

IRRIGATION SYSTEM IMPROVEMENT PLANS

FOR

REPLACE DOMESTIC FIRE AND WATER MAIN (STEWART FACILITY)

NEVADA STATE PUBLIC WORKS DIVISION, PROJECT NO. 17-M36(A)

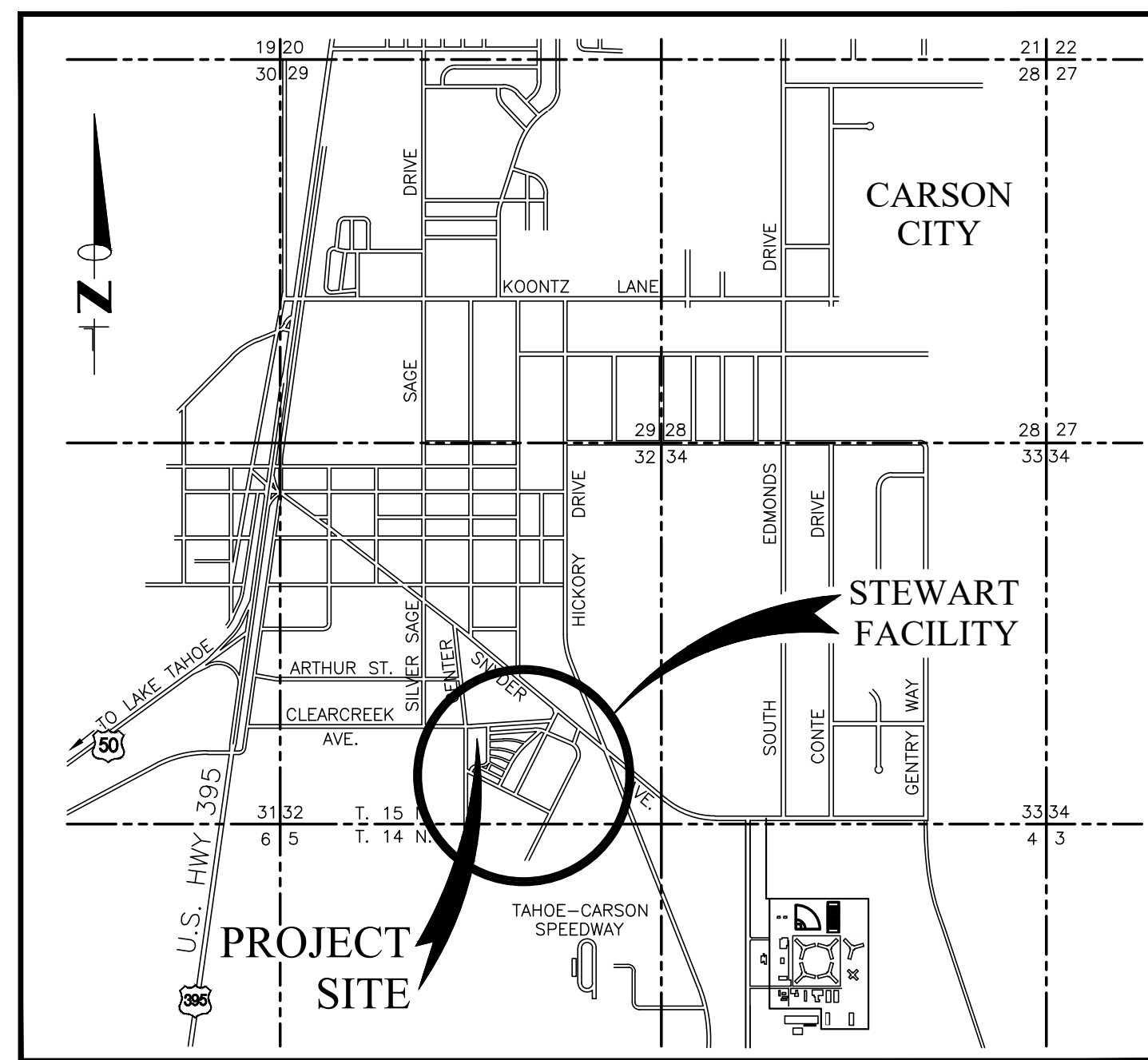
OWNER / LOCATION:
 NEVADA STATE
 BUILDINGS AND GROUNDS
 STEWART FACILITY
 536 SNYDER AVENUE
 CARSON CITY, NEVADA

CONTRACTING AGENCY:
 STATE OF NEVADA
 PUBLIC WORKS DIVISION
 515 E. MUSSER ST., SUITE 102
 CARSON CITY, NV 89701
 PHONE: (775) 684-4141

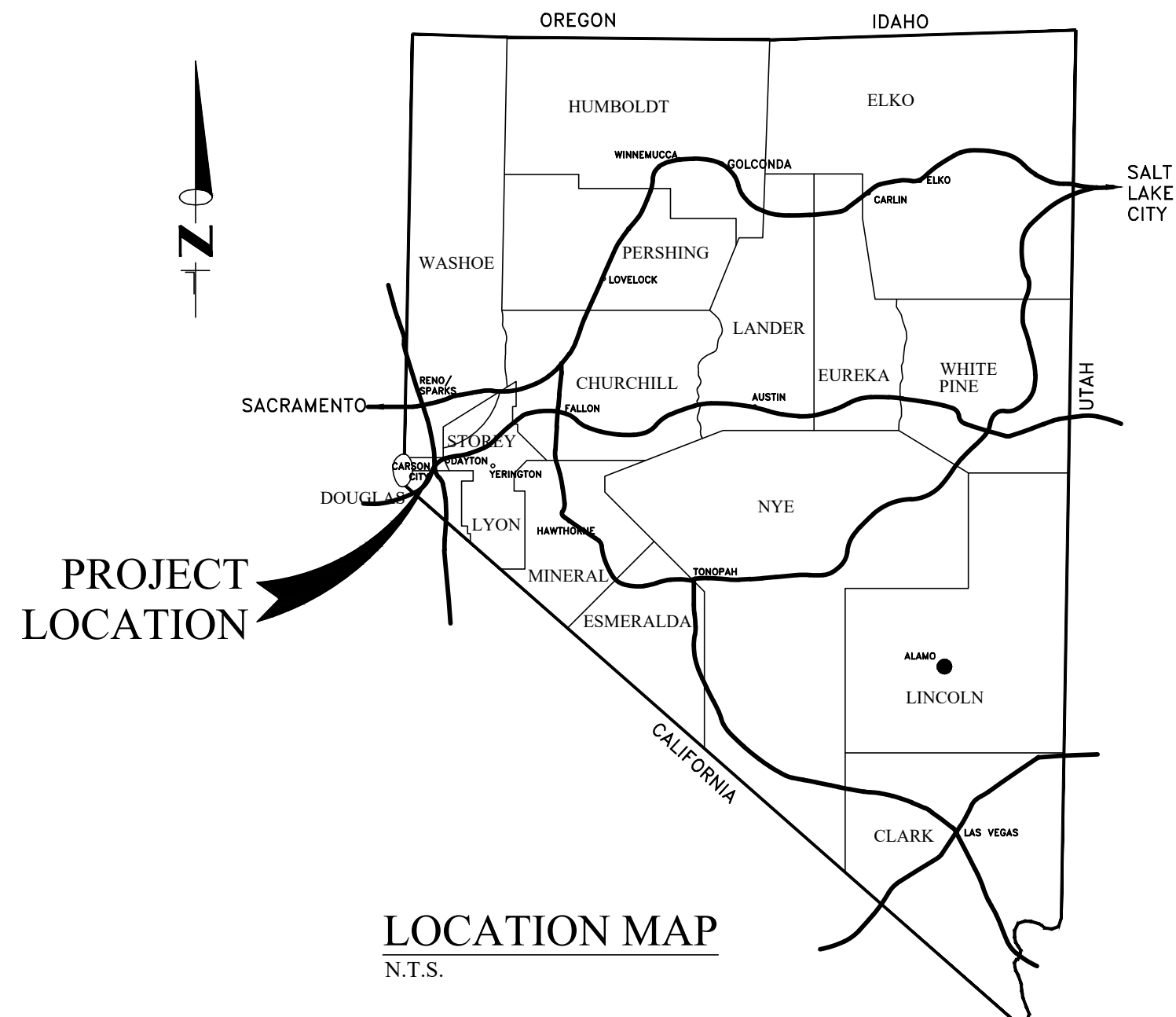
ENGINEER:
 FARR WEST ENGINEERING
 5510 LONGLEY LANE
 RENO, NV 89511
 PHONE: (775) 851-4788
 FAX: (775) 851-0766

BASIS OF BEARING & ELEVATION:
 ASSUMED. SEE SHEET C6 DATUM LOCATION AT TOP OF SLAB.

PORTION OF SECTION 32, T.15N., R.20E., M.D.M.



VICINITY MAP
 N.T.S.



LOCATION MAP
 N.T.S.

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REVISION	DESCRIPTION	BY	APP.	DATE

JOB NO.: 1717
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FARR WEST ENGINEERING
 5510 LONGLEY LANE
 RENO, NEVADA 89511
 PHONE: (775) 851-4788
 FAX: (775) 851-0766
 FARRWESTENGINEERING.COM

PROFESSIONAL ENGINEER - STATE OF NEVADA
 CHARLES L.H.A.
 RENO
 Exp. 12/31/21
 CIVIL
 No. 20841
 SIGNED: 10/28/21

REPLACE DOMESTIC FIRE AND WATER MAIN
 IRRIGATION SYSTEM IMPROVEMENTS 17-M36(A)
 TITLE SHEET
 CARSON CITY NEVADA

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SHEET NUMBER
C1
 1 OF 13

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 PLOT DATE: Oct 28, 2021 8:48am

Avoid cutting underground utility lines. It's costly.
 Call before you Dig
 1-800-227-2600
 UNDERGROUND SERVICE (USA)

FARR WEST ENGINEERING ASSUMES NO RESPONSIBILITY FOR EXISTING UTILITY LOCATIONS AND ELEVATIONS. THE UTILITIES SHOWN ON THESE DRAWINGS HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER, THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO FIELD VERIFY ALL EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION. IF A CONFLICT EXISTS BETWEEN WHAT IS SHOWN ON THESE DRAWINGS AND WHAT EXISTS IN THE FIELD, THE CONTRACTOR IS TO NOTIFY THE ENGINEER IMMEDIATELY.

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PLOT DATE: Oct 28, 2021 - 8:49am

GENERAL NOTES:

- ALL WORK SHALL CONFORM TO THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC WORKS CONSTRUCTION.
- IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR THE CONDITIONS OF THE JOB SITE INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND SHALL NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF PROPER SHORING OF TRENCHES IN ACCORDANCE WITH OCCUPATIONAL SAFETY LAWS. THE DUTIES OF THE PROJECT DESIGN ENGINEER DO NOT INCLUDE REVIEW OF THE ADEQUACY OF CONTRACTOR'S SAFETY IN, ON OR NEAR THE CONSTRUCTION SITE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING STORM WATER RUNOFF. THE CONTRACTOR SHALL MAINTAIN ALL EXISTING DRAINAGE FACILITIES WITHIN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL TAKE ALL NECESSARY AND PROPER PRECAUTIONS TO PROTECT ADJACENT PROPERTIES FROM ANY AND ALL DAMAGE THAT MAY OCCUR FROM STORM WATER RUNOFF AND/OR DEPOSITION OF DEBRIS RESULTING FROM ANY AND ALL WORK IN CONNECTION WITH CONSTRUCTION.
- SHOULD IT APPEAR THAT THE WORK TO BE DONE, OR ANY MATTER RELATIVE THERETO, IS NOT SUFFICIENTLY DETAILED OR EXPLAINED ON THESE PLANS, THE CONTRACTOR SHALL CONTACT THE PROJECT DESIGN ENGINEER FOR SUCH FURTHER EXPLANATIONS AS MAY BE NECESSARY.
- THE CONTRACTOR SHALL TAKE REASONABLE MEASURES TO PROTECT EXISTING IMPROVEMENTS FROM DAMAGE AND ALL SUCH IMPROVEMENTS DAMAGED BY THE CONTRACTOR'S OPERATIONS, SHALL BE REPAIRED OR RECONSTRUCTED TO THE ENGINEER'S SATISFACTION AT THE EXPENSE OF THE CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMMEDIATE OFF-SITE DISPOSAL OF ALL CLEARING & GRUBBING AND TRENCHING SPOILS AND BASIN SPOILS.
- THE LOCATION OF EXISTING UTILITIES SHOWN ON THESE DRAWINGS IS BASED ON THE BEST INFORMATION AVAILABLE TO THE ENGINEER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THESE LOCATIONS AT THE PROPOSED POINTS OF CONNECTION AND IN AREAS OF POSSIBLE CONFLICT WITH NEW UTILITY INSTALLATION, PRIOR TO BEGINNING CONSTRUCTION. SHOULD THE CONTRACTOR FIND ANY DISCREPANCIES BETWEEN THE CONDITIONS EXISTING IN THE FIELD AND THE INFORMATION SHOWN ON THESE DRAWINGS, HE SHALL NOTIFY THE ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION.
- THE CONTRACTOR SHALL CALL 1-800-227-2600 FOR UTILITY LOCATIONS AT LEAST 2 WORKING DAYS PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL VERIFY, IN THE FIELD, ALL ELEVATIONS, DIMENSIONS, FLOW LINES, EXISTING CONDITIONS, AND POINTS OF CONNECTIONS. ANY DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- THE CONTRACTOR SHALL PHOTOGRAPH AND/OR TAKE VIDEO OF THE ENTIRE CONSTRUCTION AREA, MOST IMPORTANTLY EACH RESIDENCE/BUSINESS OR PROPERTY WHERE CONSTRUCTION ACTIVITIES MAY TAKE PLACE. COPIES OF THE PHOTOS/VIDEO SHALL BE PROVIDED TO THE ENGINEER BEFORE CONSTRUCTION BEGINS. THE PHOTOS/VIDEO SHALL BE USED TO ENSURE THAT THE AREA IS RETURNED TO ITS EXISTING CONDITION. FAILURE TO DOCUMENT THE EXISTING CONDITION SHALL LEAVE THE CONTRACTOR LIABLE FOR CLAIMS ON IMPROVEMENTS TO EXISTING FACILITIES.
- PROPERTY LINES ARE COMPILED FROM RECORD INFORMATION.
- THE CONTRACTOR SHALL MAINTAIN A DUST ABATEMENT CONTROL PROGRAM, INCLUDING WATERING OF OPEN AREAS 7 DAYS A WEEK.
- MODIFICATIONS TO THE APPROVED PLANS REQUIRES REVIEW AND APPROVAL BY THE ENGINEER. WORK PERFORMED WITHOUT WRITTEN APPROVAL BY THE ENGINEER WILL REQUIRE REMOVAL AT THE CONTRACTOR'S EXPENSE.
- THE APPROVED PLANS, PERMITS AND INSPECTION RECORDS MUST BE ON THE JOB SITE AT ALL TIMES.
- PROVISIONS OF THE SHPO PERMIT REQUIRE ARCHEOLOGICAL MONITORING. THE MONITOR SHALL BE CONTRACTED DIRECTLY WITH THE OWNER. CONTRACTOR TO COORDINATE MONITORING WITH OWNER AND ENGINEER WHEN REQUIRED. SEE ALSO SHEET C3.
- WATERLINE SHUTDOWNS ARE TO BE COORDINATED WITH STATE OF NEVADA BUILDINGS AND GROUNDS A MINIMUM OF 48 HOURS PRIOR TO SHUTDOWN.
- PLACEMENT OF NEW IMPROVEMENTS SHALL BE COORDINATED WITH THE DESIGN ENGINEER OR HIS REPRESENTATIVE TO INSURE FUNCTIONALITY WITH EXISTING IMPROVEMENTS. PARTICULAR ATTENTION SHALL BE PAID TO EXISTING OVERHEAD POWER LINES AND EXISTING WATERLINES.

GENERAL NOTES: (cont.)

- ALL NEW WATER MAINS TO BE PRESSURE TESTED PER AWWA C605.
- WHEN CONNECTING TO AN EXISTING LINE, THE CONTRACTOR MUST ENSURE ALL IRRIGATION SUPPLY LINES ARE DEPRESSURIZED. CONNECT WITH FLANGE COUPLING ADAPTERS (FCA'S).
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO POTHOLE EXISTING WATERLINES TO DETERMINE THE EXACT LOCATION AND DEPTH. POTHOLING SHALL OCCUR PRIOR TO THE COMMENCEMENT OF WORK IN ANY AREA AND SHALL INCLUDE ALL UTILITIES WITHIN 7 FEET OF CONSTRUCTION. REPORT ALL FINDINGS TO THE ENGINEER.
- THE CONTRACTOR SHALL MAINTAIN AN ONGOING PROCESS OF REMOVAL OF ALL SPILLAGE OF EXCAVATION MATERIAL ON ALL PAVED STREETS.
- THE INSPECTION AND TESTING OF SOILS SHALL CONTRACTED WITH THE OWNER. CONTRACTOR IS RESPONSIBLE TO COORDINATE INSPECTION SERVICES WHEN REQUIRED. REPEAT TESTING, DUE TO POOR COMPACTION RESULTS, SHALL BE THE CONTRACTOR RESPONSIBILITY.
- CONSULT WITH OWNER FOR EASEMENT LOCATION. ALL WORK MUST BE LAID OUT BY A NEVADA LICENSED LAND SURVEYOR.
- THE CONTRACTOR SHALL MAINTAIN ACCURATE DAILY AS-BUILTS. WEEKLY THE OWNER'S REPRESENTATIVE SHALL REVIEW THE AS-BUILT DRAWINGS WITH THE CONTRACTOR TO ENSURE ACCURATE DOCUMENTATION FOR THE WEEK. UPON COMPLETION OF THE PROJECT, AND PRIOR TO PAYMENT, THE CONTRACTOR SHALL FINALIZE AND SUBMIT TO THE OWNER RECORD DRAWINGS INDICATING BY DIMENSION AND DESCRIPTION AND FACILITY CONSTRUCTED CONTRARY TO WHAT IS SHOWN ON THESE PLANS.
- THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL MATERIALS TO BE USED ON THE SITE TO INCLUDE, BUT NOT BE LIMITED TO, P.C.G. MIX DESIGN, AGGREGATE BASE, PRECAST CONCRETE, COVERS, PIPING, FENCING, ETC. TO THE PROJECT ENGINEER FOR APPROVAL PRIOR TO THE MANUFACTURING OR USE OF SUCH ITEMS, PER CONTRACT DOCUMENTS.
- ALL QUANTITIES SHOWN HEREIN ARE APPROXIMATE AND USED FOR PERMIT AND BOND PURPOSES ONLY. THEY SHALL NOT BE USED IN ANY WAY FOR BIDDING OR CONSTRUCTION. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO CONDUCT QUANTITY TAKE-OFFS FOR BIDDING AND CONSTRUCTION PURPOSES.
- THE CONTRACTOR SHALL PURSUE THE WORK IN A CONTINUOUS AND DILIGENT MANNER, CONFORMING TO ALL THE PERTINENT SAFETY REGULATIONS, TO ENSURE A TIMELY COMPLETION OF THE PROJECT.
- CONSTRUCTION WATER IS AVAILABLE FROM ON-SITE FIRE HYDRANTS CONSULT WITH CARSON CITY PUBLIC WORKS FOR HYDRANT METER.
- PIPELINE DEPTHS SHALL BE INSTALLED PER PLAN TO AVOID ADDITIONAL HIGHPOINTS IN THE WATERLINE AND TO SUPPORT AIR RELIEF VALVE WITHIN CONEX AS SHOWN IN THE PLANS.

MATERIAL SPECIFICATIONS:

- PVC PIPE**
- C900, CLASS 235 MINIMUM,
 - FITTINGS - USE DUCTILE IRON FITTING FOR ALL PVC WATER MAINS SEE "DUCTILE IRON PIPE" SECTION BELOW.
- DUCTILE IRON PIPE:**
- AWWA C151, CLASS 350 MINIMUM, CEMENT LINED.
 - FITTINGS - WITH ENAMEL LINER
 - MECHANICAL JOINTS - MJ FIELD LOK OR APPROVED EQUAL.
 - RESTRAINED JOINTS - FIELD LOK 350 GASKETS OR APPROVED EQUAL.
 - FLANGES SHALL BE CLASS 150.
- GATE VALVES:**
- RESILIENT SEATED PER AWWA C509 WITH CAST IRON OR DUCTILE IRON BODY.
 - FOR UNDERGROUND SERVICE USE 2" OPERATING NUT.
 - FOR INSIDE VAULTS OR BUILDINGS USE OS&Y WITH HAND WHEEL OPERATOR.
 - INSTALL NUT STEM EXTENSION AS NEEDED TO KEEP OPERATING NUT WITHIN 3.5' MIN. OF FINISHED GRADE.
- CORROSION PROTECTION:**
- COAT EXPOSED BOLTS, WASHERS, NUTS, TIE RODS, AND ALL OTHER METAL PARTS INSTALLED UNDERGROUND WITH TWO (2) COATS OF APPROVED MASTIC PRIOR TO WRAPPING WITH POLYETHYLENE.
 - ALL BURIED DUCTILE IRON PIPE OR EPOXY COATED PIPE AND FITTINGS SHALL BE DOUBLE-WRAPPED IN PLASTIC PER AWWA C105.
- MISCELLANEOUS ITEMS:**
- TRACER WIRE SHALL BE 12 GAUGE AWG SOLID COPPER WIRE WITH THWN INSULATION.
 - UNDERGROUND MARKING TAPE SHALL BE BLUE, MIN. 4 MIL, NON-DETECTABLE, 6" WIDE TAPE WITH LETTERING "CAUTION IRRIGATION LINE BURIED BELOW" OR SIMILAR WORDING.

GRADING & EARTHWORK NOTES

- EARTHWORK QUANTITIES SHALL BE PREPARED BY THE CONTRACTOR.
- ALL EARTHWORK, CLEARING AND GRUBBING, SUBGRADE PREPARATION, ETC. SHALL CONFORM TO THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
- SOIL TYPES TO BE OMITTED FROM PROJECT INCLUDE:
 - ORGANIC MATERIAL (E.G. ORGANIC SILT, SOD, PEAT, MULCH, ETC.).
- ELEVATION NOT SHOWN ON PLANS SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR. OWNER SHALL APPROVE ALL ELEVATIONS.
- THE CONTRACTOR SHALL GRADE ALL AREAS TO DRAIN AND SHALL BE RESPONSIBLE FOR ELIMINATING ALL LOW SPOTS OR PONDING AREAS.
- NO FILL SHALL BE PLACED OR COMPACTED IN UNFAVORABLE WEATHER CONDITIONS. OVERLY WET, DRY OR FROZEN FILL SHALL NOT BE PLACED.
- FOR PROJECT SPOILS THE CONTRACTOR SHALL CONTACT THE OWNER FOR A SUITABLE DISCARD LOCATION WITHIN THE OWNER'S PROPERTY BOUNDARIES. IF ADDITIONAL NATIVE SOILS ARE REQUIRED THE CONTRACTOR SHALL CONTACT THE OWNER FOR A SUITABLE BORROW PIT LOCATION.
- NO FUGITIVE DUST EMISSION SHALL BE ALLOWED FROM THE SITE. APPLY WATER AS NEEDED.

VERTICAL CROSSING CONFLICTS SUMMARY

- "WATER" INCLUDES WATER MAINS AND LATERALS.
- "SEWER" INCLUDES SANITARY SEWER, STORM DRAIN AND RECLAIMED WASTEWATER MAINS AND LATERALS.
- "SLEEVE" MEANS ENCASING THE WATER OR SEWER WITH A 20' LENGTH OF AWWA C900 CLASS 100 OR GREATER WATER QUALITY PIPE, CENTERED AT THE POINT OF WATER/SEWER CROSSING. TO AVOID BEING GROUTED IN PLACE, THE WATER MAIN INSIDE THE SLEEVE MUST HAVE A DIAMETER EQUAL TO OR GREATER THAN 2/3 THE DIAMETER OF THE SLEEVE. USE OF A "SLEEVE" IS AN ACCEPTABLE ALTERNATIVE TO CENTERING THE WATER AND SEWER AT THE POINT OF CROSSING.
- "RESTRAINT" MEANS USING MECHANICAL COUPLINGS TO RESTRICT JOINT MOVEMENT OR SEPARATION OF PIPE JOINTS WITHIN 10' EACH SIDE OF THE POINT OF CROSSING AND/OR THE USE OF THRUST BLOCKS AT ANGLE POINTS.
- "SPECIAL CONSTRUCTION" IDENTIFIES ACCEPTABLE MITIGATION OR PROTECTION THAT ADDRESSES PHYSICALLY CONSTRAINED ENVIRONMENTS WHERE THE REQUIREMENTS OF NAC 445A.67175 INCLUSIVE CANNOT BE MET.
- "CONCRETE ENCASEMENT" OF THE WATER AS MITIGATION OR PROTECTION IS DISCOURAGED.
- EVERY EFFORT IS TO BE MADE TO KEEP WATER 18" ABOVE SEWER MAINS AND WATER 12" ABOVE SEWER LATERALS. OTHERWISE, THE FOLLOWING SPECIAL CONSTRUCTION METHODS APPLY:
 - EFFORT SHALL BE MADE TO KEEP PIPELINE JOINTS EQUAL DISTANCE FROM THE POINT OF CROSSING.
 - PIPELINES MUST BE 6' APART. IF 6' IS NOT ATTAINABLE RELOCATE WATER MAIN PER PROJECT DETAILS.
 - WATER LINE MUST BE INSPECTED TO INSURE SUFFICIENT RESTRAINTS ARE IN PLACE.
 - SEWER MUST HAVE A SLEEVE OR BE ENCASED IN 4" OF CONCRETE SLURRY FOR 20' CENTERED ON POINT OF CROSSING.
 - WATER LATERALS MAY BE RELOCATED WHEN APPROVED.
 - ALL WORK SHALL DONE ACCORDING THE NAC 445A.67165 THROUGH NAC 445A.67175.
- ALL WATER MAIN AND WATER SERVICE INSTALLATIONS MUST BE OBSERVED BY THE PROJECT INSPECTOR AND APPROVED BY THE ENGINEER.

STATE HISTORIC PRESERVATION OFFICE (SHPO)

ALL CONDITIONS OF THE SHPO PERMIT HAVE BEEN INCORPORATED WITHIN THE DESIGN PLANS. SEE SHEET C3 AND C6 FOR SHPO CONSTRUCTION REQUIREMENTS.

ABBREVIATIONS

A.C.	ASPHALTIC CONCRETE
AGG.	AGGREGATE
B.W.	BACK OF SIDEWALK
C.B.	CATCH BASIN
C	CENTERLINE
CONC.	CONCRETE
CONST.	CONSTRUCT
C.O.	CLEAN OUT
C.P.	CONCRETE PIPE
CTS	COPPER TUBING
D.I.	DUCTILE IRON
DIA.	DIAMETER
DET.	DETAIL
ELEC	ELECTRICAL
EL	ELEVATION
ELEV.	ELEVATION
E.C.	EDGE OF CONCRETE
EP	EDGE OF PAVEMENT
E.V.C.	END VERTICAL CURVE
EX.	EXISTING
EXIST.	EXISTING
(e)	EXISTING
E.G.	EXISTING GRADE
FCA	FLANGED COUPLING ADAPTER
F.F.	FINISH FLOOR
F.F.C.	FRONT FACE OF CURB
FC	FINISH GRADE
FH	FIRE HYDRANT
F	FLOW LINE
FLG	FLANGE
FT	FEET
G.	GAS
GB	GRADE BREAK
CV	GATE VALVE
H.C.	HORIZONTAL CURVE
HORIZ.	HORIZONTAL
H.P.	HIGH POINT
INT.	INTERSECTION
I.E.	INVERT ELEVATION
L	LEFT
L.F.	LINEAL FEET
L.P.	LOW POINT
M.D.D.	MAXIMUM DRY DENSITY
MAX.	MAXIMUM
ME	MATCH EXISTING
MIN.	MINIMUM
N.I.C.	NOT IN CONTRACT
LT.	LEFT
M.H.	MANHOLE
MJ	MECHANICAL JOINT
MPOC	MID POINT OF CURVE
O.D.	OUTSIDE DIAMETER
OHP	OVERHEAD POWER
OS&Y	OUTSIDE SCREW AND YOKE
PCC	POINT OF COMPOUND CURVE
PE	PLAIN END
P.O.	PUSH ON
PP	POWER POLE
P.U.E.	PUBLIC UTILITY EASEMENT
R	PROPERTY LINE
P.V.C.	POLYVINYL CHLORIDE PIPE
PSI	POUNDS PER SQUARE INCH
R	RADIUS
REF.	REFERENCE
R.C.P.	REINFORCED CONCRETE PIPE
RT.	RIGHT
R/W	RIGHT OF WAY
S	SLOPE
SCH.	SCHEDULE
S.G.	SUBGRADE
SHT.	SHEET
S.S.	SANITARY SEWER
S.W.	SIDEWALK
STD.	STANDARD
SSCO	SANITARY SEWER CLEANOUT
SSMH	SANITARY SEWER MANHOLE
STA.	STATION
S.D.	STORM DRAIN
TELE.	TELEPHONE
T.C.	TOP OF CURB
T.B.	THRUST BLOCK
TOE	TOE OF SLOPE
TOP	TOP OF SLOPE
TR	TRAFFIC RATED
TYP.	TYPICAL
W	WATER
WL	WATER LINE
WM	WATER METER
Δ	CURVE DELTA

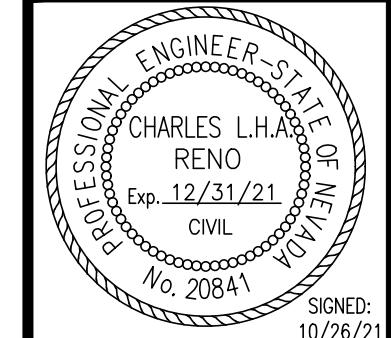
REPLACE DOMESTIC FIRE AND WATER MAIN IRRIGATION SYSTEM IMPROVEMENTS 17-M36(A)

NOTES, ABBREVIATIONS

CARSON CITY

NEVADA

FARR WEST ENGINEERING
 5510 LONGLEY LANE
 RENO, NEVADA 89511
 PHONE: (775) 851-4788
 FAX: (775) 851-0766
 FARRWESTENGINEERING.COM

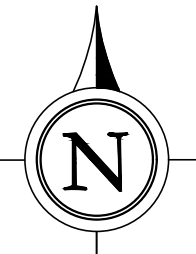
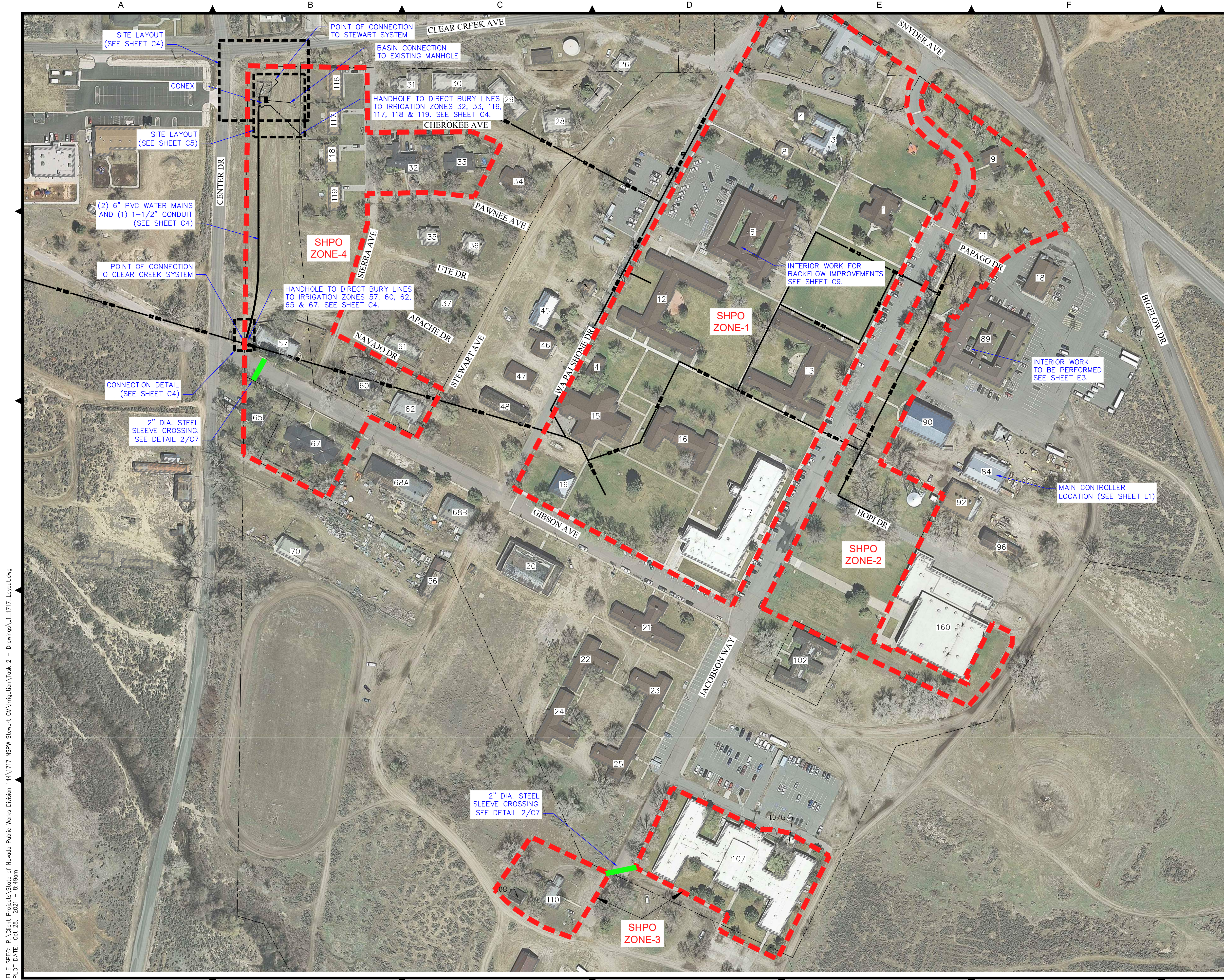


SHEET NUMBER
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 2 OF 13

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JOB NO.:	1717
DATE:	AUG. 2021
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SCALE: 1" = 100'

NOTE:
IRRIGATION LINES ARE APPROXIMATE. CONTRACTOR TO POTHOLE AND LOCATE POINTS OF CONNECTIONS. SEE CIVIL AND ELECTRICAL SHEETS FOR IMPROVEMENTS.

SHPO NOTE:
STATE HISTORIC PRESERVATION OFFICE (SHPO) REQUIRES A PERMIT TO CONSTRUCTION WITHIN THE STEWART COMPLEX. PER THE FILED PERMIT, SHPO ZONES 1, 2 AND 3 HAVE BEEN PREVIOUSLY DISTURBED AND DO NOT REQUIRE ARCHEOLOGICAL MONITORING DURING CONSTRUCTION. THIS INCLUDED THE PLACEMENT OF 2-WIRE SYSTEM AND IRRIGATION VALVES AND VALVE BOXES.

ZONE 4 REQUIRES ARCHEOLOGICAL MONITORING DURING CONSTRUCTION FOR THE 6" MAIN LINES, CONEX FOUNDATION, DRAINAGE BASIN AND ALL OTHER PIPES AND CONDUITS NOT CONSIDERED DIRECT BURY 2-WIRE LINES.

THERE ARE TWO LOCATIONS WITHIN THE COMPLEX WHERE 2" DIA. STEEL SLEEVES MAY BE INSTALLED ACROSS PAVED ROADWAYS (GIBSON AVE. AND JACOBSON WAY). THESE EXACT LOCATIONS HAVE NOT BEEN DETERMINED, HOWEVER, PAVED ROADWAYS ARE CONSIDERED TO BE PREVIOUSLY DISTURBED AND DO NOT REQUIRE ARCHEOLOGICAL MONITORING DURING CONSTRUCTION

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FARR WEST ENGINEERING
 5510 LONGLEY LANE
 RENO, NEVADA 89511
 PHONE: (775) 851-4788
 FAX: (775) 851-0766
 FARRWESTENGINEERING.COM

PROFESSIONAL ENGINEER - STATE OF NEVADA
 CHARLES L.H. RENO
 Exp. 12/31/21
 No. 20841
 CIVIL
 SIGNED: 10/26/21

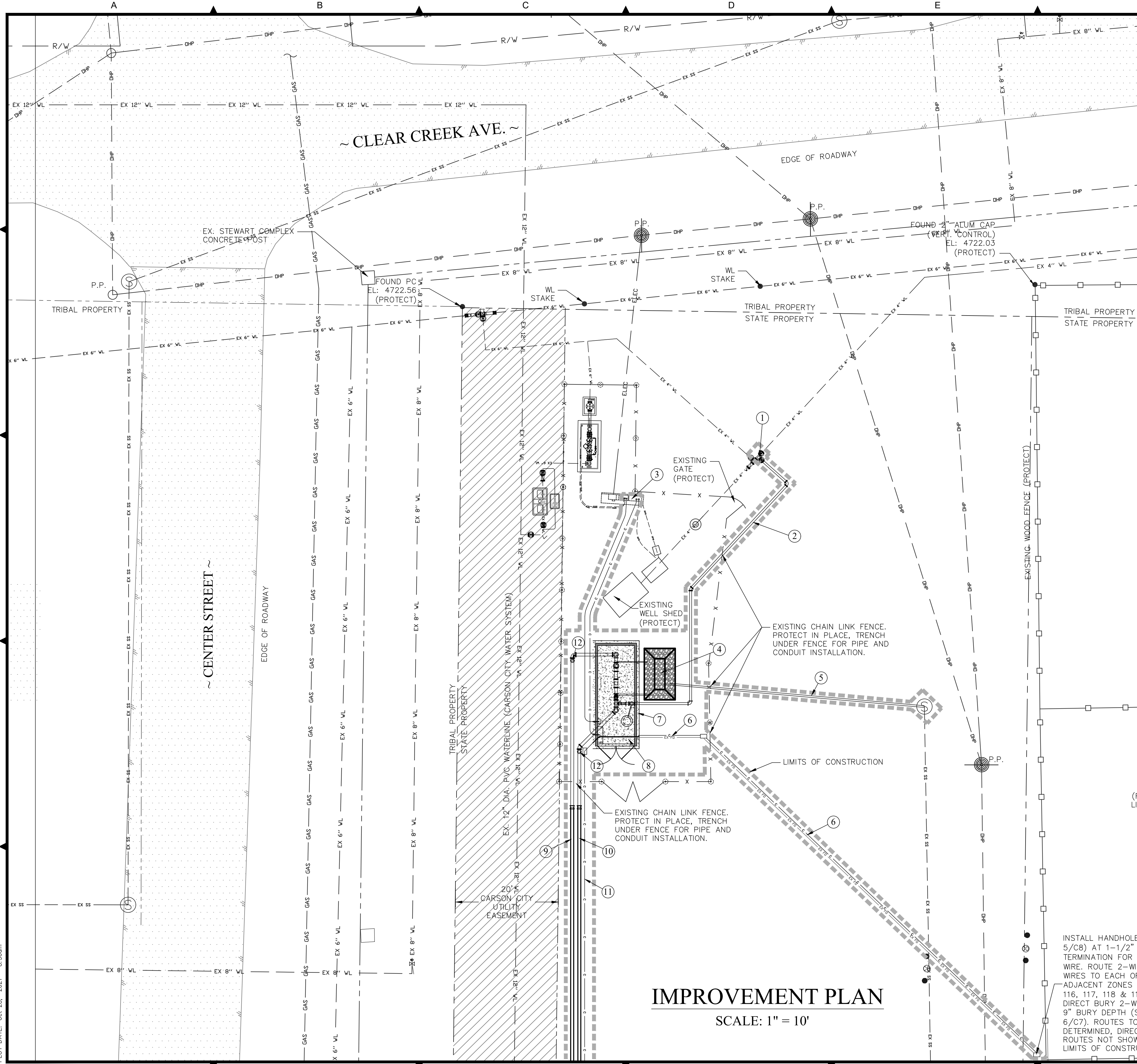
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 SITE IMPROVEMENTS
 CARSON CITY NEVADA

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SHEET NUMBER
C3
 3 OF 13

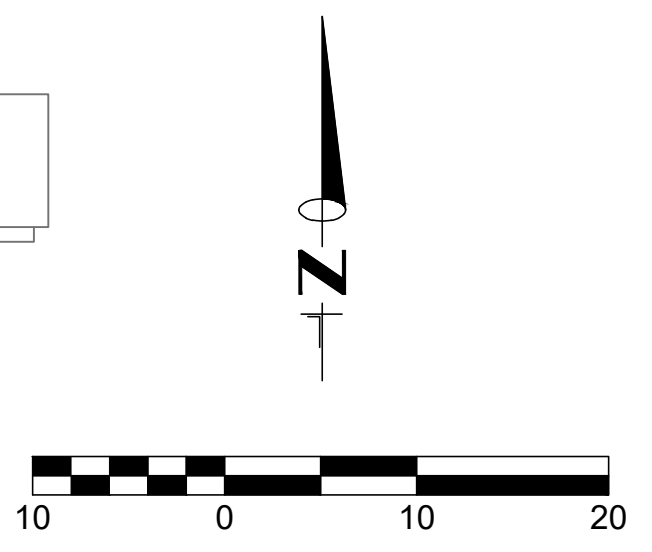
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 PLOT DATE: Oct 28, 2021 - 8:49am

FILE SPEC: R:\Client\Projects\State of Nevada Public Works Division 144\1717 NSPW Stewart CA\5.0 Drawings\5.2 DWG\Sheet Files\C4 SITE IMPROVEMENT LAYOUT.dwg
 PLOT DATE: Oct 28, 2021 - 8:50am



IMPROVEMENT PLAN
 SCALE: 1" = 10'

NOTE:
 ~ ALL IMPROVEMENTS SHALL BE DONE WITHIN
 STATE PROPERTY



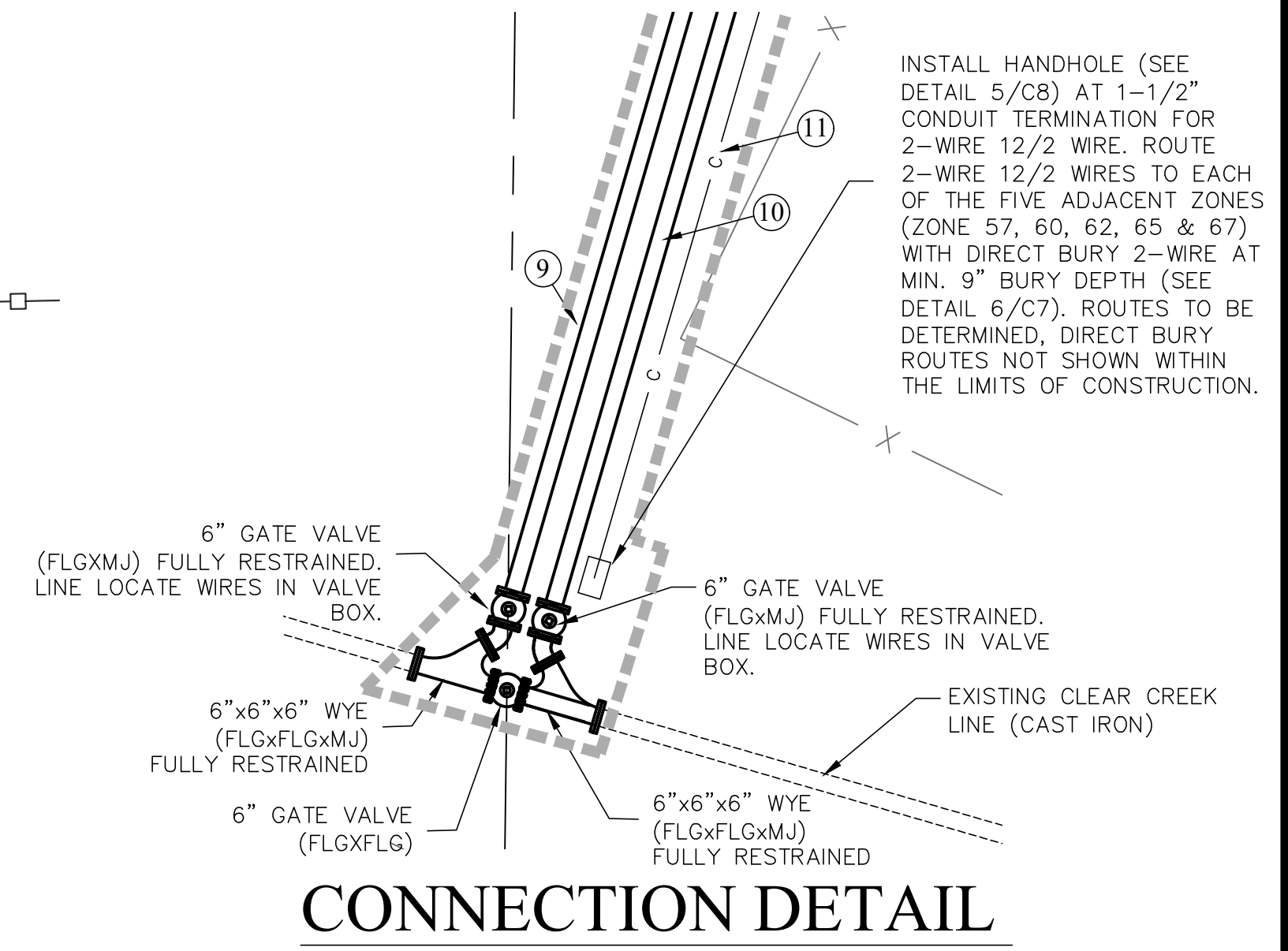
CONSTRUCTION NOTES (THIS VIEW)

- SEE ELECTRICAL PLANS FOR CONNECTIONS TO EXISTING LOAD CENTER.
- CONTRACTOR SHALL CONSULT OWNER FOR LOCATION TO DISPOSED OF SITE SPOILS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DISPOSE OF CLEAR AND GRUB SPOILS AND ALL UNUSABLE MATERIALS.

SYSTEM IMPROVEMENTS (MAJOR COMPONENTS):

SEE "SITE IMPROVEMENT PLAN CLOSE-UP", SHEET C5 FOR ADDITIONAL IMPROVEMENT DESCRIPTIONS

- ITEM NO.
- POINT OF CONNECTION TO EXISTING STEWART COMPLEX WATER SYSTEM (CONSULT WITH STATE OF NEVADA BUILDINGS AND GROUNDS). INSTALL (3) GATE VALVES AND WYES.
 - 4" DUCTILE IRON WATER LINE (CLASS 350). WELL SUPPLY LINE.
 - ELECTRICAL CONNECTIONS (SEE ELECTRICAL SHEET)
 - DRAINAGE BASIN. SEE DETAIL 4/C7.
 - 4" DIA. PVC OVERFLOW DRAIN LINE TO EXISTING SEWER MANHOLE. SEE SHEET C5 CLOSE-UP.
 - 1-1/2" FIBER OPTIC CONDUIT TO IRRIGATION CONTROLLER AND 1-1/2" CONDUIT FOR 2-WIRE SYSTEM
 - CONCRETE PAD. SEE DETAIL 2/C6.
 - CONEX CONTAINER. SEE DETAIL 1,3,4/C6.
 - 6" DIA. RAW WATER LINE FROM CLEAR CREEK. SEE DETAIL 1/C7.
 - 6" DIA. SUPPLY LINE TO STEWART IRRIGATION SYSTEM. SEE DETAIL 1/C7.
 - 1-1/2" DIA. CONDUIT FOR 2-WIRE TO IRRIGATION BOX
 - LINE LOCATE BOX. SEE DETAIL 2,3/C7.



CONNECTION DETAIL
 SCALE: 1" = 5'

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 5510 LONGLEY LANE
 RENO, NEVADA 89511
 PHONE: (775) 851-4788
 FAX: (775) 851-0766
 FARRWESTENGINEERING.COM

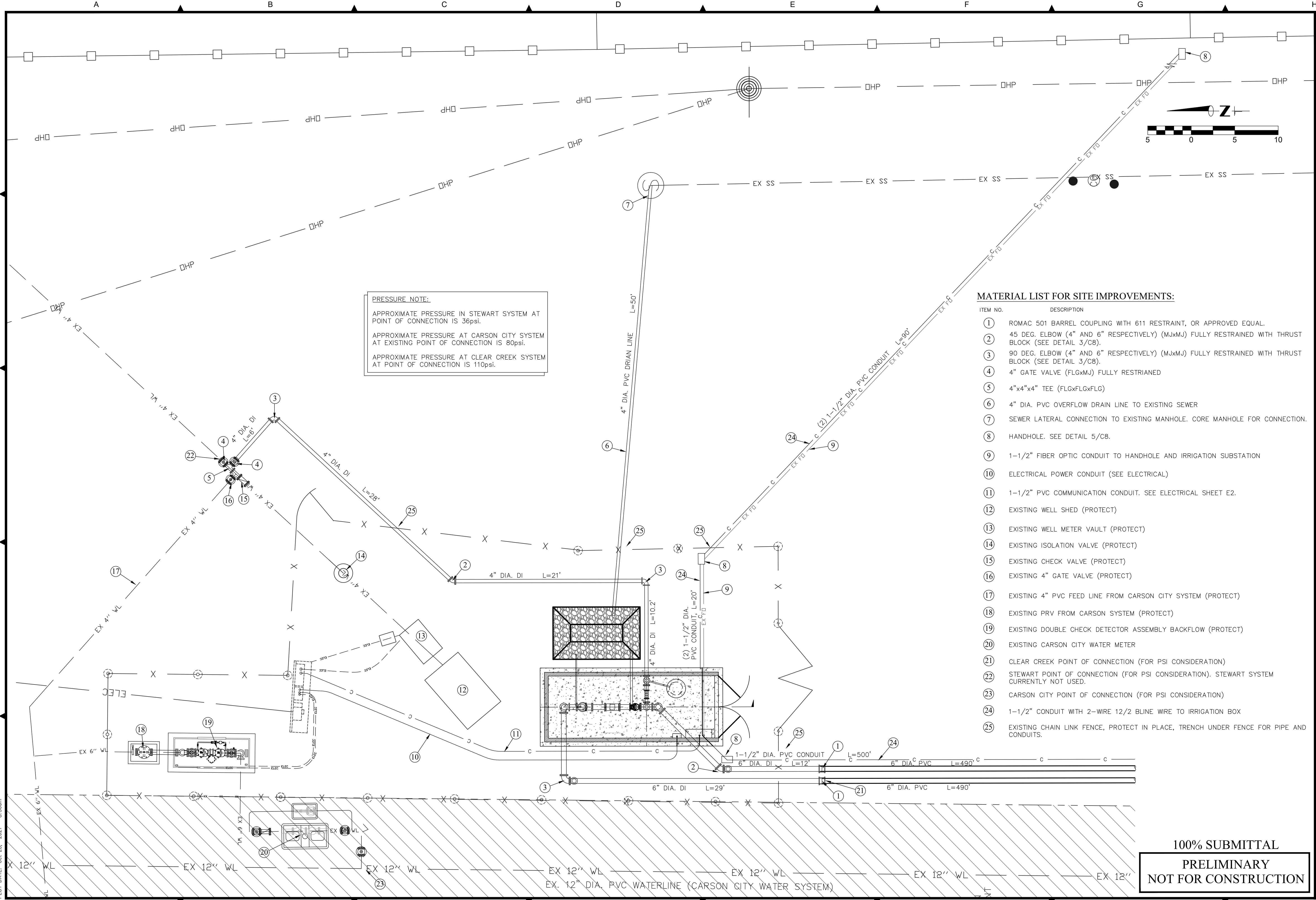
CHARLES L.H.A. RENO
 Exp. 12/31/21
 CIVIL
 No. 20841
 SIGNED: 10/28/21

REPLACE DOMESTIC FIRE AND WATER MAIN IRRIGATION SYSTEM IMPROVEMENTS 17-M36(A)
SITE IMPROVEMENT LAYOUT

CARSON CITY NEVADA

SHEET NUMBER
C4
 4 OF 13

FILE SPEC: R:\Client\Projects\State of Nevada Public Works Division 144\1717 NSPW Stewart CA\5.0 Drawings\5.2 DWG\Sheet Files\C5 SITE IMPROVEMENT PLAN CLOSE-UP.dwg
 PLOT DATE: Oct 28, 2021 - 8:50am



PRESSURE NOTE:
 APPROXIMATE PRESSURE IN STEWART SYSTEM AT POINT OF CONNECTION IS 36psi.
 APPROXIMATE PRESSURE AT CARSON CITY SYSTEM AT EXISTING POINT OF CONNECTION IS 80psi.
 APPROXIMATE PRESSURE AT CLEAR CREEK SYSTEM AT POINT OF CONNECTION IS 110psi.

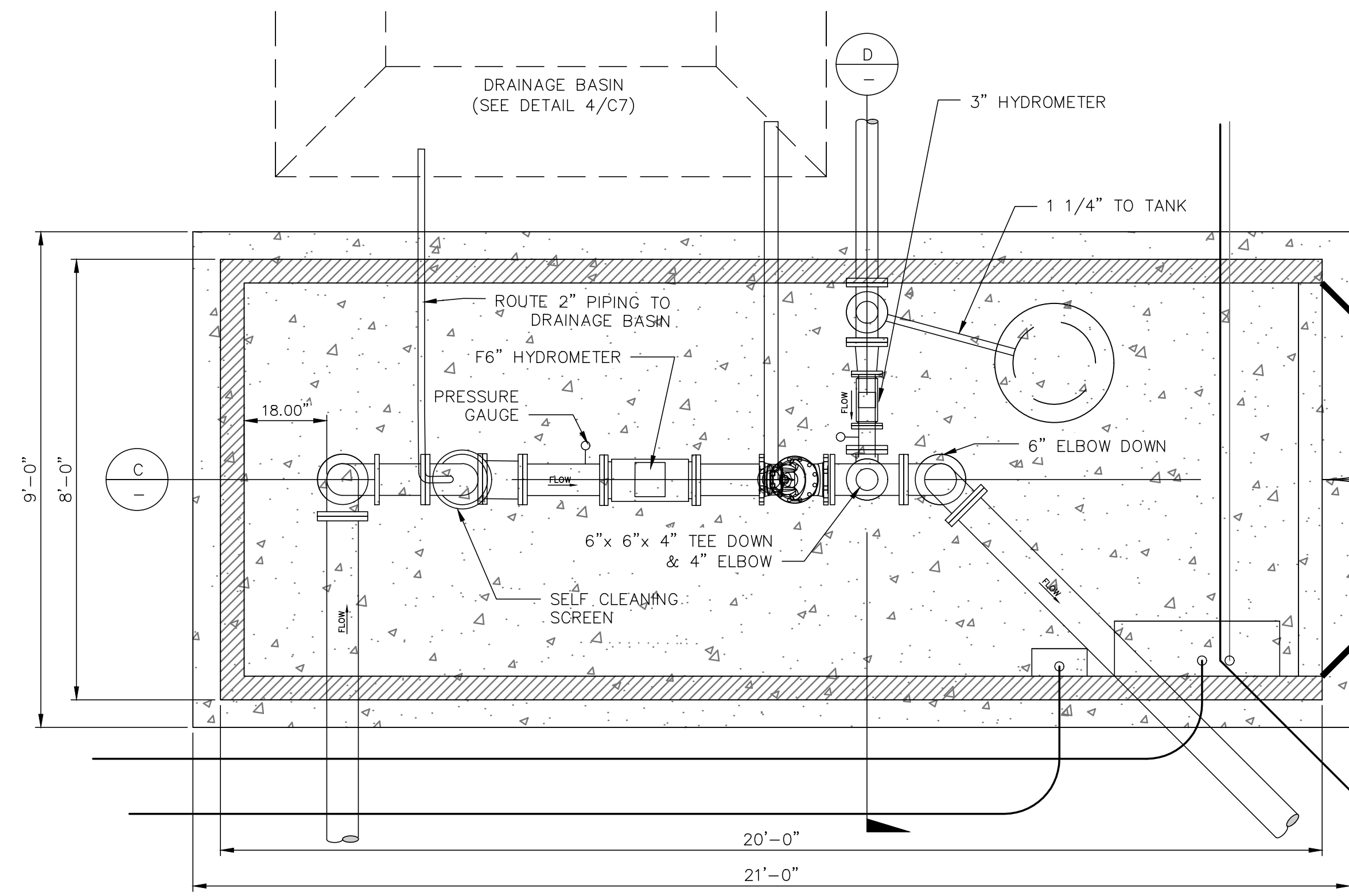
MATERIAL LIST FOR SITE IMPROVEMENTS:

- | ITEM NO. | DESCRIPTION |
|----------|--|
| 1 | ROMAC 501 BARREL COUPLING WITH 611 RESTRAINT, OR APPROVED EQUAL. |
| 2 | 45 DEG. ELBOW (4" AND 6" RESPECTIVELY) (MjxMj) FULLY RESTRAINED WITH THRUST BLOCK (SEE DETAIL 3/C8). |
| 3 | 90 DEG. ELBOW (4" AND 6" RESPECTIVELY) (MjxMj) FULLY RESTRAINED WITH THRUST BLOCK (SEE DETAIL 3/C8). |
| 4 | 4" GATE VALVE (FLGxMj) FULLY RESTRAINED |
| 5 | 4"x4"x4" TEE (FLGxFLGxFLG) |
| 6 | 4" DIA. PVC OVERFLOW DRAIN LINE TO EXISTING SEWER |
| 7 | SEWER LATERAL CONNECTION TO EXISTING MANHOLE. CORE MANHOLE FOR CONNECTION. |
| 8 | HANDHOLE. SEE DETAIL 5/C8. |
| 9 | 1-1/2" FIBER OPTIC CONDUIT TO HANDHOLE AND IRRIGATION SUBSTATION |
| 10 | ELECTRICAL POWER CONDUIT (SEE ELECTRICAL) |
| 11 | 1-1/2" PVC COMMUNICATION CONDUIT. SEE ELECTRICAL SHEET E2. |
| 12 | EXISTING WELL SHED (PROTECT) |
| 13 | EXISTING WELL METER VAULT (PROTECT) |
| 14 | EXISTING ISOLATION VALVE (PROTECT) |
| 15 | EXISTING CHECK VALVE (PROTECT) |
| 16 | EXISTING 4" GATE VALVE (PROTECT) |
| 17 | EXISTING 4" PVC FEED LINE FROM CARSON CITY SYSTEM (PROTECT) |
| 18 | EXISTING PRV FROM CARSON SYSTEM (PROTECT) |
| 19 | EXISTING DOUBLE CHECK DETECTOR ASSEMBLY BACKFLOW (PROTECT) |
| 20 | EXISTING CARSON CITY WATER METER |
| 21 | CLEAR CREEK POINT OF CONNECTION (FOR PSI CONSIDERATION) |
| 22 | STEWART POINT OF CONNECTION (FOR PSI CONSIDERATION). STEWART SYSTEM CURRENTLY NOT USED. |
| 23 | CARSON CITY POINT OF CONNECTION (FOR PSI CONSIDERATION) |
| 24 | 1-1/2" CONDUIT WITH 2-WIRE 12/2 BLINE WIRE TO IRRIGATION BOX |
| 25 | EXISTING CHAIN LINK FENCE, PROTECT IN PLACE, TRENCH UNDER FENCE FOR PIPE AND CONDUITS. |

100% SUBMITTAL
 PRELIMINARY
 NOT FOR CONSTRUCTION

DATE: AUG. 2021	BY: [Signature]	APP: [Signature]	DATE: [Blank]
REVISION: [Blank]	DESCRIPTION: [Blank]	SCALE: [Blank]	DATE: [Blank]
JOB NO.: 1717	DESIGNED: [Blank]	DRAWN: [Blank]	CHECKED: [Blank]
<p>FARR WEST ENGINEERING 5510 LONGLEY LANE RENO, NEVADA 89511 PHONE: (775) 851-4788 FAX: (775) 851-0766 FARRWESTENGINEERING.COM</p>			
<p>PROFESSIONAL ENGINEER - STATE OF NEVADA CHARLES L.H.A. RENO Exp. 12/31/21 CIVIL No. 20841 SIGNED: 10/28/21</p>			
<p>REPLACE DOMESTIC FIRE AND WATER MAIN IRRIGATION SYSTEM IMPROVEMENTS 17-M36(A) SITE IMPROVEMENT PLAN CLOSE-UP</p>			
SHEET NUMBER			NEVADA
C5			CARSON CITY
5 OF 13			

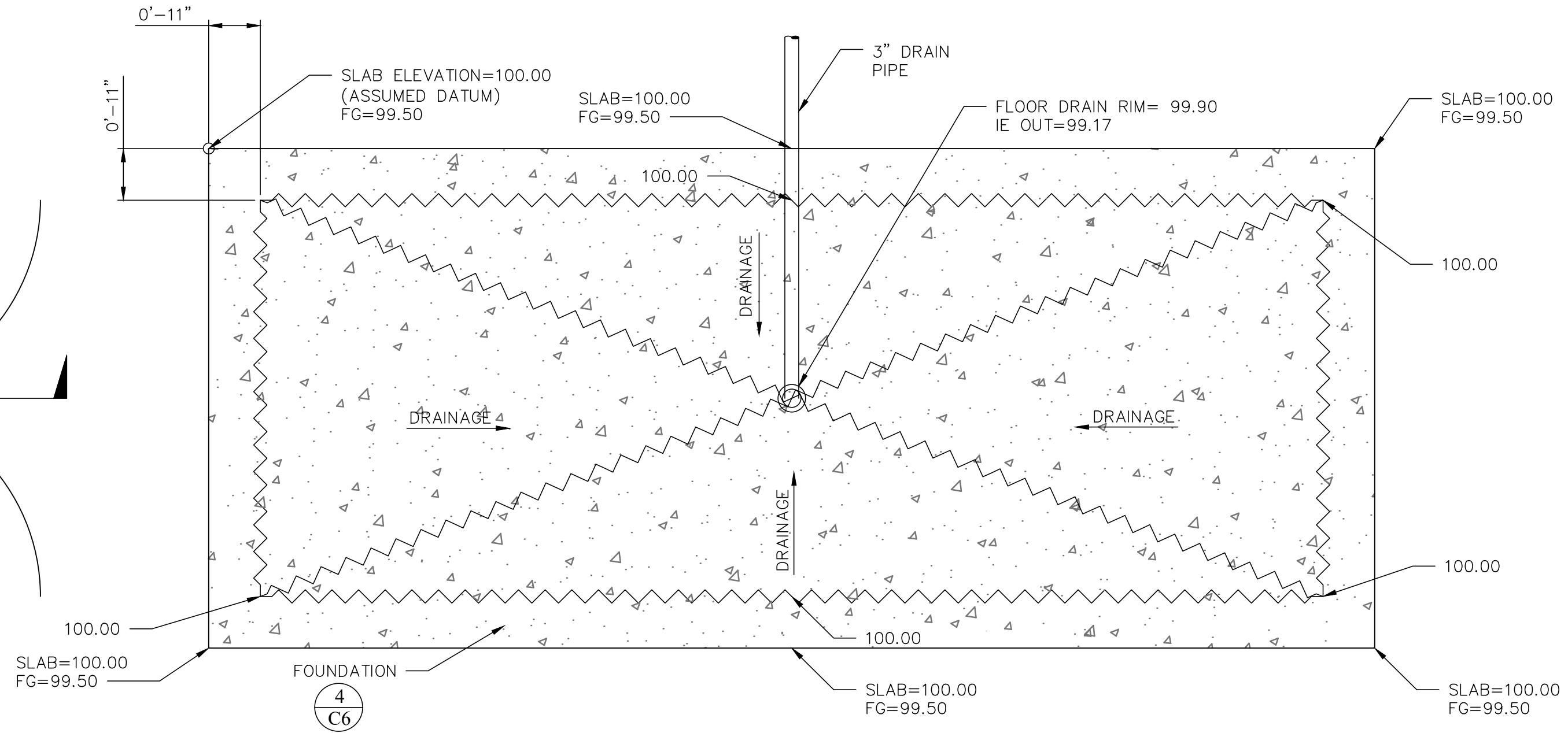
A B C D E F G H



IRRIGATION VALVING PLAN VIEW

SCALE: 1"=2'

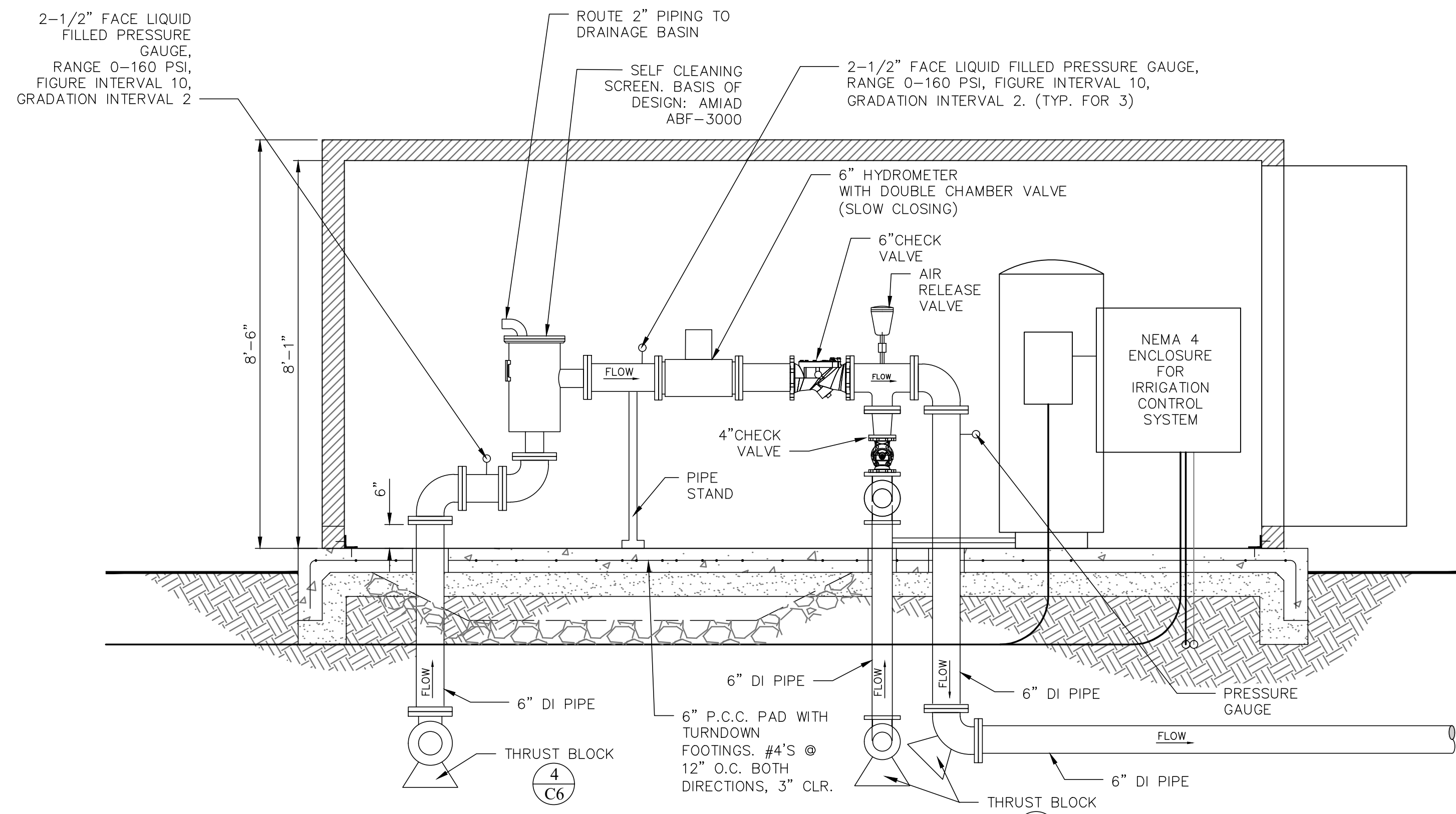
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CONCRETE SLAB GRADING PLAN

SCALE: 1"=2'

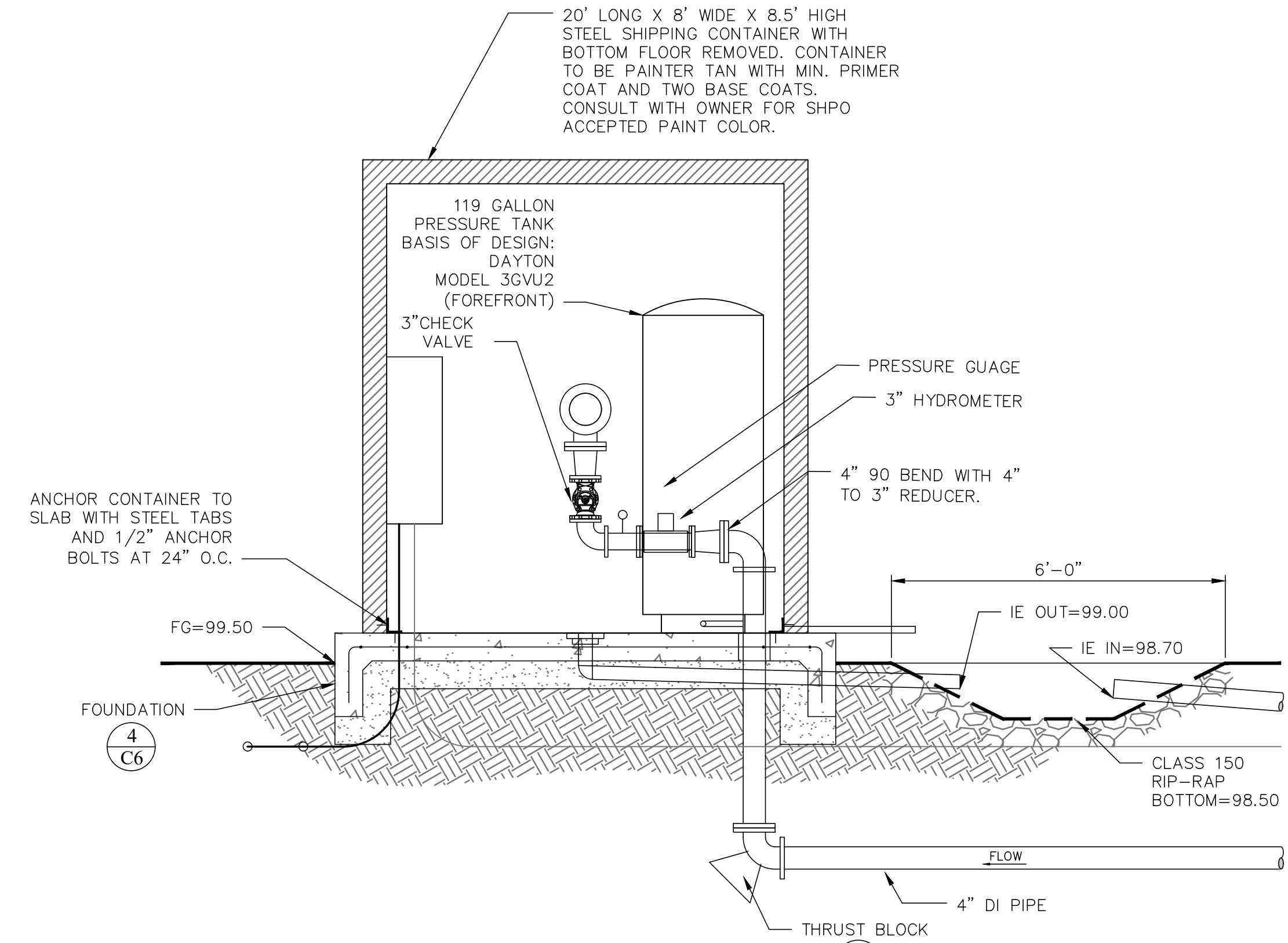
2



SECTION VIEW

SCALE: 1"=2'

3



SECTION VIEW

SCALE: 1"=2'

4

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JOB NO.:	1717
DATE:	AUG. 2021
SCALE:	
DESIGNED:	
DRAWN:	
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ONE INCH AT FULL SCALE:	
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REVISION:	
BY:	
APP:	
DATE:	

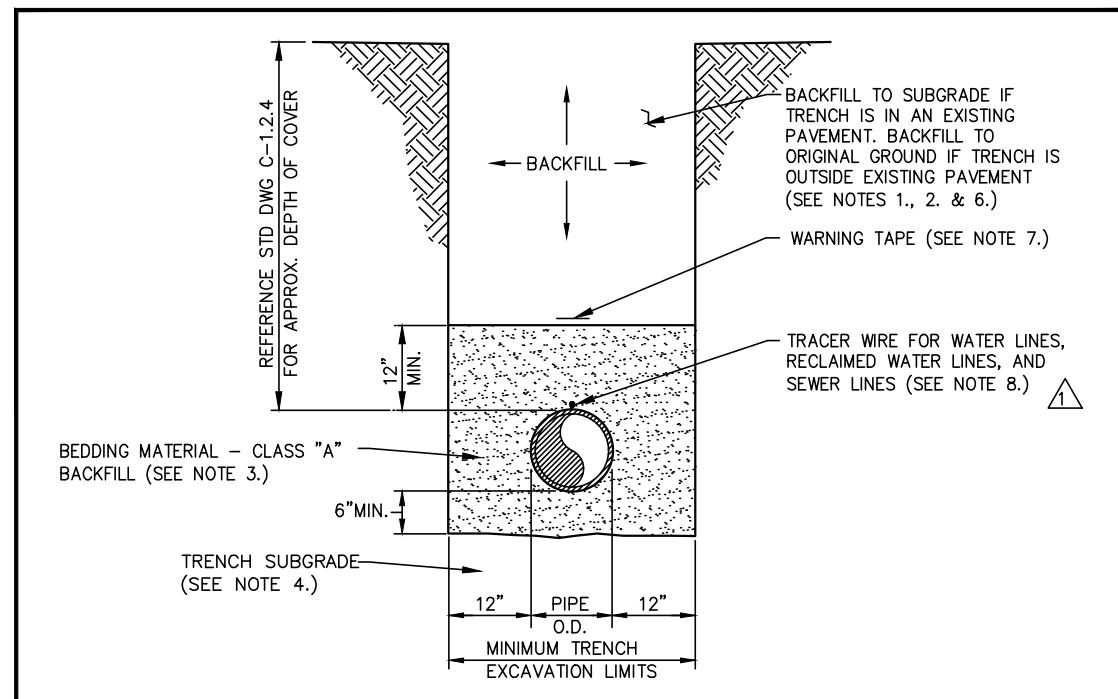
FARR WEST ENGINEERING
 5510 LONGLEY LANE
 RENO, NEVADA 89511
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PROFESSIONAL ENGINEER - STATE OF NEVADA
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REPLACE DOMESTIC FIRE AND WATER MAIN
 IRRIGATION SYSTEM IMPROVEMENTS 17-M36(A)
 DETAIL SHEET
 CARSON CITY NEVADA

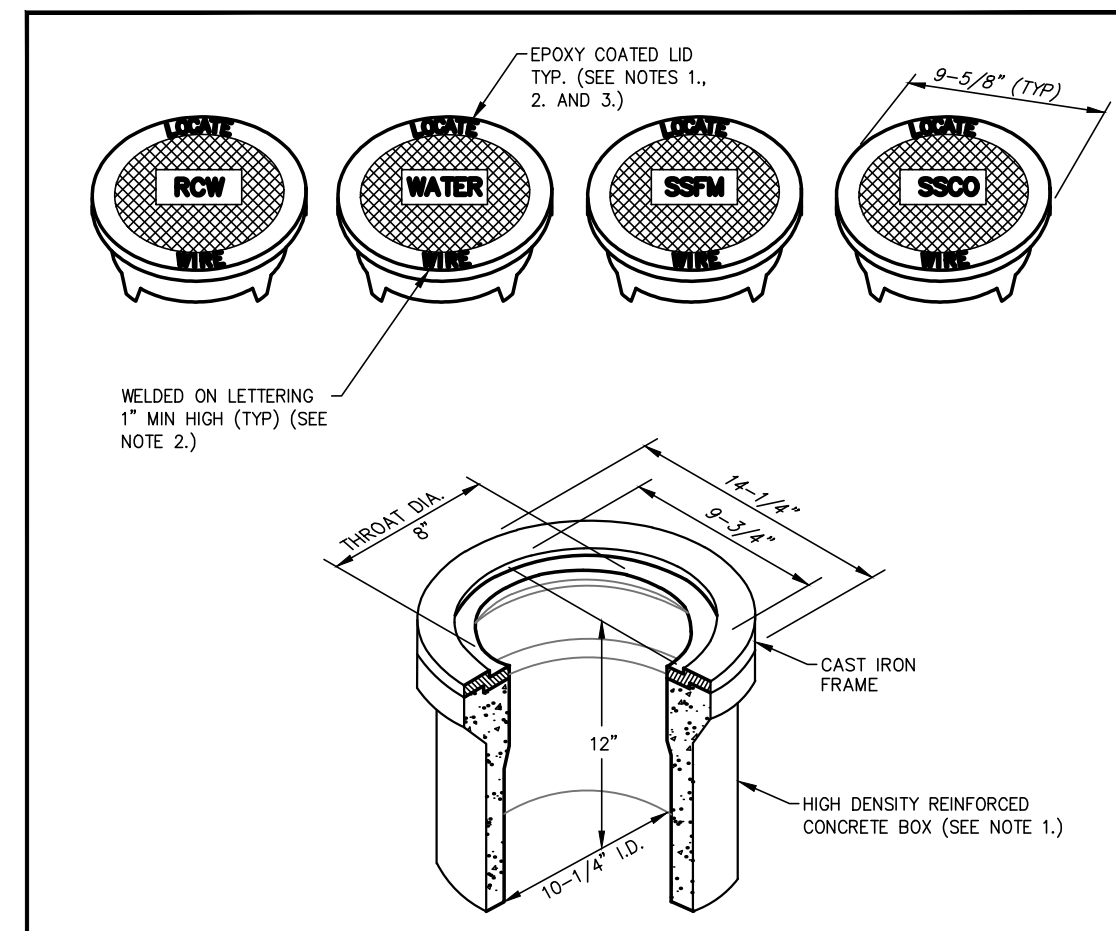
SHEET NUMBER
C6
 6 OF 13

FILE SPEC: R:\Client\Projects\State of Nevada Public Works Division 144\1717 NSPW Stewart CA\5.0 Drawings\5.2 DWG\Sheet Files\C6 Detail Sheet.dwg
 PLOT DATE: Oct 28, 2021 - 8:51am



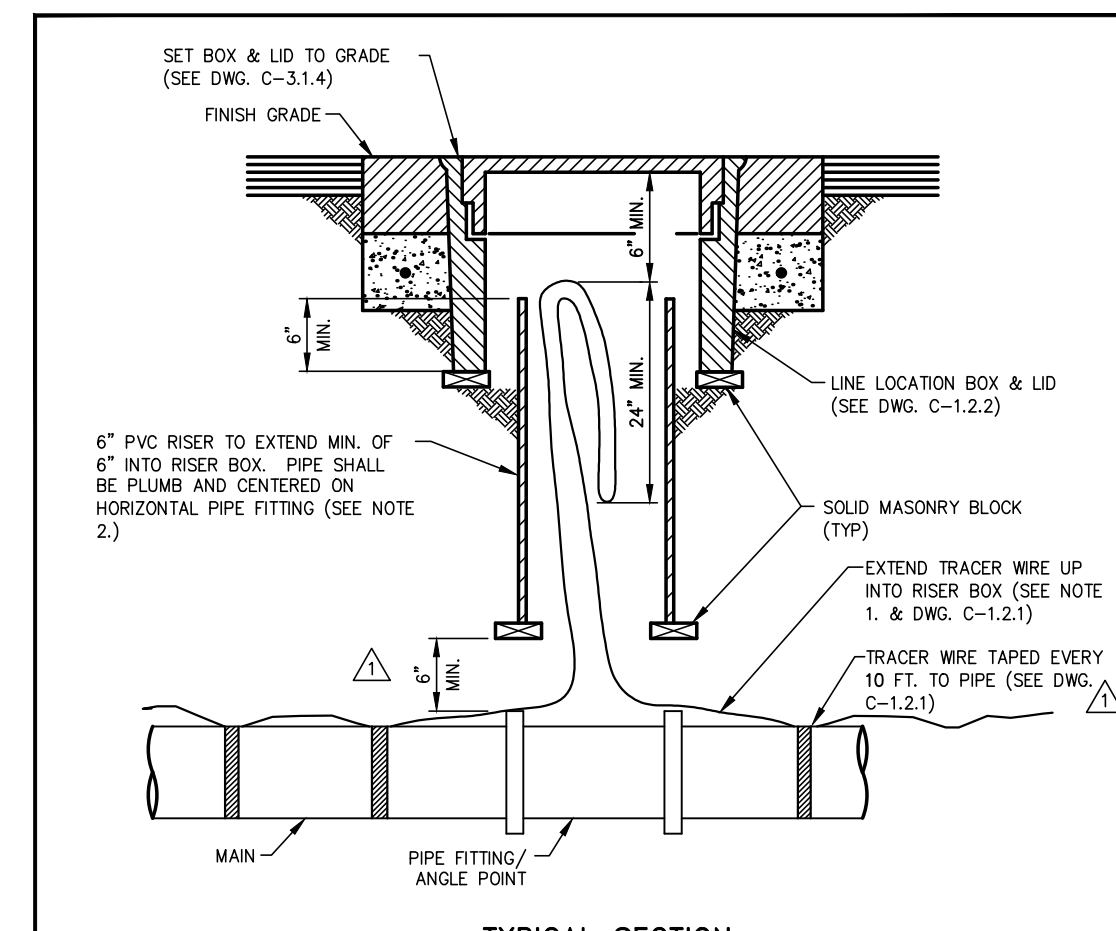
- NOTES:**
- WATER DENSIFIED BACKFILL AND TUNNELING SHALL BE BY SPECIAL PROVISION ONLY.
 - BACKFILL SHALL CONFORM TO THE REQUIREMENTS OF CLASS E BACKFILL AS SPECIFIED IN SUBSECTION 200.03.06 OF THE SSPWC. MATERIAL SHALL BE PLACED IN LIFT THICKNESS SPECIFIED IN SUBSECTION 305.10 OF THE SSPWC AND DENSIFIED TO 90% RELATIVE COMPACTION.
 - BEDDING SHALL CONFORM TO THE REQUIREMENTS OF CLASS A BACKFILL AS SPECIFIED IN SUBSECTION 200.03.02 OF THE SSPWC. MATERIAL SHALL BE DENSIFIED TO 90% RELATIVE COMPACTION.
 - PLANS SHALL INCLUDE A DETAIL FOR SUBGRADE STABILIZATION INCLUDING BACKFILL MATERIAL, STRUCTURAL GEOTEXTILE FILTER FABRIC AND MODIFIED CUTOFF COLLARS WHEN POTENTIAL FOR UNSTABLE SUBGRADGES EXIST, SUBJECT TO THE APPROVAL OF THE CARSON CITY ENGINEER OR PUBLIC WORKS DIRECTOR.
 - NOT USED.
 - FOR THE PURPOSE OF PAYMENT, EXCAVATION AND BACKFILL QUANTITIES ARE BASED ON THESE STANDARD DRAWINGS, AND NO ADDITIONAL COMPENSATION WILL BE MADE. SHORING OR SLOPED CUT SLOPES MAY BE NECESSARY, BUT THERE WILL BE NO ADDITIONAL PAYMENT. ALL EXCAVATIONS SHALL CONFORM TO THE LATEST O.S.H.A. REQUIREMENTS.
 - PLACE WARNING TAPE 1 FOOT ABOVE ALL BURIED PIPES AND CONDUITS.
 - TRACER WIRE SHALL BE 12 GAUGE (MINIMUM THICKNESS) INSULATED SOLID COPPER WIRE. INSULATION SHALL BE 30 MIL THICK. PLANS SHALL SPECIFY WIRE STRENGTH AND INSULATION THICKNESS FOR BORING APPLICATIONS. SPLICES SHALL BE CONNECTED BY WIRE NUTS, SEALED WITH AQUA SEAL OR SILICON FILLED, AND DOUBLE WRAPPED WITH U/L LISTED ELECTRICAL TAPE. TRACER WIRE COLOR SHALL BE BLUE FOR WATER, PURPLE FOR RECLAIMED WATER, GREEN FOR SEWER, AND YELLOW FOR ELECTRICAL OR FIBER OPTIC.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION
1	NOTE 8	9/17	TRENCH EXCAVATION AND BACKFILL	CARSON CITY
				DRAWING NO. C-1.2.1 (305)
				DATE SEP 2017



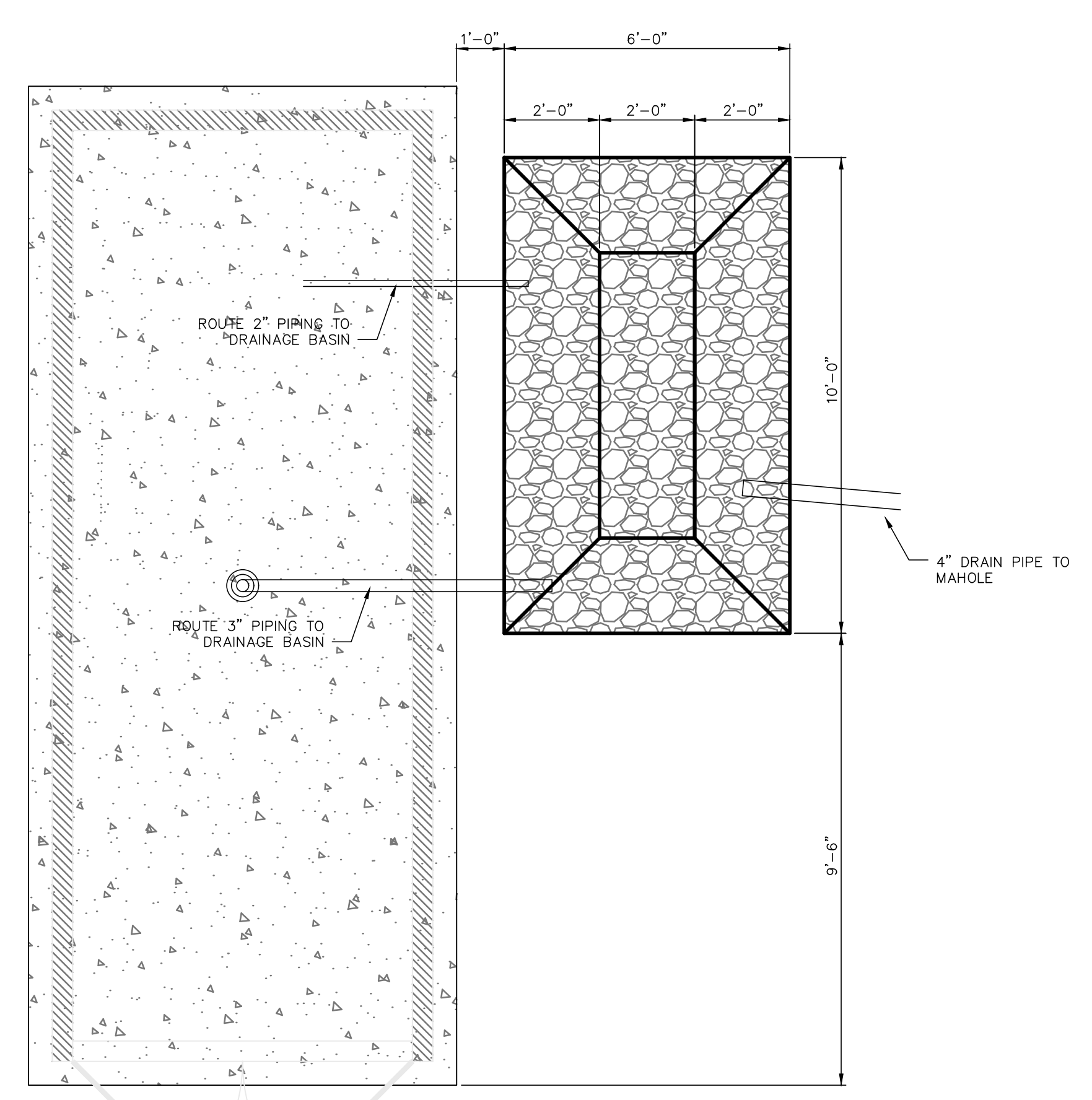
- NOTES:**
- BOX AND LID SHALL BE TRAFFIC RATED WITH A MINIMUM INSIDE DIAMETER OF 10 INCHES (CHRISTY G3 TRAFFIC VALVE BOX & LID OR APPROVED EQUAL).
 - CAST IRON LID SHALL BE MARKED AT THE FACTORY "LOCATE WIRE" FOR WATER APPLICATIONS, "RW" FOR RECLAIMED WATER APPLICATIONS, "SSM" FOR SANITARY SEWER FORCE MAIN APPLICATIONS, AND "SSCO" FOR SANITARY SEWER CLEANOUT APPLICATIONS.
 - CAST IRON LID SHALL BE EPOXY COATED AT THE FACTORY, OR POWDER COATED, COLOR SHALL BE BLUE FOR WATER APPLICATIONS, PURPLE FOR RECLAIMED WATER APPLICATIONS AND GREEN FOR SANITARY SEWER APPLICATIONS.
 - BOX SHALL BE SET OR ADJUSTED TO GRADE PER DRAWING NO. C-3.1.4. RISER FOR ADJUSTED BOX SHALL BE PER DRAWING NO. C-3.1.4. FOR OVERLAY ADJUSTMENTS, RISER WILL NOT REQUIRE REPLACEMENT OR EXTENSION IF IT EXTENDS A MINIMUM OF 2 INCHES INTO ADJUSTED BOX.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION
1	NOTE 1	9/17	LINE LOCATION BOX & LID	CARSON CITY
				DRAWING NO. C-1.2.2 (306,307)
				DATE SEP 2017

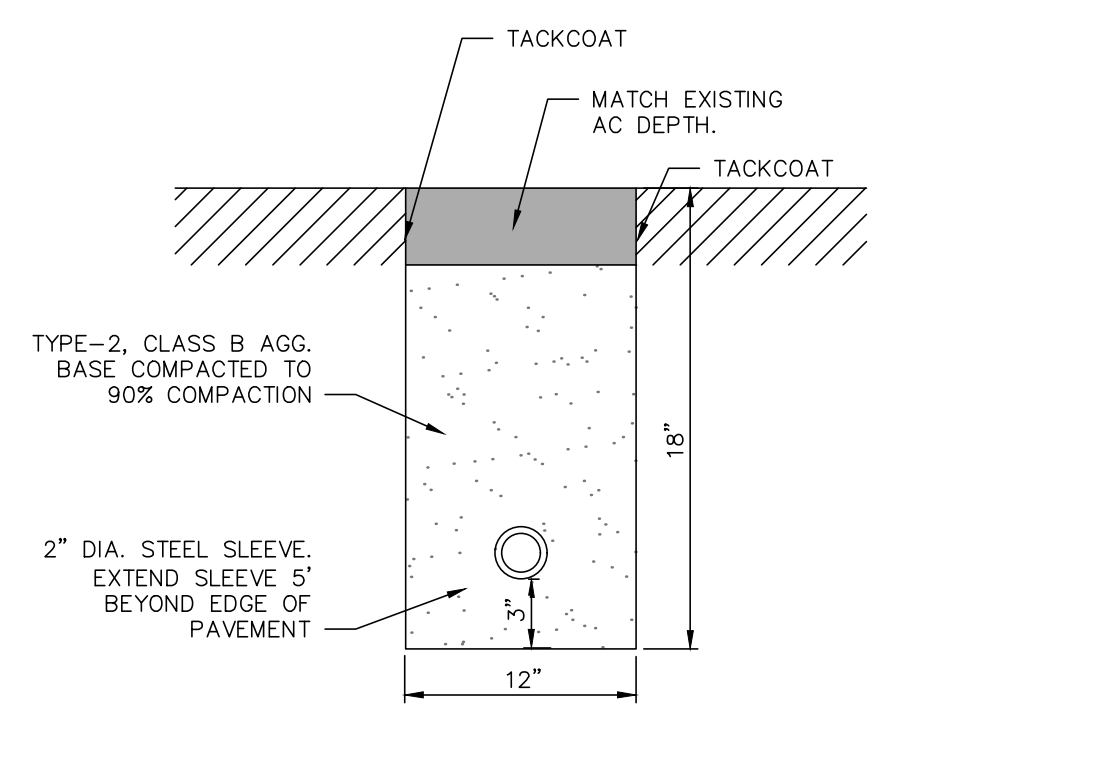


- NOTES:**
- WIRE SHALL BE CONTINUOUS IN RISER AND SHALL NOT BE SPLICED WITHIN 10 FEET OF RISER.
 - RISER COLOR SHALL BE BLUE FOR WATER APPLICATIONS, PURPLE FOR RECLAIMED WATER APPLICATIONS, AND GREEN FOR SANITARY SEWER APPLICATIONS.

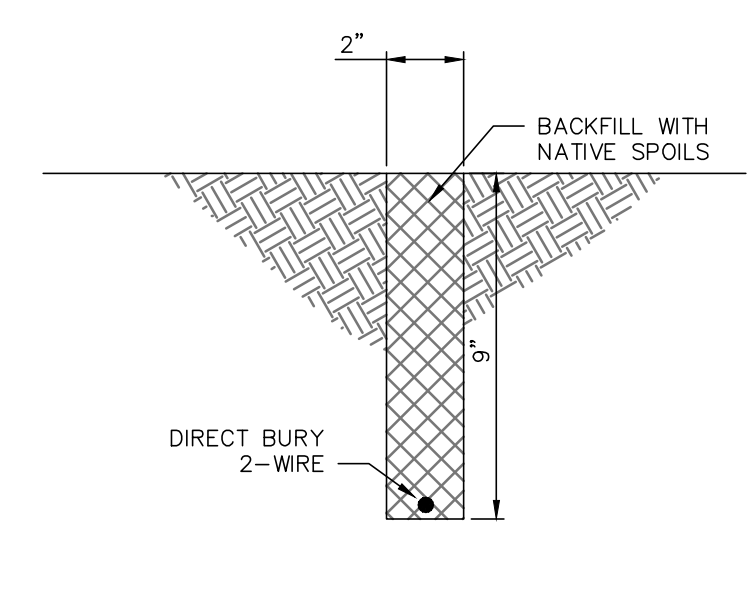
NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION
1	NOTE 2	9/17	LINE LOCATION RISER	CARSON CITY
				DRAWING NO. C-1.2.3 (203,308)
				DATE SEP 2017



PLAN VIEW



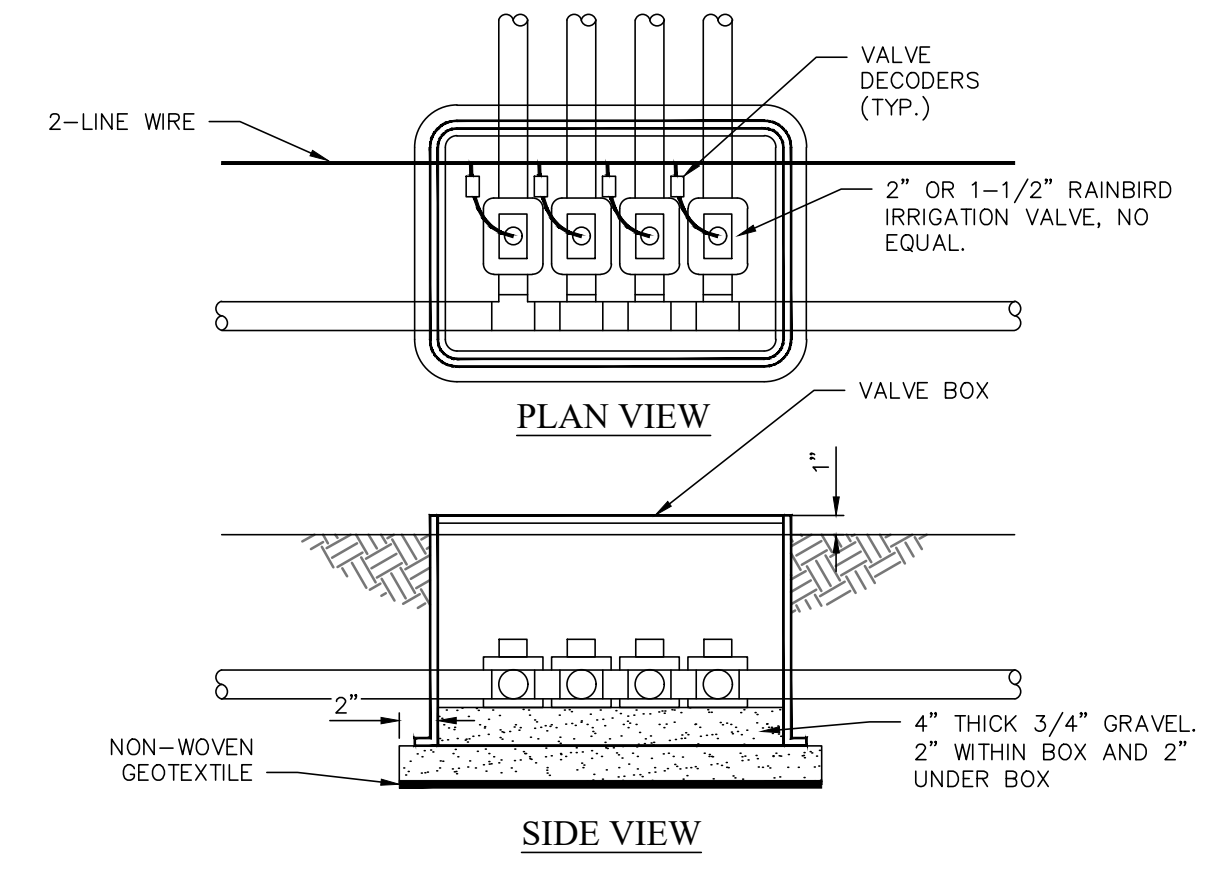
SLEEVE DETAIL AT PAVEMENT CUT
SCALE = NONE



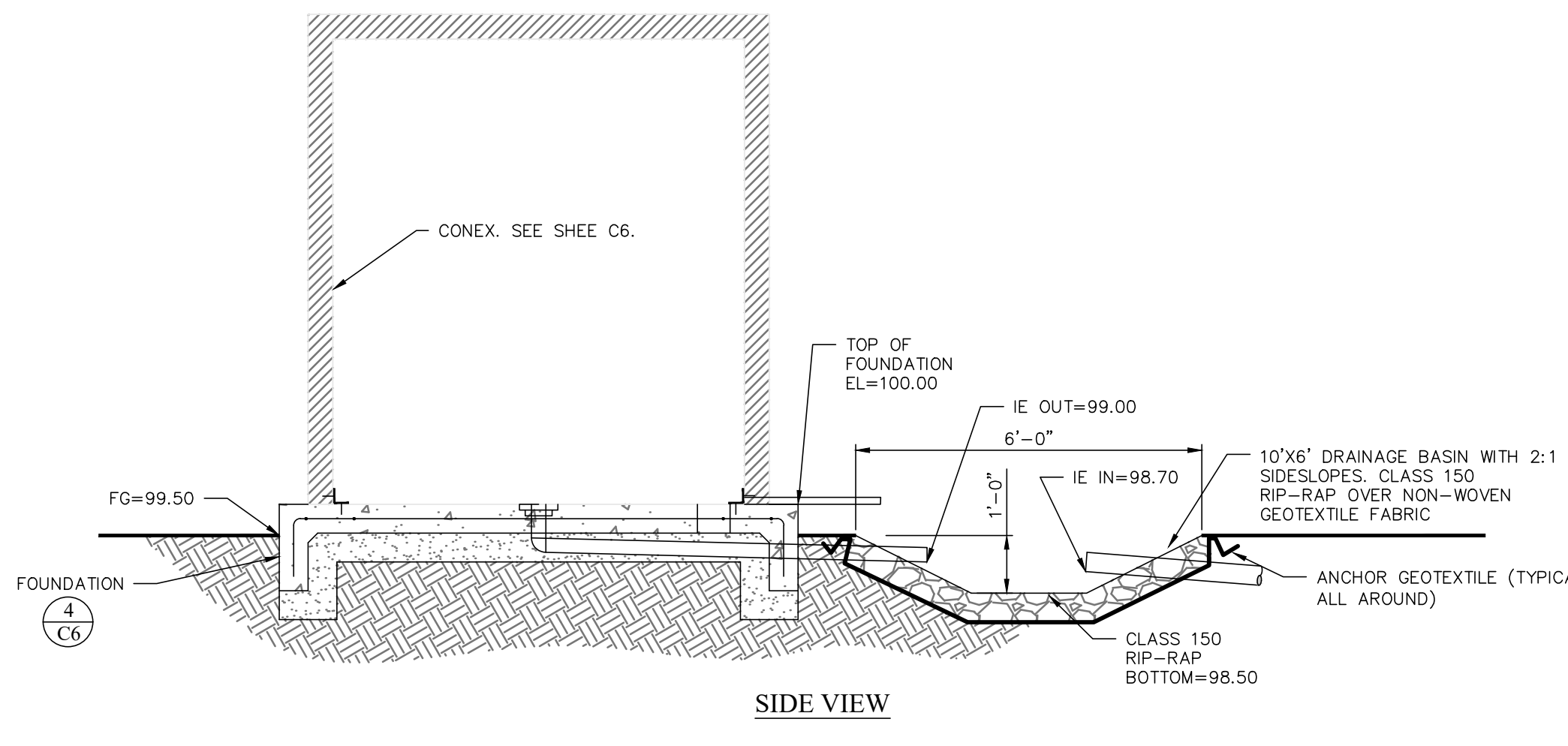
2-WIRE TRENCH DETAIL
SCALE = NONE



RAINBIRD VBSPRH - SUPER JUMBO VALVE BOX - BLACK BODY WITH GREEN LID OR ADS 13\"/>



IRRIGATION BOX LAYOUT
SCALE = NONE



DRAINAGE BASIN LAYOUT DETAIL
SCALE = NONE

JOB NO.:	1717	DESIGNED:		CHECKED:	
DATE:	AUG. 2021	DRAWN:			
SCALE:					

ONE INCH AT FULL SCALE:

REVISION	DESCRIPTION	BY	DATE

FARR WEST ENGINEERING
 5510 LONGLEY LANE
 RENO, NEVADA 89511
 PHONE: (775) 851-4788
 FAX: (775) 851-0766
 FARRWESTENGINEERING.COM

PROFESSIONAL ENGINEER - STATE OF NEVADA
 CHARLES L.H.A. RENO
 Exp. 12/31/21
 CIVIL
 No. 20841
 SIGNED: 10/28/21

REPLACE DOMESTIC FIRE AND WATER MAIN IRRIGATION SYSTEM IMPROVEMENTS 17-M36(A)

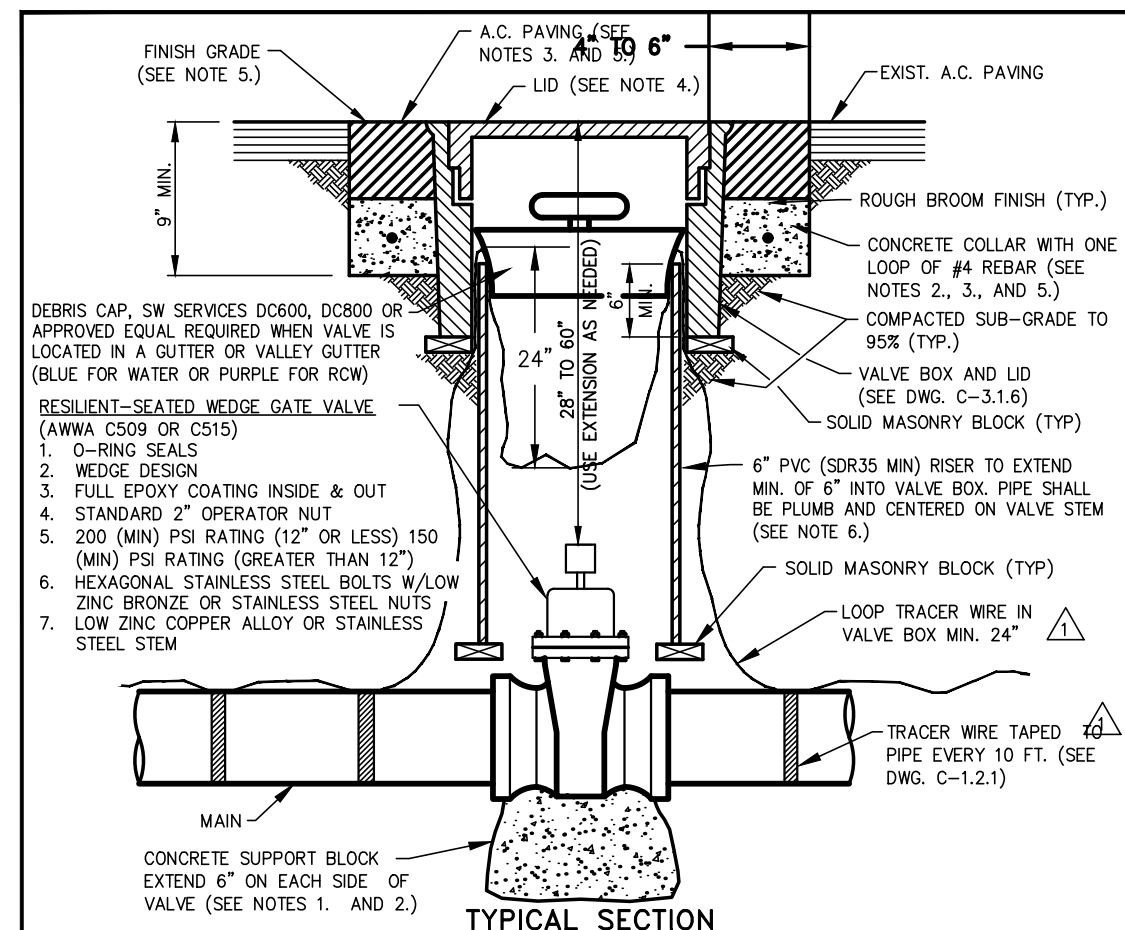
DETAIL SHEET

CARSON CITY NEVADA

SHEET NUMBER **C7**

7 OF 13

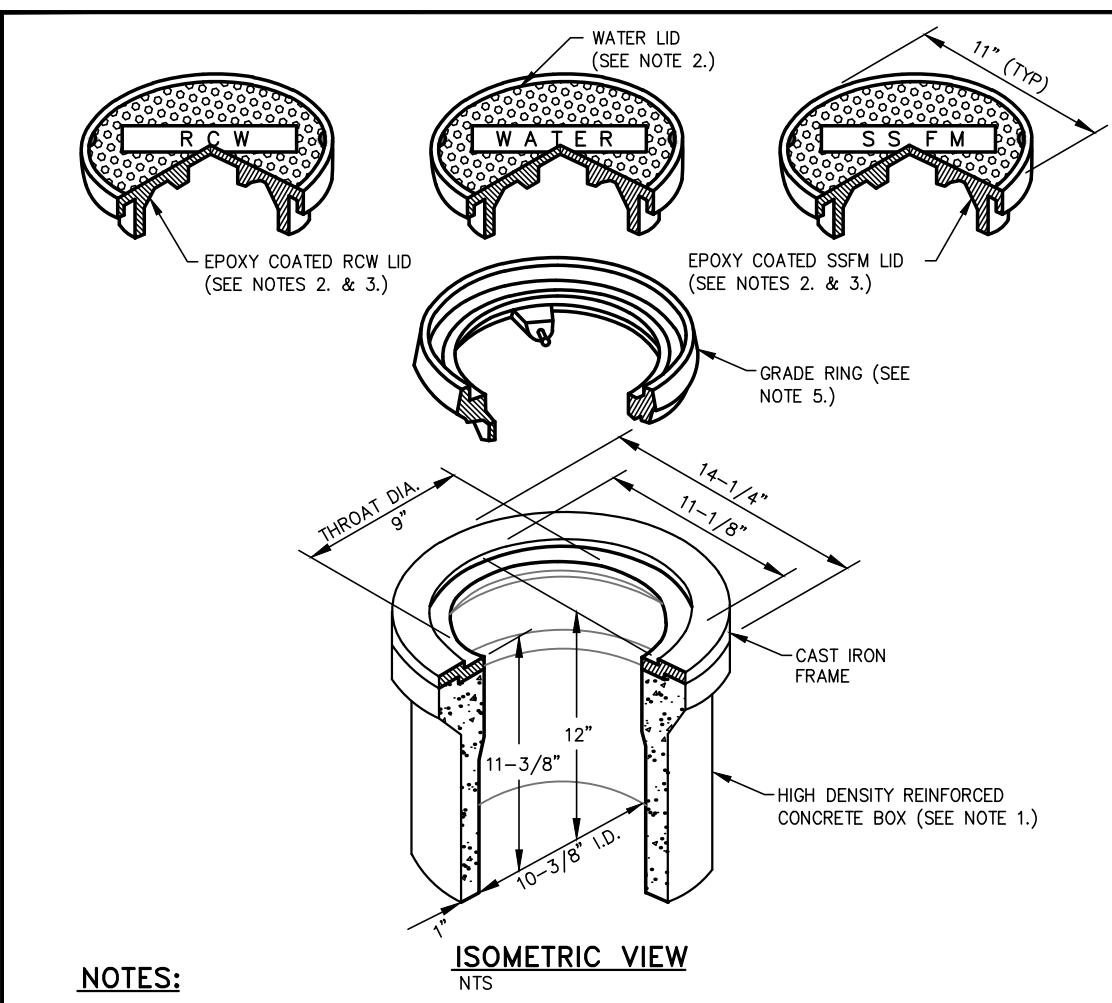
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- NOTES:**
- SUPPORT BLOCKING SHALL BE POURED AGAINST UNDISTURBED SOIL AND NOT PREVENT ACCESS TO BOLT ASSEMBLY OR VALVE JOINTS.
 - CONCRETE SHALL CONFORM TO THE SSPWC SECTION 337.10. REBAR SHALL ONLY BE USED WHEN THE VALVE BOX IS LOCATED OUTSIDE PAVED AREAS.
 - THE CONCRETE COLLAR SHALL BE LEFT 2 1/2 INCHES - 3 INCHES BELOW FINISHED ASPHALT SURFACE. APPLY AN APPROVED TACK COAT (CONFORMING TO THE SSPWC SECTION 316) AND FILL VOID BETWEEN ADJACENT PAVEMENT AND FRAME WITH TYPE 3 PG 64-22 PAVING (CONFORMING TO THE SSPWC SECTION 320). APPLY FOG SEAL (CONFORMING TO THE SSPWC SECTION 317) TO THE ASPHALT SURFACE. ALL CUTS IN PAVING SHALL BE STRAIGHT AND EVEN. EXCEPTION: WHEN STRUCTURE NOT LOCATED IN ASPHALT PAVEMENT OR IN AN UNPAVED AREA, EXTEND CONCRETE TO FINISH GRADE.
 - LIDS SHALL BE SET FLUSH WITH FINISH GRADE UNLESS OTHERWISE NOTED.
 - WHEN LOCATED IN NDOT RIGHT-OF-WAY, CONCRETE COLLAR SHALL CONFORM TO NDOT STANDARD PLAN SHT R-4.3.3 AND STANDARD SPECIFICATION 609.
 - VALVES ON FIRE LINES SHALL BE UL/FM APPROVED AND MEET ALL APPLICABLE NFPA REQUIREMENTS.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION
1	TRACER WIRE	9/17		CARSON CITY
				DRAWING NO. C-3.1.4 (203,307)
				DATE SEP 2017

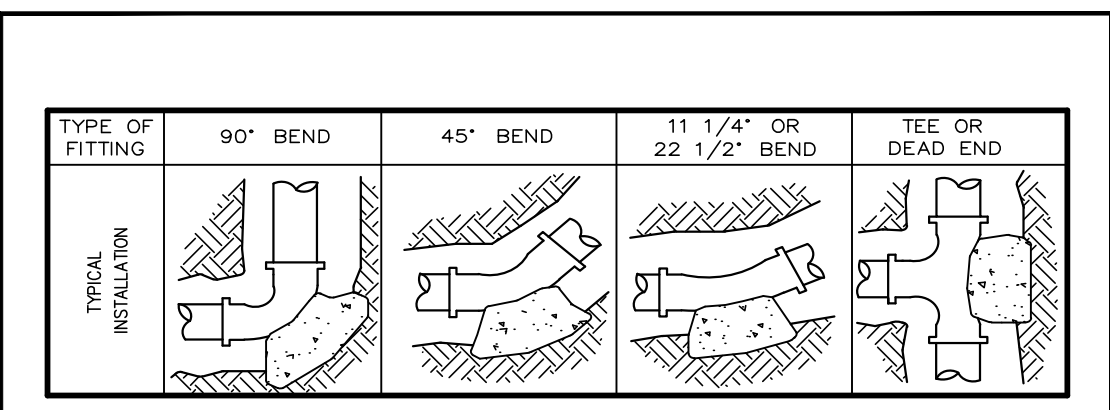
GATE VALVE



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

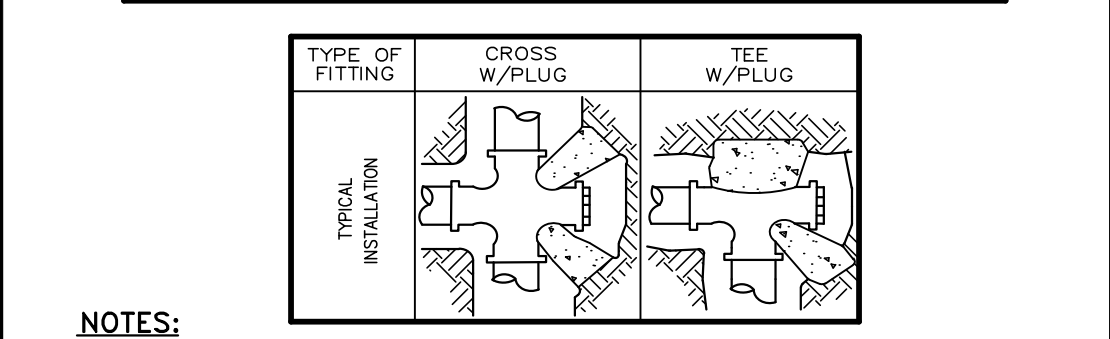
NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION
1		9/17		CARSON CITY
				DRAWING NO. C-3.1.6 (203,306,307)
				DATE SEP 2017

VALVE BOX & LID



THRUST BLOCK BEARING AREA (SQ. FT.)

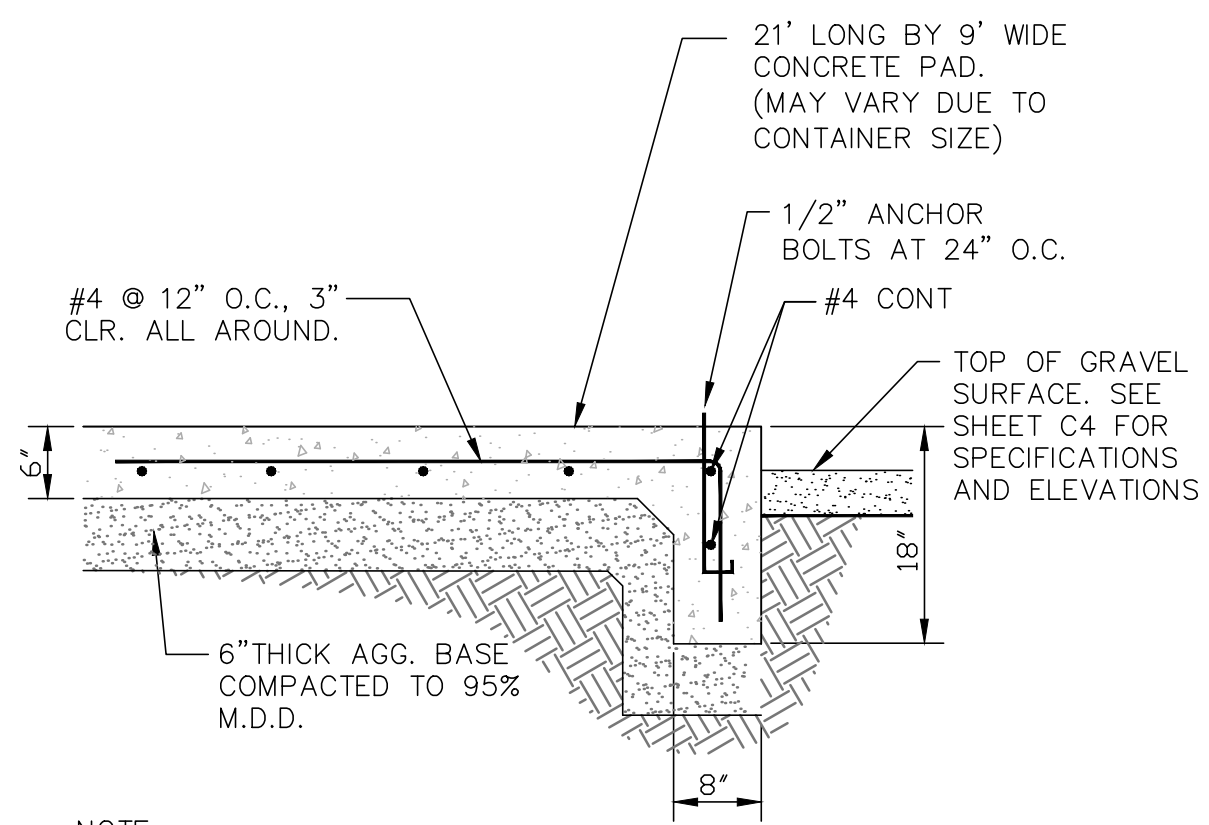
TYPE OF FITTING	90° BEND	45° BEND	11 1/4° OR 22 1/2° BEND	TEE OR DEAD END	TEE W/PLUG	CROSS W/PLUG
4"	2	1	1	2	2	2
6"	4	4	2	4	4	4
8"	7	4	2	5	7	7
10"	12	6	3	8	12	12
12"	16	10	5	12	16	16
14"	20	12	6	14	20	20
16"	27	15	8	18	27	27
18"	45	25	13	32	45	45
24"	65	35	18	46	65	65



- NOTES:**
- THRUST BLOCKS TO BE CONSTRUCTED OF CONCRETE CONFORMING TO 337.10 OF THE SSPWC AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI @ 28 DAYS.
 - AREAS GIVEN ARE FOR CLASS 150 PIPE AT WORKING AND TESTING PRESSURE OF 150 P.S.I., WITH 2000 P.S.F. BEARING CAPACITY. INSTALLATIONS USING DIFFERENT PIPE, TEST PRESSURES, AND/OR SOIL TYPES SHOULD HAVE AREAS ADJUSTED ACCORDINGLY, SUBJECT TO THE APPROVAL OF THE CARSON CITY ENGINEER OR PUBLIC WORKS DIRECTOR.
 - THRUST BLOCKS SHALL BE POURED AGAINST UNDISTURBED SOIL.
 - JOINTS, FLANGES, NUTS, BOLTS AND FACE OF PLUG SHALL BE KEPT CLEAR OF CONCRETE.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION
1		9/17		CARSON CITY
				DRAWING NO. C-3.1.14
				DATE SEP 2017

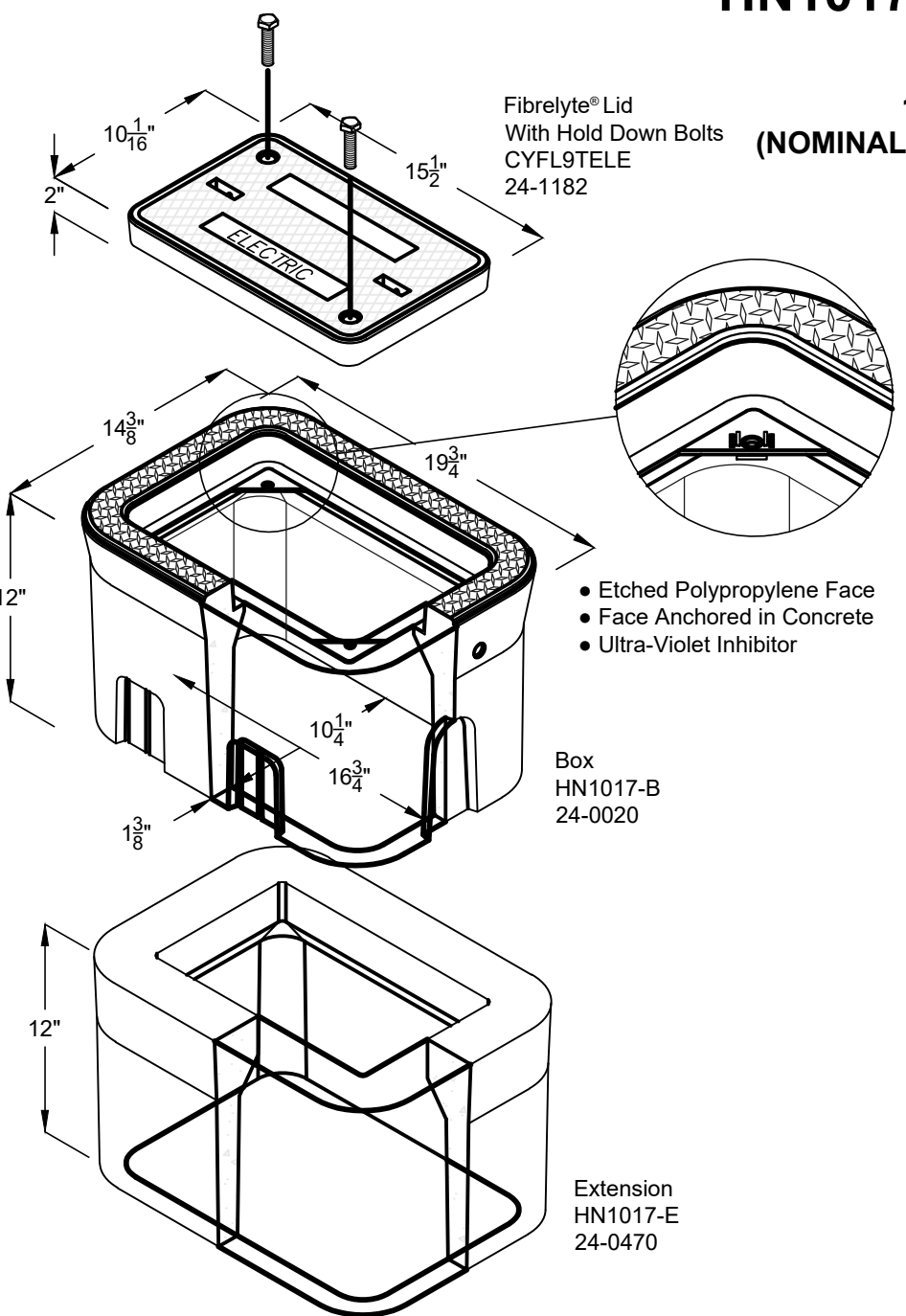
THRUST BLOCKS



NOTE: CONCRETE SLAB SHALL BE 4000psi @ 28 DAYS, FIBER REINFORCED CONCRETE.

FOUNDATION DETAIL
SCALE = NONE

HN1017 ELECTRICAL BOX
10"x17"x12"
(NOMINAL INSIDE DIMENSIONS)



STOCK NO.	PART NO.	PRODUCT	DESCRIPTION	APPROX. WEIGHT	QTY. PER PALLET
24-0020	HN1017-B	BOX	10"x17"x12" Reinforced Concrete Non-Traffic Box	112	20
24-0470	HN1017-E	EXTENSION	10"x17"x12" Reinforced Concrete Extension	112	20
24-1182	CYFL9TELE	LID A	Fibrelyte® Lid With Hold Down Bolts	21	

BY JENSEN PRECAST OR APPROVED EQUAL

HANHOLE
SCALE = NONE

DATE	APP.	DESCRIPTION

ONE INCH AT FULL SCALE:

NO.	REVISION	DATE	DESCRIPTION
1		1717	
2		AUG. 2021	

JOB NO.: 1717
DATE: AUG. 2021
SCALE: 1" = 12'
DESIGNED: [Signature]
DRAWN: [Signature]
CHECKED: [Signature]

FARR WEST ENGINEERING
5510 LONGLEY LANE
RENO, NEVADA 89511
PHONE: (775) 851-4788
FAX: (775) 851-0766
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REGISTERED PROFESSIONAL ENGINEER - STATE OF NEVADA
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REPLACE DOMESTIC FIRE AND WATER MAIN IRRIGATION SYSTEM IMPROVEMENTS 17-M36(A)

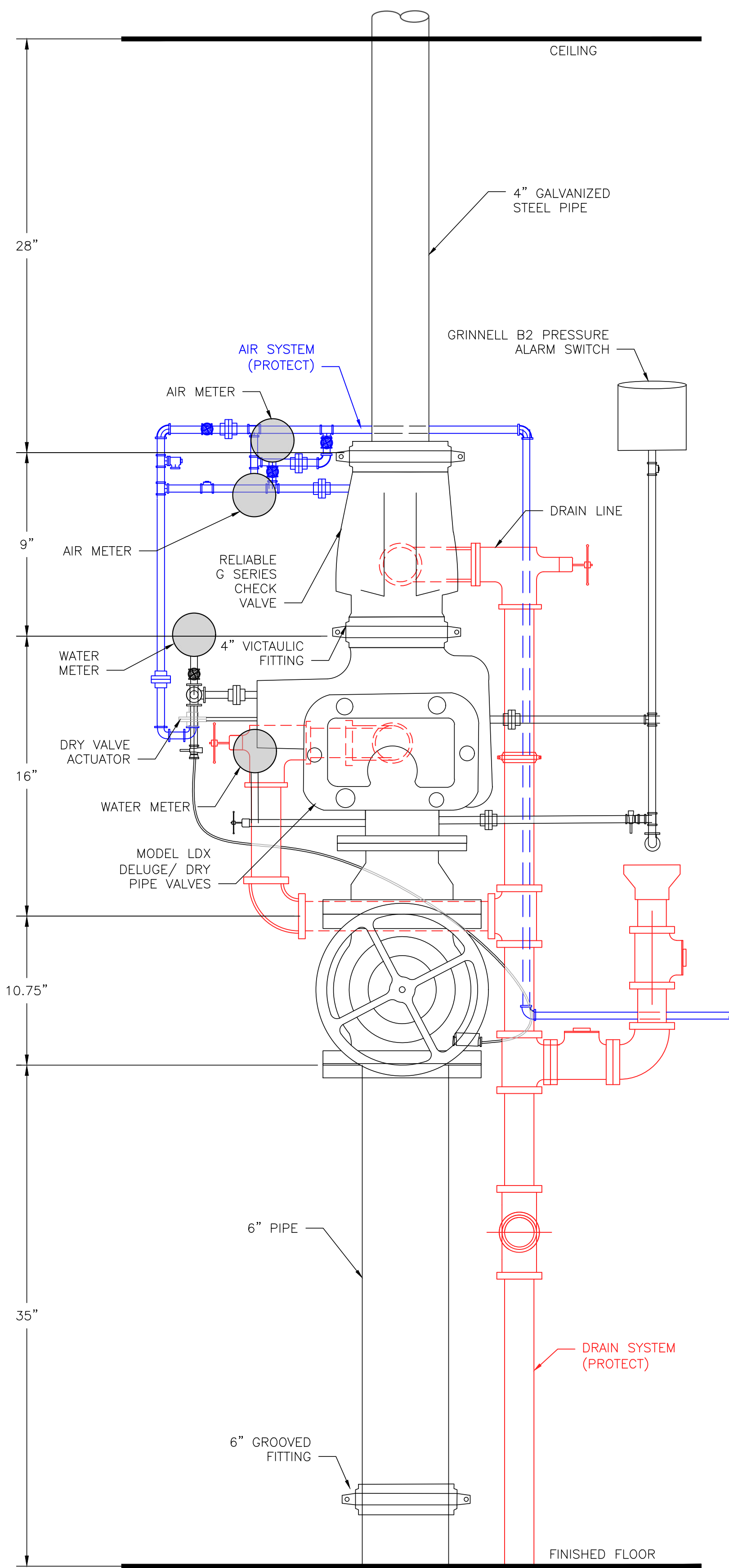
DETAIL SHEET

CARSON CITY NEVADA

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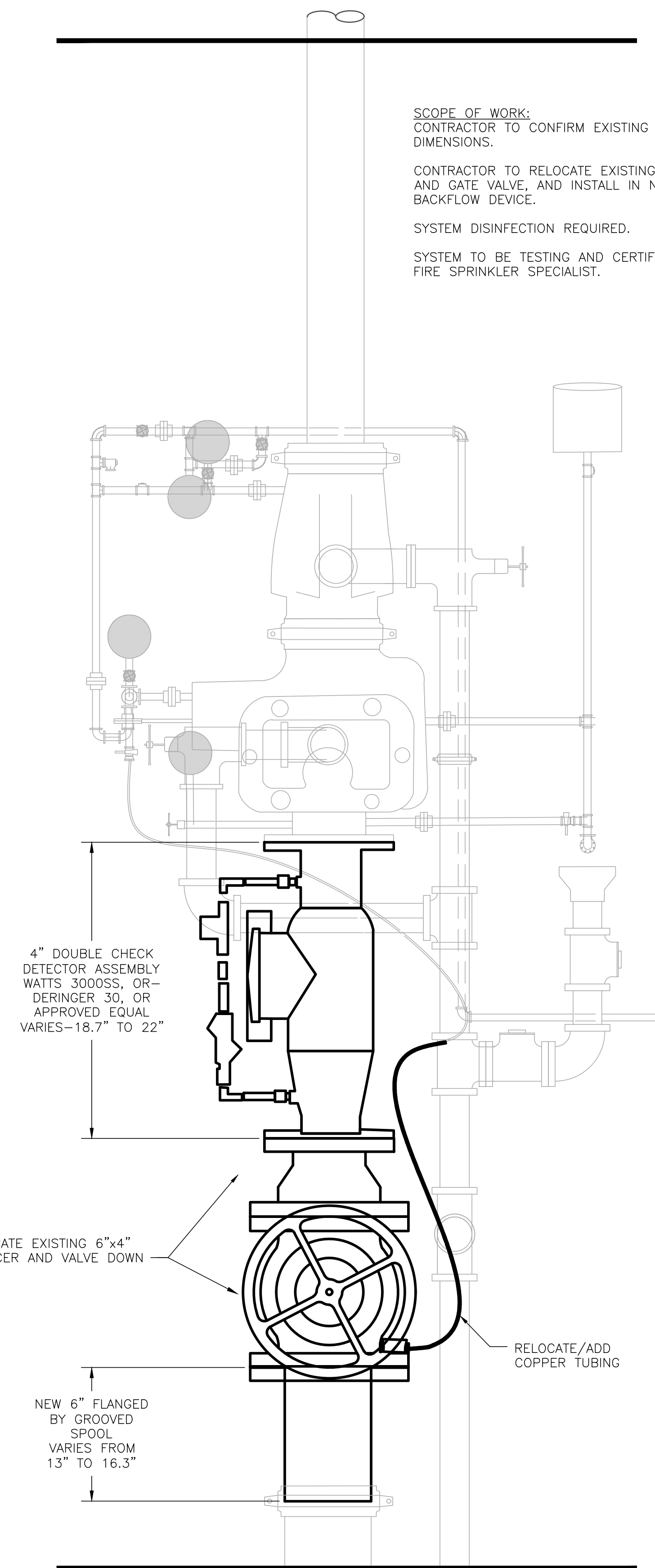
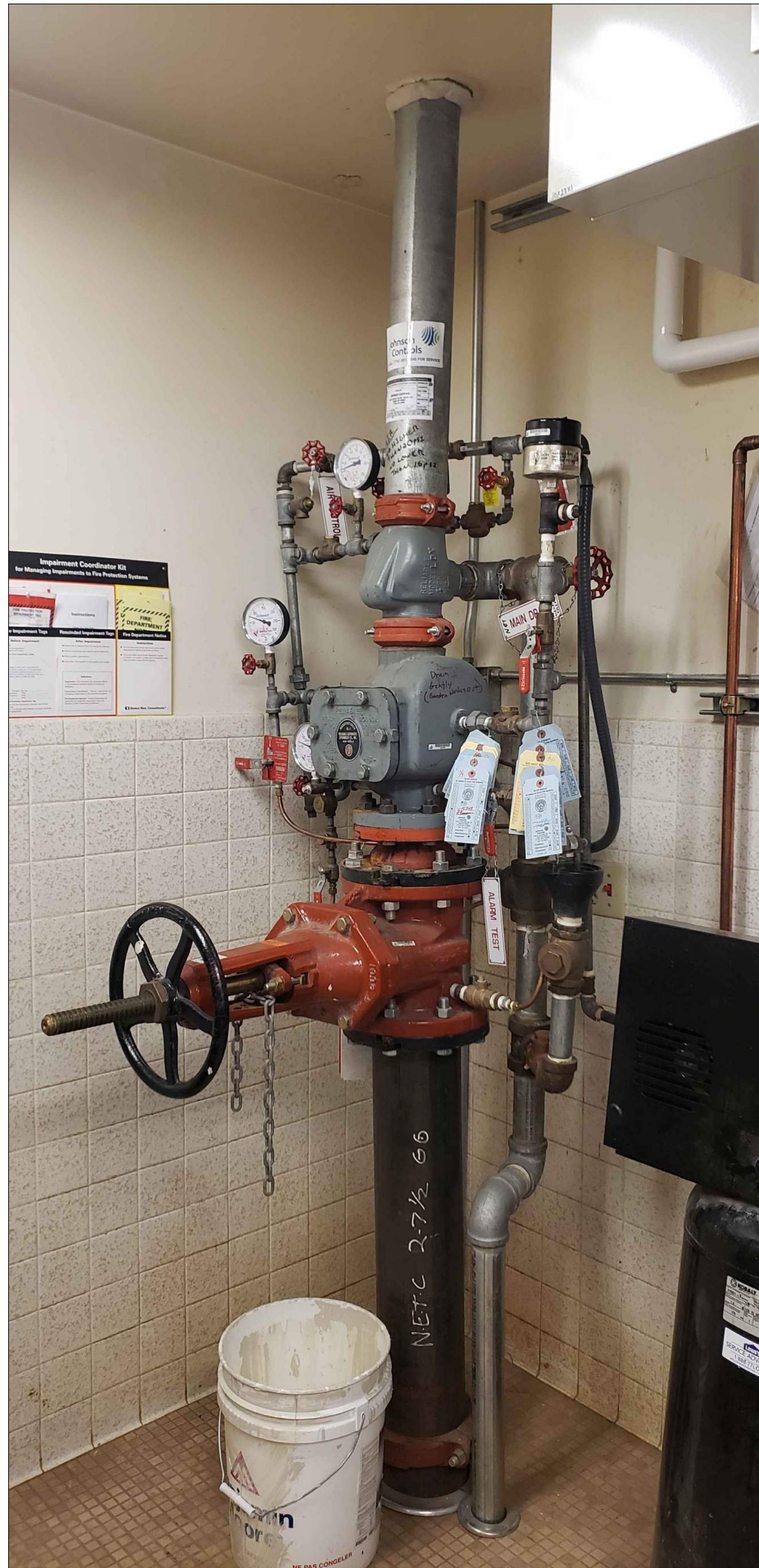
SHEET NUMBER
C8
8 OF 13

FILE SPEC: R:\Client\Projects\State of Nevada Public Works Division 144\1717 NSPW Stewart CA\5.0 Drawings\5.2 DWG\Sheet Files\C9 Detail Sheet.dwg
 PLOT DATE: Oct 28, 2021 - 8:52am



EXISTING SPRINKLER FIRE RISER
 SCALE = NONE

1



BACKFLOW IMPROVEMENTS
 SCALE = NONE

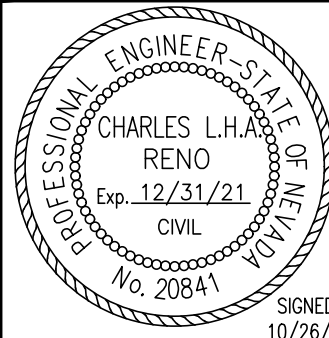
2

SCOPE OF WORK:
 CONTRACTOR TO CONFIRM EXISTING FITTING DIMENSIONS.
 CONTRACTOR TO RELOCATE EXISTING REDUCER AND GATE VALVE, AND INSTALL IN NEW BACKFLOW DEVICE.
 SYSTEM DISINFECTION REQUIRED.
 SYSTEM TO BE TESTING AND CERTIFIED BY A FIRE SPRINKLER SPECIALIST.

100% SUBMITTAL
PRELIMINARY
NOT FOR CONSTRUCTION

REPLACE DOMESTIC FIRE AND WATER MAIN IRRIGATION SYSTEM IMPROVEMENTS 17-M36(A)
BUILDING 6 BACKFLOW MODIFICATIONS
 CARSON CITY NEVADA

SHEET NUMBER
C9
 9 OF 13



FARR WEST ENGINEERING
 5510 LONGLEY LANE
 RENO, NEVADA 89511
 PHONE: (775) 851-4788
 FAX: (775) 851-0766
 FARRWESTENGINEERING.COM

JOB NO.: 1717
 DATE: AUG. 2021
 SCALE:
 DESIGNED:
 DRAWN:
 CHECKED:

REVISION	DESCRIPTION	BY	APP	DATE

5

4

3

2

1

LEGEND

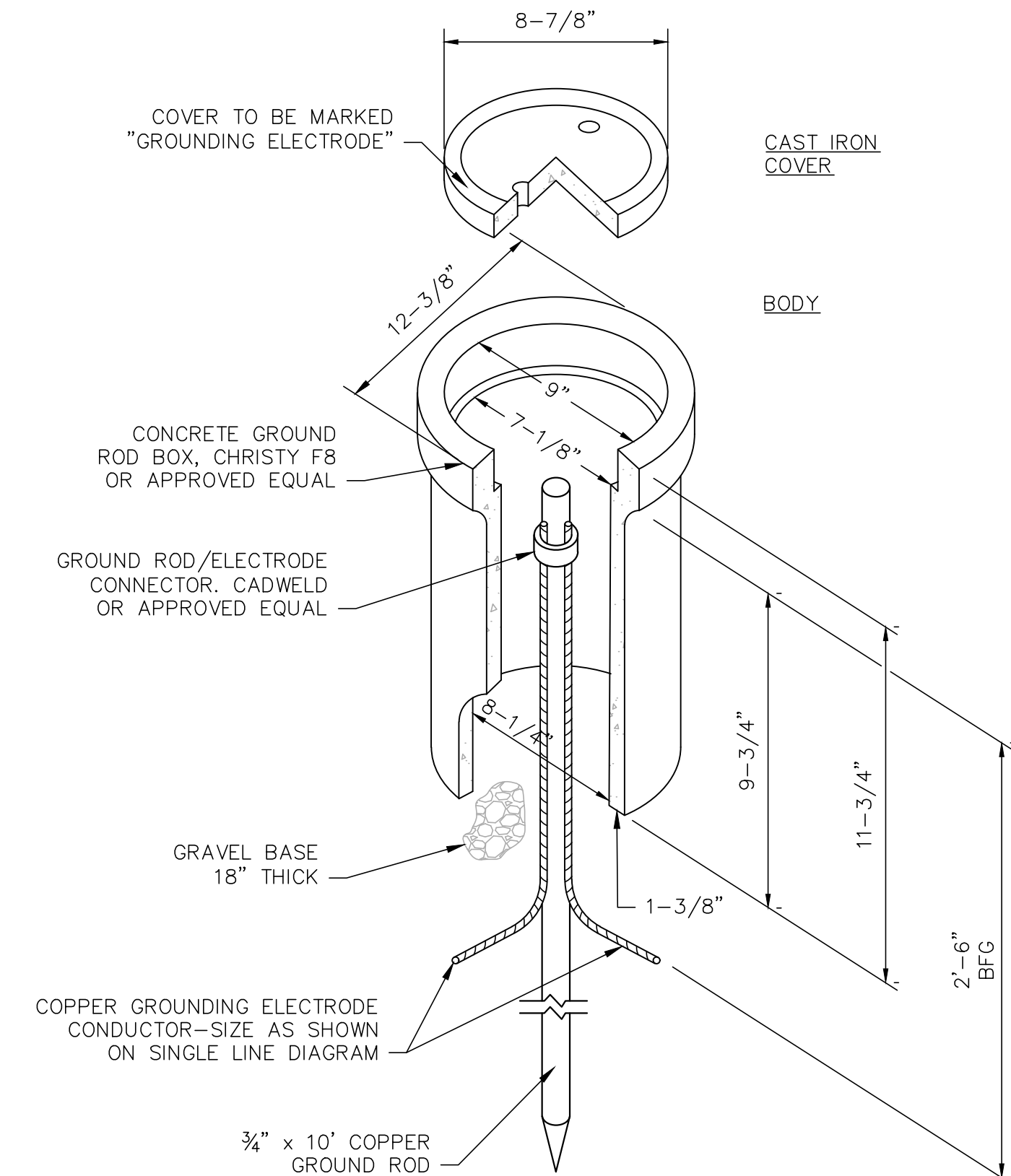
ELEC	ELECTRICAL
ELEV.	ELEVATION
EX.	EXISTING
EXIST.	EXISTING
MAX.	MAXIMUM
ME	MATCH EXISTING
MIN.	MINIMUM
OHP	OVERHEAD POWER
PVC	POLYVINYL CHLORIDE
SCH.	SCHEDULE
RAD.	RADIUS
R/W	RIGHT OF WAY
WL	WATERLINE

GRAVEL SURFCAE 

EX. ELECTRIC LINE	— EX E —
PROPOSED ELECTRIC LINE	— E —
INSTRUMENT CONDUIT	— C —
EX. OVERHEAD ELECTRIC LINE	— OHP —
FIBER OPTIC LINE	— EX FO —
RIGHT-OF-WAY LINE	— — — — —
EX. WATERLINE	— EX W —
EX. FENCE LINE	— X — X —
GROUNDING WIRE	— G — G — G —

GENERAL NOTES

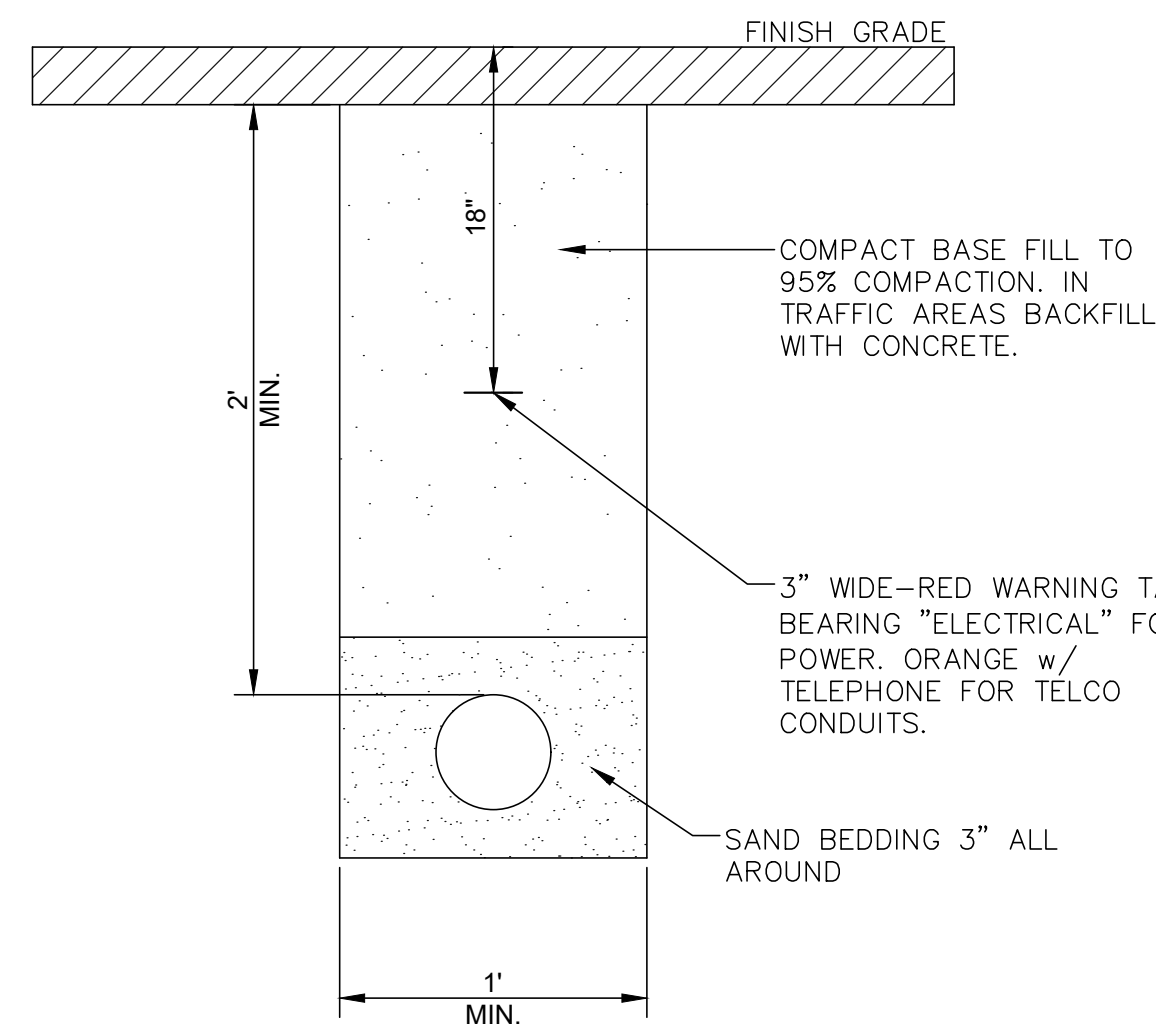
- EXISTING UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY LOCATION AND CONTACT ENGINEER OF ANY DISCREPANCIES WITH THESE PLANS.
- ALL EXISTING ITEMS TO REMAIN SHALL BE PROTECTED IN PLACE. ANY DAMAGE TO SAID ITEMS SHALL BE REPAIRED BY THE CONTRACTOR, OR UTILITY COMPANY, AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS. EASEMENT DOCUMENTATION WILL BE PROVIDED BY THE STATE TO THE CONTRACTOR TO OBTAIN THE REQUIRED PERMITS FROM NV ENERGY. SEE
- CIVIL DESIGN PLANS FOR SITE IMPROVEMENTS AND SITE FEATURES NOT LABELED ON THIS SHEET.



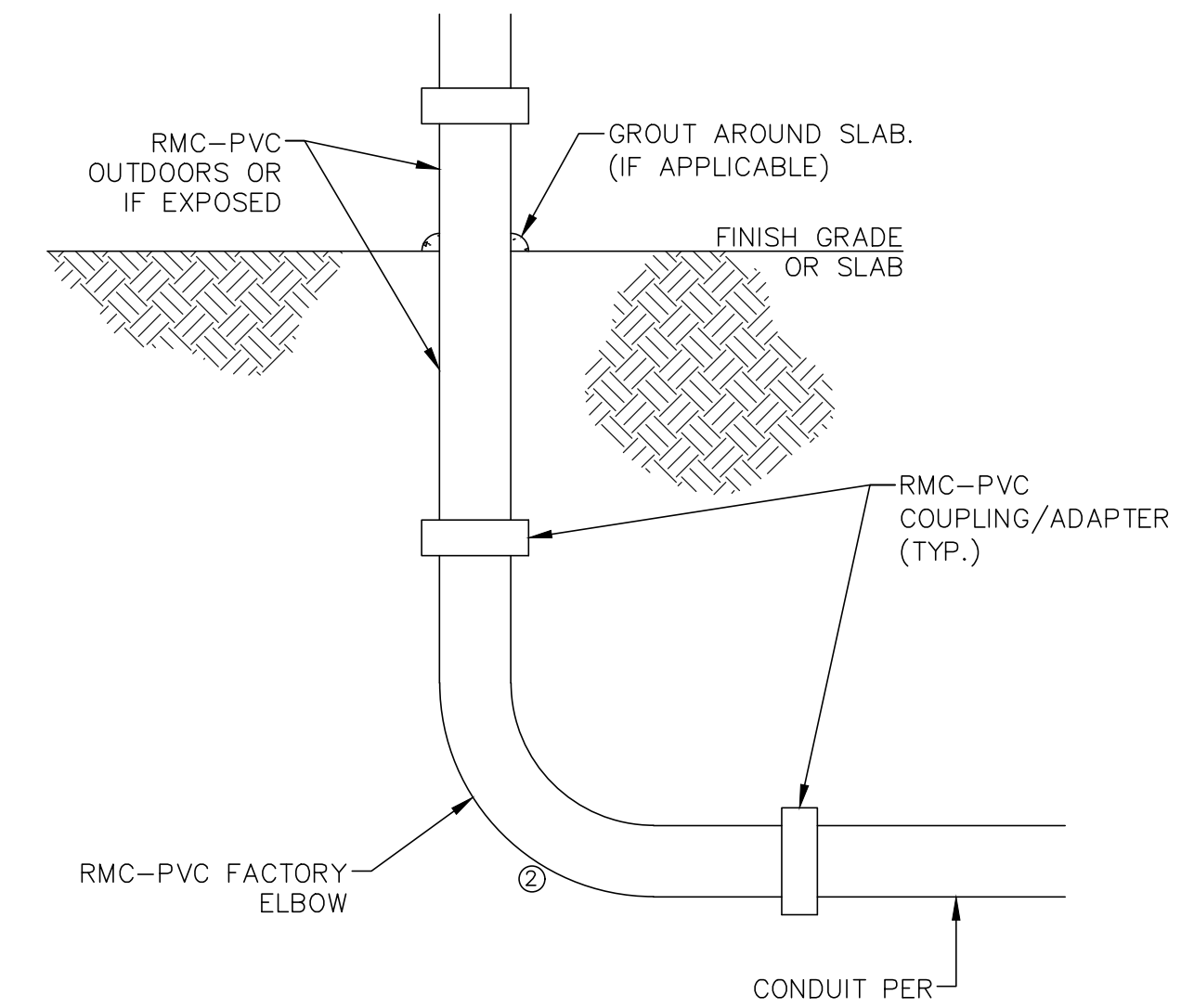
CONCRETE GROUND ROD HANDHOLD DETAIL 1
SCALE = NONE E2

GENERAL ELECTRICAL REQUIREMENTS

- | | |
|--|---|
| <p>A. FURNISH ALL LABOR, MATERIAL, EQUIPMENT, TOOLS, ACCESSORIES, ETC. REQUIRED FOR A COMPLETE ELECTRICAL SYSTEM.</p> <p>B. ALL WORK SHALL CONFORM WITH SDPWD ADOPTED 2011 NATIONAL ELECTRIC CODE (NEC) PUBLISHED BY THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA).</p> <p>C. ALL MATERIAL SHALL BE NEW AND CONFORM WITH THE REQUIREMENTS OF THE UNDERWRITER'S LABORATORIES, INC.</p> <p>D. WORKMANSHIP AND NEAT APPEARANCE SHALL BE OF THE SAME LEVEL OF IMPORTANCE AS ITS ELECTRICAL AND MECHANICAL EFFICIENCY.</p> <p>E. POWER CONDUCTORS SHALL BE #12 AWG MINIMUM. #8 AWG AND LARGER SHALL BE STRANDED. ALL CONDUCTORS SHALL BE TYPE XHHW-2. ALL WIRING SHALL BE INSTALLED IN CONDUIT. CONTROL CONDUCTORS TO BE #14 THH2-2 STRANDED.</p> <p>F. ALL CONDUIT WITHIN 18" OF GRADE OR FINISHED FLOOR TO BE GALVANIZED RIGID STEEL. ALL CONDUIT BELOW 18" OF GRADE TO BE PVC-TYPE SCHEDULE-40. ALL UNDERGROUND ELBOWS TO BE GALVANIZED RIGID STEEL (GRS). ALL METALLIC CONDUITS IN CONDUIT WITH EARTH OR EXPOSED TO BE EITHER PVC-GRSC OR HALF-LAP WRAPPED IN SCOTCH-50 ELECTRICAL TAPE.</p> <p>G. WIRING DEVICES SHALL BE HUBBELL, OR EQUAL. ALL DEVICES SHALL BE EQUAL TO THE FOLLOWING AND SHALL HAVE WHITE DEVICE PLATES:
ENCLOSURE SWITCHES:
A. SPST HUBBELL NO. 1221-I
ENCLOSURE RECEPTACLES:
A. GFCI DUPLEX 20A, 125V HUBBELL NO. GF5262-I</p> | <p>I. THIS CONTRACTOR SHALL GUARANTEE TO THE OWNER ALL WORK PERFORMED UNDER THIS CONTRACT TO BE FREE FROM DEFLECTS IN WORKMANSHIP AND MATERIALS FOR A PERIOD ON ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE.</p> <p>J. ALL CONDUCTOR CRIMPING ON CONDUCTORS #6 AWG OR GREATER TO BE HYDRAULICALLY CRIMPED, USING FULLY ANNULAR DIE-TYPE CRIMPER (MATCH COLOR TO EQUIPMENT RATING).</p> <p>K. FOR CONDUIT INSTALLED OUTDOORS, PROVIDE A WATER-TIGHT COUNT SYSTEM (IMC OR GRS ONLY) INCLUDING THREADED HUBS AT EQUIPMENT PENETRATIONS, LIQUID TIGHT CONNECTIONS, & SEALS. INCLUDE "CGB" TYPE CONNECTORS WHERE CABLES LEAVE CONDUITS & EXTEND TO SENSORS.</p> <p>L. PROVIDE NEW TYPE PANEL DIRECTORIES FOR ALL NEW AND MODIFIED 120/208/240V LOAD CENTERS AND PANELBOARDS. PROVIDE BLACK PHENOLIC NAMEPLATES FOR BREAKERS INSTALL IN 277/480V PANELS.</p> <p>M. TEST CONDUCTOR INSULATION BY WAY OF 500VDC MEGGER FOR ALL NEW CONDUCTORS. TEST SHALL BE COMPLETE ENOUGH TO BE CONCLUSIVE AND TO ENSURE PROPER OPERATION. ALL FAULTY CONDUCTORS SHALL BE REPLACED AND TESTED UNTIL SATISFACTORY RESULTS ARE OBTAINED.</p> <p>N. ALL CONCRETE WORK TO BE PER CIVIL AND/OR STRUCTURAL DRAWINGS, SPECIFICATION, REQUIREMENTS, AND DIAGRAMS.</p> |
|--|---|



TRENCH DETAIL 2
SCALE = NONE



- NOTES**
- RMC WITH PLASTIC TAPE IS NOT ALLOWED AS A SUBSTITUTE.
 - AREAS UNDER ELECTRICAL SWITCHBOARDS/XXXX SHALL BE ENCASED IN MIN. OF 2" GROUT OR CONCRETE TO STABILIZE CONDUIT BUNDLES.

EXPOSED CONDUIT TRANSITION DETAIL 3
SCALE = NONE

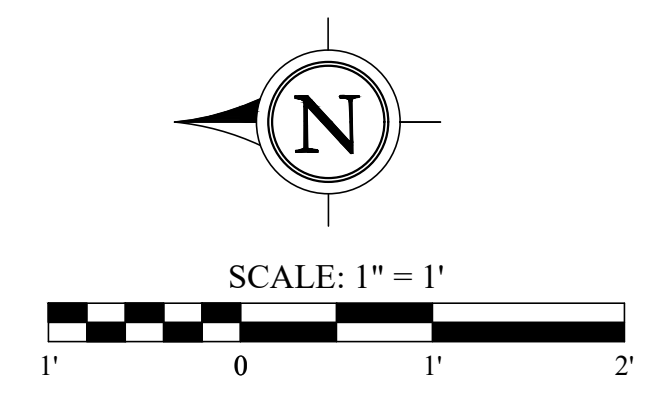
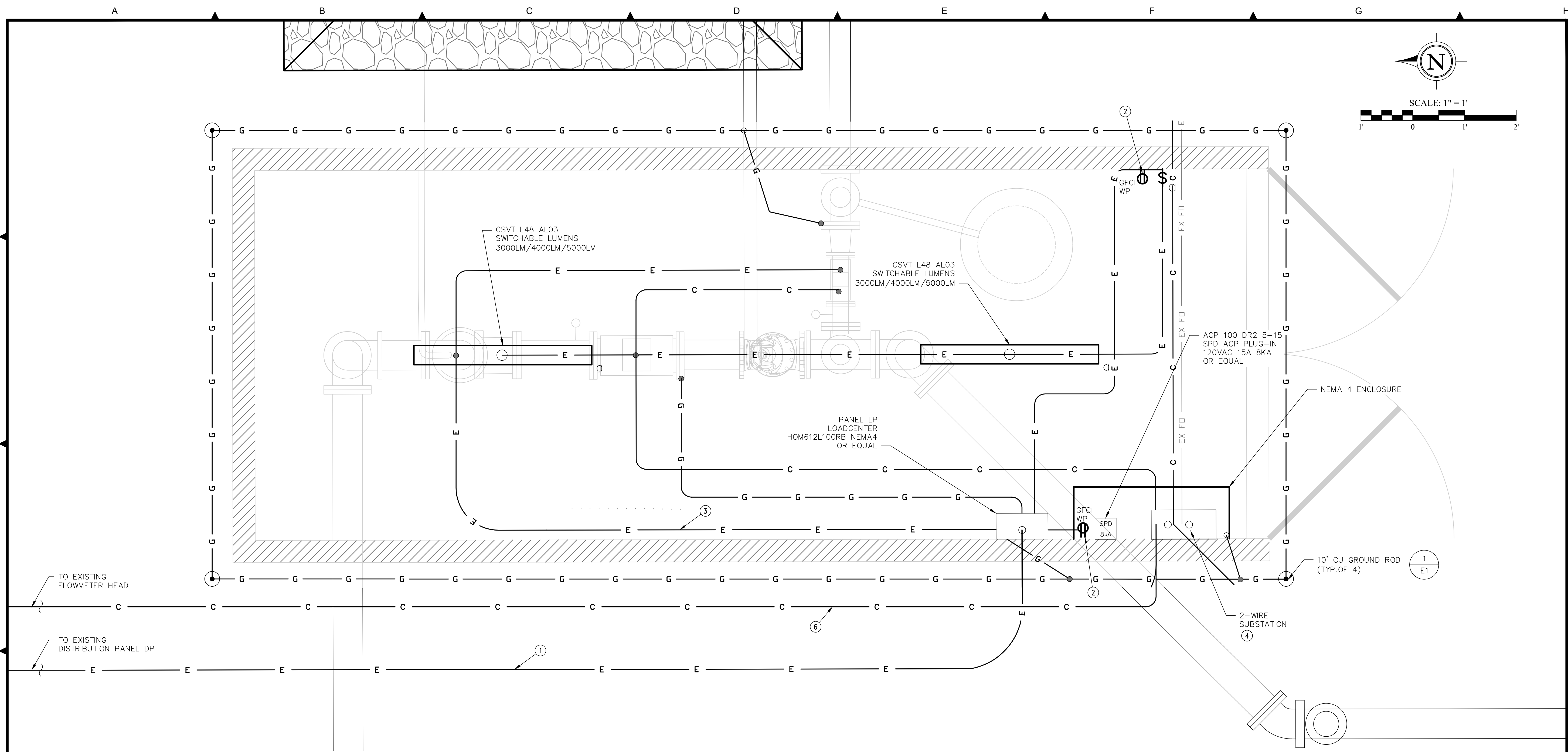
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REPLACE DOMESTIC FIRE AND WATER MAIN
IRRIGATION SYSTEM IMPROVEMENTS 17-M36(A)
ELECTRICAL SITE PLANS & DETAILS
NEVADA
CARSON CITY

SHEET NUMBER
E1
10 OF 13

FILE SPEC: P:\Client\Projects\State of Nevada Public Works Division\144\1717 NSPW Stewart CA\5.0 Drawings\5.2 DWG\Sheet Files\ELECTRICAL SITE PLAN & DETAILS.dwg
 PLOT DATE: Oct 28, 2021 - 8:54am



JOB NO.:	1717
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DATE	

FARR WEST ENGINEERING
 5510 LONGLEY LANE
 RENO, NEVADA 89511
 PHONE: (775) 851-4788
 FAX: (775) 851-0766
 FARRWESTENGINEERING.COM

PROFESSIONAL ENGINEER - STATE OF NEVADA
 DAVID H. OTO
 Exp. 12/31/21
 ELECTRICAL
 No. 019885
 10/28/21

PANEL LP SCHEDULE										
LOCATION:		STEWART SYSTEM						MAIN BKR:		60A
VOLTAGE:		120V						SYSTEM:		1Φ, 3W
NAMEPLATE:		LP						BUS RATING:		100A
MOUNTING:		INSIDE MSWB						SC LEVEL:		10 KA
CKT	LOAD	VA	CB	A	B	CB	VA	LOAD	CKT	
1	CONTROLLER	100	20/1	184		20/1	84	LIGHT SWITCH	2	
3	GFCI RECEPTICLE	180	20/1		180			SPACE	4	
5	ACTUATORS 1&2	1440	20/1	1440				SPACE	6	
NOTES:				A	B					
				1624 VA	180 VA		1.8 KVA	7.5 A		

PANEL DP SCHEDULE										
LOCATION:		STEWART						MAIN BKR:		100A
VOLTAGE:								SYSTEM:		3Φ, 3W
NAMEPLATE:		W-9971						BUS RATING:		
MOUNTING:		INSIDE WOOD CABINET						SC LEVEL:		
CKT	LOAD	VA	CB	L1	L2	CB	VA	LOAD	CKT	
1	CONEX LOAD CENTER	1000	60/2	1000			0	MAIN*	2	
3		1000			1000	100/3	0		4	
5	SPACE	0		0			0		6	
7	UNKNOWN*	0	20/1		0		0		8	
9	UNKNOWN*	0	20/1	0			0	PUMP MOTOR*	10	
11	SPACE	0			0		0		12	
13	UNKNOWN*	0	20/1			20/1	0	UNKNOWN*	14	
15	UNKNOWN*	0	20/1				0	SPACE	16	
17		0					0	SPACE	18	
NOTES:				A	B					
				1000 VA	1000 VA		2.0 KVA	8.3 A		

* LOAD OF EXISTING CIRCUITS ARE UNKNOWN.

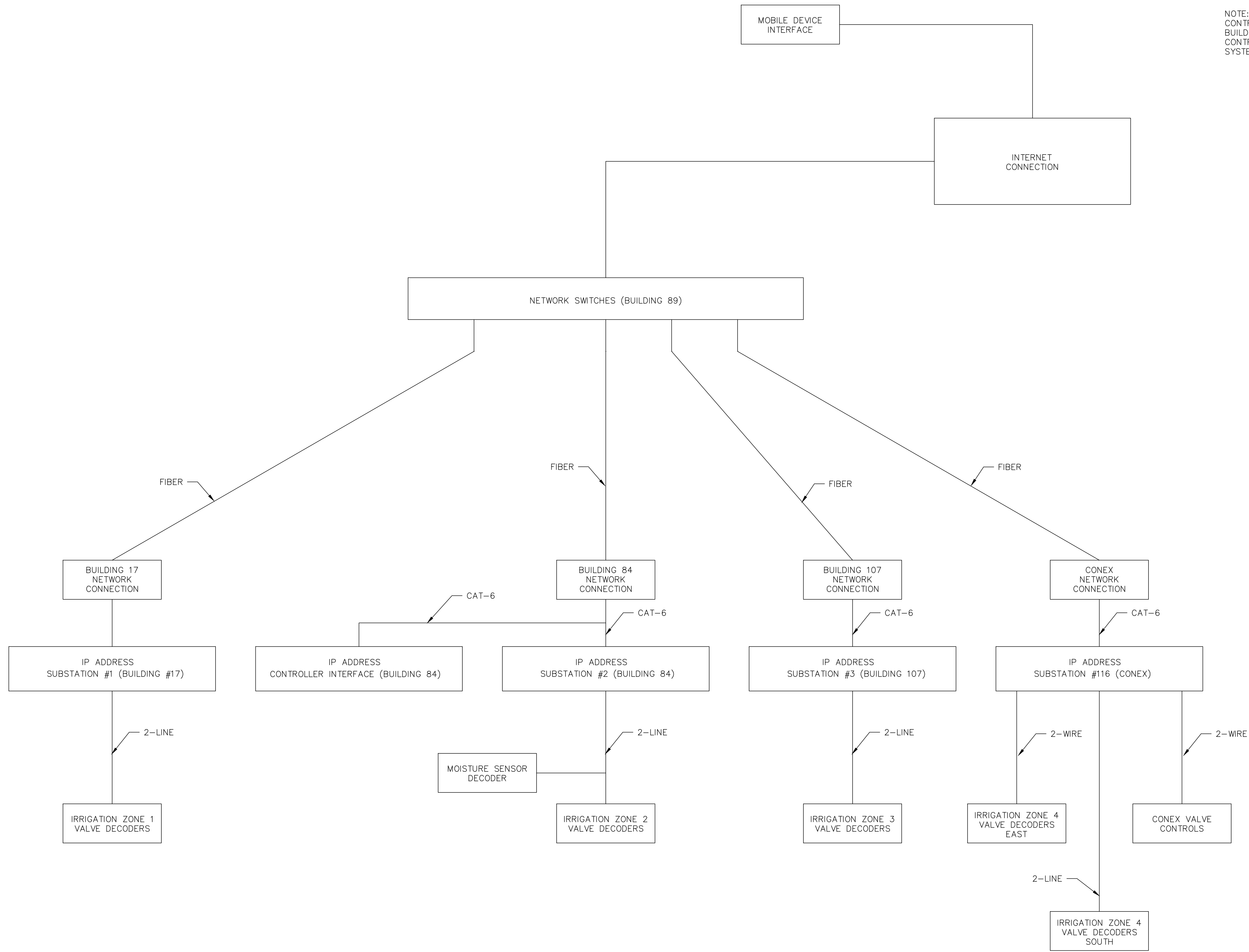
SHEET NOTES:

- ① CONNECT TO EXISTING LOAD CENTER. ADD (1) 60A/2 POLE CB TO POWER CONTAINER
- ② GFI WEATHER PROOF OUTLET FOR MOUNTED 18" AFF.
- ③ ALL INTERNAL SHIPPING CONTAINER CONDUITS TO BE SURFACE MOUNTED.
- ④ BASIS OF DESIGN IS BASELINE IRRIGATION SYSTEM.
- ⑤ ALL EXTERIOR CONDUITS TO BE UNDERGROUND PVC-SCHED40.
- ⑥ INSTALL PRESSURE SWITCH SENSOR LINE FOR OPERATION OF THE WELL FROM THE PRESSURE TANK WITHIN THE CONEX.

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REPLACE DOMESTIC FIRE AND WATER MAIN
 IRRIGATION SYSTEM IMPROVEMENTS 17-M36(A)
 ELECTRICAL SITE PLANS & DETAILS
 CARSON CITY NEVADA

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 PLOT DATE: Oct 28, 2021 - 8:55am



MOBILE DEVICE
INTERFACE

INTERNET
CONNECTION

NETWORK SWITCHES (BUILDING 89)

BUILDING 17
NETWORK
CONNECTION

IP ADDRESS
SUBSTATION #1 (BUILDING #17)

IRRIGATION ZONE 1
VALVE DECODERS

BUILDING 84
NETWORK
CONNECTION

IP ADDRESS
CONTROLLER INTERFACE (BUILDING 84)

IP ADDRESS
SUBSTATION #2 (BUILDING 84)

MOISTURE SENSOR
DECODER

IRRIGATION ZONE 2
VALVE DECODERS

BUILDING 107
NETWORK
CONNECTION

IP ADDRESS
SUBSTATION #3 (BUILDING 107)

IRRIGATION ZONE 3
VALVE DECODERS

CONEX
NETWORK
CONNECTION

IP ADDRESS
SUBSTATION #116 (CONEX)

IRRIGATION ZONE 4
VALVE DECODERS
EAST

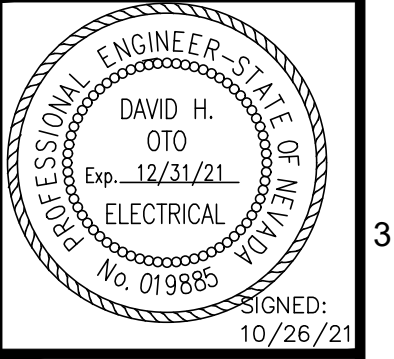
CONEX VALVE
CONTROLS

IRRIGATION ZONE 4
VALVE DECODERS
SOUTH

NOTE:
CONTRACTOR SHALL LAND FIBER AT EACH
BUILDING AND AND TEST FIBER CONNECTIONS.
CONTRACTOR TO TEST IRRIGATION CONTROL
SYSTEM

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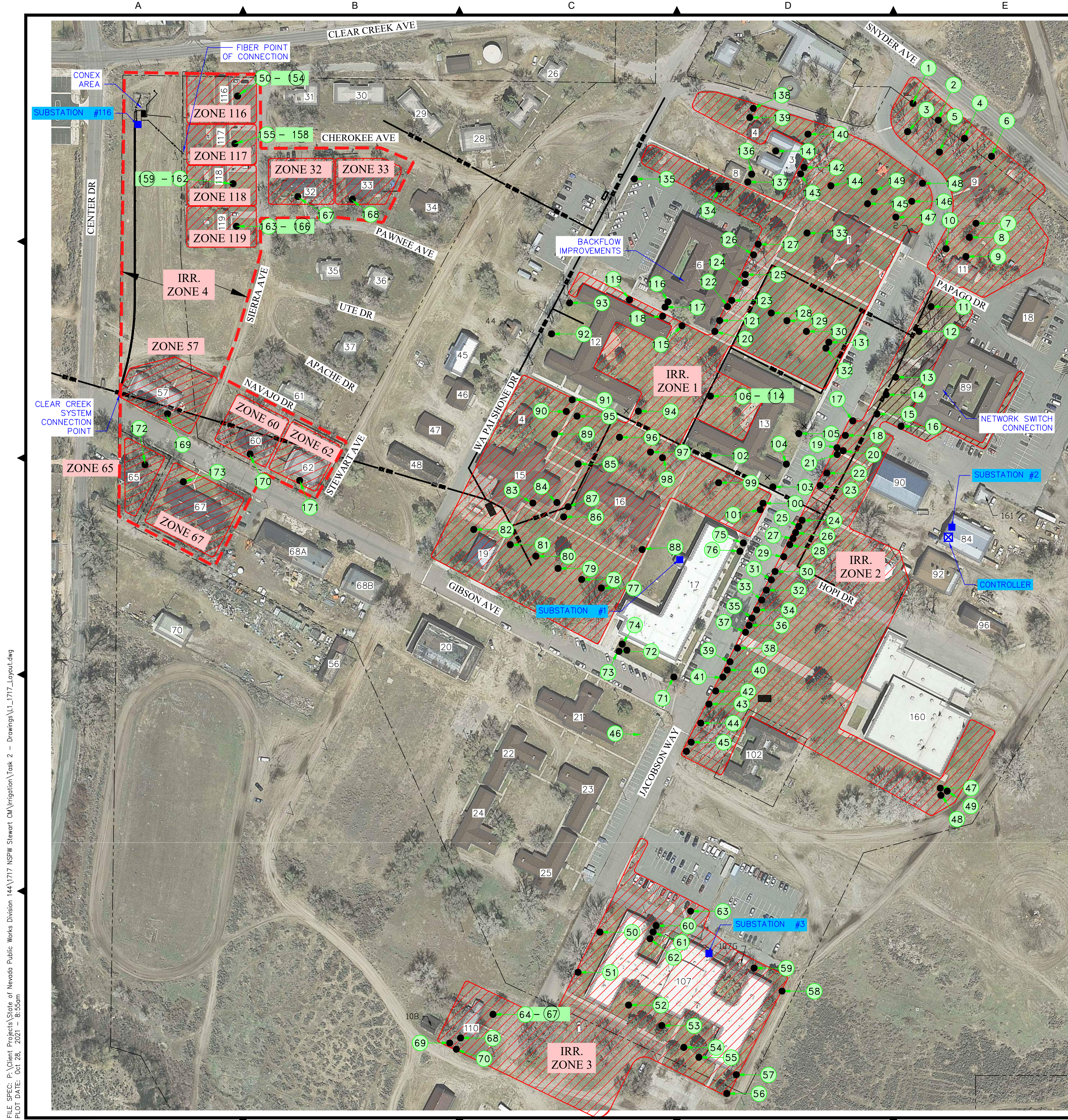
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ENGINEERING**
 5510 LONGLEY LANE
 RENO, NEVADA 89511
 PHONE: (775) 851-4788
 FAX: (775) 851-0766
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REPLACE DOMESTIC FIRE AND WATER MAIN
IRRIGATION SYSTEM IMPROVEMENTS 17-M36(A)
 NETWORK CONNECTION PLAN
 CARSON CITY NEVADA

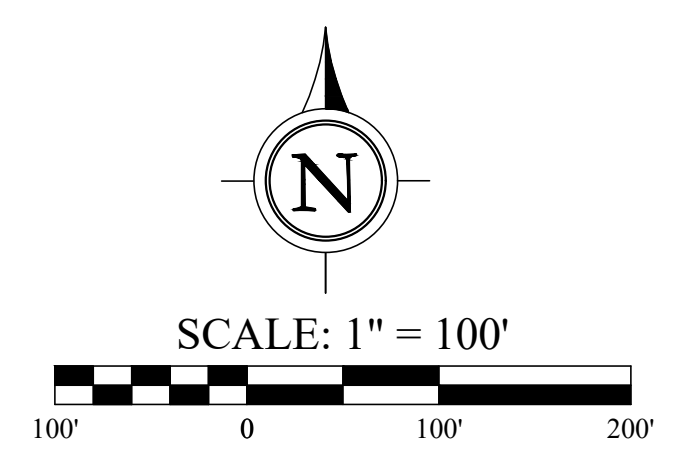
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E3
 12 OF 13



SHEET LEGEND:

- ① VALVE NUMBER
- 18 BUILDING NUMBER
- CONTROL VALVE
- ⊗ DRIP SYSTEM VALVE
- ⊠ CONTROLLER
- SUBSTATION
- × GRASS NODE
- FILTER
- ZONE XX IRRIGATION ZONES



THE IRRIGATION SYSTEM IS DESIGNED AROUND A 2-WIRE SYSTEM WITH MASTER CONTROLLER AND SUBSTATIONS. CONTROLLER IS BASED ON THE ABILITY TO REGULATE MULTIPLE INCOMING FLOWS AND MULTIPLE VALVES. THE BASIS OF DESIGN IS BASELINE IRRIGATION SYSTEM.

PROJECT SCOPE OF WORK:

INSTALL UNDERGROUND PIPING AND CONDUITS AROUND THE PROPOSED CONEX AREA (SEE SHEET C4 & C5). THIS AREA ALSO INCLUDED A CONDUIT TO SERVICE IRRIGATION ZONES 116 TO 119, 32 & 33 WITH THE 2-WIRE SYSTEM WITHIN IRRIGATION ZONE 4.

INSTALL 6" LINES FROM CLEAR CREEK SYSTEM CONNECTION POINT TO CONEX AREA. THIS ROUTE ALSO INCLUDED A CONDUIT TO SERVICE IRRIGATION ZONES, 57, 60, 62, 65 AND 67 WITH THE 2-WIRE SYSTEM WITHIN IRRIGATION ZONE 4.

INSTALL CONEX FOUNDATION, CONEX, INTERIOR CONEX COMPONENTS, ADJACENT RIP-RAP DRAINAGE BASIN AND ALL OTHER REQUIRED COMPONENTS AT THE CONEX AREA.

PERFORM ELECTRICAL CONNECTIONS TO CONEX AT CONEX AREA, INCLUDING PULLING OF FIBER FROM FIBER POINT OF CONNECTION.

PERFORM NETWORK SWITCH CONNECTIONS AT BUILDING #89. SEE SHEET E3.

INSTALL SUBSTATIONS FOR EACH IRRIGATION ZONE. SUBSTATIONS SHALL BE CONNECTED TO THE NETWORK.
 SUBSTATION #1 - BUILDING 17
 SUBSTATION #2 - BUILDING 84
 SUBSTATION #3 - BUILDING 107
 SUBSTATION #116 - CONEX

INSTALL BASE STATION CONTROLLER TO NETWORK
 CONTROLLER - BUILDING 84

REPLACE ALL IRRIGATION VALVES IN THE SYSTEM (VALVES 1 TO 166). VALVES 167 TO 163 (7 TOTAL) SHALL BE NEW VALVES AND SHALL BE 1-1/2" VALVES. 5 SPARE VALVES FOR EACH SIZE SHALL BE PROVIDED TO THE OWNER.
 [137] 2" VALVES SHALL BE REPLACED WITH RAINBIRD 200PESB, NO EQUAL.
 [46] 1-1/2" VALVES SHALL BE REPLACED WITH RAINBIRD 150PESB, NO EQUAL.

INSTALL VALVE DECODERS AT EACH IRRIGATION VALVE. DECODERS ALLOW FOR EACH VALVE TO BE INDEPENDENTLY OPERATED THROUGH THE SUBSTATIONS AND MAIN CONTROLLER.
 [200] VALVE DECODERS. DELIVER SPARES TO OWNER.

REPLACE IRRIGATION VALVES BOXES WITH RAINBIRD OR NDS VALVE BOXES WITH GREEN LIDS, OR EQUAL (SEE DETAIL 7/C7). [200] RAINBIRD OR NDS VALVE BOXES WITH GREEN LIDS. DELIVER SPARES TO OWNER.

2-WIRE 12/2 LOCATED THROUGHOUT THE IRRIGATION SYSTEM CONNECTED TO THE SUBSTATIONS IN EACH IRRIGATION ZONE. ESTIMATED WIRE LENGTHS:
 IRR. ZONE 1 = 4,800 FEET
 IRR. ZONE 2 = 3,200 FEET
 IRR. ZONE 3 = 2,000 FEET
 IRR. ZONE 4 = 3,150 FEET
 ZONES 116 TO 119, 32 & 33 = 1,550 FEET (INCLUDES LENGTH WITH CONDUIT FROM CONEX TO FIBER POINT OF CONNECTION BOX)
 ZONES 57, 60, 62, 65 & 67 = 1,600 FEET (INCLUDES LENGTH WITHIN CONDUIT FROM CONEX TO STEWART POINT OF CONNECTION BOX)
 SPARE WIRE = 1,850 FEET
 TOTAL = 15,000 FEET

ADDITIONAL COMPONENTS TO BE INSTALLED THROUGHOUT THE SYSTEM, CONSULT WITH MANUFACTURER FOR PLACEMENT RECOMMENDATIONS:
 [8] LIGHTING ARRESTORS
 [12] GROUND ROD
 [1] MOISTURE SENSOR

SEE ELECTRICAL PLANS FOR ADDITIONAL ELECTRICAL COMPONENTS REQUIRED AT THE CONEX.

PROVIDE SYSTEM PROGRAMMING AND TESTING.

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 5510 LONGLEY LANE
 RENO, NEVADA 89511
 PHONE: (775) 851-4788
 FAX: (775) 851-0766
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REPLACE DOMESTIC FIRE AND WATER MAIN
 IRRIGATION SYSTEM IMPROVEMENTS 17-M36(A)
 ALTERNATE 2 - ZONE CONTROL VALVING
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