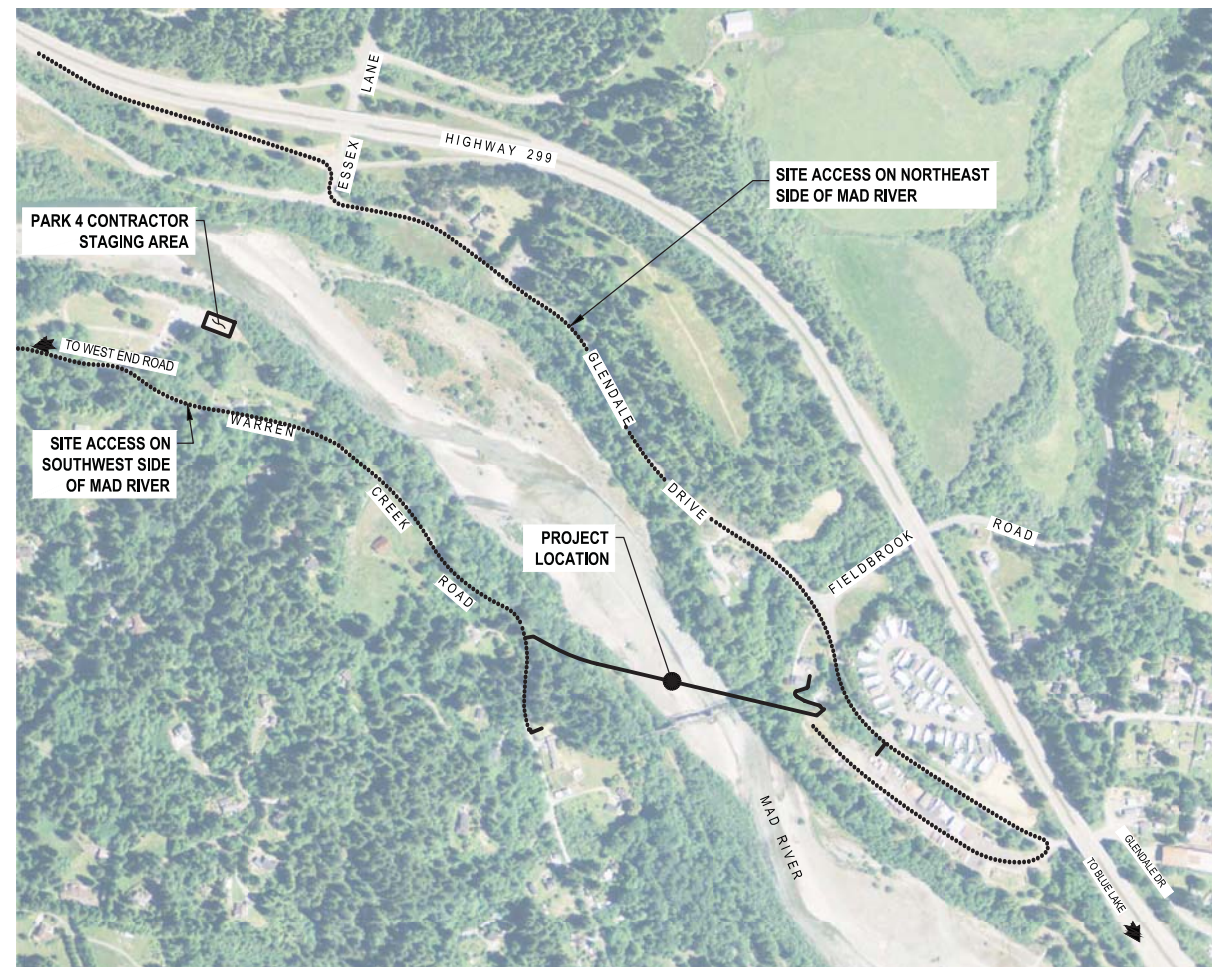
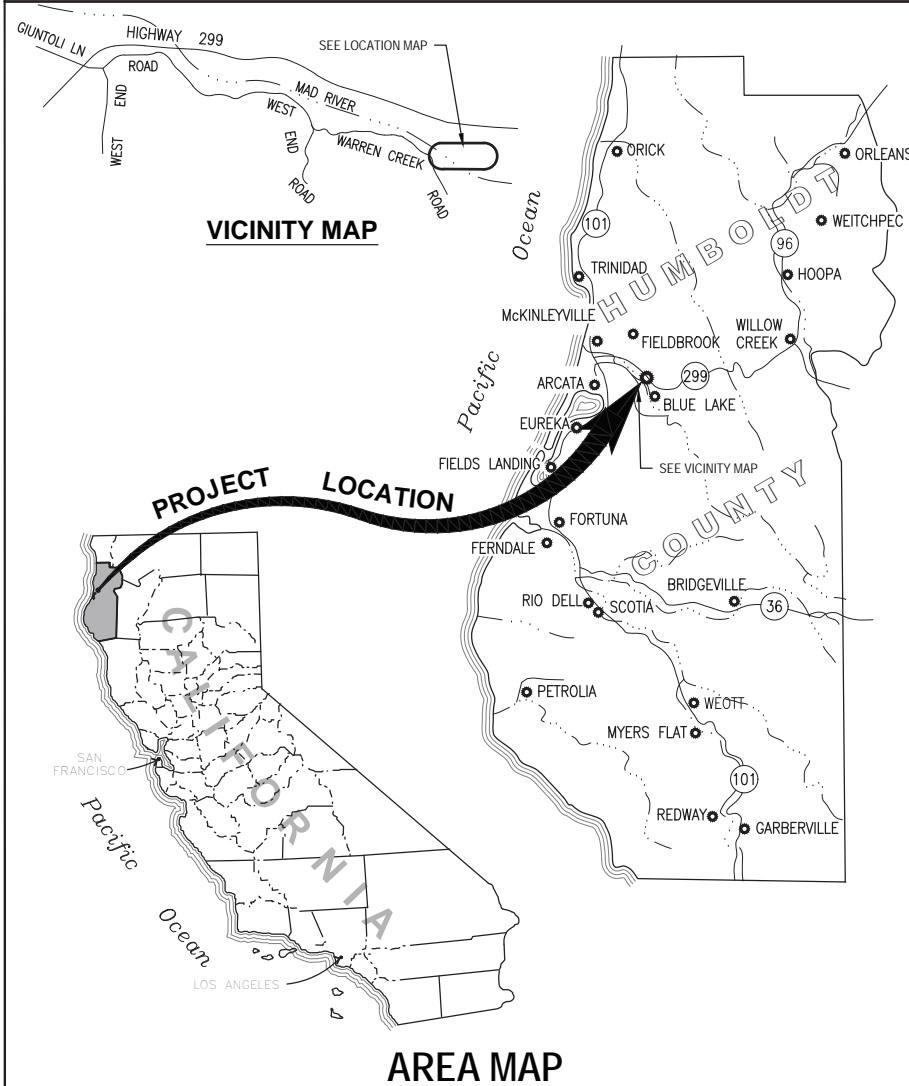


HUMBOLDT BAY MUNICIPAL WATER DISTRICT MAD RIVER PIPELINE CROSSING

FEBRUARY 2018



LOCATION MAP



APPROVALS

PLANS AND SPECIFICATIONS APPROVED BY THE BOARD OF DIRECTORS OF THE HUMBOLDT BAY MUNICIPAL WATER DISTRICT, COUNTY OF HUMBOLDT, STATE OF CALIFORNIA, THIS 8TH DAY OF FEBRUARY, 2018.

GENERAL MANAGER
JOHN FRIEDENBACH

SIGNED

BOARD OF DIRECTORS

SHERI WOO	PRESIDENT
NEAL LATT	VICE PRESIDENT
J. BRUCE RUPP	SECRETARY-TREASURER
BARBARA HECATHORN	DIRECTOR
MICHELLE FULLER	DIRECTOR

ENGINEER: GHD Inc.
PATRICK KASPARI, PE

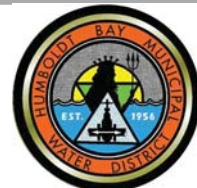
SIGNED

2/08/2018

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No.	Issue	Drawn	Approved	Date
A	ISSUE FOR BID	NS	PK	2/9/18



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Client	HUMBOLDT BAY MUNICIPAL WATER DISTRICT		
Project	MAD RIVER PIPELINE CROSSING		
Title	COVER SHEET		
Project No.	8411162		
Original Size	ANSI D	Sheet No.	G-001

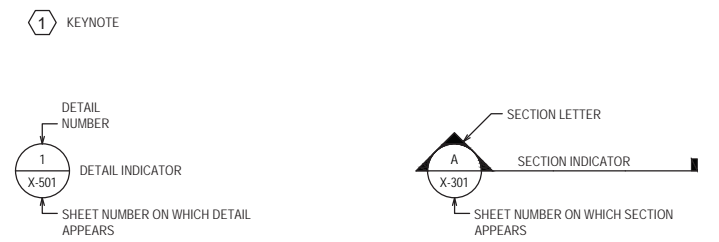
ABBREVIATIONS

\varnothing	DIAMETER	HBMWD	HUMBOLDT BAY MUNICIPAL WATER DISTRICT (DISTRICT)	S	SOUTH SLOPE
AB	AGGREGATE BASE	HC	HANDICAP	SB	SEDIMENT BASIN
ABDN	ABANDONED	HCR	HANDICAP ACCESSIBLE RAMP	SD	STORM DRAIN
AC	ACRE, ASPHALT CONCRETE	HDPE	HIGH-DENSITY POLYETHYLENE	SDCB	STORM DRAIN CATCH BASIN
ACP	ASBESTOS CEMENT PIPE	HMA	HOT MIX ASPHALT	SDI	STORM DRAIN INLET
ACM	ASBESTOS CONTAINING MATERIAL	HORIZ	HORIZONTAL	SDMH	STORM DRAIN MANHOLE
AD	AREA DRAIN	HT	HEIGHT	SDCO	STORM DRAIN CLEANOUT
ADA	AMERICANS WITH DISABILITIES ACT	HP	HIGH POINT	SF	SILT FENCE
ALGN	ALIGNMENT	HP	HIGH POINT	SG	SUBGRADE
APPROX	APPROXIMATE	INV	INVERT	SHLDR	SHOULDER
ARV	AIR RELEASE VALVE	INST	INSTALL	SHT	SHEET
ASB	AGGREGATE SUBBASE	IRR	IRRIGATION	SIM	SIMILAR
ASPH	ASPHALT	JP	JOINT POLE	SL	STREET LIGHT
		JT	JOINT TRENCH	SMH	SIGNAL MANHOLE
		L	LEFT	SS	SANITARY SEWER
		L=	LENGTH (CURVE)	SSCO	SANITARY SEWER CLEANOUT
		LF	LINEAR FEET	SSFM	SANITARY SEWER FORCE MAIN
		LAT	LATERAL	SSMH	SANITARY SEWER MANHOLE
		LIP	LIP OF GUTTER	SSPS	SANITARY SEWER PUMP STATION
		LP	LIGHT POLE, LOW POINT	SST	STAINLESS STEEL
		LPPH	LIGHT HYDRANT	STA	STATION
		LS	LANDSCAPE	STD	STANDARD
		LSA	LANDSCAPE ARCHITECT	S/W	SIDEWALK
		MA	MEDICAL AIR	T	TELEPHONE
		MAX	MAXIMUM	TC	TOP OF CURB
		MEP	MECHANICAL/ELECTRICAL/PLUMBING	TD	TRENCH DRAIN
		MF	MEDIA FILTER	TEL	TELEPHONE
		MH	MANHOLE	TEMP	TEMPORARY
		MID	MIDDLE	TFC	TOP FACE OF CURB
		MIN	MINIMUM	TG	TOP OF GRATE ELEVATION
		MJ	MECHANICAL JOINT	THK	THICK
		MPVC	MIDPOINT OF VERTICAL CURVE	TOD	TOP OF DOCK
		MON	MONUMENT	TOE	TOE OF SLOPE
		N	NORTHING COORDINATE	TRC	TOP OF ROLLED CURB
		(N)	NEW	TW,TOW	TOP OF WALL
		NCRA	NORTH COAST RAILROAD AUTHORITY	TS	TOP OF SLAB
		NIC	NOT IN CONTRACT	TYP	TYPICAL
		NO	NUMBER	UNO	UNLESS NOTED OTHERWISE
		NTS	NOT TO SCALE	U/G	UNDERGROUND
		OHE	OVERHEAD ELECTRIC	VC	VERTICAL CURVE
		O.R.	OFFICIAL RECORDS	W	WEST, WATER
		(P)	PROPOSED	WM	WATER METER
		P	PAVEMENT ELEVATION	WTR	WATER
		PA	PLANTER AREA	WV	WATER VALVE
		PB	PULL BOX	WWF	WELDED WIRE FABRIC
		PCC	POINT OF COMPOUND CURVATURE	W	WITH
		PE	PLAIN END	YDS	YARDS
		PEO	PEDESTRIAN		
		PERF	PERFORATED		
		PH	POTHOLE		
		PI	POINT OF INTERSECTION		
		PID	POINT ID		
		PIV	POST INDICATOR VALVE		
		PL	PROPERTY LINE		
		PM	PARKING METER		
		PMH	POWER MANHOLE		
		POC	POINT ON CURVE		
		POI	POINT OF INTERSECTION		
		PP	POWER POLE		
		PRC	POINT OF REVERSE CURVATURE		
		PRUE	PRIVATE UTILITY EASEMENT		
		PT	POINT OF TANGENCY		
		PUE	PUBLIC UTILITY EASEMENT		
		PVC	POLYVINYL CHLORIDE PIPE		
		R	RIGHT		
		R=	RADIUS (CURVE)		
		RC	RELATIVE COMPACTION		
		RCP	REINFORCED CONCRETE PIPE		
		REQ	REQUIRED		
		RIM	RIM ELEVATION		
		RJ	RESTRAINED JOINT		
		RP	RADIUS POINT		
		RPBFP	REDUCED PRESSURE BACKFLOW PREVENTER		
		RPPA	REDUCED PRESSURE PRINCIPLE ASSEMBLY		
		RSC	RECEIVING AND SUPPORT CENTER		
		R/W, ROW	RIGHT OF WAY		
		RW	RECYCLED WATER		

SYMBOLS LEGEND

NEW	EXISTING	
		CONCRETE SURFACE
		BOLLARD
		SPOT ELEVATION
		DOWN GUY
		STREET LIGHT
		UTILITY POLE
		ELECTRICAL HANDHOLE
		STORM DRAIN DROP INLET
		STORM DRAIN CATCH BASIN
		GAS VALVE
		STORM DRAIN MANHOLE
		SANITARY SEWER MANHOLE
		ELECTRICAL MANHOLE
		FIRE HYDRANT
		WATER VALVE
		IRRIGATION HANDHOLE
		STREET LIGHT HANDHOLE
		TREE TRUNK AND DIAMETER
		BORING
		POTHOLE
		PLUG VALVE
		BUTTERFLY VALVE
		REDUCER
		AIR RELEASE VACUUM VALVE
		BLOW OFF
		INSPECTION PORT
		TELEPHONE PEDESTAL
		CABLE TV PEDESTAL
		UTILITY POLE WITH GUY ANCHOR
		JOINT UTILITY POLE
		TELEPHONE SERVICE POLE
		WATER METER
		WATER VALVE
		CURB AND GUTTER
		ASPHALT EDGE
		BUILDING FACE
		COUNTY PARCEL LINE
		DRAINAGE FLOWLINE
		EDGE OF PAVEMENT
		EDGE OF WATER
		FENCE
		GUARD RAIL
		HAND RAIL
		MAJOR CONTOUR
		MINOR CONTOUR
		TREE DRIPLINE
		COMMUNICATION OVERHEAD (AT&T)
		COMMUNICATION UNDERGROUND (AT&T)
		CATV DATA OVERHEAD (COMCAST)
		CATV DATA UNDERGROUND (COMCAST)
		ELECTRICAL OVERHEAD (PG&E)
		ELECTRICAL UNDERGROUND (PG&E)
		JOINT TRENCH (ELECTRICAL & COMMUNICATION)
		JOINT OVERHEAD (ELECTRICAL & COMMUNICATION)
		LIMITS OF DISTURBANCE
		LIMITS OF DISTURBANCE
		NATURAL GAS UNDERGROUND (PG&E)
		NON-POTABLE WATER LINE UNDERGROUND
		RIGHT-OF-WAY EDGE LINE
		RIGHT-OF-WAY CENTERLINE
		SANITARY SEWER
		STREET LIGHT POWER UNDERGROUND
		STORM DRAIN UNDERGROUND
		TOE OF SLOPE
		TOP OF SLOPE
		WATER LINE UNDERGROUND

ANNOTATION



SHEET NOTES

- ABBREVIATIONS AND SYMBOLS ON THIS SHEET APPLY ONLY TO THE CIVIL DRAWINGS, REFER TO OTHER DISCIPLINES FOR APPLICABLE ABBREVIATIONS AND SYMBOLS NOT PROVIDED HERE.
- THIS IS A STANDARD ABBREVIATION AND LEGEND SHEET, THEREFORE, SOME ABBREVIATIONS AND LEGEND SYMBOLS MAY APPEAR ON THIS SHEET AND MAY NOT BE USED ON THIS PROJECT.

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Project Manager P. KASPARI		Date 1/12/2018	Title ABBREVIATIONS & SYMBOLS		Project No. 8411162	Original Size ANSI D	Sheet No. G-002	Sheet 2 of 11	
Issue FOR BID		Drawn NS	Approved PK	Date 2/9/18	This document shall not be used for construction unless signed and sealed for construction.				

GENERAL NOTES

1. GENERAL
 - 1.1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE OSHA REGULATIONS.
 - 1.2. CONTRACTOR SHALL NOTIFY THE OWNER AT LEAST THREE WORKING DAYS PRIOR TO COMMENCEMENT OF WORK OR IF WORK HAS BEEN SUSPENDED FOR A PERIOD OF ONE OR MORE DAYS (WEEKENDS AND HOLIDAYS EXCEPTED).
 - 1.3. THE CONTRACTOR SHALL HAVE A SUPERINTENDENT OR REPRESENTATIVE ON SITE AT ALL TIMES DURING CONSTRUCTION.
 - 1.4. THE CONTRACTOR WILL BE RESPONSIBLE FOR COMPLYING WITH ALL CONDITIONS CONTAINED IN PROJECT RELATED PERMITS AND IN OBTAINING ANY OTHER PERMITS THAT MAY BE REQUIRED.
 - 1.5. CONTRACTOR SHALL CONDUCT FIELD REVIEW AND VERIFY ALL LINES, LEVELS AND CONDITIONS PRIOR TO BEGINNING OF ANY WORK. SUBMIT TO DISTRICT A LIST OF IDENTIFIED PROBLEM AREAS.
 - 1.6. ALL MATERIALS REQUIRED FOR THE COMPLETE EXECUTION OF THE PROJECT SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNLESS OTHERWISE NOTED. ALL CONSTRUCTION MATERIALS AND METHODS SHALL COMPLY WITH THE PROJECT CONSTRUCTION CONTRACT DOCUMENTS.
 - 1.7. EXISTING FACILITIES INCLUDING, BUT NOT LIMITED TO ROADS, SIDEWALKS, WALLS, FENCES AND STRUCTURES DAMAGED BY CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO MATCH ORIGINAL CONDITION AND TO THE SATISFACTION OF THE AGENCY HAVING JURISDICTION OVER THE IMPROVEMENTS WITHOUT ADDITIONAL COST TO THE DISTRICT.
 - 1.8. ALL LANDSCAPING AND IRRIGATION SYSTEMS OR OTHER PRIVATE IMPROVEMENTS DISTURBED BY THE CONTRACTOR SHALL BE REPAIRED OR REPLACED IN KIND OR AS DIRECTED BY THE ENGINEER, AT NO ADDITIONAL COST TO OWNER.
 - 1.9. ALL UNDERGROUND IMPROVEMENTS SHALL BE INSTALLED, TESTED, AND APPROVED PRIOR TO FINAL PAVING.
 - 1.10. CONTRACTOR SHALL RESTORE OR REPLACE ANY DAMAGED MONUMENTS RESULTING FROM THEIR OPERATION AND SHALL BEAR ALL COSTS OF SUCH REPLACEMENT, INCLUDING FILING OF A CORNER RECORD.
 - 1.11. THE CONTRACTOR SHALL RECORD THE GPS COORDINATES OF ALL NEW VALVES, BENDS, AND CONNECTIONS TO THE EXISTING SYSTEM. SUBMIT NORTING AND EASTING COORDINATE INFORMATION TO THE DISTRICT USING THE HORIZONTAL DATUM: US STATE PLANE CCS 1983, CALIFORNIA ZONE 1
 - 1.12. EXISTING SHRUBBERY AND TREES SHALL BE REMOVED OR TRIMMED ONLY AS DIRECTED BY THE ENGINEER AND IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
 - 1.13. CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE DISTRICT AND THE DISTRICT'S REPRESENTATIVES HARMLESS FROM ANY AND ALL LIABILITY, REAL AND/OR ALLEGED, IN CONJUNCTION WITH THE PERFORMANCE OF THIS PROJECT.
 - 1.14. A SET OF PLANS AND A SET OF SPECIFICATIONS SHALL BE KEPT AT ALL TIMES AT THE JOB SITE ON WHICH ALL CHANGES OR VARIATIONS IN THE WORK, INCLUDING EXISTING UTILITIES, ARE TO BE RECORDED AND/OR CORRECTED DAILY AND SUBMITTED TO THE ENGINEER WHEN THE WORK TO BE DONE IS COMPLETED.
 - 1.15. CONTRACTOR SHALL CONFORM TO EXISTING STREETS, SURROUNDING LANDSCAPES, AND OTHER IMPROVEMENTS WITH A SMOOTH TRANSITION IN PAVING, CURBS, GUTTERS, SIDEWALKS, GRADING, ETC., AND AVOID ANY ABRUPT OR APPARENT CHANGES IN GRADE OR CROSS SLOPES, LOW SPOTS, OR HAZARDOUS CONDITIONS.
 - 1.16. THE DISTRICT RESERVES THE RIGHT TO REQUIRE THE CONTRACTOR TO REPAIR DAMAGE IN CONSTRUCTION ACCESS ROUTES.
 - 1.17. NOTE THAT ALL FITTINGS, BENDS, ELBOWS, ETC. SHOWN ON THESE PLANS ARE PROVIDED AS A GUIDE TO THE CONTRACTOR. CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING ALL FITTINGS REQUIRED TO MAKE CONNECTIONS TO EXISTING SERVICES IN CONFORMANCE WITH THE INTENT SHOWN ON THE PLANS.
 - 1.18. CONSTRUCTION EQUIPMENT SHALL NOT ENTER RIPARIAN AREAS.
 - 1.19. THE CONTRACTOR SHALL TAKE PREVENTATIVE MEASURES TO AVOID ANY SPILLS OR LEAKS ON THE SITE FROM PETROLEUM PRODUCTS. THE CONTRACTOR SHALL PREPARE A SPILL PREVENTION AND RESPONSE PLAN THAT WILL BE APPROVED BY THE ENGINEER. THIS PLAN MUST BE IMPLEMENTED AND ADHERED TO BY THE CONTRACTOR. AT A MINIMUM, THIS PLAN SHALL REQUIRE THAT STAGING, STORAGE AND REFUELING AREAS, AND ANY EQUIPMENT REPAIR OR SIMILAR ACTIVITY TAKING PLACE SHALL OCCUR AT LEAST 100 FEET FROM ANY ACTIVE CHANNEL OR DITCH. REFUELING SHALL ONLY OCCUR IN AREAS APPROVED BY THE ENGINEER.
 - 1.20. ELECTRICAL POWER IS NOT AVAILABLE AT THE SITE AND CONTRACTOR IS RESPONSIBLE FOR PROVIDING ANY NECESSARY POWER.
 - 1.21. CONTRACTOR HAS THE OPTION OF HOT TAPPING INTO THE DISTRICT'S EXISTING WATER LINE TO PROVIDE NECESSARY WATER. HOT TAP SHALL REQUIRE A BACKFLOW PREVENTER ASSEMBLY, AND CONTRACTOR SHALL SUBMIT PROPOSED HOT TAP ASSEMBLY FOR REVIEW AND APPROVAL BY DISTRICT AND ENGINEER PRIOR TO INSTALLATION.
2. REFER TO THE GEOTECHNICAL REPORT:
 - 2.1. FINAL GEOTECHNICAL REPORT, HUMBOLDT BAY MUNICIPAL WATER DISTRICT, WATER TRANSMISSION PIPELINE REPLACEMENT UNDER MAD RIVER, BLUE LAKE AND FIELDBROOK-GLENDALE COMMUNITY SERVICES DISTRICT, HUMBOLDT COUNTY, CALIFORNIA, BY CRAWFORD & ASSOCIATES INC, DECEMBER 14, 2017.
3. CONSTRUCTION
 - 3.1. HOURS OF WORK
 - 3.1.1. DAYTIME WORK HOURS SHALL BE LIMITED TO THE HOURS OF 7:00AM TO 7:00PM, MONDAY THROUGH SATURDAY, EXCEPT AS IDENTIFIED BELOW FOR TUNNELING ACTIVITIES AND CONNECTIONS TO THE EXISTING WATER MAIN. CONSTRUCTION OUTSIDE OF THESE HOURS, ON SUNDAY, OR LEGAL OR COUNTY HOLIDAYS SHALL NOT BE ALLOWED WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
 - 3.1.2. CONTINUOUS PULLBACK MAY BE REQUIRED DURING THE FINAL SEGMENT OF THE HDD PROCESS WHEN THE HDPE PIPELINE IS INSTALLED. DURING THIS PHASE OF THE HDD PROCESS, CONSTRUCTION COULD REQUIRE SOME NIGHTTIME WORK PERIODS FOR INSTALLATION OF THE WATER MAIN. IF REQUIRED, NIGHTTIME WORK PERIODS SHALL BE COORDINATED WITH THE ENGINEER IN ADVANCE, AND APPROVAL SHALL BE GIVEN BY THE ENGINEER PRIOR TO ANY WORK OCCURRING OUTSIDE THE HOURS DESCRIBED ABOVE.
 - 3.1.3. CONTRACTOR SHALL PROVIDE AS MUCH NOTICE AS POSSIBLE, BUT A MINIMUM OF FOURTEEN (14) DAYS' WRITTEN NOTICE PRIOR TO CONNECTING THE NEW PIPELINE TO THE EXISTING PIPELINE. CONTRACTOR SHALL NOT MAKE THESE CONNECTIONS UNTIL WRITTEN APPROVAL IS OBTAINED FROM THE DISTRICT. IT IS ANTICIPATED THAT SOME OF THESE CONNECTIONS MAY NEED TO BE MADE DURING NON-REGULAR WORK HOURS TO MINIMIZE CUSTOMER SERVICE INTERRUPTIONS.
 - 3.2. HOURS FOR EQUIPMENT DELIVERY
 - 3.2.1. EQUIPMENT DELIVERY, SUPPLY DELIVERY, AND SERVICE/FUELING VEHICLES SHALL ONLY ENTER AND EXIT SITE WORK AREAS BY THE APPROVED ACCESS ROADS DURING REGULAR WORKING HOURS AS DESCRIBED ABOVE.
 - 3.3. TRAFFIC CONTROL
 - 3.3.1. THE CONTRACTOR SHALL MAINTAIN ACCESS TO THE ROADWAYS DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL NECESSARY SIGNS, BARRICADES, AND OTHER PROTECTIVE FACILITIES AND SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION, CONVEYANCE, AND SAFETY OF THE PUBLIC.
 - 3.3.2. THE CONTRACTOR SHALL OBTAIN AN ENCROACHMENT PERMIT FROM HUMBOLDT COUNTY PRIOR TO BEGINNING THE WORK, AS PART OF THE ENCROACHMENT PERMIT PROCESS. THE CONTRACTOR SHALL PREPARE TRAFFIC CONTROL PLANS FOR REVIEW AND ACCEPTANCE OF PLANNED WORK WITHIN THE PUBLIC RIGHT-OF-WAY. THE DEVELOPMENT AND IMPLEMENTATION OF THE TRAFFIC CONTROL PLANS SHALL INCLUDE, BUT NOT NECESSARILY BE LIMITED TO, TRAFFIC CONTROLS, SIGNS, AND FLAGGERS CONFORMING WITH THE CURRENT CALIFORNIA MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
 - 3.4. CLEANING, TRASH, DEBRIS, AND STORAGE
 - 3.4.1. THE SITE SHALL BE KEPT FREE OF TRASH AT ALL TIMES. ALL ITEMS USED FOR CONSTRUCTION PURPOSES SHALL BE REMOVED FROM THE SITE AT THE COMPLETION OF CONSTRUCTION.
 - 3.4.2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMMEDIATE OFF-SITE DISPOSAL OF ALL REMOVED OR DEMOLISHED CONSTRUCTION WASTE, INCLUDING BUT NOT LIMITED TO ALL NON-REUSED BITUMINOUS PAVEMENT, CONCRETE, REINFORCEMENT, AND SPOILS AS REQUIRED BY THE ENGINEER AND PER THE SPECIFICATIONS.
 - 3.4.3. STORAGE OF CONSTRUCTION MATERIAL AND EQUIPMENT ON STREETS WILL NOT BE PERMITTED.
 - 3.4.4. A CONTAINED AND COVERED AREA ON-SITE SHALL BE USED FOR STORAGE OF CEMENT BAGS, PAINTS, FLAMMABLES, OILS, FERTILIZERS, PESTICIDES, OR ANY OTHER MATERIALS THAT HAVE POTENTIAL FOR BEING DISCHARGED TO THE MAD RIVER BY WIND OR STORM WATER RUNOFF IN THE EVENT OF A MATERIAL SPILL.
 - 3.4.5. ALL TEMPORARY ON-SITE CONSTRUCTION PILES SHALL BE SECURELY COVERED WITH A TARP OR OTHER DEVICE TO CONTAIN DEBRIS.
 - 3.5. UTILITY LOCATION
 - 3.5.1. LOCATIONS OF ALL EXISTING UTILITIES MAY NOT BE SHOWN OR ARE SHOWN AS APPROXIMATE ONLY. THE CONTRACTOR SHALL POTHOLE TO LOCATE AND USE EXTREME CAUTION WHEN WORKING NEAR THE UTILITIES. THE CONTRACTOR SHALL PROVIDE SUPPORT FOR ALL CROSSING UTILITIES EXPOSED DURING CONSTRUCTION. ANY AND ALL DAMAGE SHALL BE IMMEDIATELY REPAIRED AND/OR RESTORED TO ITS ORIGINAL CONDITION BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
 - 3.5.2. CONTRACTOR TO FIELD LOCATE ALL OVERHEAD UTILITIES PRIOR TO START OF CONSTRUCTION.
 - 3.5.3. CONTRACTOR SHALL POTHOLE AND VERIFY THE EXACT LOCATION, SIZE, TYPE, MATERIAL, AND ELEVATION OF ALL PERTINENT UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. THEIR VERIFICATION SHALL BE COORDINATED BY THE CONTRACTOR WITH THE APPROPRIATE UTILITY ENTITY. THE CONTRACTOR SHALL COOPERATE WITH UTILITY OWNERS TO EXPEDITE THE RELOCATION OR ADJUSTMENT OF THEIR UTILITIES TO MINIMIZE INTERRUPTION OF SERVICE AND DUPLICATION OF WORK. THE CONTRACTOR SHALL EXERCISE CARE WHEN WORKING NEAR EXISTING UTILITIES AND SHALL BE RESPONSIBLE FOR ALL DAMAGE, BREAKS, AND/OR LEAKS. IF DAMAGE OCCURS, THE CONTRACTOR SHALL REPAIR UTILITY AT NO ADDITIONAL EXPENSE.
 - 3.5.4. CONTRACTOR SHALL CONFIRM THAT UNDERGROUND SERVICE ALERT (USA) HAS BEEN NOTIFIED AND UTILITIES ARE MARKED OUT IN ACCORDANCE WITH STATE LAW AND THE CONTRACT DOCUMENTS PRIOR TO ANY EXCAVATION.
 - 3.5.5. CONTRACTOR SHALL NOT BEGIN EXCAVATION UNTIL ALL EXISTING UTILITIES HAVE BEEN MARKED IN THE FIELD BY THE UTILITY OWNER RESPONSIBLE FOR THAT PARTICULAR UTILITY. THE CONTRACTOR SHALL NOTIFY EACH UTILITY OWNER AT LEAST 48 HOURS BEFORE STARTING WORK.
 4. HYDROFRACTURE CONTINGENCY PLAN AND PERMITTING
 - 4.1. COMPLIANCE WITH SURFACE SPILL AND HYDROFRACTURE CONTINGENCY PLAN
 - 4.1.1. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OUTLINED IN THE HORIZONTAL DIRECTIONAL DRILLING SURFACE SPILL AND HYDROFRACTURE CONTINGENCY PLAN, HUMBOLDT BAY MUNICIPAL WATER DISTRICT BLFG CSD WATER TRANSMISSION PIPELINE REPLACEMENT, MAD RIVER HDD CROSSING, DATED DECEMBER 20, 2017.
 - 4.2. COMPLIANCE WITH CITY, COUNTY, AND STATE PERMITS
 - 4.2.1. CONTRACTOR IS RESPONSIBLE FOR THE ACQUISITION OF AND COMPLIANCE WITH ANY RELEVANT CITY, COUNTY, OR STATE PERMITS NEEDED FOR THE PROPOSED CONSTRUCTION ACTIVITIES INCLUDING, BUT NOT LIMITED TO, TRAFFIC AND ENCROACHMENT PERMITS RELATED TO THE DELIVERY AND HAULING OF CONSTRUCTION EQUIPMENT AND MATERIALS, AND TRAFFIC CONTROL MEASURES (TRAFFIC SAFETY PLAN). THE CONTRACTOR MUST FOLLOW ALL PERTINENT REQUIREMENTS FOR HAULING LARGE VEHICLES OR EQUIPMENT TO THE PROJECT SITE. IF A COUNTY, STATE, OR CITY ROAD IS USED FOR HEAVY EQUIPMENT TRANSPORT OR WIDE LOADS, PERTINENT CLEARANCES MUST BE OBTAINED.
 - 4.2.2. DISTRICT HAS OBTAINED CONFIRMATION FROM THE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, CALIFORNIA STATE WATER QUALITY CONTROL BOARD, AND U.S. ARMY CORPS OF ENGINEERS THAT PERMITS FROM THEIR AGENCIES ARE NOT REQUIRED FOR THIS PROJECT.

DUST AND EXHAUST CONTROL NOTES

- TO ADDRESS THE POTENTIAL FOR DUST AND EXHAUST GENERATION, THE CONTRACTOR IS REQUIRED TO IMPLEMENT THE FOLLOWING MEASURES TO PREVENT DUST AND EXHAUST GENERATION:
1. ALL EXPOSED SURFACES (E.G., PARKING AREAS, STAGING AREAS, SOIL PILES, GRADED AREAS, AND UNPAVED ACCESS ROADS) SHALL BE WATERED AS NECESSARY DURING DUSTY CONDITIONS.
 2. IF LOOSE MATERIAL BECOMES AIRBORNE DURING TRANSPORTATION, ALL HAUL TRUCKS TRANSPORTING SOIL, SAND, OR OTHER LOOSE MATERIAL OFF-SITE SHALL BE COVERED.
 3. DISTURBED ROADWAYS SHALL BE RE-PAVED AS SOON AS POSSIBLE FOLLOWING WORK IN THE AREA, AS APPROPRIATE.
 4. ALL VISIBLE MUD OR DIRT TRACKED-OUT ONTO ADJACENT PUBLIC ROADS SHALL BE REMOVED USING WET POWER VACUUM STREET SWEEPERS, DAILY OR MORE FREQUENTLY AS NECESSARY. THE USE OF DRY POWER SWEEPING IS PROHIBITED.
 5. CONTRACTOR SHALL CONDUCT ALL EARTH DISTURBING OPERATIONS IN SUCH A MANNER AS TO PRECLUDE WIND BLOWN DIRT AND DUST AND RELATED DAMAGE TO NEIGHBORING PROPERTIES. SUFFICIENT WATERING TO CONTROL DUST IS REQUIRED AT ALL TIMES. CONTRACTOR SHALL ASSUME LIABILITY FOR CLAIMS RELATED TO WIND BLOWN MATERIAL. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER SEDIMENT AND EROSION CONTROL. IF THE DUST CONTROL IS INADEQUATE AS DETERMINED BY THE ENGINEER, THE CONSTRUCTION WORK SHALL BE TERMINATED UNTIL CORRECTIVE MEASURES ARE TAKEN.
 6. IDLING TIMES SHALL BE MINIMIZED BY SHUTTING EQUIPMENT OFF WHEN NOT IN USE.
 7. ALL CONSTRUCTION EQUIPMENT SHALL BE MAINTAINED AND PROPERLY TUNED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

WATER SYSTEM NOTES

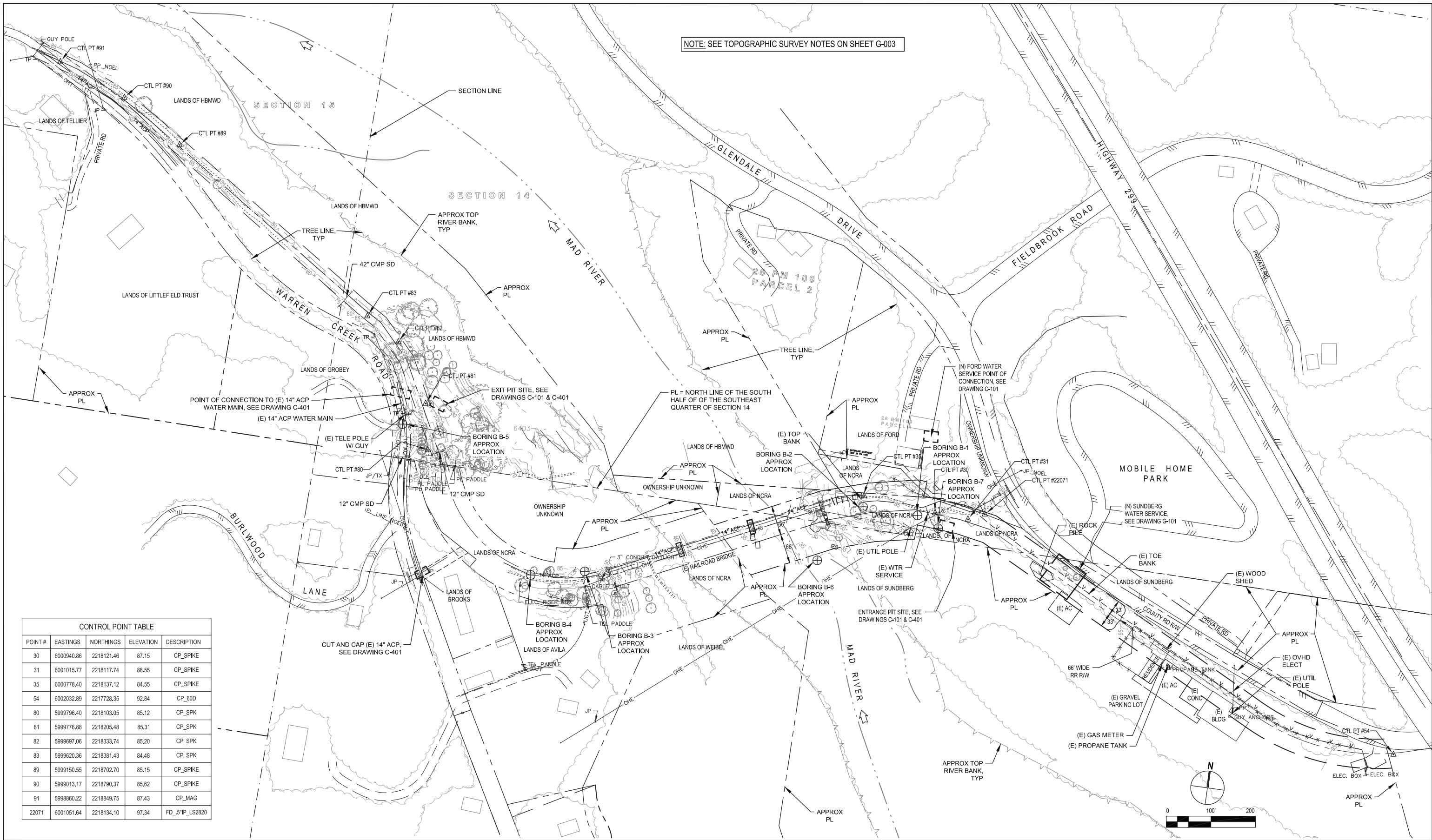
1. ALL MATERIALS TO BE IN CONTACT WITH POTABLE WATER SHALL BE NSF-61 APPROVED.
2. AT WATER LINE CROSSINGS WITH UTILITIES, THE MINIMUM VERTICAL CLEARANCE SHALL BE 12 INCHES.
3. EXCAVATIONS MUST BE KEPT DEWATERED AT ALL TIMES SO AS NOT TO ALLOW CONTAMINATED WATER TO ENTER WATER MAINS.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE LOCATION, DIAMETER, AND TYPE OF EXISTING PIPE SO THAT THE NEW PIPE CAN BE PROPERLY ALIGNED WITH AND FITTED TO THE EXISTING PIPE. THE CONTRACTOR SHALL VERIFY THE TYPE, SIZE AND CONDITION OF EXISTING PIPE PRIOR TO INSTALLING NEW PIPE CONNECTIONS. THE PIPE SHALL BE INSPECTED FOR CORROSION OR OTHER CONDITION THAT WOULD PREVENT AN ADEQUATE CONNECTION.
5. DEFLECTION OF PIPE AT JOINTS SHALL COMPLY WITH MANUFACTURER'S SPECIFICATIONS.
6. BENDS MAY NOT BE USED EXCEPT WHEN SHOWN ON THE PLANS OR PERMITTED BY THE ENGINEER.
7. THRUST RESTRAINT SHALL BE PROVIDED AT TEES AND BENDS BY MECHANICAL METHODS UNLESS NOTED OTHERWISE. ON ALL TIE INS AND CONNECTIONS, THERE SHALL BE NO UNRESTRAINED JOINTS WITHIN TEN (10) FEET OF THE CONNECTION OR TIE IN UNLESS NOTED OTHERWISE.
8. ALL BOLTED FITTINGS AND VALVES WHICH ARE BURIED SHALL BE WRAPPED WITH A MINIMUM 16 MILS POLYETHYLENE.
9. ALL FITTINGS, VALVES, AND MATERIALS TO ACCOMPLISH TIE INS SHALL BE ON THE JOB SITE AND CHECKED FOR PROPER FIT PRIOR TO ANY SHUTDOWN OF EXISTING WATER MAINS. ALL TIE INS SHALL BE MECHANICALLY RESTRAINED.
10. NOTE THAT ALL FITTINGS, BENDS, ELBOWS, ETC. SHOWN ON THESE PLANS ARE PROVIDED AS A GUIDE TO THE CONTRACTOR. CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING ALL FITTINGS REQUIRED TO MAKE CONNECTIONS TO EXISTING SERVICES IN CONFORMANCE WITH THE INTENT SHOWN ON THE PLANS.
11. TIE-INS TO EXISTING MAINS SHALL BE MADE AFTER CHLORINATION, BACTERIAL, AND PRESSURE TESTS ARE COMPLETED AND APPROVED BY ENGINEER. TIE-INS AND SYSTEM INTERRUPTIONS SHALL BE COORDINATED WITH THE DISTRICT AND CUSTOMERS, AND A MINIMUM OF 14 CALENDAR DAYS NOTICE SHALL BE PROVIDED BY THE CONTRACTOR TO THE ENGINEER PRIOR TO ANY INTERRUPTION IN SERVICE. EXCAVATIONS BY THE CONTRACTOR FOR TIE INS MUST BE APPROVED THE DAY BEFORE WORK IS TO COMMENCE AT EACH TIE IN.
12. EXISTING PIPE SHALL NOT BE CUT AND ABANDONED UNTIL THE NEW PIPE IS INSTALLED, TESTED, AND APPROVED BY THE ENGINEER.
13. MISALIGNMENT SHALL BE CORRECTED BY THE REALIGNMENT OF THE NEW PIPE TO BE CONNECTED. CONTRACTOR SHALL PROVIDE ALL FITTINGS AND PIPE MATERIALS NEEDED TO CONNECT THE NEW PIPE TO THE EXISTING PIPE.
14. IF THE TOTAL DEFLECTION OF ALL JOINTS IN THE TIE IN AREA IS 11.25 DEGREES OR GREATER, ADEQUATE RESTRAINT MUST BE PROVIDED.
15. PIPES TO BE DEMOLISHED SHALL BE REMOVED EITHER BY SAW CUTTING, REMOVING A COMPLETE PIPE SECTION TO AN EXISTING JOINT, OR OTHER ADEQUATE MEANS WHICH RESULTS IN A CLEAN JOINT FOR CAPPING AND CONNECTING TO A NEW PIPE.
16. WATER FROM TESTING WATERLINES IS TO BE FLUSHED FROM THE PIPE, DECHLORINATED, AND DISPOSED OF PER THE SPECIFICATIONS. FLUSHING SHALL NOT BEGIN UNTIL AN APPROVED DECHLORINATION AND DISPOSAL MECHANISM IS IN PLACE AND FUNCTIONING.
17. THE CONTRACTOR SHALL NOT OPERATE EXISTING VALVES. ALL REQUIRED OPERATION OF EXISTING VALVES SHALL BE COORDINATED WITH OWNER IN ADVANCE, AND OWNER'S PERSONNEL WILL OPEN AND CLOSE VALVES AS REQUIRED.

TOPOGRAPHIC SURVEY NOTES

- A) THE PURPOSE OF THIS SURVEY DATA PRESENTED HEREIN IS TO SUPPLEMENT A PRIOR SURVEY PERFORMED IN 2014 BY POINTS WEST SURVEYING FOR THE HUMBOLDT BAY MUNICIPAL WATER DISTRICT (HBMWD) PROJECT TO REPLACE THE WATER LINE THAT NOW EXISTS ON THE AMRR RAILROAD BRIDGE. THIS ADDITIONAL WORK IS A TOPOGRAPHIC SURVEY (ONLY); ADJACENT PROPERTY LINES ARE APPROXIMATE ONLY BASED ON ASSESSOR PARCEL MAPS. SURVEY WAS PERFORMED IN MAY AND JUNE 2017, AND SUPPLEMENTED FURTHER BY ADDITIONAL TOPOGRAPHIC SURVEY WORK IN DECEMBER 2017 AND JANUARY 2018.
- B) SURVEY UPDATE INCLUDES AREA ON WESTERLY SIDE OF RIVER ON HBMWD PROPERTY IDENTIFIED AS AREA FOR RECEIVING PIT OF HORIZONTAL DIRECTIONAL DRILL (HDD), A STRIP OF LAND 100 FEET LONG ON THE OLD RAILROAD BED PROPOSED FOR ACCESS, A STRIP 10-15 WIDE ALONG THE PROPOSED PIPE ALIGNMENT, AND OTHER AREAS. TREES 12 INCH AND BIGGER WERE LOCATED EXCEPT ON THE STRIP CROSSING RIVER BED. ON THE EAST SIDE OF THE RIVER THE TOPOGRAPHY WAS UPDATED TO REFLECT THE GROUND AS FILLED NEAR THE BEGINNING OF THE PROPOSED BORE AND A STRIP OF LAND ON THE SUNDBERG PARCEL BEING CONSIDERED AS A "LAYDOWN" AREA. NO UNDERGROUND UTILITIES WERE LOCATED IN "LAYDOWN" AREA. IN DECEMBER 2017 AND JANUARY 2018, ADDITIONAL AREAS ON BOTH SIDES OF RIVER WERE SURVEYED. THE AREA ADJACENT TO LANDS OF FORD INCLUDES AN AREA FOR WHICH NO UNDERGROUND UTILITY MAPPING WAS AVAILABLE. CURRENT OWNER (RELATED TO ORIGINAL UTILITY INSTALLER, NOW DECEASED) HAS NO KNOWLEDGE OF LOCATION OF EXISTING UNDERGROUND UTILITIES. ORIGINAL TOPOGRAPHIC SURVEY DATA FROM 2014 WAS NOT VERIFIED/MODIFIED EXCEPT AS NOTED ABOVE.
- C) THE FOLLOWING SURVEY NOTES 1 THROUGH 4 ARE TAKEN FROM 2014 SURVEY; SURVEY CONTROL FOR THIS WORK IS BASED ON ORIGINAL WORK- SEE NOTE 2 BELOW.
 1. THE PURPOSE OF THIS SURVEY IS TO SHOW EXISTING TOPOGRAPHY, PROPERTY LINES AND/OR EASEMENTS IN THE VICINITY OF THE HUMBOLDT BAY MUNICIPAL WATER DISTRICT (HBMWD) WATER LINE WHICH CROSSES THE MAD RIVER OVER AN EXISTING AMRR RAILROAD BRIDGE IN GLENDALE, CALIFORNIA. SURVEY WAS PERFORMED BETWEEN MAY AND AUGUST 2014. UNDERGROUND UTILITIES SHOWN HEREON ARE BASED ON TIES MADE IN THE FIELD TO VISIBLE UTILITY STRUCTURES AND PLANS PROVIDED BY PG&E AND HBMWD. AN UNDERGROUND CROSSING OF A SUDENLINK CABLE LINE ALONG BRIDGE WAS LOCATED- IT RUNS UNDERGROUND ON WEST SIDE FROM A POLE DROP, THEN ON A CONDUIT ACROSS BRIDGE WHERE IT THEN GOES OVERHEAD ON EAST SIDE. HBMWD CONNECTIONS TO LANDS OF SUNDBERG WERE LOCATED AS WELL AS WATER METERS ON EAST SIDE OF BRIDGE- NO PLANS SHOWING SIZE OR ROUTING WERE AVAILABLE ON THOSE CONNECTIONS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED, OR THAT THEY ARE IN THE EXACT LOCATION SHOWN. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.
 2. COORDINATES FOR THIS SURVEY ARE CALIFORNIA COORDINATE SYSTEM OF 1983 (CCS83) BASED ON A GPS SURVEY. THE MAPPING ANGLE IS 1 DEGREE 19 MINUTES 43 SECONDS- ROTATE BEARINGS COUNTERCLOCKWISE BY THIS ANGLE TO OBTAIN "TRUE" OR GEODETIC BEARINGS. GRID DISTANCES SHOWN SHOULD BE DIVIDED BY THE COMBINED SCALE FACTOR OF 0.99989515 TO OBTAIN GROUND DISTANCES. BOTH MAPPING ANGLE AND COMBINED SCALE FACTOR ARE TAKEN AT CONTROL POINT NUMBER 1. HORIZONTAL CONTROL IS BASED ON NGS PID "AC9254", AN NGS HPGN NETWORK POINT IN ARCATO (2010.0 EPOCH). VERTICAL CONTROL IS BASED ON NGS PID "LV0608", NAVD 88 DATUM.
 3. ORTHOPHOTO IS FROM NATION AGRICULTURAL IMAGERY PROGRAM (NAIP), DATED 2016, AND IS INTENDED FOR GENERAL ORIENTATION PURPOSES ONLY AND MAY NOT REFLECT CURRENT SITE CONDITIONS INCLUDING LOCATION OF RIVER, GRAVEL, ETC.
 4. ONLY TREES 12 INCH AND LARGER WERE LOCATED DURING THE COURSE OF THIS SURVEY. NUMEROUS OTHER TREES EXIST AND ARE NOT SHOWN.

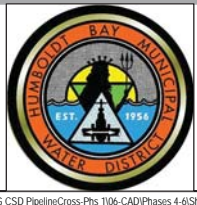
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											Drafting Check P. KASPARI Design Check P. KASPARI		Project MAD RIVER PIPELINE CROSSING		Title GENERAL NOTES	
											Project Manager P. KASPARI Date 1/12/2018		Project No. 8411162		Original Size	
A ISSUE FOR BID					NS PK 2/9/18						This document shall not be used for construction unless signed and sealed for construction.		Scale AS NOTED		ANSI D Sheet No. G-003	
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NOTE: SEE TOPOGRAPHIC SURVEY NOTES ON SHEET G-003



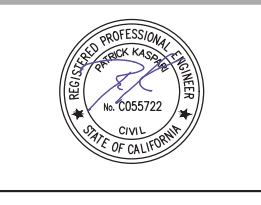
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31	6001015.77	2218117.74	88.55	CP_SPIKE
35	6000778.40	2218137.12	84.55	CP_SPIKE
54	6002032.89	2217728.35	92.84	CP_60D
80	5999796.40	2218103.05	85.12	CP_SPK
81	5999776.88	2218205.48	85.31	CP_SPK
82	5999697.06	2218333.74	85.20	CP_SPK
83	5999620.36	2218381.43	84.48	CP_SPK
89	5999150.55	2218702.70	85.15	CP_SPIKE
90	5999013.17	2218790.37	85.62	CP_SPIKE
91	5998860.22	2218849.75	87.43	CP_MAG
22071	6001051.64	2218134.10	97.34	FD_5"IP_LS2820

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Project Manager	P. KASPARI	Date	1/12/2018
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Client	HUMBOLDT BAY MUNICIPAL WATER DISTRICT		
Project	MAD RIVER PIPELINE CROSSING		
Title	EXISTING CONDITIONS & SURVEY CONTROL		
Project No.	8411162		
Original Size	ANSI D		
Sheet No.	G-004		
Sheet	4 of 11		

UNIFIED SOIL CLASSIFICATION (ASTM D 2487-06)
MATERIAL TYPES CRITERIA FOR ASSIGNING SOIL GROUP NAMES GRAPHIC SYMBOL GROUP SYMBOL SOIL GROUP NAMES
GRAVELS CU ≥ 4 AND 1 < Cc ≤ 3
POORLY-GRADED GRAVEL
POORLY-GRADED SAND
POORLY-GRADED SILT
POORLY-GRADED CLAY

CALTRANS SOIL & ROCK LOGGING MANUAL (2010)
LEGEND OF ROCK MATERIALS
PERCENT CORE RECOVERY (REC) & ROCK QUALITY DESIGNATION (RQD)
BEDDING SPACING
ROCK HARDNESS
WEATHERING DESCRIPTIONS FOR INTACT ROCK

LOG OF BORING B1
PROJECT NO: 15-245.1
LOCATION: East Side of Mad River
LOGGED BY: NBM
DEPTH OF BORING: 17.5 (ft)
DESCRIPTION: Lean Clay (CL), 7.5YR 4/4 (brown), dry, medium to stiff, trace fine gravel, trace woody organics.

LOG OF BORING B2
PROJECT NO: 15-245.1
LOCATION: East Side of Mad River
LOGGED BY: NBM
DEPTH OF BORING: 24 (ft)
DESCRIPTION: Lean Clay (CL), 7.5YR 4/4 (brown), dry, moderately stiff, trace gravel, trace woody organics.

BORING LOG / TEST PIT LEGEND AND SOIL DESCRIPTIONS
BLow COUNT
PLASTICITY CHART
GROUND WATER LEVELS

ROCK DESCRIPTION LEGEND
Crawford & Associates, Inc.
4030 S Land Park Drive, Ste. C
Sacramento, CA 95822

BORING LOG B1 CONTINUED
PROJECT NUMBER: 15-245.1
BORING: B1
ENTRY BY: NBM
CHECKED BY: RDS SHEET 1 of 1

BORING LOG B2 CONTINUED
PROJECT NUMBER: 15-245.1
BORING: B2
ENTRY BY: NBM
CHECKED BY: RDS SHEET 1 of 1

LOG OF BORING B3
PROJECT NO: 15-245.1
LOCATION: West Side of Mad River
LOGGED BY: NBM
DEPTH OF BORING: 35 (ft)
DESCRIPTION: Lean Clay (CL), 5YR 4/4 (reddish brown), dry, moderately stiff, 10% sand.

LOG OF BORING B3 CONTINUED
PROJECT NUMBER: 15-245.1
BORING: B3
ENTRY BY: NBM
CHECKED BY: RDS SHEET 2 of 2

LOG OF BORING B4
PROJECT NO: 15-245.1
LOCATION: West Side of Mad River
LOGGED BY: NBM
DEPTH OF BORING: 15.5 (ft)
DESCRIPTION: GRAVELLY lean CLAY (CL), 5YR 4/4 (reddish brown), dry, stiff, trace sand.

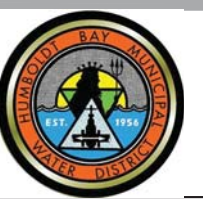
LOG OF BORING B5
PROJECT NO: 15-245.2
LOCATION: 84 ft Sta. 8+00
LOGGED BY: NBM
DEPTH OF BORING: 48 (ft)
DESCRIPTION: SALTY SAND WITH GRAVEL (SM), 10YR 6/2 (light grayish green), moderately hard, 30% rounded to subrounded sand, 30% fine to medium gravel.

BORING LOG B3 CONTINUED
PROJECT NUMBER: 15-245.1
BORING: B3
ENTRY BY: NBM
CHECKED BY: RDS SHEET 1 of 2

BORING LOG B4 CONTINUED
PROJECT NUMBER: 15-245.1
BORING: B4
ENTRY BY: NBM
CHECKED BY: RDS SHEET 1 of 1

BORING LOG B5 CONTINUED
PROJECT NUMBER: 15-245.2
BORING: B5
ENTRY BY: NBM
CHECKED BY: RDS SHEET 1 of 2

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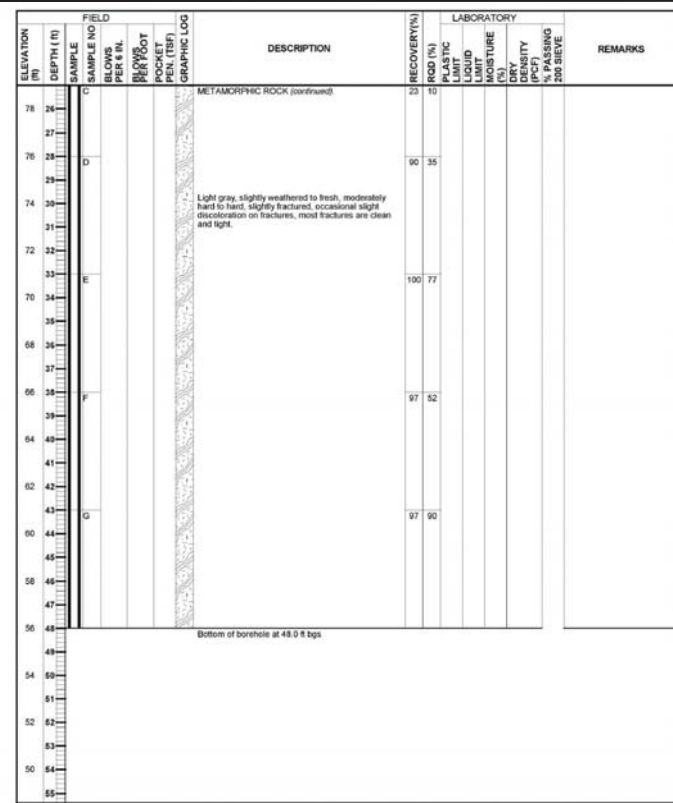
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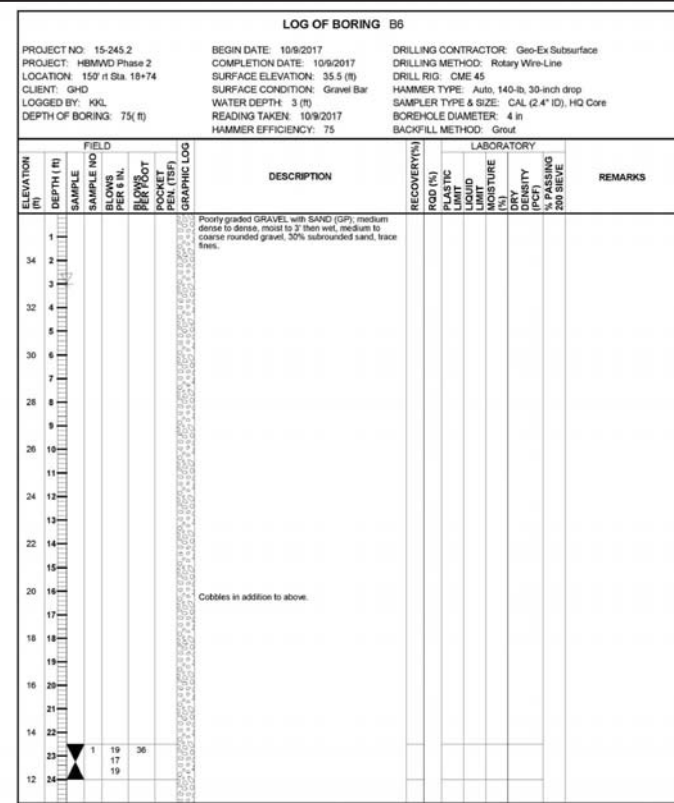
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Table with 2 columns: Role and Name. Roles include Drawn (S. DAVIS), Designer (N. STEVENS), Drafting Check (P. KASPARI), Design Check (P. KASPARI), Project Manager (P. KASPARI), Date (1/12/2018), Scale (AS NOTED).

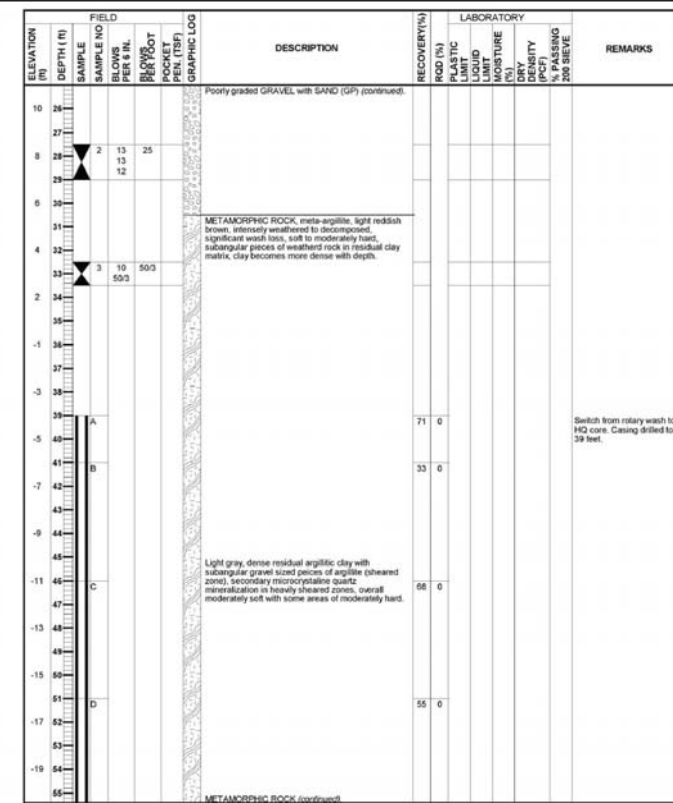
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Project: MAD RIVER PIPELINE CROSSING
Title: BORING LOGS 1 OF 2
Project No: 8411162
Original Size: ANSI D
Sheet No: G-005
Sheet 5 of 11



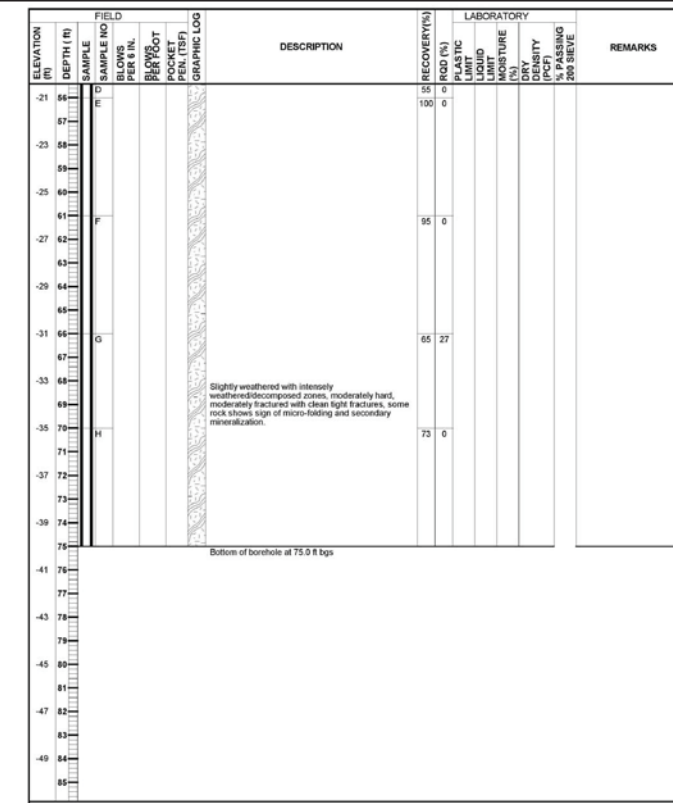
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 PROJECT: HBMWD Phase 2
 BORING: B5
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 CHECKED BY: SHEET 2 of 2



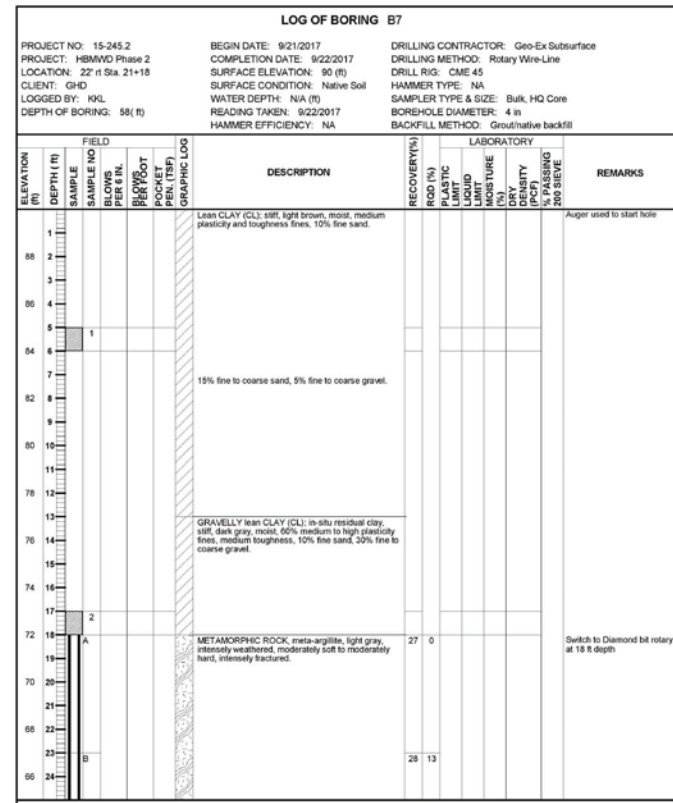
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 PROJECT: HBMWD Phase 2
 BORING: B6
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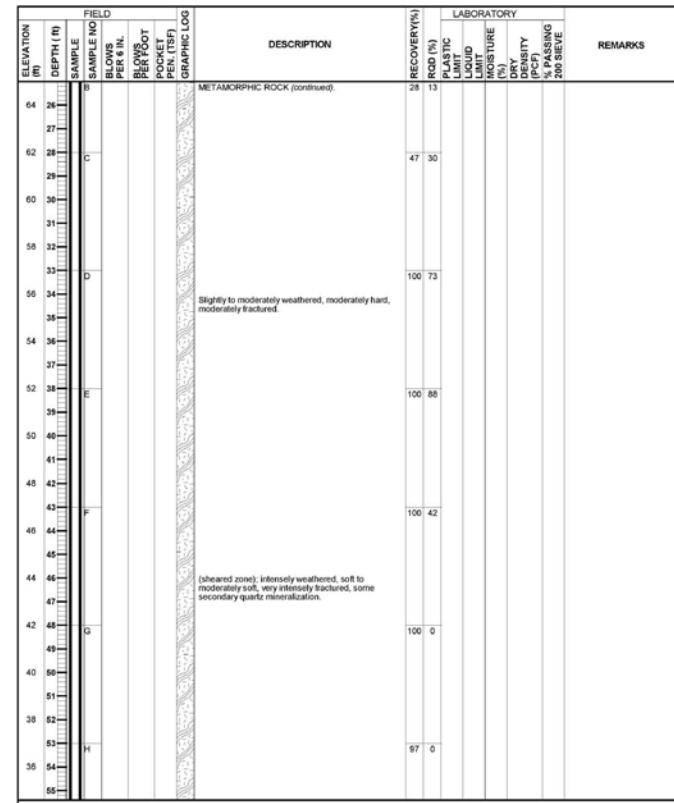
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 PROJECT: HBMWD Phase 2
 BORING: B7
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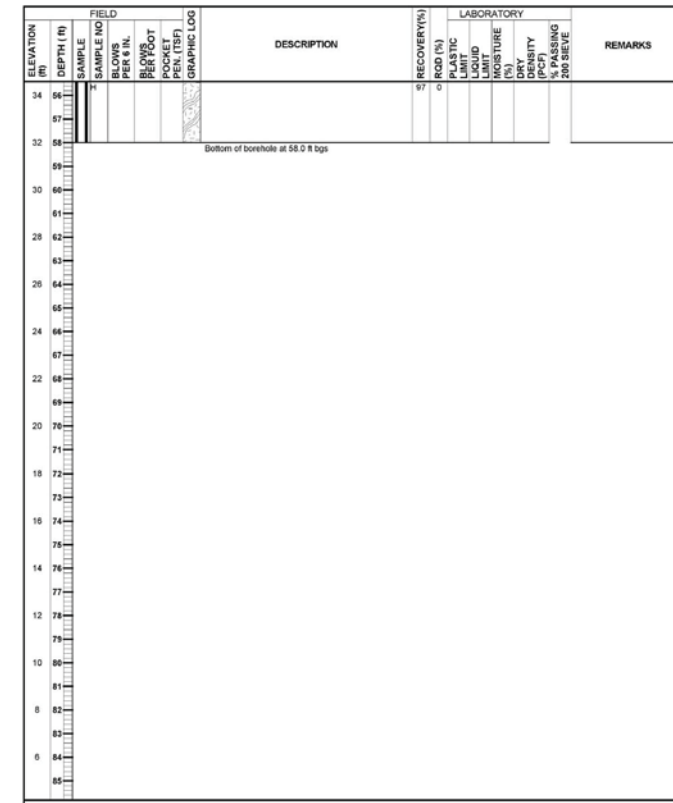
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 PROJECT: HBMWD Phase 2
 BORING: B8
 ENTRY BY: NBM
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 PROJECT: HBMWD Phase 2
 BORING: B7
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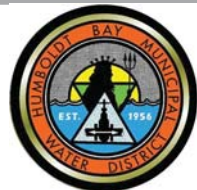
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 PROJECT: HBMWD Phase 2
 BORING: B7
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 PROJECT: HBMWD Phase 2
 BORING: B7
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NOTE:
 SEE SHEET G-004 FOR A PLAN VIEW OF APPROXIMATE BORING LOCATIONS AND SHEET C-101 FOR AN INTERPRETATION OF THE GEOTECHNICAL PROFILE ALONG THE HDD ALIGNMENT. REFERENCE THE GEOTECHNICAL REPORT, "HUMBOLDT BAY MUNICIPAL WATER DISTRICT, WATER TRANSMISSION PIPELINE REPLACEMENT UNDER MAD RIVER, BLUE LAKE AND FIELDBROOK-GLENDALE COMMUNITY SERVICES DISTRICT," CRAWFORD & ASSOCIATES, DECEMBER 14, 2017, FOR ADDITIONAL INFORMATION. THE GEOTECHNICAL REPORT IS INCLUDED AS AN ATTACHMENT TO THE TECHNICAL SPECIFICATIONS.

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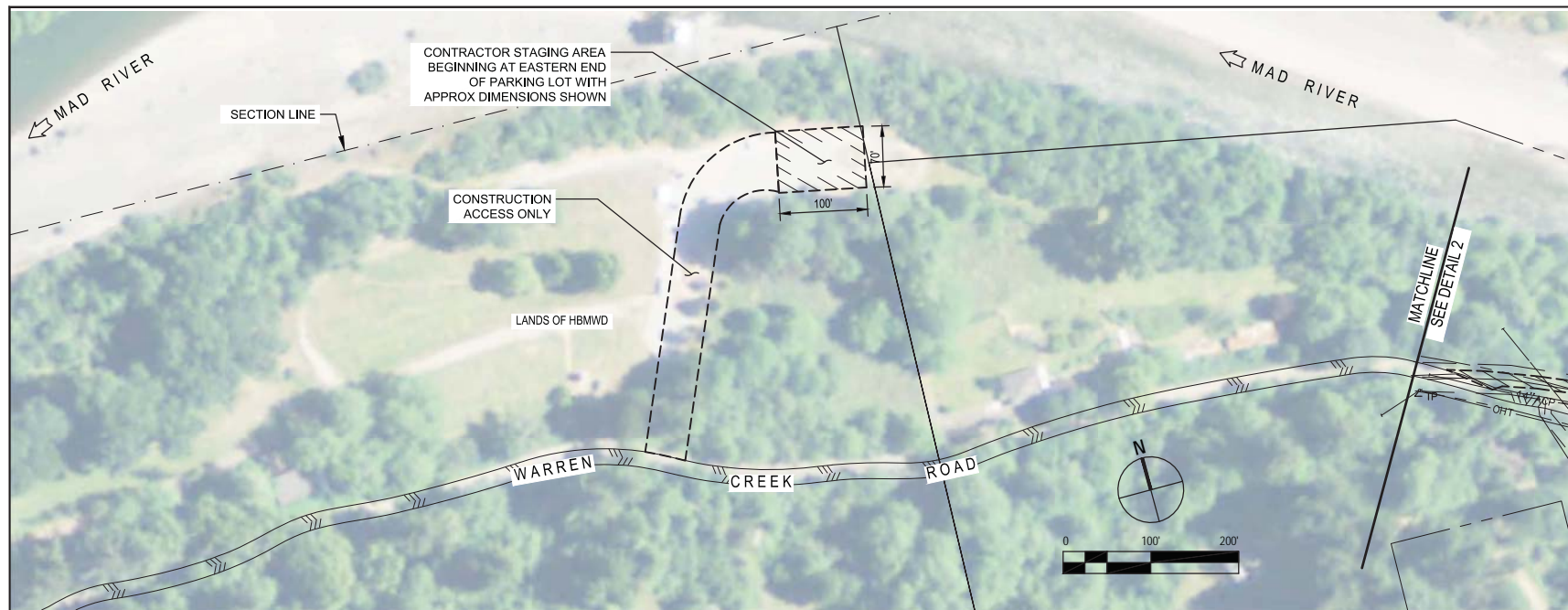
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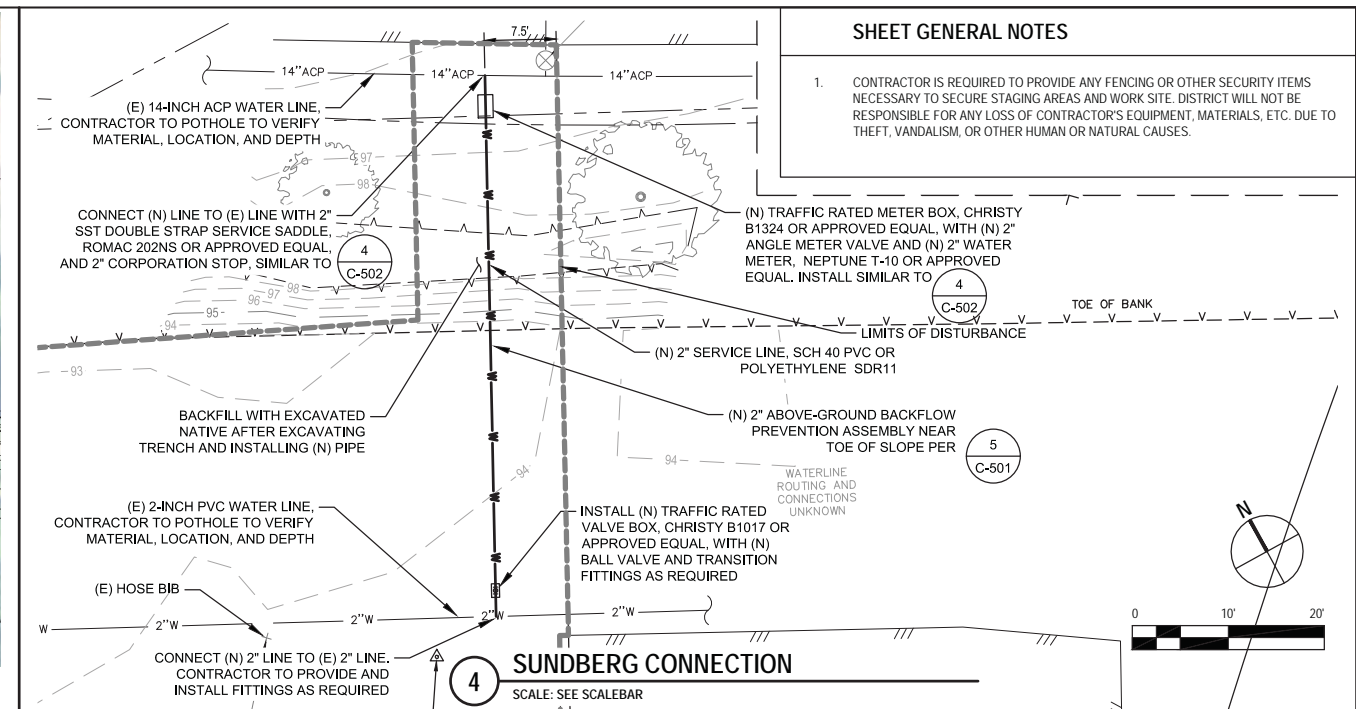
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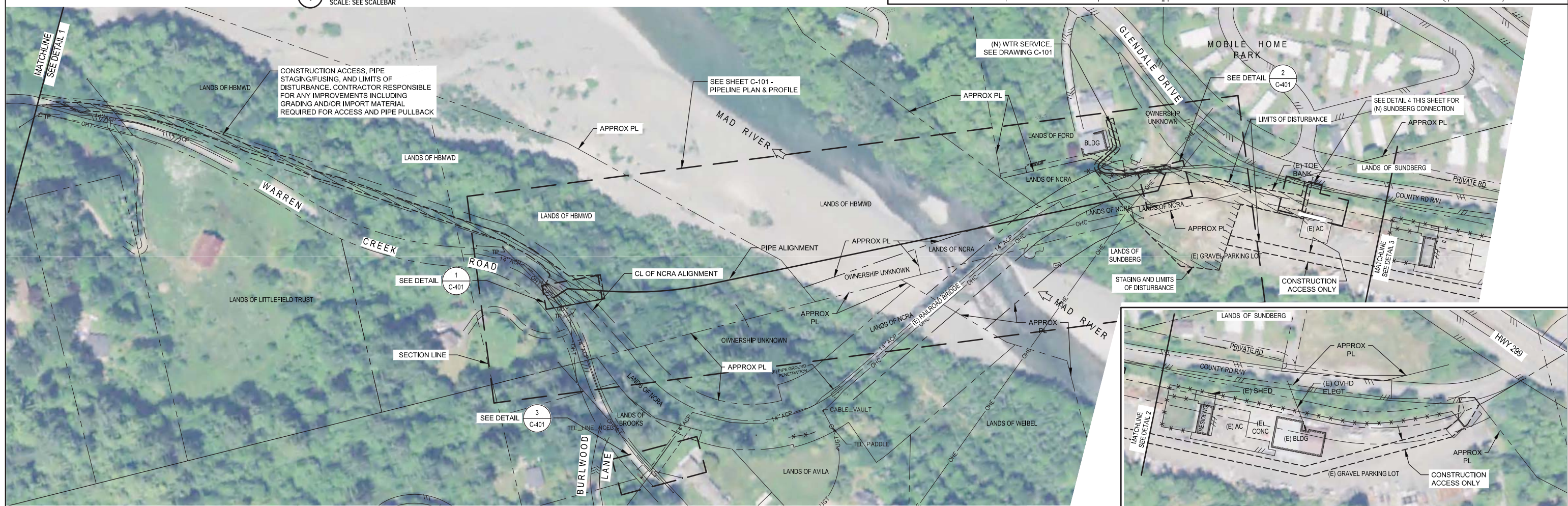
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Project	MAD RIVER PIPELINE CROSSING		
Title	BORING LOGS 2 OF 2		
Project No.	8411162		
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Sheet No.	G-006		
Sheet	6 of 11		



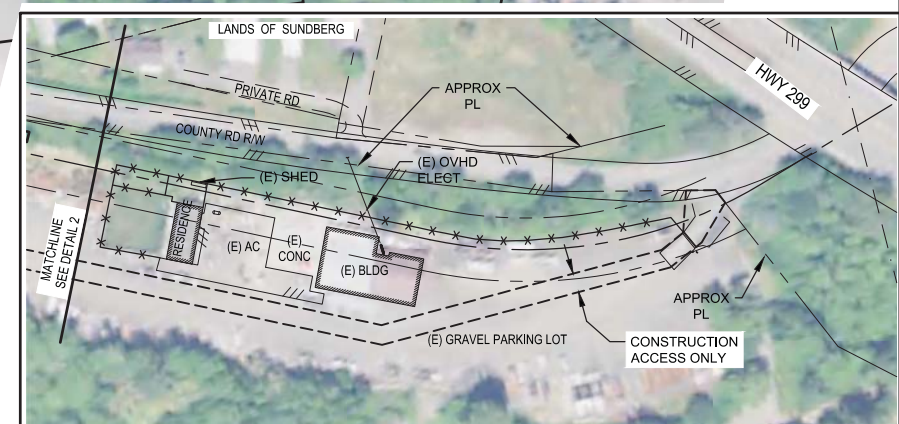
1 PARK 4 STAGING AND ACCESS
SCALE: SEE SCALEBAR



4 SUNDBERG CONNECTION
SCALE: SEE SCALEBAR

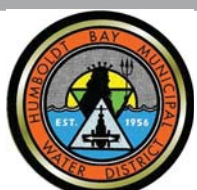


2 OVERALL CONSTRUCTION PLAN KEY, STAGING, AND ACCESS
SCALE: SEE SCALEBAR



3 EAST SIDE CONTINUATION - ACCESS PLAN
SCALE: SEE SCALEBAR

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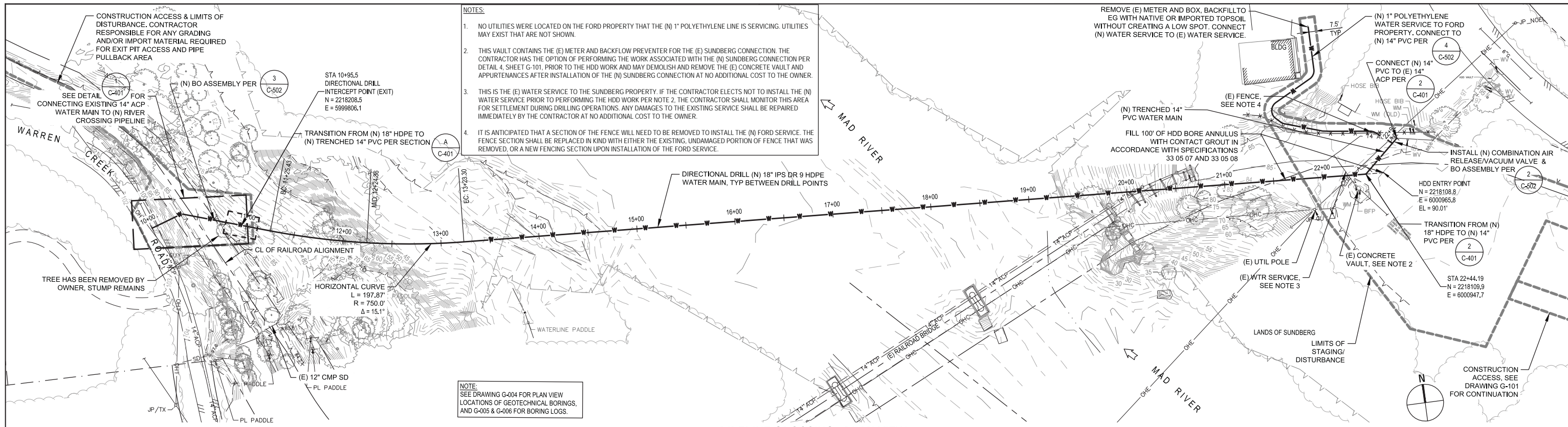
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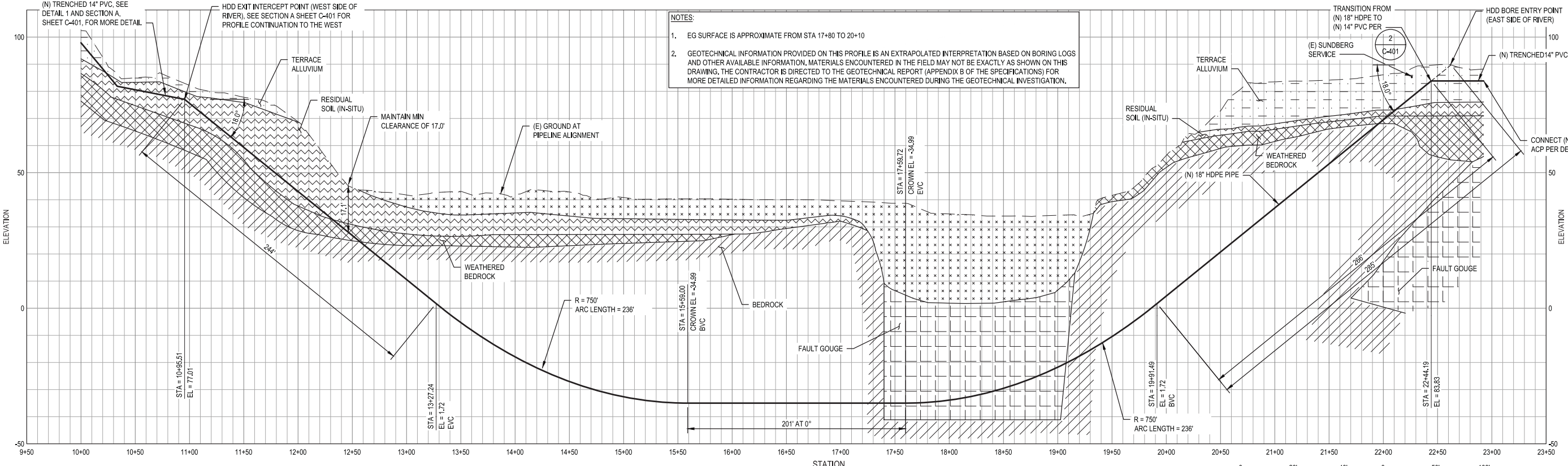
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Project No.	8411162		
Original Size	ANSI D		
Sheet No.	G-101		
Sheet	7 of 11		



1 PIPELINE CROSSING - PLAN VIEW
SCALE: SEE SCALEBAR



2 PIPELINE CROSSING - PROFILE
SCALE: SEE SCALEBAR

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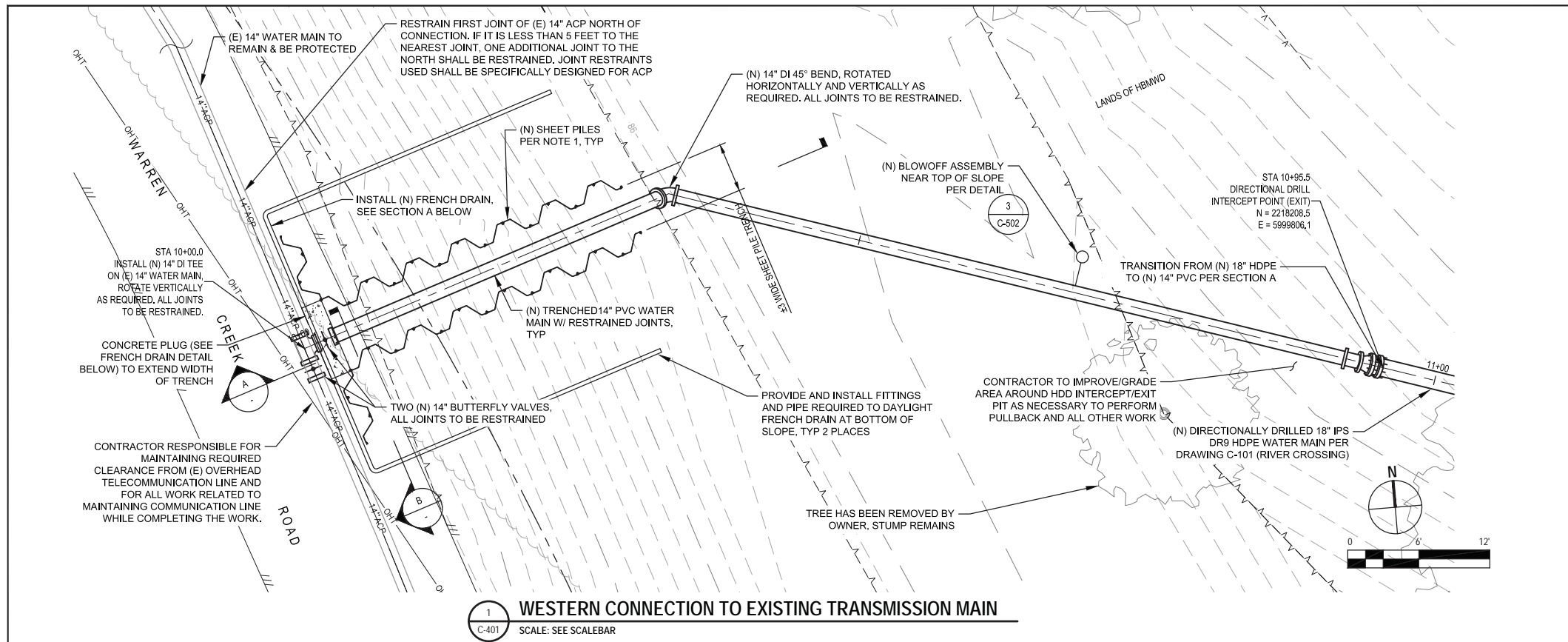
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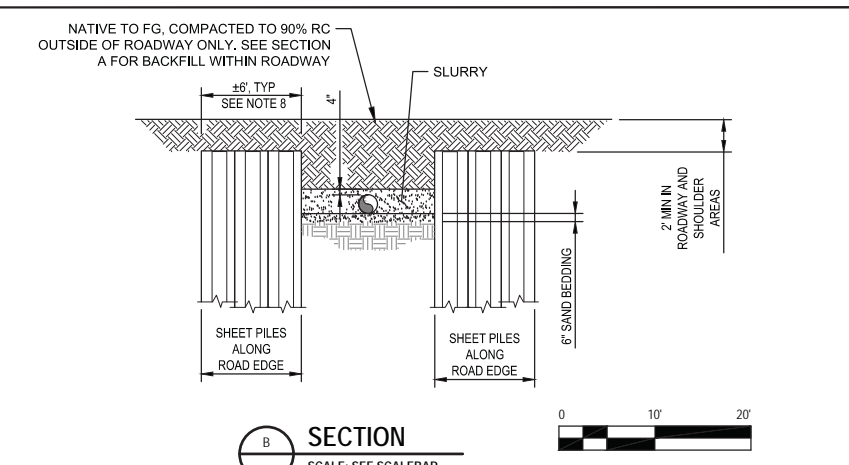
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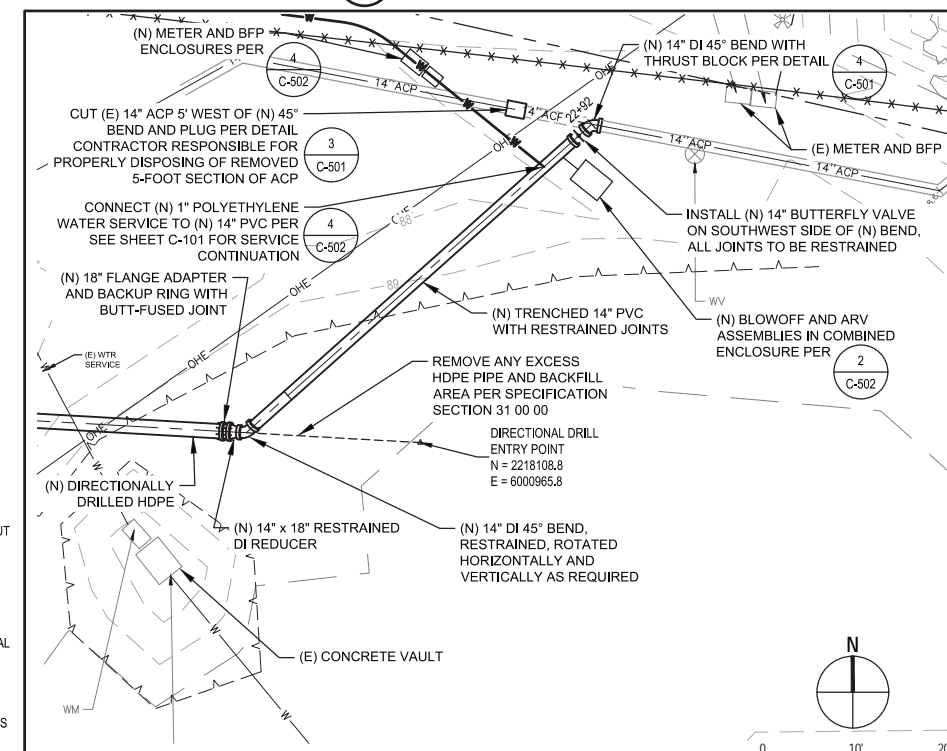
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Project	MAD RIVER PIPELINE CROSSING		
Title	PIPELINE PLAN AND PROFILE		
Project No.	8411162		
Original Size	ANSI D		
Sheet No.	C-101		
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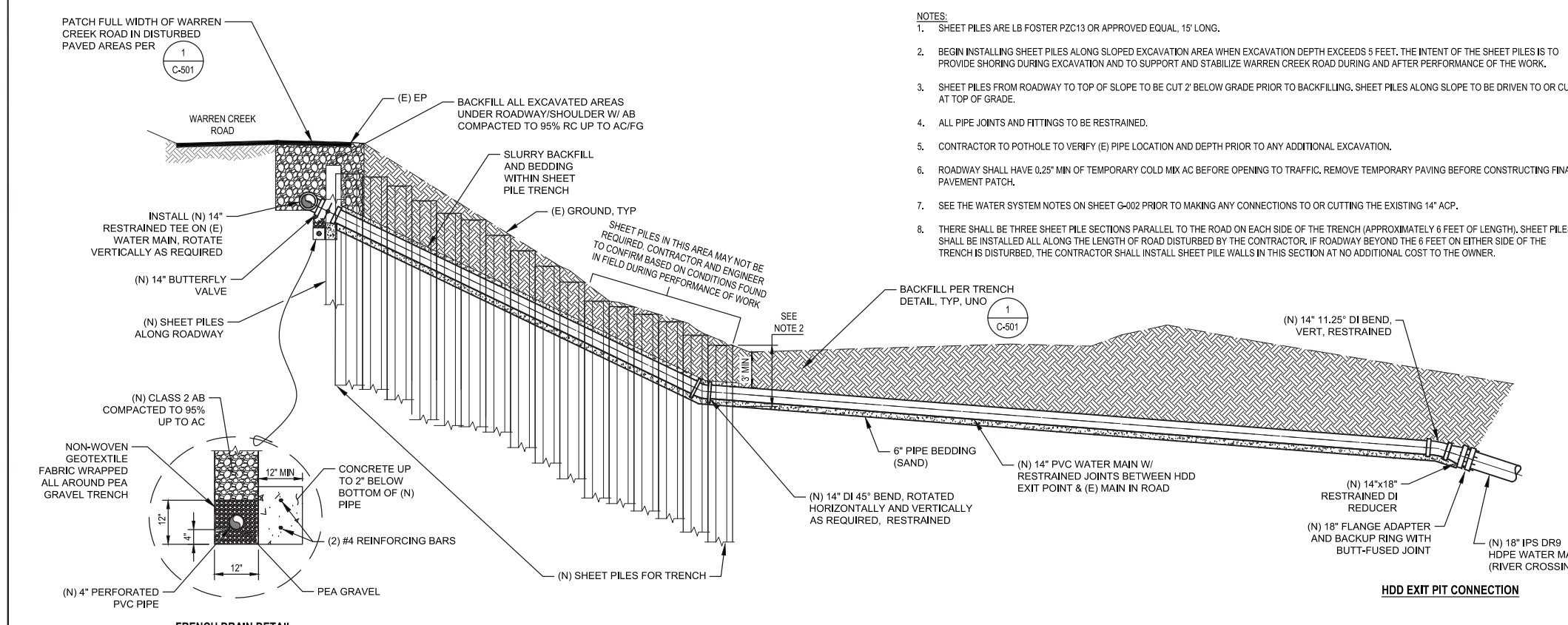
1 WESTERN CONNECTION TO EXISTING TRANSMISSION MAIN
SCALE: SEE SCALEBAR



B SECTION
SCALE: SEE SCALEBAR



2 EASTERN CONNECTION TO EXISTING TRANSMISSION MAIN
SCALE: SEE SCALEBAR

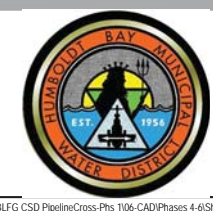


A SECTION
SCALE: SEE SCALEBAR

FRENCH DRAIN DETAIL

- NOTES:**
1. SHEET PILES ARE LB FOSTER PZC13 OR APPROVED EQUAL, 15' LONG.
 2. BEGIN INSTALLING SHEET PILES ALONG SLOPED EXCAVATION AREA WHEN EXCAVATION DEPTH EXCEEDS 5 FEET. THE INTENT OF THE SHEET PILES IS TO PROVIDE SHORING DURING EXCAVATION AND TO SUPPORT AND STABILIZE WARREN CREEK ROAD DURING AND AFTER PERFORMANCE OF THE WORK.
 3. SHEET PILES FROM ROADWAY TO TOP OF SLOPE TO BE CUT 2' BELOW GRADE PRIOR TO BACKFILLING. SHEET PILES ALONG SLOPE TO BE DRIVEN TO OR CUT AT TOP OF GRADE.
 4. ALL PIPE JOINTS AND FITTINGS TO BE RESTRAINED.
 5. CONTRACTOR TO POTHOLE TO VERIFY (E) PIPE LOCATION AND DEPTH PRIOR TO ANY ADDITIONAL EXCAVATION.
 6. ROADWAY SHALL HAVE 0.25\"/>

A		ISSUE FOR BID	NS	PK	2/9/18
No.	Issue	Drawn	Approved	Date	



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0 1"

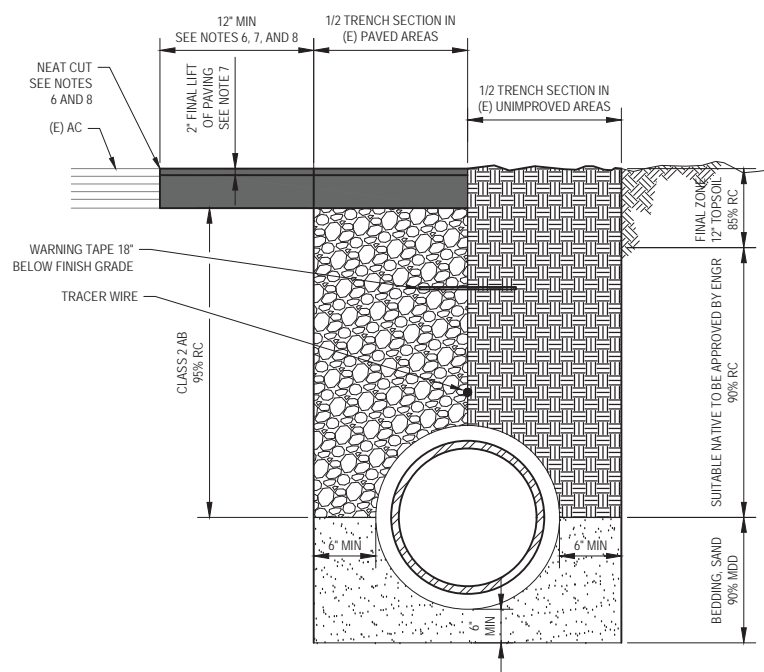
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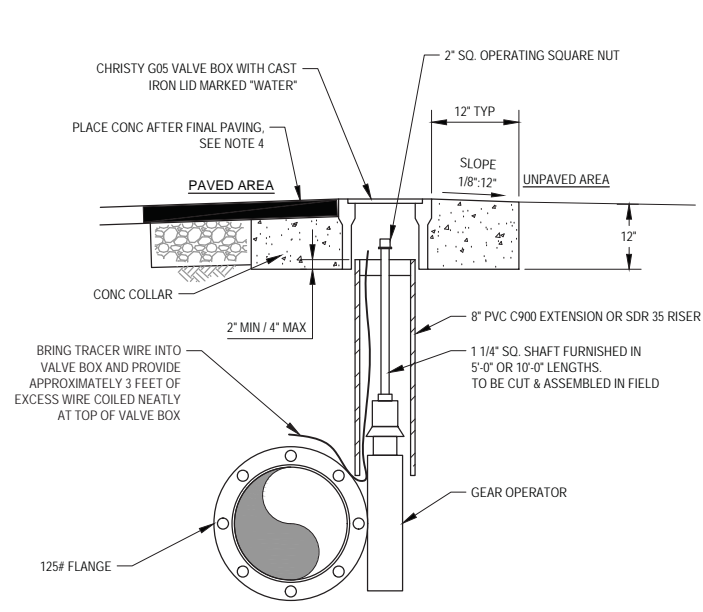
Drawn	S. DAVIS	Designer	N. STEVENS
Drafting Check	P. KASPARI	Design Check	P. KASPARI
Project Manager	P. KASPARI	Date	1/12/2018
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Client	HUMBOLDT BAY MUNICIPAL WATER DISTRICT		
Project	MAD RIVER PIPELINE CROSSING		
Title	CONNECTION AND ABANDONMENT DETAILS		
Project No.	8411162		
Original Size	ANSI D		
Sheet No.	C-401		
Sheet	9 of 11		



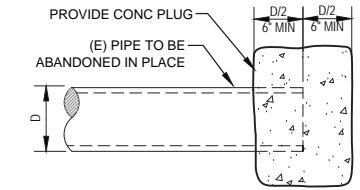
- NOTES:**
- REFER TO THE SPECIFICATION SECTION 31 23 00 (TRENCHING, BACKFILLING, AND COMPACTING) FOR EXCAVATION AND BACKFILL REQUIREMENTS.
 - ASPHALT CONCRETE (AC) MUST BE SAWCUT FULL DEPTH.
 - IF DISTANCE BETWEEN EDGE OF TRENCH TO EDGE OF PAVEMENT IS 4' OR LESS, THEN REPLACE ALL AC UP TO EDGE OF PAVEMENT.
 - FINAL PAVING SHALL CONSIST OF THE FULL WIDTH OF WARREN CREEK ROAD FOR THE ENTIRE SECTION DISTURBED.
 - THESE ARE MINIMUM REQUIREMENTS. IF OTHER JURISDICTIONAL (CITY, COUNTY, STATE) AGENCY REQUIREMENTS EXCEED THOSE SHOWN, THE HIGHER REQUIREMENTS SHALL BE MET.
 - ASPHALT CONCRETE (AC) MUST BE SAWCUT FULL DEPTH.
 - AC SHALL BE TYPE B, 1/2\"/>

1 TYPICAL TRENCH SECTIONS IN IMPROVED AND UNIMPROVED AREAS
C-501 NOT TO SCALE

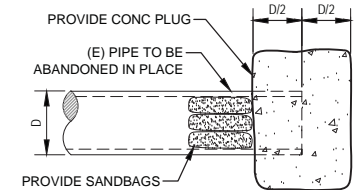


- NOTES:**
- VALVE BOX & LID SHALL BE RATED FOR AASHTO H-20 LOADINGS AS MANUFACTURED BY CHRISTY (No. G05).
 - ALL LIDS & GRADE RINGS SHALL HAVE MACHINED SEATING SURFACES.
 - EXTENSIONS SHALL BE AS MANUFACTURED FOR THE VALVE BOX SUPPLIED OR HDPE OR PVC PIPE OF CORRECT SIZE CAN BE USED.
 - VALVE BOX IS PLACED AFTER ROADWAY IS PAVED, CONSTRUCT CONC BASE TO TOP OF PAVEMENT.

2 STANDARD BUTTERFLY VALVE INSTALLATION DETAIL
C-501 NOT TO SCALE



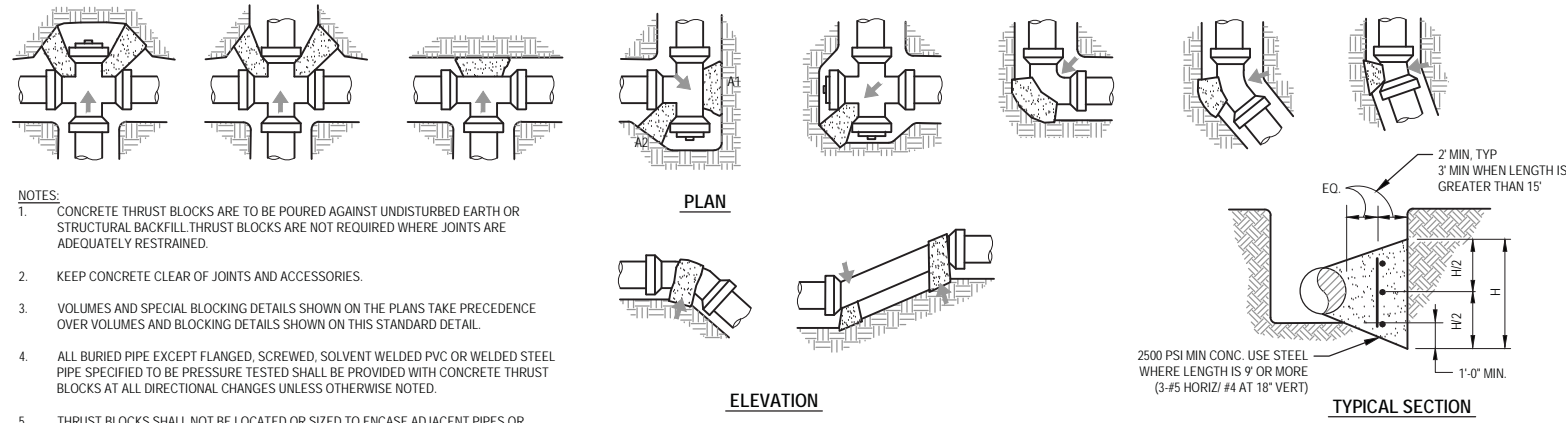
12\"/>



14\"/>

- NOTES:**
- PIPE PLUGS SHALL BE INSTALLED TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
 - SHALL BE INSPECTED BY THE OWNER'S REPRESENTATIVE BEFORE COVERING.

3 PLUG AND ABANDON EXISTING WATER MAIN
C-501 NOT TO SCALE

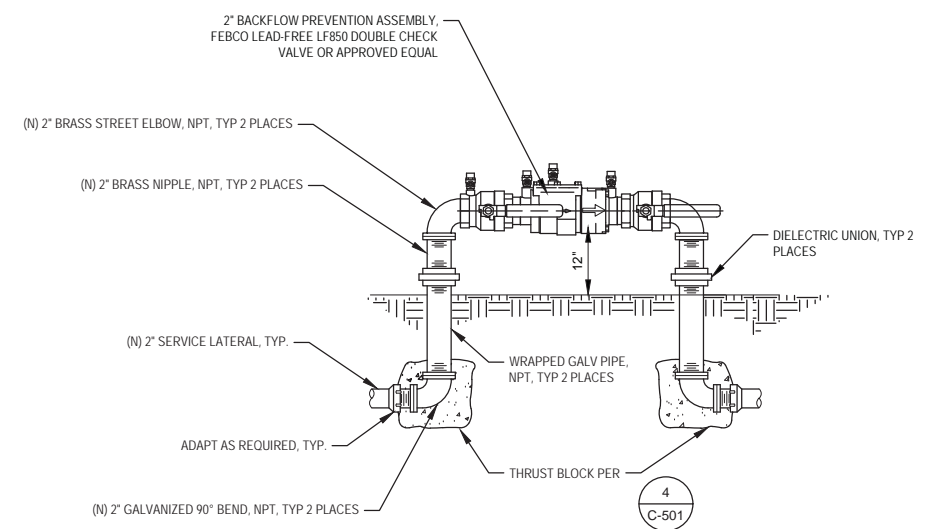


- NOTES:**
- CONCRETE THRUST BLOCKS ARE TO BE POURED AGAINST UNDISTURBED EARTH OR STRUCTURAL BACKFILL. THRUST BLOCKS ARE NOT REQUIRED WHERE JOINTS ARE ADEQUATELY RESTRAINED.
 - KEEP CONCRETE CLEAR OF JOINTS AND ACCESSORIES.
 - VOLUMES AND SPECIAL BLOCKING DETAILS SHOWN ON THE PLANS TAKE PRECEDENCE OVER VOLUMES AND BLOCKING DETAILS SHOWN ON THIS STANDARD DETAIL.
 - ALL BURIED PIPE EXCEPT FLANGED, SCREWED, SOLVENT WELDED PVC OR WELDED STEEL PIPE SPECIFIED TO BE PRESSURE TESTED SHALL BE PROVIDED WITH CONCRETE THRUST BLOCKS AT ALL DIRECTIONAL CHANGES UNLESS OTHERWISE NOTED.
 - THRUST BLOCKS SHALL NOT BE LOCATED OR SIZED TO ENCASE ADJACENT PIPES OR FITTINGS.
 - THE SIZE AND WEIGHT OF ALL UPLIFT THRUST BLOCKS SHALL BE AS DETERMINED BY ENGINEER.
 - THE BEARING AREAS ARE BASED ON TEST PRESSURE OF 150 PSI AND ALLOWABLE SOIL BEARING STRESS OF 1000 POUNDS PER SQUARE FOOT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION:
BEARING AREA = (TEST PRESSURE / 150) x (1000 / SOIL BEARING STRESS) x (TABLE VALUE)
 - THRUST BLOCKS REQUIRED AT ALL CHANGES IN DIRECTION OF PIPING UNLESS NOTED OTHERWISE.
 - CONTRACTOR TO PROVIDE ALL COMPONENTS.
 - ALL PIPE AND FITTINGS SHALL BE WRAPPED IN POLYETHYLENE TO PREVENT CORROSION AND CONC ADHESION.

BEARING AREA OF THRUST BLOCK IN SQ. FT.

PIPE SIZE	TEE, WYE, PLUG OR CAP	90° BEND PLUGGED CROSS	TEE PLUGGED				45° BEND	22 1/2° BEND	11 1/4° BEND
			A1	A2	A1	A2			
2, 4	1.5	2	2	1.5	1.5	1	1		
6	3	4.5	4.5	3	2.5	1.5	1		
8	5	7	7	5	4	2	1		
10	8	12	12	8	7	3	2		
12	12	17	17	12	10	5	3		
14	14	19.5	19.5	14	11	6	4		
16	15	21.5	21.5	15	12	6	4		

4 TYPICAL THRUST BLOCK DETAILS
C-501 NOT TO SCALE



5 ABOVE-GROUND BACKFLOW PREVENTER ASSEMBLY
C-501 NOT TO SCALE

- NOTES:**
- INSTALL PER LOCAL CODE.
 - CONTRACTOR TO PROVIDE ALL COMPONENTS.

A ISSUE FOR BID				
No.	Issue	Drawn	Approved	Date
		NS	PK	2/9/18



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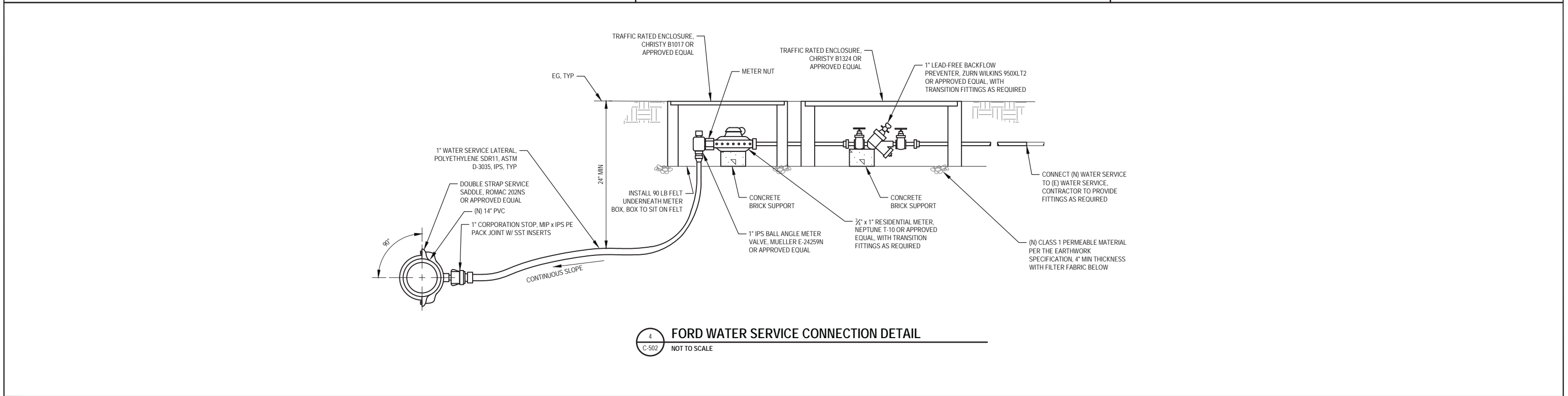
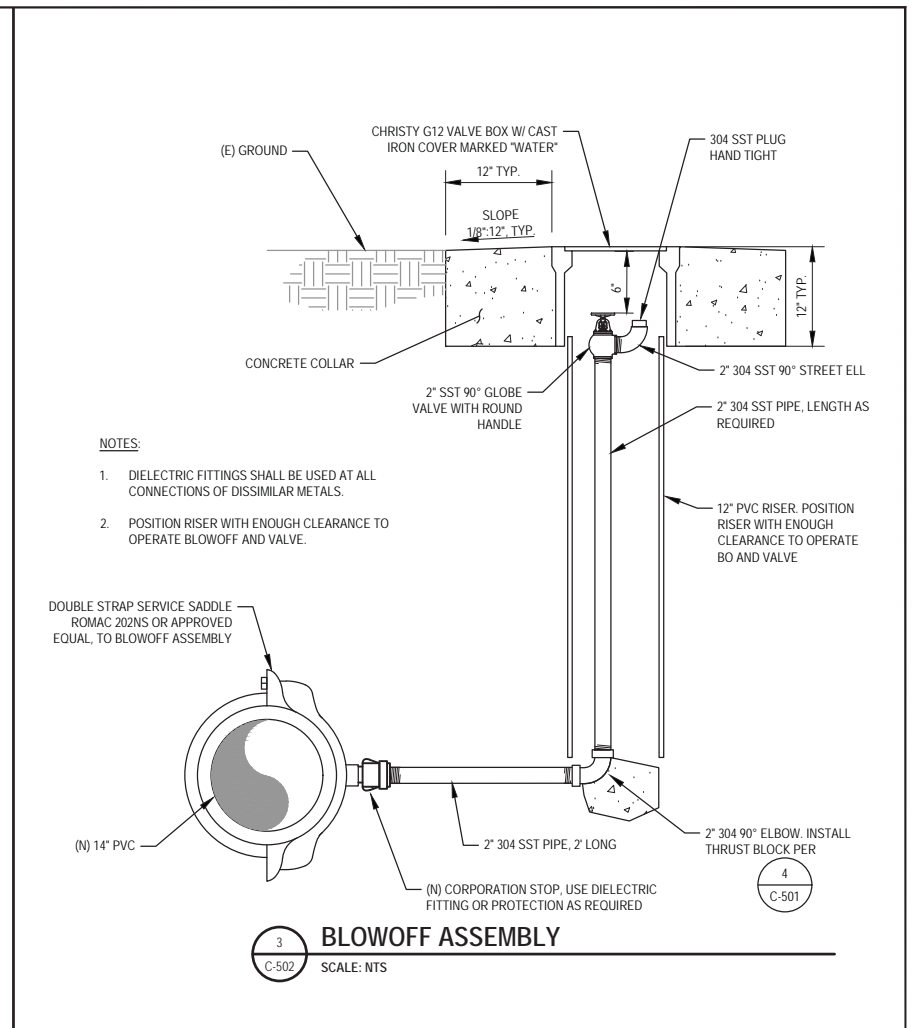
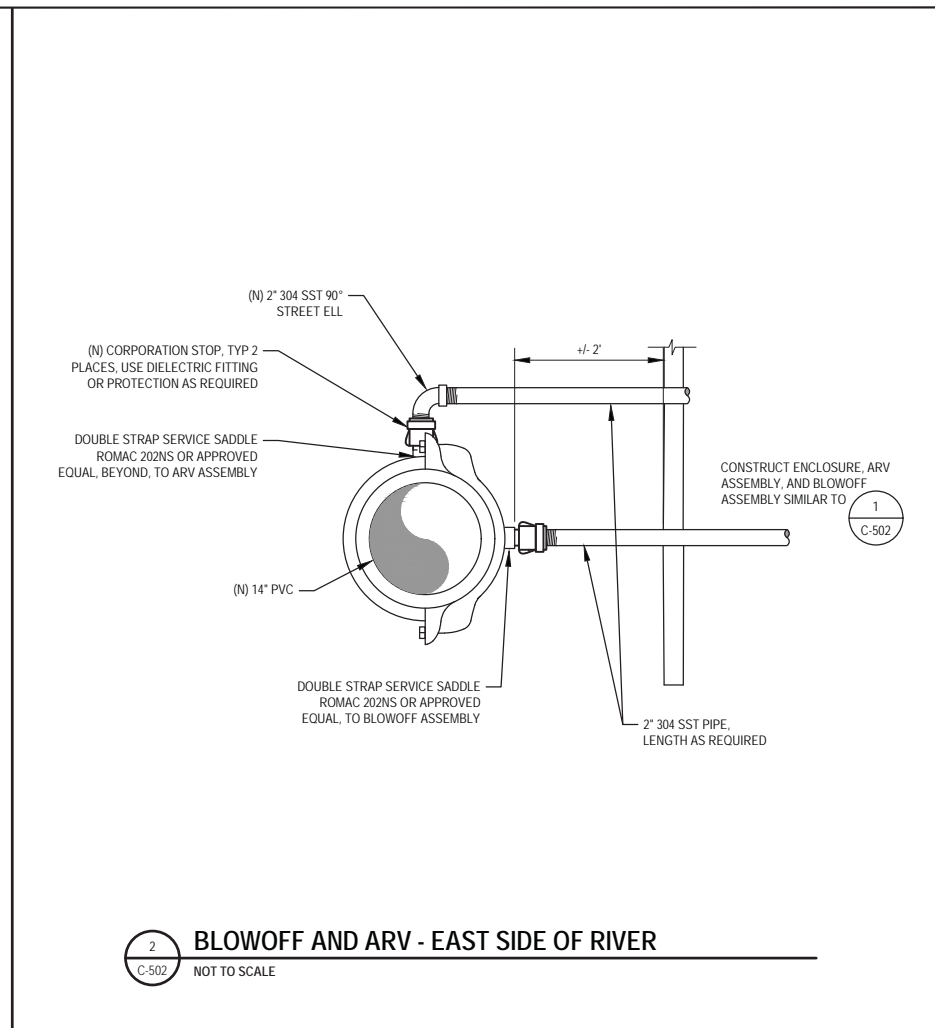
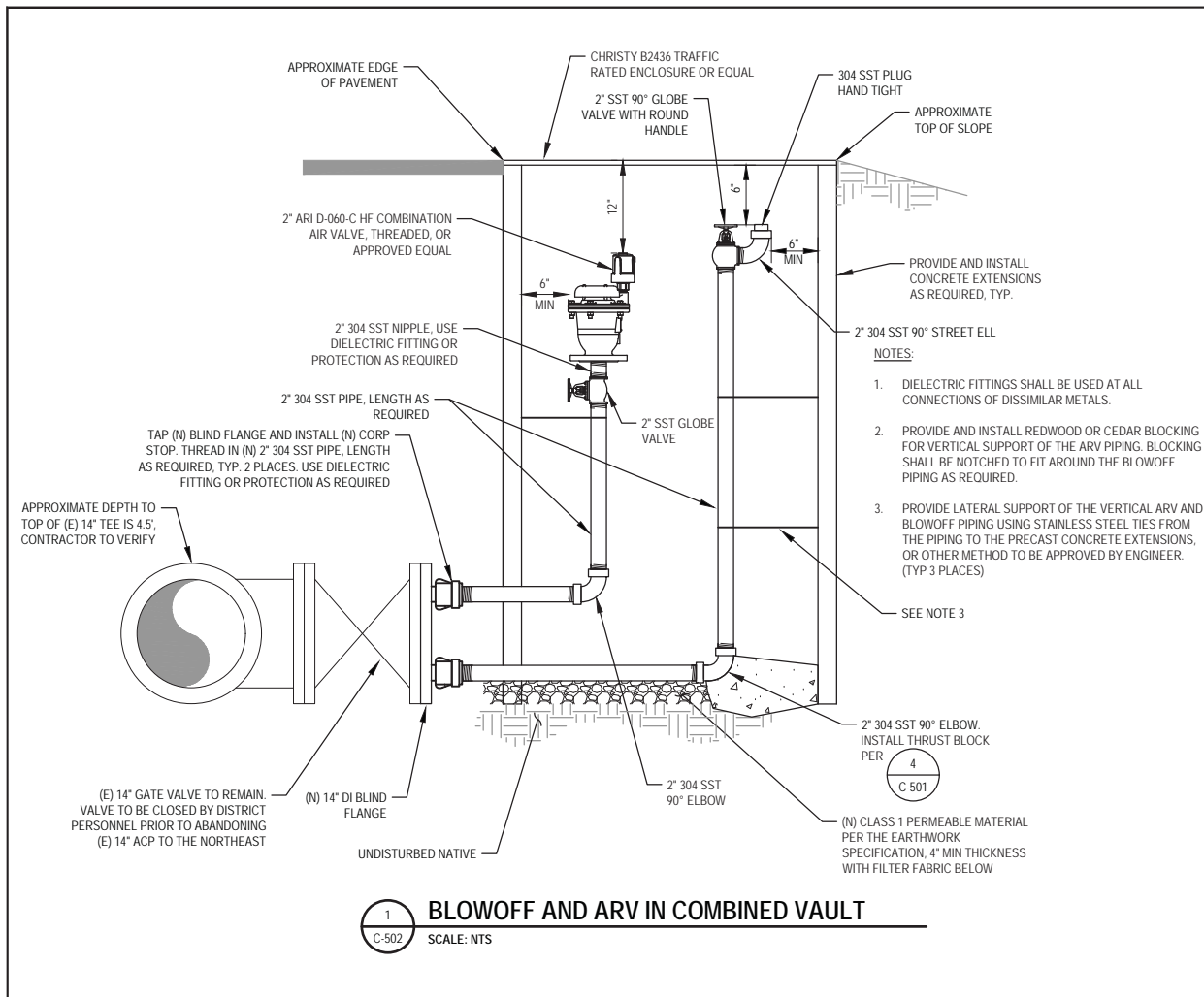
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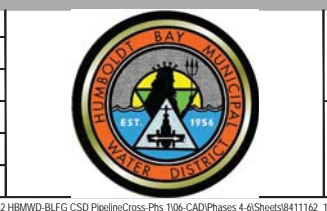
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Project Manager	P. KASPARI	Date	1/12/2018
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Project	MAD RIVER PIPELINE CROSSING		
Title	CIVIL DETAILS - 1 OF 2		
Project No.	8411162		
Original Size	ANSI D		
Sheet No.	C-501		
Sheet	10 of 11		

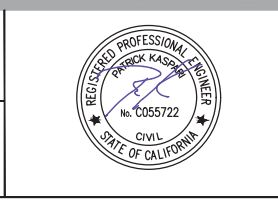


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Project	MAD RIVER PIPELINE CROSSING		
Title	CIVIL DETAILS - 2 OF 2		
Project No.	8411162		
Original Size	ANSI D		
Sheet No.	C-502		
Sheet	11 of 11		