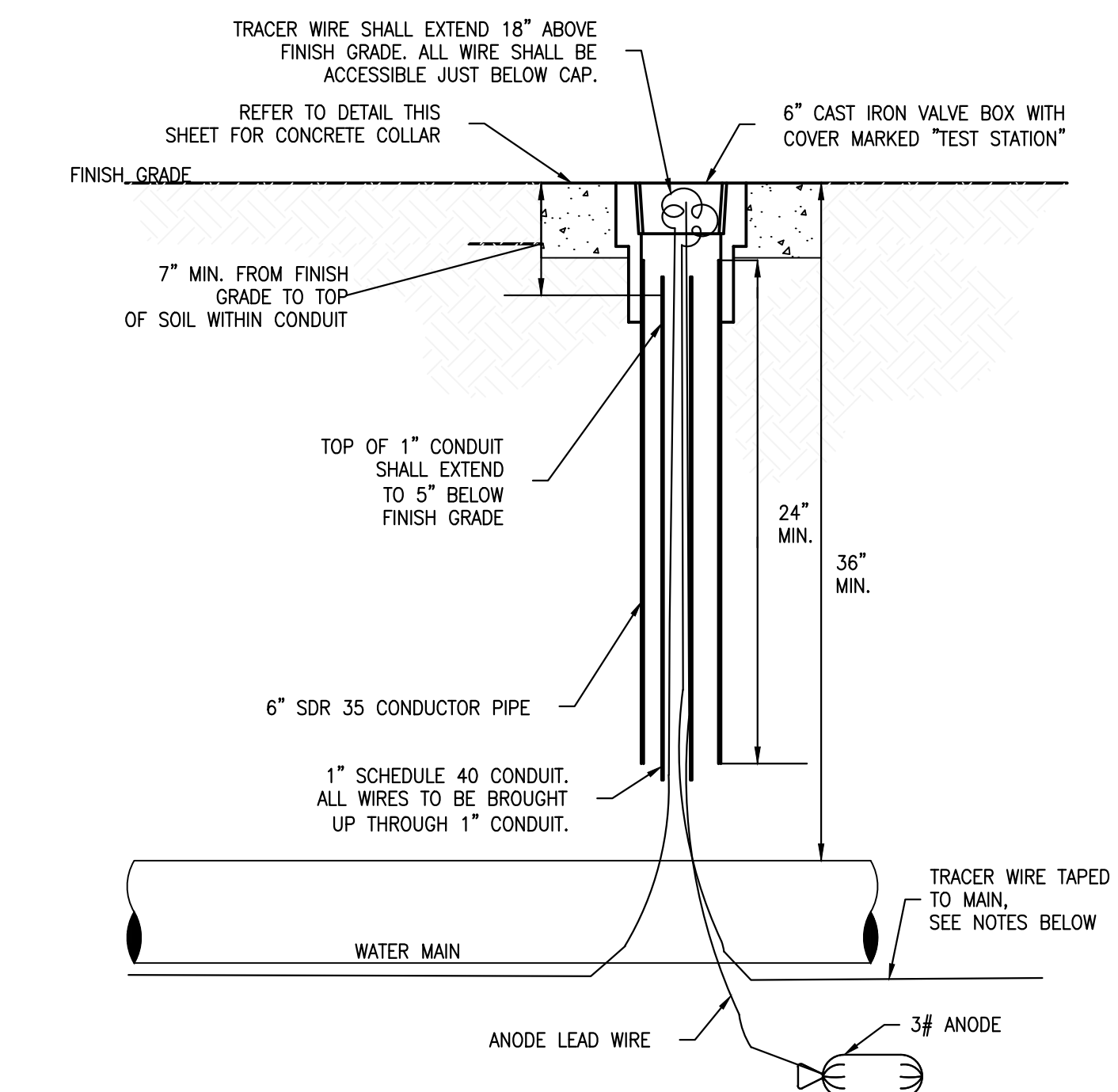
drawn: GKG
checked: GKG
date: APRIL 2021
scale: 1"=20'
project no: 19029

N:\Axion Engineering\Projects AE\City of Sparks\Sparks Marina Piping\Drawings\MARINA Base.dwg

- NOTES:
1. CONCRETE COLLAR SHALL BE MINIMUM 6-INCHES THICK.
 2. PORTLAND CEMENT CONCRETE (P.C.C.) FOR CONCRETE COLLAR SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4,000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS, MINIMUM 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAXIMUM WATER/CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES. BAG CONCRETE MIX IS NOT ACCEPTABLE.

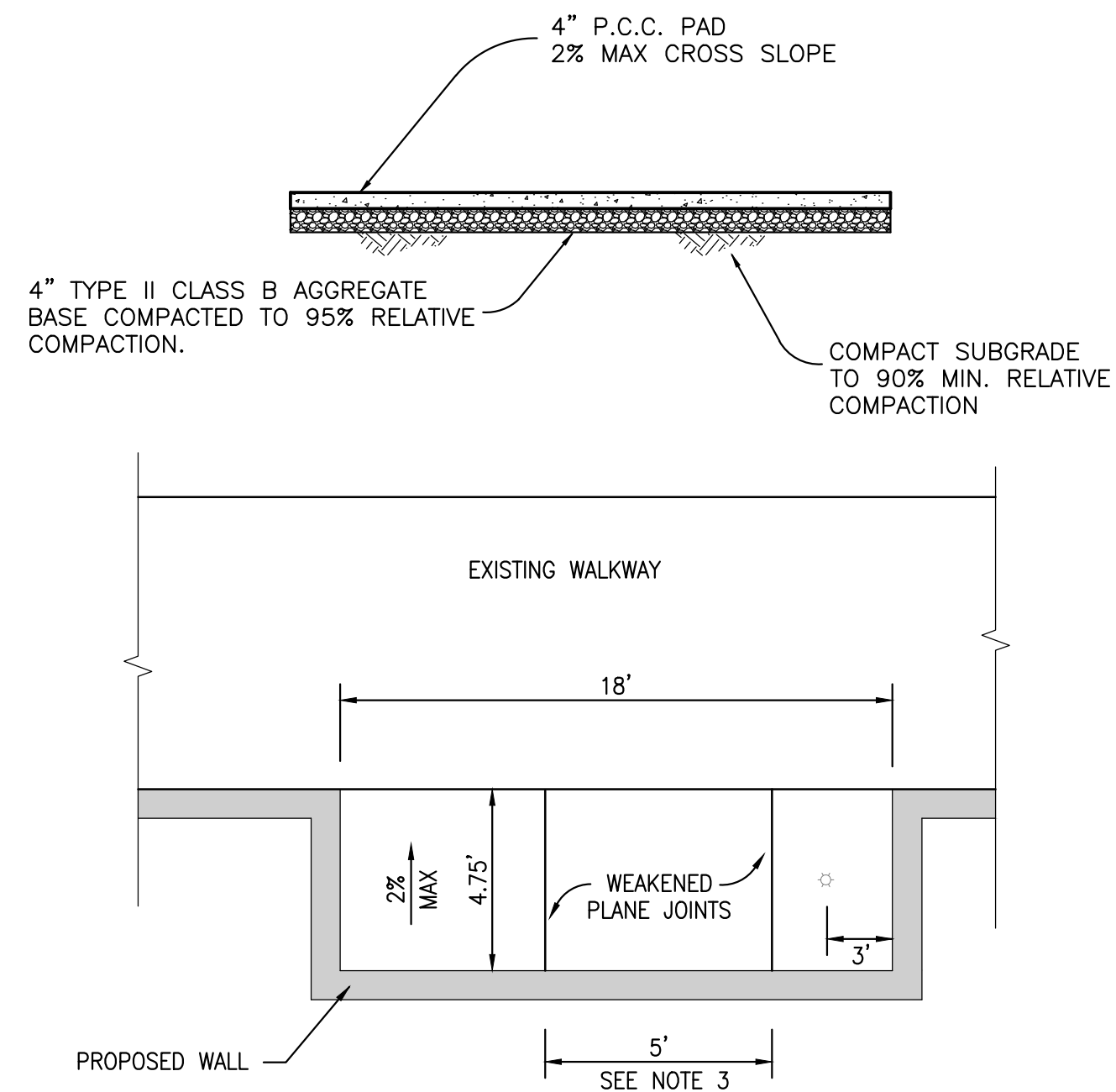


MATERIAL LIST	
QTY	DESCRIPTION
1	MAIN SIZE GATE VALVE (AWWA C509 OR C515, DUCTILE IRON BODY) WITH END CONFIGURATION AS SPECIFIED IN THE WATER IMPROVEMENT PLANS
1	MASTIC (1 GALLON CAN - BRUSH ON)
1	6" Ø SDR-35 PVC CONDUCTOR PIPE SECTION
1	6" Ø CAST IRON VALVE BOX WITH COVER MARKED "WATER"
1	FULL FACE GASKET
1	CONCRETE BULK - PAD AND COLLAR



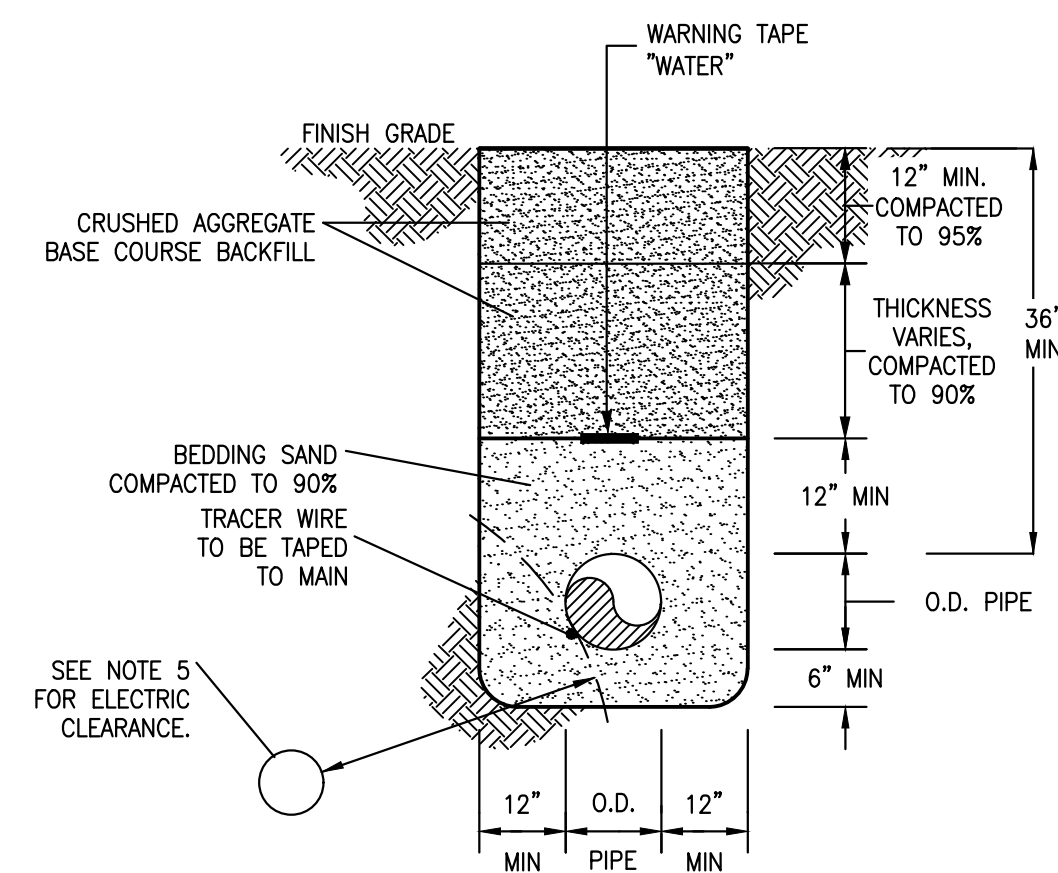
- NOTES:
1. TRACER WIRE SHALL BE #14 COPPER CLAD STAINLESS STEEL CORE WITH 30 MILS BLUE HDPE INSULATION.
 2. ALL WIRE SPLICES SHALL BE MADE USING A SPLIT BOLT CONNECTOR WRAPPED WITH AQUEASEAL AND ELECTRIC TAPE.
 3. CONTRACTOR SHALL INSTALL A 3 POUND ANODE AT EVERY TEST STATION.
 4. TEST STATIONS SHALL BE PLACED AT THE BEGINNING AND END OF THE PROPOSED PIPELINE AND LOCATED ALONG THE PIPELINE NO MORE THAN 500 FEET APART.
 5. PRIOR TO ACCEPTANCE OF WATER MAIN, THE CONTRACTOR SHALL PERFORM A CONTINUITY TEST ON THE INSTALLED TRACER WIRE SYSTEM.

TEST STATION



- NOTES:
1. FIBER-REINFORCED PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH MAX. WATER-CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES. MIX DESIGN SHALL CONFORM TO THE REQUIREMENTS OF SECTION 337 OF STANDARD SPECIFICATIONS OF PUBLIC WORKS CONSTRUCTION (SSPWC). CEMENT SHALL BE TYPE II. ALL CEMENT CONCRETE SHALL HAVE A COARSE AGGREGATE GRADATION CONFORMING TO SIZE No. 67. POLYPROPYLENE OR CELLULOSE FIBERS SHALL BE ADDED TO THE P.C.C. AT 1.5 LBS. PER CUBIC YARD. ALL MATERIALS SHALL CONFORM TO SSPWC.
 2. AGGREGATE BASE MATERIAL SHALL BE TYPE 2, CLASS B CRUSHED AGGREGATE BASE. MATERIALS SHALL CONFORM TO SSPWC SECTION 200.
 3. WEAKENED PLANE JOINTS SHALL BE CONSTRUCTED AT 5 FT INTERVALS AND ACCORDANCE WITH SECTION 312 OF THE SSPWC.

CONCRETE EQUIPMENT PAD



- NOTES:
1. ALL TRENCHES MUST CONFORM TO APPLICABLE CITY, STATE, COUNTY, AND OSHA SPECIFICATIONS AND REQUIREMENTS. IN THE CASE OF CONFLICT, THE MORE RIGID SPECIFICATION OR STANDARD SHALL APPLY.
 2. BEDDING SAND SHALL BE COMPACTED TO 90% MAXIMUM DENSITY PER SECTION 5.05.03 AND SHALL BE A MINIMUM OF 12" ABOVE AND 6" BELOW THE MAIN.
 3. CRUSHED AGGREGATE BASE COURSE BACKFILL SHALL BE PLACED IN 12" MAXIMUM LOOSE LIFTS. THE TOP 12" SHALL BE COMPACTED TO 95% MAXIMUM DENSITY. THE AREA ABOVE THE BEDDING SAND & BELOW 12" FROM FINISH GRADE SHALL BE COMPACTED TO 90% MAXIMUM DENSITY. PER STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST REVISION.
 4. NON-METALLIC BLUE WARNING TAPE SHALL BE PLACED IN ALL TRENCHES AT LEAST 12" ABOVE THE WATER MAIN.
 5. ELECTRIC UTILITIES MUST BE LOCATED BELOW WATER & MAINTAIN 2' MINIMUM RADIAL CLEARANCE FROM THE WATER FACILITY. IF 2' RADIAL CLEARANCE CAN NOT BE MET ELECTRIC CONDUIT MUST BE CONCRETE ENCASED AT LEAST 18" EACH SIDE OF WATER CROSSING. FIBER OPTIC AND/OR COMMUNICATION CONDUITS SHALL NOT BE PLACED IN THE SAME TRENCH AS WATER.
 6. TRACER WIRE SHALL BE #14 COPPER CLAD STAINLESS STEEL CORE WITH 30 MILS BLUE HDPE INSULATION. ALL WIRE SPLICES SHALL BE MADE USING A SPLIT BOLT CONNECTOR WRAPPED WITH AQUEASEAL AND ELECTRIC TAPE. THE CONTRACTOR SHALL INSTALL A 3 POUND ANODE AT EVERY TEST STATION. TEST STATIONS SHALL BE LOCATED ALONG THE MAIN NO MORE THAN 500 FEET APART. REFER TO DETAIL THIS SHEET.

TRENCH EXCAVATION/BACKFILL

GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE BOOK "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" (2012 EDITION), AND THE "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION", AS ADOPTED AND MODIFIED BY THE CITY OF SPARKS AND DISTRIBUTED BY WASHOE COUNTY, INCLUDING ANY ADDITIONS OR MODIFICATIONS THAT ARE SET FORTH IN THE DRAWINGS OR SPECIFICATIONS.
2. THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION FOR THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY, AND NOT BE LIMITED TO NORMAL WORKING HOURS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATION AND SHORING PROCEDURES AND CONFORM TO THE LATEST OSHA REQUIREMENTS.
4. THE CONTRACTOR SHALL MAINTAIN AN ON-GOING DUST CONTROL PROGRAM, INCLUDING WATERING OF OPEN AREAS, IN ORDER TO CONFORM WITH THE LATEST FEDERAL, STATE, AND COUNTY AIR POLLUTION REGULATIONS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAILY REMOVAL OF ALL CONSTRUCTION MATERIALS SPILLED ON PAVED STREETS, ON-SITE OR OFF-SITE. AT THE CLOSE OF EACH DAY, THE CONTRACTOR SHALL INSPECT THE SITE FOR ANY DEBRIS OR TRASH AND PROPERLY DISPOSE OF IT.
6. THE CONTRACTOR SHALL NOTIFY THE DESIGN PROFESSIONAL, ALL GOVERNING AGENCIES HAVING JURISDICTION OVER THE WORK, UTILITY COMPANIES, TELEPHONE COMPANIES, CABLE TELEVISION COMPANIES, AND ANY OTHER ENTITY IMPACTED BY THE WORK 48 HOURS PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL GIVE 48 HOURS PRIOR NOTICE FOR ALL CONSTRUCTION STAKING AND INSPECTIONS REQUIRED DURING CONSTRUCTION.
7. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND FEES REQUIRED FOR CONSTRUCTION.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION SIGNING, BARRICADES, AND TRAFFIC DELINEATION TO CONFORM TO THE STATE OF NEVADA, DEPARTMENT OF TRANSPORTATION "NEVADA WORK ZONE TRAFFIC CONTROL MANUAL" AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION.
9. THE CONTRACTOR SHALL PROTECT FROM DAMAGE EXISTING UTILITY STRUCTURES ON AND AROUND THE SITE INCLUDING, BUT NOT LIMITED TO, PAVEMENT, CURB AND GUTTER, SIDEWALK, LANDSCAPING, IRRIGATION LINES, SIGNAGE, STORM AND SANITARY SEWERS, UTILITIES, TELEPHONE, TRAFFIC CONTROL, AND CABLE TELEVISION. THE CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR THE REPAIR AND/OR REPLACEMENT OF ANY IMPROVEMENTS (NEW OR EXISTING) DAMAGED THROUGHOUT THE COURSE OF CONSTRUCTION EITHER AS A DIRECT RESULT OF THE ACTIVITIES OR THE FAILURE TO ADEQUATELY PROTECT THE IMPROVEMENT.
10. THE CONTRACTOR SHALL, DURING THE COURSE OF THE PROJECT, MAINTAIN RECORD DRAWINGS INDICATING BY DIMENSION AND DESCRIPTION ANY FACILITY CONSTRUCTED CONTRARY TO THAT SHOWN ON THE DRAWINGS OR DESCRIBED IN THE SPECIFICATIONS. AT THE END OF CONSTRUCTION, THE RECORD DRAWINGS SHALL BE TURNED OVER TO THE ENGINEER.
11. PRIOR TO THEIR INCORPORATION INTO THE WORK, THE CONTRACTOR SHALL SUBMIT FOR THE ENGINEER'S APPROVAL SHOP DRAWINGS AND MATERIAL SPECIFICATIONS FOR ALL MATERIALS TO BE USED ON THE PROJECT.
12. ANY DAMAGED ASPHALT OR CONCRETE BEYOND THAT SHOWN ON THE PLANS WILL BE THE CONTRACTOR'S RESPONSIBILITY TO REPLACE.
13. TREES TO BE REMOVED SHALL INCLUDE PROPER DISPOSAL OFF-SITE.

DETAIL SHEET

revisions

NO.	DESCRIPTION	DATE

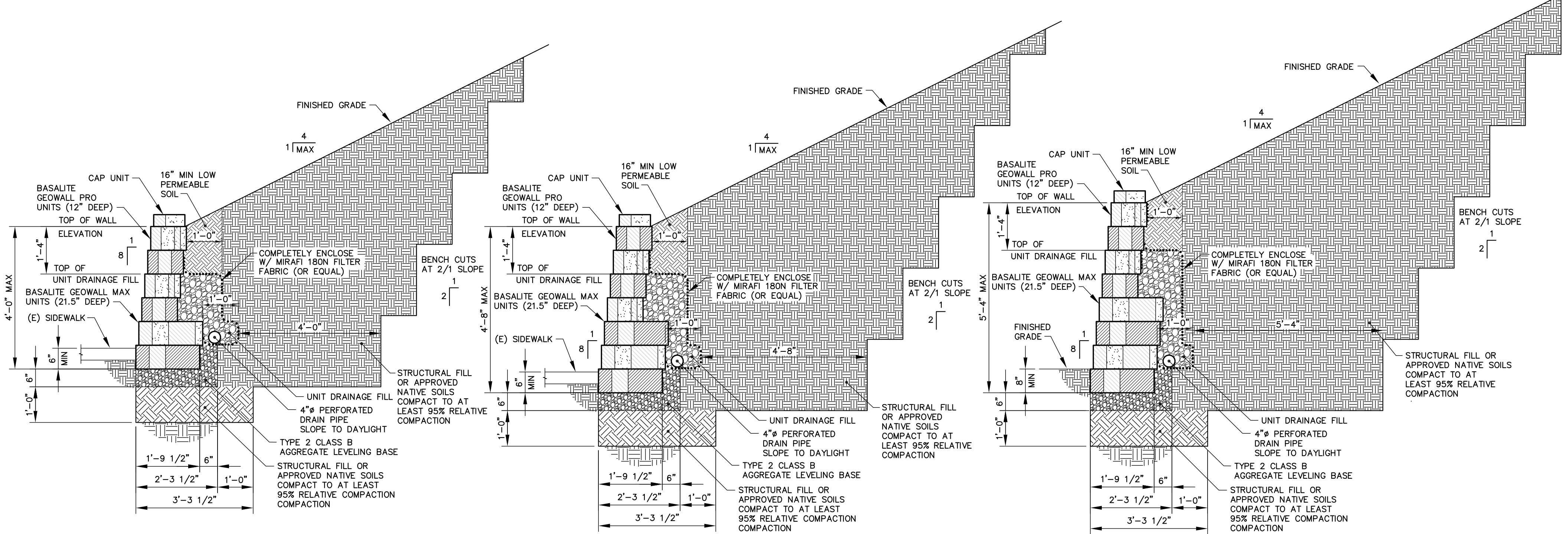
drawn: GKG
checked: GKG
date: APRIL 2021
scale:
project no: 19029

ABBREVIATIONS

AB	ANCHOR BOLT
ABV	ABOVE
AG	ASPHALT CONCRETE
AGG	AGGREGATE
ALT	ALTERNATE
ALUM	ALUMINUM
ANC	ANCHOR, ANCHORAGE
APPROX	APPROXIMATE
ARCH	ARCHITECT (URAL)
BRF	BRACED FRAME
BLDG	BUILDING
BLK	BLOCK
BLNG	BLOCKING
BLW	BELOW
BM	BEAM
BN	BOUNDARY NAILING
BP	BEARING OR BASE PLATE
BRG	BEARING
BTM	BOTTOM
BTWN	BETWEEN
BVL	BEVELED
BW	BOTH WAYS
CB	CAMBER
CIP	CAST-IN-PLACE
CJ	CONSTRUCTION JOINT
CLG	CEILING
CLR	CLEAR (ANCE)
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONTN	CONTINUE (OUS)
CONTR	CONTRACTOR
CONN	CONNECTING
COORD	COORDINATE
CS	CENTER
CDB	DEFORMED BAR ANCHOR
DB	DOUBLE
DEMO	DEMOLISH, DEMOLITION
DF	DEPRESS
DO	DITTO
DIAG	DIAGONAL
DIM	DIMENSION
DWL	DRAWING
DWG	DRAWING
(E)	EXISTING
EA	EACH
EAB	EXPANSION BOLT
EN	EDGE NAILING
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
ENGR	ENGINEER
EQ	EQUAL
EQUIP	EQUIPMENT
ES	EACH SIDE
EXPN	EXPANSION
EXP	EXPOSED
EXT	EXTERIOR
EW	EACH WAY
FBO	FURNISHED BY OTHERS
FD	FLOOR DRAIN
FDN	FOUNDATION
FF	FINISHED FLOOR
FIN	FINISH (ED)
FLG	FLANGE
FLR	FLOOR (ING)
FN	FACE
FOC	FACE OF CONCRETE
FOF	FACE OF FORMWORK
FOS	FACE OF STUD
FRMG	FRAMING
FS	FAR SIDE
FTG	FOOTING
GA	GAGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GL	GLUED LAMINATED BEAM
GRD	GRADE, GRADING
HDR	HEADER
HAB	HEX-HEADED ANCHOR BOLT
HAB	HEAVY HEX-HEADED ANCHOR BOLT
HK	HOOK
HNGR	HANGER
HOR	HORIZONTAL
HP	HIGH POINT
HSA	HEADED STUD ANCHOR
HSS	HIGH STRENGTH TUB
HT	HEIGHT
ID	INSIDE DIAMETER
INCL	INCLUDE (D)
INSUL	INSULATION
INT	INTERIOR
INT	JOINT
JST	JOIST
LB	LAG BOLT
LOC	LOCATION
LH	LONG LEG HORIZONTAL
LV	LONG LEG VERTICAL
LLB	LONG LEG BACK-TO-BACK
LONGIT	LONGITUDINAL
LP	LOW POINT
LWC	LIGHTWEIGHT CONCRETE
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MB	MACHINE BOLT
MCH	MECHANICAL
MFR	MANUFACTURE (ER)
MIN	MINIMUM
MISC	MISCELLANEOUS
MTL	METAL
NIC	NOT IN CONTRACT
NO	NUMBER
NGM	NOMINAL
NS	NEAR SIDE
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OPNG	OPENING
OPP	OPPOSITE
OPH	OPPOSITE HAND
ONJ	ON-JOB JOIST
PAR	PARALLEL
PERP	PERPENDICULAR
PLY	PLYWOOD
PC	PRECAST
PCP	POUNDER DRIVEN PIN
PJ	POUR JOINT
PIP	POURED IN PLACE
PL	PROPERTY LINE
PLF	POUNDS PER LINEAL FOOT
PNL	PANEL
PREFAB	PREFABRICATED
PROJ	PROJECTION
PSF	POUNDS PER SQUARE FOOT
PT	PRESSURE TREATED
R	RADIUS
RD	ROOF DRAIN
RECT	RECTANGULAR
REF	REFERENCE
REIN	REINFORCEMENT
REO	REQUIRED
REV	REVISION (S), REVISED
RO	ROUGH OPENING
SCHD	SCHEDULE
SEC	SECTION
SHTG	SHEATHING
SHT	SHEET
SM	SIMILAR
SPC	SPECIAL
SPCL	SPECIAL
SPC	SPECIAL
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STFR	STIFFENER
STGRD	STAGGERED
STR	STRUCTURAL
SUSP	SUSPENDED
SYM	SYMMETRY (ICAL)
TH	THICK (NESS)
THND	THICKNESS
THRD	THREAD (ED)
T&B	TOP AND BOTTOM
TCX	TOP CHORD EXTENSION
TJ	TONGUE AND GROOVE
TJ	TOOLED JOINT
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOL	TOP OF LEDGER
TOM	TOP OF MASONRY
TOS	TOP OF STEEL
TOW	TOP OF WALL
TRANS	TRANSVERSETYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
W	WIDTH, WIDE
WD	WITH
W/O	WITHOUT
WD	WOOD
WP	WORK POINT
WS	WEB STEFFENER
WT	WEIGHT
WWF	WELDED WIRE FABRIC
W	WIDTH, WIDE
W	WITHOUT
W	WOOD
WP	WORK POINT
WS	WEB STEFFENER
WT	WEIGHT
WWF	WELDED WIRE FABRIC
W	WIDTH, WIDE
W	WITHOUT
W	WOOD
WP	WORK POINT
WS	WEB STEFFENER
WT	WEIGHT
WWF	WELDED WIRE FABRIC

GENERAL NOTES

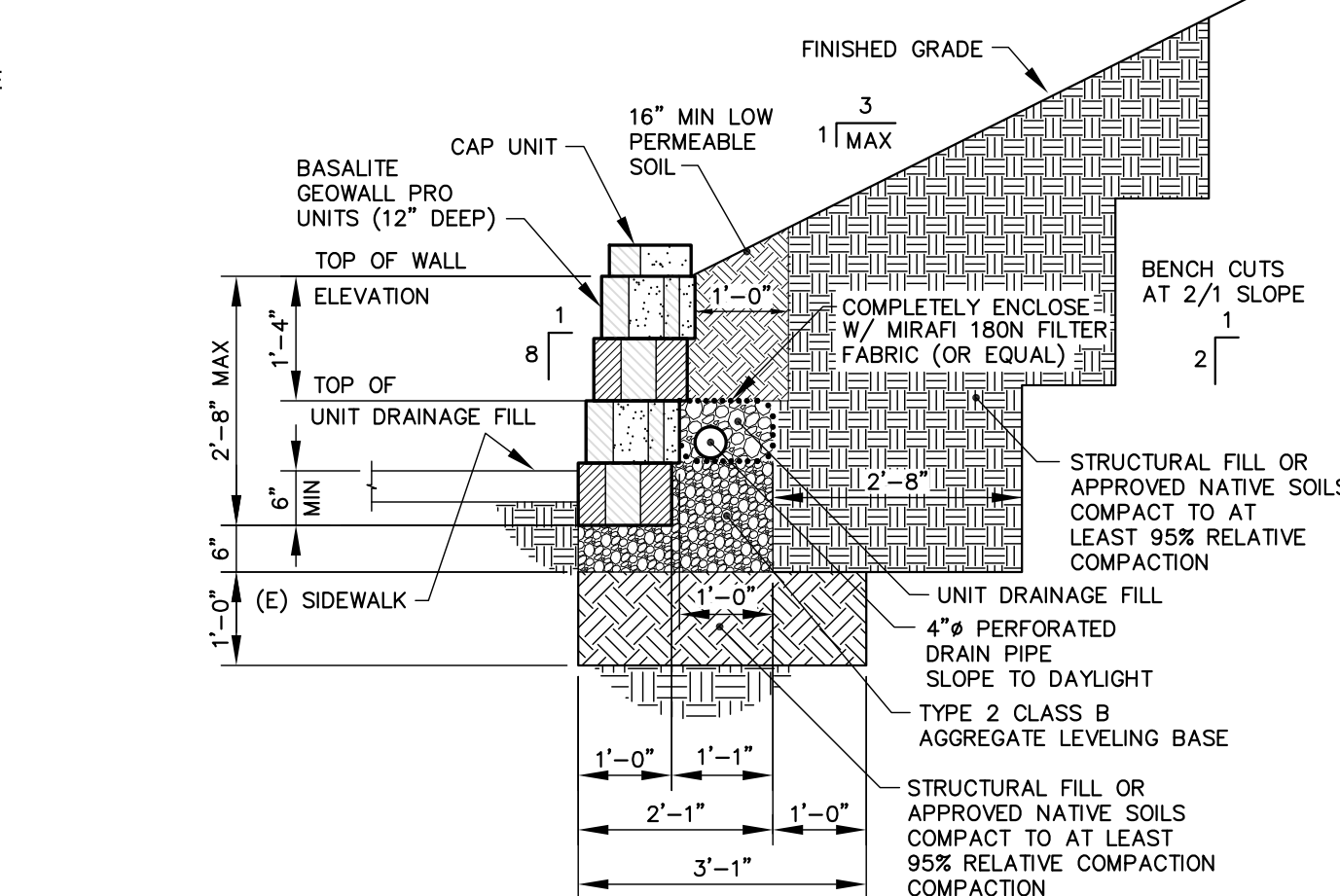
- A. DIVISION 1 - GENERAL:
- THE FOLLOWING GENERAL NOTES APPLY TO ALL STRUCTURAL DRAWINGS UNLESS SPECIFICALLY SHOWN OR NOTED.
 - ALL WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE 2018 INTERNATIONAL BUILDING CODE (IBC), CITY OF SPARKS BUILDING ORDINANCES, REFERENCED STANDARDS OF THE AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM), AND CURRENT EDITIONS OF REFERENCED INDUSTRY STANDARDS.
 - ALL WORK SHALL CONFORM TO THE PLANS AND SPECIFICATIONS IN ALL RESPECTS, AND SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER. APPROVAL TO DEVIATE FROM THE PLANS MUST BE OBTAINED IN WRITINGS FROM THE ENGINEER.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE SITE DURING CONSTRUCTION AND FOR CONFORMANCE WITH ALL APPLICABLE SAFETY REGULATIONS.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATION AND SHORING PROCEDURES, AND PROTECTION OF ADJACENT STREETS, UTILITIES AND STRUCTURES.
 - SEE SECTIONS BELOW FOR MATERIAL TESTING, QUALITY CONTROL AND SHOP DRAWING REQUIREMENTS.
 - THESE STRUCTURES HAVE BEEN DESIGNED IN ACCORDANCE WITH THE 2018 IBC, CITY OF SPARKS BUILDING ORDINANCES, AND GENERALLY ACCEPTED DESIGN PRACTICES. SEE BASIS OF DESIGN THIS SHEET.
 - SPECIAL INSPECTIONS FOR MATERIALS NOTED SHALL BE PERFORMED BY ICC CERTIFIED INSPECTORS.
- B. DIVISION 03 - SECTION 312010 - SEGMENTAL - RETAINING WALL STRUCTURES:
- PRIOR TO BIDDING, CONTRACTOR SHALL MAKE SUCH INVESTIGATION AS DEEMED NECESSARY TO DETERMINE SOIL CONDITIONS THAT MAY AFFECT THIS WORK.
 - SEE CIVIL DRAWINGS AND GRADING SPECIFICATIONS FOR ALL WALL ELEVATIONS.
 - AFTER EXCAVATION TO SUBGRADE, AND PRIOR TO THE START OF ANY FOUNDATIONS OR THE PLACEMENT OF FILL, THE ENGINEER SHALL BE REQUESTED TO INSPECT THE SITE TO INSURE THAT ALL SOILS ARE ACCEPTABLE. IN THE EVENT THAT SOFT OR UNACCEPTABLE SOILS ARE ENCOUNTERED, THE ENGINEER SHALL ISSUE INSTRUCTIONS TO THE CONTRACTOR FOR REMOVAL AND REPLACEMENT OF UNACCEPTABLE MATERIALS.
 - REMOVE ALL LOOSE MATERIAL GENERATED BY EXCAVATION EQUIPMENT OR RECOMPACT BOTTOM OF FTG EXCAVATION PRIOR TO PLACING FILL OR LEVELING PAD MATERIALS.
 - SOILS ENGINEER SHALL BE PRESENT THROUGHOUT EARTHWORK OPERATIONS. CONTRACTOR REQUIRED TESTS: SAMPLE AND TEST ALL IMPORTED MATERIALS.
 - SEE SPECIFICATION SECTION 312010 FOR COMPLETE SEGMENTAL RETAINING WALL INFORMATION. MODULAR CONCRETE RETAINING WALL UNITS TO BE GEOWALL MAX AS MANUFACTURED BY BASALITE CONCRETE PRODUCTS OR APPROVED EQUAL. LEVELING PAD MATERIAL SHALL BE PLACED TO A MINIMUM 6 INCH COMPACTED THICKNESS AND EXTEND LATERALLY A MINIMUM OF 6 INCHES IN FRONT AND BEHIND THE MODULAR WALL UNIT.
 - SOIL LEVELING PAD MATERIALS SHALL BE COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR DENSITY PER ASTM D-698.
 - LEVELING PAD SHALL BE PREPARED TO INSURE FULL CONTACT TO THE BASE SURFACE OF THE WALL UNITS.
 - PLACE UNITS ACCORDING TO NCMA'S "SEGMENTAL RETAINING WALL INSTALLATION GUIDE" AND SEGMENTAL RETAINING WALL UNIT MANUFACTURER'S WRITTEN INSTRUCTIONS.
 - FIRST COURSE OF UNITS SHALL BE PLACED ON A LEVELING PAD AT THE APPROPRIATE LINE AND GRADE. ALIGNMENT AND LEVEL SHALL BE CHECKED IN ALL DIRECTIONS AND INSURE THAT ALL UNITS ARE IN FULL CONTACT WITH THE BASE AND PROPERLY SEATED.
 - TAMP UNITS INTO BASE LEVELING PAD AS NECESSARY TO BRING TOPS OF UNITS INTO A LEVEL PLANE. PLACE UNITS FOR FULL LENGTH OF WALL. PLACE UNITS IN FIRM CONTACT WITH EACH OTHER, PROPERLY ALIGNED AND LEVEL.
 - FOR SUBSEQUENT UNITS, REMOVE EXCESS FILL AND DEBRIS FROM TOP OF UNITS IN COURSE BELOW. PLACE UNITS IN FIRM CONTACT, PROPERLY ALIGNED AND DIRECTLY ON COURSE BELOW.
 - PLACE THE FRONT OF THE BLOCKS SIDE BY SIDE. DO NOT LEAVE GAPS BETWEEN ADJACENT UNITS. LAYOUT OF CORNERS AND CURVES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
 - INSTALL SHEAR CONNECTING DEVICES PER MANUFACTURER'S RECOMMENDATIONS.
 - PLACE AND COMPACT DRAINAGE FILL WITHIN AND BEHIND WALL UNITS. PLACE AND COMPACT BACKFILL SOIL BEHIND DRAINAGE FILL. FOLLOW WALL ERECTION AND DRAINAGE FILL CLOSELY WITH STRUCTURE BACKFILL.
 - MAXIMUM STACKED VERTICAL HEIGHT OF WALL UNITS, PRIOR TO PLACEMENT OF UNIT DRAINAGE FILL AND BACKFILL PLACEMENT AND COMPACTION SHALL NOT EXCEED THREE COURSES.
 - GEGRID SHALL BE ORIENTED WITH THE HIGHEST STRENGTH AXIS PERPENDICULAR TO THE WALL ALIGNMENT.
 - FILL VOIDS BETWEEN AND WITHIN UNITS WITH DRAINAGE FILL. PLACE FILL AS EACH COURSE OF UNITS IS LAID.
 - PLACE, SPREAD AND COMPACT DRAINAGE FILL AND SOIL FILL IN UNIFORM LIFTS FOR FULL WIDTH AND LENGTH OF EMBANKMENT AS WALL IS LAID. PLACE AND COMPACT FILLS WITHOUT DISTURBING ALIGNMENT OF UNITS.
 - REINFORCED BACKFILL SHALL BE PLACED AND COMPACTED IN LIFTS NOT TO EXCEED 6 INCHES WHERE HAND COMPACTION IS USED, OR 8-10 INCHES WHERE HEAVY COMPACTION EQUIPMENT IS USED. LIFT THICKNESS SHALL BE DECREASED TO ACHIEVE THE REQUIRED DENSITY AS REQUIRED.
 - REINFORCED BACKFILL SHALL BE COMPACTED TO AT LEAST 95% RELATIVE COMPACTION BASED ON ASTM D-1557. THE MOISTURE CONTENT OF THE BACKFILL MATERIAL PRIOR TO AND DURING COMPACTION SHALL BE UNIFORMLY DISTRIBUTED THROUGHOUT EACH LAYER AND SHALL BE DRY OF OPTIMUM, +0%,-3%.
 - ONLY LIGHTWEIGHT HAND-OPERATED EQUIPMENT SHALL BE ALLOWED WITHIN 3 FEET FROM THE TAIL OF THE MODULAR CONCRETE UNITS.
 - WRAP SUBDRAINAGE PIPE WITH FILTER FABRIC AND PLACE IN DRAINAGE FILL AS INDICATED. SLOPE NOT LESS THAN 0.5 PERCENT TO DRAIN.
 - PLACE IMPERVIOUS FILL OVER TOP EDGE OF DRAINAGE FILL LAYER.
 - SLOPE GRADE AT TOP OF WALL AWAY FROM WALL UNLESS OTHERWISE INDICATED. SLOPE GRADE AT WALL BASE AWAY FROM WALL. PROVIDE UNIFORM SLOPES THAT PREVENT PONDING.
 - AT THE END OF EACH DAY'S OPERATION, THE CONTRACTOR SHALL SLOPE THE LAST LIFT OF REINFORCED BACKFILL AWAY FROM THE WALL UNITS TO DIRECT RUNOFF AWAY FROM WALL FACE. THE CONTRACTOR SHALL NOT ALLOW SURFACE RUNOFF FROM ADJACENT AREAS TO ENTER THE WALL CONSTRUCTION SITE.
 - CAP UNIT SHALL BE GLUED TO UNDERLAYING UNIT WITH AN ALL-WEATHER ADHESIVE RECOMMENDED BY THE MANUFACTURER.
 - AS-BUILT CONSTRUCTION TOLERANCES:
 - VERTICAL ALIGNMENT: ±1.5 INCHES OVER 10 FOOT DISTANCE.
 - WALL BATTER: WITHIN 2 DEGREES OF DESIGN BATTER.
 - HORIZONTAL ALIGNMENT: ±1.5 INCHES OF ANY 10 FOOT DISTANCE. CORNERS, BENDS CURVES ±1 INCH TO THEORETICAL LOCATION. MAXIMUM HORIZONTAL GAP BETWEEN ERECTED UNITS SHALL BE 1/8 INCH.



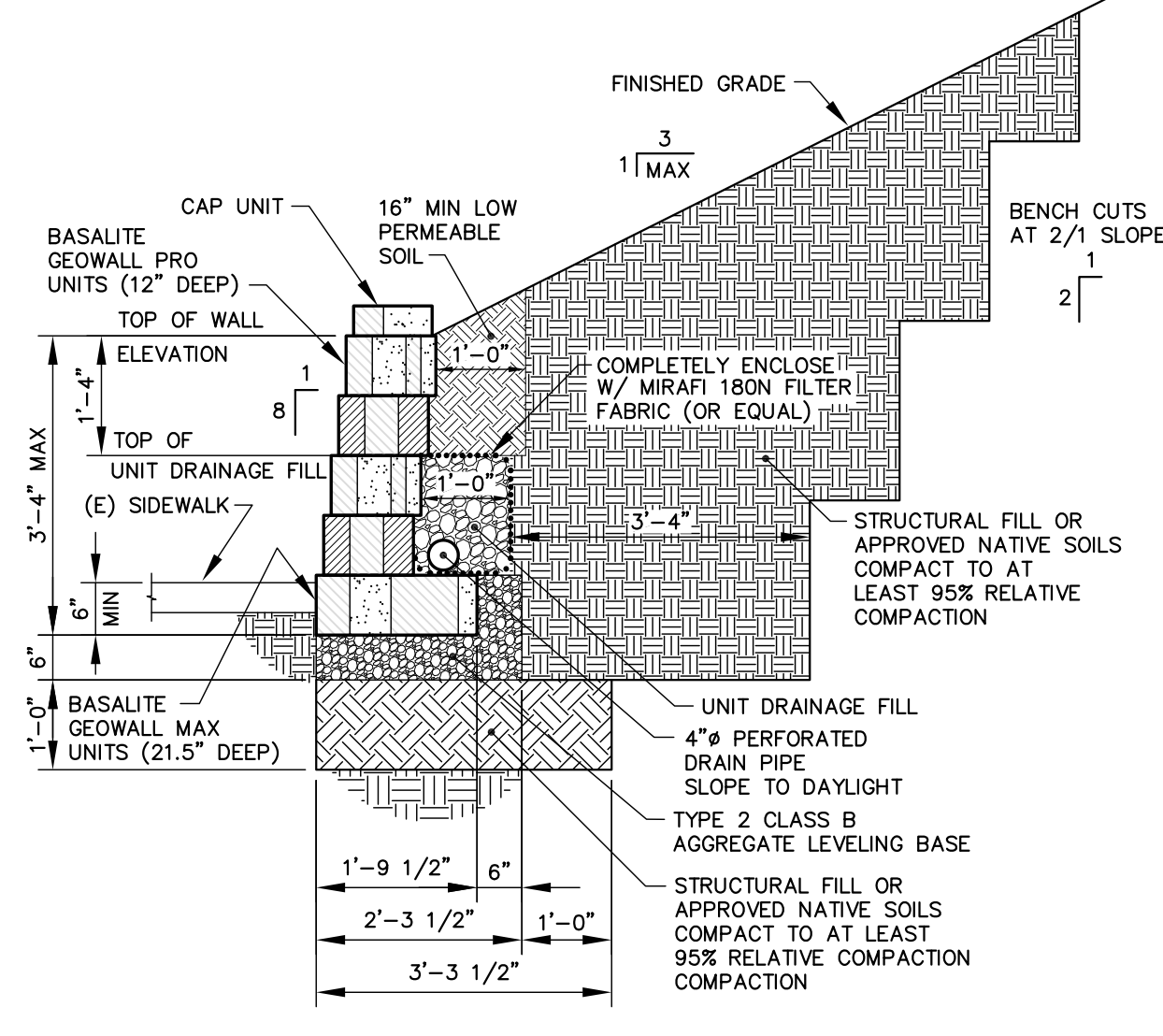
3'-4" EXPOSED TYPICAL SINGLE STACK WALL
SCALE: 1/2"=1'-0"

4'-0" EXPOSED TYPICAL SINGLE STACK WALL
SCALE: 1/2"=1'-0"

4'-8" EXPOSED TYPICAL SINGLE STACK WALL
SCALE: 1/2"=1'-0"



2'-0" EXPOSED TYPICAL SINGLE STACK WALL
SCALE: 1/2"=1'-0"



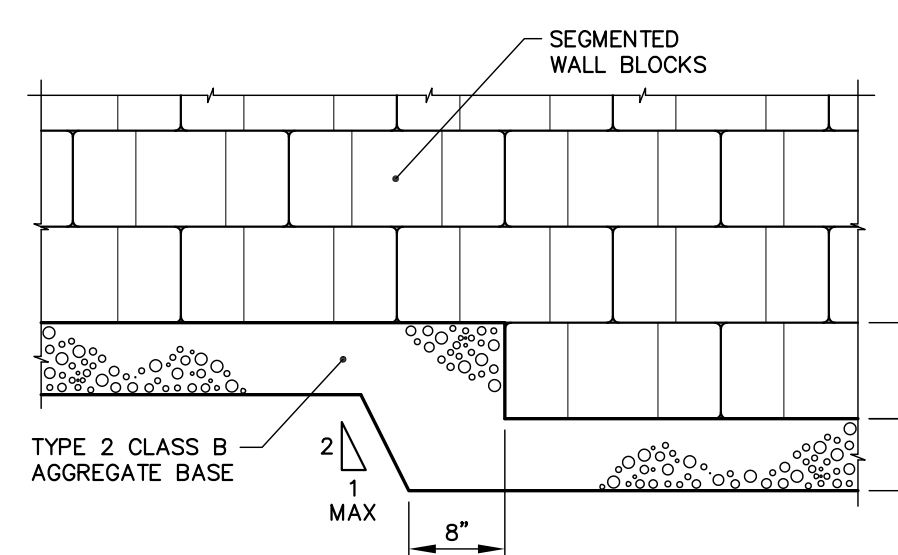
2'-8" EXPOSED TYPICAL SINGLE STACK WALL
SCALE: 1/2"=1'-0"

SPECIAL INSPECTIONS

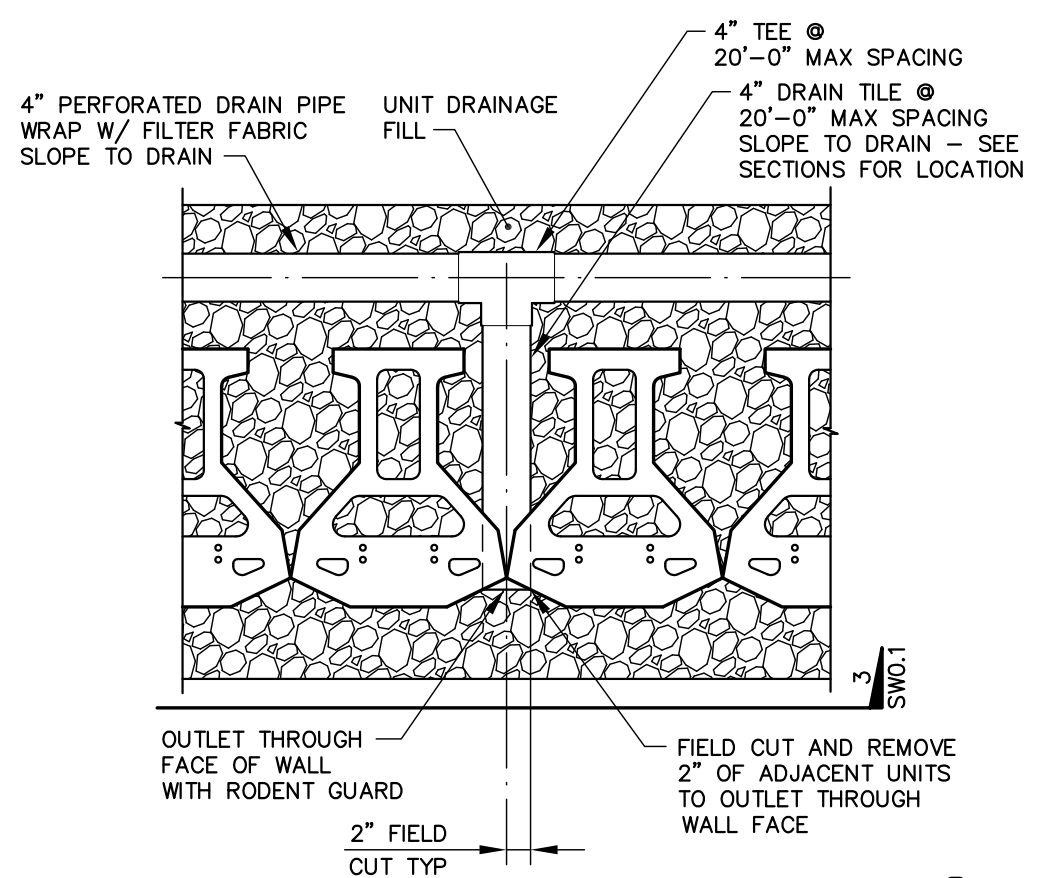
- THE FOLLOWING SPECIAL INSPECTIONS SHALL BE PERFORMED BY CERTIFIED SPECIAL INSPECTORS.
- A. EARTHWORK:
- COMPACTION TESTS OF OVER EXCAVATION AND STRUCTURAL FILL.
 - CONTINUOUS VERIFICATION OF FILL MATERIALS AND COMPACTION TESTING OF EACH LIFT.
 - COMPACTION TESTS OF FOUNDATION AND WALL BACKFILL.
 - ALL EARTHWORK PER IBC TABLE 1705.6.
- B. SEGMENTED RETAINING WALLS:
- COMPACTION OF LEVELING PAD.
 - CONTINUOUS INSPECTION OF ALL BLOCK PLACEMENT.
 - CONTINUOUS INSPECTION OF FILL AND BACKFILL PLACEMENT AND COMPACTION OF EACH LIFT.

BASIS OF DESIGN

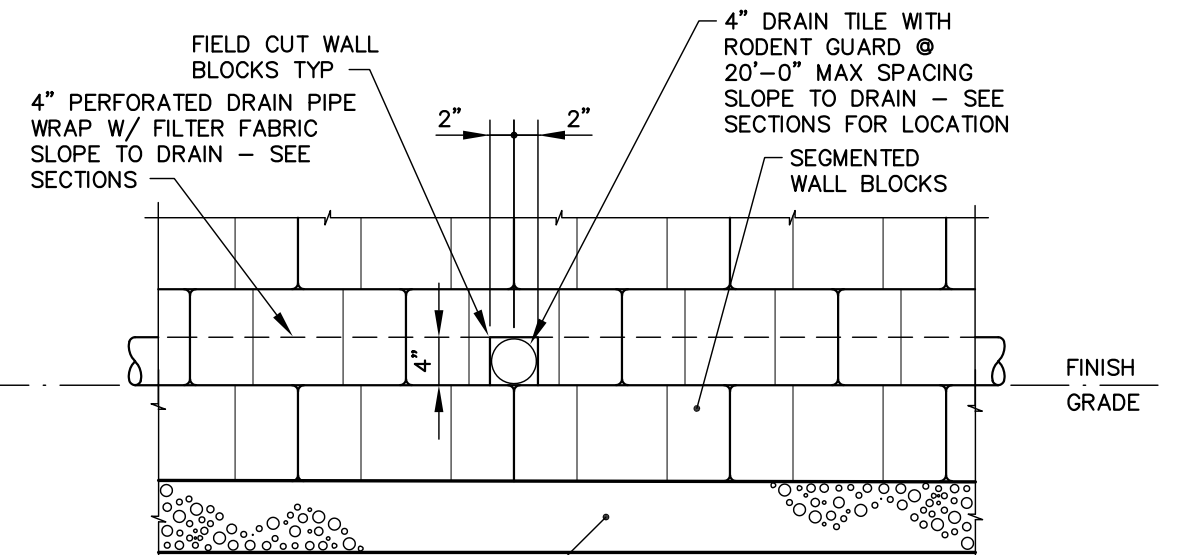
- A. CODES
INTERNATIONAL BUILDING CODE - 2018 EDITION
INTERNATIONAL CODE COUNCIL.
- B. SOILS
GEOTECHNICAL EVALUATION
SPARKS MARINA RETAINING WALLS
300 HOWARD DRIVE
SPARKS, NEVADA 89341
PROJECT NO. R20205316ER
DATED FEBRUARY 4, 2021
PREPARED FOR - CITY OF SPARKS
PREPARED BY - GEOTECHNICAL & ENVIRONMENTAL SERVICES, INC.
COEFFICIENT OF FRICTION = 0.60
(1.5 FACTOR OF SAFETY)
ANGLE OF INTERNAL FRICTION = 34°
UNIT WEIGHT OF SOIL = 120 PCF.
ALLOWABLE BEARING PRESSURE = 1,500 PSI.
- C. MATERIALS
- WALL UNITS: GEOWALL MAX, GEOWALL PRO
 - LEVELING PAD: TYPE 2 CLASS B AGGREGATE BASE.



TYPICAL SEGMENTED WALL STEP
SCALE: 3/4"=1'-0" **1 SWO.1**

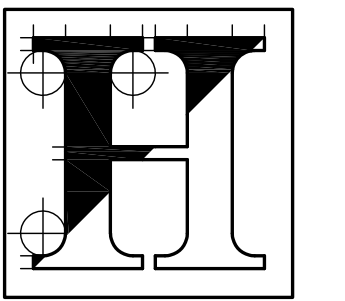


TYPICAL DRAIN PIPE
SCALE: 3/4"=1'-0" **2 SWO.1**



TYPICAL DRAIN PIPE
SCALE: 3/4"=1'-0" **3 SWO.1**

CONSULTANT



HARTMAN

STRUCTURAL ENGINEERING

6180 Mac Anne Avenue
Suite 5
Reno, Nevada
89523-4708

Telephone: (775) 786-4717
Facsimile: (775) 786-4733
E-mail: mail@hartman-se.com

SECTIONS, DETAILS,
GENERAL NOTES AND BASIS OF DESIGN

MARINA LAKE LEVEL CONTROL PIPELINE
NEVADA
SPARKS

SHEET TITLE

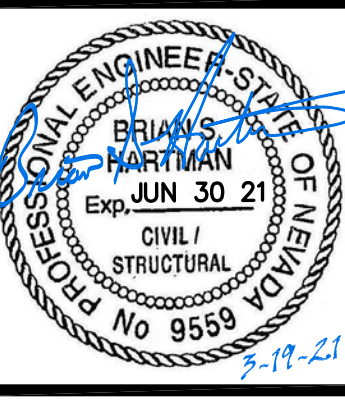
PROJECT

DRAWN BY GLF

CHECKED SJC

DATE 3/19/2021

JOB NO 6420



SHEET NUMBER

SW0.1