

LEGEND

DESCRIPTION	SYMBOL	
	PROPOSED	EXISTING
12" WATER PIPELINE	12" PVC	12" PVC
66" WATER PIPELINE	66" MLCP ACCESS MH	66" MLCP
IN-LINE VALVE VAULT		
ACCESS MANHOLE (TO PIPELINE)		
BLOWOFF		
COMBINATION AIR VALVE		
TEST STATION (CATHODIC)		
REDUCER		
END CAP FOR WATER PIPELINE		
WATER VALVE		
FIRE HYDRANT ASSEMBLY		
WATER METER	WM	WM
WATER METER SIZE	1"	
IDENTIFICATION HEXAGON	XX	
EDGE OF PAVEMENT		
SANITARY SEWER MANHOLE		S
STORM DRAIN MANHOLE		SD
POWER POLE W/GUY WIRE		
STREET LIGHT (GENERIC SYMBOL NOT RELATED TO WATTAGE)		
SURVEY MONUMENT		
POLYGON FOR TRANSMISSION POLE		
ELECTRICAL BOX		ELEC
ELECTRICAL PANEL BOX		ELEC PANEL
CABLE TV		CTV CTV
FENCE		X X X X X
GAS LINE		2" G
CONTOURS		2640
DITCH		
SANITARY SEWER		10" SS
STORM DRAIN		24" SD
UNDERGROUND POWER		UGP
UNDERGROUND TELEPHONE		UGTEL
CURB, GUTTER AND SIDEWALK		
PROPERTY LINE		
CENTER LINE		
BLOCK WALL		
RIGHT-OF-WAY LINE		
PATENT RESERVATION OR EASEMENT LINE		
SECTION LINE		
ANGLE (HORIZONTAL OR VERTICAL)		
ANGLE OF CURVE		
FIELD WELD		
REFERENCE BUBBLE	1 D2 C1, C9, C11 DETAIL OR SECTION REFERENCE NUMBER (DETAIL) OR LETTER (SECTION) DRAWING NUMBER OF SHEET WHERE DETAIL OR SECTION RESIDES ALL SHEETS THAT REFERENCE TO THE DETAIL OR SECTION	

LAS VEGAS VALLEY WATER DISTRICT (LVVWD) STANDARD NOTES

1. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY HORIZONTAL AND VERTICAL TRANSITIONS BETWEEN NEW CONSTRUCTION AND EXISTING SURFACES FOR PROPER DRAINAGE, AND FOR INGRESS AND EGRESS TO SAID CONSTRUCTION. EXTENT OF TRANSITIONS TO BE DETERMINED IN THE FIELD BY THE LVVWD ENGINEER.
2. REPLACE EXISTING SEWER LINES OR STORM DRAINS WHICH CROSS OVER NEW WATER LINE WITH C900 WATER QUALITY PIPE TEN (10) FEET BEYOND EACH SIDE OF WATER LINE OR SLURRY ENCASE OR WELD JOINTS (MLCP) OF NEW WATER LINE TEN (10) FEET BEYOND EACH SIDE OF ALL SEWER MAINS AND LATERALS OR STORM DRAINS.
3. SOME WATER SERVICE LATERALS ARE NOT SHOWN. ALL WATER SERVICE LATERALS SHALL BE PROTECTED IN PLACE OR REPLACED WITH COPPER TUBING AT THE CONTRACTOR'S EXPENSE IN ACCORDANCE WITH THE UDS.
4. DURING ALL PHASES OF CONSTRUCTION THE CONTRACTOR SHALL MAINTAIN A 10 FOOT MINIMUM CLEARANCE IN ALL DIRECTIONS OF ALL OVERHEAD POWER LINES AND EQUIPMENT.
5. REMOVAL OR RELOCATION OF POWER POLES, TELEPHONE POLES, CABLE POLES OR JOINTLY-OWNED POLES AND APPURTENANCES WHICH INTERFERE WITH THE IMPROVEMENTS REQUIRED TO BE CONSTRUCTED UNDER THIS CONTRACT, SHALL BE COORDINATED BY THE CONTRACTOR WITH THE RESPECTIVE UTILITY COMPANY.
6. ALL AGENCY/UTILITY INSPECTORS SHALL BE CALLED WHENEVER WORK IS TO BE PERFORMED NEAR OR ON ANY OF THEIR FACILITIES.
7. SEWER LATERALS ARE NOT SHOWN. THE CONTRACTOR SHALL MAINTAIN CONTINUOUS SEWER SERVICE TO CUSTOMERS. SEWER LATERALS CUT DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE PER DESIGN AND CONSTRUCTION STANDARDS OF AGENCY HAVING JURISDICTION.
8. SANITARY SEWER MANHOLES SHALL BE PROTECTED FROM DAMAGE WHEN EXCAVATING IN THEIR VICINITY.

DEVIATIONS FROM STANDARDS

THERE ARE NO DEVIATIONS FROM APPLICABLE LAS VEGAS VALLEY WATER DISTRICT STANDARDS, UNLESS STATED IN THE SPECIFICATIONS.

APPROVED BY:

Diane McChone 10-24-16
CENTRAL TELEPHONE CO. DBA CENTURYLINK DATE

THE AFFIXED CENTURYLINK APPROVAL DOES NOT ASSUME OR GUARANTEE LIABILITY FOR KNOWN OR UNKNOWN CONFLICTS WITH EXISTING OR PROPOSED IMPROVEMENTS. RESOLUTION OF ANY CONFLICT WILL BE ACCOMPLISHED PURSUANT TO LOCAL ORDINANCES, NEVADA REVISED STATUTES AND / OR PUBLIC UTILITY COMMISSION RULES AND REGULATIONS.

Patricia Gray 10-25-16
NV ENERGY DATE

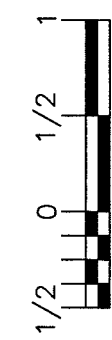
NV ENERGY ACKNOWLEDGES THAT WE HAVE RECEIVED YOUR PLANS AND WILL PROVIDE SERVICE TO ALL ELECTRICAL NEEDS ASSOCIATED WITH THIS PROJECT. NV ENERGY RESERVES THE RIGHT TO ADDRESS ANY EXISTING OR FUTURE CONFLICTS ONCE THE FINAL DESIGN IS COMPLETED. THE NEW SERVICE AND THE RESOLUTION OF ANY CONFLICTS WILL BE ACCOMPLISHED PURSUANT TO THE NEVADA PUBLIC UTILITY COMMISSION'S RULES AND REGULATIONS.

Justin Ferguson 10/27/16
SOUTHWEST GAS CORPORATION DATE

David B. Haile 10/27/16
COX COMMUNICATIONS LAS VEGAS, INC. DATE

LAS VEGAS VALLEY WATER DISTRICT

VERIFY SCALE



BAR REPRESENTS
ONE INCH OF FIELD
ON ORIGINAL
INCHES ON ORIGINAL

SLATER
HANIFAN
GROUP
CONSULTING ENGINEERS & PLANNERS
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5300

EGAN CREST 3090 ZONE NORTH PIPELINE, PHASE II

LVVWD GENERAL NOTES, LEGEND
AND AGENCY APPROVALS

SCALE
HORIZ. SCALE
VERT. SCALE
AS NOTED

DRAWN BY: 10/20/2016

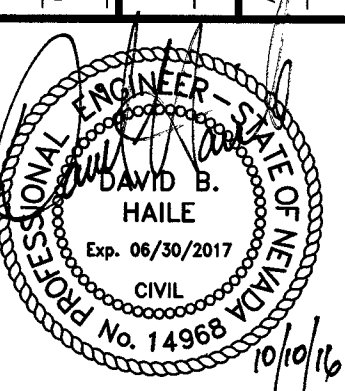
CHECKED BY: 10/20/2016

RECOMMENDED BY: DATE

SR. CIVIL ENGINEER DATE

ACCEPTED BY: DATE

RYAN C. PEARSON, DESIGN MANAGER DATE



CONTRACT NUMBER

C1450

REVISIONS:
DRAWING NUMBER G2
SHEET 2 OF 24

565-501

CLV DWG # H-64613

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CITY OF LAS VEGAS FIRE AND RESCUE GENERAL NOTES

- ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE LAS VEGAS FIRE AND RESCUE ADOPTED FIRE CODE ORDINANCE # 6325, FOR HYDRANT SPECIFICATIONS, AND HYDRANT INSTALLATION SPECIFICATIONS.
- ONLY FIRE HYDRANTS THAT ARE ON THE LAS VEGAS VALLEY WATER DISTRICT'S - APPROVED PRODUCTS LIST ARE ALLOWED TO BE INSTALLED.
- A PERMIT IS REQUIRED FROM LAS VEGAS FIRE AND RESCUE FOR ALL INSTALLATION OF ON-SITE WATER LINES AND FIRE HYDRANTS. THE PERMIT AND CONTRACTORS MATERIAL TEST CERTIFICATE FOR UNDERGROUND PIPING FORM SHALL BE OBTAINED FROM THE FIRE PROTECTION ENGINEER BEFORE COMMENCEMENT OF WORK [IFC 105.7.12]
- ON ANT RESIDENTIAL OR COMMERCIAL INSTALLATIONS, FIRE HYDRANTS SHALL BE INSTALLED AND FIRE APPARATUS ACCESS ROADS SHALL BE MAINTAINED BEFORE COMMENCEMENT OF ANY COMBUSTIBLE CONSTRUCTION. ALL FIRE HYDRANTS SHALL BE IN GOOD WORKING ORDER AND SHALL BE CAPABLE OF DELIVERING THE REQUIRED FIRE FLOW. [IFC 3310, 3312]
- TO IDENTIFY THE FIRE HYDRANT LOCATIONS, THE CONTRACTOR SHALL PLACE A BLUE REFLECTIVE MARKER AT THE CENTER LINE OF THE STREET ADJACENT TO THE FIRE HYDRANTS. [IFC 507.5.7.3]
- ALL UNDERGROUND INSPECTIONS, PRESSURE AND FLUSH VERIFICATIONS OF ALL FIRE HYDRANTS AND FIRE LINES, SHALL BE CONDUCTED BEFORE COVERING THE LINES. CENTER LOADING IS ACCEPTABLE FOR THE HYDRO TESTS WITH PRIOR FIRE PREVENTION APPROVAL. [IFC 106.3]
- ALL ON-SITE UNDERGROUND WATER MAINS AND MATERIALS SHALL BE U.L. LISTED, A.W.W.A APPROVED AND SHALL BE RATED FOR THE APPROPRIATE WORKING PRESSURE. [IFC 507.2.1, NFPA 24]
- PAINTING OF CURBS, FIRE HYDRANTS, PADS, PROTECTION OF FIRE HYDRANTS FROM PHYSICAL DAMAGE, AND ALL OTHER WORK NECESSARY PER PLANS SHALL BE COMPLETED BEFORE APPROVAL BY LAS VEGAS FIRE AND RESCUE, FIRE PREVENTION DIVISION. [IFC 507]
- PRIVATE HYDRANTS SHALL BE PANTED RED. [IFC 507.5.7.1]
- PRIOR TO THE FINAL OCCUPANCY, A FIRE FLOW TEST SHALL BE WITNESSED BY LAS VEGAS FIRE AND RESCUE, FIRE PREVENTION DIVISION TO VERIFY AVAILABILITY OF THE REQUIRED FIRE FLOW. [IFC 507]
- FIRE HYDRANT SPACING SHALL BE AS FOLLOWS: [IFC C102]
 - RESIDENTIAL- 500 FT UNSPRINKLERED; 600 FT SPRINKLERED.
 - COMMERCIAL- 300 FT UNSPRINKLERED; 400 FT SPRINKLERED.
- WHERE NEW WATER MAINS ARE EXTENDED ALONG STREETS OR NEW STREETS ARE INSTALLED WHERE FIRE HYDRANTS ARE NOT NEEDED FOR PROTECTION OF THE STRUCTURES, FIRE HYDRANTS SHALL BE INSTALLED AT A MAXIMUM OF 1,000 FT SPACING, TO PROVIDE FOR TRANSPORTATION HAZARDS. WHERE STREETS ARE PROVIDED WITH MEDIAN DIVIDERS OR HAVE FOUR (4) OR MORE TRAFFIC LANES AND HAVE A TRAFFIC COUNT OF MORE THAN 30,000 PER DAY, HYDRANTS ARE REQUIRED ON EACH SIDE OF THE STREET SPACED AT 500 FT ON AN ALTERNATING BASIS. [IFC C102.8]
- NO FIRE HYDRANTS SHALL BE LOCATED WITHIN THE RADIUS OF A CUL-DE-SAC OR WITHIN 20 FEET OF THE PERIMETER OF THE RADIUS OF THE CUL-DE-SAC.
- NO FIRE HYDRANTS SHALL BE LOCATED WITHIN 6 FT OF ANY CURB RETURN, DRIVEWAY, POWER POLE, STREETLIGHT OR ANY OTHER OBSTRUCTION. [IFC C102.12]
- A MAXIMUM DISTANCE FROM A FIRE HYDRANT TO A ONE-TWO FAMILY DWELLING SHALL NOT EXCEED 300 FT, AS MEASURED BY AN APPROVED ROUTE. [IFC C102.4]
- THE MAXIMUM DISTANCE FROM A FIRE HYDRANT TO A FIRE DEPARTMENT CONNECTION (FDC) SHALL NOT EXCEED 100 FT, AS MEASURED BY AN APPROVED ROUTE. [IFC C102.7]
- THE MAXIMUM DISTANCE FROM A HYDRANT TO THE END OF A DEAD-END STREET SHALL NOT EXCEED 200 FT. [IFC C102.6]
- TWO (2) SOURCES OF SUPPLY ARE REQUIRED WHENEVER THERE ARE 4 OR MORE FIRE HYDRANTS/SPRINKLER LEAD-INS ARE INSTALLED ON A SINGLE SYSTEM. SECTIONAL CONTROL VALVES SHALL BE INSTALLED SO THAT NO MORE THAN 2 FIRE HYDRANTS CAN BE OUT OF SERVICE DUE TO A BREAK IN A WATER MAIN. [IFC C104]
- ALL FIRE APPARATUS ACCESS ROADS SHALL BE PAVED TO PROVIDE ALL-WEATHER DRIVING CAPABILITIES, AND SHALL BE DESIGNED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF THE FIRE APPARATUS. [IFC 503.2.3]
- THE GRADIENT FOR THE FIRE APPARATUS ACCESS ROADS SHALL NOT EXCEED 12%. ANGLES OF APPROACH AND ANGLES OF DEPARTURE SHALL NOT EXCEED 6% FOR 25 FEET PRIOR TO OR AFTER THE GRADE CHANGE. ADJACENT TO THE STRUCTURES GRADIENT SHALL NOT EXCEED 6%. [IFC 503.2.7, 503.2.8]
- THE TURNING RADIUS OF THE FIRE APPARATUS ACCESS ROADS SHALL BE NO LESS THAN 52 FEET OUTSIDE AND 28 FEET INSIDE TURNING RADIUS. [IFC 503.2.4]
- VERTICAL CLEARANCE OF ALL FIRE APPARATUS ACCESS ROADS SHALL NOT BE LESS THAN 13 FT 6 INS. [IFC 503.2.1]
- FIRE DEPARTMENT ACCESS ROADS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF NOT LESS THAN 40 FT FLOW LINE TO FLOW LINE WITH PARALLEL PARKING PERMITTED ON BOTH SIDES. NOT LESS THAN 32 FT WIDE, FLOW LINE TO FLOW LINE, WHERE PARKING IS PERMITTED ONLY ON ONE SIDE OF THE FIRE APPARATUS ACCESS ROAD. NOT LESS THAN 24 FT WIDE, FLOW LINE TO FLOW LINE, WHERE NO PARKING IS PERMITTED ON EITHER SIDE. FIRE LANES THROUGH PARKING LOTS SHALL BE NOT LESS THAN 24 FT. [IFC 503.2.1.1]
- A FIRE APPARATUS ACCESS ROAD SHALL BE REQUIRED WHEN ANY PORTION OF AN EXTERIOR WALL OF THE FIRST STORY IS LOCATED MORE THAN 150 FT FROM A FIRE DEPARTMENT VEHICLE ACCESS. THE DISTANCE COULD BE INCREASED TO 250 FT IF THE BUILDING IS SPRINKLERED. [IFC 503.1.1]
- APPROVED SECONDARY FIRE APPARATUS ACCESS SHALL BE PROVIDED FOR 100 OR MORE DWELLING UNITS, ROAD(S) WITH DEAD-ENDS OR WITH A SINGLE POINT OF ACCESS IN EXCESS OF 600 FT. COMMERCIAL AND INDUSTRIAL DEVELOPMENTS WHERE BUILDINGS EXCEED 2 STORIES OR 30 FEET IN HEIGHT, OR EXCEEDING 62,000 SQUARE FEET IN AREA. [IFC 503.1.2]
- ALL DEAD-END FIRE APPARATUS ROADS AND/OR FIRE LANES, PUBLIC OR PRIVATE, IN EXCESS OF 150 FT IN LENGTH SHALL BE PROVIDED WITH AN APPROVED TURN AROUND HAVING A MINIMUM DIAMETER OF 81 FT. [IFC 503.2.5]
- FIRE APPARATUS ACCESS ROADS SHALL BE MARKED BY PLACING APPROVED SIGNS AT THE START OF THE DESIGNATED FIRE LANE, ONE SIGN AT THE END OF THE FIRE LANE AND WITH SIGNS AT INTERVALS OF 100 FEET ALONG THE DESIGNATED FIRE LANES. SIGNS TO BE PLACED ON BOTH SIDES OF AN ACCESS ROADWAY IF NEEDED TO PREVENT PARKING ON EITHER SIDE. SIGNS TO BE INSTALLED NO HIGHER THAN 10 FT OR LESS THAN 6 FT FROM THE ROADWAY LEVEL. THE CURB ALONG OR ON THE PAVEMENT OR CEMENT (IF NO CURB IS PROVIDED) SHALL BE PAINTED WITH A RED WEATHER RESISTANT PAINT IN ADDITION TO THE SIGNS. [IFC 503.3]
- ELECTRICALLY CONTROLLED ACCESS GATES SHALL BE PROVIDED WITH AN APPROVED EMERGENCY VEHICLE DETECTOR/RECEIVER SYSTEM. SAID SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE IFC 503.6 AND IFC APPENDIX M.

DEVIATIONS FROM STANDARDS

THERE ARE NO DEVIATIONS FROM APPLICABLE CITY OF LAS VEGAS STANDARDS, UNLESS STATED IN THE SPECIFICATIONS.

CITY OF LAS VEGAS GENERAL NOTES

- ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE "UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA NEVADA", LATEST ISSUE; THE "UNIFORM STANDARD DRAWINGS FOR PUBLIC WORKS CONSTRUCTION, CLARK COUNTY AREA NEVADA", LATEST REVISED EDITION; THE "SUMMERLIN IMPROVEMENT STANDARDS" FOR WORK IN THE SUMMERLIN AREA; AND OTHER APPLICABLE APPROVED STANDARDS ISSUED BY THE CONTROLLING AGENCY; THE UNIFORM BUILDING CODE; AND ALL LOCAL CITY CODES AND ORDINANCES APPLICABLE, EXCEPT AS NOTED ON THIS SHEET AS "DEVIATIONS FROM STANDARDS".
 - THE EXISTENCE AND LOCATION OF ANY OVERHEAD OR UNDERGROUND UTILITY LINES, PIPES, OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A RESEARCH OF THE AVAILABLE RECORDS. EXISTING UTILITIES AS SHOWN FROM CLV PLANS LIBRARY ARE APPROXIMATE AND FOR RECORD PURPOSES. EXISTING UTILITIES ARE LOCATED ON PLANS ONLY FOR THE CONVENIENCE OF THE CONTRACTOR. EXISTING UTILITY SERVICE LATERALS MAY NOT BE SHOWN ON THE PLANS. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, LOCATE ALL UNDERGROUND AND OVERHEAD INTERFERENCE'S WHICH MAY AFFECT HIS OPERATION DURING CONSTRUCTION AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO SAME. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING NEAR OVERHEAD UTILITIES SO AS TO SAFELY PROTECT ALL PERSONNEL AND EQUIPMENT, AND SHALL BE RESPONSIBLE FOR ALL COST AND LIABILITY IN CONNECTION THEREWITH.
 - THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT EXISTING UTILITY LINES, STRUCTURES AND STREET IMPROVEMENTS WHICH ARE TO REMAIN IN PLACE, FROM DAMAGE, AND ALL SUCH IMPROVEMENTS OR STRUCTURES DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED SATISFACTORY TO THE CITY ENGINEER AND OWNING UTILITY COMPANY AT THE EXPENSE OF THE CONTRACTOR.
 - ALL CONSTRUCTION SHALL BE AS SHOWN ON THESE PLANS, ANY REVISIONS SHALL HAVE THE PRIOR WRITTEN APPROVAL OF THE CITY ENGINEER.
 - TYPE V CEMENT SHALL BE USED IN ALL OFF-SITE CONCRETE WORK. CONCRETE TO BE 3000 P.S.I. MINIMUM @ 28 DAYS. MIX DESIGNS TO BE APPROVED BY THE CITY, PRIOR TO THE USE ON THE PROJECT.
 - PERMITS ARE REQUIRED FOR ANY WORK IN THE PUBLIC RIGHT-OF-WAY. THE CONTRACTOR SHALL SECURE ALL PERMITS AND INSPECTIONS REQUIRED FOR THIS CONSTRUCTION.
 - EXPANSION JOINTS REQUIRED, MAXIMUM EVERY 300' IN EXTRUDED-TYPE CURB.
 - AC PAVEMENT TO BE ONE-HALF INCH (1/2") ABOVE LIP OF ALL GUTTERS AFTER COMPACTION, EXCEPT AT SIDEWALK RAMPS AND CROSS GUTTERS.
 - CURB AND GUTTER FOUND TO BE UNACCEPTABLE TO THE CITY OF LAS VEGAS SHALL BE REMOVED AND REPLACED PER STANDARD DRAWING 216.
 - SIDEWALK RAMPS SHALL BE CONSTRUCTED IN EACH QUADRANT OF AN INTERSECTION PER STANDARD DRAWING 235. EXACT LOCATION OF RAMPS MAY BE ADJUSTED IN THE FIELD BY A CITY INSPECTOR.
 - CONTRACTOR SHALL PROVIDE ALL NECESSARY HORIZONTAL AND VERTICAL TRANSITIONS BETWEEN NEW CONSTRUCTION AND EXISTING SURFACES TO PROVIDE FOR PROPER DRAINAGE AND FOR INGRESS AND EGRESS TO NEW CONSTRUCTION. THE EXTENT OF THE TRANSITIONS TO BE AS SHOWN ON PLANS.
 - ALL GRADING WORK SHALL CONFORM TO THE SOILS REPORT AS PREPARED BY GEOTEK, REPORT #12208-LVR, APRIL 13, 2016 APPROVED BY THE CITY ENGINEER, AND AS SHOWN ON THESE PLANS.
 - EXACT LOCATION OF ALL SAWCUT LINES MAY BE ADJUSTED OR DETERMINED IN THE FIELD BY A CITY OF LAS VEGAS ENGINEER IF LOCATION ON PLANS IS NOT CLEARLY SHOWN, OR EXISTING PAVEMENT CONDITION REQUIRES RELOCATIONS.
 - THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PROTECT EXISTING PERMANENT SURVEY MONUMENTS. ANY MONUMENTS DISTURBED SHALL BE REPLACED AND ADJUSTED PER AVAILABLE RECORDS IN ACCORDANCE WITH N.R.S. STATUTE NO. 625.380 & CITY OF LAS VEGAS TITLE 18, APPENDIX D.
 - UTILITY COMPANY METER BOXES, MANHOLE LIDS, VALVE COVERS, ETC., SHALL BE LOCATED OUT OF DRIVEWAYS, DRIVEWAY APRONS, FLOWLINES, AND CROSS GUTTERS UNLESS WRITTEN APPROVAL IS GRANTED BY THE UTILITY COMPANY AND THE CITY ENGINEER.
- WALL NOTES:
- ALL WALLS, NEW OR EXISTING, ARE ONLY SHOWN ON CIVIL PLANS FOR THE PURPOSE OF REVIEWING GRADING RELATIONSHIPS; FLOOD CONTROL AND SIGHT DISTANCE AT INTERSECTIONS. NEW WALLS REQUIRE A SEPARATE PERMIT AND INSPECTION BY THE BUILDING DEPARTMENT.
 - ASPHALT MIX DESIGN MUST BE SUBMITTED AND APPROVED BY THE CITY ENGINEER PRIOR TO THE PLACEMENT OF ASPHALT WITHIN CITY RIGHT OF WAY.
 - CONTRACTOR SHALL ADJUST ALL NEW AND EXISTING INLETS, VALVE BOXES, MANHOLE RIMS, AND SEWER CLEAN OUTS, ETC. TO FINISH GRADE AS APPLICABLE WHETHER OR NOT THEY ARE SHOWN ON THE PLANS.
 - MATERIALS, HANDLING AND PLACEMENT OF PORTLAND CEMENT CONCRETE SHALL BE IN ACCORDANCE WITH APPLICABLE SECTIONS OF NDOT OR THE CLARK COUNTY AREA SPECIFICATIONS (AS APPLICABLE) AND THE PLANS AND DETAILS SHOWN HEREON.
 - WHEN INSTALLING UNDERGROUND FACILITIES THAT REQUIRE UNDERGROUND LOCATING DEVICES SUCH AS MARKER BALLS, LOCATING RIBBON, ETC, THE CONTRACTOR SHALL PROVIDE WRITTEN DOCUMENTATION TO OFFSITE INSPECTION AND TESTING CERTIFYING THAT ALL DEVICES HAVE BEEN PLACED AND VERIFIED TO BE IN GOOD WORKING CONDITION PRIOR TO THE CONSTRUCTION OF ANY ROAD BASE.
 - SANITARY SEWER AND STORM DRAIN FINAL LOCATION MAP(S) SHALL BE PROVIDED TO THE CITY AND APPROVED PRIOR TO ACCEPTANCE OF FACILITY VIDEO INSPECTION. THE MAP(S) SHALL INCLUDE THE HORIZONTAL AND VERTICAL (INVERT) LOCATION OF PUBLIC SEWER MANHOLES, STORM DRAIN MANHOLES AND TRANSITION STRUCTURES, STORM DRAIN LATERALS AT THE CONNECTION TO THE STORM DRAIN MAIN AND AT THE CONNECTION TO A DROP INLET, THE CONNECTION OF SEWER SERVICE LATERALS TO THE SEWER MAIN AND WHERE THE SEWER SERVICE LATERALS EXIT THE PUBLIC RIGHT-OF-WAY, AND STORM DRAIN MAIN ALIGNMENT, INCLUDING DEFLECTION POINTS. THE LOCATION SHALL BE DESCRIBED BY COORDINATES WHICH SHALL BE BASED ON THE OFFICIAL HORIZONTAL AND VERTICAL CONTROL NETWORKS OF THE CITY OF LAS VEGAS. FINAL LOCATION MAPS MUST BE SEALED AND CERTIFIED BE A NEVADA PROFESSIONAL LAND SURVEYOR TO HAVE POSITIONAL CERTAINTIES OF ±0.09 METERS (±0.3 FEET) HORIZONTALLY AND VERTICALLY. A SEPARATE ELECTRONIC COMMA DELIMITED FILE FOR THE SANITARY SEWER AND STORM DRAIN COORDINATES SHALL ALSO ACCOMPANY THE SANITARY SEWER AND STORM DRAIN FINAL LOCATION MAP(S).
- OR
- SANITARY SEWER AND STORM DRAIN FACILITIES SHOWN ON THESE PLANS SHALL BE USED TO MEET THE REQUIREMENTS OF NRS 455 AND SHALL SHOW AT A MINIMUM THE HORIZONTAL AND VERTICAL (INVERT) LOCATION OF PUBLIC MANHOLES, STORM DRAIN MANHOLES, STORM DRAIN LATERALS, AND THE CONNECTION OF SEWER SERVICE LATERALS TO THE SEWER MAIN AND WHERE THE SEWER SERVICE LATERALS EXIT THE PUBLIC RIGHT-OF-WAY. ANY DEVIATIONS FROM THE INFORMATION SHOWN SHALL BE NOTED AND SUBMITTED AS A REVISION TO THE PLANS AND APPROVED PRIOR TO ACCEPTANCE OF FACILITY VIDEO INSPECTION.
- CCTV VIDEO INSPECTION IS REQUIRED FOR ALL SEWER AND STORM DRAINS. THE CCTV VIDEO INSPECTIONS NEED TO BE PERFORMED PER THE DESIGN AND CONSTRUCTION STANDARDS FOR WASTEWATER COLLECTION SYSTEMS LATEST ADDITION.
 - A SEPARATE BORING PERMIT IS REQUIRED FOR ALL BORING ACTIVITIES.

CITY OF LAS VEGAS SEWER NOTES

- ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE DESIGN AND CONSTRUCTION STANDARDS FOR WASTEWATER COLLECTION SYSTEMS AND THE UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS' CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA, NEVADA, AS AMENDED. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO BE AWARE OF THE CONTENTS OF THE ABOVE SPECIFICATIONS.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PERFORM CONSTRUCTION AS PER PLANS. ANY ADDITIONS, DELETIONS, OR CHANGES SHALL FIRST MEET WITH THE APPROVAL OF THE CITY ENGINEER.
- CHISEL "S" OR "G" IN CURBS WHERE SEWER OR GAS LATERALS PASS UNDER THE CURB.
- POLYVINYL (PVC) SEWER PIPE SHALL MEET ASTM D-3034 SDR 35 SPECIFICATIONS, INSTALLED WITH SAND BEDDING AND BACKFILL OF TYPE II AGGREGATE BASE.
- ALL MANHOLES PAVED IN STREETS EIGHTY (80') FOOT R/W AND LARGER SHALL HAVE CONCRETE COLLARS. STREETS LESS THAN EIGHTY (80') FOOT R/W WILL REQUIRE RETROFIT IF PAVING DOES NOT CONFORM TO CITY STANDARDS AT THE MANHOLE.
- TEE SADDLES SHALL BE USED TO CONNECT SEWER LATERALS TO EXISTING MAIN LINES UP TO TWELVE INCH (12") DIAMETER. CONNECTIONS TO FIFTEEN INCH (15") OR LARGER MAINS SHALL REQUIRE SPECIAL PROCEDURES. IN LINE "Y" "S" SHALL BE USED ON LINES TWELVE INCHES (12") OR ABOVE.
- WATER MAINS SHALL BE PROTECTED IN ACCORDANCE WITH LVWMD STANDARDS WHENEVER A SEWER MAIN CROSSES OVER A WATER MAIN OR THE SEWER IS LESS THAN EIGHTEEN INCH (18") UNDER A WATER MAIN.
- ALL CONTRACTORS INSTALLING SEWER MAINS THAT WILL BE UNDER THE JURISDICTION OF THE CITY OF LAS VEGAS MUST BE STATE OF NEVADA CLASS "A" CONTRACTORS.
- THE CITY OF LAS VEGAS WILL NOT ACCEPT ANY SEWER MAINS WHICH HAVE A VERTICAL DEFLECTION OF MORE THAN ONE TENTH (0.1) OF A FOOT FROM THE APPROVED CONSTRUCTION PLANS AT ANY LOCATION. SEWER MAINS FOUND TO EXCEED THIS TOLERANCE WILL HAVE TO BE REPAIRED OR REMOVED OR REPLACED TO THE SATISFACTION OF THE CITY ENGINEER PRIOR TO ACCEPTANCE BY THE CITY OF LAS VEGAS.
- INSTALLATION OF CURVED SEWER REQUIRES THE USE OF C-900 PIPE WHICH ALLOWS FOR PIPE DEFLECTION AT THE JOINTS.

CITY OF LAS VEGAS GRADING NOTES

- IN THE EVENT THAT ANY UNFORESEEN CONDITIONS NOT COVERED BY THESE NOTES ARE ENCOUNTERED DURING GRADING OPERATIONS, THE OWNER/ENGINEER SHALL BE IMMEDIATELY NOTIFIED FOR DIRECTION.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM ALL NECESSARY CUTS AND FILLS WITHIN THE LIMITS OF THIS PROJECT AND THE RELATED OFF-SITE WORK, SO AS TO GENERATE THE DESIRED SUBGRADE, FINISH GRADES AND SLOPES SHOWN.
- CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ALL EXCAVATION. ADEQUATE SHORING SHALL BE DESIGNED AND PROVIDED BY THE CONTRACTOR TO PREVENT UNDERMINING OF ANY ADJACENT FEATURES OR FACILITIES AND/OR CAVING OF THE EXCAVATION.
- THE CONTRACTOR IS WARNED THAT AN EARTHWORK BALANCE WAS NOT NECESSARILY THE INTENT OF THIS PROJECT. ANY ADDITIONAL MATERIAL REQUIRED OR LEFTOVER MATERIAL FOLLOWING EARTHWORK OPERATIONS BECOMES THE RESPONSIBILITY OF THE CONTRACTOR.
- THE GRADING CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH THE OWNER TO PROVIDE FOR THE REQUIREMENTS OF THE PROJECT STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND ASSOCIATED PERMIT.
- CONTRACTOR SHALL GRADE TO THE LINES AND ELEVATIONS SHOWN ON THE PLANS WITHIN THE FOLLOWING HORIZONTAL AND VERTICAL TOLERANCES AND DEGREES OF COMPACTION, IN THE AREAS INDICATED:

	HORIZONTAL	VERTICAL	COMPACTION
A. PAVEMENT AREA SUBGRADE	0.1'+	+0.0' to -0.1'	SEE SOILS REPORT
B. ENGINEERED FILL	0.5'+	+0.1' to -0.1'	SEE SOILS REPORT

COMPACTION TESTING WILL BE PERFORMED BY THE OWNER OR HIS REPRESENTATIVE.

- ALL CUT AND FILL SLOPES SHALL BE PROTECTED UNTIL EFFECTIVE EROSION CONTROL HAS BEEN ESTABLISHED.
- THE USE OF POTABLE WATER WITHOUT A SPECIAL PERMIT FOR BUILDING OR CONSTRUCTION PURPOSES INCLUDING CONSOLIDATION OF BACKFILL OR DUST CONTROL IS PROHIBITED. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR CONSTRUCTION WATER.
- THE CONTRACTOR SHALL MAINTAIN THE STREETS, SIDEWALKS AND ALL OTHER PUBLIC RIGHT-OF-WAY IN A CLEAN, SAFE AND USABLE CONDITION. ALL SPILLS OF SOIL, ROCK OR CONSTRUCTION DEBRIS SHALL BE PROMPTLY REMOVED FROM THE PUBLICLY OWNED PROPERTY DURING CONSTRUCTION AND UPON COMPLETION OF THE PROJECT. ALL ADJACENT PROPERTY, PRIVATE OR PUBLIC SHALL BE MAINTAINED IN A CLEAN, SAFE AND USABLE CONDITION.
- IN THE EVENT THAT ANY TEMPORARY CONSTRUCTION ITEM IS REQUIRED THAT IS NOT SHOWN ON THESE DRAWINGS, THE OWNER AGREES TO PROVIDE AND INSTALL SUCH ITEM AT HIS OWN EXPENSE AND AT THE DIRECTION OF THE CITY ENGINEER. TEMPORARY CONSTRUCTION INCLUDES DITCHES, BERMS, ROAD SIGNS AND BARRICADES, ETC.

APPROVED BY:

Allen Pavelka 12-20-16
CITY ENGINEER-ALLEN PAVELKA PE, #009029 DATE

APPROVAL OF THESE PLANS BY THE CITY ENGINEER IS LIMITED TO THOSE IMPROVEMENTS CONSTRUCTED IN THE DEDICATED OF RIGHT-OF-WAY, AND/OR DEDICATED EASEMENTS. THIS APPROVAL DOES NOT AUTHORIZE CONSTRUCTION OF ANY IMPROVEMENTS THAT DEVIATE FROM ADOPTED STANDARDS AND/OR SPECIFICATIONS EXCEPT THOSE SPECIALLY LISTED UNDER DEVIATIONS FORM STANDARDS. THE ENGINEER SHALL RESOLVE ANY DEVIATION OTHER THAN THOSE LISTED IN DEVIATIONS FROM STANDARDS IN FAVOR OF THE UNIFORM STANDARD DRAWINGS AND SPECIFICATIONS, CLARK COUNTY AREA, NEVADA.

R. Knight 11/2/16
LAS VEGAS FIRE AND RESCUE DATE

N/A
CHRIS KNIGHT, DIRECTOR BUILDING AND SAFETY DATE

THIS PLAN MEETS THE APPLICABLE STANDARDS OF THE PLANNING DEPARTMENT.

LAS VEGAS VALLEY WATER DISTRICT

VERIFY SCALE



BAR REPRESENTS ONE AND ONE-HALF INCHES ON ORIGINAL

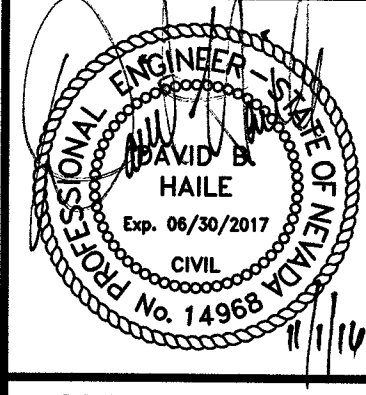
S-I-G
SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS
8740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 241-5500 FAX (702) 244-5589

EGAN CREST 3090 ZONE NORTH PIPELINE, PHASE II

CITY OF LAS VEGAS GENERAL NOTES I

SCALE
HORIZ. SCALE
VERT. SCALE
AS NOTED

DRAWN BY: 11/1/2016
CHECKED BY: DBH 11/1/2016
RECOMMENDED BY:
SR. CIVIL ENGINEER DATE
ACCEPTED BY: RYAN C. PEARSON, DESIGN MANAGER DATE



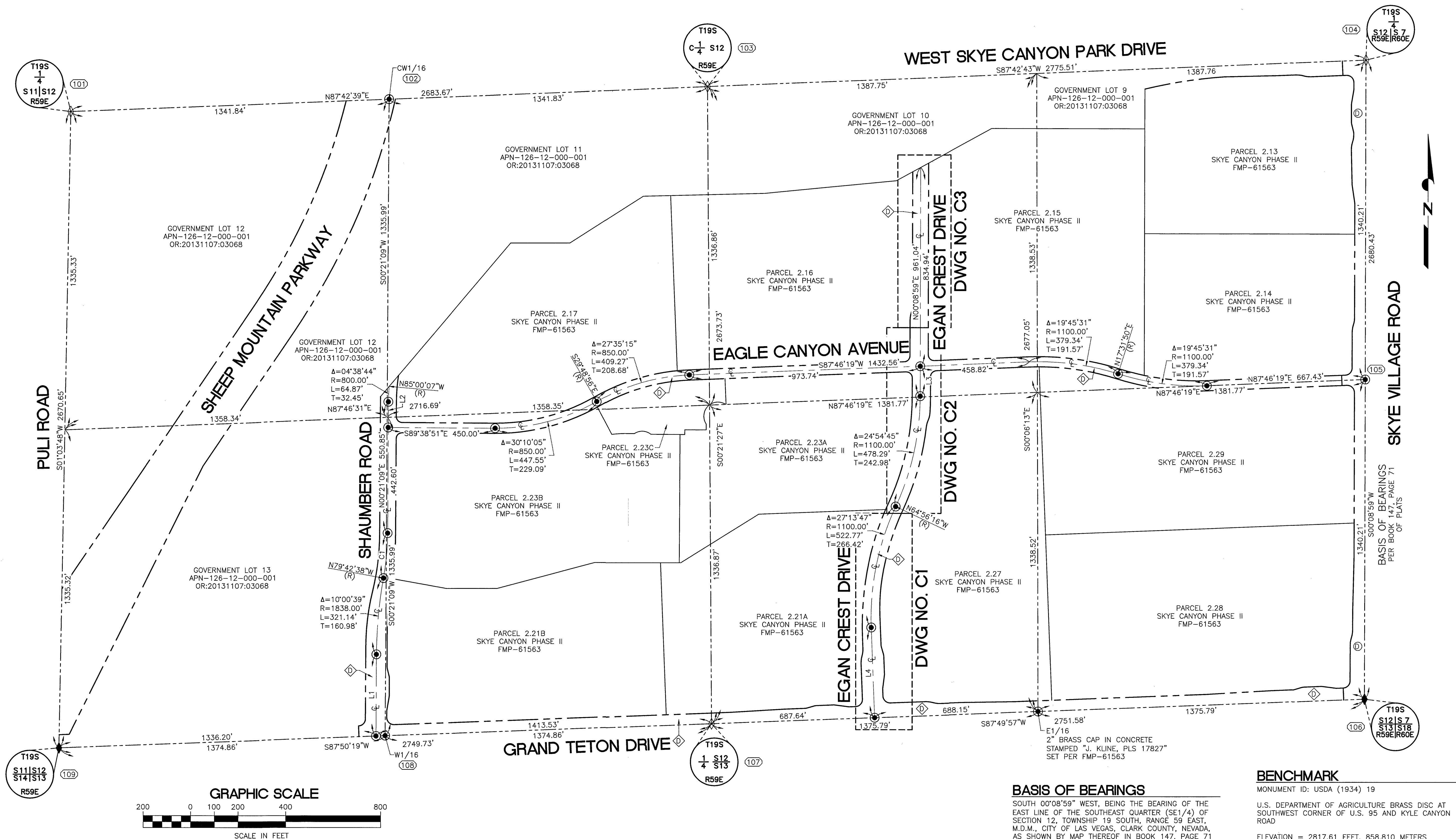
CONTRACT NUMBER

C1450

DRAWING NUMBER 63
SHEET 3 OF 24

565-501
CLV DWG # **H-64613**

- A -			- C - (CONT.)			- F - (CONT.)			- M - (CONT.)			- Q - (CONT.)			- T - (CONT.)													
A/C	AIR CONDITIONING	CON	CONCENTRIC	FPS	FEET PER SECOND	MLCP	MORTAR LINED & COATED PIPE	QS	QUAD SHEET	TOR	TOP OF RIM																	
AB	ANCHOR BOLT	CONC	CONCRETE	FPT	FEMALE PIPE THREAD	MLTCP	MORTAR LINED & COATED TAPE WRAPPED PIPE	QTR	QUARTER	TOS	TOP OF SLAB																	
ABAN	ABANDON	CONN	CONNECTION	FREQ	FREQUENCY	MON	MONUMENT	QTY	QUANTITY	TOSTL	TOP OF STEEL																	
ABC	AGGREGATE BASE COURSE	CONST	CONSTRUCTION	FRP	FIRE RETARDANT POLYESTER RESIN/ FIBERGLASS REINFORCED POLYMER	MOV	MOTOR OPERATED VALVE				TOSW	TOP OF SIDEWALK																
ABS	ABSOLUTE	CONT	CONTINUE OR CONTINUOUS				MPT	MALE PIPE THREAD				TOT	TOTAL															
ABUT	ABUTMENT	CONTR	CONTRACTOR	FSTNR	FASTENER	MSD	MAIN SERVICE DISTRIBUTION				TOW	TOP OF WALL																
ABV	ABOVE	COORD	COORDINATE	FT	FOOT OR FEET	MSDS	MATERIAL SAFETY DATA SHEET				TP	TELEPHONE POLE/TOP OF PIPE																
AC	ASPHALTIC CONCRETE	COR	CORNER	FTG	FOOTING	MTD	MOUNTED				TR	TRAIL OR TRACK/TOP OF RIM																
ACKV	AUTOMATIC CHECK VALVE	CORP STOP	CORPORATION STOP	FUT	FUTURE							TRANS	TRANSITION/TRANSMISSION															
ACP	ASBESTOS CEMENT PIPE	COV PL	COVER PLATE									(TYP)	TYPICAL															
ACS	ACCESS	CPLG	COUPLING																									
ADA	AMERICAN DISABILITY ACT	CPVC	CHLORINATED POLYVINYL CHLORIDE PIPE																									
AD	AREA DRAIN	CT	COURT																									
ADDL	ADDITIONAL	CTR	CENTER																									
ADDM	ADDENDUM	CTV	CABLE TELEVISION																									
ADJ	ADJUSTABLE	CU	CUBIC/COPPER																									
AGGR	AGGREGATE	CUST	CUSTOMER																									
AHD	AHEAD	CV	CONTROL VALVE																									
AL	ALUMINUM	CW	CLOCKWISE																									
ALT	ALTERNATE	CY	CUBIC YARD																									
AMS	ANGLE METER STOP	CYL	CYLINDER																									
AMT	AMOUNT																											
&	AND																											
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE																											
ANT	ANTENNA																											
AP	ACCESS PANEL	D OR Δ	DELTA ANGLE																									
APN	ASSESSOR PARCEL NUMBER	D/W	DRIVEWAY																									
APPROX	APPROXIMATE	DEC	DECIMETER																									
APVVD	APPROVED	DEMO	DEMOLITION																									
ASPH	ASPHALT	DEPT	DEPARTMENT																									
ASSN	ASSOCIATION	DET	DETAIL																									
ASSY	ASSEMBLY	DEV	DEVELOPMENT																									
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS	DI	DROP INLET OR DUCTILE IRON																									
AUX	AUXILIARY	DIA OR Ø	DIAMETER																									
AV	AIR VENT/AIR VALVE	DIAG	DIAGONAL																									
AVAR	AIR VACUUM AIR RELEASE VALVE	DIM	DIMENSION																									
AVE	AVENUE	DIP	DUCTILE IRON PIPE																									
AWG	AMERICAN WIRE GAUGE	DIR	DIRECTION																									
AWWA	AMERICAN WATER WORKS ASSOCIATION	DISCH	DISCHARGE																									
			DIST	DISTANCE																								
			DISTR	DISTRIBUTION																								
			DIV	DIVISION																								
			DL	DEAD LOAD																								
			DMH	DROP MANHOLE																								
			DN	DOWN																								
			DR	DRIVE																								
			DRW	DRY WELL																								
			DUPL	DUPLICATE																								
			DWG	DRAWING																								



CONTROL COORDINATE TABLE ABBREVIATION LISTING

DESCRIPTION:
BLM = BUREAU OF LAND MANAGEMENT
PLS = PROFESSIONAL LAND SURVEYOR
HARN = HIGH ACCURACY REF. NETWORK

GENERAL:
ELEV = ELEVATION
NO. = NUMBER

PROJECT CONTROL COORDINATE TABLE

POINT (NO.)	PROJECT COORDINATE INFORMATION				NEVADA COORDINATE SYSTEM 1983 HARN BASED EAST ZONE (FEET)		GEOGRAPHIC COORDINATES NAD 83 HARN BASED		
	NORTHING	EASTING	ELEV	DESCRIPTION	NORTHING	EASTING	LATITUDE	LONGITUDE	ELLIPSOID HT. (FT)
101	821839.4234	729962.5360	3064.46	FOUND 3" BLM BRASS CAP	26815871.7511	729799.8635	36°18'48.9736"	-115°20'00.2274"	2975.335
102	821892.9892	731303.1416	3006.76	FOUND RAILROAD SPIKE	26815925.3053	731140.1753	36°18'49.4686"	-115°19'43.8476"	2917.563
103	821946.6821	732644.0789	2950.50	FOUND 3/4" REBAR	26815978.9864	732480.8188	36°18'49.9643"	-115°19'27.4638"	2861.221
104	822057.4627	735417.3688	2856.03	FOUND 3.25" BRASS CAP IN WELL MON PLS 17827"	26816089.7427	735253.5010	36°18'50.9849"	-115°18'53.5790"	2766.604
105	820717.1844	735413.9110	2848.86	FOUND 2" BRASS CAP IN CONCRETE PLS 17827"	26814749.8287	735249.9703	36°18'37.7340	-115°18'53.6676"	2758.735
106	819376.9575	735410.2356	2854.72	FOUND 3.25" BRASS CAP IN WELL MON PLS 17827"	26813409.8248	735246.3694	36°18'24.4822	-115°18'53.7570"	2765.241
107	819272.9604	732660.6738	2962.86	FOUND 3" BRASS CAP STAMPED "PLS 17022"	26813305.8505	732497.4100	36°18'23.5280"	-115°19'27.3485"	2873.539
108	819221.0325	731286.9921	3016.50	FOUND 2" BRASS CAP, STAMPED "PLS 13930"	26813253.9340	731124.0293	36°18'23.0506	-115°19'44.1308"	2927.262
109	819169.3016	729913.0718	3069.28	FOUND 2" BLM BRASS CAP	26813202.2144	729750.4101	36°18'22.5745"	-115°20'00.9159"	2980.127

LINE TABLE

LINE	BEARING	DISTANCE
L1	N00°16'43"E	343.19'
L2	N00°21'09"E	108.25'
L3	N00°08'59"E	126.09'
L4	N02°10'03"W	378.52'

CURVE TABLE

CURVE	DELTA	RADIUS	LENGTH	TANGENT
C1	09°56'13"	1100.00'	190.77'	95.63'

BASIS OF BEARINGS

SOUTH 00°08'59" WEST, BEING THE BEARING OF THE EAST LINE OF THE SOUTHEAST QUARTER (SE1/4) OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF IN BOOK 147, PAGE 71 OF PLATS IN THE CLARK COUNTY RECORDER'S OFFICE, NEVADA.

LEGEND

APPROXIMATE PROPERTY LINE	◆	FOUND SECTION CORNER
STREET CENTERLINE	◇	FOUND 1/4 SECTION CORNER
SECTION LINE	●	2" ALUMINUM CAP STAMPED "J. KLINE, PLS 17827" WITH REFERENCE MONUMENTS SET IN TOP OF CURB PER FMP-61563
RIGHT OF WAY LINE	○	PUBLIC STREET DEDICATED PER BOOK 118, PAGE 88 OF PLATS
GENERAL EXTENTS OF HORIZONTAL CONTROL PLAN SHEET (DWG NO. SV-2)	◇	PUBLIC STREET DEDICATED PER FMP-61563
LOT NUMBER	①	
OR:		
ASSESSOR'S PARCEL NUMBER	◇	
RADIAL LINE	—(R)—	
LINE LABEL SEGMENT	L1	
CURVE LABEL SEGMENT	C1	

BENCHMARK

MONUMENT ID: USDA (1934) 19
U.S. DEPARTMENT OF AGRICULTURE BRASS DISC AT SOUTHWEST CORNER OF U.S. 95 AND KYLE CANYON ROAD
ELEVATION = 2817.61 FEET, 858.810 METERS
NAVD 88 DATUM
PER THE CITY OF LAS VEGAS BENCHMARK BOOK - 2008 ADJUSTMENT (UPDATED 05/24/2010)

LAS VEGAS VALLEY WATER DISTRICT

S-I-G GROUP
SLATER
HANIFAN
CONSULTING ENGINEERS & PLANNERS
5740 S. ARVILLE STREET #216 LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

VERIFY SCALE

1/2" = 1'

BAR REPRESENTS
ORIGINAL SCALE
INCHES ON ORIGINAL

EGAN CREST 3090 ZONE NORTH PIPELINE, PHASE II

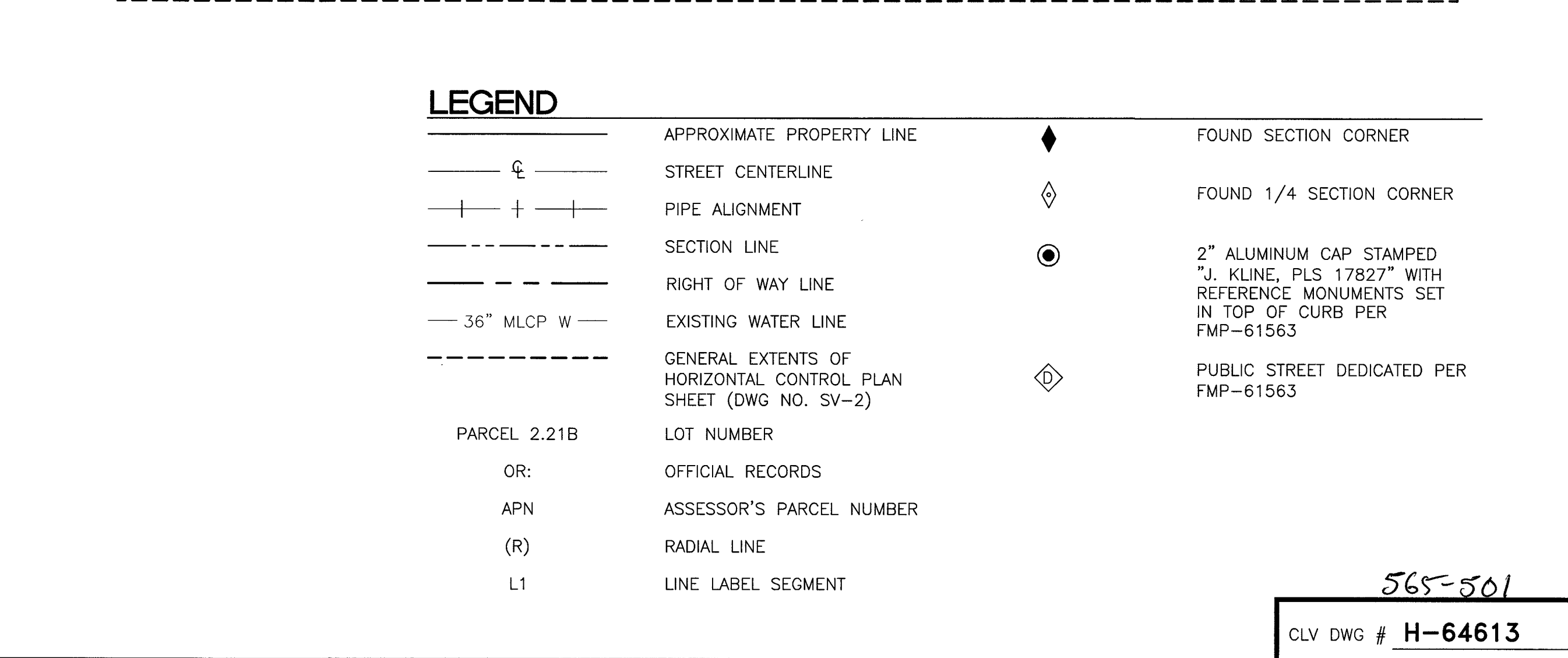
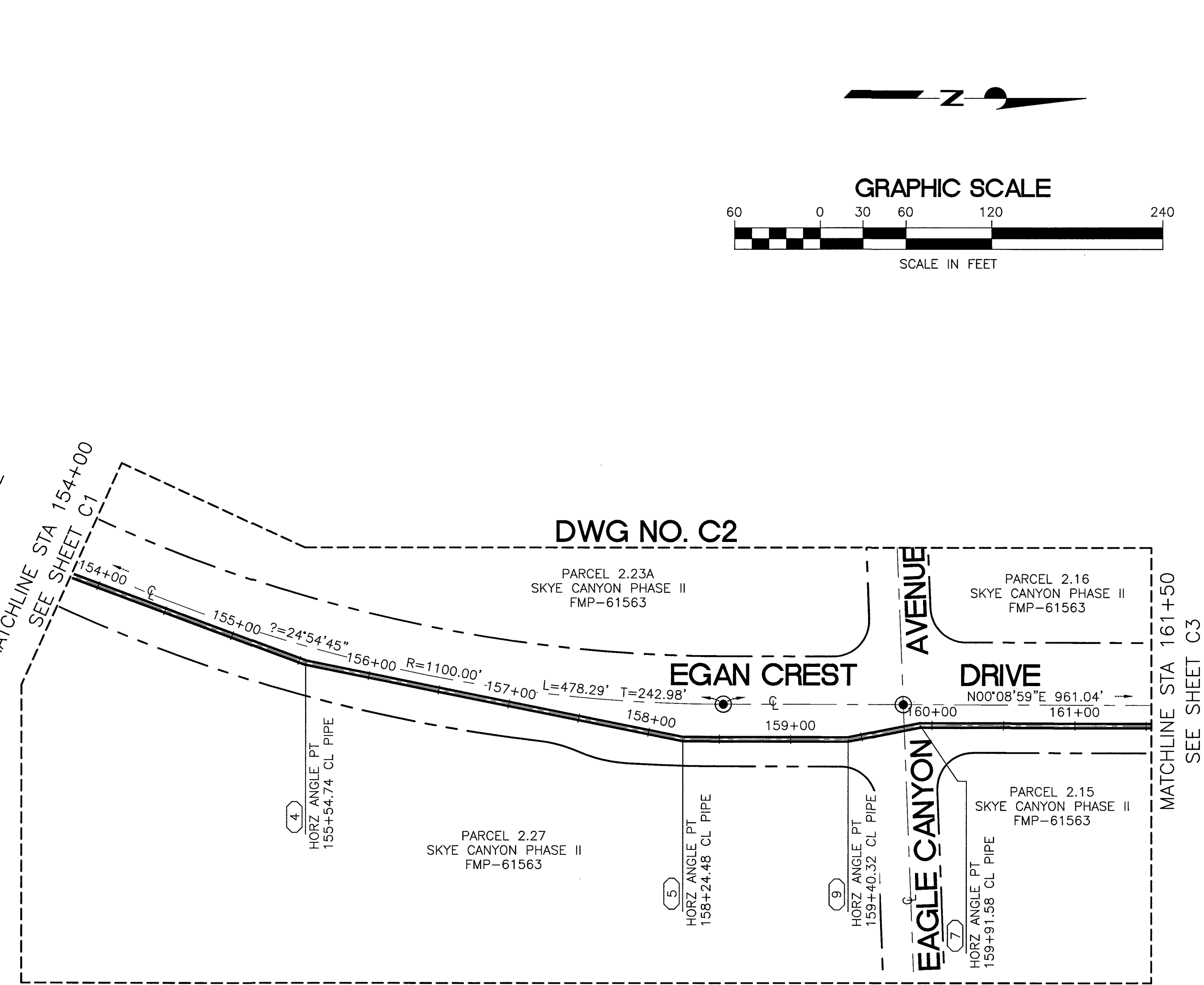
EGAN CREST HORIZONTAL CONTROL PLAN I

DRAWN BY: SE
CHECKED BY: DBH
RECOMMENDED BY: SR: CIVIL ENGINEER
ACCEPTED BY: RYAN C. PEARSON, DESIGN MANAGER

11/22/2016
11/22/2016
DATE
No. 17022
CRAIG K. MATSUEDA
PROFESSIONAL LAND SURVEYOR - STATE OF NEVADA

CONTRACT NUMBER
C1450
DRAWING NUMBER SV1
SHEET 6 OF 24

CLV DWG # H-64613



POINT (NO.)	PROJECT COORDINATE INFORMATION				NEVADA COORDINATE SYSTEM 1983, EAST ZONE HIGH ACCURACY REFERENCE NETWORK (HARN) BASED STATE PLANE COORDINATES (U.S. SURVEY FEET)	
	HORIZONTAL: U.S. SURVEY FEET		VERTICAL: N.A.V.D. 88 U.S. SURVEY FEET		NORTHING	EASTING
	NORTHING	EASTING	INVERT ELEV	PIPELINE DESCRIPTION		
1	819552.3448	733353.2222	2919.00	BEGIN CONSTRUCTION	26813585.1600	733189.8549
2	819792.1668	733344.0429	2918.52	HORZ. ANGLE POINT	26813824.9278	733180.6772
3	819988.5765	733375.3551	2915.67	HORZ. ANGLE POINT	26814021.2932	733211.9819
4	820355.1333	733511.0072	2907.50	HORZ. ANGLE POINT	26814387.7674	733347.6026
5	820619.5558	733564.3222	2904.36	HORZ. ANGLE POINT	26814652.1303	733400.9051
6	820735.3918	733564.6246	2903.02	HORZ. ANGLE POINT	26814767.9402	733401.2072
7	820785.6911	733554.7559	2908.31	HORZ. ANGLE POINT	26814818.2281	733391.3406
8	821413.7003	733556.3956	2901.13	END CONSTRUCTION	26815446.0954	733392.9787

LINE	BEARING	DISTANCE
L1	S87°49'57"W	14.93'

SOUTH 00°08'59" WEST, BEING THE BEARING OF THE EAST LINE OF THE SOUTHEAST QUARTER (SE1/4) OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF IN BOOK 147, PAGE 71 OF PLATS IN THE CLARK COUNTY RECORDER'S OFFICE, NEVADA.

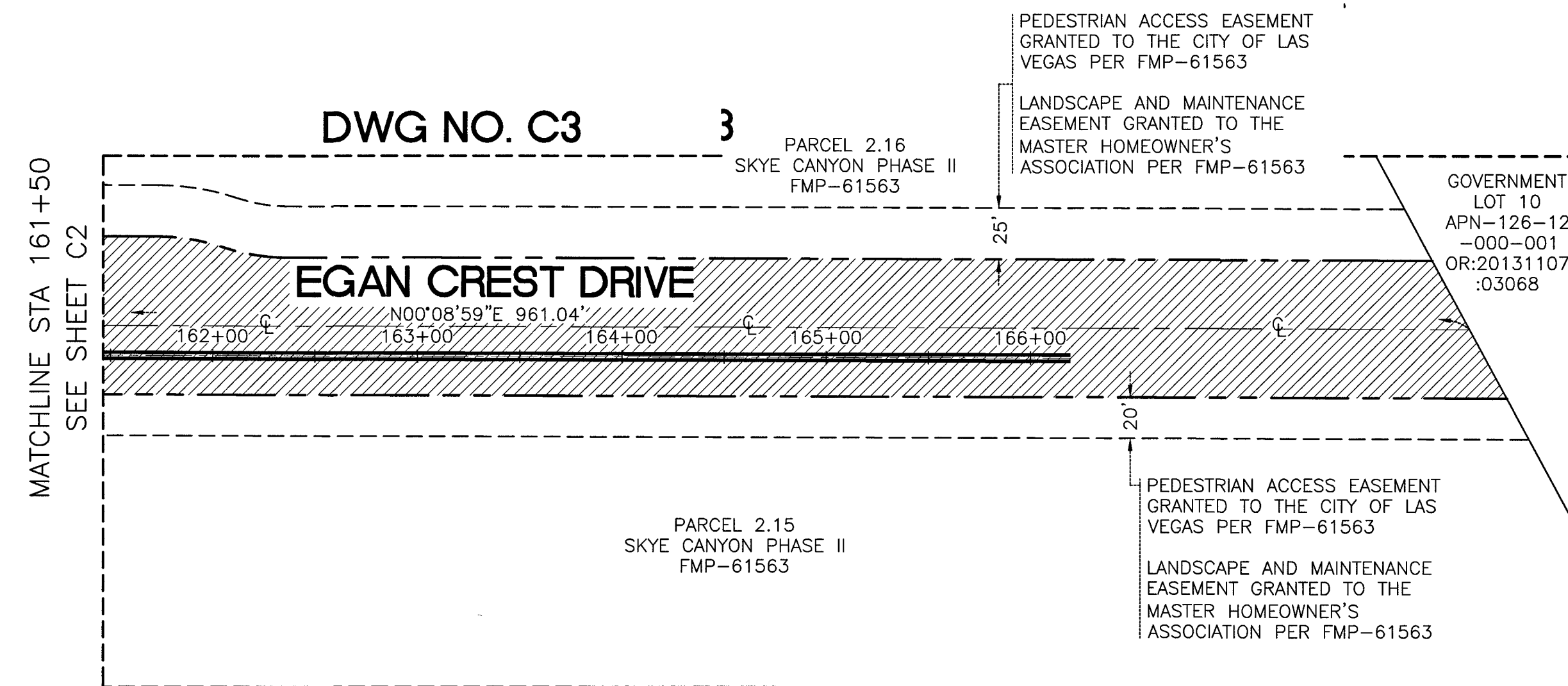
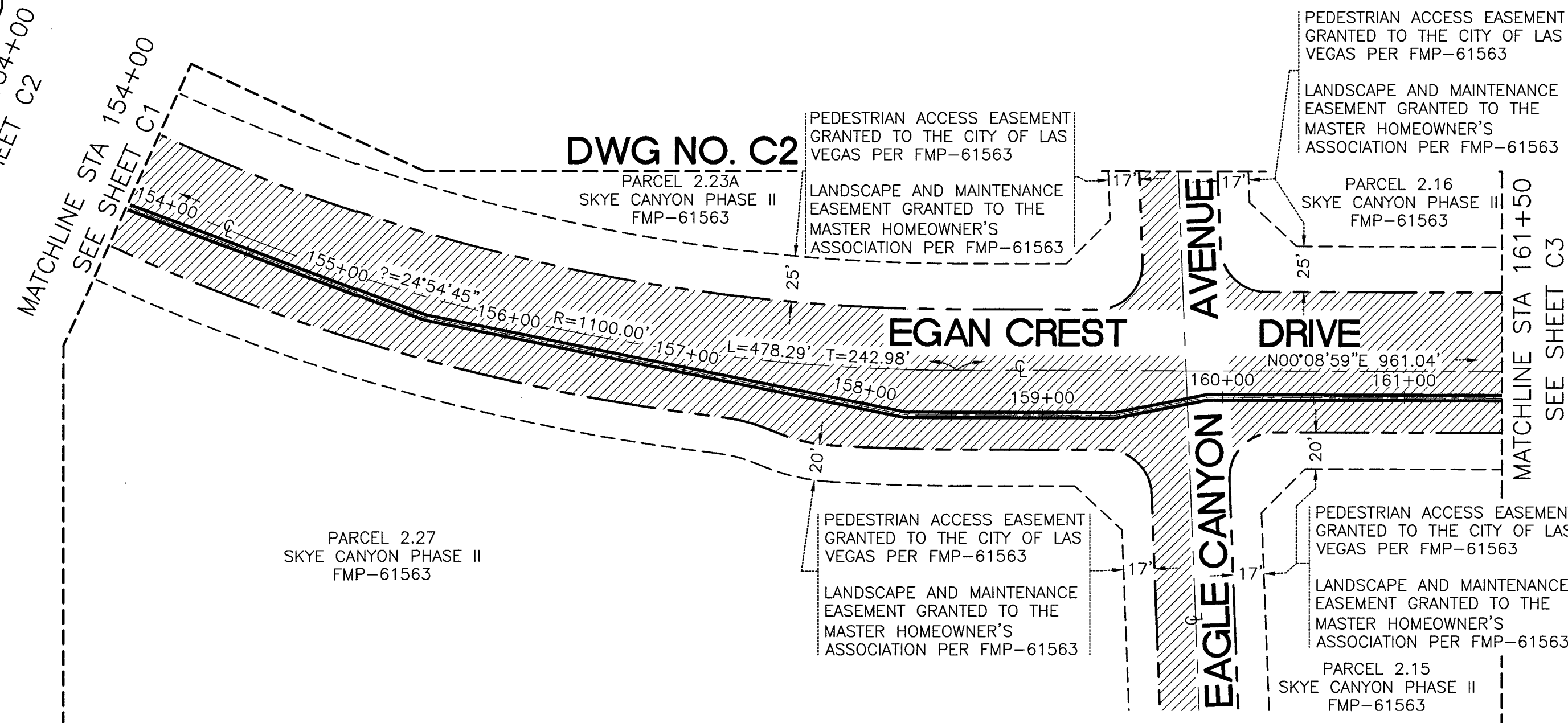
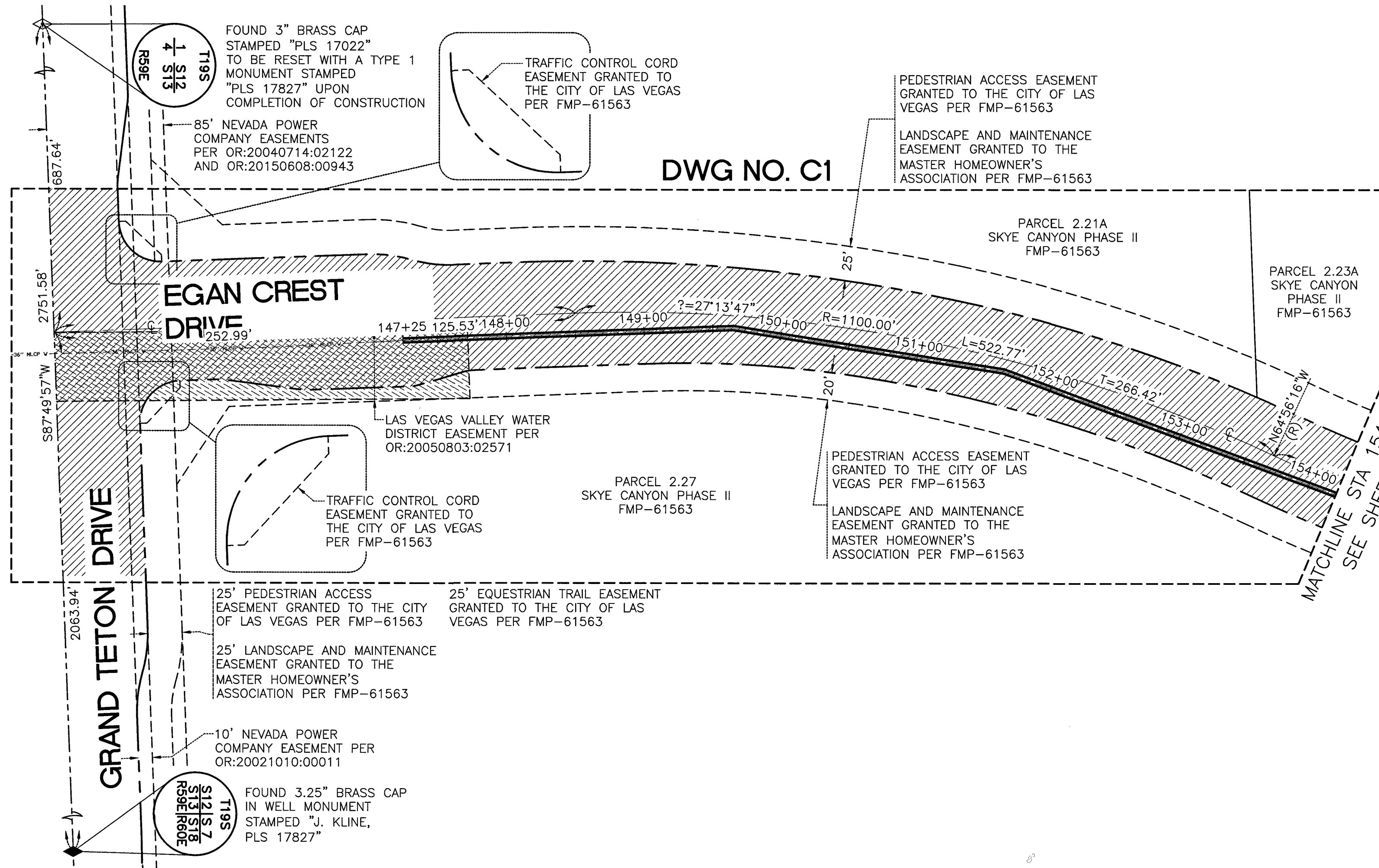


CONTRACT NUMBER

C1450

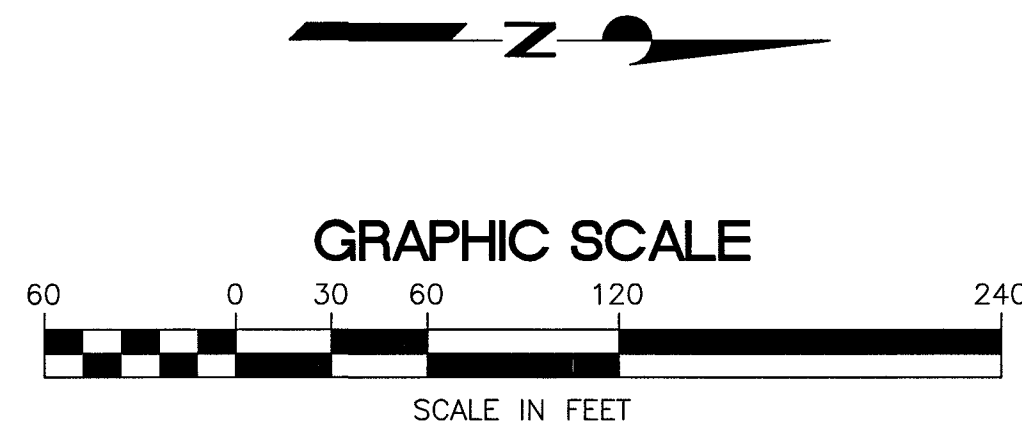
DRAWING NUMBER SV2

SHEET 7 OF 24



LEGEND

	APPROXIMATE PROPERTY LINE		FUTURE RIGHT OF WAY (R/W) DEDICATED PER FMP-61563
	STREET CENTERLINE		L.V.V.W.D. EASEMENT
	PIPE ALIGNMENT		
	SECTION LINE		
	RIGHT OF WAY LINE		
	EASEMENT LINE		
	EXISTING WATER LINE		
	GENERAL EXTENTS OF HORIZONTAL CONTROL PLAN SHEET (DWG NO. SV-2)		
PARCEL 2.21B	LOT NUMBER		
OR:	OFFICIAL RECORDS		
APN	ASSESSOR'S PARCEL NUMBER		
(R)	RADIAL LINE		

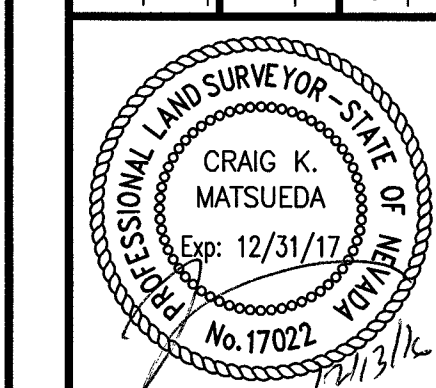


LAS VEGAS VALLEY WATER DISTRICT

VERIFY SCALE

EGAN CREST 3090 ZONE NORTH PIPELINE, PHASE II

DRAWN BY: SE
CHECKED BY: DBH
RECOMMENDED BY: DBH
DATE: 11/22/2016



CONTRACT NUMBER

C1450
DRAWING NUMBER SV3
SHEET 8 OF 24

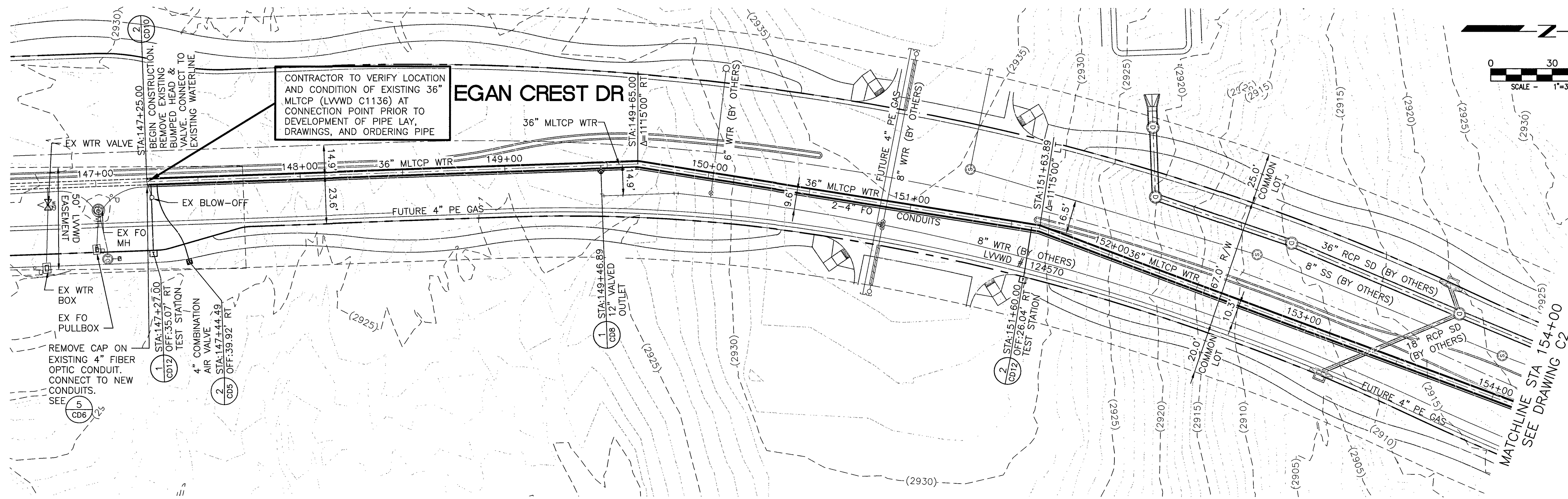
SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS
8740 S. ARVILLE STREET #216 LAS VEGAS, NV 89118
PHONE (702) 244-5500 FAX (702) 244-5595

BAR REPRESENTS ONE AND ONE-HALF INCHES ON ORIGINAL

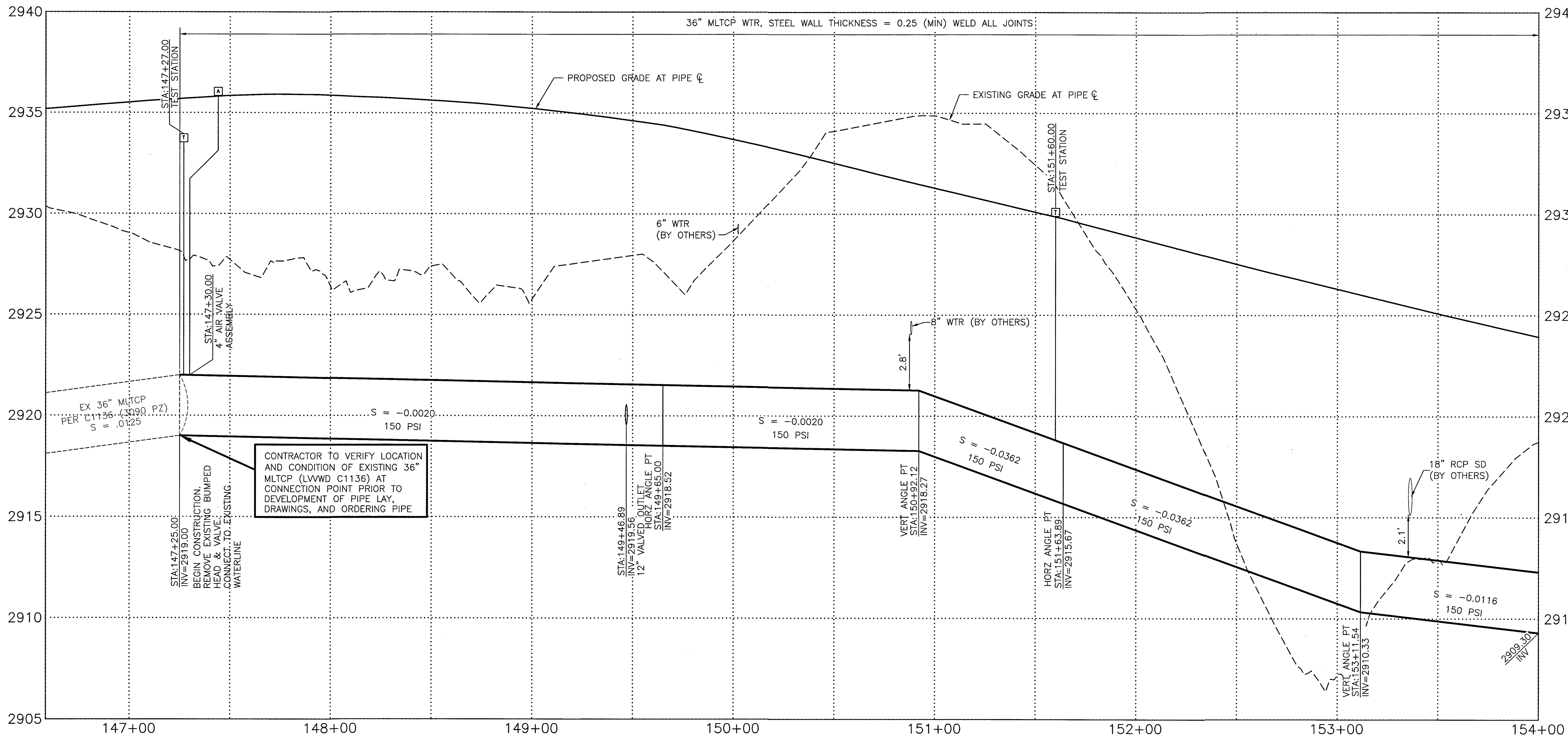
EGAN CREST RIGHT-OF-WAY SHEET

565-501
CLV DWG # H-64613

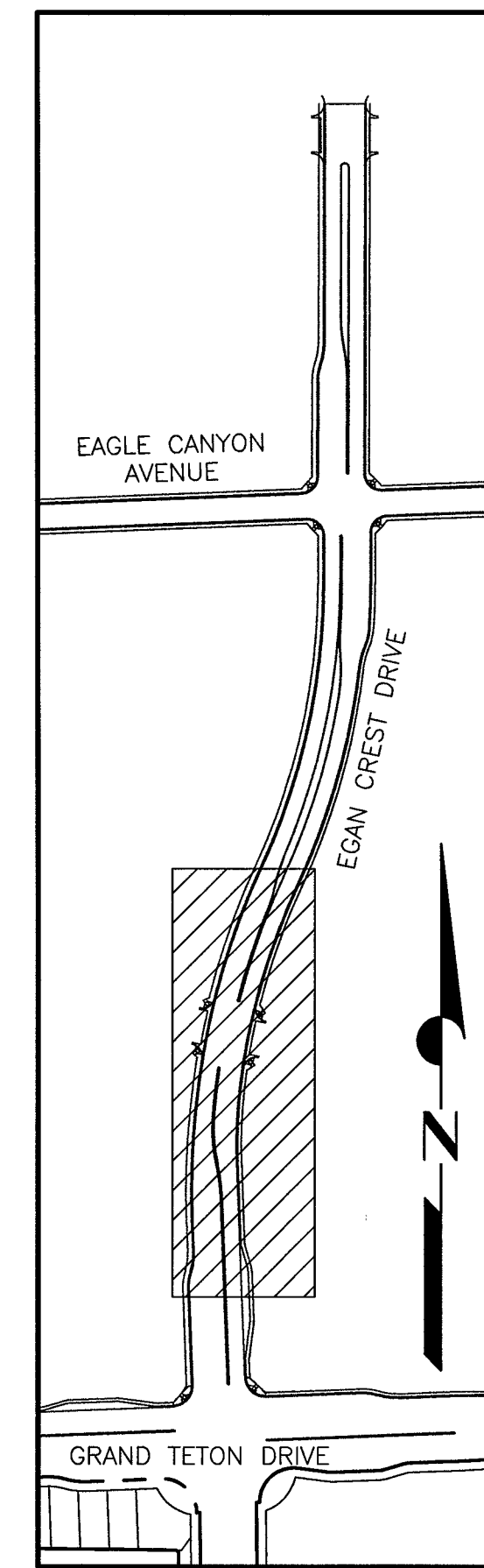
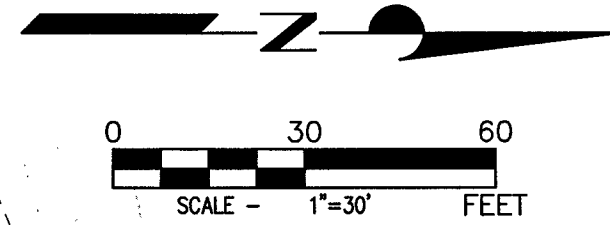
J:\OLY1511-000_Slave Canyon Egan Crest 36 Inch WL Ext.dwg Improv 11/22/2016 10:48 MAgelino Elitondo



EGAN CREST DRIVE PLAN VIEW
(PUBLIC)



EGAN CREST DRIVE PROFILE VIEW
HORZ. SCALE: 1"=30'
VERT. SCALE: 1"=3'



KEY MAP
SCALE: NTS

EX 36" MLTWP DATA (C1136)
STL CYL OD = 37.875"
STL CYL THK = 0.1875"
MORTAR LINING THK = 0.625"
MORTAR COATING THK = 1.0"

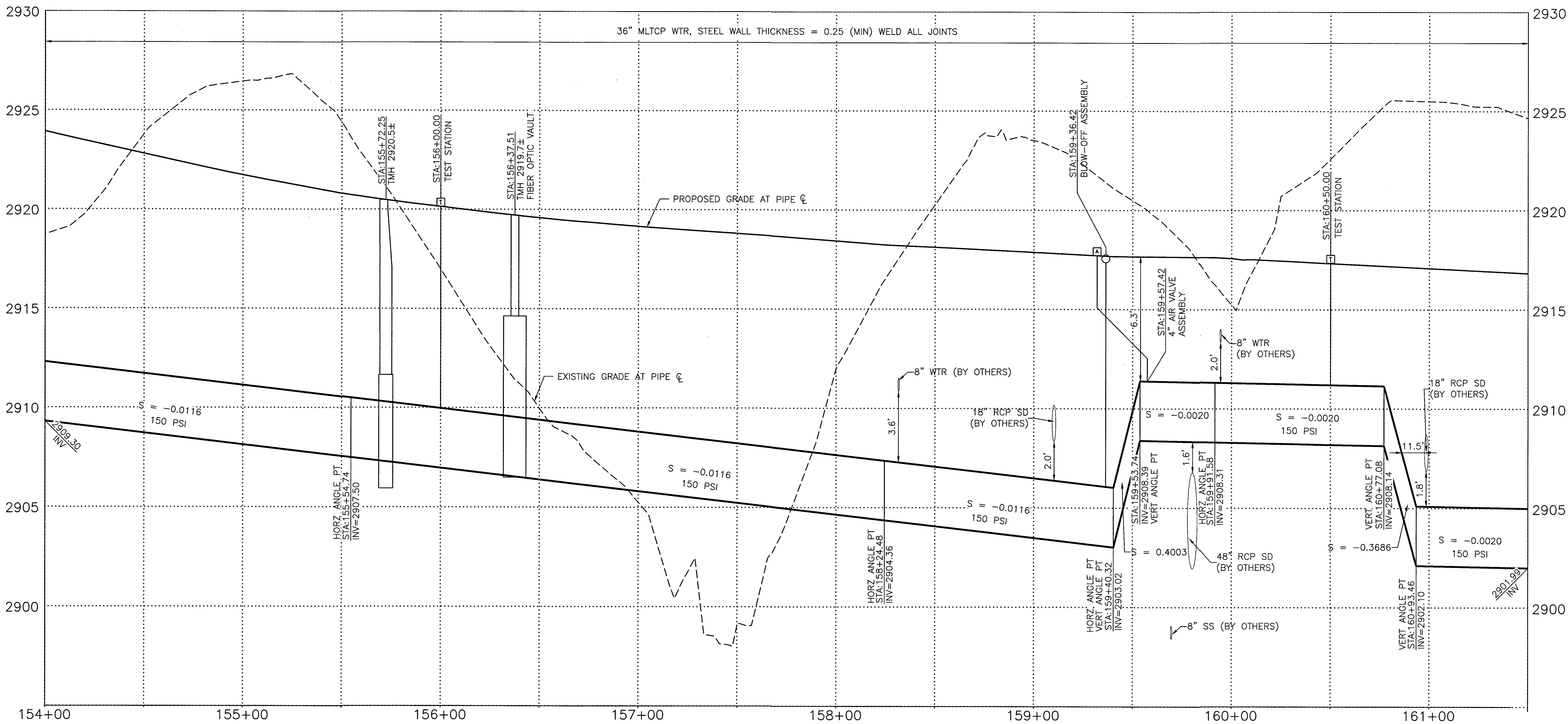
NEW 36" MLTWP DATA
STL CYL OD = 37.500"
STL CYL THK = 0.250"
MORTAR LINING THK = 0.50"
MORTAR COATING THK = 1.0"

Call before you
do Underground
1-702-455-6000
CLARK COUNTY TRAFFIC OPERATIONS
AND
1-702-432-5300
FREEWAY AND ARTERIAL SYSTEM OF TRANSPORTATION

Call before you Dig
AVOID CUTTING UNDERGROUND
UTILITY LINES. IT'S COSTLY.
Call 811
1-800-227-2600
OR
CLARK COUNTY TRAFFIC OPERATIONS
1-702-455-6000

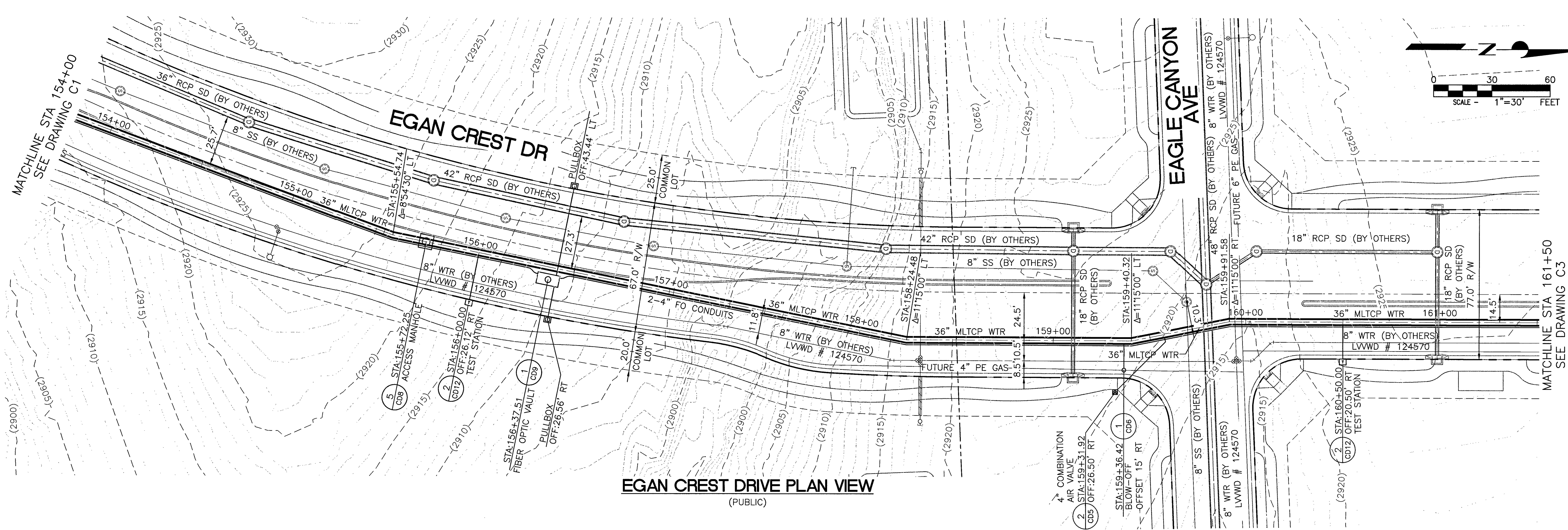
LAS VEGAS VALLEY WATER DISTRICT		S-I-G SLATER HANIFAN GROUP CONSULTING ENGINEERS & PLANNERS 6740 S. ARVILLE STREET #210, LAS VEGAS, NV 89118 PHONE (702) 284-5300 FAX (702) 284-5399	
VERIFY SCALE 1/2" = 0' 1/2" = 1'	BAR REPRESENTS ONE AND ONE-HALF INCHES ON ORIGINAL		
EGAN CREST 3090 ZONE NORTH PIPELINE, PHASE II		EGAN CREST PLAN AND PROFILE I	
DRAWN BY: SE		CHECKED BY: DBH	
RECOMMENDED BY: SR, CIVIL ENGINEER		DATE: _____	
ACCEPTED BY: RYAN C. PEARSON, DESIGN MANAGER		DATE: _____	
CONTRACT NUMBER C1450		DRAWING NUMBER C1 SHEET 9 OF 24	

J:\VOL1511-000 Snye Canyon Egan Crest 36 Inch Wt. Ext.dwg/Improv 11/22/2016 10:49 AM/ergio Elizondo



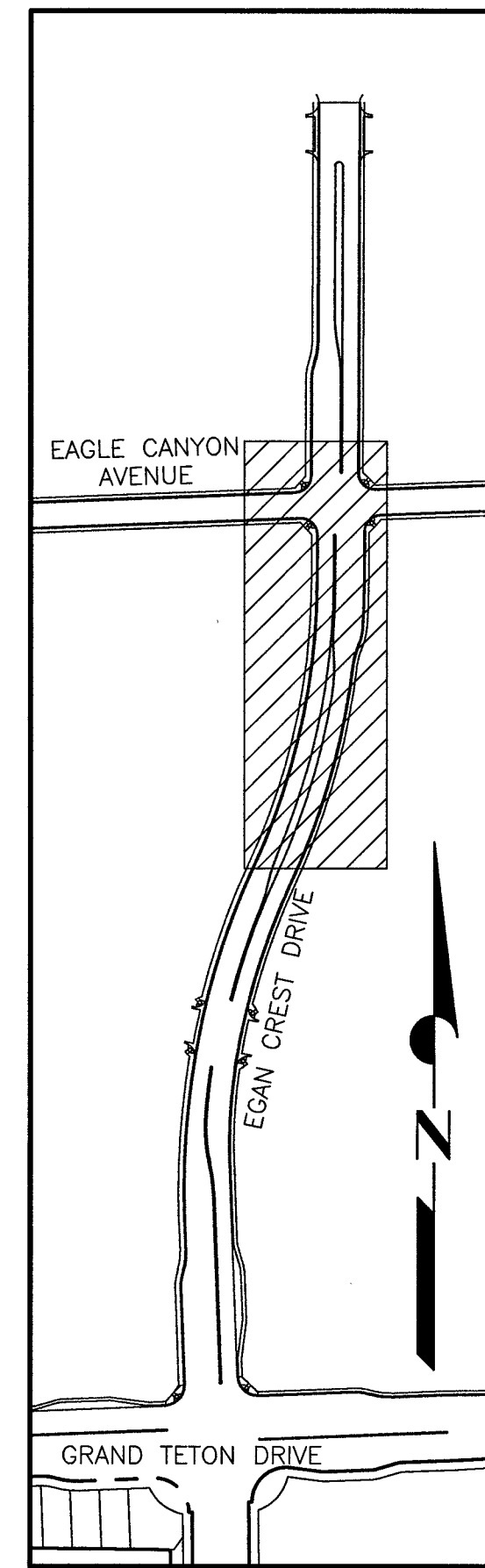
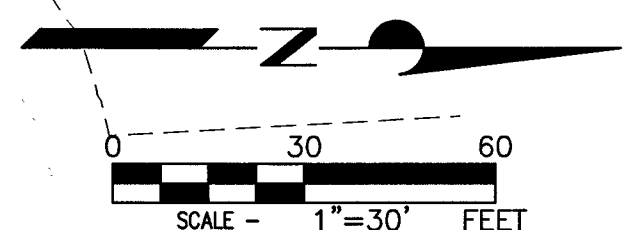
EGAN CREST DRIVE PROFILE VIEW

HORIZ. SCALE: 1"=30'
VERT. SCALE: 1"=3'



EGAN CREST DRIVE PLAN VIEW

(PUBLIC)



KEY MAP
SCALE: NTS

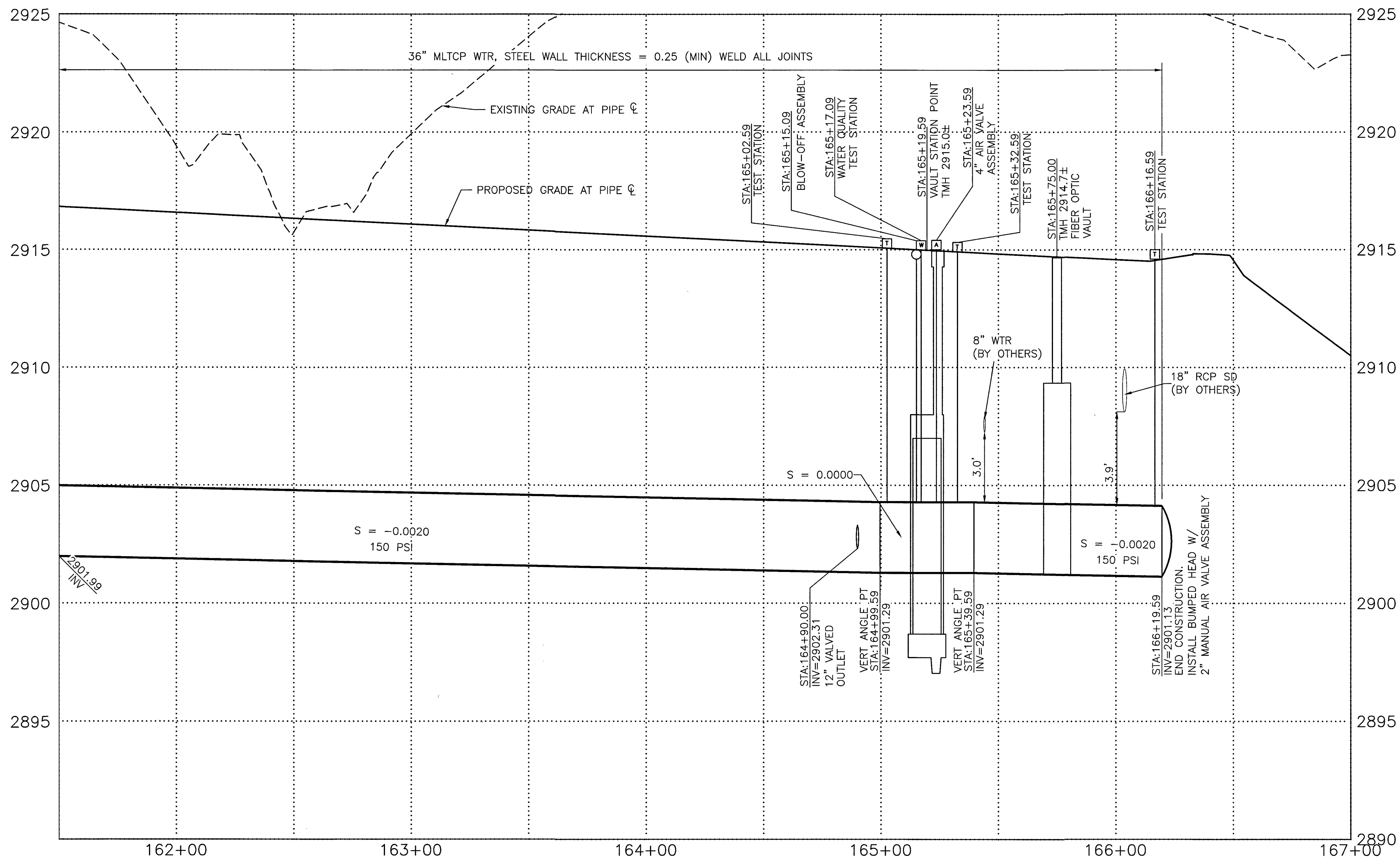
NEW 36" MLTCP DATA
STL CYL OD = 37.500"
STL CYL THK = 0.250"
MORTAR LINING THK = 0.500"
MORTAR COATING THK = 1.0"

Call before you Dig
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AND
CLARK COUNTY TRAFFIC OPERATIONS
1-702-455-6000

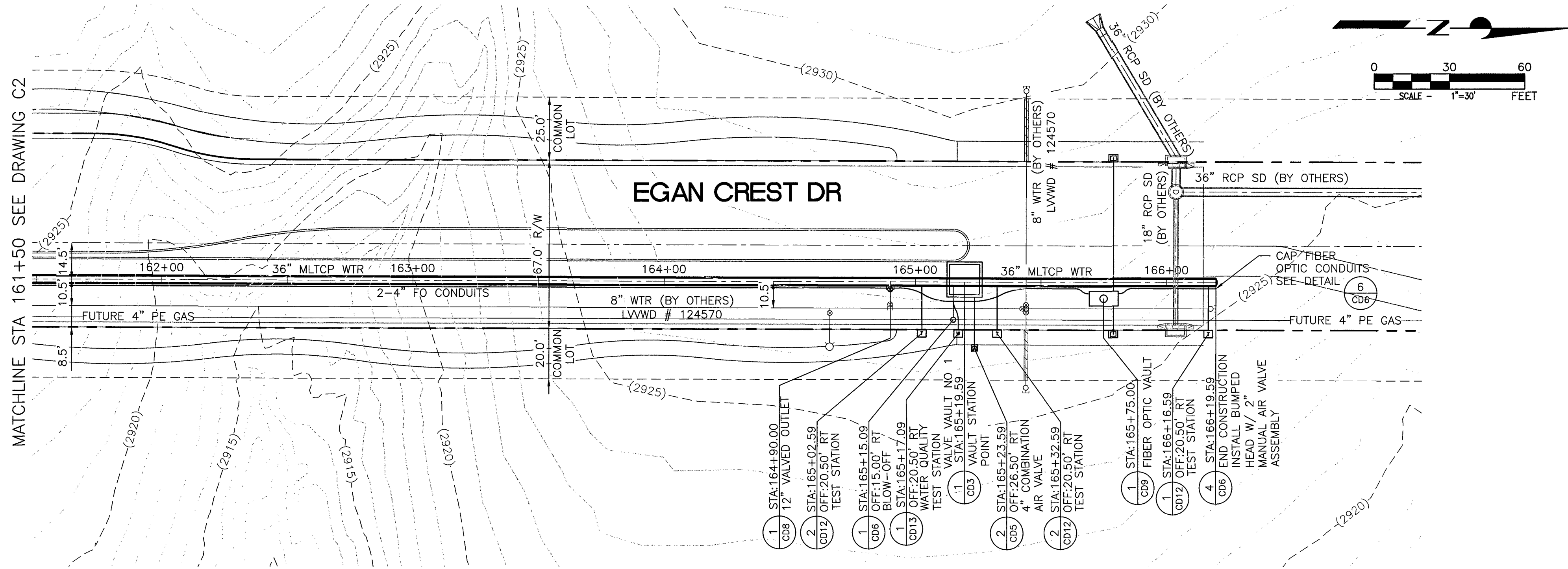
Call before you Dig
1-702-227-2929

LAS VEGAS VALLEY WATER DISTRICT		SLATER HANIFAN GROUP CONSULTING ENGINEERS & PLANNERS 9740 S. ARVILLE STREET #116, LAS VEGAS, NV 89118 PHONE (702) 284-5300	
VERIFY SCALE 1/2" = 0' 1/2" = 1'	BAS REPRESENTS ONE AND ONE-HALF INCHES ON ORIGINAL		
EGAN CREST 3090 ZONE NORTH PIPELINE, PHASE II		EGAN CREST PLAN AND PROFILE II	
DRAWN BY: _____		DATE: _____	
CHECKED BY: _____		DESIGN MANAGER: _____	
RECOMMENDED BY: _____		DATE: _____	
ACCEPTED BY: _____		DATE: _____	
CONTRACT NUMBER C1450		DRAWING NUMBER C2	
SHEET 10		OF 24	

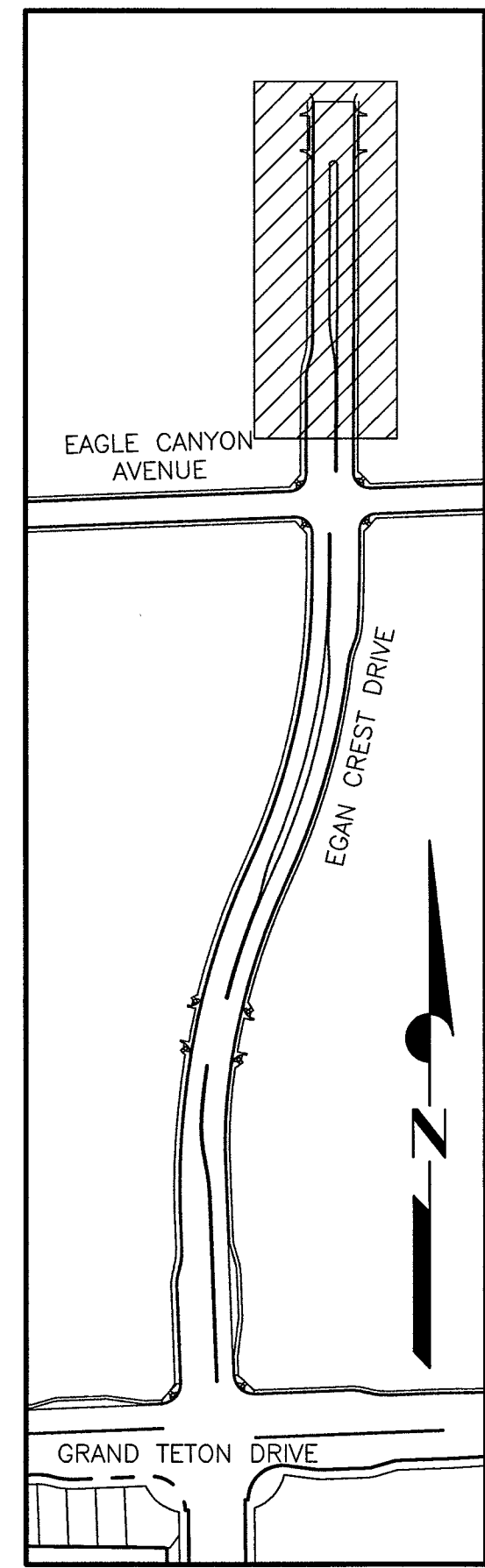
CLV DWG # H-64613



EGAN CREST DRIVE PROFILE VIEW
HORIZ. SCALE: 1"=30'
VERT. SCALE: 1"=3'



EGAN CREST DRIVE PLAN VIEW
(PUBLIC)



KEY MAP
SCALE: NTS

NEW 36" MLTCP DATA
STL CYL OD = 37.500"
STL CYL THK = 0.250"
MORTAR LINING THK = 0.50"
MORTAR COATING THK = 1.0"

Call before you dig
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CLARK COUNTY TRAFFIC OPERATIONS
AND
FREIGHTWAY AND ARTERIAL SYSTEM OF TRANSPORTATION

Call before you dig
1-702-227-2929
CLARK COUNTY TRAFFIC OPERATIONS
AND
FREIGHTWAY AND ARTERIAL SYSTEM OF TRANSPORTATION

Call before you dig
1-800-227-2600
AND
CLARK COUNTY TRAFFIC OPERATIONS
1-702-455-6000

LAS VEGAS VALLEY WATER DISTRICT
SLATER
HANFAN
GROUP
CONSULTING ENGINEERS & PLANNERS
8740 S. ARVILLE STREET #216 LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

VERIFY SCALE
1/2" = 1'
1/2" = 1/2'
1/2" = 1/4'

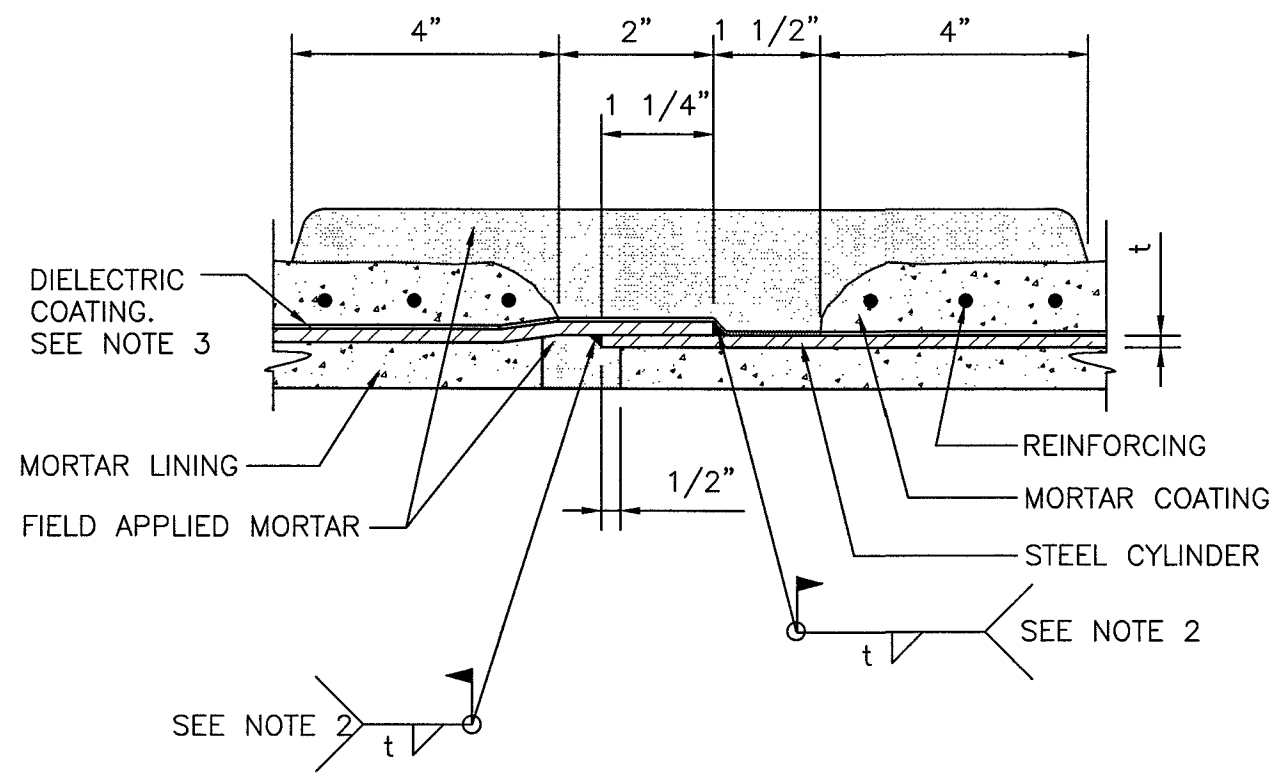
EGAN CREST 3090 ZONE NORTH PIPELINE, PHASE II
EGAN CREST PLAN AND PROFILE III
SCALE
HORIZ. SCALE
VERT. SCALE
AS NOTED

DRAWN BY: 11/22/2016
CHECKED BY: DBH 11/22/2016
RECOMMENDED BY: SR. CIVIL ENGINEER DATE
ACCEPTED BY: RYAN C. PEARSON, DESIGN MANAGER DATE

PROFESSIONAL ENGINEER
DAVID A. HAILE
Exp. 06/30/2017
CIVIL
Lic. No. 14968

CONTRACT NUMBER
C1450
DRAWING NUMBER C3
SHEET 11 OF 24

CLV DWG # H-64613



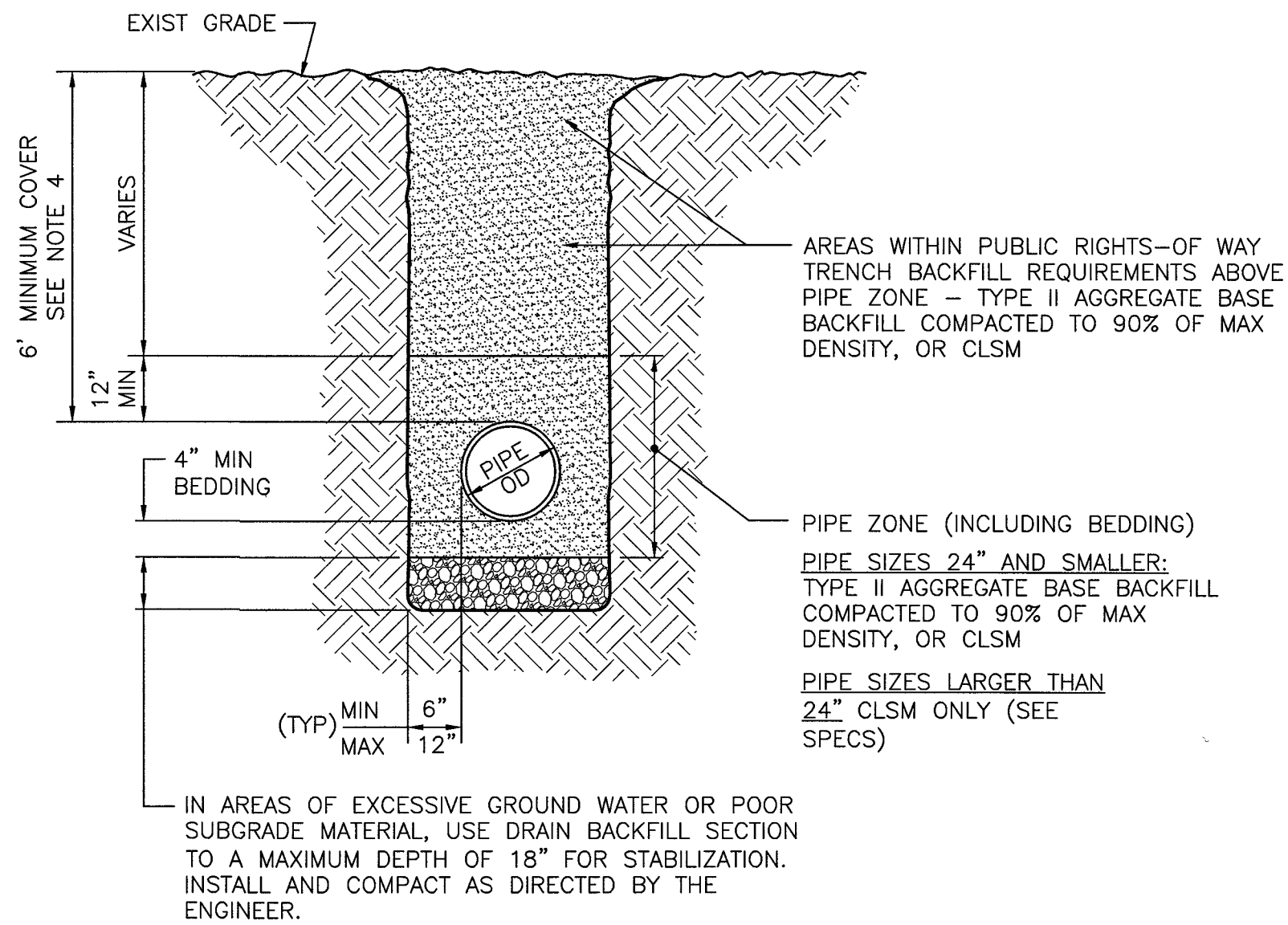
NOTES:

1. SEE SPECS SEC 33 11 50 FOR MORTAR LINED AND COATED STEEL PIPE.
2. WELD OUTSIDE ON PIPE SMALLER THAN 36". WELD INSIDE ON PIPE GREATER THAN OR EQUAL TO 36", UNLESS APPROVED BY ENGINEER.
3. FIELD APPLIED DIELECTRIC TAPE COATING AFTER COMPLETION OF JOINT WELDING.

LAP - WELDED SLIP JOINT
ALTERNATE "A" FIELD WELDED

NOT TO SCALE

1
CD1

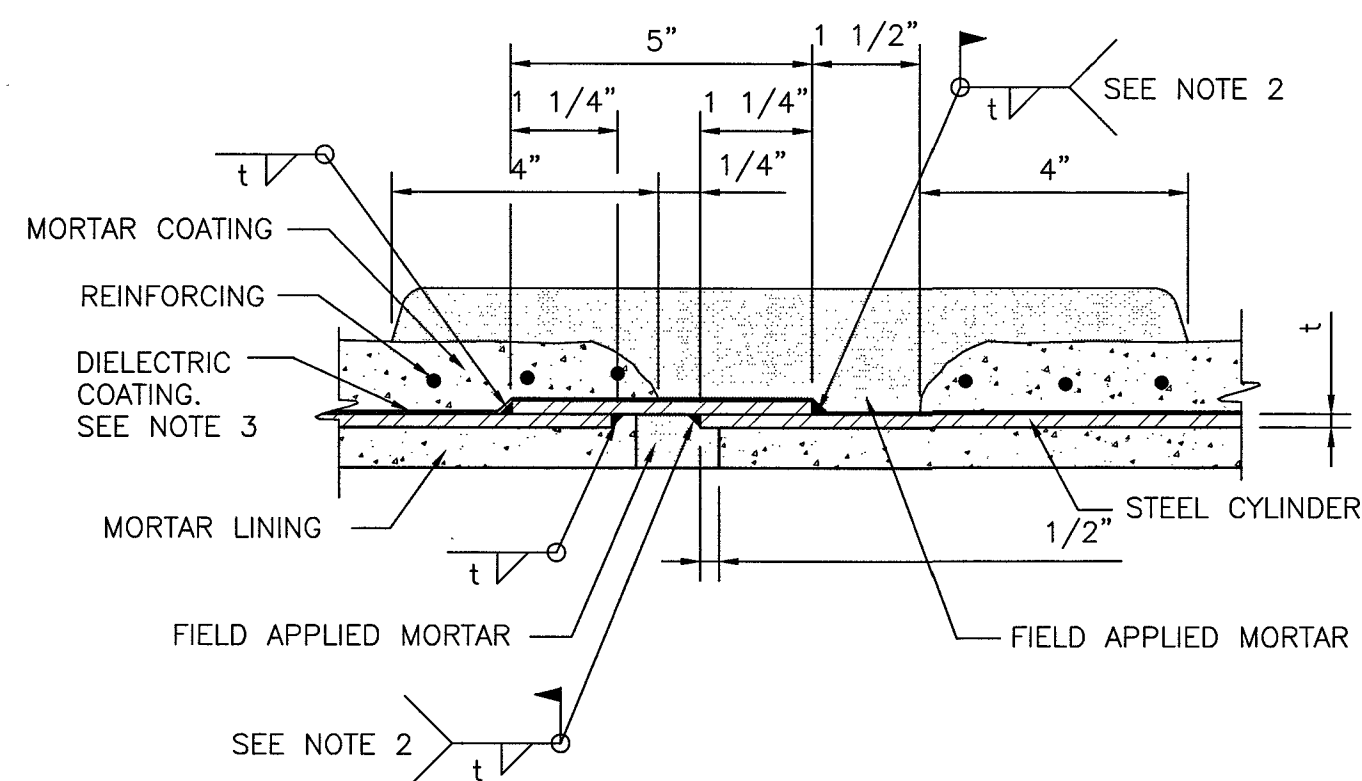


TRENCH BACKFILL - UNPAVED AREAS

NOT TO SCALE

4
CD1

CD9



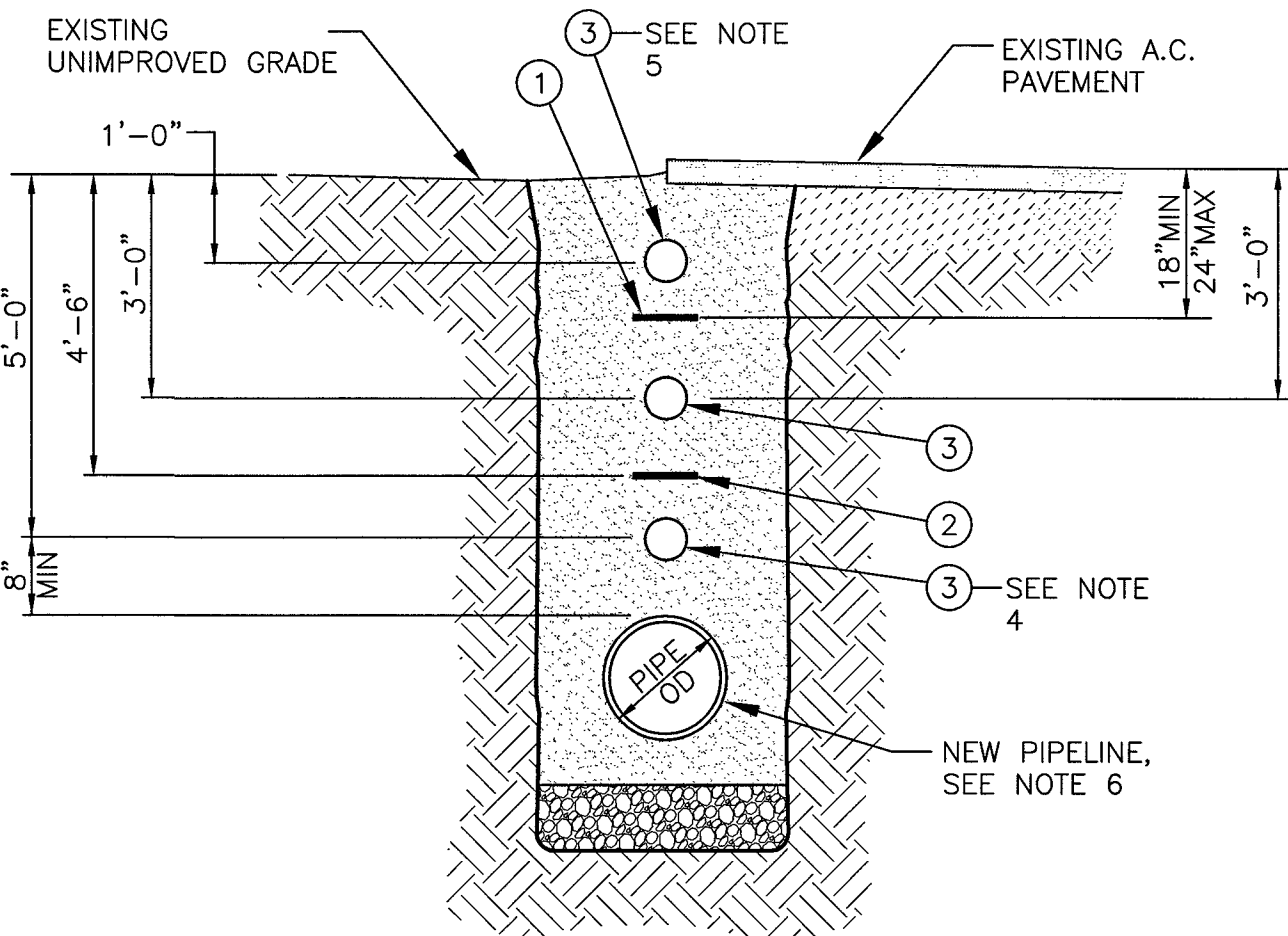
NOTES:

1. SEE SPECS SEC 33 11 50 FOR MORTAR LINED AND COATED STEEL PIPE.
2. WELD OUTSIDE ON PIPE SMALLER THAN 36". WELD INSIDE ON PIPE GREATER THAN OR EQUAL TO 36", UNLESS APPROVED BY ENGINEER.
3. FIELD APPLIED DIELECTRIC TAPE COATING AFTER COMPLETION OF JOINT WELDING.

LAP - WELDED SLIP JOINT
ALTERNATE "B" FIELD WELDED

NOT TO SCALE

2
CD1



1. PIPE LOCATOR RIBBON - 3" WIDTH
2. PIPE LOCATOR RIBBON - 3" WIDTH (INSTALLED WHEN COVER OF NEW PIPELINE IS 7'-0" OR GREATER)
3. LOCATOR BALL - SEE NOTES

NOTES:

1. CENTER PIPE LOCATOR RIBBON IN TRENCH AND PLACE OVER ENTIRE LENGTH OF ALL TYPES, SIZES AND LOCATIONS OF WATER MAINS.
2. LOCATOR BALLS REQUIRED AT ALL HORIZONTAL BENDS OR DEFLECTIONS, CASING ENDS, EVERY 400 FEET OF PIPELINE, OR WHERE REQUESTED BY ENGINEER.
3. IF A.C. PAVEMENT EXISTS INSTALL LOCATOR BALL AT 3'-0" (TYP).
4. IF A CUT TO FINISH GRADE IS ANTICIPATED, INSTALL LOCATOR BALLS AT BOTH 3'-0" AND 5'-0" (TYP).
5. IF A FILL TO FINISH GRADE IS ANTICIPATED, INSTALL LOCATOR BALLS AT BOTH 1'-0" AND 3'-0" (TYP).
6. RIBBON FOR RESTRAINED JOINTS/PIPE TO BE TAPED EVERY 20 FEET DIRECTLY TO TOP OF PIPE OR USE SELF-ADHERING RIBBON.

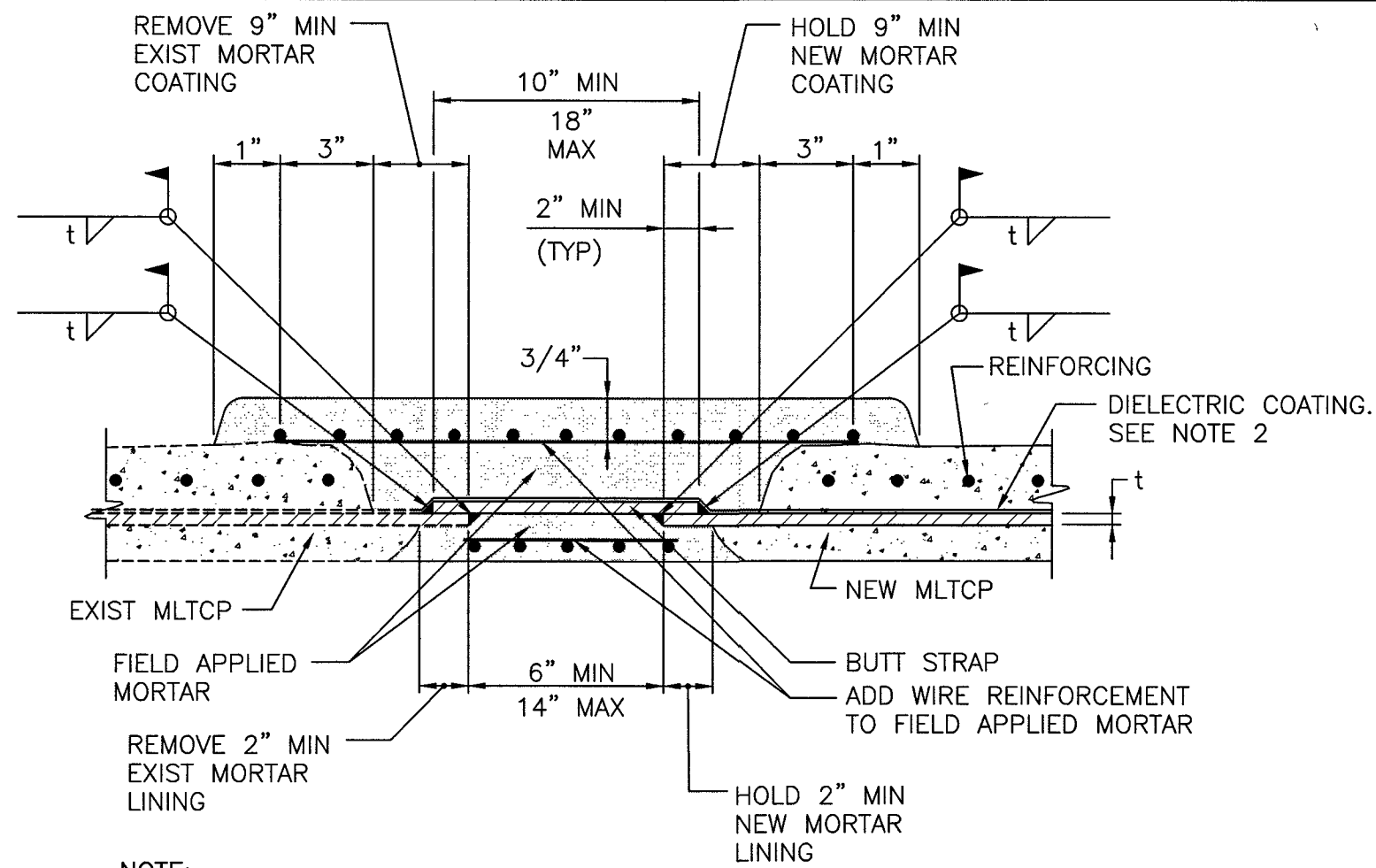
NOTES FOR PAVED AND UNPAVED AREAS

1. REFERENCES:
UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFF-SITE IMPROVEMENTS CLARK COUNTY AREA NEVADA, LATEST EDITION.
INTERAGENCY QUALITY ASSURANCE COMMITTEE (IQAC)
2. SEE SPECS SEC 31 20 00 FOR ACCEPTABLE METHODS OF COMPACTION.
3. TRENCH EXCAVATION: COMPLY WITH THE CURRENT REGULATIONS AS DETERMINED BY NEVADA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION.
4. DURING CONSTRUCTION 24" MINIMUM COVER MUST BE MAINTAINED FROM TOP OF PIPE TO GRADE.
5. MINIMUM COVER IS REFERENCED TO FUTURE FINISHED FINAL GRADES UNLESS OTHERWISE SHOWN ON PROFILE DRAWINGS.
6. SUPPORT PIPE AND FIBER OPTIC CONDUITS (IF REQUIRED) WITH SANDBAGS AND SPOT LOAD AS REQUIRED DURING INSTALLATION OF CLSM IN PIPE ZONE AND PIPE BEDDING AREAS.
7. DIAGONAL PAVEMENT REPLACEMENT IS NOT PERMITTED.
8. FOG SEAL (SEAL COAT) ALL DENSE GRADE PAVEMENT REPLACEMENT SECTIONS.

PIPE LOCATOR RIBBON AND
LOCATOR BALL INSTALLATION

NOT TO SCALE

5
CD1



NOTE:

1. SEE SPECS SEC 33 11 50 FOR MORTAR LINED AND COATED STEEL PIPE.
2. FIELD APPLIED DIELECTRIC TAPE COATING AFTER COMPLETION OF JOINT WELDING.

BUTT STRAP JOINT AT MLTCP
CONNECTIONS TO EXISTING MLTCP

NOT TO SCALE

3
CD1

CD10

LAS VEGAS VALLEY WATER DISTRICT

SLATER
HANIFAN
GROUP
CONSULTING ENGINEERS & PLANNERS
8740 S. ARVILLE STREET #516, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

VERIFY SCALE

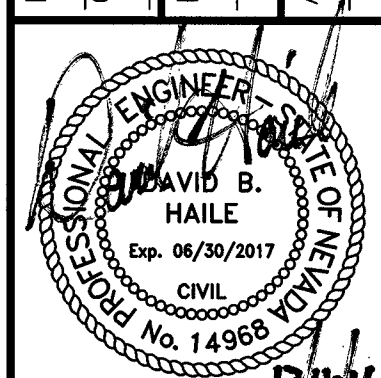
1/2 0 1/2
BAR REPRESENTS
ONE AND ONE-HALF
INCHES ON ORIGINAL

EGAN CREST 3090 ZONE NORTH PIPELINE, PHASE II

PIPE TRENCH AND MISCELLANEOUS DETAILS

SCALE
HORIZ. SCALE
AS NOTED
VERT. SCALE
AS NOTED

DRAWN BY: SE 11/22/2016
CHECKED BY: DBH 11/22/2016
RECOMMENDED BY: SR, CIVIL ENGINEER DATE
ACCEPTED BY: RYAN C. PEARSON, DESIGN MANAGER DATE



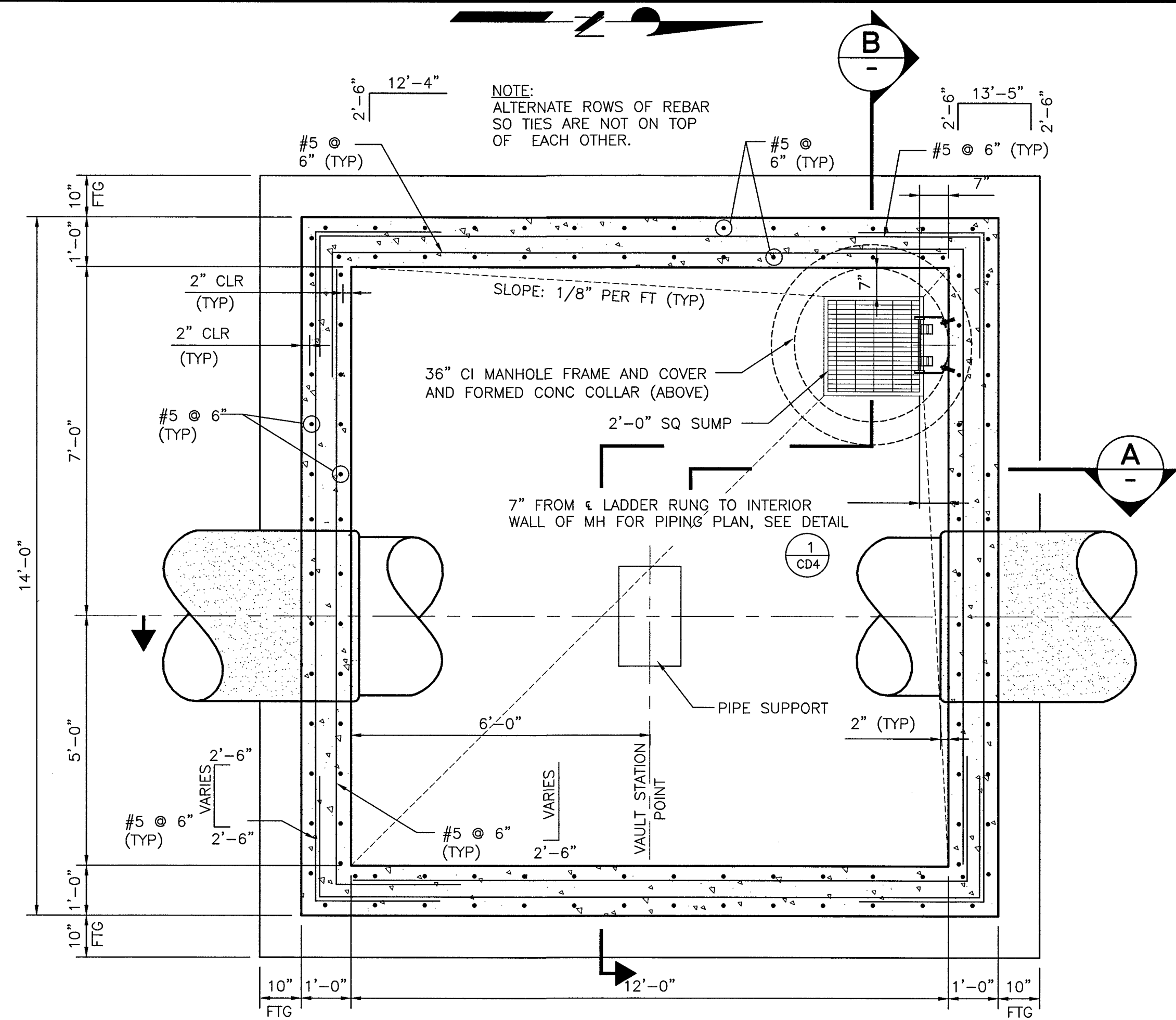
CONTRACT NUMBER

C1450

DRAWING NUMBER CD1
SHEET 12 OF 24

565-501
CLV DWG # H-64613

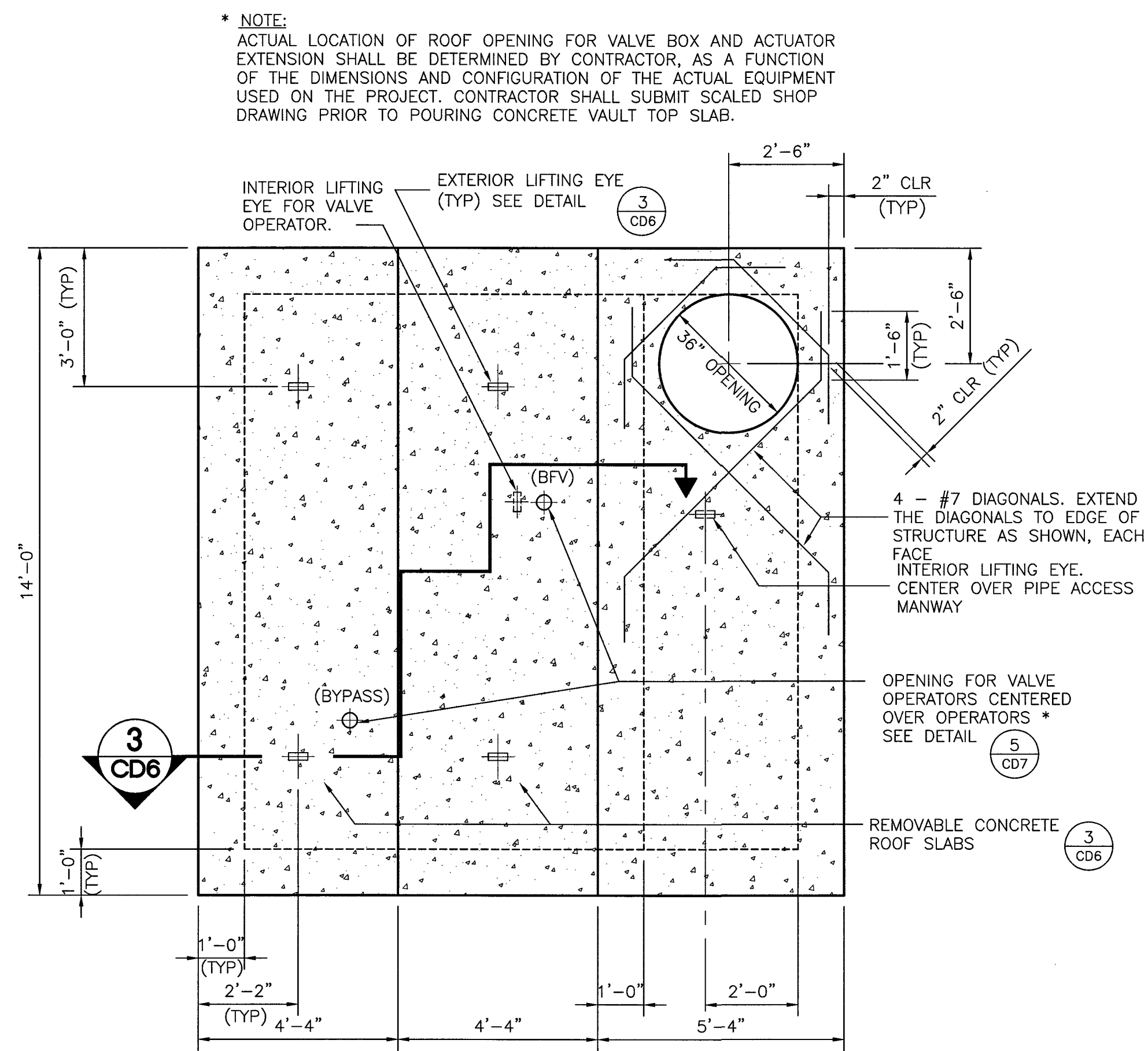
11/22/2016 10:42 AM Egon Crest 36 Inch WL Ext.dwg Improv J:\OLY1511-000 Slaye Canyon Egon Crest 36 Inch WL Ext.dwg Improv



SECTIONAL PLAN

NOT TO SCALE

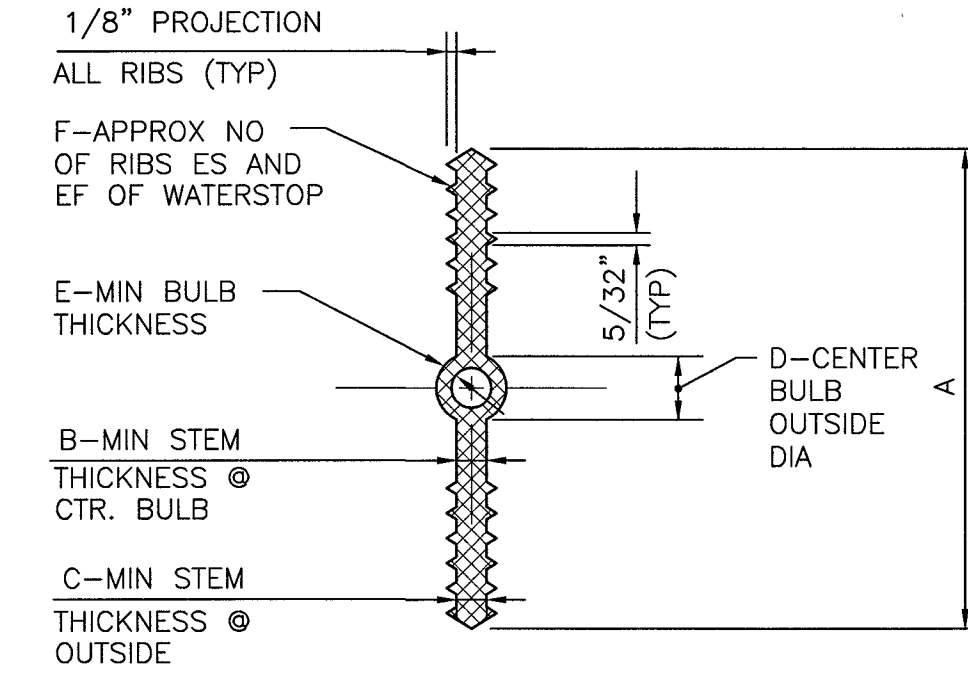
1
CD2
CD3



ROOF PLAN

NOT TO SCALE

2
CD6



SIZE	A	B	C	D	E	F
6"x3/8"	6"	3/8"	3/8"	7/8"	1/4"	6"

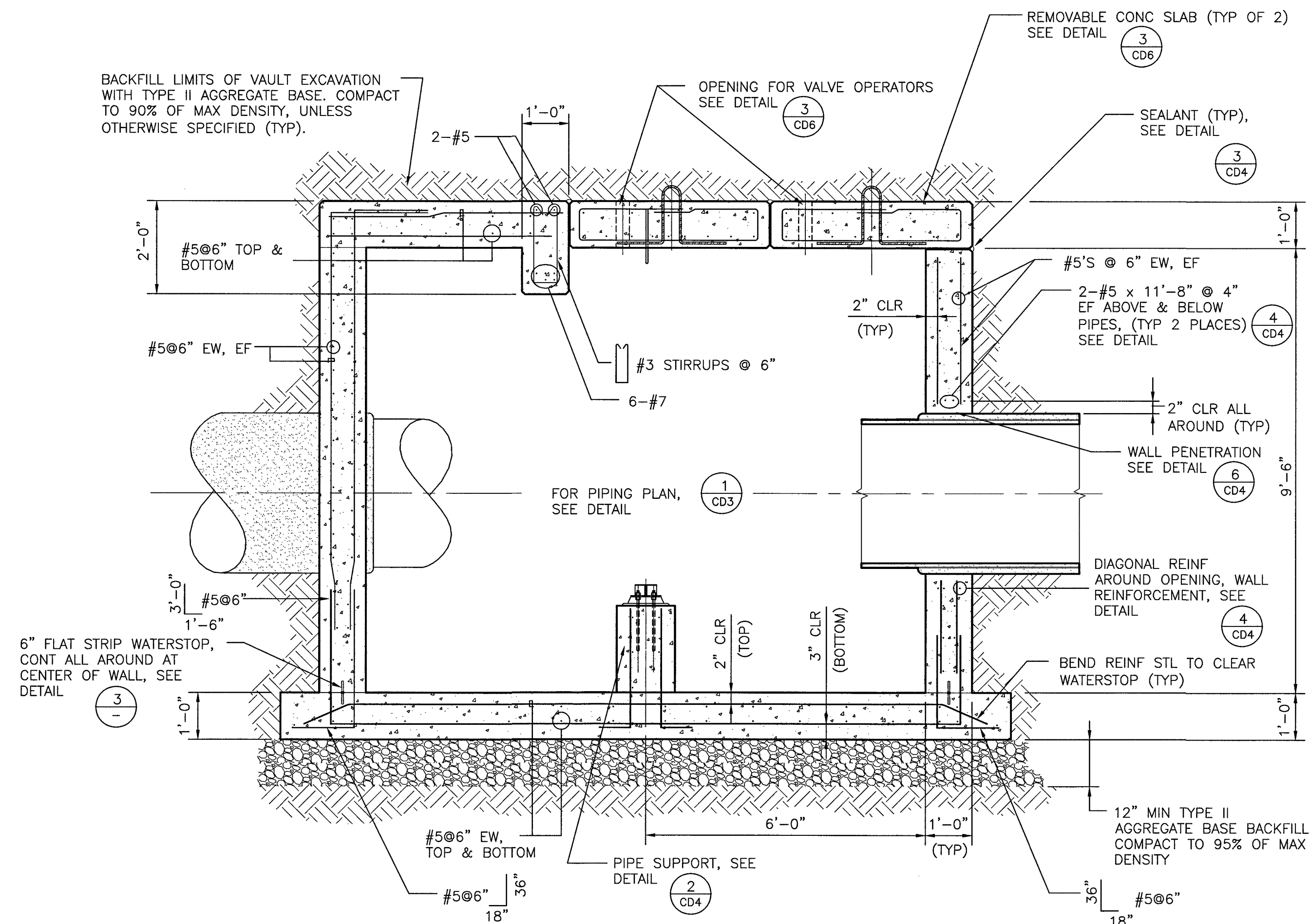
NOTES:

1. MATERIAL QUALITY PER SECTION 03 30 00 OF SPECIFICATIONS.
2. DIMENSION REQUIREMENTS INDICATED SHOULD BE GIVEN TO SUPPLIERS PRIOR TO PLACING ORDERS.
3. NON-ROUND CENTER BULBS SHALL HAVE A MIN OUTSIDE DIMENSION OF "D".

WATERSTOP DETAIL

NOT TO SCALE

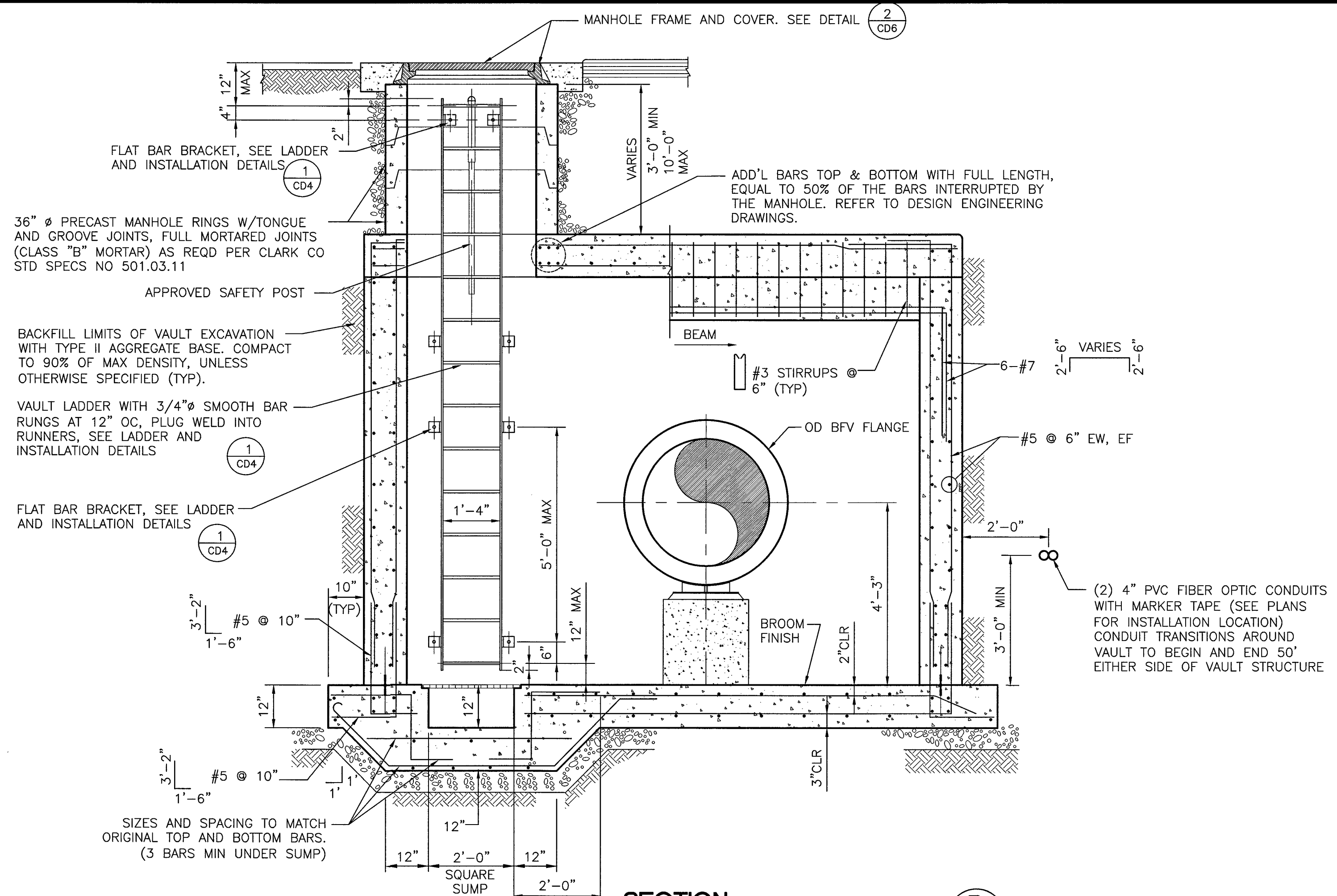
3
CD6



SECTION

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

A
CD4



SECTION

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

B
CD4

LAS VEGAS VALLEY WATER DISTRICT

SLATER
HANIFAN
GROUP
CONSULTING ENGINEERS & PLANNERS
5740 S. ARVILLE STREET #210, LAS VEGAS, NV 89118
PHONE (702) 284-5300
FAX (702) 284-5398

VERIFY SCALE
1/2" = 0' 1/2"

BAR REPRESENTS
ORIGINAL
INCHES ON ORIGINAL

EGAN CREST 3090 ZONE NORTH PIPELINE, PHASE II

36-INCH VALVE VAULT NO. 1 STRUCTURE DETAILS

SCALE
HORIZ. SCALE
AS NOTED
VERT. SCALE
AS NOTED

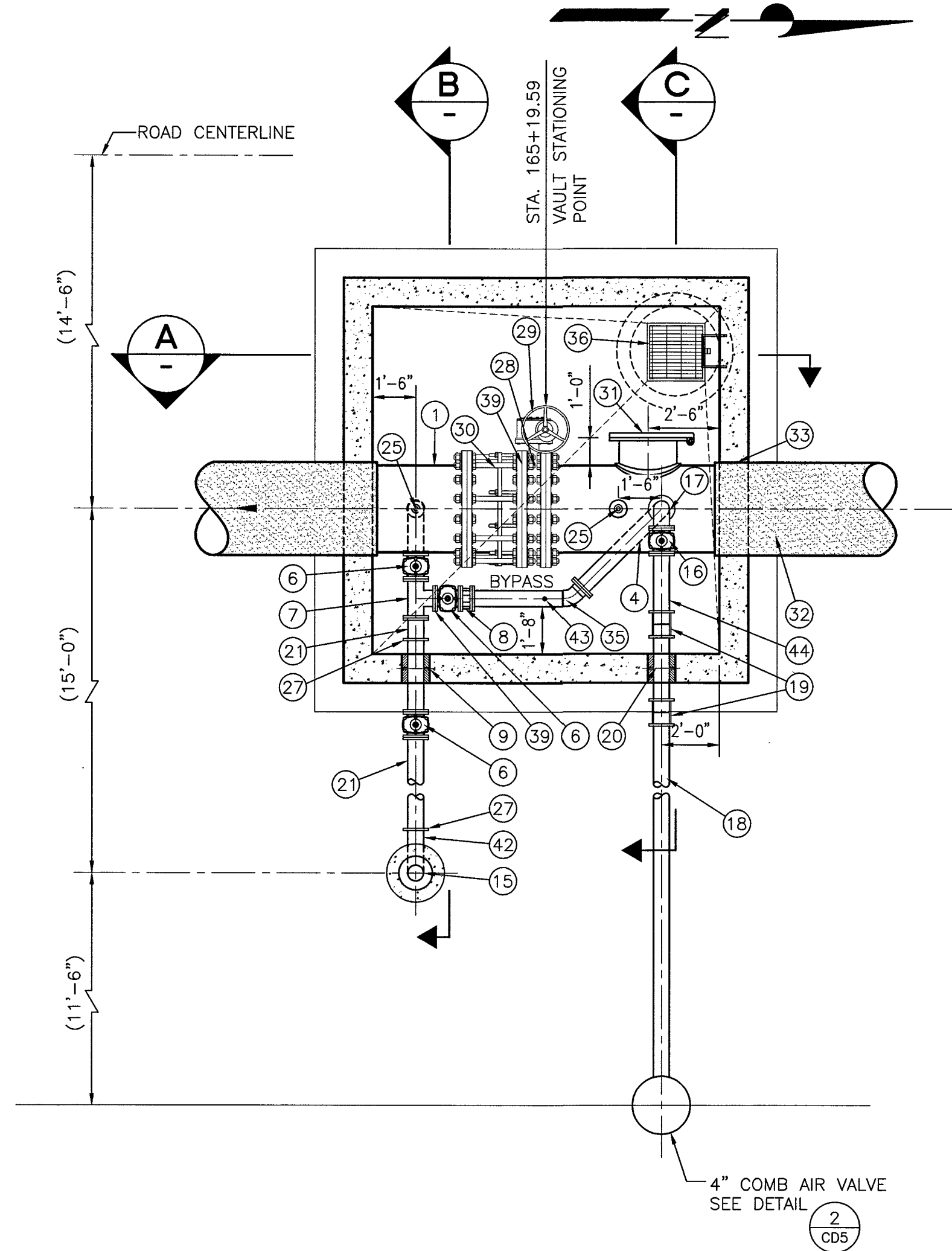
DRAWN BY: 11/22/2016
SE: 11/22/2016
CHECKED BY: DBH
RECOMMENDED BY: SR: CIVIL ENGINEER
ACCEPTED BY: RYAN C. PEARSON, DESIGN MANAGER
DATE: 12/16/16

PROFESSIONAL ENGINEER
DAVID B. HAILE
Exp. 06/30/2017
CIVIL
No. 14568

CONTRACT NUMBER
C1450
DRAWING NUMBER CD2
SHEET 13 OF 24

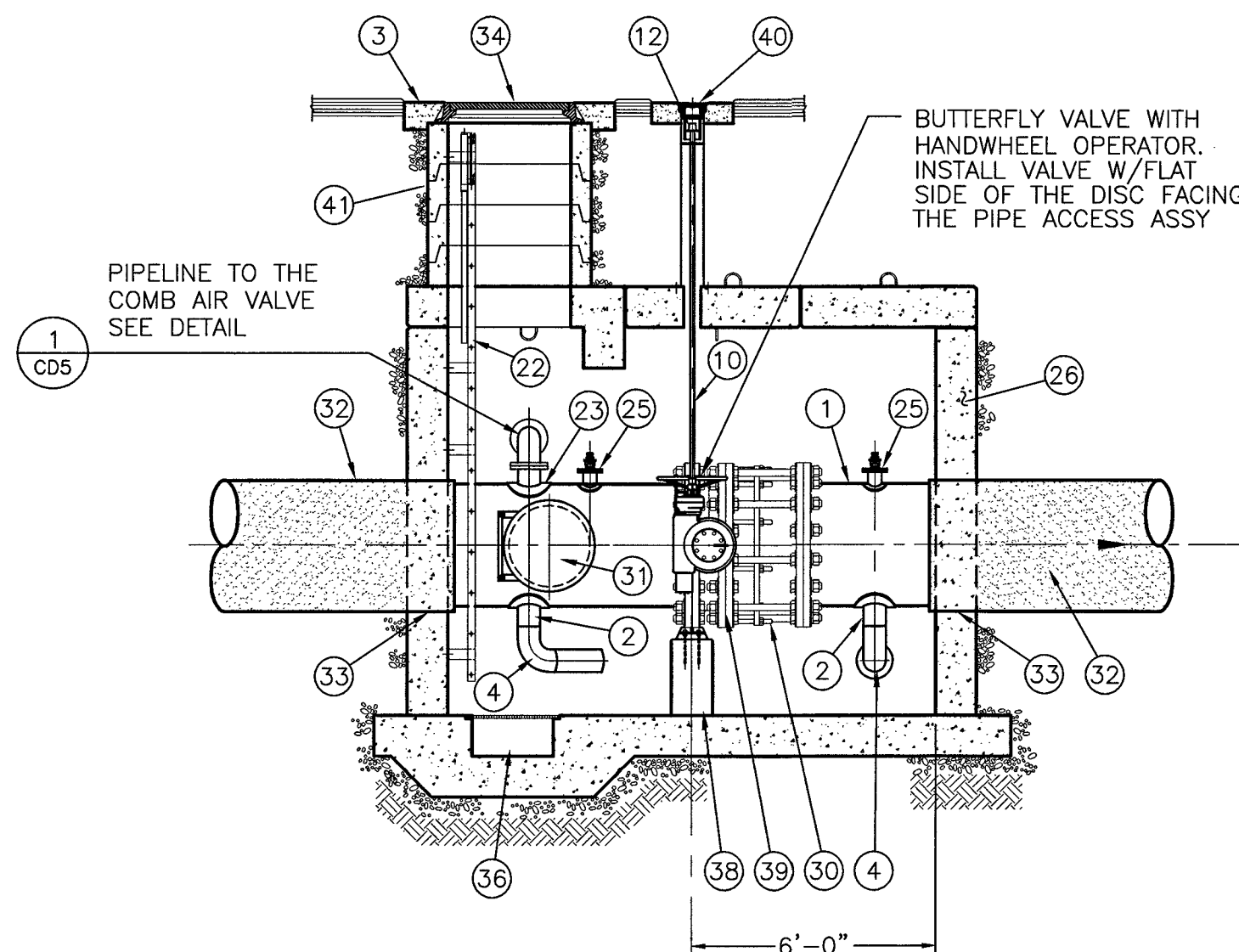
CLV DWG # H-64613

J:\OLV1511-000 Sky Canyon Egan Crest 36 inch WL Ext.dwg Improv 11/22/2016 10:42 AM Gargio Elizondo



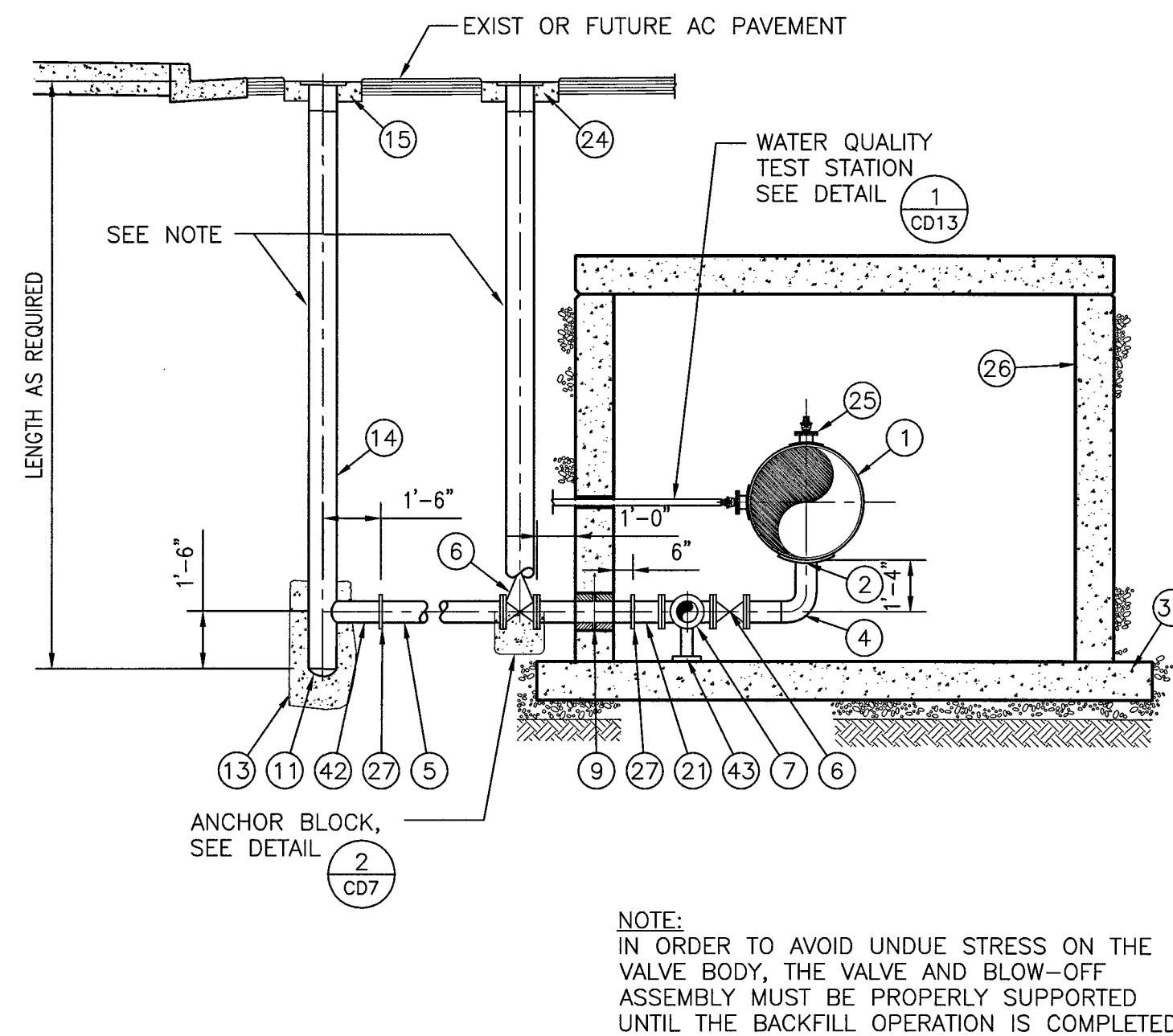
VALVE VAULT NO. 1 STA. 165+19.59
36-INCH PIPING PLAN - DISMANTLING JOINT
SCALE: 1/4" = 1'-0"

1
CD3
C3, CD2



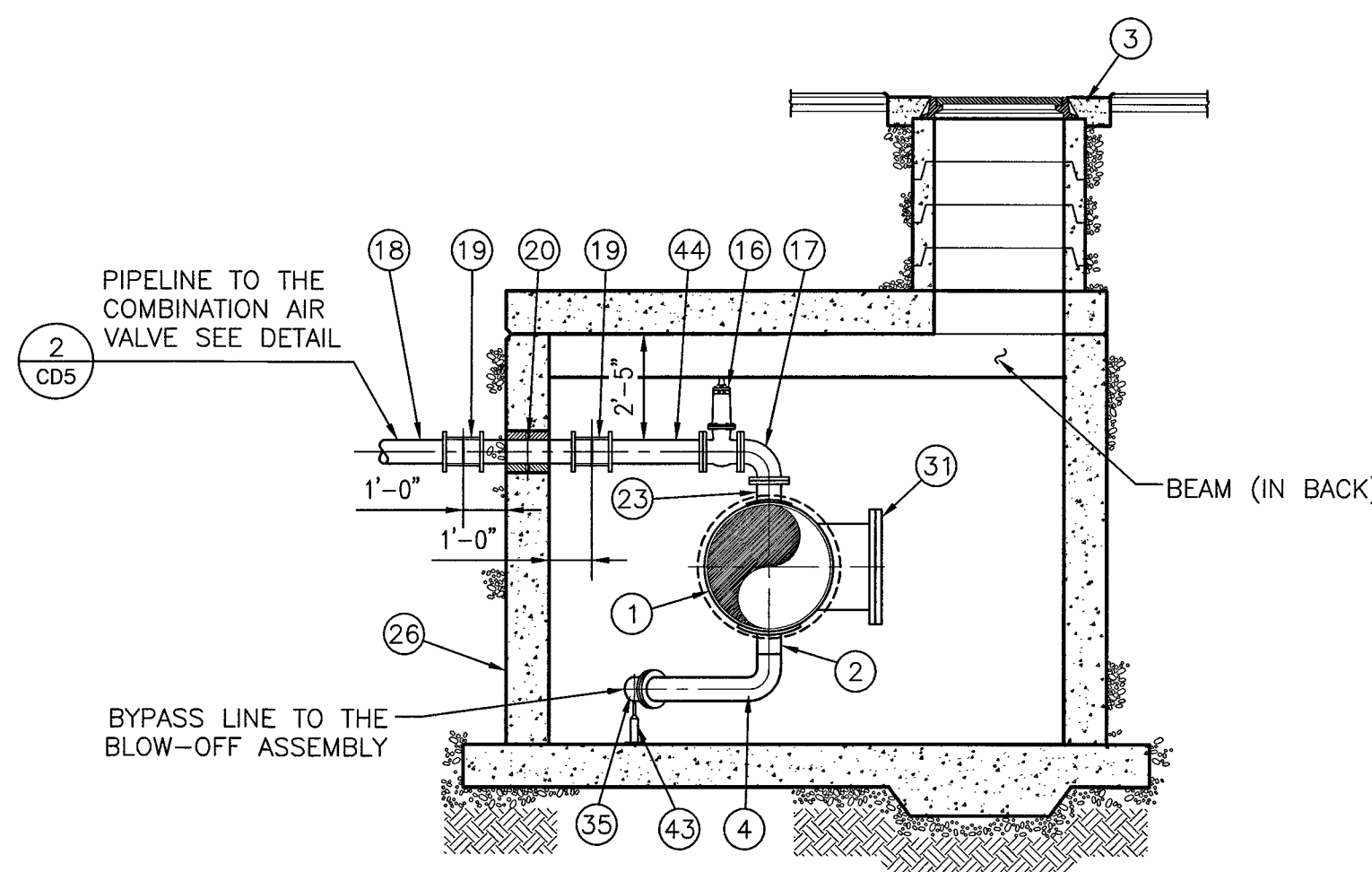
PIPING PROFILE SECTION - DISMANTLING JOINT
SCALE: 1/4" = 1'-0"

A
-



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

B
-



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

C
-

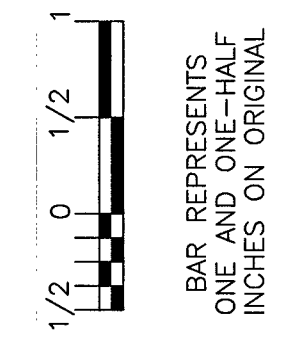
COMPONENT DESCRIPTIONS - DISMANTLING JOINT	
ITEM	DESCRIPTION
1	ML STL PIPE, SEE SPECS SEC 33 11 50
2	6" ML STL OUTLET AND COLLAR PLATE
3	10" THK FORMED CONCRETE COLLAR
4	6" - 90° ML STL ELBOW W/WELDED SHORT PIECE W/FLANGE
5	6" SCH 40 STL MLTCP FLANGED x GROOVED ENDS
6	6" FLANGED GATE VALVE NRS (2" SQUARE OPERATING NUT OUTSIDE VAULT OR HAND WHEEL INSIDE VAULT) SEE SPECS SEC 33 17 10. BYPASS VALVE INSIDE VAULT SHALL HAVE 1-1/4" VALVE OPERATOR STEM EXTENSION W/UNIVERSAL JOINT THROUGH ROOF TO STREET, SEE DETAIL 5 ON DWG CD7
7	6" ML STL FLANGED TEE
8	6" DISMANTLING JOINT - SEE SPECS SEC 33 10 02
9	6" SCH 40 FABR STL MLC WALL SPOOL - GROOVED x FLANGED ENDS W/WALL FLANGE.
10	1-1/4" VALVE OPERATOR STEM EXTENSION W/UNIVERSAL JOINT THROUGH ROOF TO STREET, SEE DETAIL 5 ON DWG CD7
11	8" SCH 30 STL MLTCP BUMPED HEAD
12	2" SQ OPERATING NUT
13	ENCASE BUMPED HEAD IN CONCRETE 4" MIN ALL AROUND
14	8" SCH 30 STL MLTCP
15	BLOW-OFF COVER ASSEMBLY, SEE DETAIL 1 ON DWG CD6
16	6" FLANGED GATE VALVE, SEE SPECS SEC 33 17 10
17	6" - 90° WELDED FLANGED ML STL ELBOW
18	6" DIP PC350 OR 6" PVC CL150 DR18 PIPE
19	6" SLEEVE TYPE COUPLING - SEE SPECS SEC 33 10 02
20	6" SCH 40 FABRICATED STL MLTCP WALL SPOOL - PLAIN ENDS W/WALL FLG
21	6" SCH 40 ML STL PIPE - FLANGED x GROOVED
22	GALVANIZED CARBON STEEL LADDER, SEE DETAIL 1 ON DWG CD4
23	6" FLANGED ML STL OUTLET
24	VALVE BOX AND CONCRETE COLLAR. SEE DETAIL 3 ON DWG CD5
25	CORP STOP, SEE DETAIL 1 ON DWG CD7
26	VAULT WALL
27	6" MECHANICAL COUPLING - SEE SPECS SEC 33 10 02
28	BUTTERFLY VALVE - SEE SPECS SEC 33 17 20
29	BUTTERFLY VALVE OPERATOR - SEE SPECS SEC 33 17 20
30	DISMANTLING JOINT - SEE SPECS SEC 33 10 02
31	24" ACCESS MANWAY, SEE VAULT ACCESS MANWAY DETAIL 6 ON DWG CD8
32	STL MLTCP, SEE SPECS SEC 33 11 50
33	WALL PENETRATION, SEE DETAIL 6 ON DWG CD4
34	36" C.I. MANHOLE FRAME, SEE DETAIL 2 ON DWG CD6
35	6" SCH 40 ML STL PIPE - FLANGED x PLAIN END AND WELDED WITH FLANGED x PLAIN END 45° BEND. BYPASS LINE TO BLOW-OFF ASSEMBLY
36	2" SQ. SUMP, SEE SECTION B ON DWG CD2
37	CONCRETE FOOTING, SEE SECTION A ON DWG CD2
38	PIPE SUPPORT, SEE DETAIL 2 ON DWG CD4
39	INSULATING FLANGE, SEE DETAIL 4 ON DWG CD7
40	VALVE BOX ON VAULT, SEE DETAIL 5 ON DWG CD7
41	36" PRECAST MANHOLE RINGS, SEE DETAIL 2 ON DWG CD6
42	6" SCH 40 STL MLTCP - GROOVED x PLAIN END WELDED TO 8" STL PIPE
43	ADJUSTABLE PIPE SUPPORT, SEE SPECS SEC 33 10 02
44	6" SCH 40 ML STL PIPE - FLANGED x PLAIN END

565-501
CLV DWG # H-64613

LAS VEGAS VALLEY WATER DISTRICT

SLATER
HANIFAN
GROUP
CONSULTING ENGINEERS & PLANNERS
8740 S. ARVILLE STREET #216 LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

VERIFY SCALE

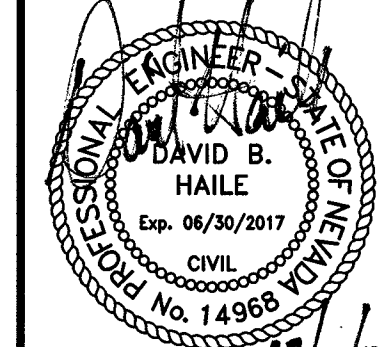


EGAN CREST 3090 ZONE NORTH PIPELINE, PHASE II

36-INCH VALVE VAULT NO. 1 STA. 165+19.59

SCALE
HORIZ. SCALE
AS NOTED
VERT. SCALE
AS NOTED

DRAWN BY: SE 11/22/2016
CHECKED BY: DBH 11/22/2016
RECOMMENDED BY: SR. CIVIL ENGINEER DATE
ACCEPTED BY: RYAN C. PEARSON, DESIGN MANAGER DATE



CONTRACT NUMBER

C1450
DRAWING NUMBER CD 3
SHEET 14 OF 24

J:\OLY1511-000 Sky Canyon Egan Crest 36 Inch WL Ext.dwg\improv 11/22/2016 10:42 AM\gargo Elizondo

DRILL 9/16" HOLE FOR
INSTALLATION OF ADHESIVE
ANCHOR

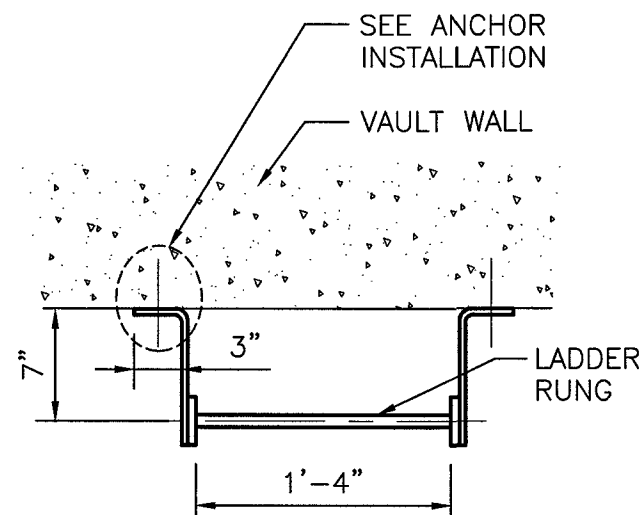
ADHESIVE CARTRIDGE,
INSTALL CARTRIDGE
PRIOR TO INSTALLATION
OF SS ANCHOR ROD

FLAT BAR BRACKET, DRILL
7/8"Ø x 1-1/4" LONG
HOLES (TYP), SEE TABLE BELOW
FOR FLAT BAR SIZE.

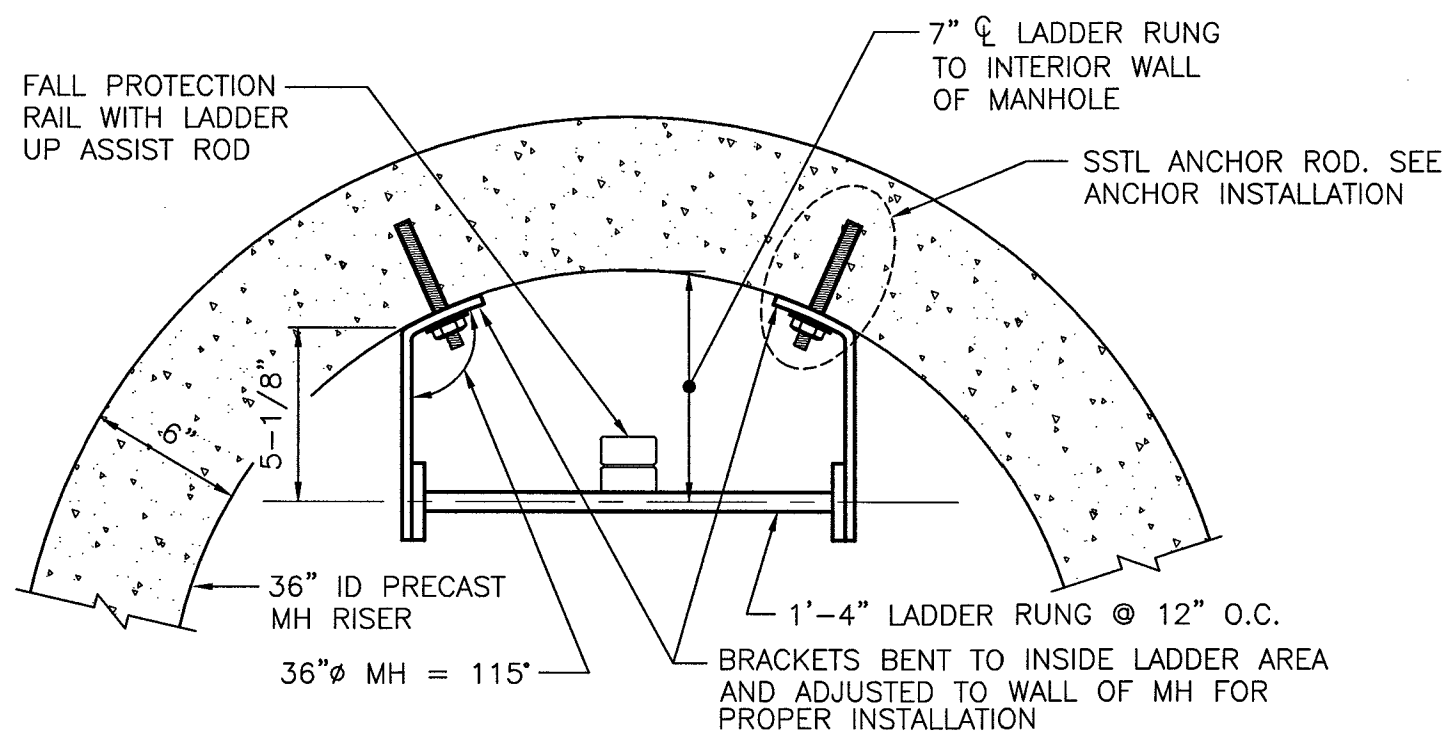
1/2" x 6-1/2" SSTL ANCHOR
ROD INSTALL SS ANCHOR ROD
AND ADHESIVE CARTRIDGE PER
MANUFACTURE'S SPECIFICATIONS

SHIM WITH SSTL WASHERS
AS REQUIRED
CUT ANCHOR ROD TO ALLOW THREE (3)
THREADS TO PROTRUDE FROM ANCHOR
NUT AS REQUIRED

ANCHOR INSTALLATION



LADDER IN VAULT



LADDER IN MANHOLE

FLAT BAR SIZE	
LADDER LENGTH	FLAT BAR SIZE
5'-0" TO 20'-0"	3" x 3/8"
OVER 20'-0"	4" x 1/2"

NOTES

- ALL FIXED LADDERS (OVER 20 FEET IN LENGTH) SHALL BE INSTALLED WITH A FALL PROTECTION RAIL AS SHOWN ABOVE.
- APPROVAL OF THE ENGINEER REQUIRED FOR ANY BRACKET SPACING OVER 5'-0" OC
- LADDER SHALL BE MADE OF MILD CARBON STEEL WITH 3/4"Ø SMOOTH BAR RUNGS PLUG WELDED TO RUNNERS.
- GALVANIZE LADDER ASSEMBLY AFTER WELDING.

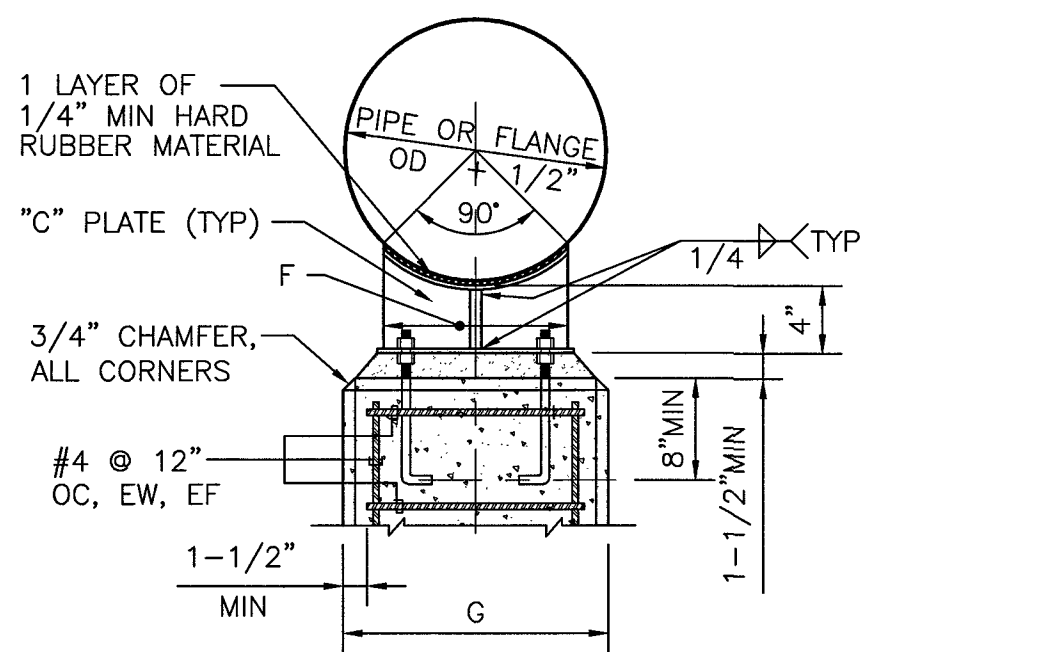
LADDER INSTALLATION DETAILS

NOT TO SCALE

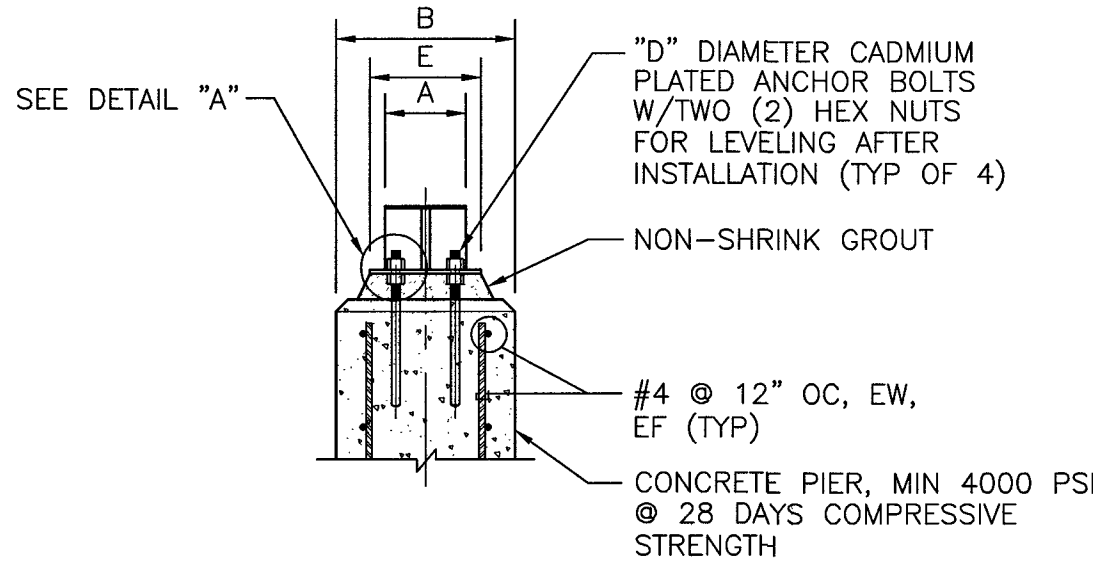
CD2, CD3, CD8, CD9, CD10

"D" + 1/16" DIAMETER HOLE
FOR INSTALLATION OF ANCHOR
BOLT INTO CONCRETE PIER

DETAIL "A"



FRONT VIEW



SIDE VIEW

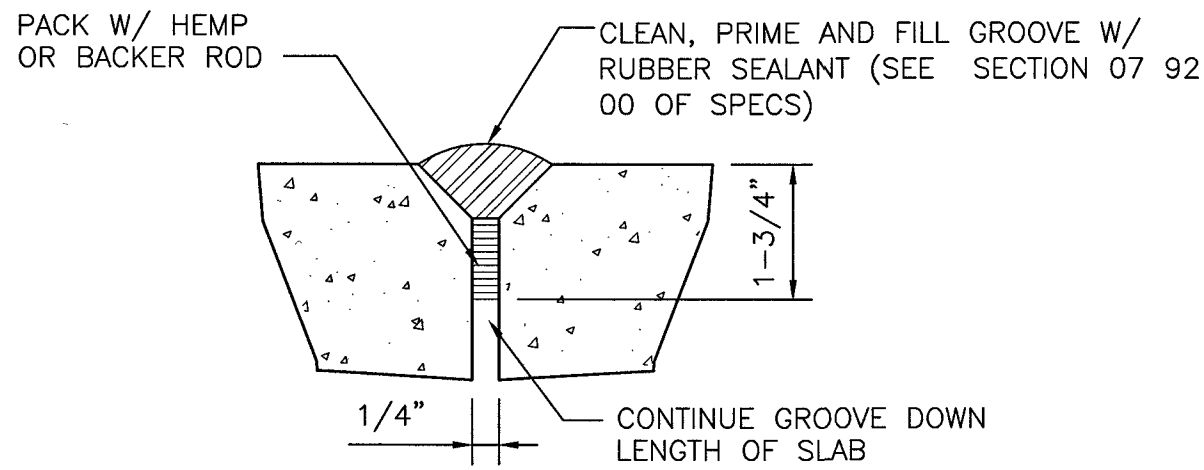
NOTE: GALVANIZE ASSEMBLY AFTER WELDING FABRICATION.

PIPE SUPPORT TABLE									
NOMINAL PIPE SIZE						SUPPORTING			
	A	B	C	D	E	STL CYL PIPE	FLANGE	F	G
12"	4"	12"	3/8"	5/8"	6"	10"	14"	14"	18"
16"	4"	12"	3/8"	5/8"	6"	12"	16"	17"	21"
18"	4"	12"	3/8"	5/8"	6"	14"	18"	18"	22"
20"	4"	12"	3/8"	5/8"	6"	16"	20"	20"	24"
24"	4"	12"	3/8"	5/8"	6"	19"	23"	23"	27"
30"	5"	12"	3/8"	3/4"	6"	23"	29"	28"	34"
36"	6"	15"	3/8"	3/4"	6"	27"	33"	33"	39"
42"	6"	18"	1/2"	1"	8"	32"	38"	38"	44"
48"	6"	18"	1/2"	1"	8"	36"	42"	42"	48"
54"	6"	18"	1/2"	1"	8"	40"	46"	47"	53"
60"	6"	18"	1/2"	1"	8"	44"	50"	52"	58"
66"	6"	18"	1/2"	1"	8"	48"	54"	57"	63"
72"	6"	18"	1/2"	1"	8"	52"	58"	62"	68"

PIPE SUPPORT DETAIL

NOT TO SCALE

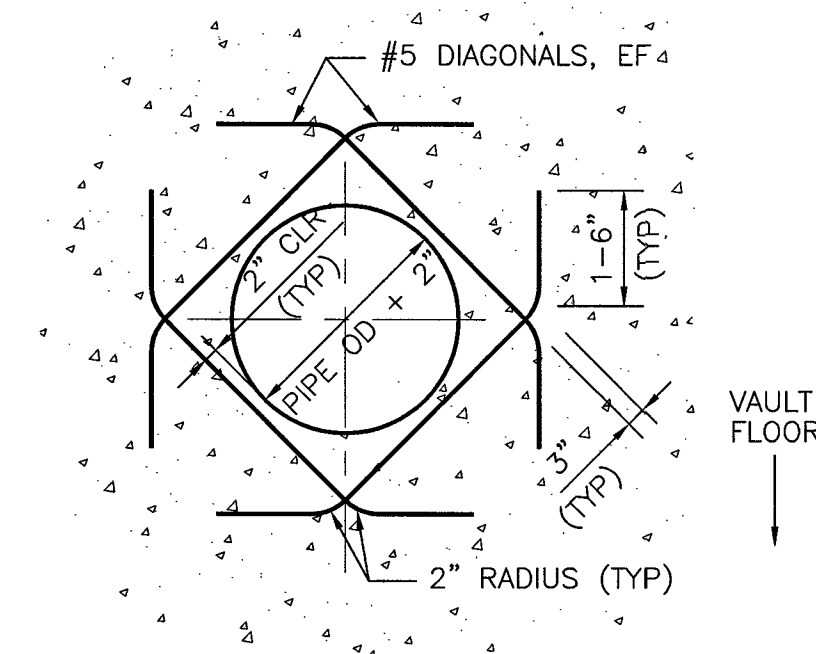
CD2, CD3



SEALANT GROOVE DETAIL

NOT TO SCALE

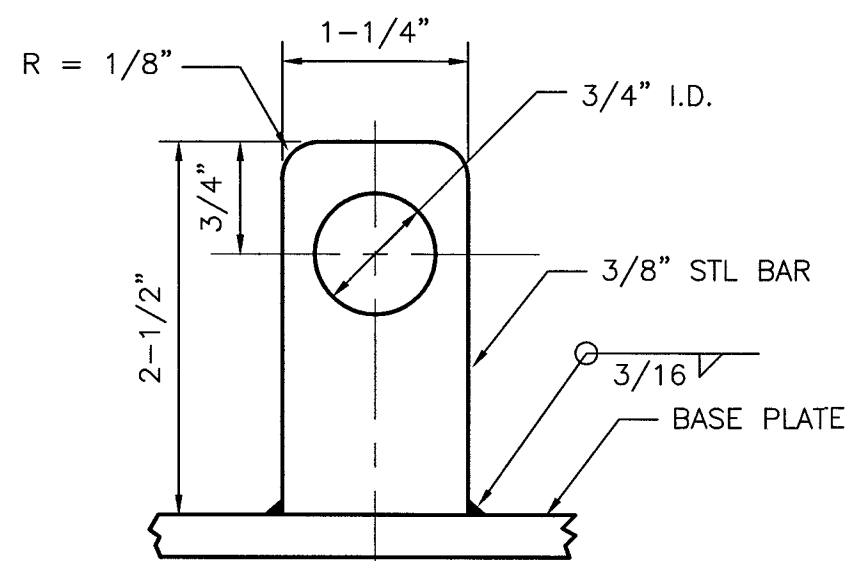
3
CD4
CD2, CD6



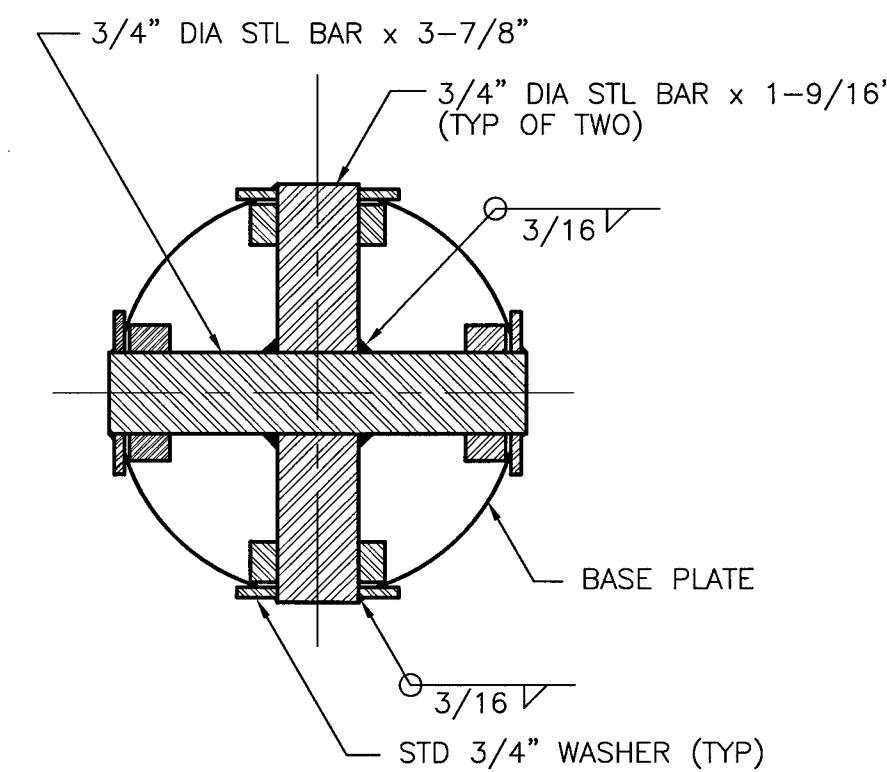
WALL OPENING - DIAGONAL
REINFORCEMENT DETAIL

NOT TO SCALE

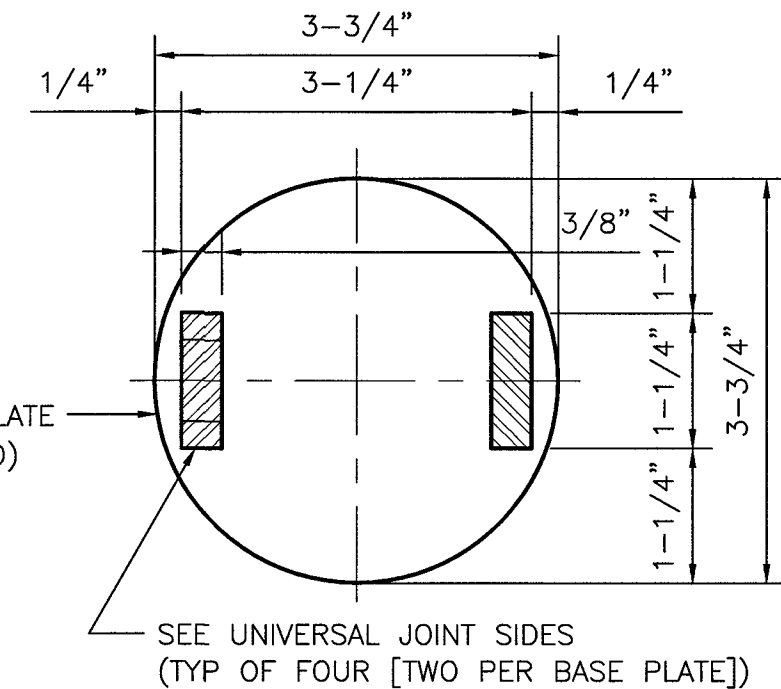
4
CD4
CD2



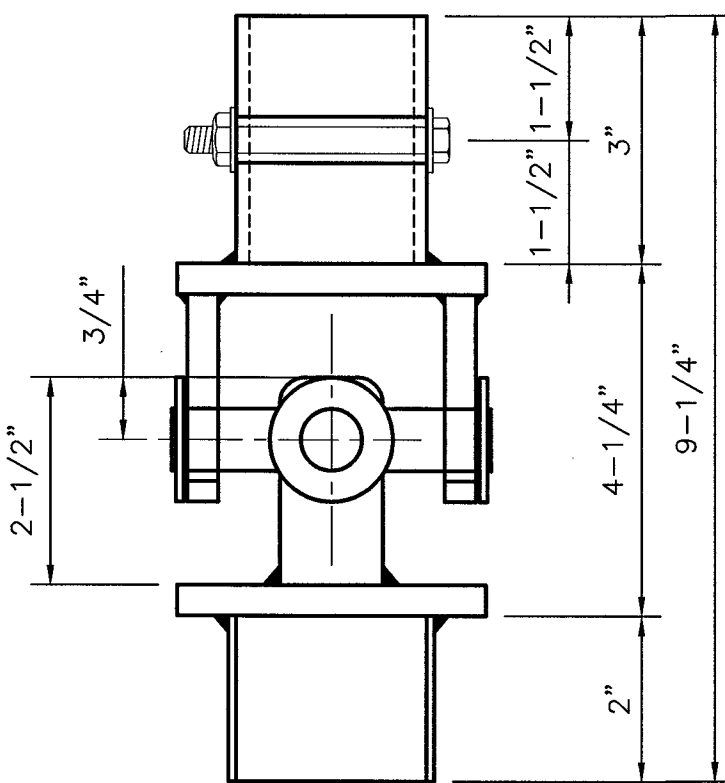
UNIVERSAL JOINT SIDES



JOINT CROSS



BASE PLATE



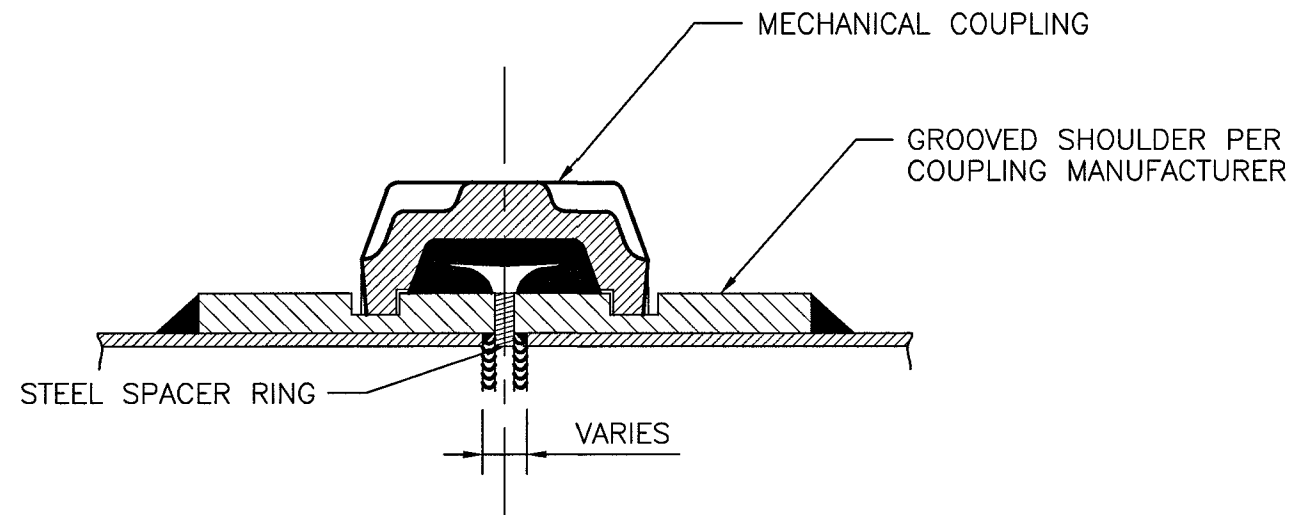
UNIVERSAL JOINT

NOTE
ASSEMBLY SHALL BE GALVANIZED AFTER WELDING.

UNIVERSAL JOINT DETAIL

NOT TO SCALE

7
CD4
CD7

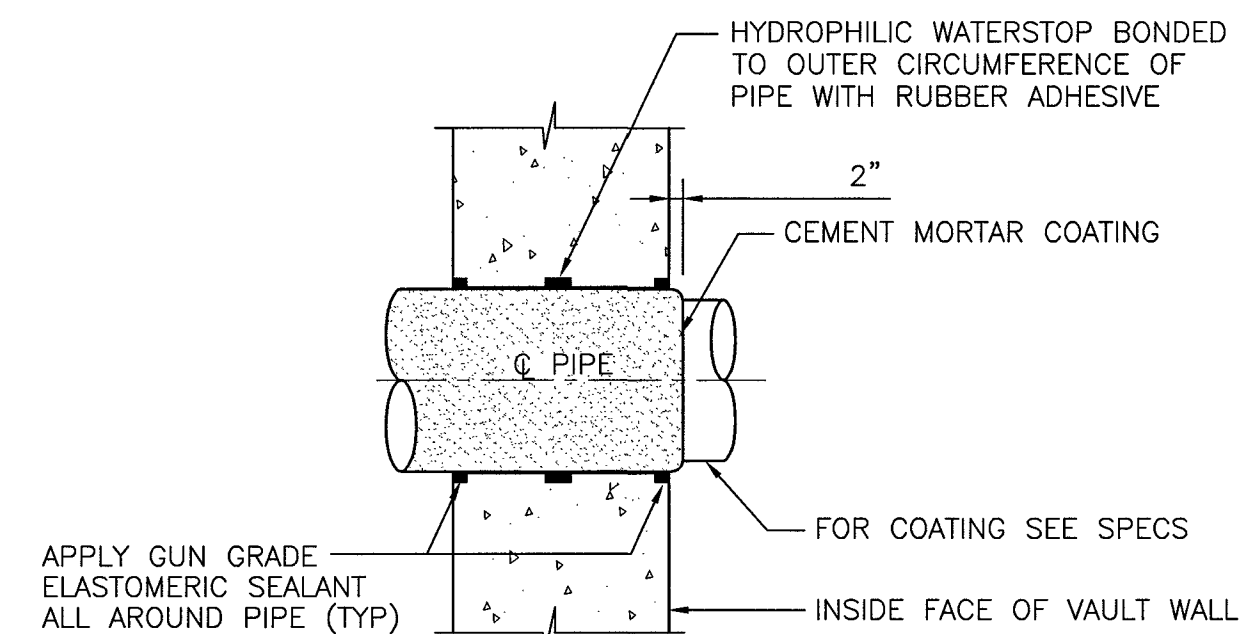


NOTE:
THICKNESS OF SPACER RING TO BE EQUAL TO MAXIMUM ALLOWABLE
PIPE AND SEPARATION PER COUPLING MANUFACTURER.

MECHANICAL COUPLING WITH SPACER

NOT TO SCALE

5



WALL PENETRATION DETAIL

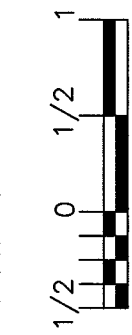
NOT TO SCALE

6
CD4
CD2, CD3

LAS VEGAS VALLEY WATER DISTRICT

SLATER
HANIFAN
GROUP
CONSULTING ENGINEERS & PLANNERS
5740 S. ARVILLE STREET #218, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

VERIFY SCALE

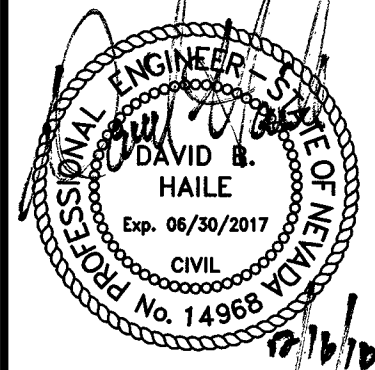


BAR REPRESENTS
ORIGINAL SCALE
INCHES ON ORIGINAL

EGAN CREST 3090 ZONE NORTH PIPELINE, PHASE II

LADDER, PIPE SUPPORT AND MISCELLANEOUS DETAILS

DRAWN BY:	11/22/2016
SE	
CHECKED BY:	11/22/2016
DBH	
RECOMMENDED BY:	
DATE	
SR. CIVIL ENGINEER	
ACCEPTED BY:	
RYAN C. PEARSON, DESIGN MANAGER	
DATE	

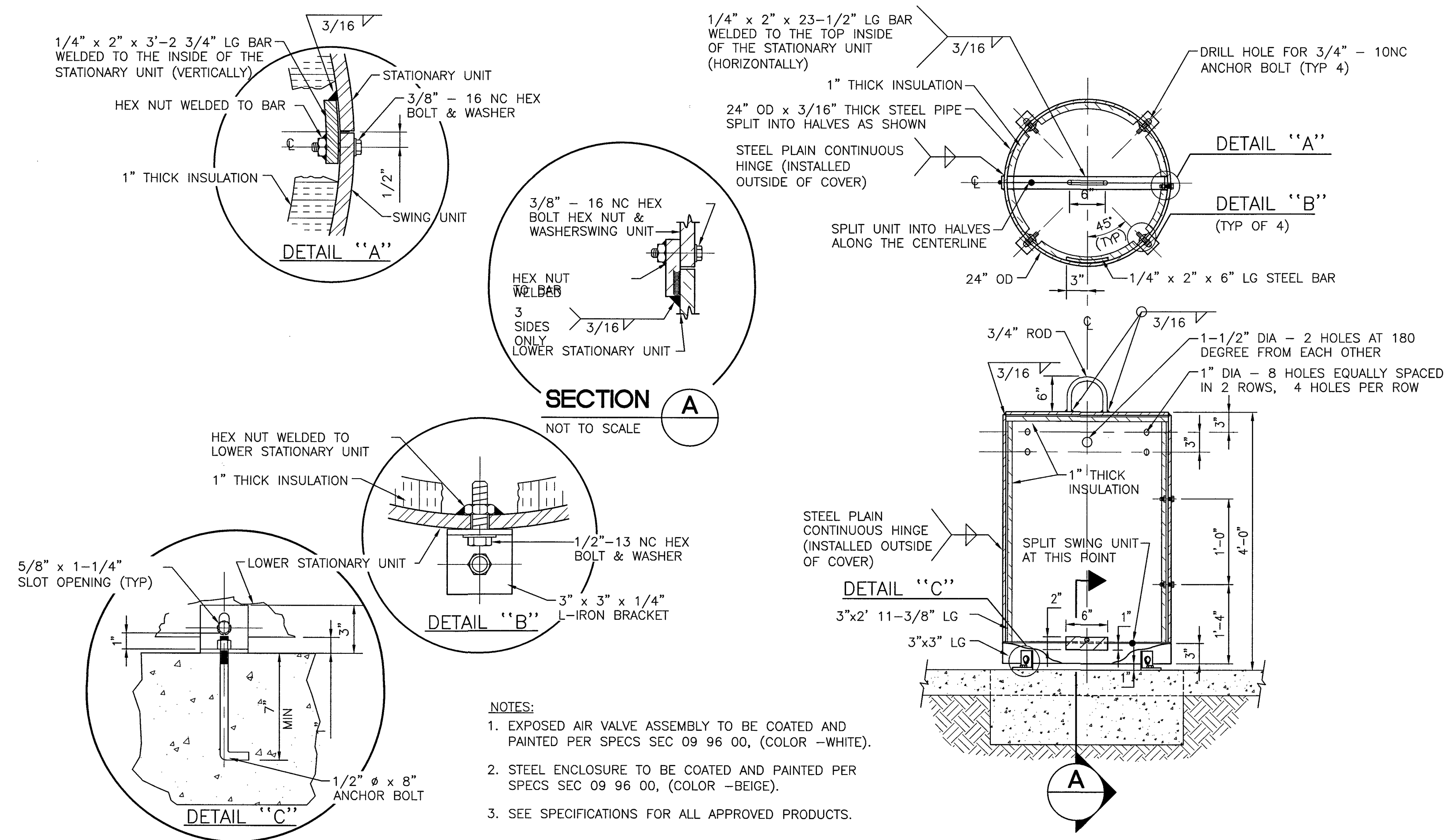


CONTRACT NUMBER

C1450

DRAWING NUMBER CD 4
SHEET 15 OF 24

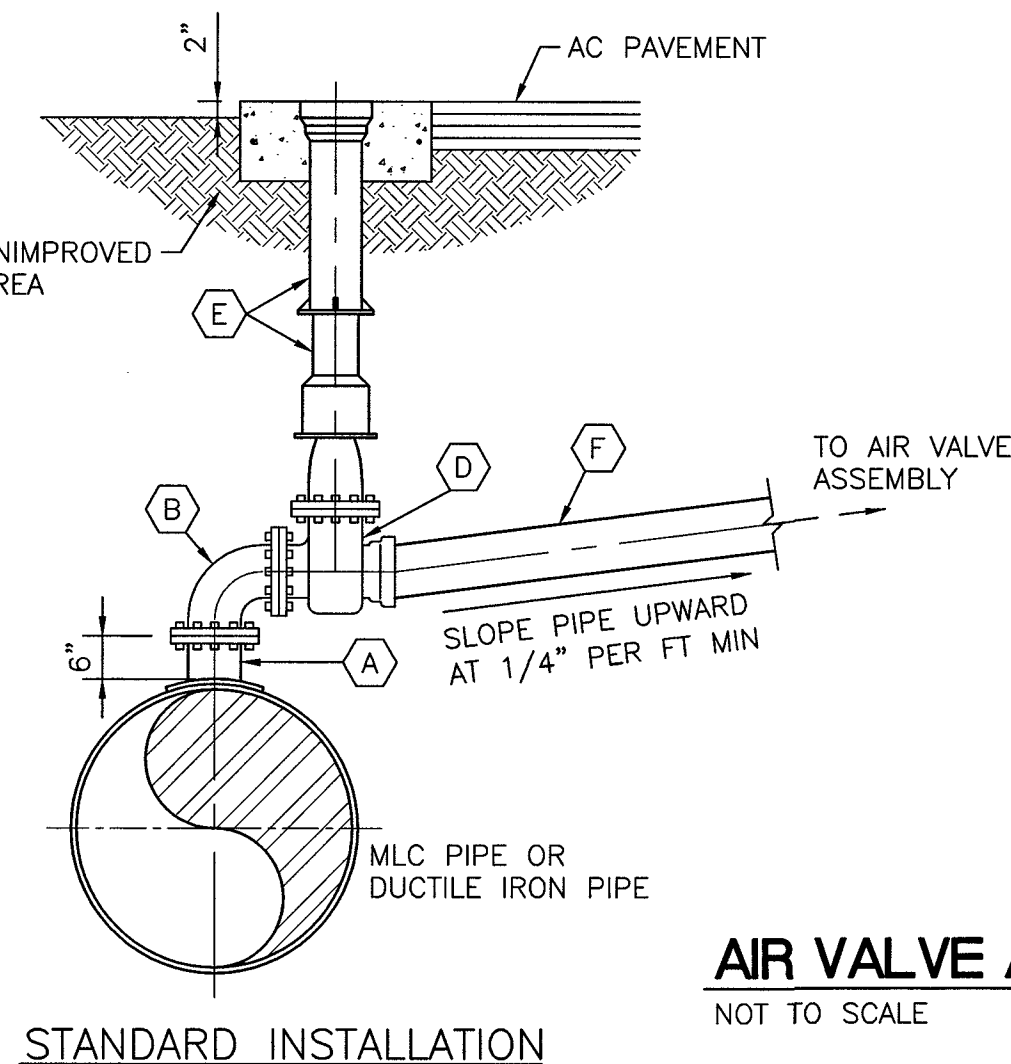
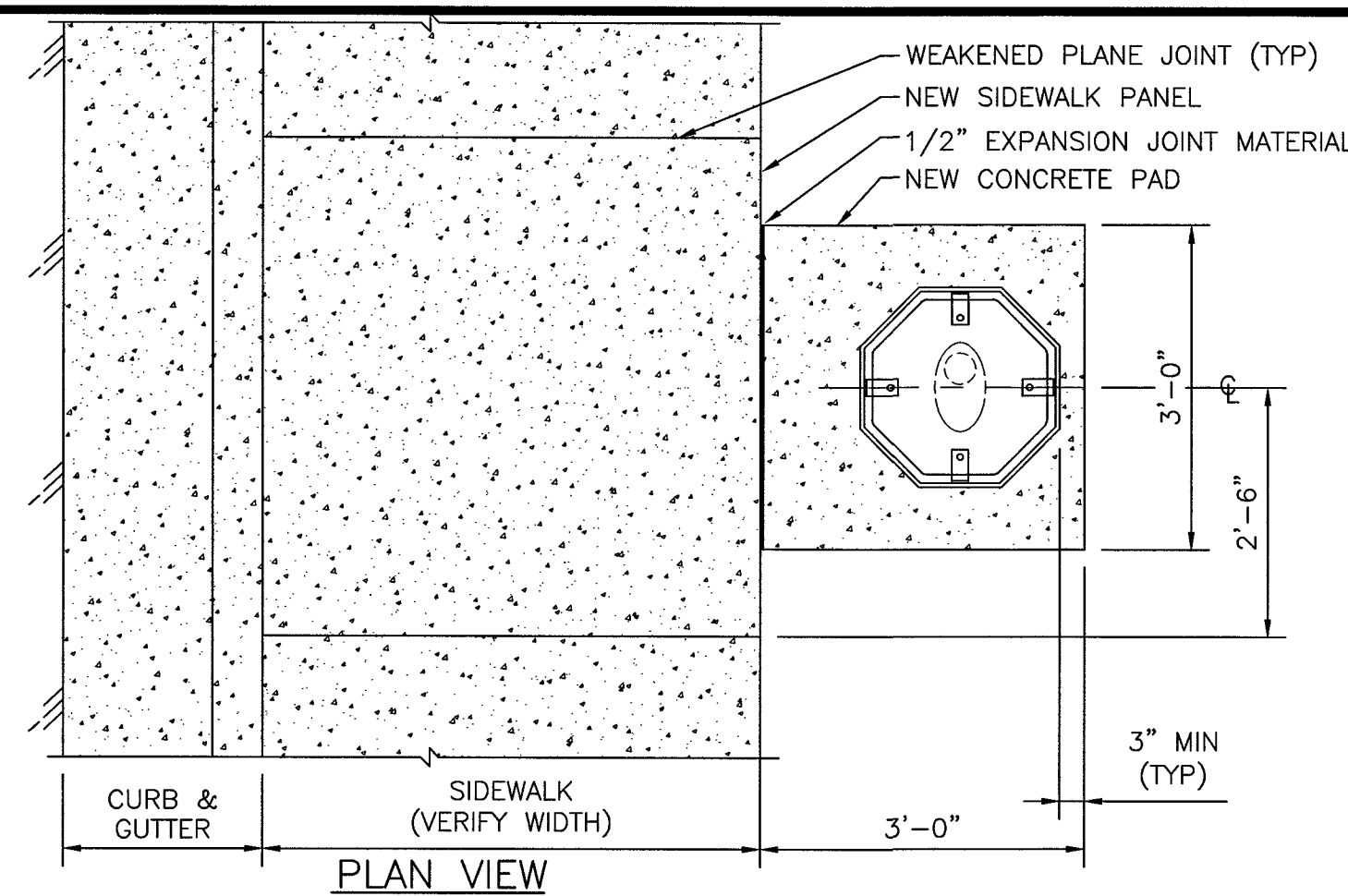
565-501
CLV DWG # H-64613



AIR VALVE ASSEMBLY FOR 2" AND 4" VALVES (STEEL ENCLOSURE)

NOT TO SCALE

1
CD5
CD3

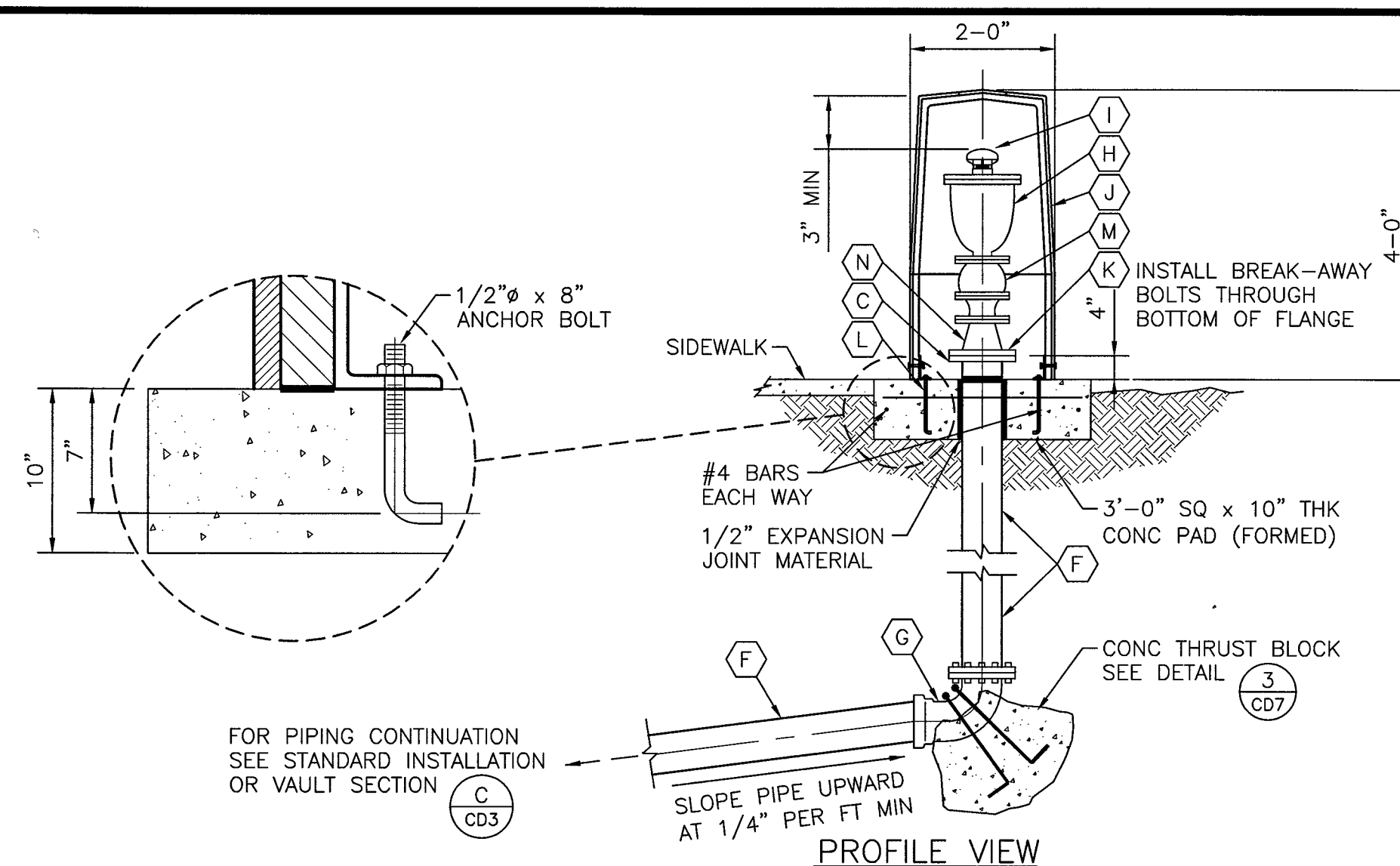


AIR VALVE ASSEMBLY FOR 4" VALVES

NOT TO SCALE

2
CD5

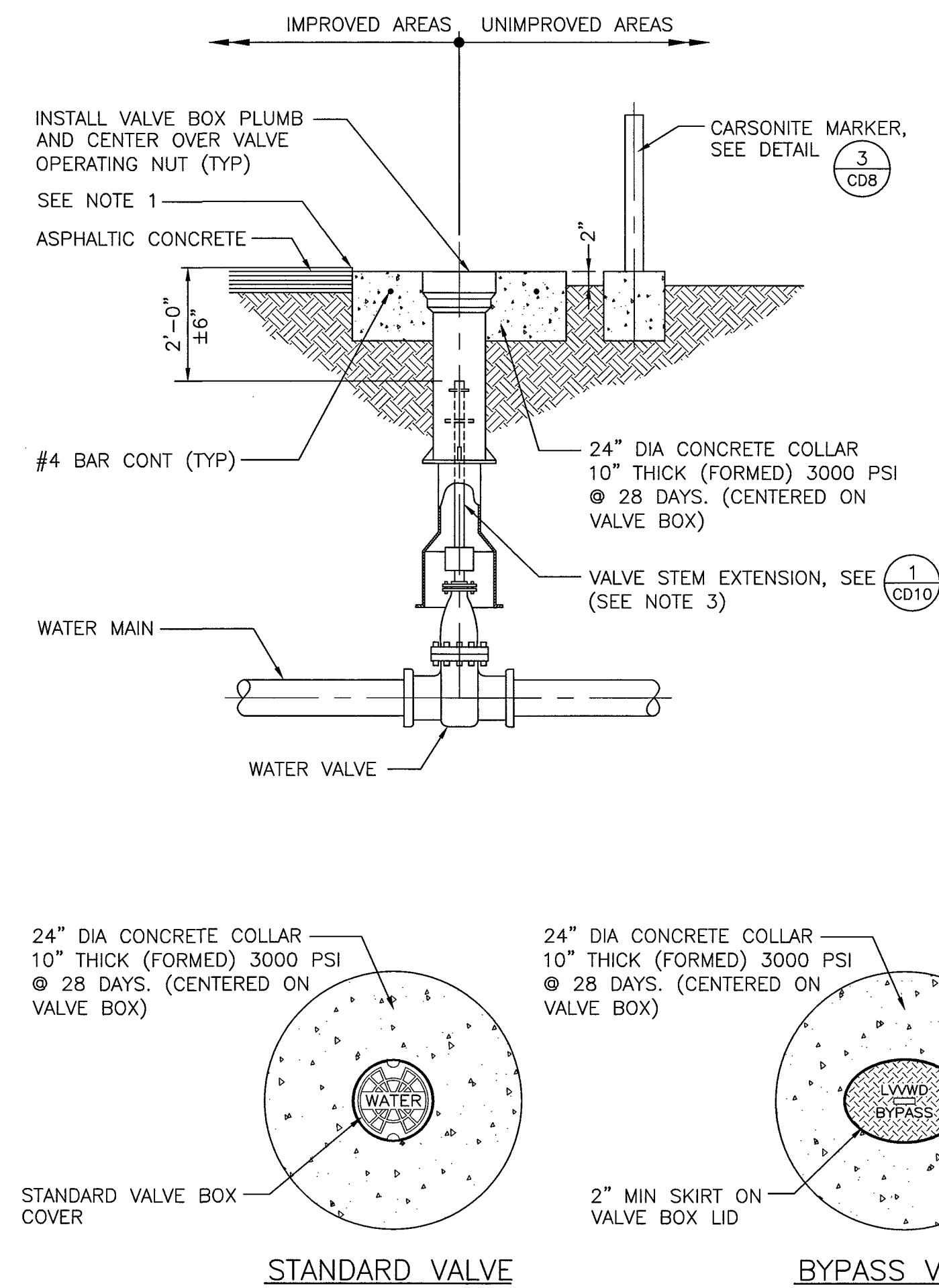
C1, C2, C3, CD3



LEGEND

- | | |
|---|--|
| (A) 6" FLG STL OUTLET FOR MLC STL PIPE, FLG TEE FOR DIP | (H) 4" COMBINATION AIR VALVE, FLANGED INLET |
| (B) 6"- 90° FLG DUCTILE IRON BEND | (I) 4" MUSHROOM VENT CAP |
| (C) 6" DUCTILE IRON FLANGE ADAPTOR | (J) APPROVED ENCLOSURE |
| (D) 6" FLG x PO OR FLG x MJ GATE VALVE W/2" OPERATING NUT | (K) 5/8"-11NC BREAK-AWAY ZINC PLATED HEX HD BOLT, HEX NUT AND LOCKWASHER |
| (E) VALVE BOX AND COVER - SEE DETAIL 3 | (L) 1/2" x 8" ANCHOR BOLT |
| (F) 6" DUCTILE IRON PC350 PIPE OR 6" PVC CL150 DR18 PIPE | (M) 4" BALL VALVE- QUARTER TURN |
| (G) 6" - 90° FLG x PO OR FLG x MJ DI BEND | (N) 6" x 4" FLG x FLG DI REDUCER |

- NOTES:**
- SEE SPECIFICATIONS FOR ALL APPROVED PRODUCTS.
 - TAPE WRAP ALL BURIED DIP IF USED FOR AIR VALVE ASSEMBLY PIPING.

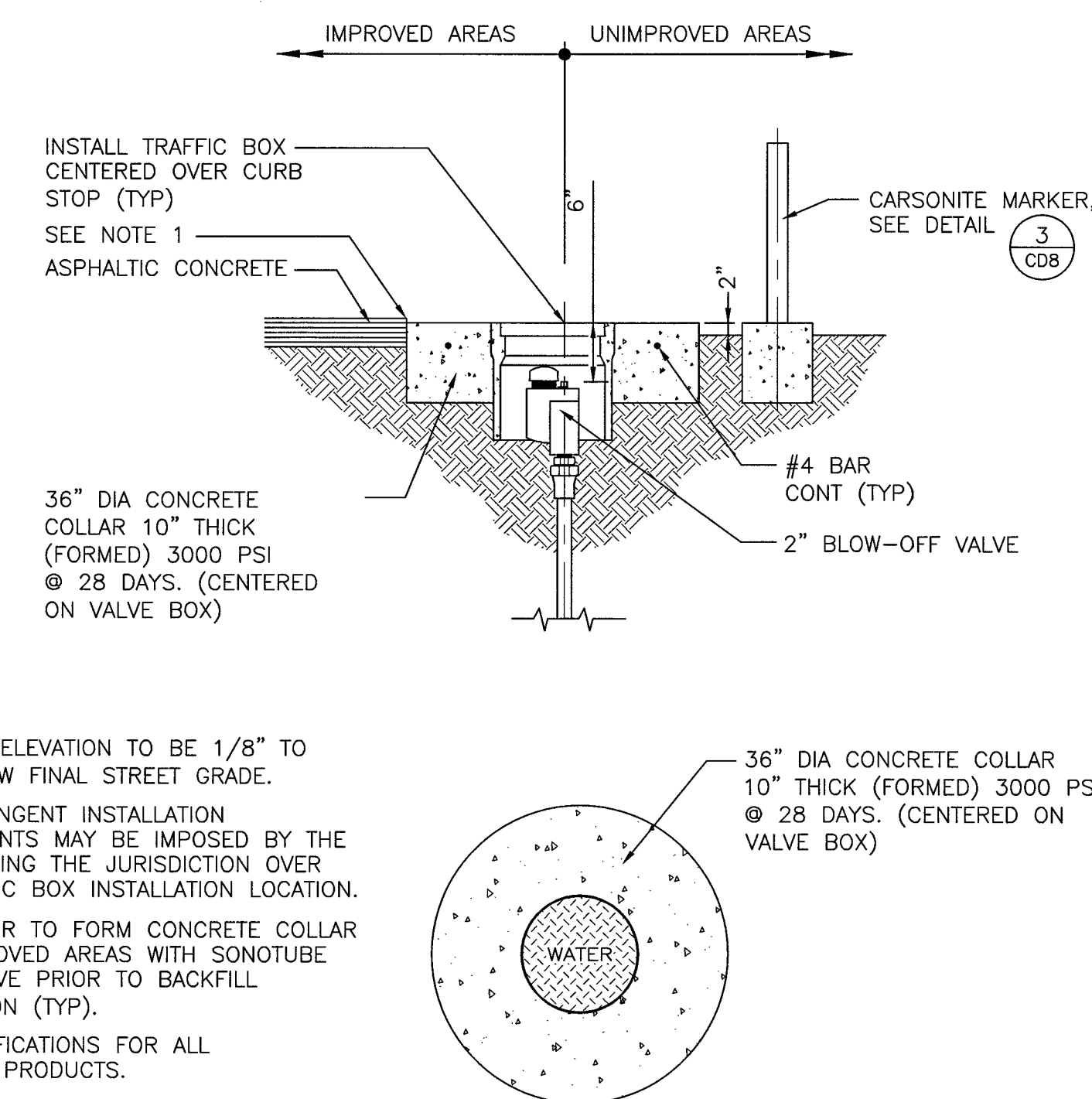


VALVE BOX INSTALLATION

NOT TO SCALE

3
CD5

CD3, CD6, CD7, CD8



NOTES:

- FINAL RIM ELEVATION TO BE 1/8" TO 1/4" BELOW FINAL STREET GRADE.
- MORE STRINGENT INSTALLATION REQUIREMENTS MAY BE IMPOSED BY THE ENTITY HAVING THE JURISDICTION OVER THE TRAFFIC BOX INSTALLATION LOCATION.
- CONTRACTOR TO FORM CONCRETE COLLAR IN UNIMPROVED AREAS WITH SONOTUBE AND REMOVE PRIOR TO BACKFILL INSTALLATION (TYP).
- SEE SPECIFICATIONS FOR ALL APPROVED PRODUCTS.

LAS VEGAS VALLEY WATER DISTRICT

S-I-G
SLATER
HANIFAN
GROUP
CONSULTING ENGINEERS & PLANNERS
8740 S. ARVILLE STREET #16, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

VERIFY SCALE

1/2 0 1/2
BAR REPRESENTS ONE AND ONE-HALF INCHES ON ORIGINAL

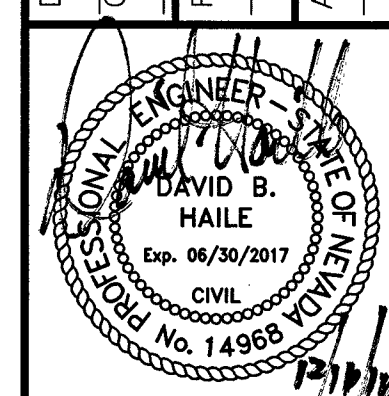
EGAN CREST 3090 ZONE NORTH PIPELINE, PHASE II

VALVE ASSEMBLY AND BOX DETAILS

SCALE
HORIZ SCALE
AS NOTED
VERT SCALE
AS NOTED

DRAWN BY: SE 11/22/2016
CHECKED BY: DBH 11/22/2016

RECOMMENDED BY: SR. CIVIL ENGINEER
ACCEPTED BY: RYAN C. PEARSON, DESIGN MANAGER



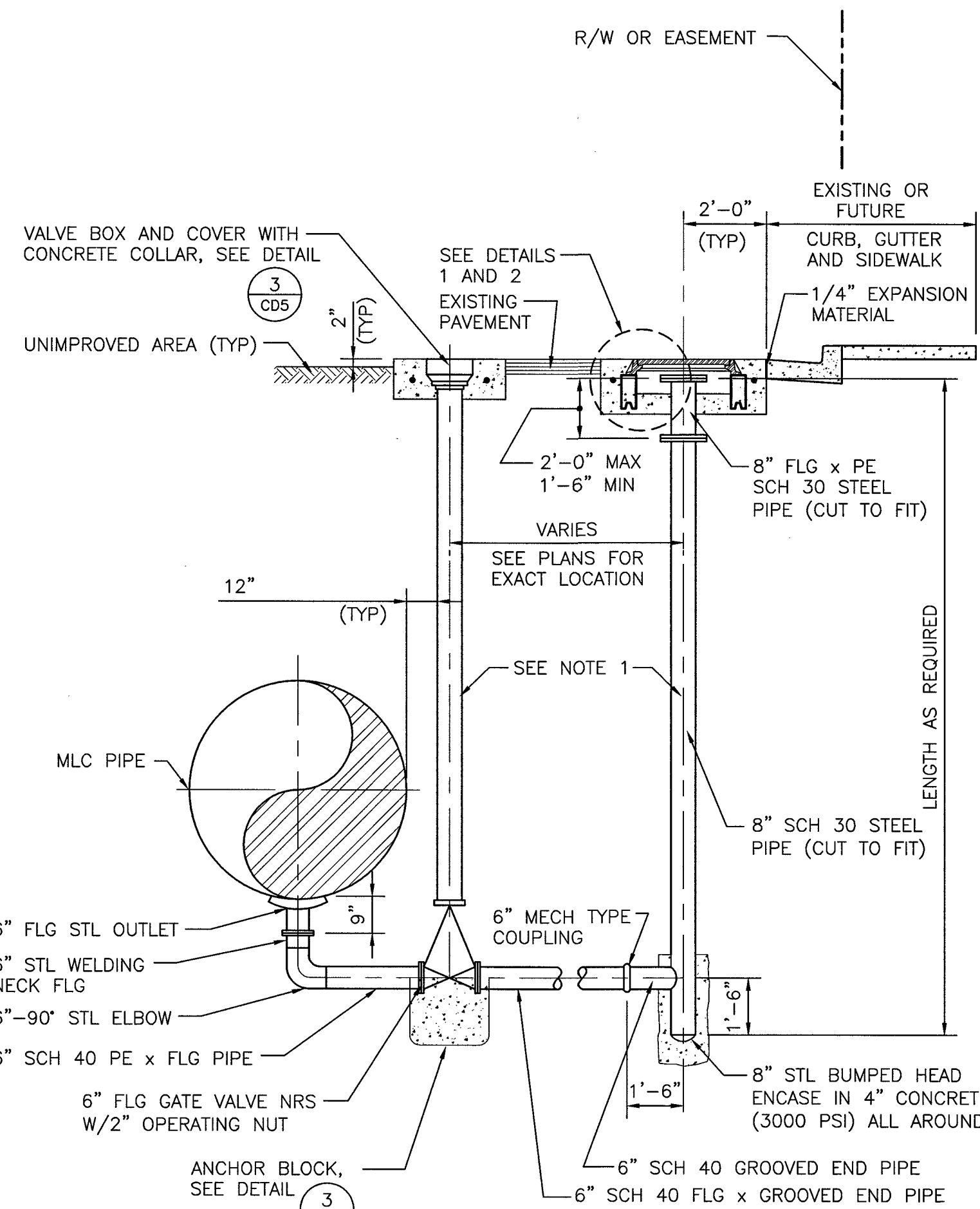
CONTRACT NUMBER

C1450
DRAWING NUMBER CD5
SHEET 16 OF 24

565-501
CLV DWG # H-64613

CD8

11/22/2016 10:42 AM Jorge Elizondo
11/22/2016 10:42 AM Jorge Elizondo
11/22/2016 10:42 AM Jorge Elizondo

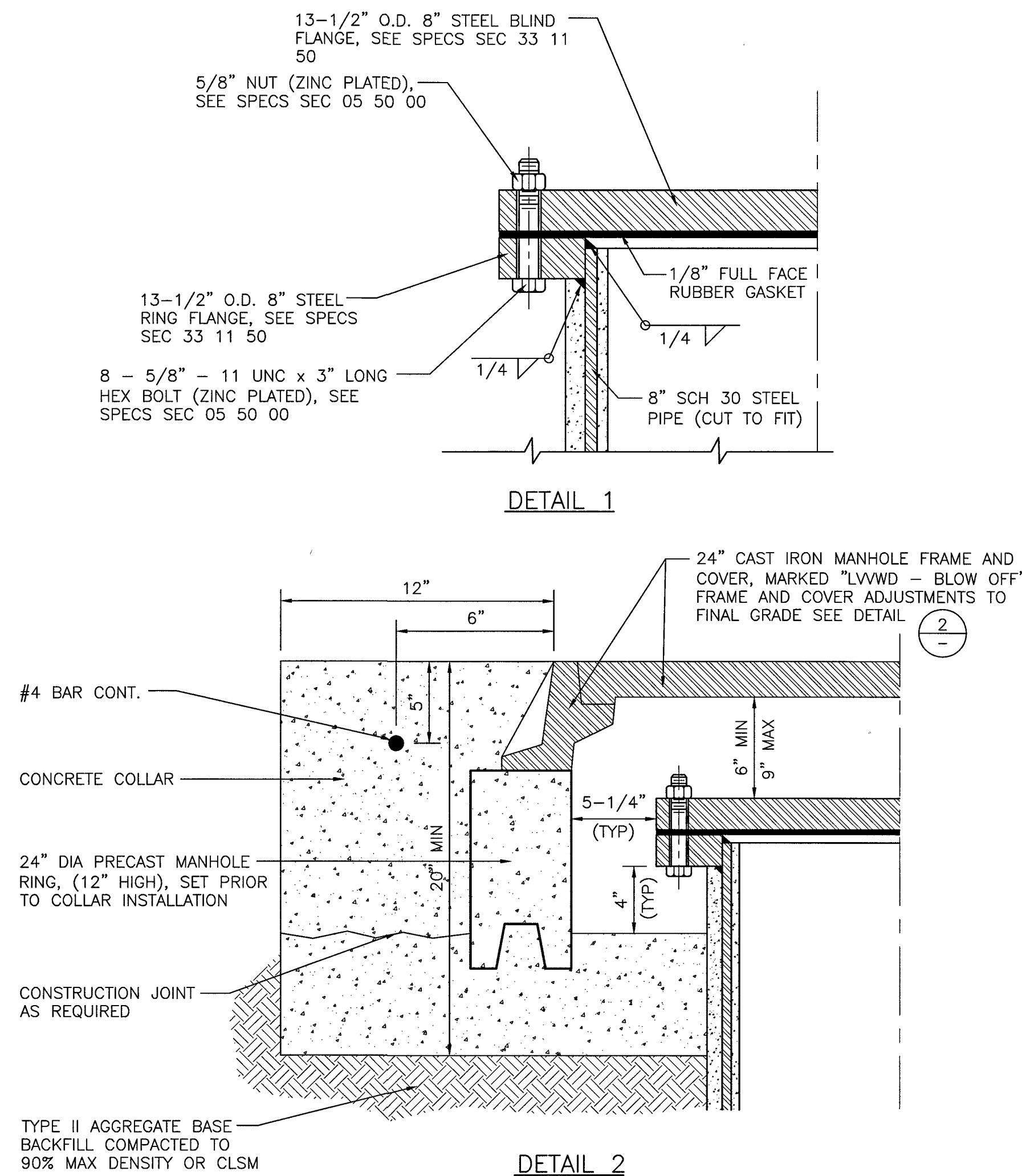


BLOW-OFF ASSEMBLY

- NOTES:
1. IN ORDER TO AVOID UNDUE STRESS ON THE VALVE BOX, VALVE AND BLOW-OFF ASSEMBLY THEY MUST BE PROPERLY SUPPORTED UNTIL THE BACKFILL OPERATION IS COMPLETED.
 2. ALL 6" AND 8" STEEL PIPES AND FITTINGS SHALL BE TAPE WRAPPED AND SHALL HAVE CEMENT MORTAR LINING AND COATING.
 3. ALL EXPOSED FERROUS SURFACES TO BE COATED IN ACCORDANCE WITH SPECS SEC 33 05 13 AND 09 96 00.

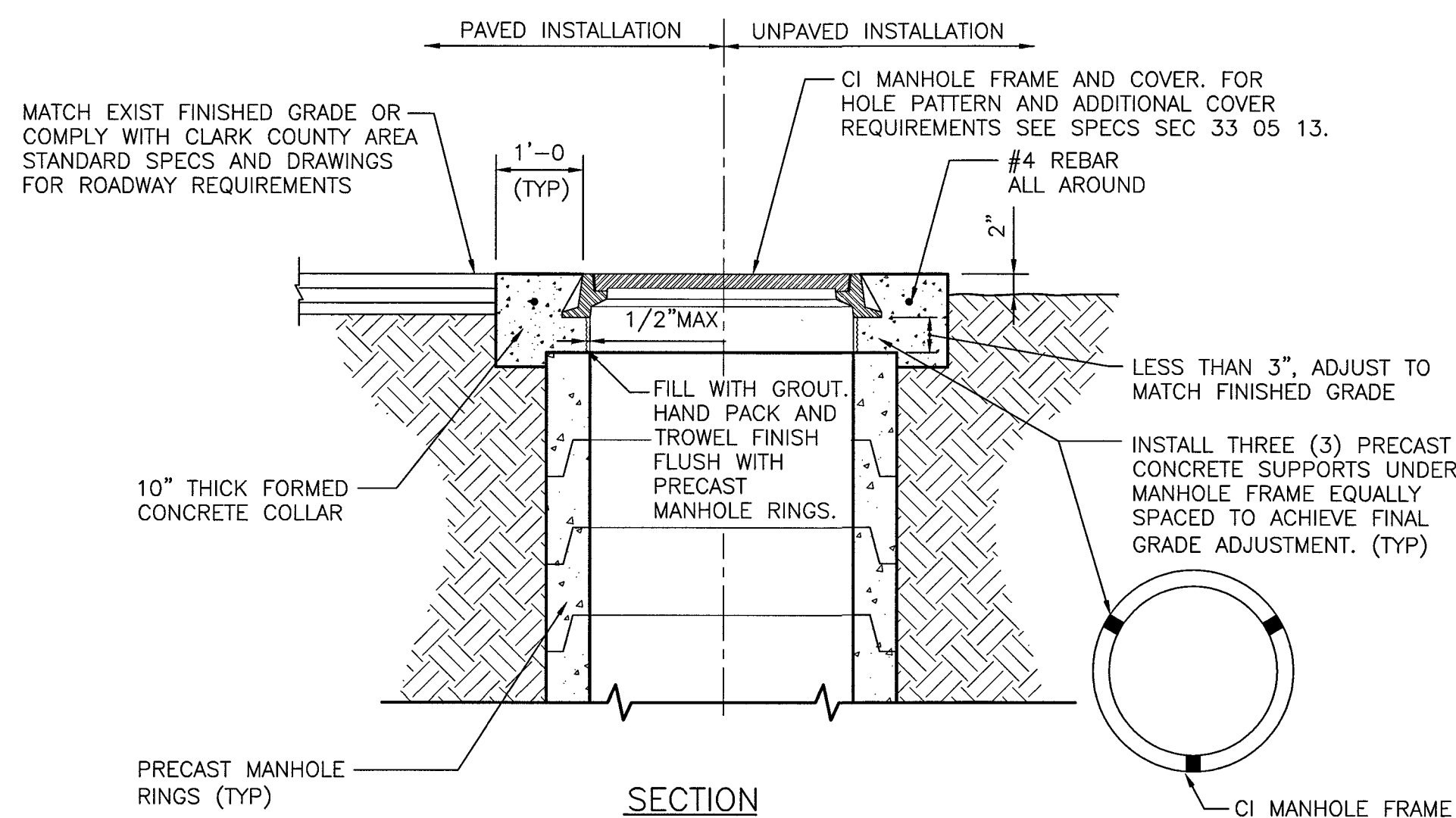
BLOW-OFF ASSEMBLY AND COVER DETAIL 1

NOT TO SCALE



DETAIL 2

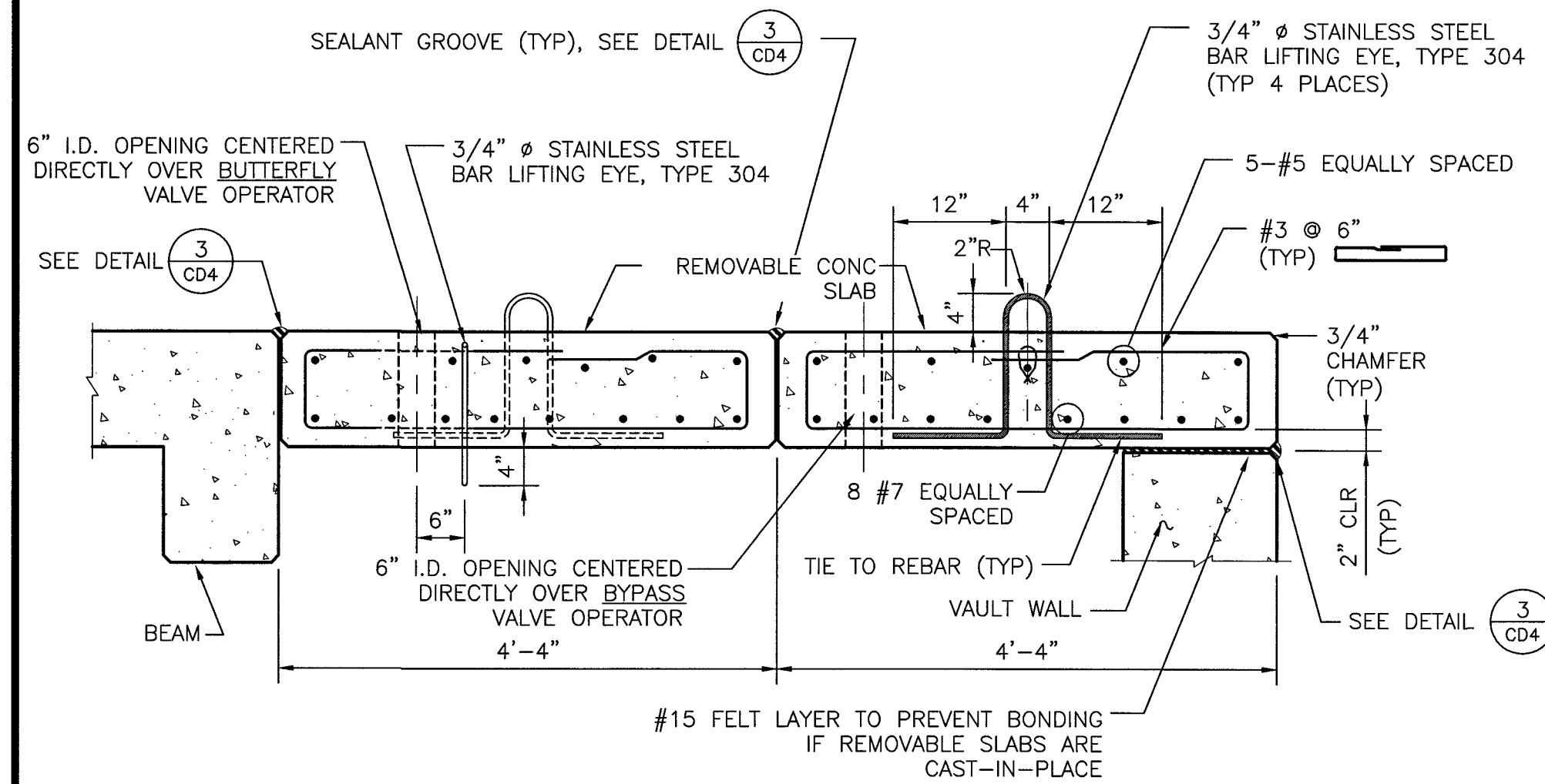
C2, C3, CD3



MANHOLE COVER AND COLLAR INSTALLATION 2

NOT TO SCALE

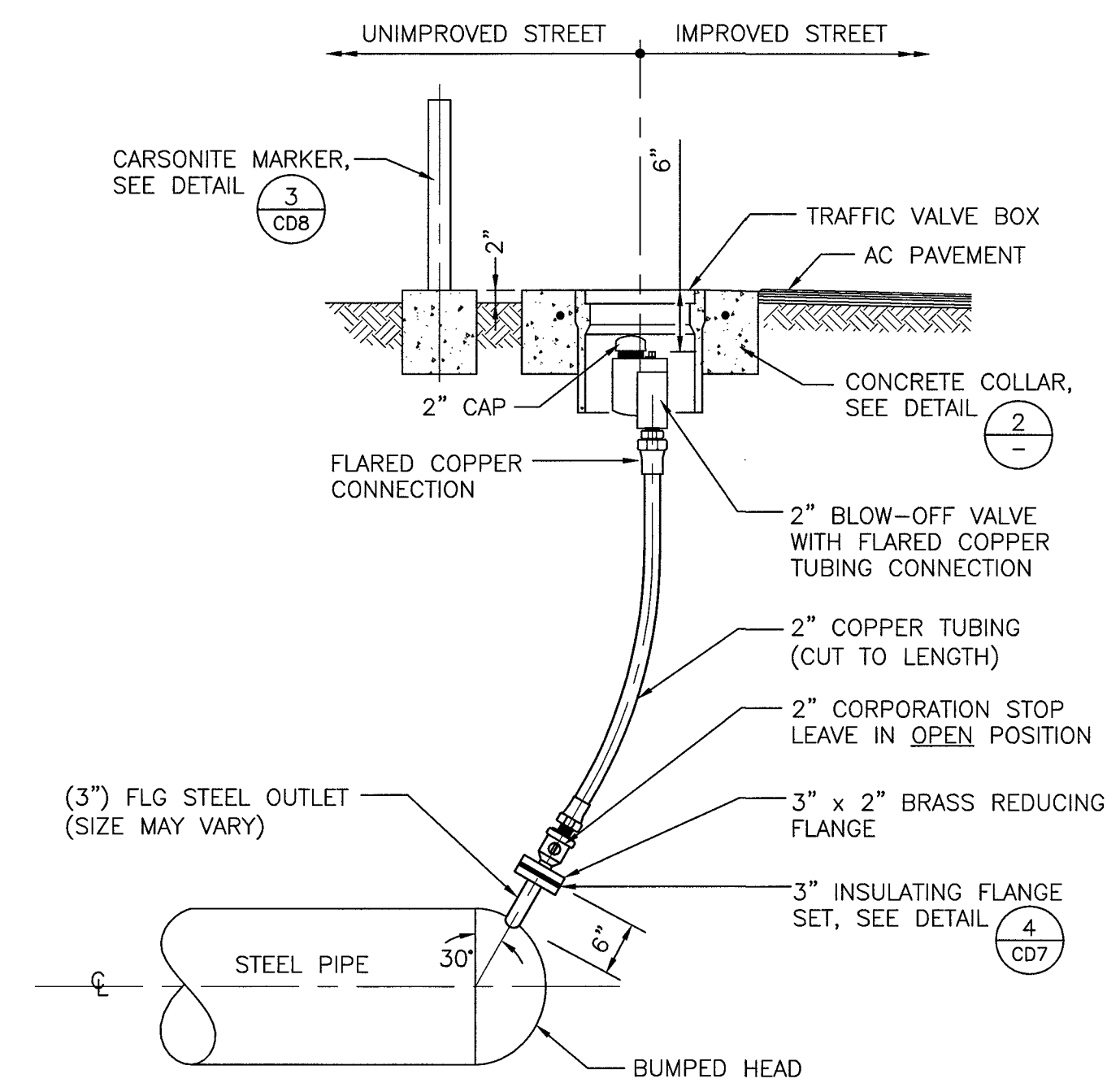
CD2, CD3, CD9, CD10



REMOVABLE CONCRETE SLAB SECTION 3

NOT TO SCALE

CD2

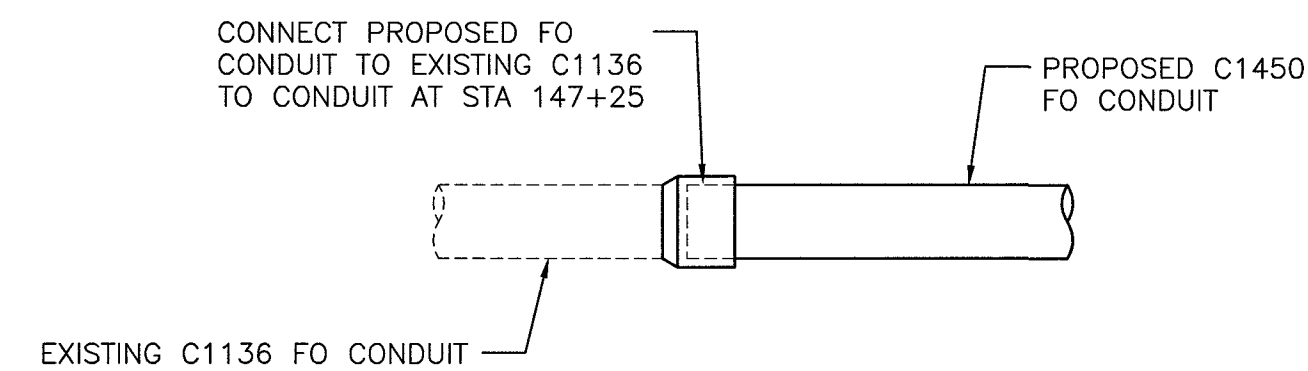


NOTE:
ALL COPPER TUBING AND BRASS PIPE SHALL BE WRAPPED WITH TWO LAYERS OF SIX (6) MIL POLYETHYLENE AND BACKFILLED ALL AROUND WITH 4" MINIMUM OF SAND.

MANUAL AIR RELEASE ASSEMBLY (STEEL PIPE)

NOT TO SCALE

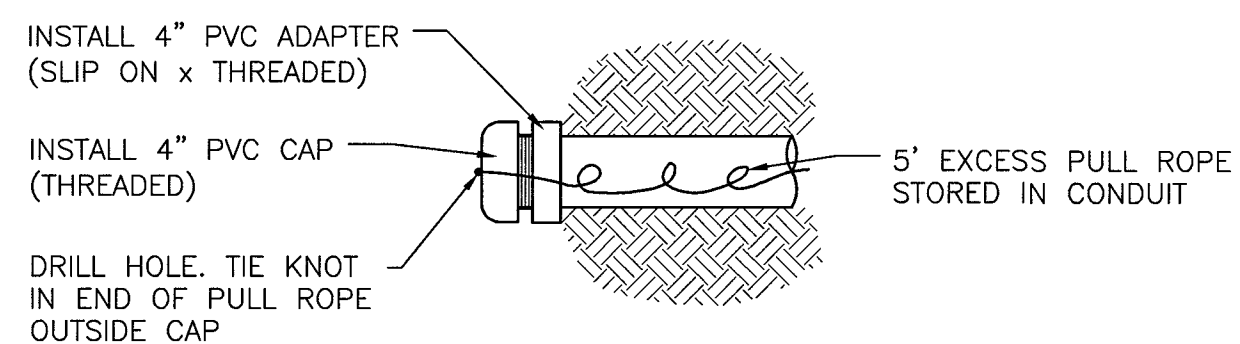
4 CD6
C3



FIBER OPTIC CONNECTION DETAIL

NOT TO SCALE

5 CD6
C1



FIBER OPTIC TERMINATION DETAIL

NOT TO SCALE

6 CD6
C3

CLV DWG # H-64613

LAS VEGAS VALLEY WATER DISTRICT

SLATER
HANIFAN
GROUP
CONSULTING ENGINEERS & PLANNERS
1400 S. MOUNTAIN VIEW AVE., SUITE 100
LAS VEGAS, NV 89102
PHONE (702) 264-4391
FAX (702) 264-4398

VERIFY SCALE
1/2" = 1'
0 1/2 1

BAR REPRESENTS ONE AND ONE-HALF INCHES ON ORIGINAL AS NOTED

EGAN CREST 3090 ZONE NORTH PIPELINE, PHASE II

BLOW-OFF, CONNECTION, AIR RELEASE & MANHOLE DETAILS

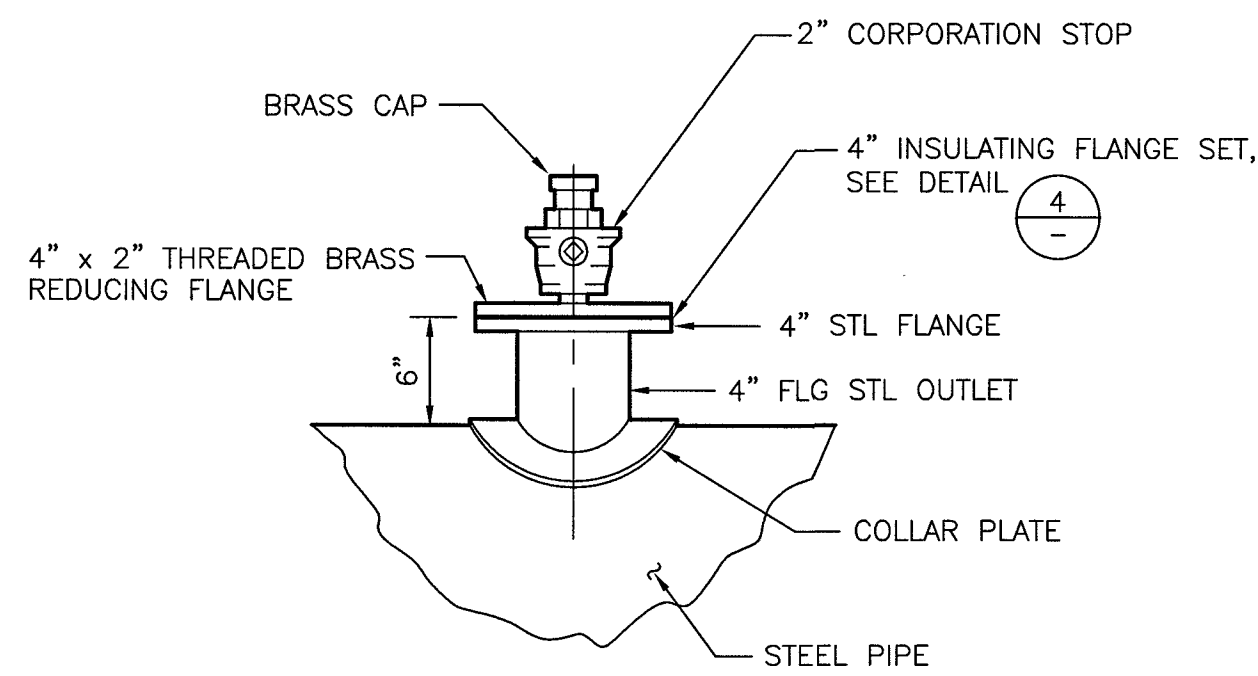
DRAWN BY:	SE	11/22/2016
CHECKED BY:	DBH	11/22/2016
RECOMMENDED BY:	SR, CIVIL ENGINEER	DATE
ACCEPTED BY:	RYAN C. PEARSON, DESIGN MANAGER	DATE

REVISIONS:

NO.	DESCRIPTION	DATE
1	ISSUED FOR PERMIT	11/22/2016
2	REVISED	12/16/16

CONTRACT NUMBER
C1450

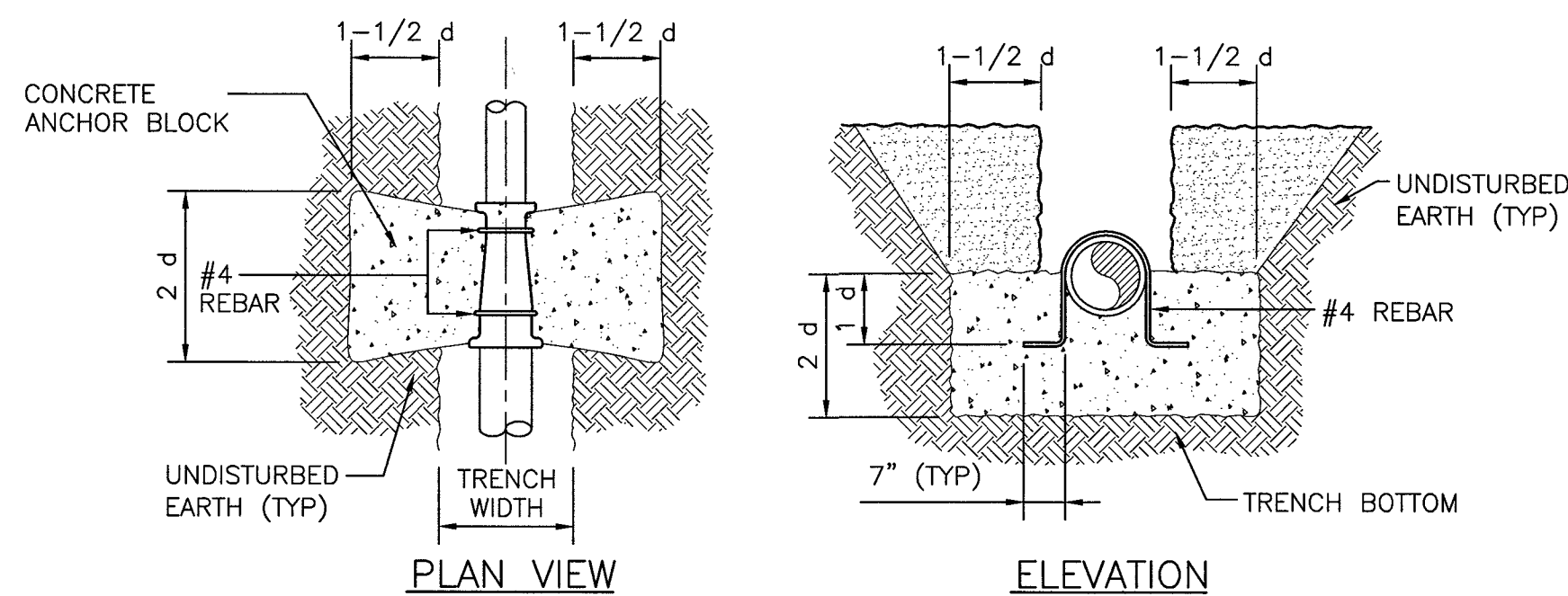
DRAWING NUMBER CD6
SHEET 17 OF 24



CORPORATION STOP DETAIL 1
NOT TO SCALE

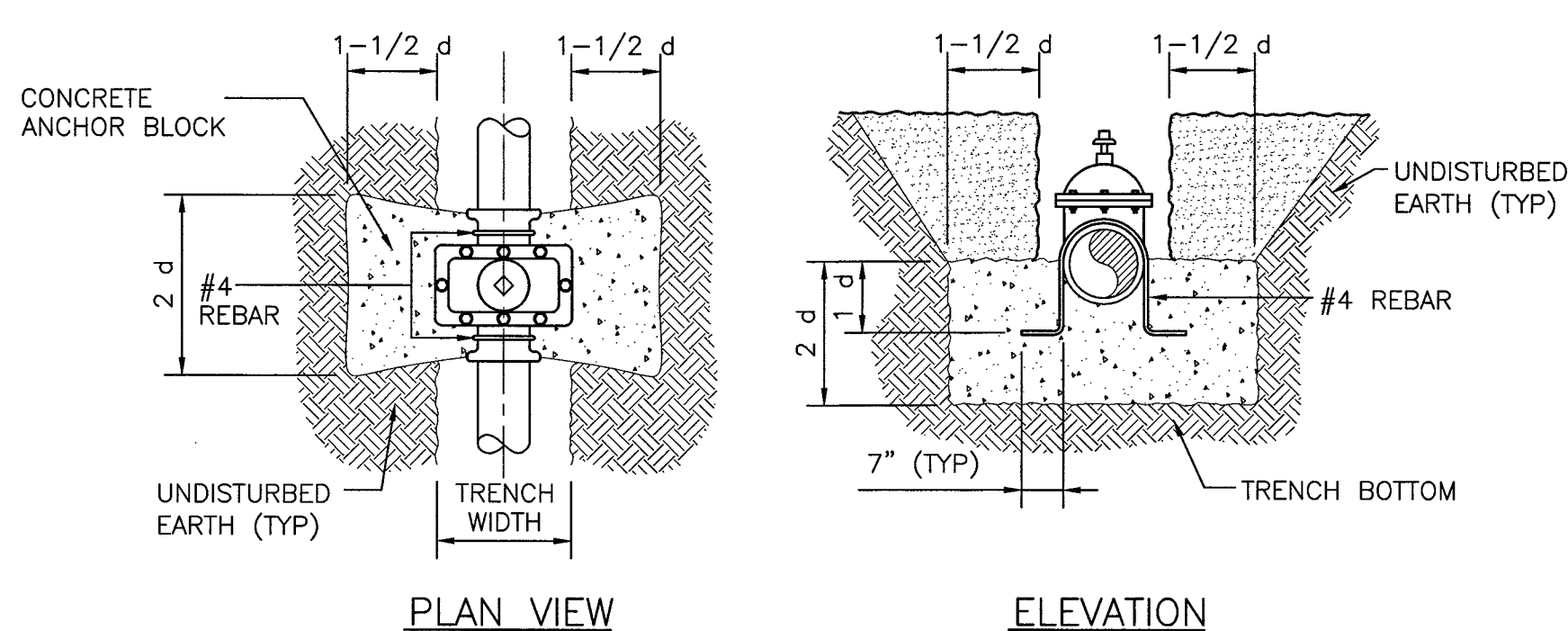
CD7
CD3

LEGEND: d = LARGER DIAMETER PIPE SIZE



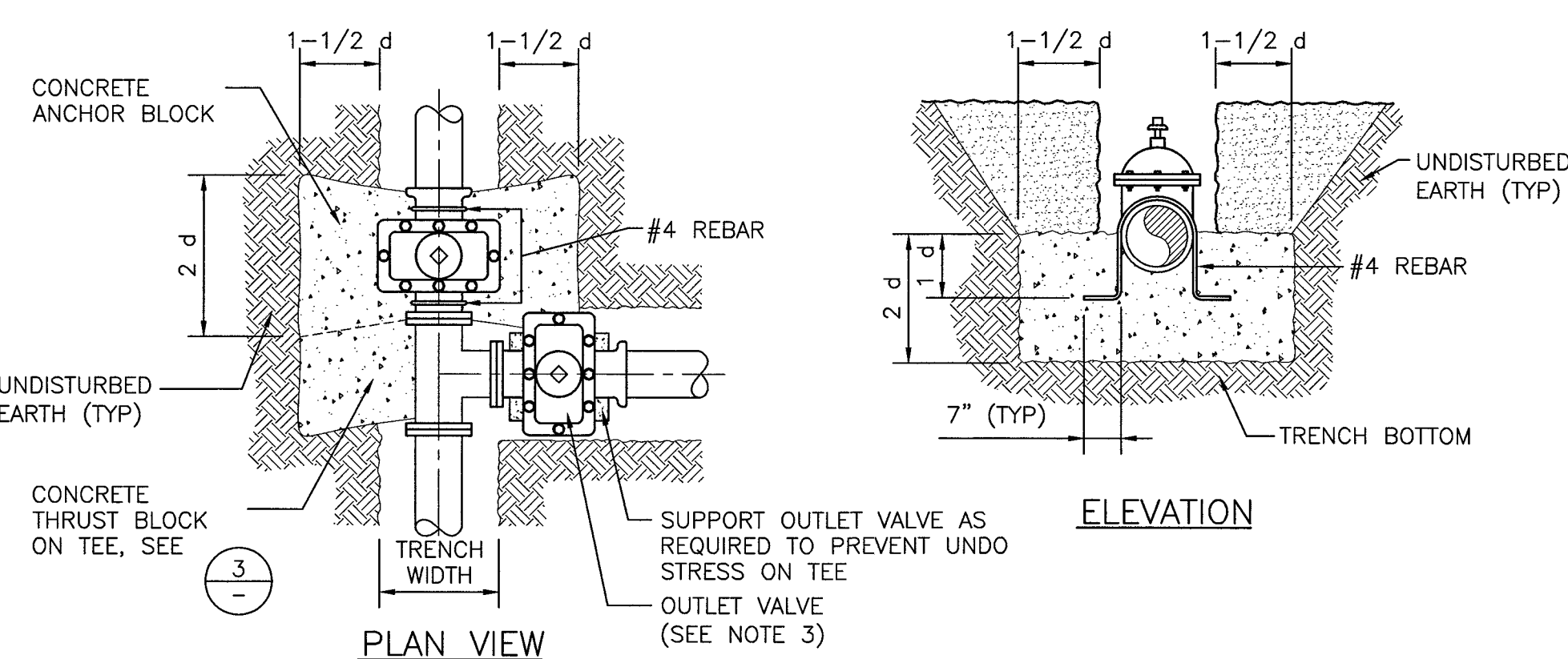
IN-LINE REDUCERS

LEGEND: d = NOMINAL PIPE SIZE



IN-LINE GATE VALVES

LEGEND: d = NOMINAL PIPE SIZE



TEE GATE VALVES

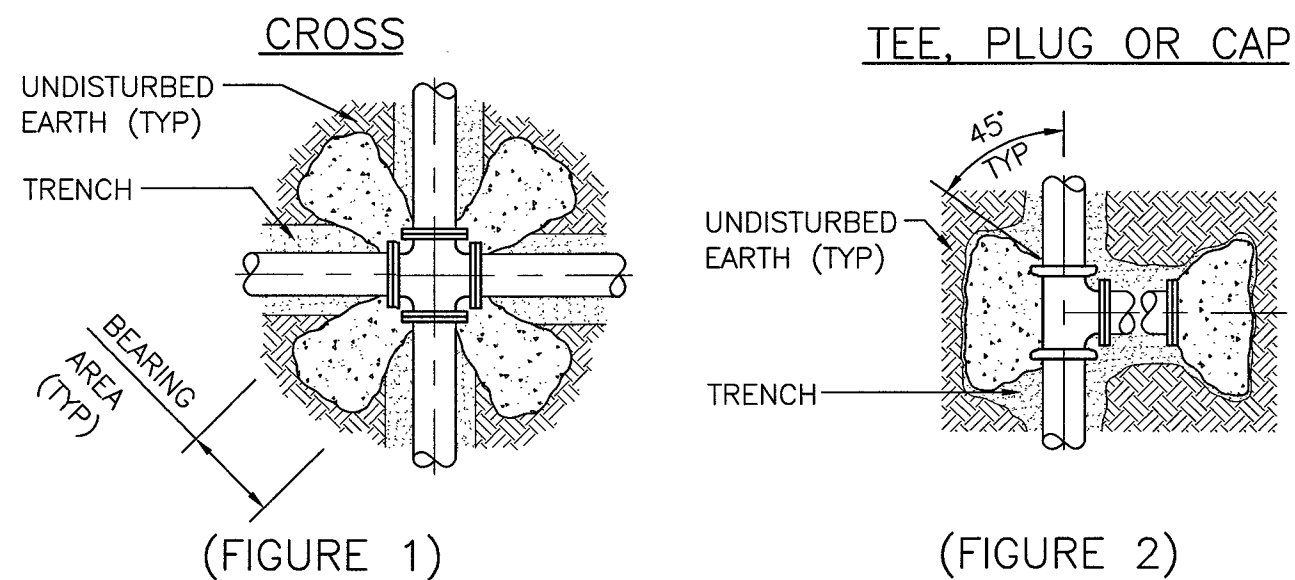
NOTES:

- ALL CONCRETE SHALL BE 3000 PSI MINIMUM 28 DAYS COMPRESSIVE STRENGTH
- ALL VALVES AND EXPOSED REBAR TO BE COATED AND WRAPPED IN ACCORDANCE WITH SECTION 09 96 00 OF THE LVWD SPECS, PROTECTIVE COATINGS.
- WHEN PIPE IS INSTALLED BETWEEN TEE AND OUTLET VALVE AN ADDITIONAL CONCRETE ANCHOR BLOCK WILL BE REQUIRED ON THE OUTLET VALVE.

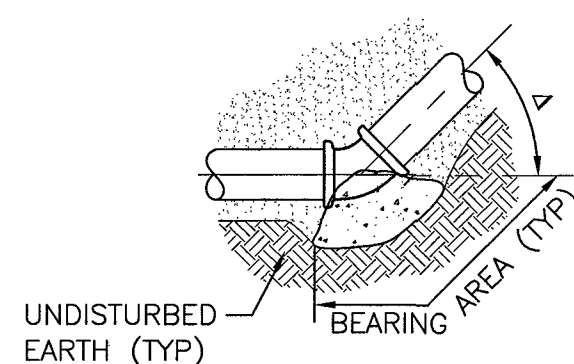
ANCHOR BLOCK DETAILS FOR REDUCERS AND GATE VALVES

NOT TO SCALE

CD7
CD3

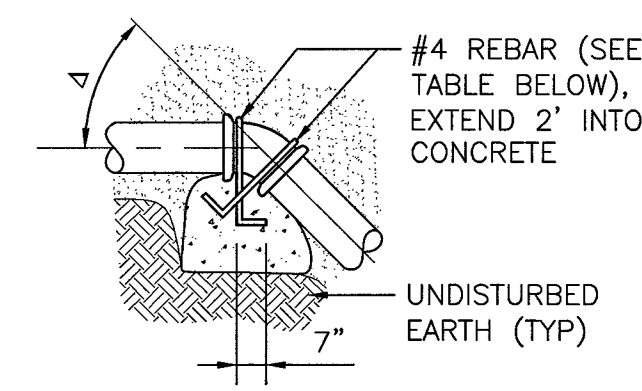


HORIZONTAL OR UPWARD VERTICAL BEND



(FIGURE 3)

DOWNWARD VERTICAL BEND



(FIGURE 4)

NOTE:

COAT AND WRAP ALL METAL SURFACES IN ACCORDANCE WITH SECTION 09 96 00 OF THE LVWD SPECS, PROTECTIVE COATINGS. ALL CONCRETE SHALL BE 3000 PSI MINIMUM, 28 DAYS COMPRESSIVE STRENGTH. CONCRETE IS TO BE PLACED AGAINST UNDISTURBED EARTH. TABLE BELOW DENOTES MINIMUM BEARING AREA OR VOLUME OF THRUST BLOCK. SPECIAL DESIGN CALCULATIONS ARE TO BE SUBMITTED TO LVWD FOR APPROVAL IF ALLOWABLE SOIL BEARING CAPACITY IS LESS THAN 3000 PSF. ALL VERTICAL SURFACES NOT BEARING AGAINST UNDISTURBED EARTH SHALL BE FORMED.

PIPE ID	BEARING AREA IN SQ FT						CONC/CU YDS		
	FIGURE 1	FIGURE 2	FIGURE 3, Δ				FIGURE 4, Δ		
4"	1	2	90"	45"	22 1/2"	11 1/4"	45"	22 1/2"	11 1/4"
6"	2	2	2	2	1	1	1.0	0.5	0.5
8"	2	3	4	2	1	1	1.5	1.0	0.5
10"	3	5	7	4	2	1	3.0	1.5	1.0
12"	4	8	11	6	3	2	4.0	2.5	1.5
16"	6	11	15	8	4	2	6.0	3.0	1.5
18"	10	20	28	15	8	4	10.5 *	6.0	3.0
20"	13	25	35	19	10	5	13.5 *	7.5	3.5
24"	16	31	44	24	12	6	16.0 **	9.0	4.5
24"	22	44	63	34	17	9	23.5 **	12.5 *	6.5

* #5 REBAR ** #6 REBAR

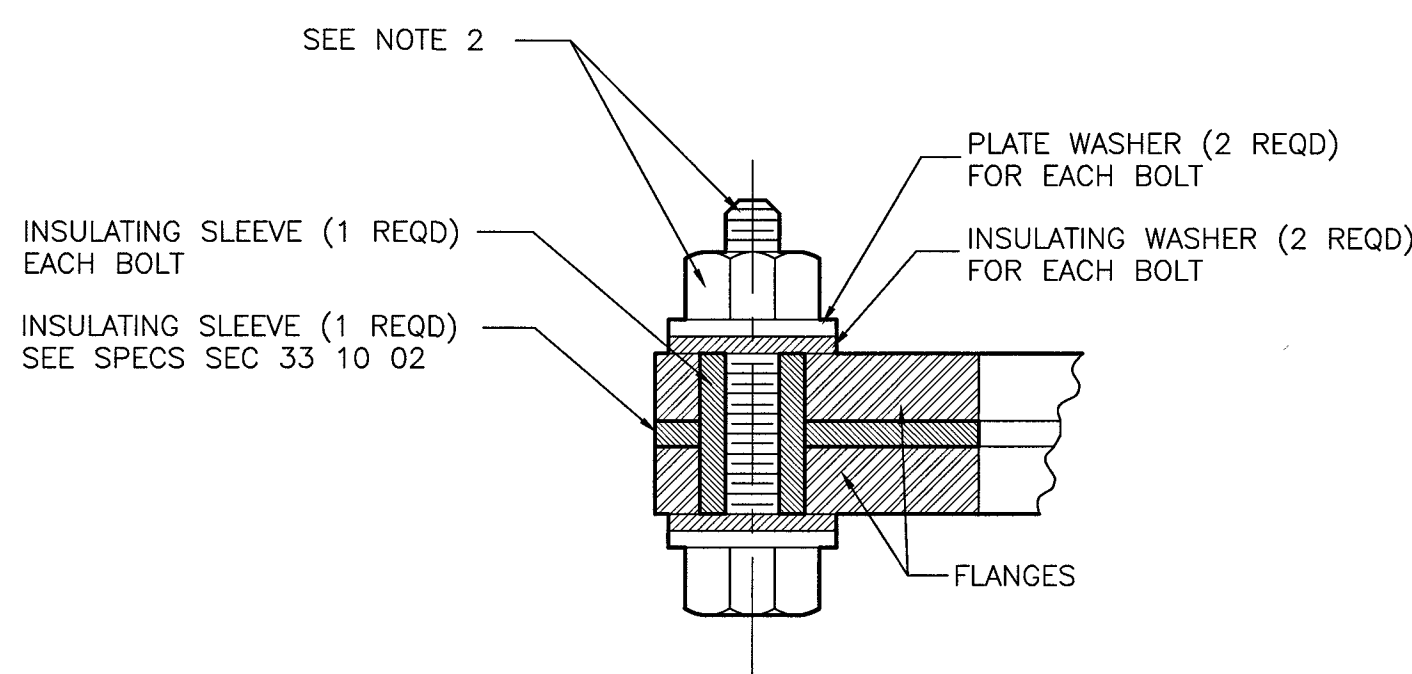
NOTE:

USE OF THRUST BLOCKS FOR PIPE DIAMETERS GREATER THAN 12" REQUIRES PRIOR DISTRICT APPROVAL AND WILL BE EVALUATED ON A CASE BY CASE BASIS.

THRUST BLOCK INSTALLATION

NOT TO SCALE

CD5, CD6



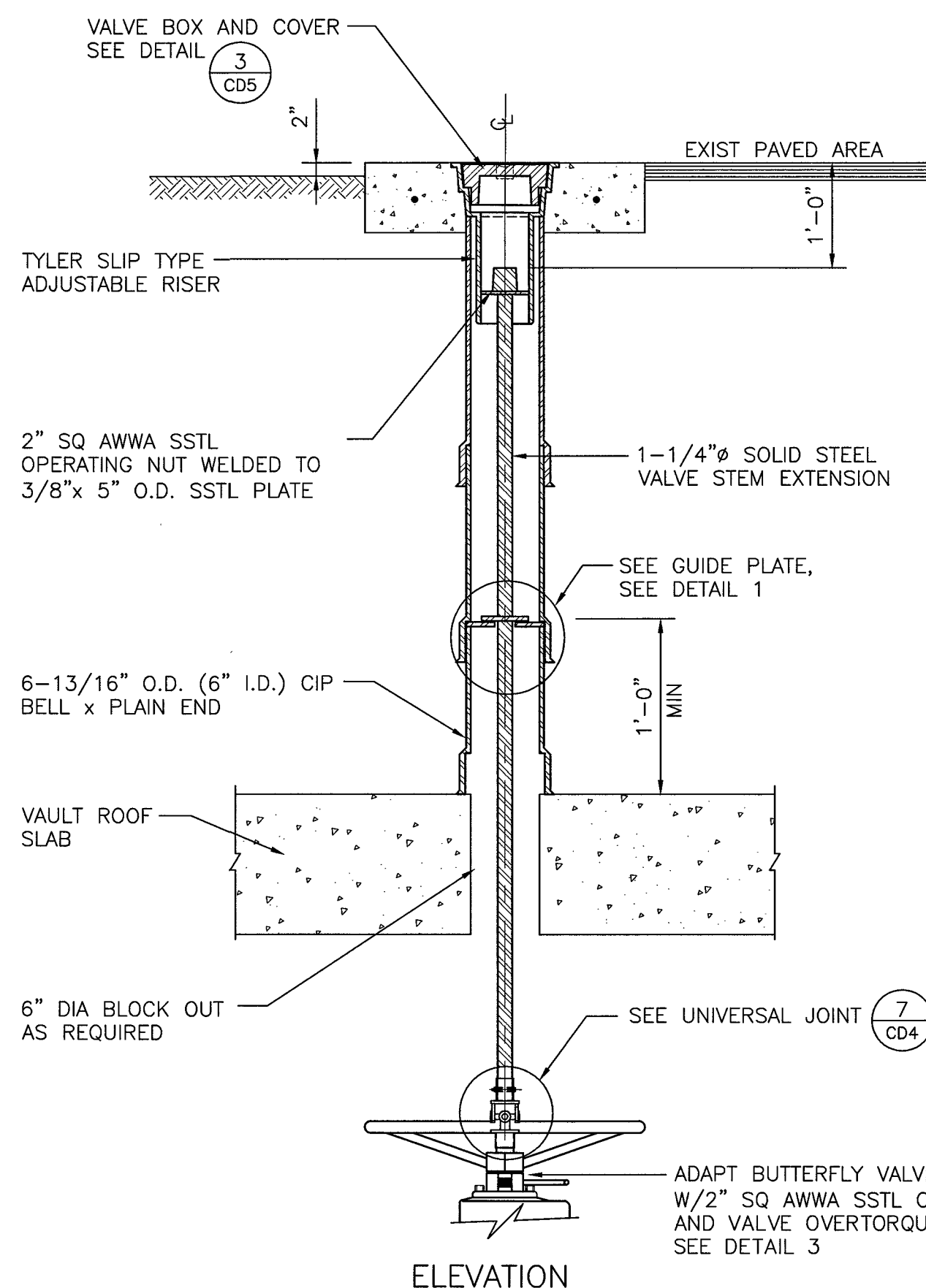
NOTES:

- TORQUE BOLTS PER INSULATING FLANGE SET MANUFACTURERS RECOMMENDATIONS (TYP).
- VAULT LOCATIONS:
ASTM F593, SS TYPE 316 BOLT WITH ASTM A563 NUT, Xylan 1000 SERIES COATING.
BURIED OR EXPOSED LOCATIONS:
ASTM A307 BOLT - UNC THREADS, WITH ASTM A563 NUT, ZINC COATED.

INSULATING FLANGE SET DETAIL

NOT TO SCALE

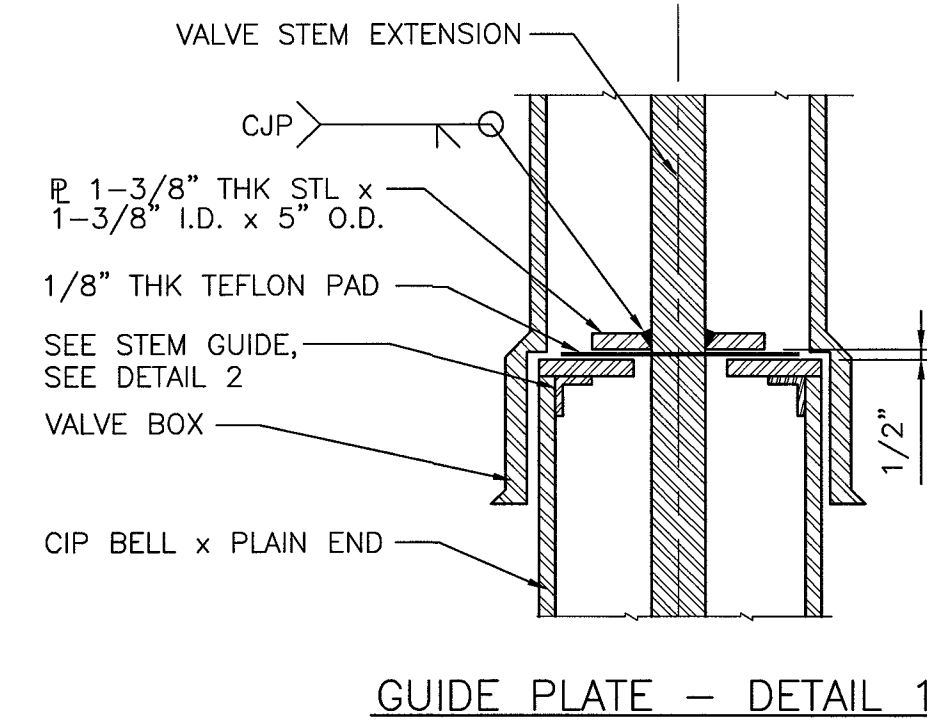
CD3, CD6, CD13



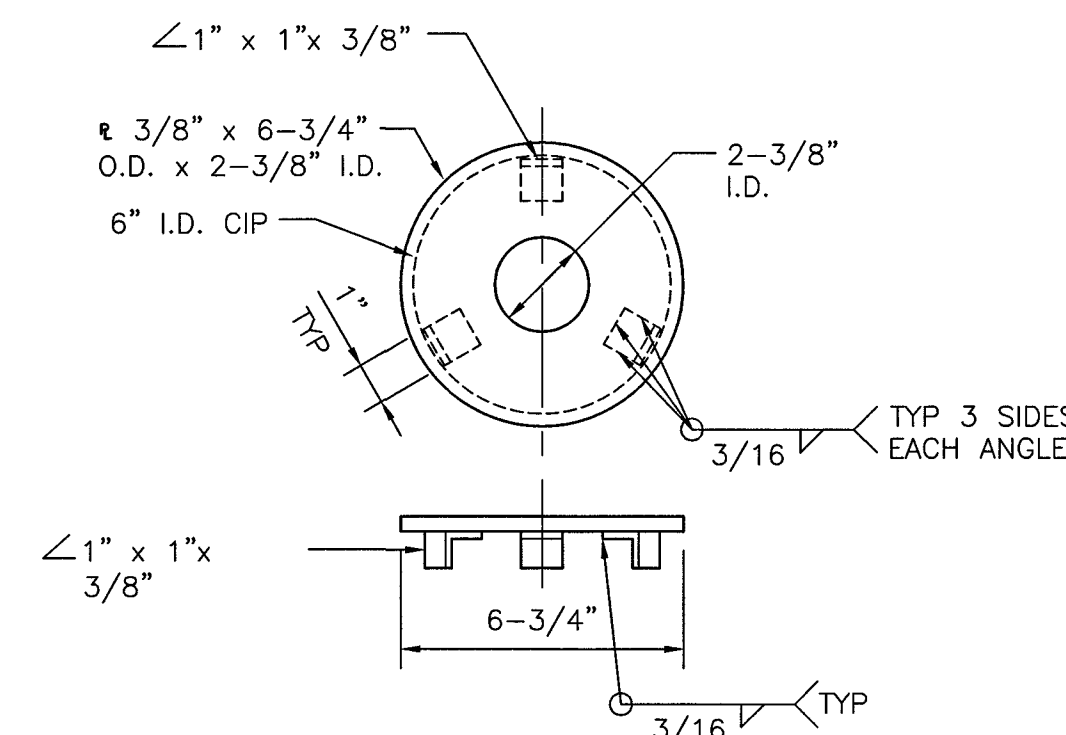
VALVE BOX ON VAULT DETAIL

NOT TO SCALE

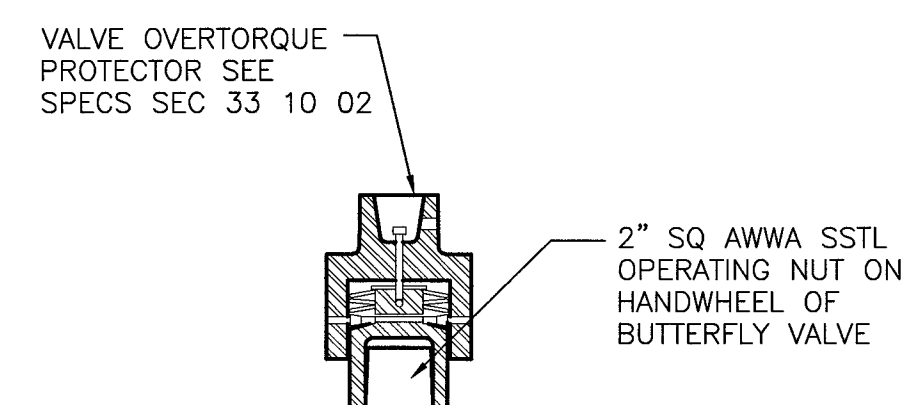
CD7
CD3



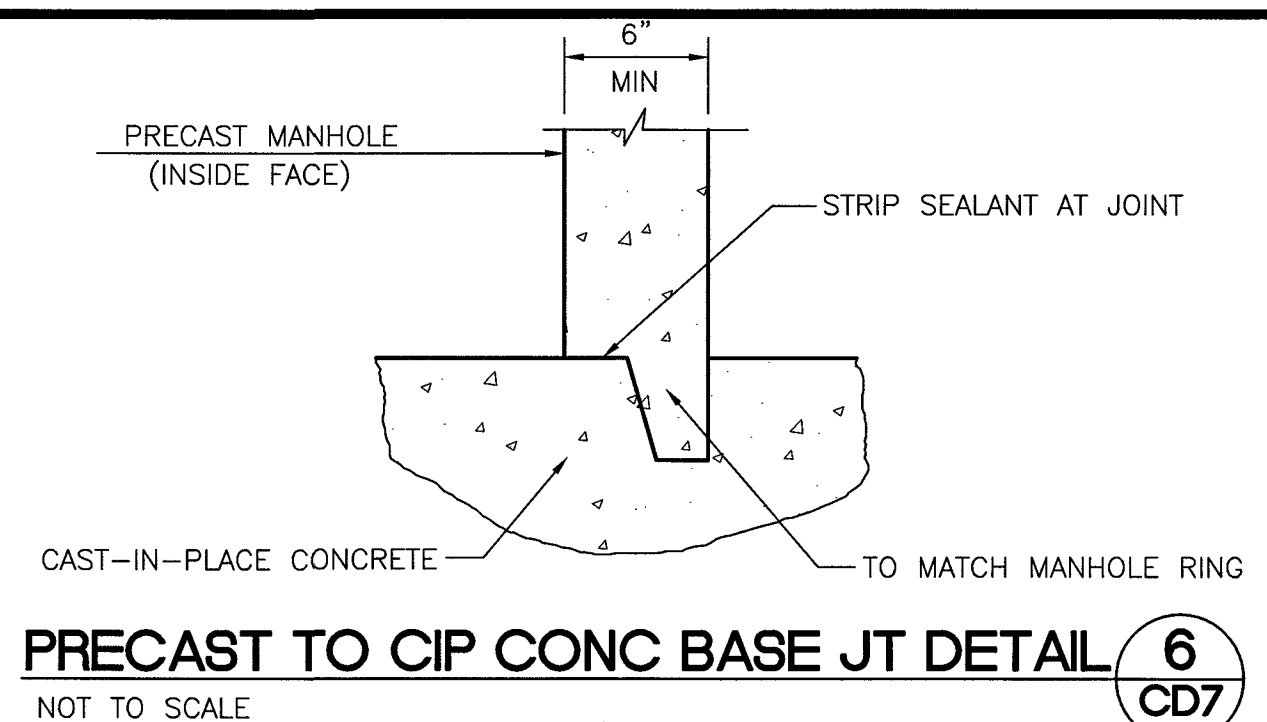
GUIDE PLATE - DETAIL 1



STEM GUIDE - DETAIL 2



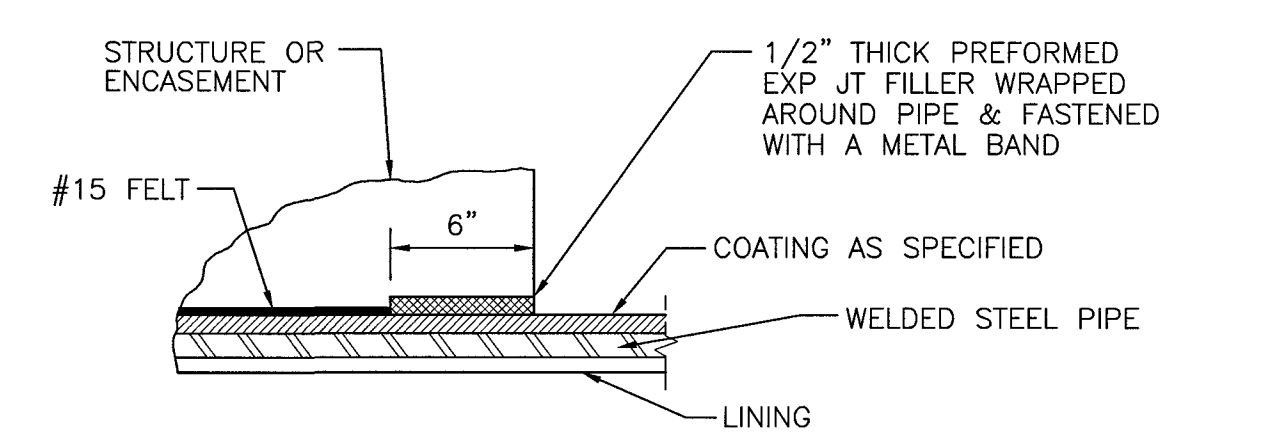
HANDWHEEL OPERATING NUT - DETAIL 3



PRECAST TO CIP CONC BASE JT DETAIL

NOT TO SCALE

CD7
CD10



TYPICAL AT ENDS OF ACCESS MANHOLE STRUCTURES AND ENCASEMENTS

NOT TO SCALE

CD7
CD10

ACCESS MANHOLE ENCASEMENT

NOT TO SCALE

CLV DWG # H-64613

565-501 CD8, CD10

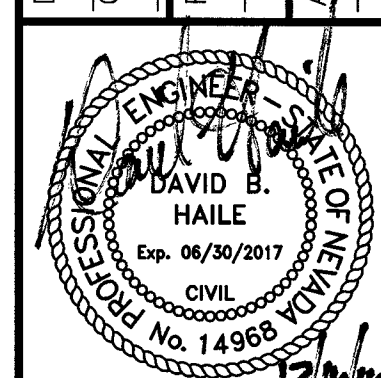
LAS VEGAS VALLEY WATER DISTRICT

VERIFY SCALE

EGAN CREST 3090 ZONE NORTH PIPELINE, PHASE II

THRUST BLOCK AND MISCELLANEOUS DETAILS

DRAWN BY: SE 11/22/2016
CHECKED BY: DBH 11/22/2016
RECOMMENDED BY: SR. CIVIL ENGINEER
ACCEPTED BY: RYAN C. PEARSON, DESIGN MANAGER
DATE: 12/1/16



CONTRACT NUMBER

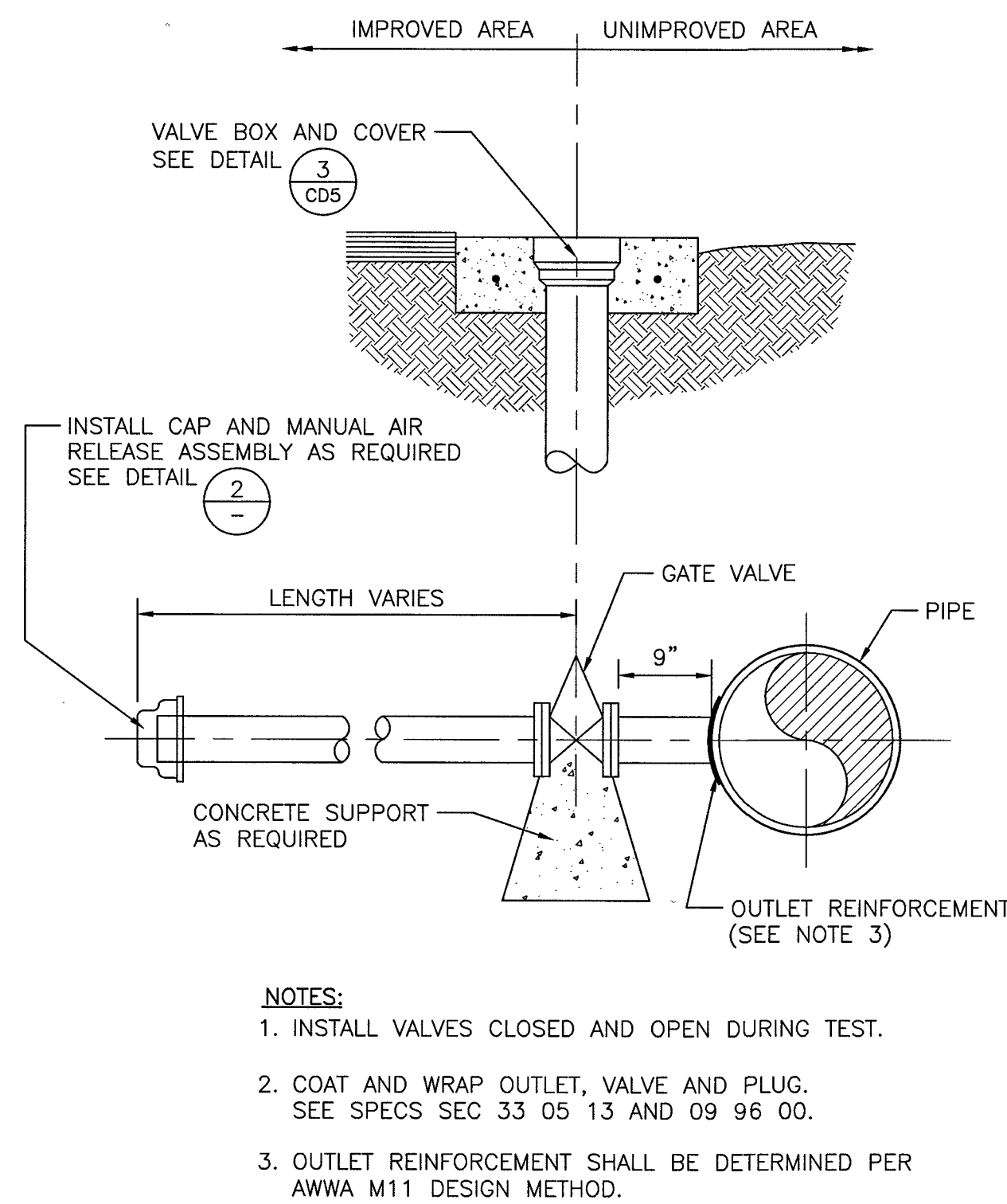
C1450

DRAWING NUMBER CD7

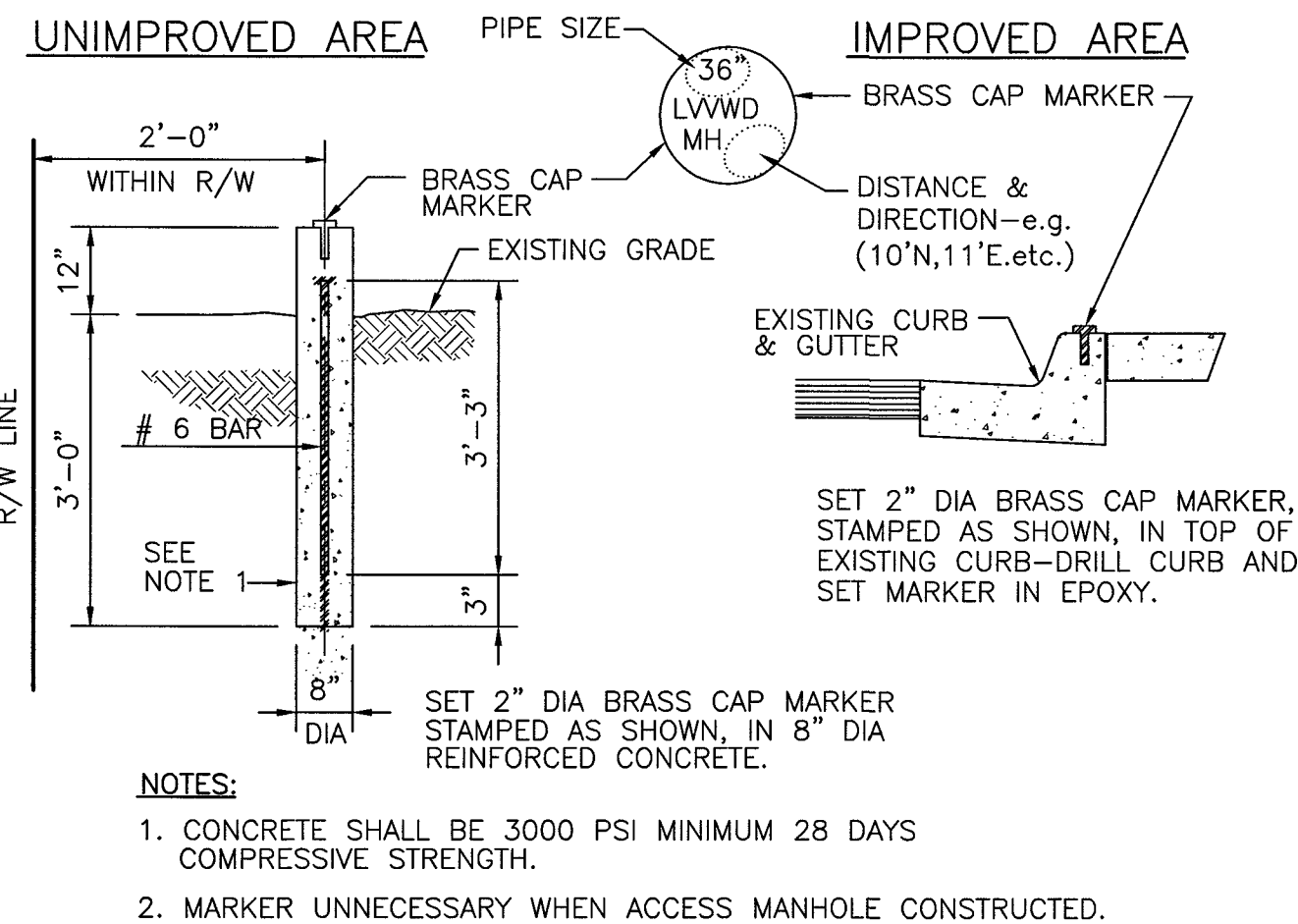
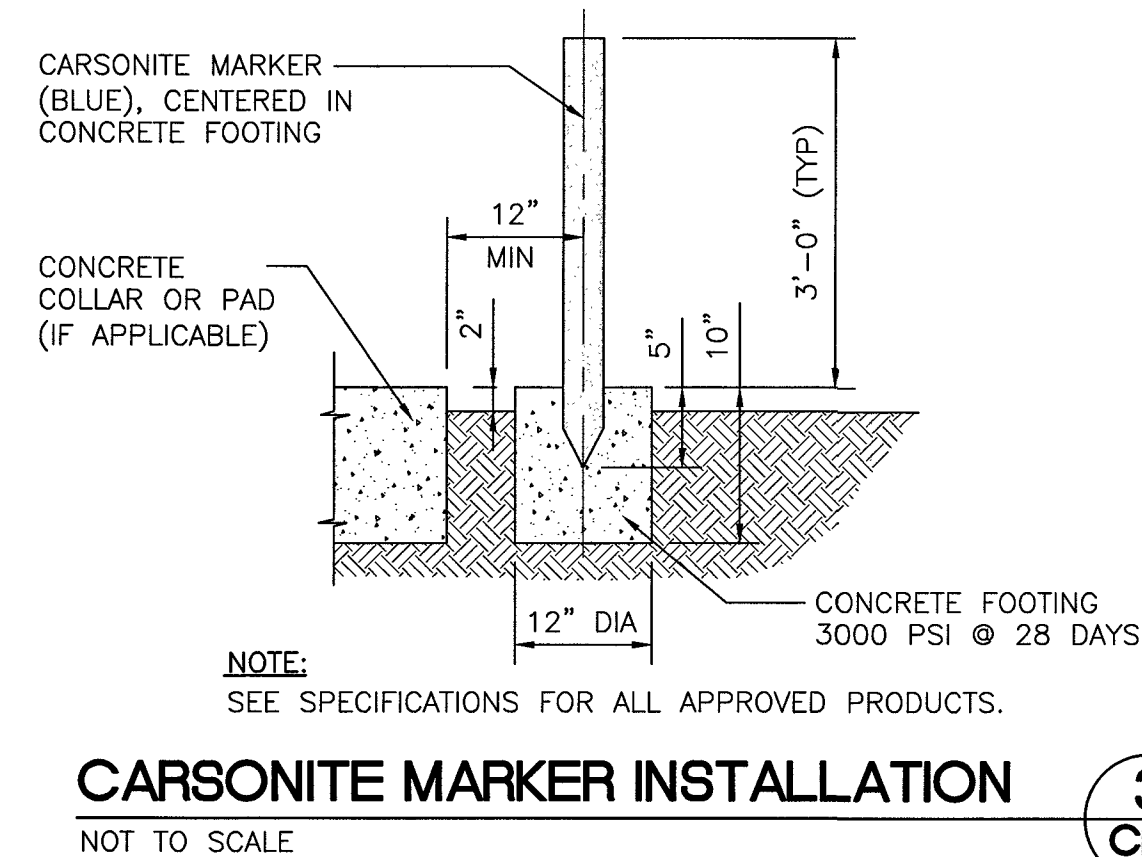
SHEET 19 OF 24

S-I-G
SLATER
HANIFAN
GROUP
CONSULTING ENGINEERS & PLANNERS
1001 S. STREET #416 LAS VEGAS, NV 89108
PHONE (702) 254-9300 FAX (702) 254-9300

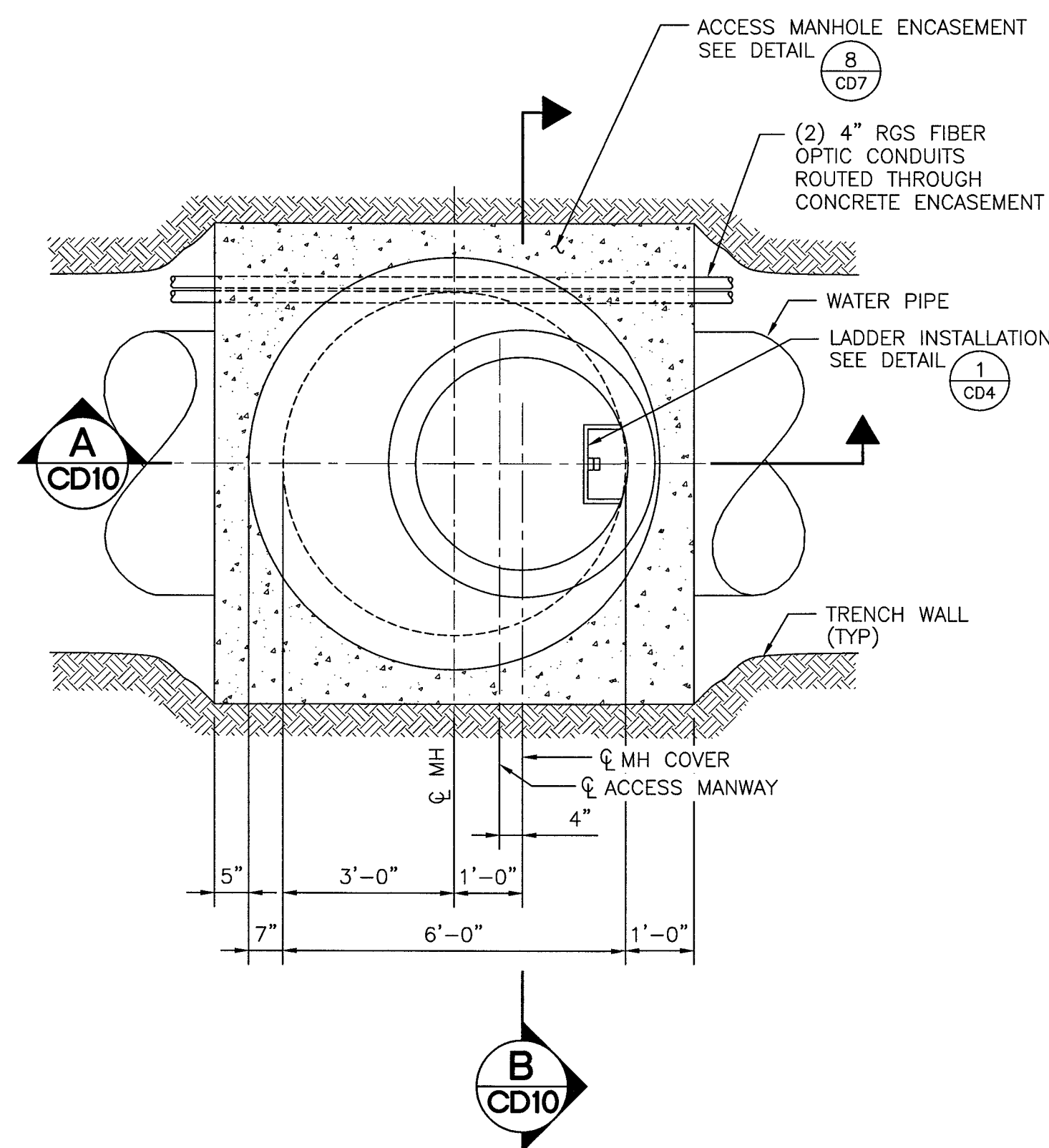
11/22/2016 10:43 AM Argio Eltondo
JA01Y1511-000 Sky Canyon Egan Crest 36 inch WL Ext'dwg/Improv



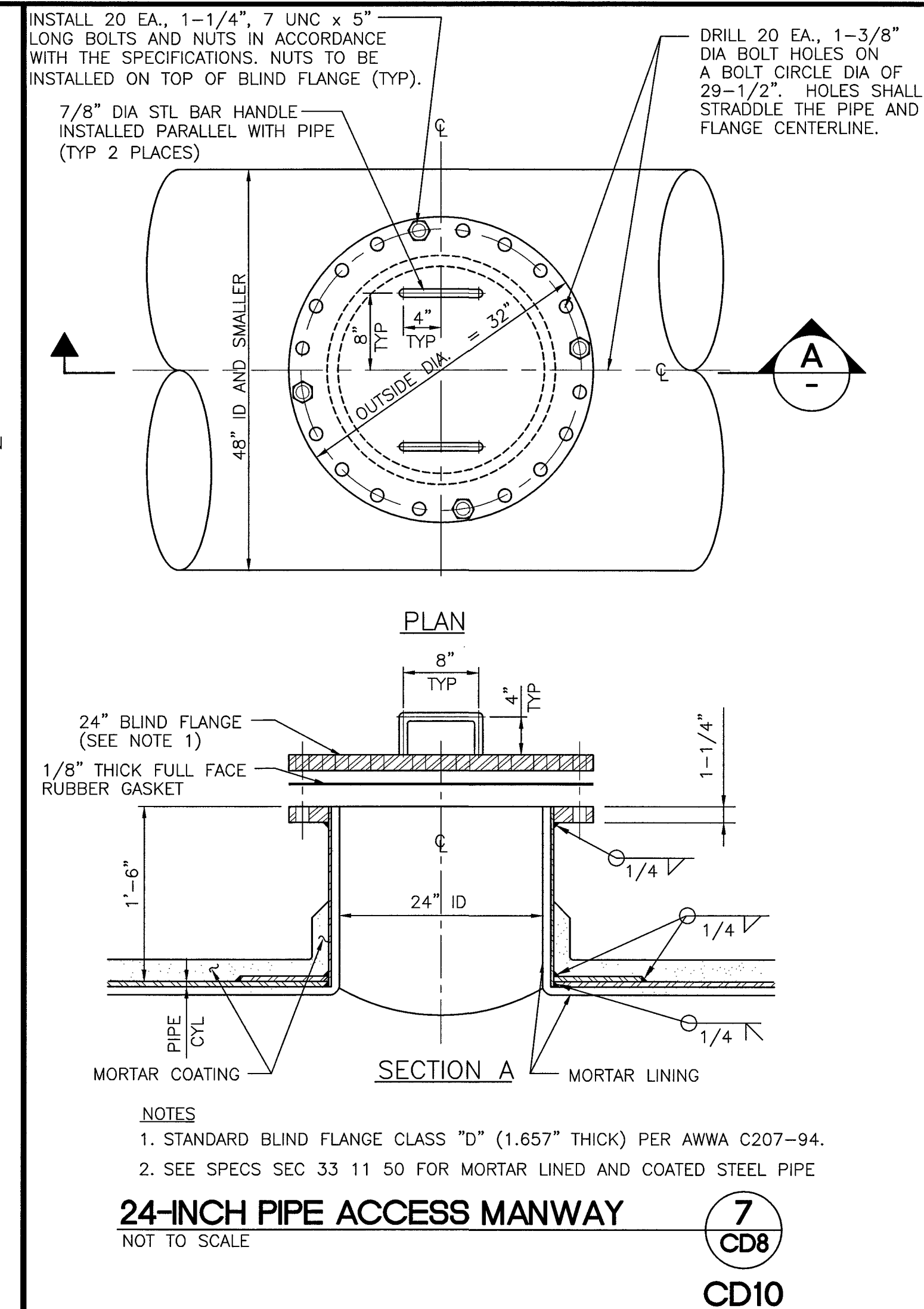
VALVED OUTLET DETAIL (1) CD8
NOT TO SCALE
C1, C3



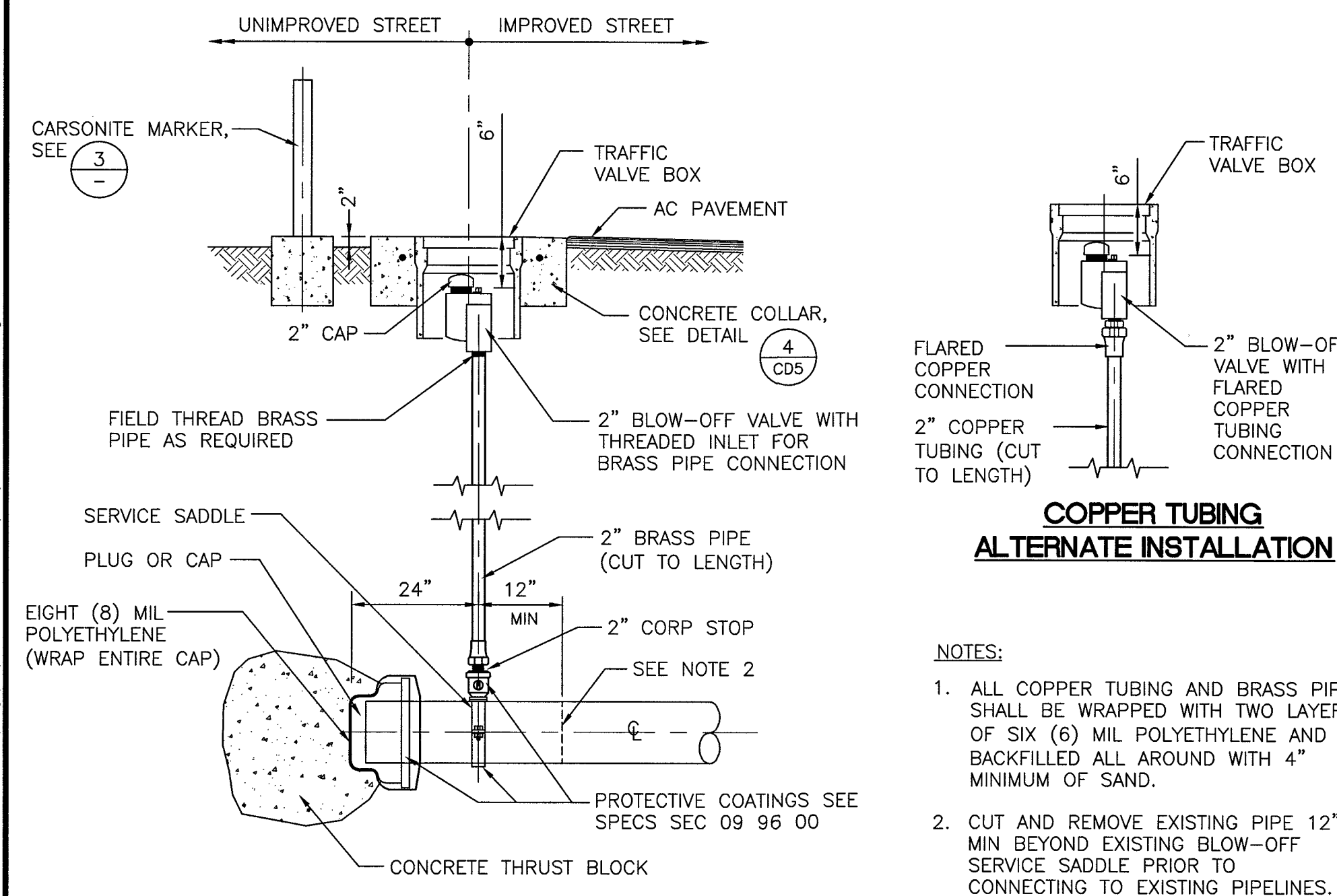
PIPE ACCESS ASSEMBLY MARKER (4) CD8
NOT TO SCALE



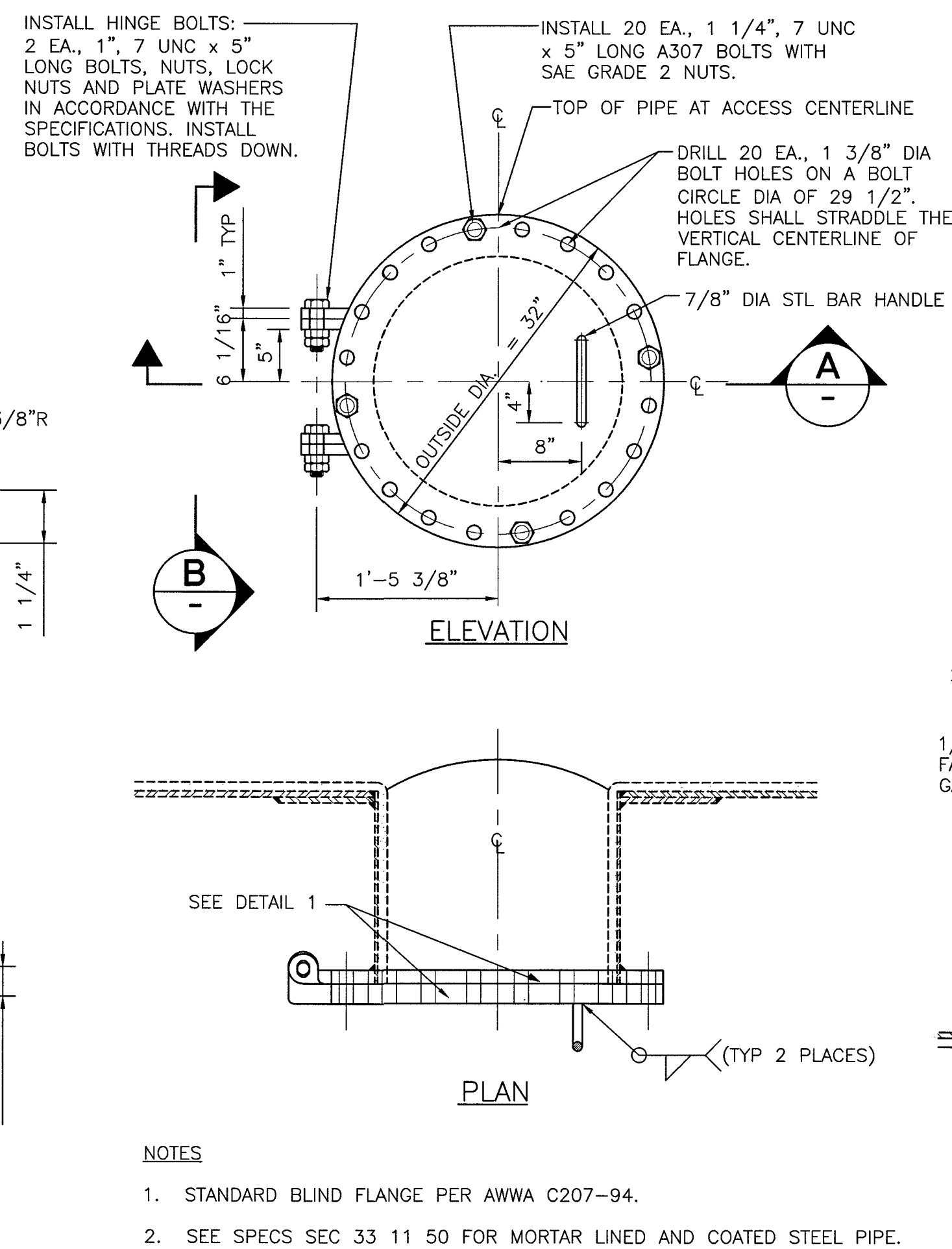
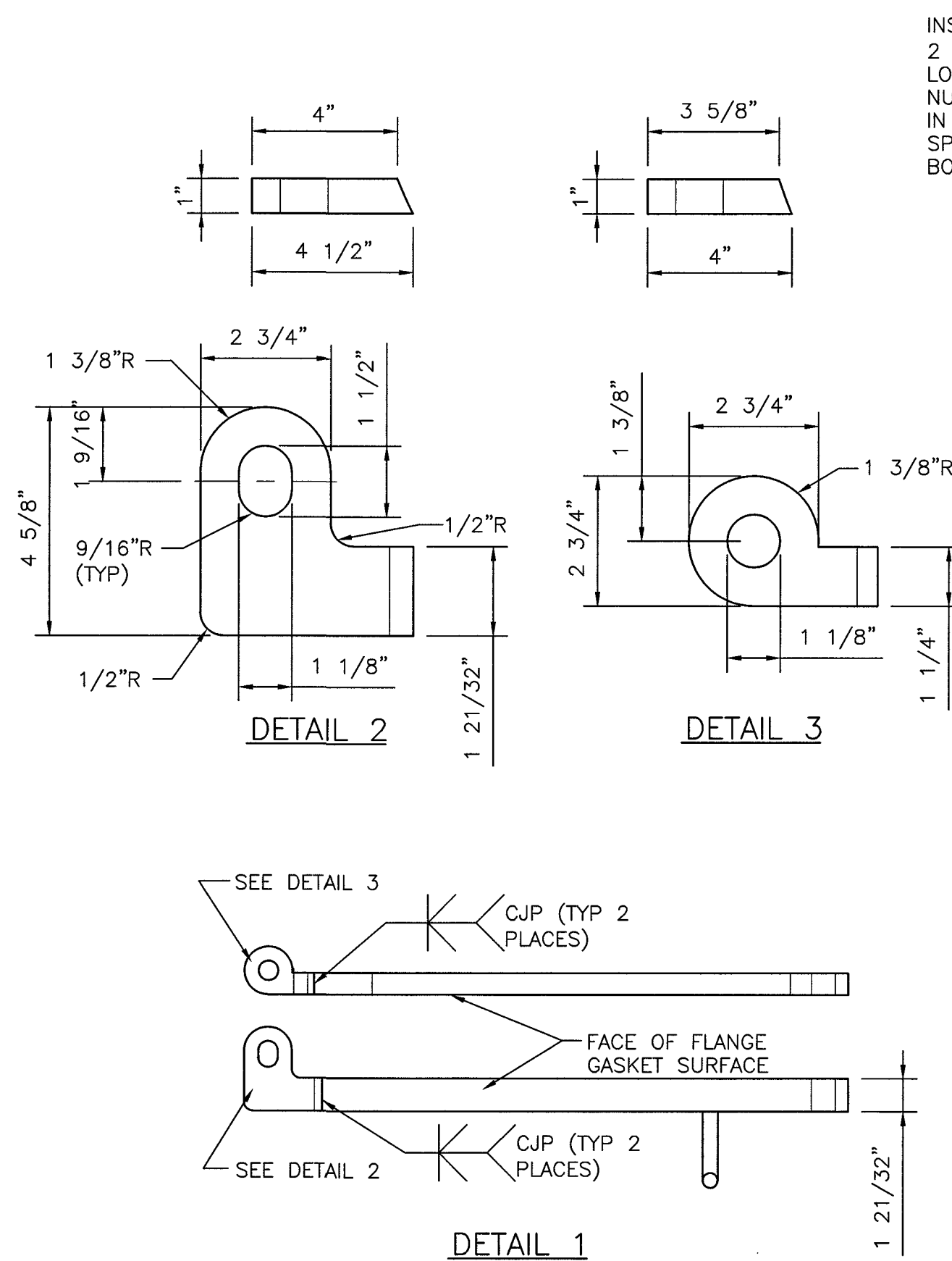
C2, CD10



CD10



MANUAL AIR RELEASE ASSEMBLY FOR VALVED OUTLET (2) CD8
NOT TO SCALE



24-INCH VAULT ACCESS MANWAY (6) CD8
NOT TO SCALE

CD3

LAS VEGAS VALLEY WATER DISTRICT

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS
8740 S. ARVILLE STREET #816, LAS VEGAS, NV 89118
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VERIFY SCALE
1/2" = 0' 1/2"

SCALE
HORIZ. SCALE
AS NOTED
VERT. SCALE
AS NOTED

APPURTENANCE DETAILS

EGAN CREST 3090 ZONE NORTH PIPELINE, PHASE II

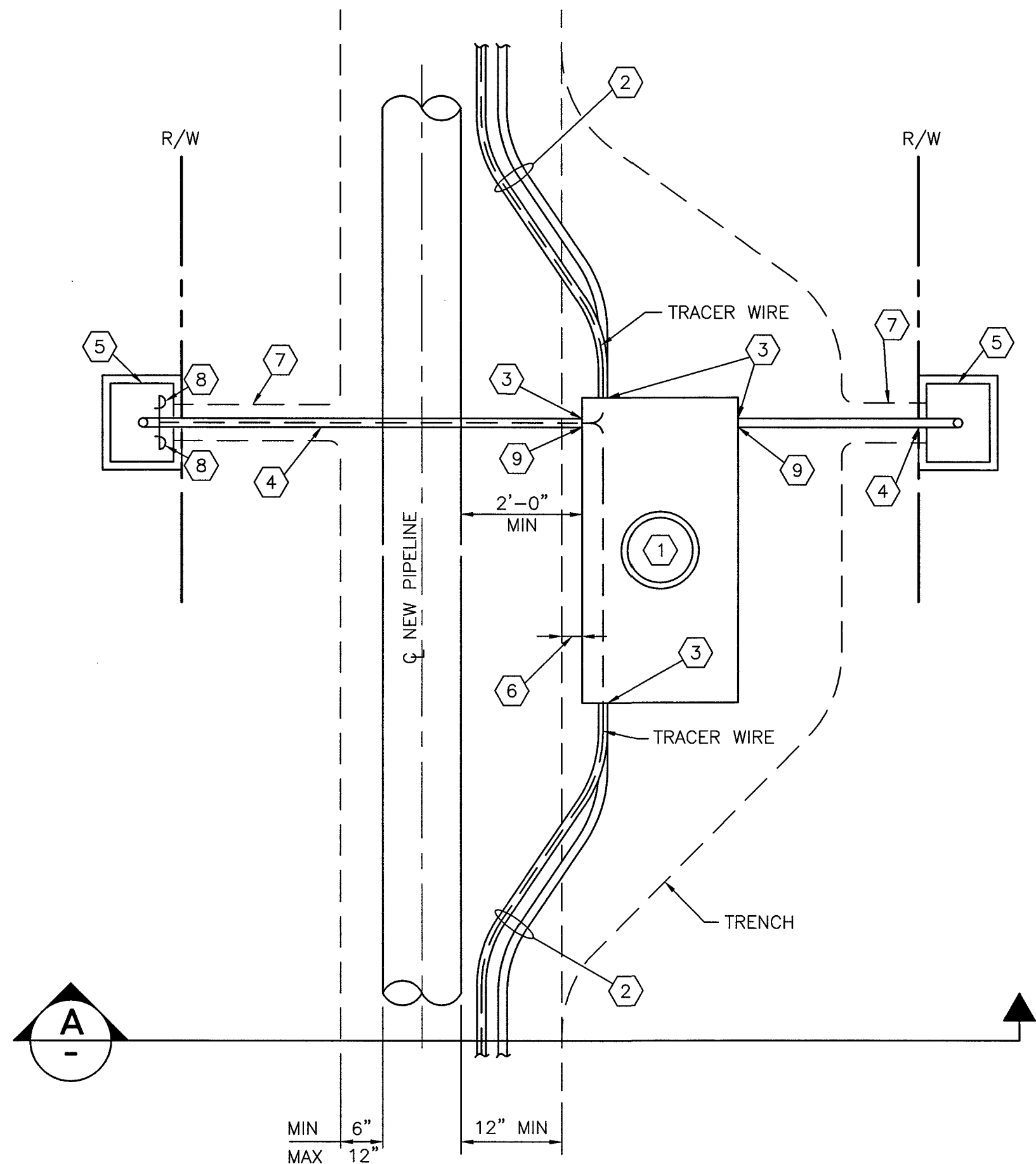
REVISIONS:

NO.	DATE	BY	CHKD BY	REASON
1	11/22/2016	DAVID B. HAILE	DAVID B. HAILE	ISSUED FOR CONSTRUCTION

CONTRACT NUMBER
C1450

DRAWING NUMBER CD8
SHEET 19 OF 24

CLV DWG # H-64613



FIBER OPTIC PULLBOX LOCATION

NOT TO SCALE

LEGEND

- ① FIBER VAULT ASSEMBLY. SEE SPECS AND DETAIL ④
- ② 2-4" CONDUITS, SCHEDULE 40 PVC, SWEEP (LESS THAN 10 DEGREE BEND) UP TO FIBER VAULT ENTRY. USE THE TWO LOWER CONDUIT ENTRY POINTS.
- ③ PENETRATE AND CAP CONDUIT AT FIBER VAULT. USE THE TWO LOWER VAULT DUCT TERMINATORS. SEE DETAIL ②
- ④ 1-4" CONDUIT, SCHEDULE 40 PVC, UP TO #7 CONCRETE PULLBOX AT EDGE OF RIGHT-OF-WAY. (WHERE RIGHT-OF-WAY IS EXISTING OR OBTAINED). USE BLANK DUCT PLUGS TO CAP ALL CONDUITS AT THE PULLBOX AND THE VAULT.
- ⑤ CLARK COUNTY UNIFORM STANDARD DRAWING NO. 326 #7 CONCRETE PULLBOX AND A 12" EXTENSION WITH CONCRETE COLLAR/PANEL (SEE NOTE) MARKED "LVWD FIBER OPTIC", H20 LOADING BOLT-DOWN GASKETED STEEL COVER. (TO BE REPLACED WHEN RIGHT-OF-WAY IS FULLY DEVELOPED).
- ⑥ ACTUAL DISTANCE BETWEEN FIBER VAULT AND EDGE OF PIPE TRENCH TO BE DETERMINED BY SOIL CONDITIONS, BUT SHALL NOT BE LESS THAN 1'-0".
- ⑦ TRENCH AS REQUIRED (12" MIN) FROM FIBER VAULT TO PULLBOX NEAR EDGE OF RIGHT-OF-WAY.
- ⑧ COIL 48" OF TRACER WIRE. STRIP 3/4" OF INSULATION OF EACH TRACER AND TWIST A SEALANT-FILLED WIRE-NUT ON EACH TRACER TO PREVENT MOISTURE BUT ALLOW WIRE-NUT TO BE EASILY REMOVED FOR FUTURE USE.
- ⑨ CORE DRILL 4" CONDUIT PENETRATION 18" FROM ENDWALL AND 12" ABOVE UPPER CONDUIT PENETRATION IN END WALL. (24" ABOVE VAULT FLOOR).

NOTE:

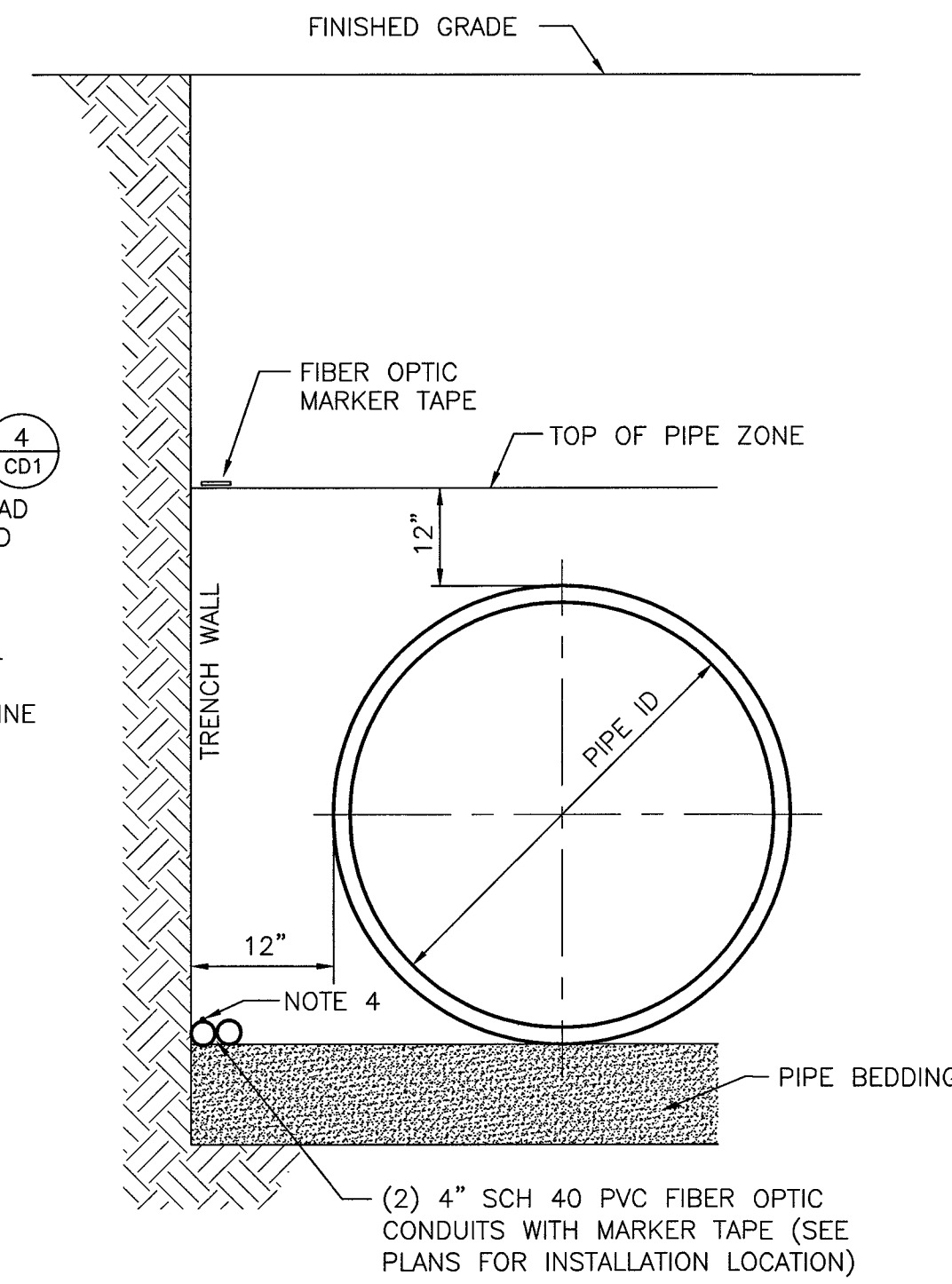
UNIMPROVED AREAS INSTALL 12" WIDE x 6" THICK REINFORCED CONCRETE COLLAR.
IMPROVED AREAS INSTALL NEW SIDEWALK PANEL AS REQUIRED.

①
CD9

C2, C3

NOTES:

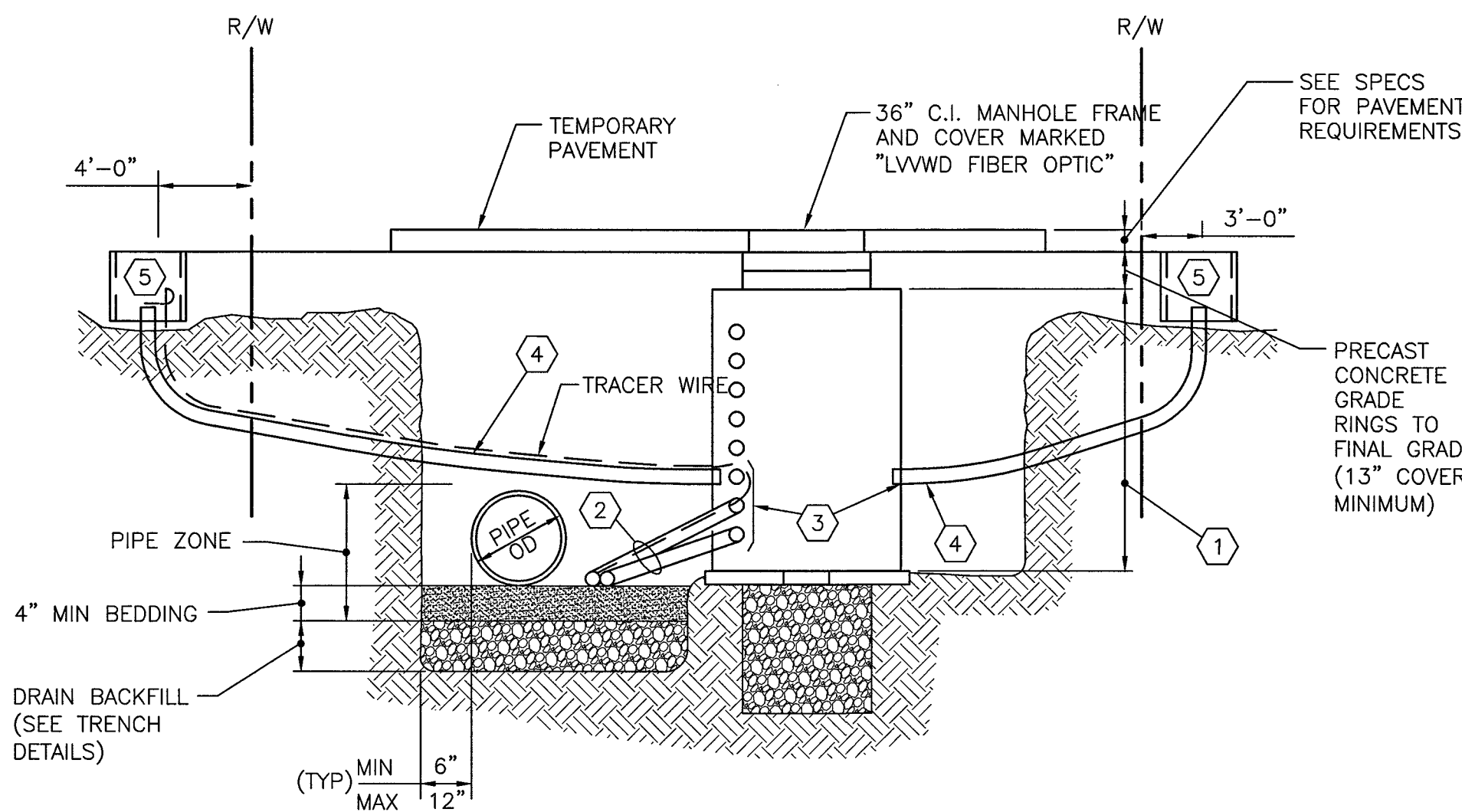
1. CHANGES IN DIRECTION OF THE FIBER OPTIC CONDUIT BY MORE THAN 10 DEGREE HORIZONTALLY OR VERTICALLY SHALL BE ACCOMPLISHED USING BENDS WITH A MINIMUM RADIUS OF 12 TIMES THE CONDUIT DIAMETER.
2. FOR ADDITIONAL TRENCH BACKFILL REQUIREMENTS SEE DETAIL ④
3. SUPPORT FIBER OPTIC CONDUITS WITH SANDBAGS AND SPOT LOAD AS REQUIRED DURING INSTALLATION OF CLSM IN PIPE ZONE AND PIPE BEDDING AREAS.
4. 12 AWG TRACER WIRE WITH BLUE THW INSULATION. ATTACH TO CONDUIT EVERY 8 FEET WITH WRAPPED ELECTRICAL TAPE. LABEL TRACER WIRE "F.O. CONDUIT TRACER" IN ACCORDANCE WITH SECTION 26 05 53. SPACE LABELS EVERY 8' ALONG THE PIPELINE AND EVERY 4" IN THE FIBER OPTIC VAULT AND PULL BOXES.



FIBER OPTIC CONDUIT TRENCH LOCATION

NOT TO SCALE

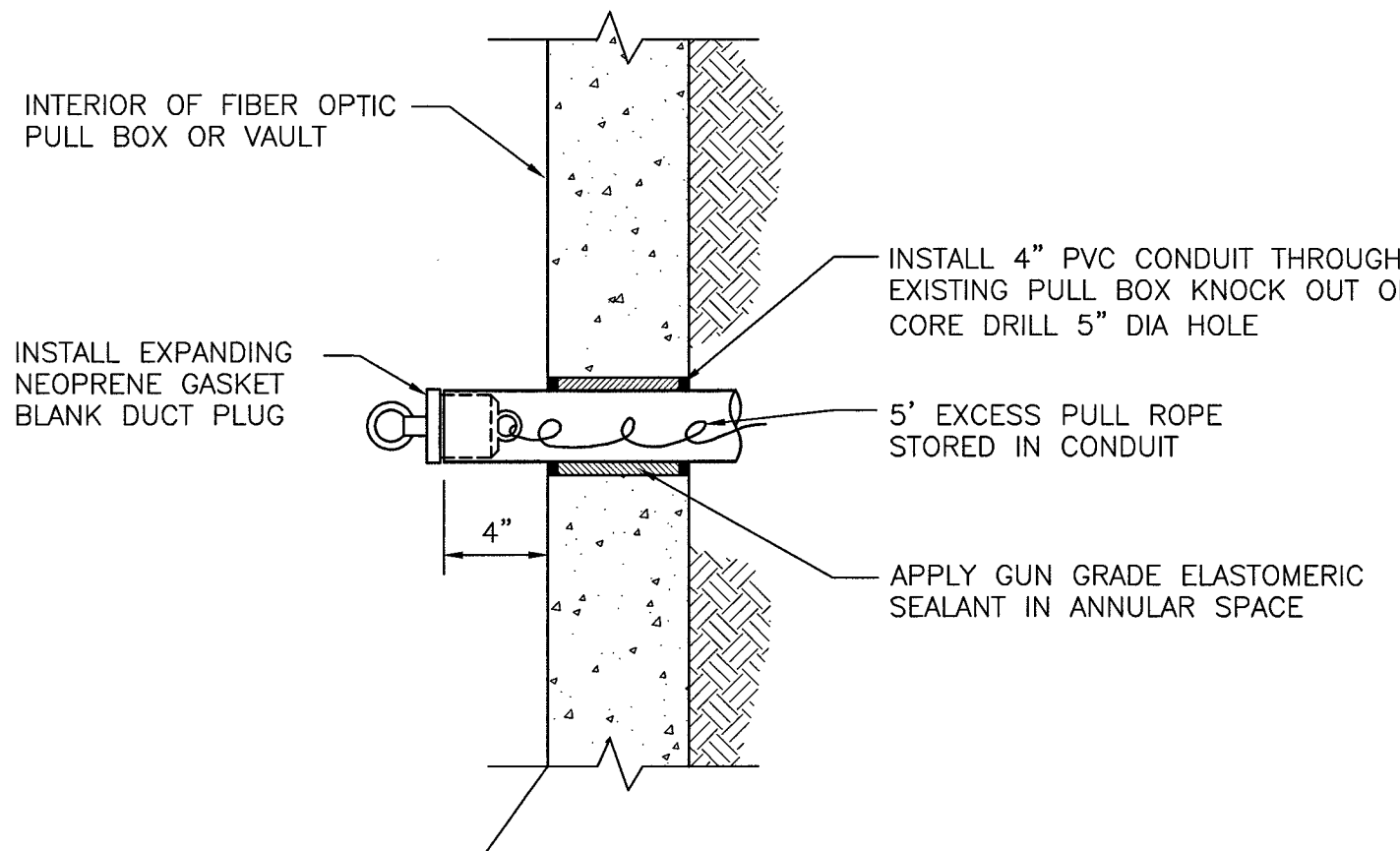
③



SECTION

NOT TO SCALE

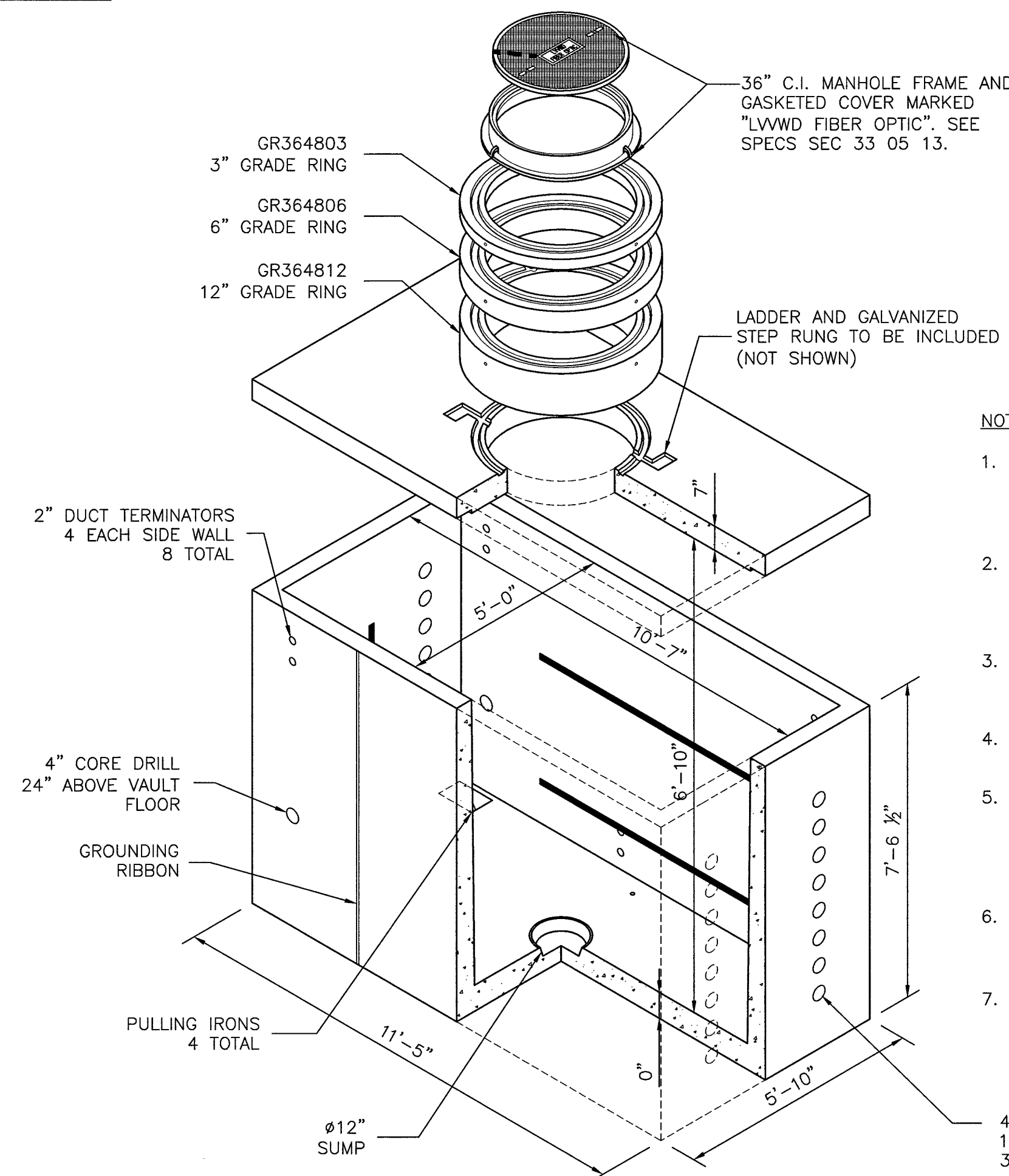
①
A



CONDUIT PENETRATION FOR VAULT STRUCTURES

NOT TO SCALE

②



FIBER OPTIC VAULT ASSEMBLY

NOT TO SCALE

④

NOTES:

1. 5'-0" X 10'-6" X 7'-0" NOMINAL INSIDE DIMENSIONS. JENSEN PRECAST "CENTURYLINK 650-1" MANHOLE EQUIVALENT WITH 36" COVER.
2. DESIGN LOAD: H-20 FULL TRAFFIC WITH 13 INCHES TO 4 FEET SOIL COVER TO TOP OF SLAB. WATER TABLE BELOW BASE OF VAULT.
3. ENTIRE VAULT ASSEMBLY AND CONDUIT INSTALLATION SHALL BE CLEAN AND DRY AT TIME OF ACCEPTANCE.
4. BACKFILL AROUND VAULT ASSEMBLY IN ACCORDANCE WITH SPEC SEC 31 20 00.
5. FINAL MANHOLE FRAME ADJUSTMENT AND CONCRETE COLLAR INSTALLATION REQUIREMENTS, SEE DETAIL ②
6. INSTALL 3' DIA x 3' DEEP DRAIN GRAVEL PACK UNDER 12" DRAIN HOLE AND COVER (CENTERED).
7. INCLUDE CABLE RACKING WITH EACH MANHOLE FOR FIELD INSTALLATION.

LAS VEGAS VALLEY WATER DISTRICT

SLATER
HANIFAN
GROUP
CONSULTING ENGINEERS & PLANNERS
8740 S. ARVILLE STREET #215, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

VERIFY SCALE

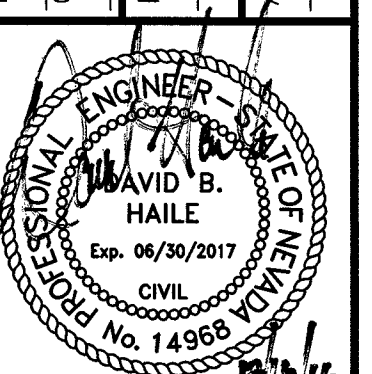
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BAR REPRESENTS
ONE AND ONE-HALF
INCHES ON ORIGINAL

EGAN CREST 3090 ZONE NORTH PIPELINE, PHASE II

FIBER OPTIC DETAILS

SCALE
HORIZ. SCALE
AS NOTED
VERT. SCALE
AS NOTED

DRAWN BY: SE 11/22/2016
CHECKED BY: DBH 11/22/2016
RECOMMENDED BY: SR, CIVIL ENGINEER
ACCEPTED BY: RYAN C. PEARSON, DESIGN MANAGER



CONTRACT NUMBER

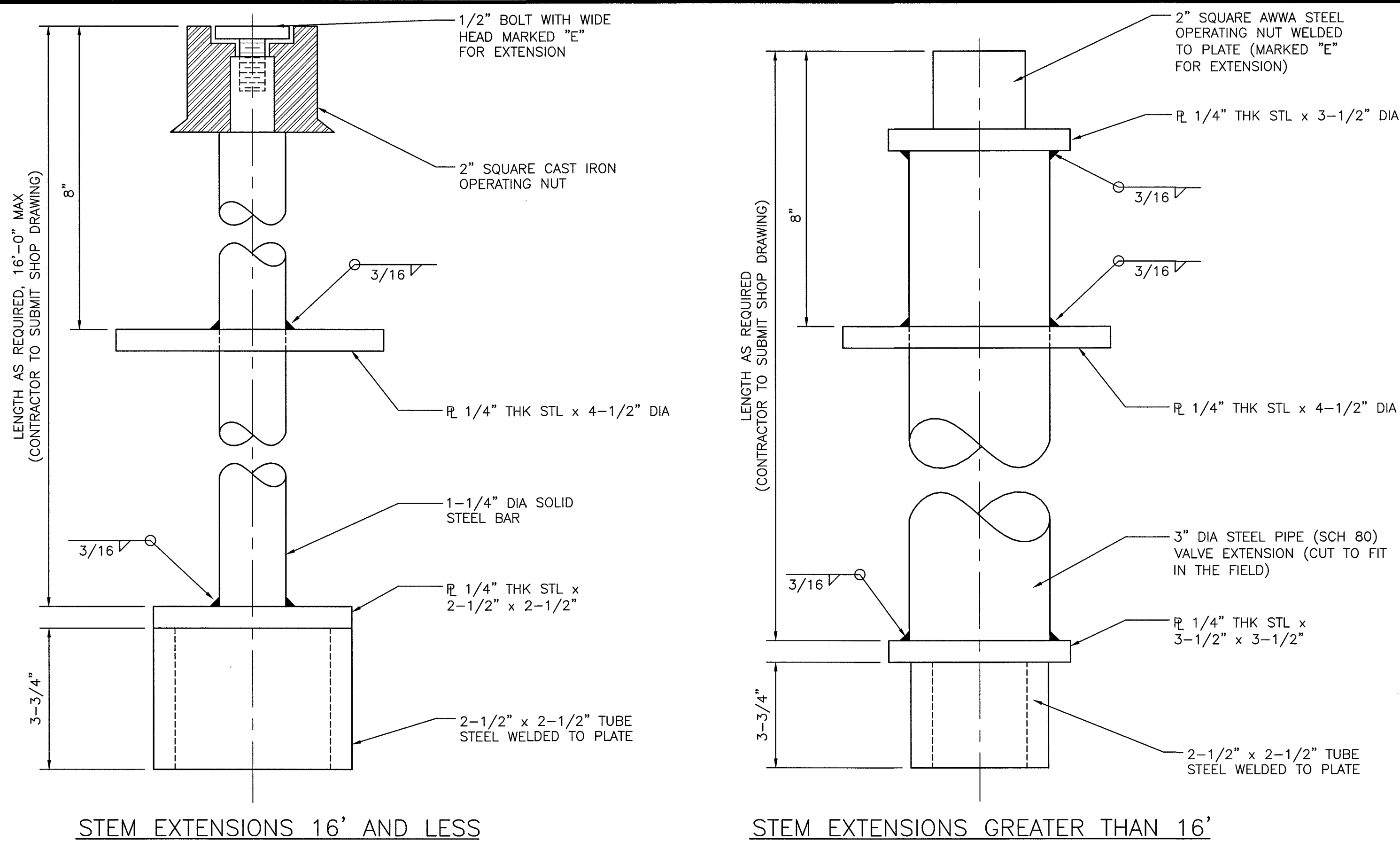
C1450

DRAWING NUMBER CD9
SHEET 20 OF 24

CLV DWG # H-64613

565-501

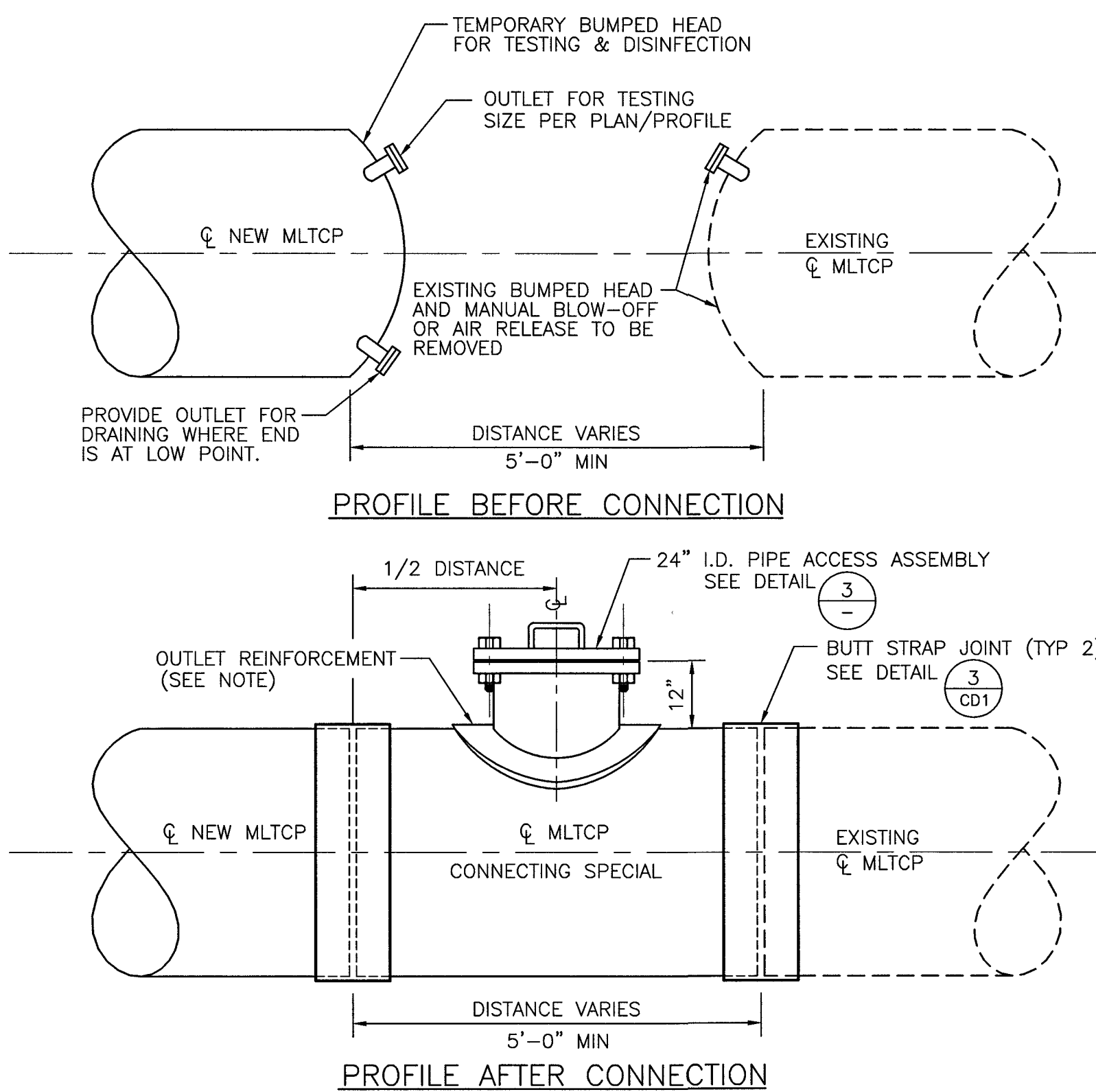
J:\01\1511-000 Sky Canyon Egon Crest 36 inch WL EXA.dwg, Improv 11/22/2016 10:43 Alkargio, Elizondo



VALVE STEM EXTENSION

NOT TO SCALE

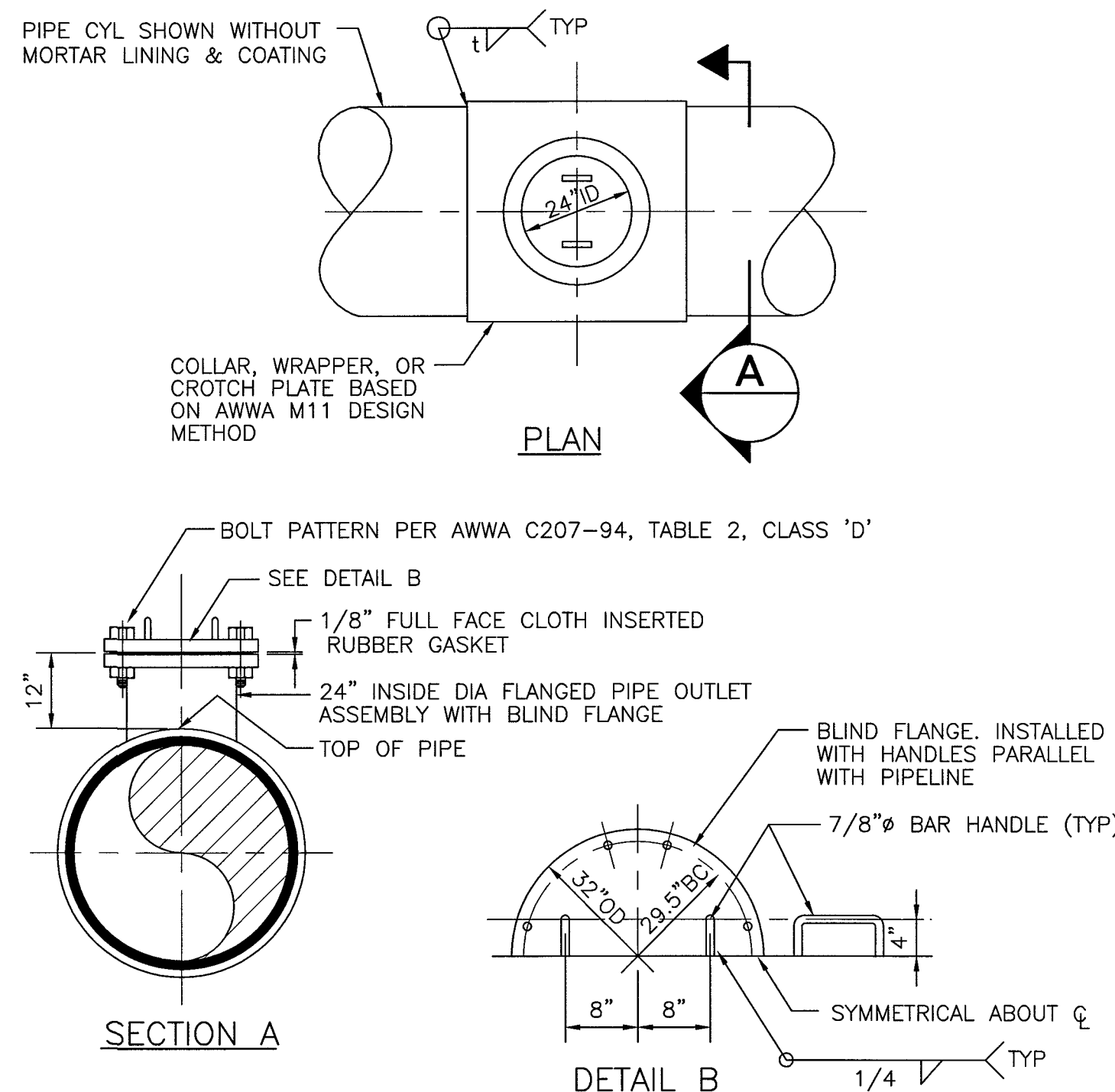
1
CD10
CD5



CONNECTION OF NEW PIPE TO EXISTING PIPE FOR MLTCP ONLY

NOT TO SCALE

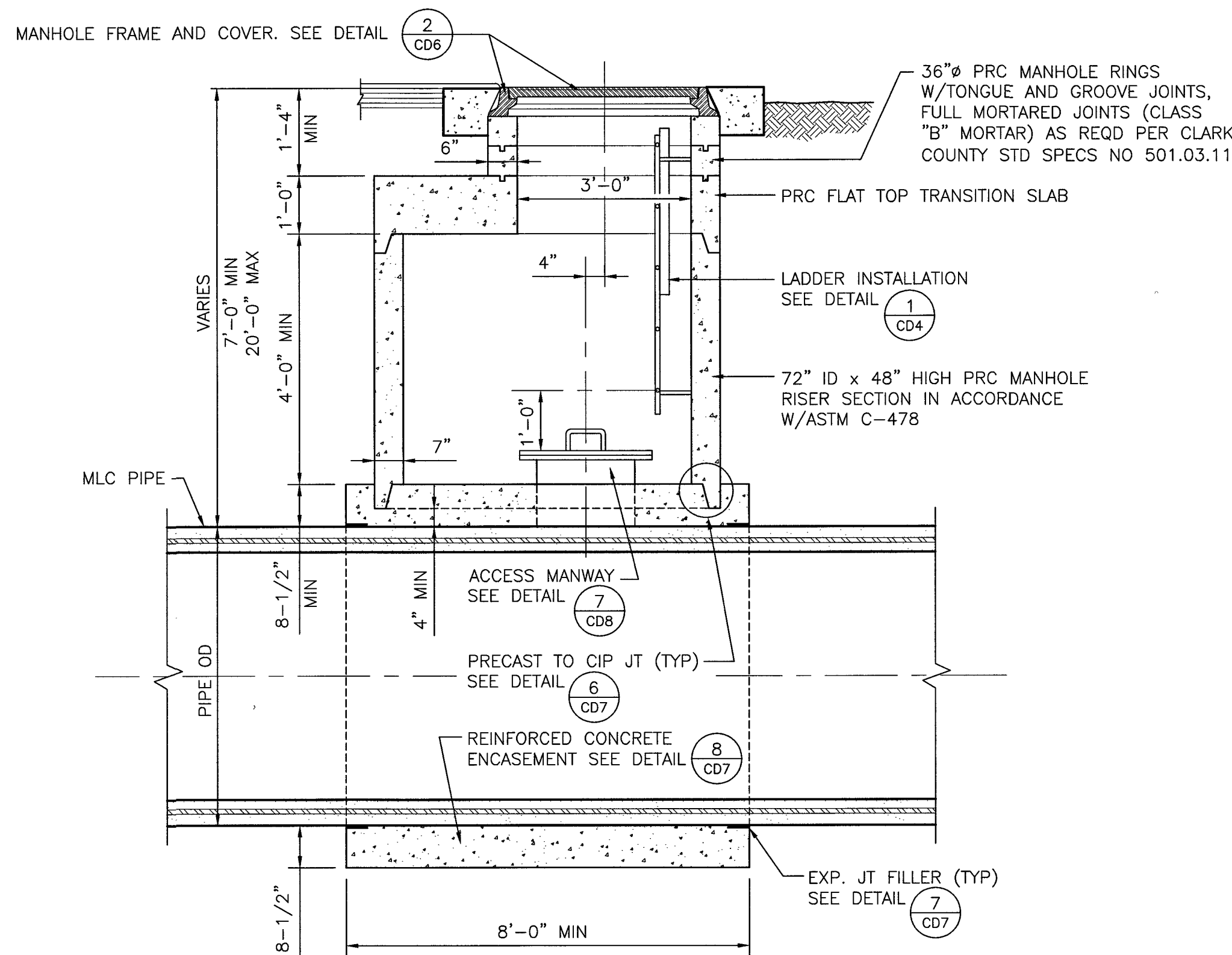
2
CD10
C1



PIPE ACCESS ASSEMBLY

NOT TO SCALE

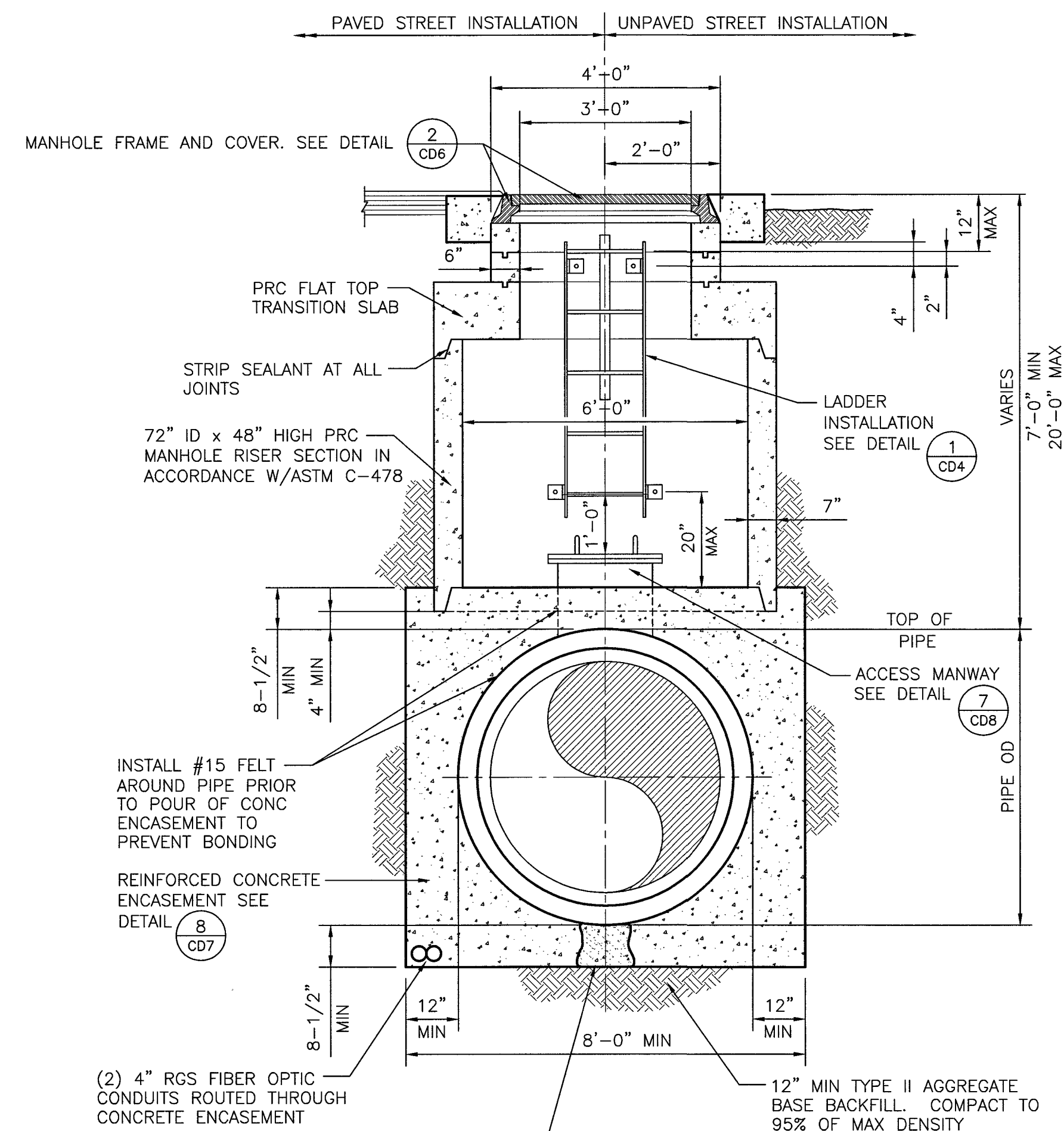
3
CD10



SECTION

NOT TO SCALE

A
CD10
CD8



SECTION

NOT TO SCALE

B
CD10
CD8

LAS VEGAS VALLEY WATER DISTRICT

SLATER
HANIFAN
GROUP
CONSULTING ENGINEERS & PLANNERS
5740 S. ARVILLE STREET #216 LAS VEGAS, NV 89118
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VERIFY SCALE

1/2 0 1/2 1

BAR REPRESENTS ONE AND ONE HALF INCHES ON ORIGINAL

EGAN CREST 3090 ZONE NORTH PIPELINE, PHASE II

CONNECTION, PIPE ACCESS AND VALVE STEM DETAILS

DRAWN BY: SE 11/22/2016
CHECKED BY: DBH 11/22/2016
RECOMMENDED BY: SR. CIVIL ENGINEER DATE
ACCEPTED BY: RYAN C. PEARSON, DESIGN MANAGER DATE

PROFESSIONAL ENGINEER
DAVID B. HAILE
Exp. 06/30/2017
CIVIL

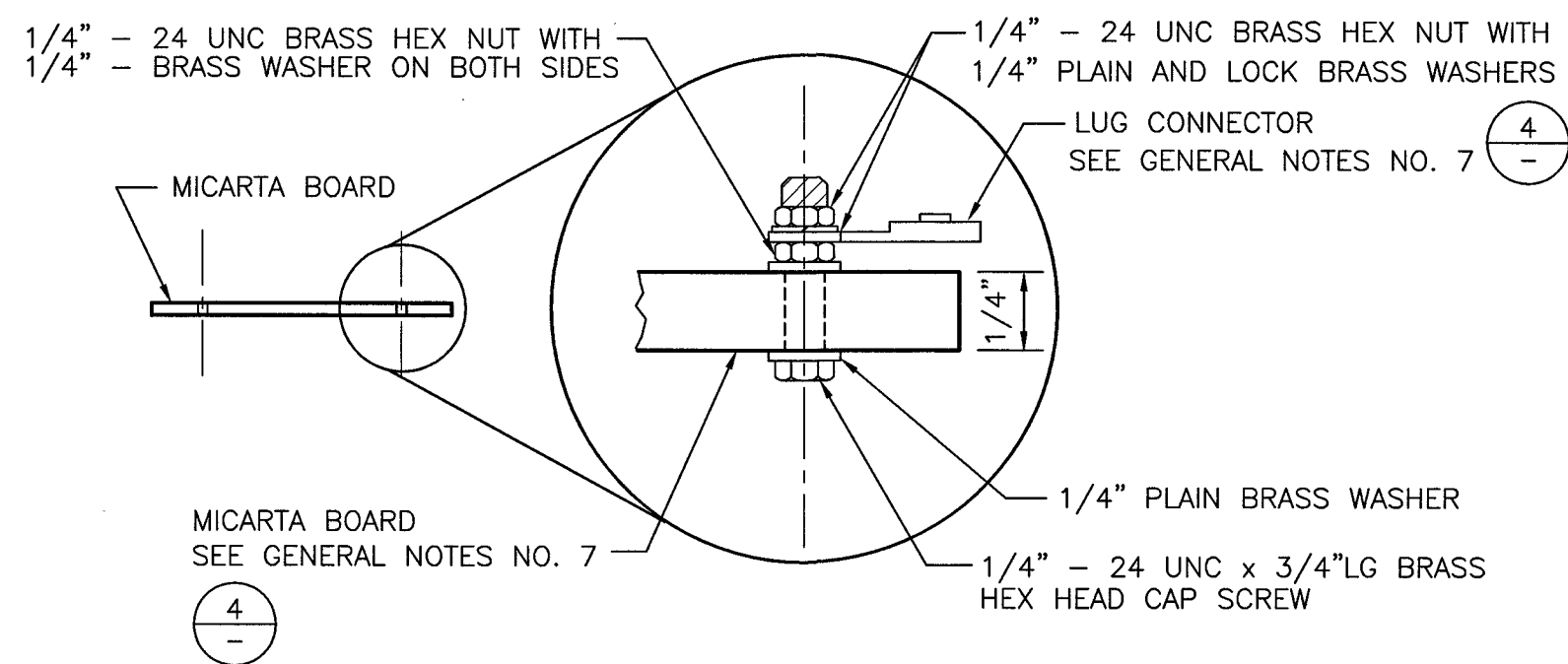
CONTRACT NUMBER

C1450

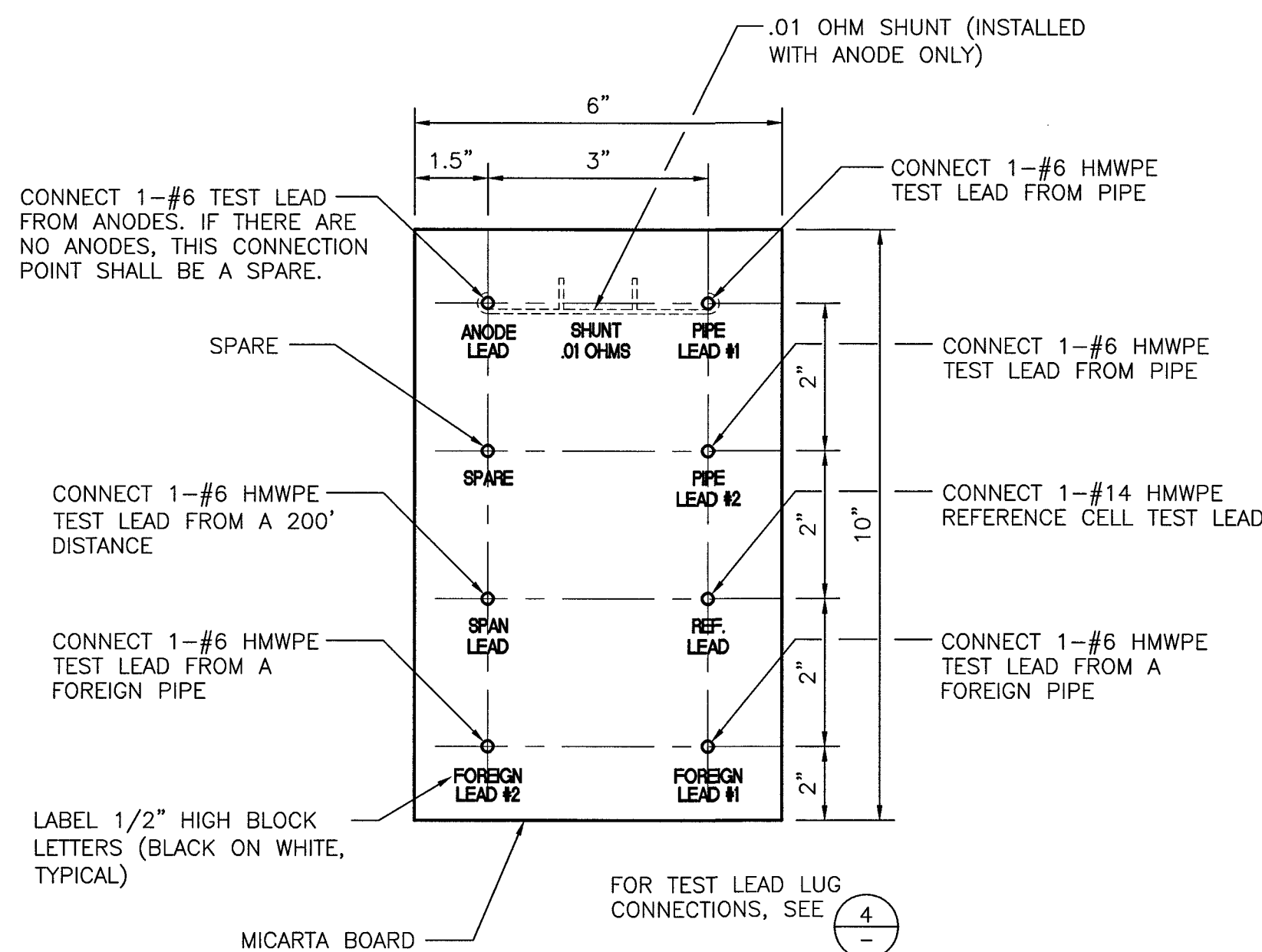
DRAWING NUMBER CD 10
SHEET 21 OF 24

365-501
CLV DWG # H-64613

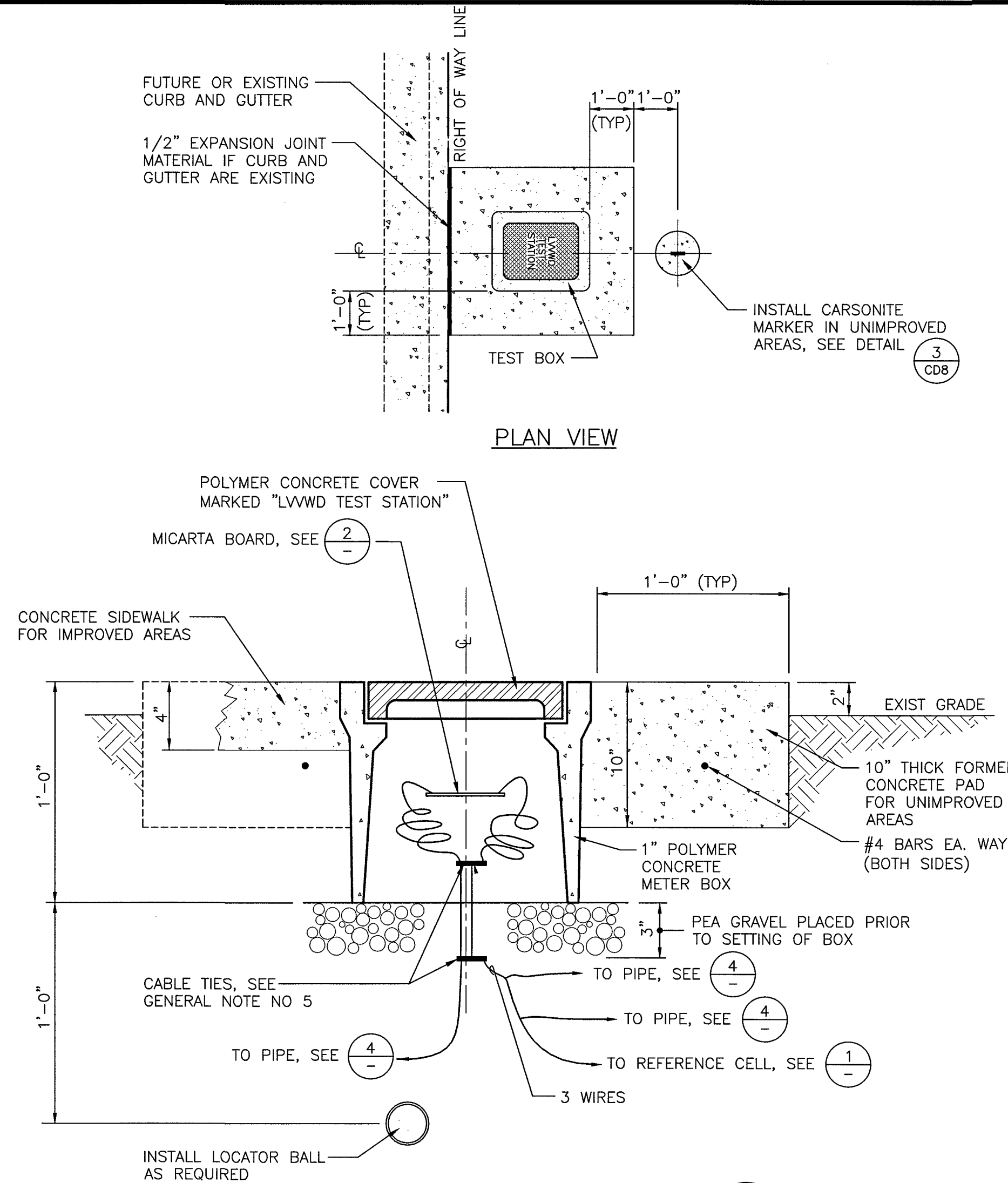
J:\Q\1511-000 Skye Canyon Egan Crest 36 Inch WL Ext.dwg\Improv 11/22/2016 10:43 AM\ergio Eliando



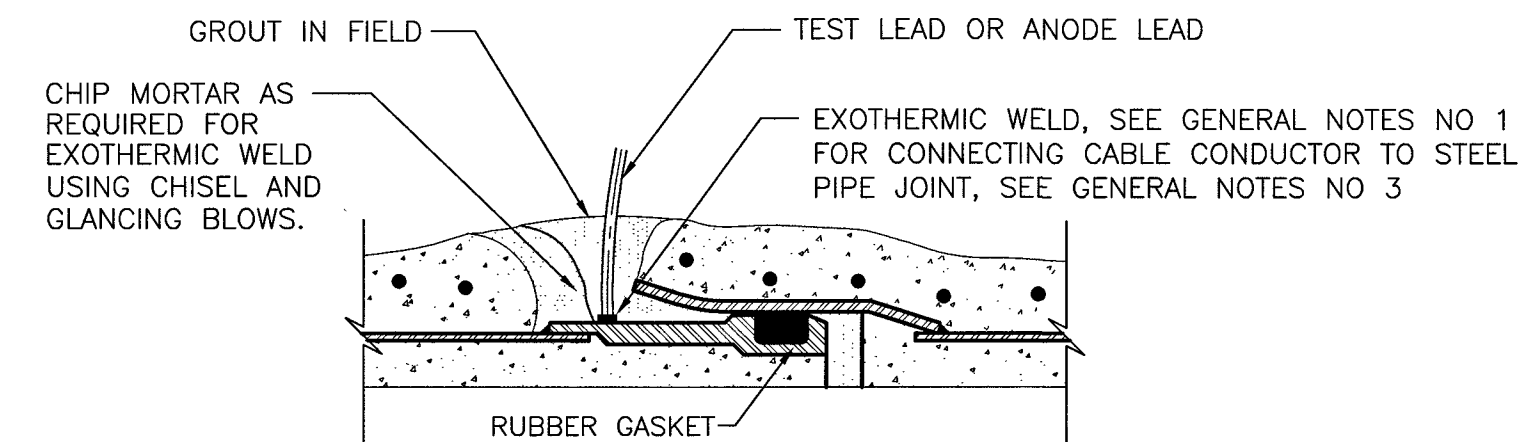
TEST BOARD DETAIL - TYPICAL (4)
NOT TO SCALE



TEST BOARD FOR JOINT TEST STATION (2)
NOT TO SCALE



TEST BOX DETAIL - TYPICAL (3)
NOT TO SCALE
CD11
CD12



NOTE
FOR WELDED JOINT, ATTACH TEST LEAD OR ANODE LEAD BY EXOTHERMIC WELD TO THE EXPOSED STL END OF PIPE.

GENERAL NOTES

- ALL TEST LEADS AND ANODE LEADS SHALL BE ATTACHED TO THE STEEL CYLINDER OF THE PIPE BY MEANS OF A "CADWELD" EXOTHERMIC WELD.
- ALL TEST LEADS AND ANODE LEADS SHALL BE ATTACHED TO EITHER THE PIPELINE'S BELL END, SPIGOT END OR PLAIN END AS SHOWN ON THE DRAWING.
- ALL EXPOSED PORTIONS OF THE EXOTHERMIC WELD AND COPPER CABLE CONDUCTORS SHALL BE COATED WITH MULTI-USE EPOXY PRIOR TO PLACING GROUT AROUND THE PIPELINE JOINT.
- ALL TEST LEADS AND ANODE LEADS SHALL BE RUN WITHOUT SPLICES FROM THE CONNECTION AT THE PIPE TO THE CONNECTION AT THE TEST STATION BOX.
- ALL TEST LEADS AND ANODE TEST LEADS INSIDE THE TEST BOX SHALL BE BUNDLED TOGETHER AT 8 INCH INTERVALS WITH NYLON CABLE TIES. ALL TEST STATION LEADS SHALL BE PROVIDED WITH SUFFICIENT SLACK SO THAT THE TEST BOARD MAY BE EXTENDED A MINIMUM OF 4 FEET ABOVE THE TEST BOX.
- ALL TEST LEADS AND ANODE LEADS (WIRE INSULATION) ARE COLOR CODED AS FOLLOWS:
TEST STATION LEADS FROM PIPE - WHITE
REFERENCE CELL TEST LEADS - RED
ANODE TEST LEADS - GREEN
200' TEST LEAD - BLUE
FOREIGN PIPE LEAD - YELLOW
CASING - BLACK
ALL TEST LEADS AND ANODE LEADS SHALL BE COLOR CODED WITH COLORED WIRE INSULATION. COLORED TAPING NOT PERMITTED (TYP).
- ALL TEST LEADS AND ANODE LEADS SHALL BE CONNECTED TO THE BRASS BOLTS ON THE TEST BOARD WITH SOLDERLESS SCREW TIGHT COPPER LUG CONNECTORS OR PRESSURE TERMINAL CONNECTORS. ALL FASTENERS (SCREWS, LUGS) SHALL BE BRASS OR COPPER.
- ALL TEST LEADS AND ANODE TEST LEADS SHALL HAVE A MINIMUM OF 4' OF SLACK NEAR THE PIPE JOINT TO PREVENT DAMAGE DURING THE BACKFILL OPERATION.
- ALL TEST LEADS AND ANODE TEST LEADS SHALL BE PLACED ALONG THE SIDE AND BELOW THE SPRINGLINE OF THE PIPE.
- DUAL TEST STATIONS - LABEL ALL WIRES TO DISTINGUISH.
- CABLE ASSEMBLIES SHALL BE USED WHEN PRACTICAL.
- TEST STATION PLACEMENT TO BE PERPENDICULAR TO PIPE. AT INTERSECTIONS TEST STATION WIRES TO BE PLACED PARALLEL TO PIPE FOR PLACEMENT PERPENDICULAR TO PIPE AFTER ROAD EASEMENT RADIUS.
- PRE-PACKAGED ANODES SHALL HAVE 6" LIFT OF COMPACTED NATIVE BACKFILL. AFTER BACKFILL IS IN PLACE, SATURATE THE AREA WITH TEN (10) GALLONS MINIMUM OF WATER. AFTER ALL WATER HAS BEEN ABSORBED CONTINUE BACKFILLING.
- ALL BURIED WIRE SHALL BE PLACED IN A 4" SCH 40 PVC ELECTRICAL CONDUIT FROM THE POINT THAT THE WIRES RUN PERPENDICULAR FROM THE PIPELINE TO THE TERMINATION IN THE TEST BOX. DO NOT PLACE RIBBON IN CONDUIT. CONDUIT NOT SHOWN ON PLANS FOR CLARITY.

TEST LEAD OR ANODE LEAD CONNECTION TO
PIPE JOINT CARNegie OR ROLLED-GROOVE DETAIL (4)
NOT TO SCALE
CD11

CD12 565-501

CLV DWG # H-64613

LAS VEGAS VALLEY WATER DISTRICT

SLATER
HANIFAN
GROUP
CONSULTING ENGINEERS & PLANNERS
5740 S. ARVILLE STREET #216 LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5300

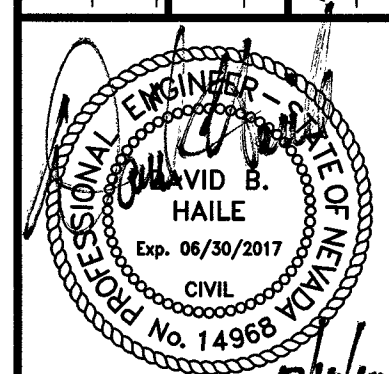
VERIFY SCALE
1/2" = 1'

BAR REPRESENTS
ORIGINAL SCALE
INCHES ON ORIGINAL

EGAN CREST 3090 ZONE NORTH PIPELINE, PHASE II

CATHODIC PROTECTION I

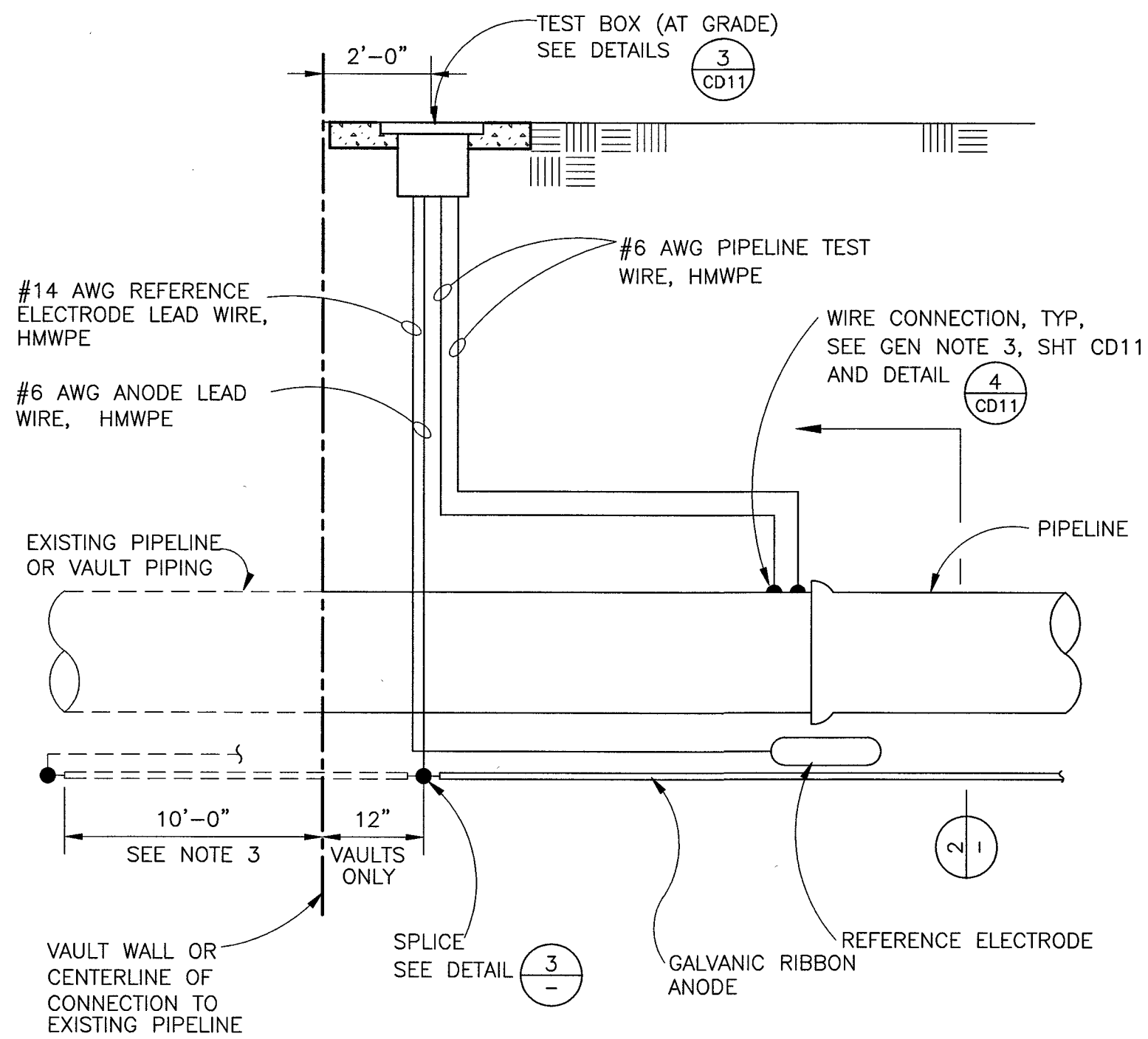
DRAWN BY: SE
CHECKED BY: DBH
RECOMMENDED BY: SR. CIVIL ENGINEER
ACCEPTED BY: RYAN C. PEARSON, DESIGN MANAGER
DATE: 11/22/2016
DATE: 11/22/2016



CONTRACT NUMBER

C1450
DRAWING NUMBER CD11
SHEET 22 OF 24

11/22/2016 10:43 AM\gargio Elizondo
J:\01\1511-000 Sky Canyon Egan Crest 36 inch WL Ext.dwg\improv



GENERAL RIBBON ANODE NOTES

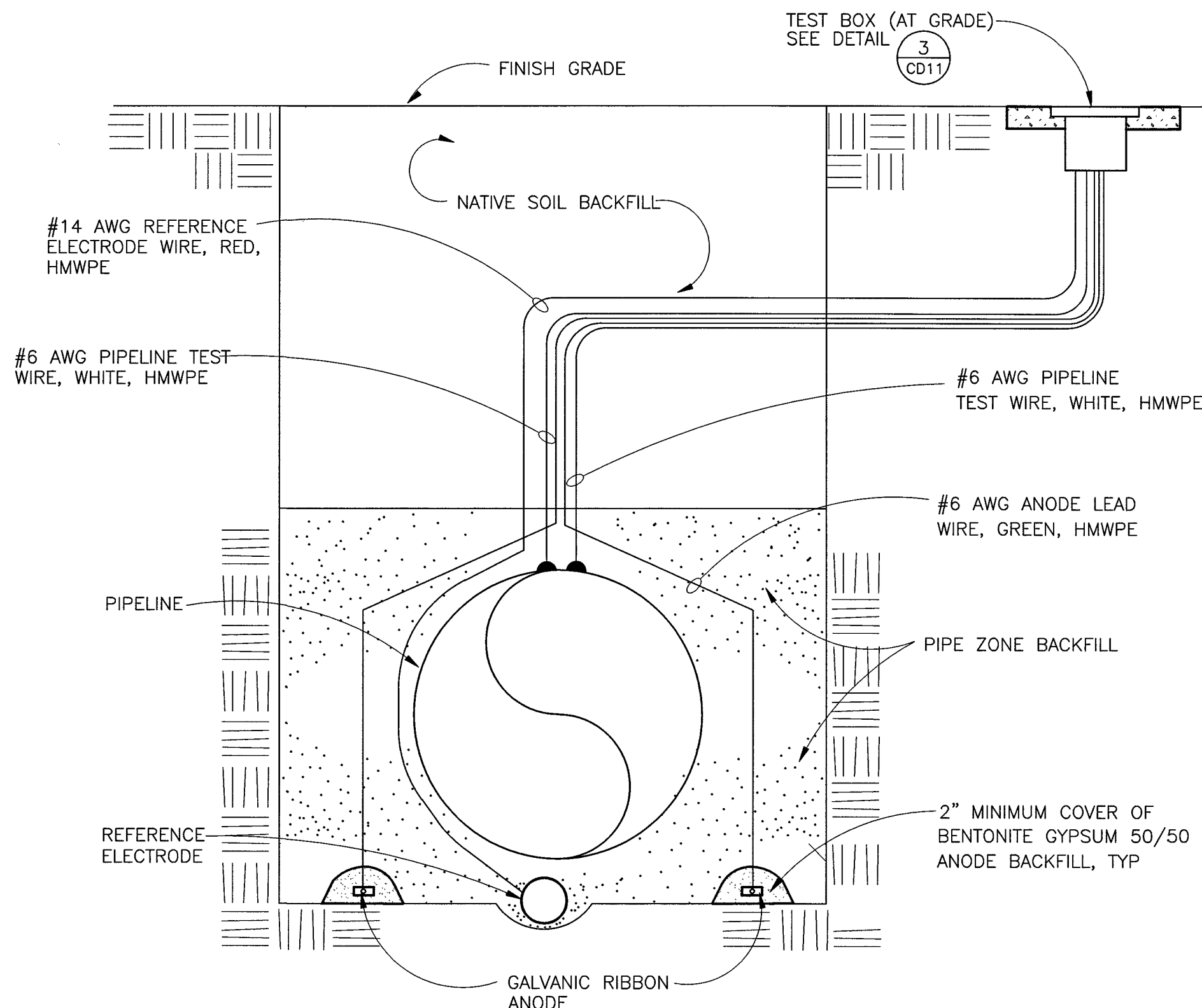
1. SEE GENERAL NOTES, SHEET CD9, FOR ADDITIONAL TEST STATION AND GALVANIC RIBBON ANODE REQUIREMENTS.
2. SEE DETAIL 1, SHT CD9 FOR TEST STATION OFFSET REQUIREMENTS TO EASEMENTS OR PROPERTY LINES.
3. EXTEND GALVANIC RIBBON ANODE 10'-0" PAST CENTERLINE OF CONNECTIONS TO EXISTING PIPELINES.
4. MOVE TEST STATION LOCATION AND WIRE CONNECTIONS TO THE NEAREST PIPE JOINT WHERE POSSIBLE. MAXIMUM ALLOWABLE DISTANCE TO BE MOVED IS 24 FEET IN EITHER DIRECTION.

TYPE AR-1 GALVANIC RIBBON ANODE TEST STATION

NOT TO SCALE

1
CD12

C1, C3



NOTES:

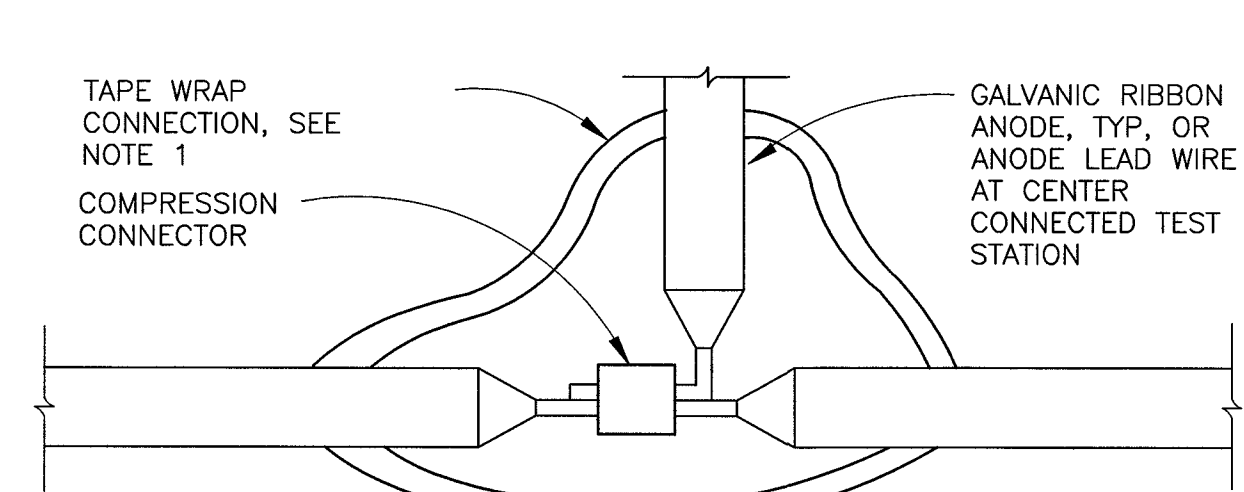
1. MAINTAIN 12" MINIMUM SEPARATION BETWEEN GALVANIC RIBBON ANODE AND PIPELINE.
2. WET ANODE BACKFILL AND GEOTEXTILE FABRIC PRIOR TO PIPE ZONE BACKFILL PLACEMENT TO PREVENT LOSS OF ANODE BACKFILL.

GALVANIC RIBBON ANODE INSTALLATION SECTION

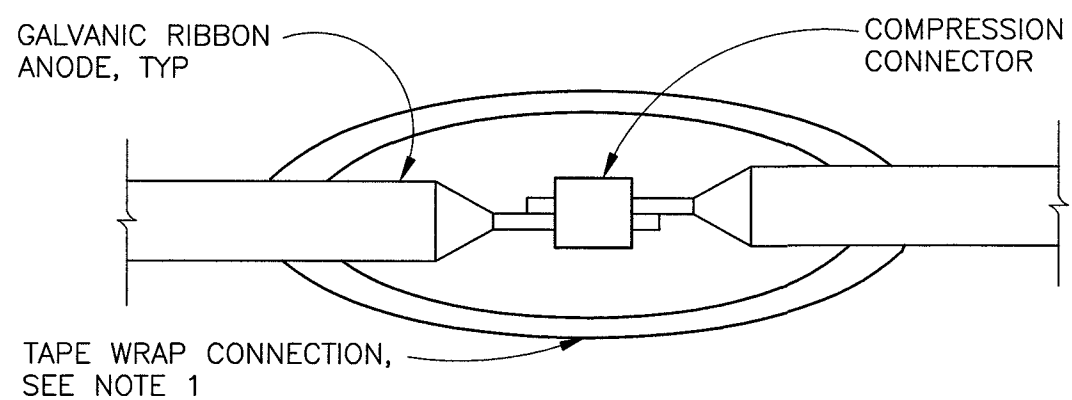
NOT TO SCALE

2
CD12

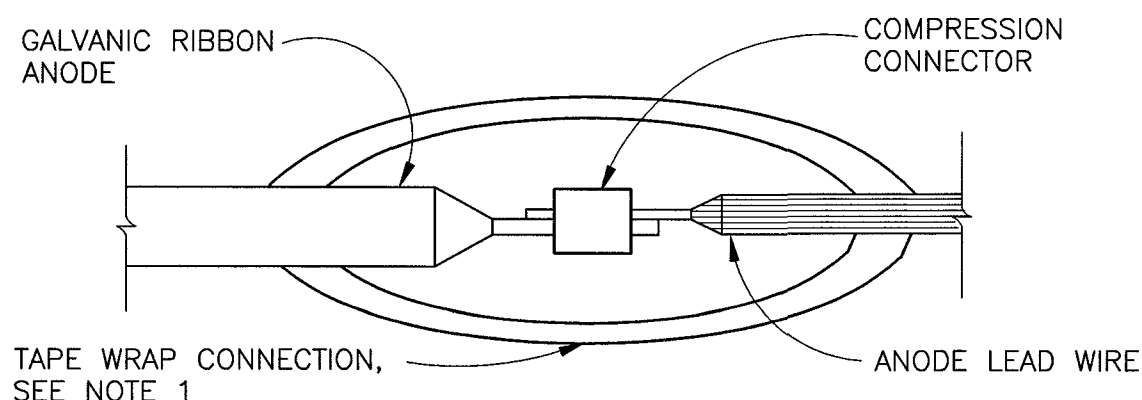
C1, C2, C3



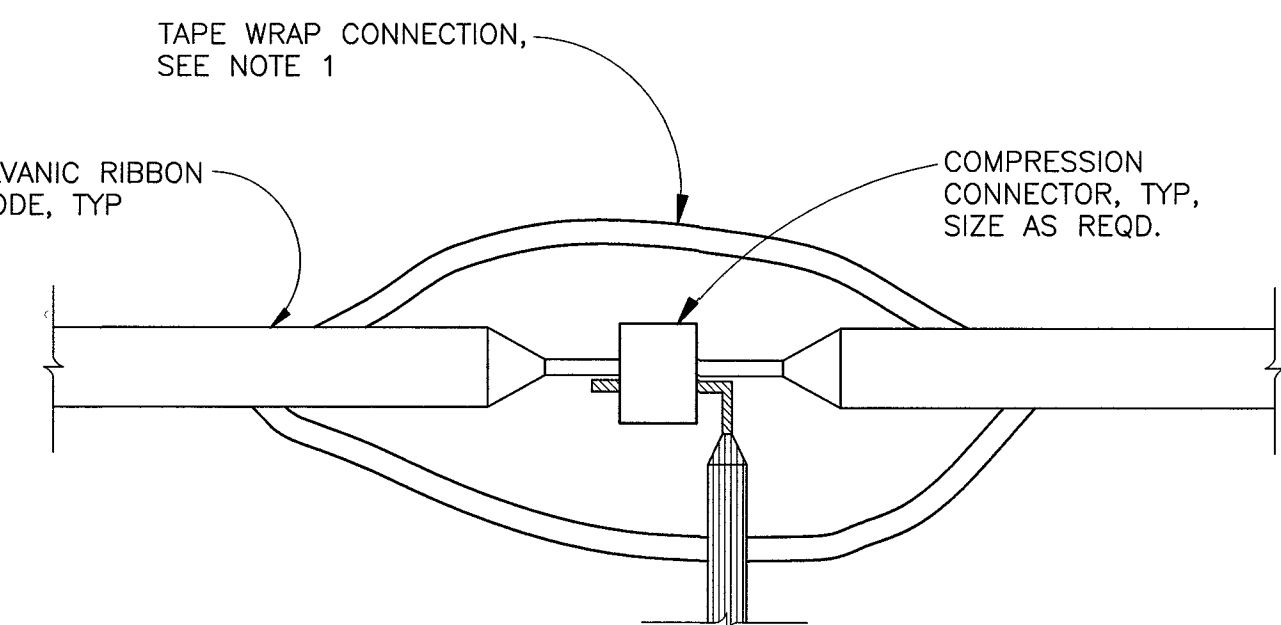
TAP ANODE SPLICE



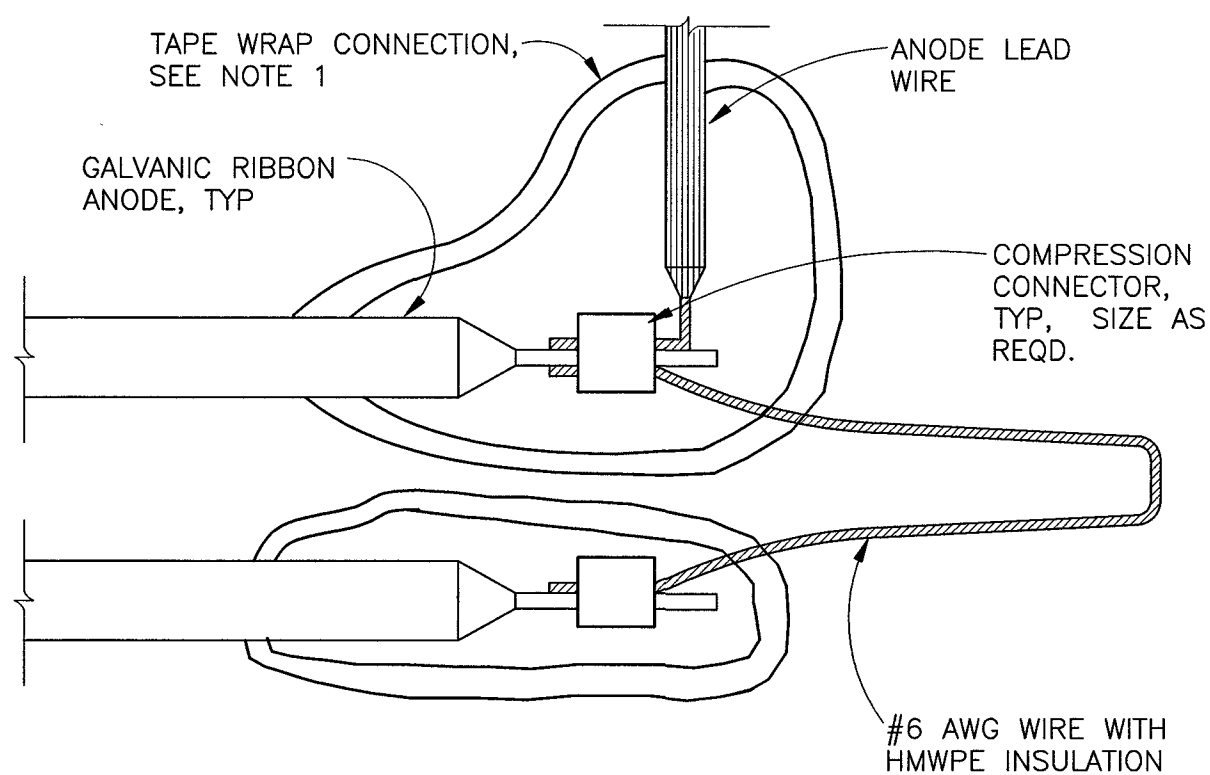
INLINE ANODE SPLICE



WIRE INLINE SPLICE



CENTER RIBBON WIRE SPLICE



WIRE SPLICE FOR DOUBLE ANODES

NOTES:

1. FILL VOID AND SMOOTH IRREGULARITIES WITH INSULATING PUTTY. WRAP ENTIRE CONNECTION WITH TWO LAYERS OF SCOTCH 130C SELF VULCANIZING RUBBER TAPE. THEN WRAP WITH TWO LAYERS OF VINYL ELECTRICAL TAPE, SCOTCH 88.
2. DETAIL SIMILAR FOR ANODE HEADER WIRES SPLICES, SIZE COMPRESSION CONNECTORS AS REQUIRED.

GALVANIC RIBBON ANODE SPLICE

NOT TO SCALE

3

LAS VEGAS VALLEY WATER DISTRICT

SLATER
HANIFAN
GROUP
CONSULTING ENGINEERS & PLANNERS
5740 S. ARVILLE STREET #116, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5309

VERIFY SCALE

1 1/2 0 1/2 1

BAR REPRESENTS
AS NOTED
INCHES ON ORIGINAL

EGAN CREST 3090 ZONE NORTH PIPELINE, PHASE II

CATHODIC PROTECTION II

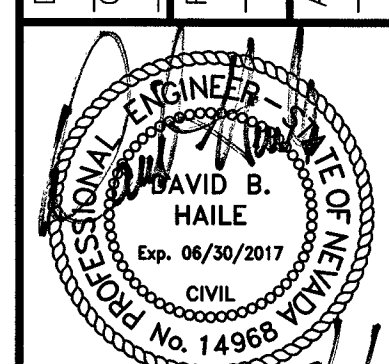
SCALE
HORIZ. SCALE
AS NOTED
VERT. SCALE
AS NOTED

DRAWN BY: 11/22/2016
CHECKED BY: DBH 11/22/2016

RECOMMENDED BY: DATE

SR. CIVIL ENGINEER

ACCEPTED BY: RYAN C. PEARSON, DESIGN MANAGER DATE



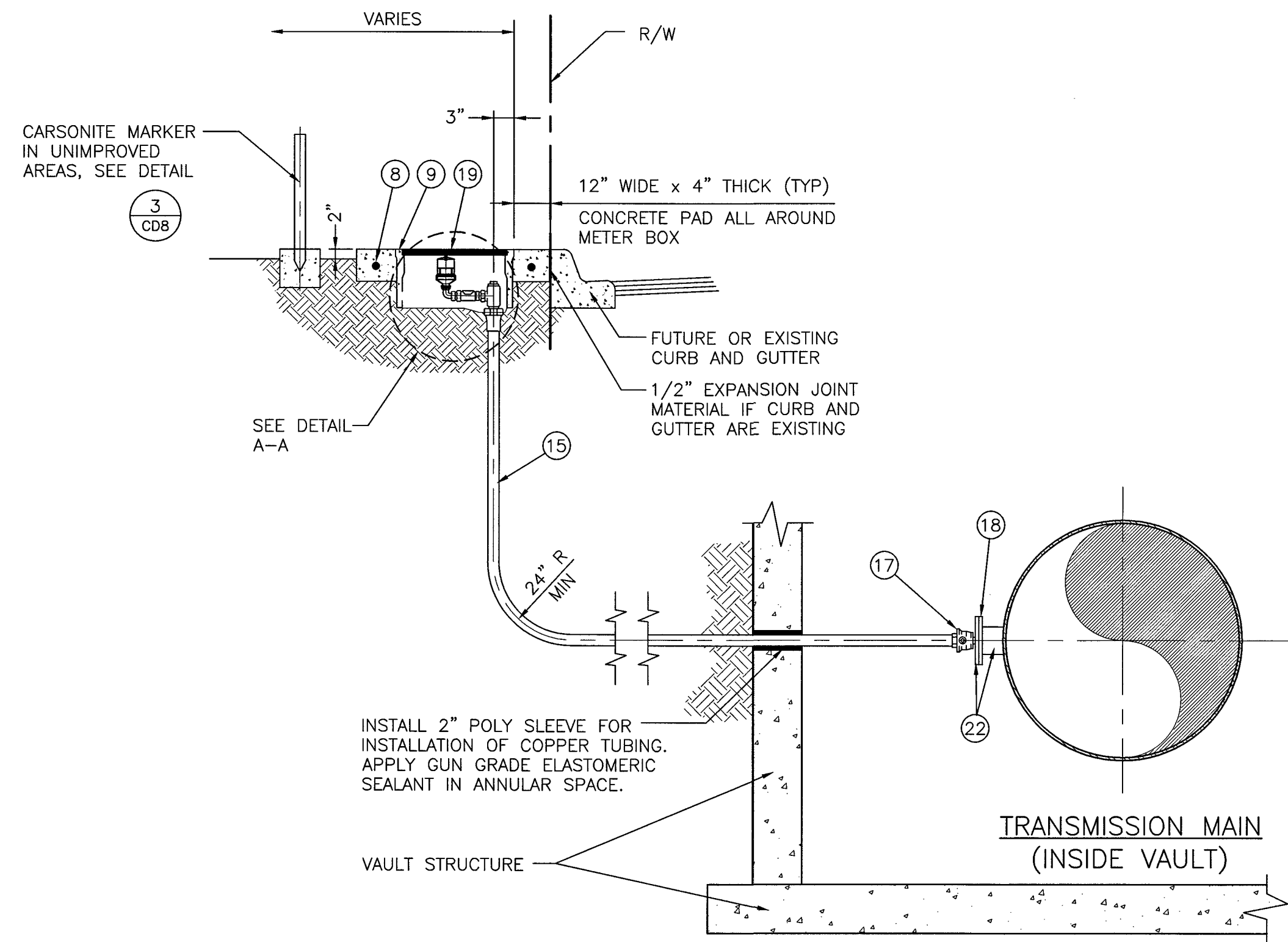
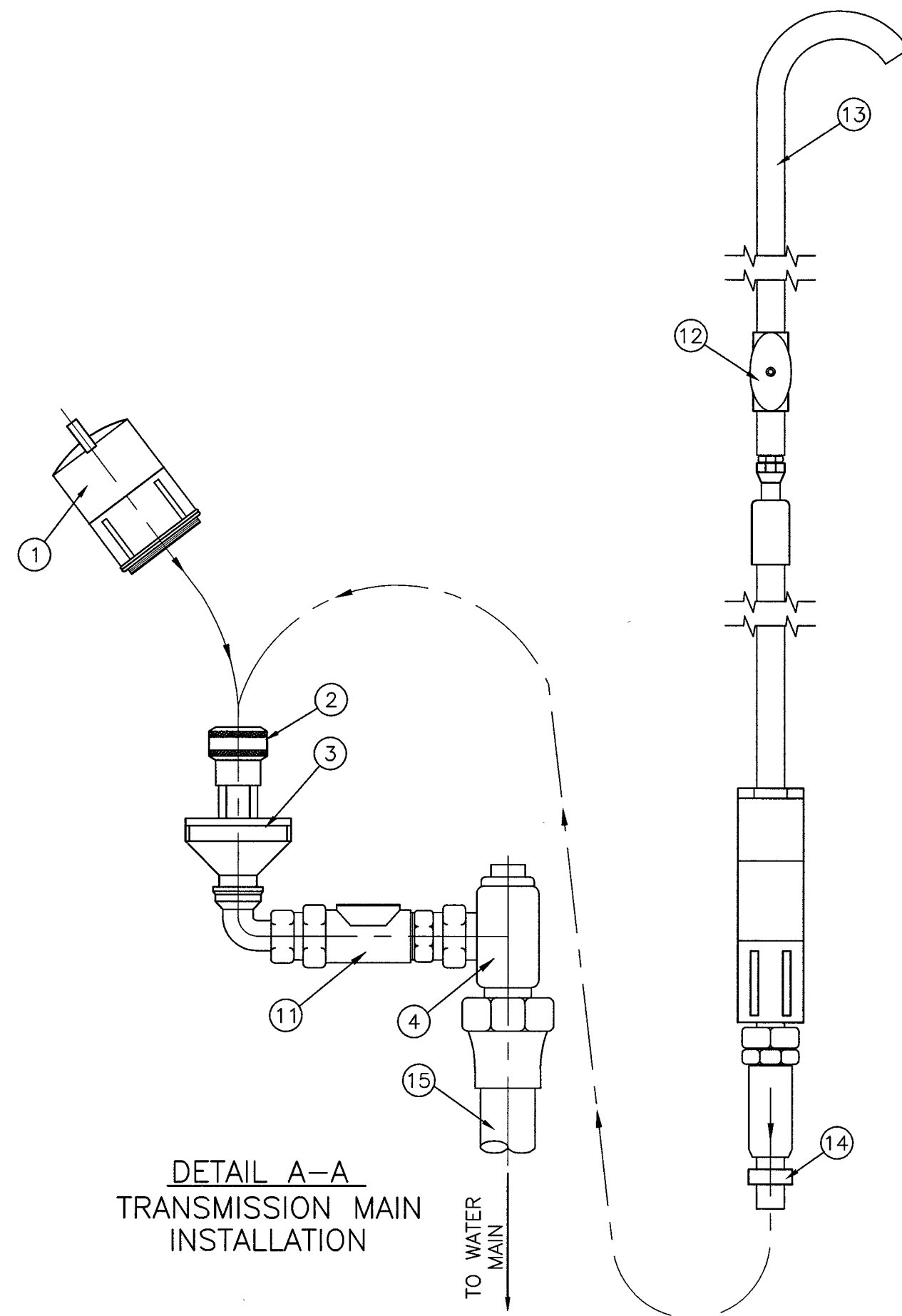
CONTRACT NUMBER

C1450

DRAWING NUMBER CD 12
SHEET 23 OF 24

565-501
CLV DWG # H-64613

COMPONENT DESCRIPTIONS	
ITEM	DESCRIPTION
1	HOUSING CAP
2	MAIN SAMPLING VALVE
3	BRASS HOUSING
4	1" x 3/4" BALL ANGLE METER STOP W/PADLOCK WING W/O LEVER HANDLE
5	BRASS BASE
6	3/4" BRASS METER NUT (W/GASKET)
7	METER SETTER (COPPER)
8	#3 REBAR IN CONCRETE COLLAR IF NO SIDEWALK
9	1" METER BOX INSTALLED AT FUTURE FINISH GRADE (WITHIN 1")
10	3/4" METER
11	DUAL CHECK VALVE BACKFLOW PREVENTER
12	THROTTLING VALVE
13	PROBE ROD W/UNTHREADED SPIGOT (MODEL 1500)
14	VALVE KEY
15	1" COPPER TUBING
16	1" SERVICE SADDLE (PVC OR DIP)
17	1" CORP STOP
18	INSULATING FLANGE, SEE DETAIL 4 ON DWG CD7
19	"LVWD SAMPLING STATION" MARKED ON LID
20	6" FLANGED OUTLET WITH 6" FLG GATE VALVE
21	6" x 1" THREADED BRASS REDUCING FLANGE
22	4" FLANGED OUTLET WITH 4" x 1" THREADED BRASS REDUCING FLANGE



NOTES:

- ADDITIONAL SAMPLING ASSEMBLY INFORMATION SEE SPECS SEC 33 10 02.
- ALL COPPER TUBING SHALL BE WRAPPED WITH TWO LAYERS OF SIX (6) MIL POLYETHYLENE AND BACKFILLED ALL AROUND WITH 4" MINIMUM OF SAND.

WATER QUALITY TEST STATION INSTALLATION

NOT TO SCALE

1
CD13

C3, CD3

CLV DWG # H-64613

LAS VEGAS VALLEY WATER DISTRICT		SLATER HANIFAN GROUP CONSULTING ENGINEERS & PLANNERS 1000 S. GARDEN AVENUE, SUITE 200, LAS VEGAS, NV 89102 PHONE (702) 254-4300 FAX (702) 254-4398			
VERIFY SCALE 1/2 0 1/2 1 BAR REPRESENTS ONE AND ONE-HALF INCHES ON ORIGINAL	EGAN CREST 3090 ZONE NORTH PIPELINE, PHASE II				
WATER TEST STATION DETAILS					
DRAWN BY: SE		CHECKED BY: DBH			
RECOMMENDED BY: SR, CIVIL ENGINEER		DATE: 11/22/2016			
ACCEPTED BY: RYAN C. PEARSON, DESIGN MANAGER		DATE: 11/22/2016			
PROFESSIONAL ENGINEER DAVID B. HAILE Exp. 06/30/2017 CIVIL No. 14968 NVS					
CONTRACT NUMBER C1450					
DRAWING NUMBER CD13 SHEET 24 OF 24					