

WESTERN MINI RANCHES/VAQUERO ESTATES SA

SANITARY SEWER IMPROVEMENTS

LARIMER COUNTY, COLORADO

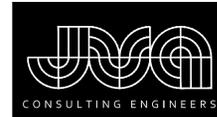
BIDDING DOCUMENTS

Set No. _____

CONTACTS

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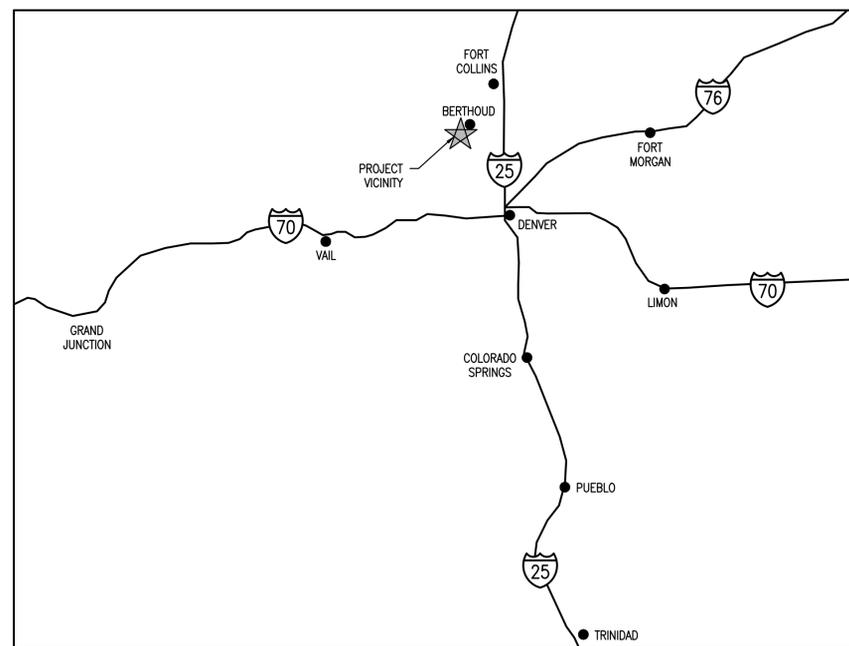
OCTOBER 2016

PREPARED UNDER THE SUPERVISION OF

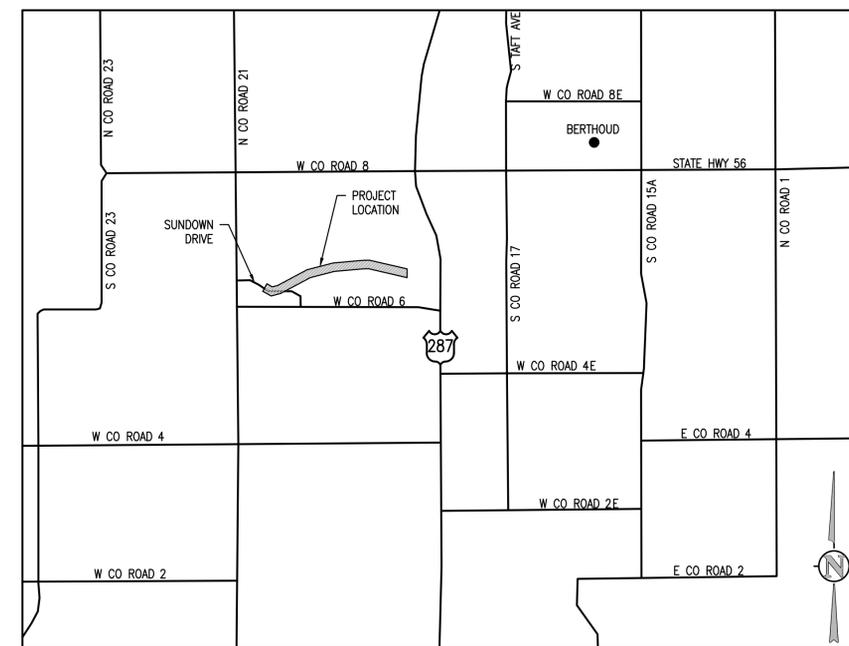
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VICINITY MAP
 NTS



PROJECT LOCATION MAP
 NTS

ABBREVIATIONS

AASHTO	AMERICAN ASSOC. OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS	INCL	INCLUDED
ABAN	ABANDON	ID	INSIDE DIAMETER
AC	ASPHALTIC CONCRETE PAVING	IN	INLET
ADDL	ADDITIONAL	INSUL	INSULATION
ADDM	ADDENDUM	INV	INVERT
ADJ	ADJUSTABLE	IRR	IRRIGATION
AL	ALUMINUM	JTS	JOINTS
ALT	ALTERNATE		
AMT	AMOUNT	KB	KICKBLOCK
APPROX	APPROXIMATE	KO	KNOCKOUT
ARCH	ARCHITECT(URAL)	KPL	KICK PLATE
ARV	AIR RELIEF VALVE	KWY	KEYWAY
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS		
ASPH	ASPHALT	L	LEFT OR LITER
ASSY	ASSEMBLY	LSCAPE	LANDSCAPE(ING)
ASYM	ASYMMETRICAL	LP	LINEAR FOOT
AUTO	AUTOMATIC	LP	LOW PRESSURE OR LIGHT POLE
AVG	AVERAGE	LT	LIGHT
AWWA	AMERICAN WATER WORKS ASSOC.	LWL	LOW WATER LEVEL
BC	BACK OF CURB	MAINT	MAINTENANCE
BFV	BUTTERFLY VALVE	MAN	MANUAL
BLDG	BUILDING	MATL	MATERIAL
BLK	BLOCK	MAX	MAXIMUM
BM	BENCH MARK	MECH	MECHANICAL
BMP	BEST MANAGEMENT PRACTICE	MFR	MANUFACTURER
BS	BACKSIGHT	MH	MANHOLE
BOT	BOTTOM	MIN	MINIMUM
BSMT	BASEMENT	MISC	MISCELLANEOUS
BVCE	BEGIN VERTICAL CURVE ELEVATION	MJ	MECHANICAL JOINT
BVCS	BEGIN VERTICAL CURVE STATION		
BW	BOTTOM OF WALL	N	NORTH
		NA	NOT APPLICABLE
CB	CATCH BASIN	NC	NOT IN CONTRACT
CCW	COUNTER CLOCKWISE	NPT	NATIONAL PIPE THREAD
CDOT	COLORADO DEPARTMENT OF TRANSPORTATION	NTS	NOT TO SCALE
CHWR	CHILLED WATER RETURN		
CHWS	CHILLED WATER SUPPLY	OC	ON CENTER
CIP	CAST IRON PIPE	OD	OUTSIDE DIAMETER
CJ	CONSTRUCTION JOINT	OPP	OPPOSITE
CL	CENTER LINE OR CHAIN LINK	OPT	OPTIONAL
CLR	CLEAR		
CMP	CORRUGATED METAL PIPE	PC	POINT OF CURVATURE
CMU	CONCRETE MASONRY UNIT	PCO	PRESSURE CLEAN OUT
CO	CLEANOUT	PCR	POINT OF CURVE RETURN
CONC	CONCRETE	PI	POINT OF INTERSECTION
CONST	CONSTRUCTION	PVI	POINT OF VERTICAL INTERSECTION
CONT	CONTINUOUS(ATION)	PL	PROPERTY LINE
COR	CORNER	PE	POLYETHYLENE
CR	CONCENTRIC REDUCER	PFAB	PREFABRICATED
CTR	CENTER	PRELIM	PRELIMINARY
CY	CUBIC YARDS	PREP	PREPARATION
		PROP	PROPOSED
DEMO	DEMOLITION	PRV	PRESSURE REDUCING VALVE OR PRESSURE RELIEF VALVE
DIA	DIAMETER	PSF	POUNDS PER SQUARE FOOT
DIAG	DIAGONAL	PSI	POUNDS PER SQUARE INCH
DIP	DUCTILE IRON PIPE	PT	POINT OF TANGENCY
DOM	DOMESTIC	PV	PLUG VALVE
DN	DOWN	PVC	POLYVINYL CHLORIDE OR POINT OF VERTICAL CURVATURE PAVEMENT
DR	DRAIN	PVMT	
DWG	DRAWING		
DWL	DOWEL	QTY	QUANTITY
E	EAST	R	RIGHT
EA	EACH	RAD	RADIUS
ECC	ECCENTRIC	RCP	REINFORCED CONCRETE PIPE
EJ	EXPANSION JT	RD	ROOF DRAIN
EL	ELEVATION	RE	REFERENCE
ELB	ELBOW	RECT	RECTANGULAR
ELEC	ELECTRICAL	REIN	REINFORCE (D) (ING) (MENT)
ENGR	ENGINEER	REQD	REQUIRED
EOP	EDGE OF PAVEMENT	ROW	RIGHT OF WAY
EQ	EQUAL		
EQUIP	EQUIPMENT		

LEGEND

	SURVEY CONTROL POINT
	BENCHMARK
	PROPOSED MANHOLE
	EXISTING MANHOLE
	18" AREA DRAIN
	12" AREA DRAIN
	COMBINATION INLET
	TYPE R INLET
	TYPE 13 FIELD INLET
	FLARED END SECTION
	RIPRAP
	THRUST BLOCK
	TEE W/ THRUST BLOCK
	BEND W/ THRUST BLOCK
	END CAP W/ THRUST BLOCK
	GATE VALVE
	REDUCER/INCREASER
	WATER METER
	FIRE HYDRANT
	LIGHT POLE
	SIGN
	STRUCTURE IDENTIFICATION
	SIGN IDENTIFICATION
	STORM DRAIN
	ROOF DRAIN
	SANITARY SEWER
	WATER
	IRRIGATION
	UNDERDRAIN
	TRENCH DRAIN
	FRENCH DRAIN
	PERFORATED DRAIN
	TELEPHONE
	ELECTRIC
	OVERHEAD ELECTRIC
	UNDERGROUND ELECTRIC
	GAS
	CABLE TV
	FIBER OPTIC
	FLOW LINE
	FENCE
	ABANDON UTILITY
	DEMO SURFACE FEATURE
	DEMO SUBSURFACE FEATURE
	LIMITS OF SAWCUT
	PROPERTY LINE / ROW
	EASEMENT LINE
	LIMITS OF WORK
	LIMITS OF OVEREXCAVATION
	MATCHLINE
	PROPOSED BUILDING
	EXIST BUILDING
	BLDG ACCESS
	CONCRETE PAVING
	HEAVY DUTY ASPHALT PAVING
	EARTH
	GRASS PAVERS
	CONCRETE SCORING
	CURB & GUTTER
	GUTTER PAN
	SPILL/CATCH CURB TRANSITION
	PROPOSED INDEX CONTOUR
	PROPOSED INTERMEDIATE CONTOUR
	EXIST INDEX CONTOUR
	EXIST INTERMEDIATE CONTOUR
	PROPOSED SPOT ELEVATION
	EXIST SPOT ELEVATION

SURVEY LEGEND

	FOUND MONUMENT AS DESCRIBED
	CONCRETE
	EDGE OF ASPHALT
	GRAVEL
	FENCE
	CHAIN LINK FENCE
	SIGN
	DECIDUOUS TREE (TRUNK DIAMETER/DRIP LINE RADIUS)
	CONIFEROUS TREE (TRUNK DIAMETER/FRIP LINE RADIUS)
	WATER VALVE
	WATER MANHOLE
	SANITARY SEWER LINE
	SANITARY SEWER LINE SCALED FROM MAPS
	PROPOSED SANITARY SEWER LINE SCALED FROM MAPS
	SANITARY SEWER MANHOLE
	CLEANOUT
	STORM SEWER LINE
	ELECTRIC LINE
	TRANSFORMER
	ELECTRIC METER
	ELECTRIC RISER
	GAS LINE
	UNIDENTIFIED MANHOLE
	CENTERLINE
	TEST HOLE
	ELEVATION
	INVERT

GENERAL NOTES:

- ALL MATERIALS AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF THE TOWN OF BERTHOUD, LARIMER COUNTY, BERTHOUD FIRE PROTECTION REQUIREMENTS, AND APPLICABLE STATE AND LOCAL STANDARDS AND SPECIFICATIONS. THE CONTRACTOR SHALL HAVE IN POSSESSION AT THE JOB SITE AT ALL TIMES ONE (1) SIGNED COPY OF APPROVED PLANS, STANDARDS AND SPECIFICATIONS. CONTRACTOR SHALL CONSTRUCT AND MAINTAIN EMERGENCY ACCESS ROUTES TO THE SITE AND STRUCTURE AT ALL TIMES PER THE APPLICABLE BERTHOUD FIRE PROTECTION DISTRICT REQUIREMENTS. THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FOR ANY VARIANCE TO THE ABOVE DOCUMENTS. NOTIFY ENGINEER OF ANY CONFLICTING STANDARDS OR SPECIFICATIONS. IN THE EVENT OF ANY CONFLICTING STANDARD OR SPECIFICATION, THE MORE STRINGENT OR HIGHER QUALITY STANDARD, DETAIL OR SPECIFICATION SHALL APPLY.
- THE CONTRACTOR SHALL OBTAIN, AT HIS OWN EXPENSE, ALL APPLICABLE CODES, LICENSES, STANDARD SPECIFICATIONS, PERMITS, BONDS, ETC., WHICH ARE NECESSARY TO PERFORM THE PROPOSED WORK, INCLUDING, BUT NOT LIMITED TO A LOCAL AND STATE GROUNDWATER DISCHARGE AND COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT (CDPHE) STORMWATER DISCHARGE PERMIT ASSOCIATED WITH CONSTRUCTION ACTIVITY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE REQUIRED PARTY (OWNER, OWNER'S REPRESENTATIVE, MUNICIPAL/DISTRICT INSPECTOR, GEOTECHNICAL ENGINEER, ENGINEER AND/OR UTILITY OWNER) AT LEAST 48 HOURS PRIOR TO START OF ANY CONSTRUCTION. PRIOR TO BACKFILLING, AND AS REQUIRED BY JURISDICTIONAL AUTHORITY AND/OR PROJECT SPECIFICATIONS, THE CONTRACTOR SHALL CONTINUE WITH NOTIFICATIONS THROUGHOUT THE PROJECT AS REQUIRED BY THE STANDARDS AND SPECIFICATIONS.
- THE LOCATIONS OF EXISTING UTILITIES ARE SHOWN IN THE APPROXIMATE LOCATION BASED ON INFORMATION BY OTHERS. NOT ALL UTILITIES MAY BE SHOWN. THE CONTRACTOR SHALL DETERMINE THE EXACT SIZE, LOCATION AND TYPE OF ALL EXISTING UTILITIES WHETHER SHOWN OR NOT BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE FULLY AND SOLELY RESPONSIBLE FOR ANY AND ALL DAMAGES AND COSTS WHICH MIGHT OCCUR BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UTILITIES. THE CONTRACTOR SHALL NOTIFY ALL PUBLIC AND PRIVATE UTILITY COMPANIES AND DETERMINE THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO PROCEEDING WITH GRADING AND CONSTRUCTION. ALL WORK PERFORMED IN THE AREA OF UTILITIES SHALL BE PERFORMED AND INSPECTED ACCORDING TO THE REQUIREMENTS OF THE UTILITY OWNER. LIKEWISE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND MAPPING ANY EXISTING UTILITY (INCLUDING DEPTH) WHICH MAY CONFLICT WITH THE PROPOSED CONSTRUCTION, AND FOR RELOCATING ENCOUNTERED UTILITIES AS DIRECTED BY THE ENGINEER. CONTRACTOR SHALL CONTACT AND RECEIVE APPROVAL FROM OWNER AND ENGINEER BEFORE RELOCATING ANY ENCOUNTERED UTILITIES. CONTRACTOR RESPONSIBLE FOR SERVICE CONNECTIONS, AND RELOCATING AND RECONNECTING AFFECTED UTILITIES AS COORDINATED WITH UTILITY OWNER AND/OR ENGINEER, INCLUDING NON-MUNICIPAL UTILITIES (TELEPHONE, GAS, CABLE, ETC.), WHICH SHALL BE COORDINATED WITH THE UTILITY OWNER). THE CONTRACTOR SHALL IMMEDIATELY CONTACT ENGINEER UPON DISCOVERY OF A UTILITY DISCREPANCY OR CONFLICT. AT LEAST 48 HOURS PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO (1-800-922-1987, WWW.UNCC.ORG).
- THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS AT AND ADJACENT TO THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING THE PERFORMANCE OF THE WORK. THE CONTRACTOR SHALL PREPARE A TRAFFIC CONTROL PLAN FOR OWNER AND/OR CITY APPROVAL AND PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FENCING, FLAGMEN OR OTHER DEVICES NECESSARY TO PROVIDE FOR PUBLIC SAFETY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR AGREES TO COMPLY WITH THE PROVISIONS OF THE TRAFFIC CONTROL PLAN AND THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES," PART VI, FOR CONSTRUCTION SIGNAGE AND TRAFFIC CONTROL. ALL TEMPORARY AND PERMANENT TRAFFIC SIGNS SHALL COMPLY TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) WITH REGARD TO SIGN SHAPE, COLOR, SIZE, LETTERING, ETC. UNLESS OTHERWISE SPECIFIED. IF APPLICABLE, PART NUMBERS ON SIGNAGE DETAILS REFER TO MUTCD SIGN NUMBERS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ANY GROUNDWATER ENCOUNTERED DURING THE CONSTRUCTION OF ANY PORTION OF THIS PROJECT. GROUNDWATER SHALL BE PUMPED, PIPED, REMOVED AND DISPOSED OF IN A MANNER WHICH DOES NOT CAUSE FLOODING OF EXISTING STREETS NOR EROSION ON ABUTTING PROPERTIES IN ORDER TO CONSTRUCT THE IMPROVEMENTS SHOWN ON THESE PLANS. GROUNDWATER TO BE PUMPED SHALL BE TESTED, PERMITTED, AND PUMPED PER THE STATE OF COLORADO AND LOCAL GROUNDWATER DISCHARGING PERMIT REQUIREMENTS.
- RIM SHOWN ON PLANS ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATIONS. THE CONTRACTOR SHALL ADJUST RIMS AND OTHER IMPROVEMENTS BASED ON FINAL PAVEMENT AND FINISHED GRADE ELEVATIONS. THE MANHOLES DESIGNATED IN PLANS SHALL BE BURIED APPROXIMATELY THIRTEEN (13) INCHES BELOW FINAL GRADE ELEVATIONS.
- THE EXISTING AND PROPOSED ELEVATIONS OF FLATWORK, SIDEWALKS, CURBS, PAVING, ETC. AS SHOWN HEREON ARE BASED ON EXTRAPOLATION OF FIELD SURVEY DATA AND EXISTING CONDITIONS. AT CRITICAL AREAS AND SITE FEATURES, CONTRACTOR SHALL HAVE FORMWORK INSPECTED AND APPROVED BY OWNER, OWNER'S REPRESENTATIVE, OR ENGINEER PRIOR TO PLACING CONCRETE. MINOR ADJUSTMENTS, AS APPROVED, TO PROPOSED GRADES, INVERTS, ETC. MAY BE REQUIRED TO PREVENT PONDING OR SLOPE NOT IN CONFORMANCE WITH MUNICIPAL STANDARDS. ALL FLATWORK MUST PREVENT PONDING AND PROVIDE POSITIVE DRAINAGE AWAY FROM EXISTING AND PROPOSED BUILDINGS, WALLS, ROOF DRAIN OUTFALLS, ACROSS DRIVES AND WALKS, ETC., TOWARDS THE PROPOSED INTENDED DRAINAGE FEATURES AND CONVEYANCES.
- FINAL LIMITS OF REQUIRED ASPHALT SAWCUTTING AND PATCHING MAY VARY FROM LIMITS SHOWN ON PLANS. CONTRACTOR TO PROVIDE SAWCUT AND PATCH WORK TO ACHIEVE POSITIVE DRAINAGE AND A SMOOTH TRANSITION TO EXISTING ASPHALT WITHIN SLOPES ACCEPTABLE TO THE ENGINEER AND WITHIN MUNICIPAL STANDARDS. CONTRACTOR SHALL PROVIDE ADDITIONAL SAWCUTTING AND PATCHING AT UTILITY WORK, CONNECTION POINTS TO EXISTING PAVEMENT AND FEATURES, ETC. THAT MAY NOT BE DELINEATED ON PLANS.
- ANY EXISTING MONITORING WELLS, CLEANOUTS, VALVE BOXES, ETC. TO BE PROTECTED AND TO REMAIN IN SERVICE. IF FEATURES EXIST, EXTEND OR LOWER TO FINAL SURFACE WITH LIKE KIND CAP WITH STANDARD CAST ACCESS LID WITH SAME MARKINGS. IN LANDSCAPED AREAS PROVIDE A CONCRETE COLLAR (18"x18"x6" THICK) AT ALL EXISTING AND PROPOSED MONITORING WELLS, CLEANOUTS, VALVE BOXES, ETC.
- PIPE LENGTHS AND HORIZONTAL CONTROL POINTS SHOWN ARE FROM CENTER OF STRUCTURES, END OF FLARED END SECTIONS, ETC. SEE STRUCTURE DETAILS FOR EXACT HORIZONTAL CONTROL LOCATION. CONTRACTOR IS RESPONSIBLE FOR ADJUSTING ACTUAL PIPE LENGTHS TO ACCOUNT FOR STRUCTURES AND LENGTH OF FLARED END SECTIONS.
- ALL SURPLUS MATERIALS, TOOLS, AND TEMPORARY STRUCTURES, FURNISHED BY THE CONTRACTOR, SHALL BE REMOVED FROM THE PROJECT SITE BY THE CONTRACTOR. ALL DEBRIS AND RUBBISH CAUSED BY THE OPERATIONS OF THE CONTRACTOR SHALL BE REMOVED, AND THE AREA OCCUPIED DURING CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO ITS ORIGINAL CONDITION, WITHIN 48 HOURS OF PROJECT COMPLETION, UNLESS OTHERWISE DIRECTED BY THE MUNICIPALITY OR OWNER'S REPRESENTATIVE.
- THE CONTRACTOR IS REQUIRED TO PROVIDE AND MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH THE LOCAL JURISDICTION, THE STATE OF COLORADO, URBAN DRAINAGE AND FLOOD CONTROL DISTRICT "URBAN STORM DRAINAGE CRITERIA MANUAL VOLUME 3," THE M-STANDARD PLANS OF THE COLORADO DEPARTMENT OF TRANSPORTATION, AND THE APPROVED EROSION CONTROL PLAN. JURISDICTIONAL AUTHORITY MAY REQUIRE THE CONTRACTOR TO PROVIDE ADDITIONAL EROSION CONTROL MEASURES AT THE CONTRACTOR'S EXPENSE DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE PLANS DO NOT FUNCTION AS INTENDED. THE CONTRACTOR IS RESPONSIBLE FOR PROHIBITING SILT AND DEBRIS LADEN RUNOFF FROM LEAVING THE SITE, AND FOR KEEPING ALL PUBLIC AREAS FREE OF MUD AND DEBRIS. THE CONTRACTOR IS RESPONSIBLE FOR RE-ESTABLISHING FINAL GRADES AND FOR REMOVING ACCUMULATED SEDIMENTATION FROM ALL AREAS INCLUDING SWALES AND DETENTION/WATER QUALITY AREAS. CONTRACTOR SHALL REMOVE TEMPORARY EROSION CONTROL MEASURES AND REPAIR AREAS AS REQUIRED AFTER VEGETATION IS ESTABLISHED AND ACCEPTED BY OWNER AND MUNICIPALITY.
- BENCHMARK INFORMATION: TOPOGRAPHIC INFORMATION WAS PROVIDED BY FLATIRON SURVEYING, INC. SEE TOPOGRAPHIC SURVEY EXHIBIT DATED JANUARY 11, 2016. A GPS DERIVED ELEVATION WAS ESTABLISHED AT AN ONSITE BENCHMARK AT THE NORTHEAST FENCE CORNER OF THE POND AREA, BEING A NO. 4 REBAR WITH A BROKEN YELLOW PLASTIC CAP, ILLEGIBLE WITH AN ELEVATION OF 5036.09 FEET. A CHECK SHOT, 0.1±, WAS TAKEN ON NGS POINT K 410, BEING STEEL ROD WITH NGS CAP, MARKED "K 410, 1984" LOCATED 0.7 MILES FROM SITE, WITH A PUBLISHED ELEVATION OF 5066.70 FEET (NAVD83). NO DIFFERENTIAL LEVELING WAS PERFORMED TO ESTABLISH THIS ELEVATION.
- HORIZONTAL CONTROL INFORMATION: HORIZONTAL CONTROL COORDINATES ARE BASED ON THE REFERENCED SURVEY AND ARE PROVIDED BY THE FOLLOWING POINTS AS SHOWN ON THE PLANS:

CP-1	ONSITE BENCHMARK, NORTHEAST FENCE CORNER OF THE POND AREA, NO. 4 REBAR WITH BROKEN YELLOW PLASTIC CAP, ELEV: 5036.09 N1349803.06 E3104477.91
CP-2	LATH CENTERLINE GAS 1+160.00, ELEV:5028.56 N1350367.95 E3105494.55
CP-3	CP-BERM 1.5AC N05 ELEV:5046.06 N1349551.00 E3104367.82
CP-4	CP-JOYCE 1.5AC N06 ELEV:5043.50 N1349541.87 E3104922.04

BASIS OF BEARINGS: SEE PLANS

- PROTECT ALL TREES AND VEGETATION. PLACE CONSTRUCTION FENCING AT DRIP LINE OF TREES AND PLANTS NEAR THE WORK ZONE. DEEP WATER TREES WEEKLY. HAND EXCAVATION REQUIRED AT ROOT ZONES WHERE PROPOSED PAVING OR UTILITY WORK IS WITHIN DRIPLINE OF TREES.
- THE CONTRACTOR SHALL FURNISH THE ENGINEER OF RECORD A COMPLETE SET OF CONSTRUCTION RECORD DRAWINGS ("AS-BUILTS"), FOR THE CONSTRUCTED IMPROVEMENTS. THE PLANS SHALL SHOW SUFFICIENT DIMENSION TIES TO PERMANENT SURFACE FEATURES FOR ALL BURIED FACILITIES TO ALLOW FOR FUTURE LOCATING. THE PLANS SHALL SHOW FINAL PAVEMENT, CONTOURS, MANHOLE, PIPE, AND INLET LOCATIONS, INVERTS, SIZES OF ALL UTILITIES, AND ANY VARIATIONS FROM THE APPROVED PLAN. ENGINEER WILL PRODUCE FINAL RECORD DRAWINGS.

SYMBOLS

	DETAIL TITLE
	DETAIL NUMBER IDENTIFICATION
	SHEETS WHERE THE SECTION OR ELEVATION IS CUT OR CALLED OUT
	- INDICATES SAME DRAWING
	DETAIL TITLE
	DETAIL NUMBER IDENTIFICATION
	SHEET WHERE THE DETAIL IS DRAWN
	- INDICATES SAME DRAWING
	DETAIL MARKER
	REVISION CLOUD
	REVISION NUMBER



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REVISION DESCRIPTION
 NO. DATE DESD DWN

DESIGNED BY:	MMR / JPM
DRAWN BY:	LAT
CHECKED BY:	KAT
JOB #:	2192.2c
DATE:	OCTOBER 2016
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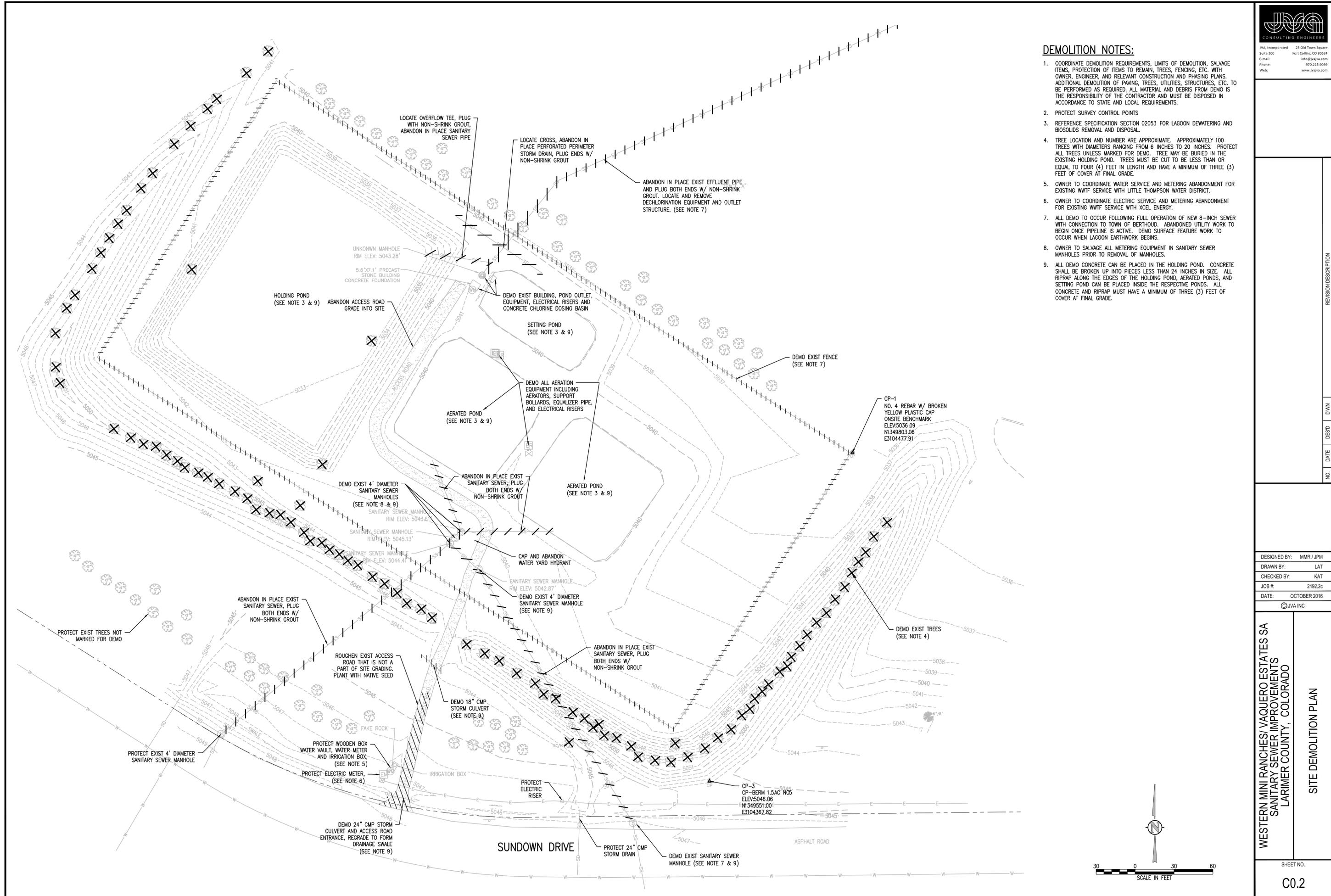
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C0.1



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DEMOLITION NOTES:

- COORDINATE DEMOLITION REQUIREMENTS, LIMITS OF DEMOLITION, SALVAGE ITEMS, PROTECTION OF ITEMS TO REMAIN, TREES, FENCING, ETC. WITH OWNER, ENGINEER, AND RELEVANT CONSTRUCTION AND PHASING PLANS. ADDITIONAL DEMOLITION OF PAVING, TREES, UTILITIES, STRUCTURES, ETC. TO BE PERFORMED AS REQUIRED. ALL MATERIAL AND DEBRIS FROM DEMO IS THE RESPONSIBILITY OF THE CONTRACTOR AND MUST BE DISPOSED IN ACCORDANCE TO STATE AND LOCAL REQUIREMENTS.
- PROTECT SURVEY CONTROL POINTS
- REFERENCE SPECIFICATION SECTION 02053 FOR LAGOON DEWATERING AND BIOSOLIDS REMOVAL AND DISPOSAL.
- TREE LOCATION AND NUMBER ARE APPROXIMATE. APPROXIMATELY 100 TREES WITH DIAMETERS RANGING FROM 6 INCHES TO 20 INCHES. PROTECT ALL TREES UNLESS MARKED FOR DEMO. TREE MAY BE BURIED IN THE EXISTING HOLDING POND. TREES MUST BE CUT TO BE LESS THAN OR EQUAL TO FOUR (4) FEET IN LENGTH AND HAVE A MINIMUM OF THREE (3) FEET OF COVER AT FINAL GRADE.
- OWNER TO COORDINATE WATER SERVICE AND METERING ABANDONMENT FOR EXISTING WWTF SERVICE WITH LITTLE THOMPSON WATER DISTRICT.
- OWNER TO COORDINATE ELECTRIC SERVICE AND METERING ABANDONMENT FOR EXISTING WWTF SERVICE WITH XCEL ENERGY.
- ALL DEMO TO OCCUR FOLLOWING FULL OPERATION OF NEW 8-INCH SEWER WITH CONNECTION TO TOWN OF BERTHOUD. ABANDONED UTILITY WORK TO BEGIN ONCE PIPELINE IS ACTIVE. DEMO SURFACE FEATURE WORK TO OCCUR WHEN LAGOON EARTHWORK BEGINS.
- OWNER TO SALVAGE ALL METERING EQUIPMENT IN SANITARY SEWER MANHOLES PRIOR TO REMOVAL OF MANHOLES.
- ALL DEMO CONCRETE CAN BE PLACED IN THE HOLDING POND. CONCRETE SHALL BE BROKEN UP INTO PIECES LESS THAN 24 INCHES IN SIZE. ALL RIPRAP ALONG THE EDGES OF THE HOLDING POND, AERATED PONDS, AND SETTING POND CAN BE PLACED INSIDE THE RESPECTIVE PONDS. ALL CONCRETE AND RIPRAP MUST HAVE A MINIMUM OF THREE (3) FEET OF COVER AT FINAL GRADE.



NO.	DATE	DES'D	DWN	REVISION DESCRIPTION

DESIGNED BY:	MMR / JPM
DRAWN BY:	LAT
CHECKED BY:	KAT
JOB #:	2192.2c
DATE:	OCTOBER 2016

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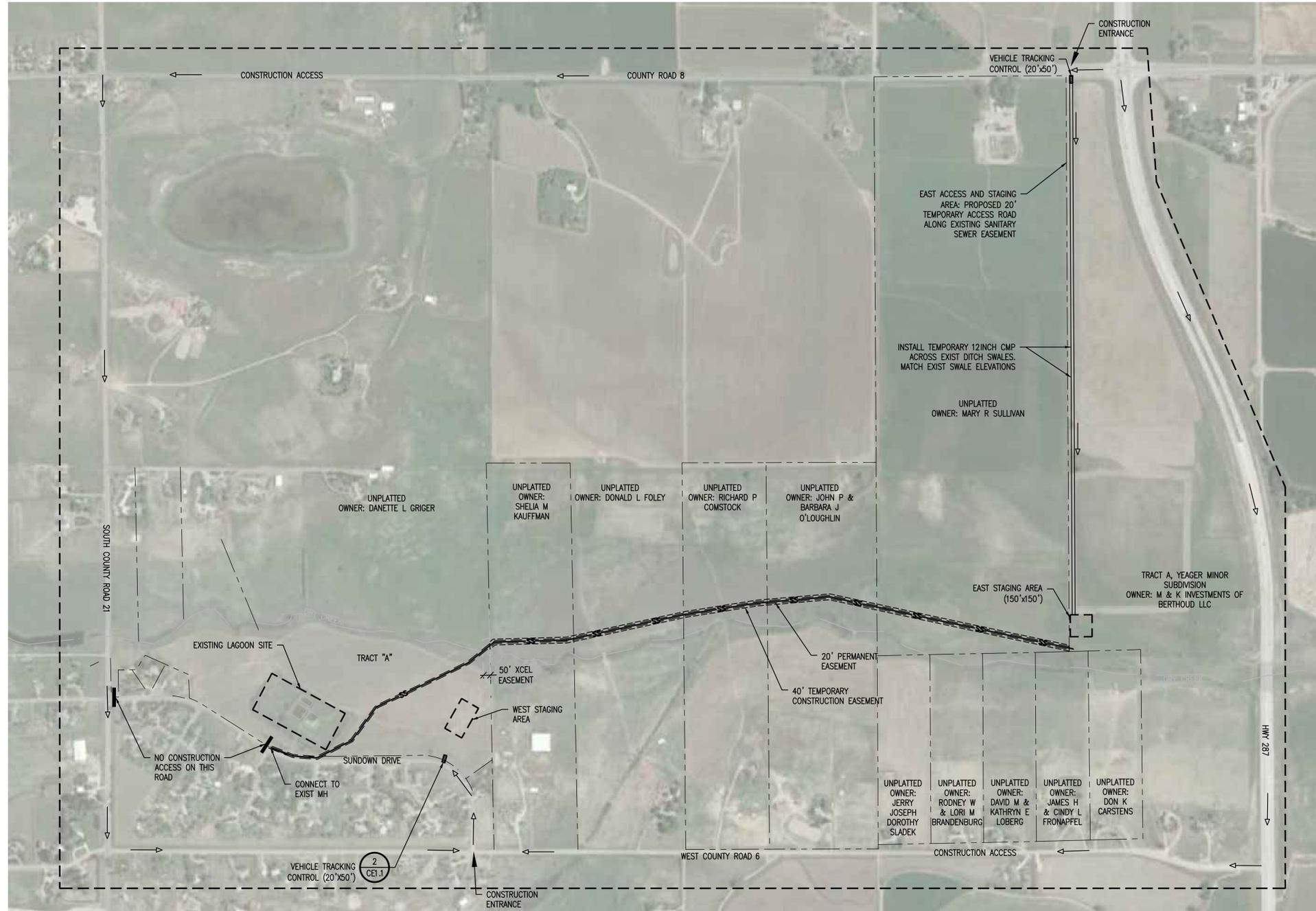
SHEET NO.
C0.2

SITE DEMOLITION PLAN

J:\2192\Drawings\2192.2c - C0.2.dwg, 10/26/2016 11:44:35 AM, int, 1:1



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DRAWN BY:	LAT
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 SANITARY SEWER IMPROVEMENTS
 LARIMER COUNTY, COLORADO
 TEMPORARY ACCESS AND STAGING AREA PLAN

SHEET NO.
 C0.3

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STORMWATER MANAGEMENT PLAN (SWMP)

THIS STORMWATER MANAGEMENT PLAN IS TO BE RETAINED AND MAINTAINED ONSITE INCLUDING FINAL LANDSCAPING PLANS AND ANY OTHER EROSION CONTROL DOCUMENTATION. A SWMP ADMINISTRATOR WILL BE DESIGNATED BY THE CONTRACTOR AND IS RESPONSIBLE FOR DEVELOPING, IMPLEMENTING, MAINTAINING, AND REVISING THIS SWMP. THE SWMP ADMINISTRATOR IS THE CONTACT FOR ALL SWMP-RELATED ISSUES AND IS RESPONSIBLE FOR ITS ACCURACY, COMPLETENESS, AND IMPLEMENTATION. THE FOLLOWING HAS BEEN DESIGNATED AS THE SWMP ADMINISTRATOR FOR THIS PROJECT:

NAME: _____
 CONTACT INFO: _____

THE BEGINNING OF THE PROJECT SITE IS LOCATED OFF COUNTY ROAD 6 ON SUNDOWN DRIVE AT APPROXIMATELY 40°17'32"N LATITUDE, 105°07'35"W LONGITUDE. THE PROPOSED PROJECT CONSISTS OF THE CONSTRUCTION OF A 8" GRAVITY SANITARY LINE AND THE DECOMMISSION OF THE EXISTING LAGOON WASTEWATER TREATMENT FACILITY. THE TOTAL SITE AREA IS APPROXIMATELY 10.7 ACRES. NO AREAS GREATER THAN 40 ACRES SHALL BE DISTURBED AT ANY GIVEN TIME. NO CONSTRUCTION ACTIVITIES SHALL OCCUR OFFSITE OR OUTSIDE OF THE CONSTRUCTION LIMITS SHOWN ON THE CONSTRUCTION DOCUMENTS. THE SEQUENCE OF CONSTRUCTION STARTS IS AS FOLLOWS:

PHASE	ESTIMATED	ACTUAL
CONSTRUCTION START	MONTH, YEAR	_____
ROAD AND OVERLOT GRADING	MONTH, YEAR	_____
UTILITY CONSTRUCTION	MONTH, YEAR	_____
BUILDING CONSTRUCTION	MONTH, YEAR	_____
PAVING	MONTH, YEAR	_____
SITE RESTORATION	MONTH, YEAR	_____

THE EXISTING SITE CONSISTS OF DEVELOPED LAND, NATIVE GRASSLAND, VEGETATION, GRAVEL AND ASPHALT PAVING AND IS APPROXIMATELY 80% COVERED WITH VEGETATIVE GROUND COVER

OTHER POTENTIAL POLLUTION SOURCES DO NOT EXIST AT THIS SITE.

BEST MANAGEMENT PRACTICES FOR STORMWATER MANAGEMENT

NON STRUCTURAL BMPs WILL BE IMPLEMENTED TO THE MAXIMUM EXTENT POSSIBLE. THE UTILIZATION OF NON STRUCTURAL BMPs WILL BE AN ONGOING PROCESS DIRECTED AT PREVENTING EROSION. THE NON STRUCTURAL BMPs WILL RECEIVE CONTINUOUS EMPHASIS THROUGHOUT CONSTRUCTION BECAUSE THEY AVERT PROBLEMS BEFORE THEY OCCUR AND REDUCE THE NEED FOR STRUCTURAL BMPs. NON STRUCTURAL BMPs WILL CONSIST PRIMARILY OF PRESERVATION OF EXISTING MATURE VEGETATION AND TREES, PLANNING AND SCHEDULING CONSTRUCTION ACTIVITIES AIMED AT ACHIEVING THE GOAL OF MINIMIZING EROSION. FURTHERMORE, CONSTRUCTION PERSONNEL WILL BE INSTRUCTED AND SUPERVISED IN CONSTRUCTION METHODS CONSISTENT WITH EROSION PREVENTION PRACTICES.

PLANNED STRUCTURAL BMPs FOR EROSION AND SEDIMENT CONTROL ARE SHOWN ON THE EROSION AND SEDIMENTATION CONTROL PLAN. IMPLEMENTING THESE MEASURES SHOULD MINIMIZE NUISANCE SILT AND SEDIMENTATION EXITING THE SITE AND PREVENT CLOGGING EXISTING STORM SEWERS AND STREET GUTTERS.

APPLICATION OF THESE BMPs FOR STORMWATER MANAGEMENT ARE FOR CONSTRUCTION PERIODS AND ARE CONSIDERED TEMPORARY. POST-DEVELOPMENT STORMWATER MANAGEMENT IS PROVIDED THROUGH VEGETATED LANDSCAPED AREAS AND GRASSED SWALES.

VEHICLE TRACKING CONTROL (VTC):

A STABILIZED CONSTRUCTION ENTRANCE WILL BE PROVIDED AT SUNDOWN DRIVE AND COUNTY ROAD 8. THE CONSTRUCTION ACCESS AND PARKING WILL BE GRADED AND COVERED WITH A CRUSHED STONE BASE COURSE DURING CONSTRUCTION. THE VEHICLE TRACKING CONTROL WILL BE RELOCATED WITH THE CONSTRUCTION ACCESS AS NECESSARY.

TREE PROTECTION:

BEFORE BEGINNING CONSTRUCTION OPERATIONS, ESTABLISH TREE PROTECTION ZONE AROUND TREES TO BE PRESERVED BY INSTALLING CONSTRUCTION FENCES. ALLOW ENOUGH SPACE FROM THE TRUNK TO PROTECT THE ROOT ZONE FROM SOIL COMPACTION AND MECHANICAL DAMAGE, AND THE BRANCHES FROM MECHANICAL DAMAGE. IF LOW BRANCHES WILL BE KEPT, PLACE THE FENCE OUTSIDE OF THE DRIP LINE. WHERE THIS IS NOT POSSIBLE, PLACE FENCING AS FAR AWAY FROM THE TRUNK AS POSSIBLE. IN ORDER TO MAINTAIN A HEALTHY TREE, BE AWARE THAT ABOUT 60% OF THE TREE'S ROOT ZONE EXTENDS BEYOND THE DRIP LINE.

SILT FENCING (SF):

SILT FENCING SHALL BE INSTALLED WITH RESPECT TO PROPOSED DRAINAGE PATTERNS. SILT FENCE SHALL BE CONSTRUCTED ALONG THE PORTIONS OF ALL SIDES OF THE PROPERTY AND ALONG ANY DRAINAGE AREAS SUBJECT TO EROSION. THE FENCE SHALL BE INSTALLED AT THE DOWNHILL SIDE OF THE EXISTING SLOPES ACROSS THE SITE AND AT ALL POINT DISCHARGE AREAS WHETHER SHOWN OR NOT. SILT FENCE SHALL BE MAINTAINED AS NEEDED THROUGHOUT THE CONSTRUCTION PROCESS. THE TEMPORARY SILT FENCE WILL REMAIN UNTIL THE STORM SEWER STRUCTURES ARE COMPLETED AND GROUND COVER IS EFFECTIVE.

DUST CONTROL MEASURES:

DISTURBED AREAS NOT YET READY TO BE SEEDED, LANDSCAPED, PAVED, OR OTHERWISE STABILIZED SHALL BE WATERED, OR RIPPED AS NECESSARY TO PRECLUDE VISIBLE DUST EMISSIONS.

ITEMS ARE SCHEDULED TO BE IMPLEMENTED ACCORDING TO THE CONSTRUCTION SCHEDULE. AS WORK PROCEEDS, IMPLEMENTATION OF INDIVIDUAL BMPs IS TO COINCIDE WITH THE CONSTRUCTION THEREBY MINIMIZING THE EXPOSURE OF UNPROTECTED AREAS. THE SILT FENCE, INLET PROTECTION (FOR EXISTING INLETS), AND GRAVELING OF THE CONSTRUCTION ENTRANCE WILL BE PERFORMED WHEN THE GRADING BEGINS. THE INLET PROTECTION WILL BE INSTALLED AS THE STORM SEWER STRUCTURES ARE CONSTRUCTED. THE RIPRAP PROTECTION WILL BE INSTALLED AS THE STORM SEWER OUTFALLS OR CULVERTS ARE CONSTRUCTED. THE STRUCTURAL BMPs THAT DO NOT BECOME PART OF THE PERMANENT STORMWATER MANAGEMENT PLAN ARE TO BE REMOVED, AS THE PAVING, LANDSCAPING, AND OTHER PERMANENT GROUND COVER INSTALLATIONS ARE COMPLETED. FUGITIVE DUST EMISSIONS RESULTING FROM GRADING ACTIVITIES AND/OR WIND SHALL BE CONTROLLED USING THE BEST AVAILABLE CONTROL TECHNOLOGY AS DEFINED BY THE COLORADO DEPARTMENT OF HEALTH AT THE TIME OF GRADING. THE GRAVELING IS TO BE MAINTAINED AND EXTENDED CONSTRUCTION PROGRESSES ESPECIALLY AROUND THE BUILDING SITE. THE STRUCTURAL BMPs ARE TO BE REMOVED, AS THE PERMANENT LANDSCAPING INSTALLATIONS ARE COMPLETED.

THE EROSION AND SEDIMENT CONTROL PLAN MAY BE MODIFIED BY THE DEPARTMENT OF HIGHWAYS AND TRANSPORTATION, OWNER'S ENGINEER, COUNTY ENGINEERING INSPECTORS, MUNICIPALITY, OR ITS AUTHORIZED REPRESENTATIVE AS FIELD CONDITIONS WARRANT.

TEMPORARY SEEDING AND MULCHING:

ALL SEEDS FURNISHED SHALL BE FREE FROM NOXIOUS SEEDS SUCH AS RUSSIAN OR CANADIAN THISTLE, COURSE FESCUE, EUROPEAN BINDWEED, JOHNSON GRASS, KNAWEED, AND LEAFY SPURGE. THE FORMULA USED FOR DETERMINING THE QUALITY OF PURE LIVE SEED (PLS) SHALL BE (POUNDS OF SEED) X (PURITY) X (GERMINATION) = POUNDS OF PURE LIVE SEED (PLS). REQUIRED SEED MIX CAN BE FOUND IN SPEC 02950.

ALL SEEDS SHALL BE DRILLED NOT HYDROSEEDED. ALL DISTURBED AREAS SHALL BE SEEDED AND CRIMP MULCHED IF PERMANENT VEGETATION IS NOT IMMEDIATELY INSTALLED. AFTER SEEDING HAS BEEN COMPLETED, A RATE OF 4,000 LBS. OF STRAW PER ACRE SHALL BE APPLIED UNIFORMLY, CRIMPED IN WITH A CRIMPER OR OTHER APPROVED EQUIPMENT OR OTHERWISE ATTACHED. A TACKIFIER OR JUTE NETTING TO ATTACH MULCH MAY BE USED WITH THE OWNER'S APPROVAL. THE SEEDED AREA SHALL BE CRIMPED MULCHED AND THE MULCH ATTACHED WITHIN TWENTY-FOUR (24) HOURS AFTER SEEDING. AREAS NOT MULCHED AND ATTACHED WITHIN TWENTY-FOUR (24) HOURS AFTER SEEDING MUST BE RESEED WITH THE SPECIFIED MIX AT THE CONTRACTOR'S EXPENSE, PRIOR TO MULCHING AND ATTACHING. ON STEEP SLOPES OR OTHER SPECIFIED AREAS AS SHOWN ON THE PLANTING PLAN, WHICH ARE DIFFICULT TO MULCH AND ATTACH BY CONVENTIONAL METHOD, BURLAP OR OTHER BLANKETING MATERIALS PROPERLY ANCHORED AND SECURED MAY BE USED WHEN APPROVED BY LARIMER COUNTY OR ENGINEER.

PERMANENT STABILIZATION MEASURES:

PERMANENT LANDSCAPING WILL INCLUDE SEEDING TO OPEN AREAS. NATIVE PERENNIAL SEEDING WILL BE ESTABLISHED IN NON-IRRIGATED AREAS AND SOD OR OTHER VEGETATIVE COVER WILL BE ESTABLISHED IN IRRIGATED OPEN AREAS. ALL PERMANENT STABILIZATION MEASURES WILL BE SPECIFIED BY THE LANDSCAPE ARCHITECT OR OWNER. REQUIRED SEED MIX CAN BE FOUND IN SPEC 02950.

MATERIALS AND SPILL PREVENTION:

THE CONTRACTOR WILL STORE CONSTRUCTION MATERIALS AND EQUIPMENT IN CONFINED AREAS ON SITE FROM WHICH RUNOFF WILL BE CONTAINED AND FILTERED. MATERIALS WILL BE STORED OFF THE GROUND AND PROTECTED FROM THE WEATHER BY A COVER OR STORED IN A CONTAINER SUCH AS A VAN OR TRAILER. AN EARTHEN DIKE WILL BE CONSTRUCTED AROUND THE PERIMETER OF THE FUEL STORAGE AREA TO PREVENT MATERIALS FROM CONTACT WITH SURFACE RUNOFF. EQUIPMENT MAINTENANCE WILL BE PERFORMED IN A DESIGNATED AREA AND STANDARD MAINTENANCE PROCEDURES, SUCH AS THE USE OF DRIP PANS, WILL BE USED TO CONTAIN PETROLEUM PRODUCTS.

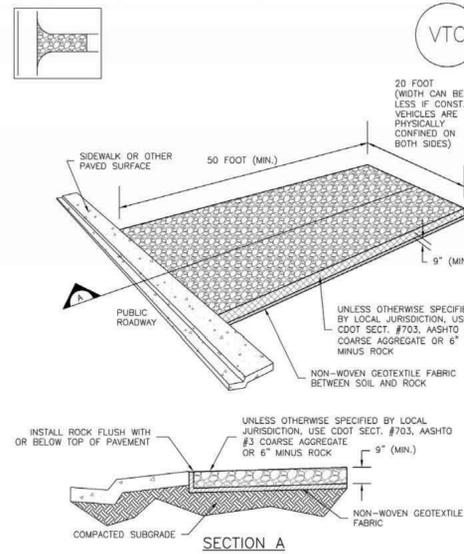
INSPECTION AND MAINTENANCE:

THE EROSION CONTROL MEASURES WILL BE INSPECTED DAILY DURING CONSTRUCTION BY THE CONTRACTOR AND AFTER EACH RAIN EVENT. ALL INSPECTIONS SHALL BE DOCUMENTED AND SHALL INCLUDE THE DATE OF INSPECTION, ANY INCIDENCE OF NON-COMPLIANCE, SIGNED CERTIFICATION THAT THE SITE IS IN COMPLIANCE, AND ANY NOTES, DRAWINGS, MAPS, ETC. PERTAINING TO REPAIRS. COPIES OF ALL DOCUMENTATION SHALL BE DISTRIBUTED TO MUNICIPALITIES AND OWNER ON A REGULAR BASIS AS SPECIFIED BY OWNER. SILT FENCE AND STRAW BALE BARRIERS WILL BE CHECKED FOR UNDERMINING AND BYPASS AND REPAIRED OR EXPANDED AS NEEDED. SEDIMENT SHOULD BE REMOVED FROM INLET FILTERS AND SILT FENCING BEFORE ONE HALF OF THE DESIGN DEPTH HAS BEEN FILLED. SEDIMENTS DEPOSITED IN THE PUBLIC RIGHTS-OF-WAY WILL BE REMOVED IMMEDIATELY. THE TEMPORARY VEGETATION OF BARE SOILS WILL BE CHECKED REGULARLY AND AREAS WHERE IT IS LOST OR DAMAGED WILL BE RESEEDED. AT MINIMUM THE CONTRACTOR OR HIS AGENT SHALL INSPECT ALL BMPs EVERY 14 DAYS AND AFTER SIGNIFICANT PRECIPITATION OR SNOWMELT EVENTS. INSTALLATIONS AND MODIFICATIONS AS REQUIRED BY LARIMER COUNTY WILL BE IMPLEMENTED WITHIN 48 HOURS OF NOTIFICATION. CONTRACTOR SHALL REMOVE TEMPORARY EROSION CONTROL MEASURES AND REPAIR AREAS AS REQUIRED AFTER VEGETATION IS ESTABLISHED AND ACCEPTED BY OWNER AND MUNICIPALITY.

FINAL STABILIZATION AND LONG-TERM STORMWATER QUALITY:

FINAL STABILIZATION IS REACHED WHEN ALL SOIL DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED, AND UNIFORM VEGETATIVE COVER HAS BEEN ESTABLISHED WITH A DENSITY OF AT LEAST 70% OR PRE-DISTURBANCE LEVELS OR EQUIVALENT PERMANENT, PHYSICAL EROSION REDUCTION METHODS HAVE BEEN EMPLOYED. FINAL STABILIZATION WILL BE ACHIEVED USING SOD, NATIVE SEEDING, PERMANENT BMP'S, AND OTHER METHODS. CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL STABILIZATION REGARDLESS OF ACCEPTANCE BY OWNER OF THE CONTRACTOR ITEM.

Vehicle Tracking Control (VTC) SM-4

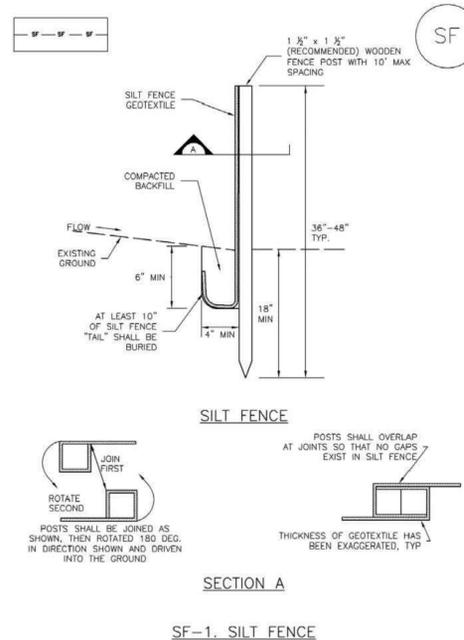


VTC-1. AGGREGATE VEHICLE TRACKING CONTROL

November 2010 Urban Drainage and Flood Control District VTC-3
 Urban Storm Drainage Criteria Manual Volume 3

VTC VEHICLE TRACKING CONTROL DETAIL 1 Cl.O

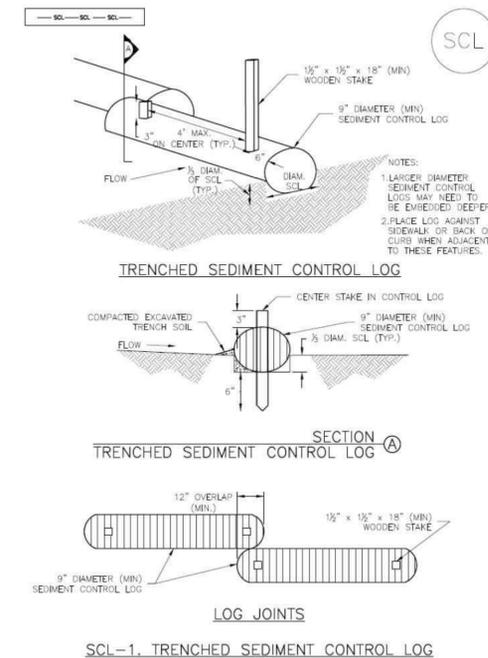
Silt Fence (SF) SC-1



November 2010 Urban Drainage and Flood Control District SF-3
 Urban Storm Drainage Criteria Manual Volume 3

SF SILT FENCE DETAIL 3 Cl.O

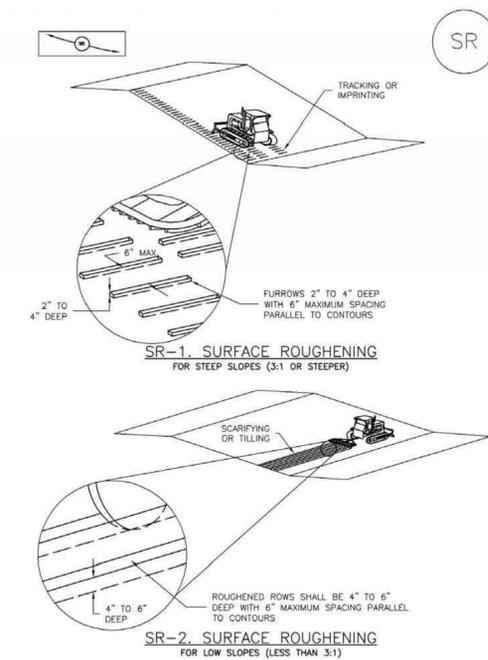
Sediment Control Log (SCL) SC-2



November 2015 Urban Drainage and Flood Control District SCL-3
 Urban Storm Drainage Criteria Manual Volume 3

SCL SEDIMENT CONTROL LOG DETAIL 2 Cl.O

Surface Roughening (SR) EC-1



November 2010 Urban Drainage and Flood Control District SR-3
 Urban Storm Drainage Criteria Manual Volume 3

SR SURFACE ROUGHENING DETAIL 4 Cl.O

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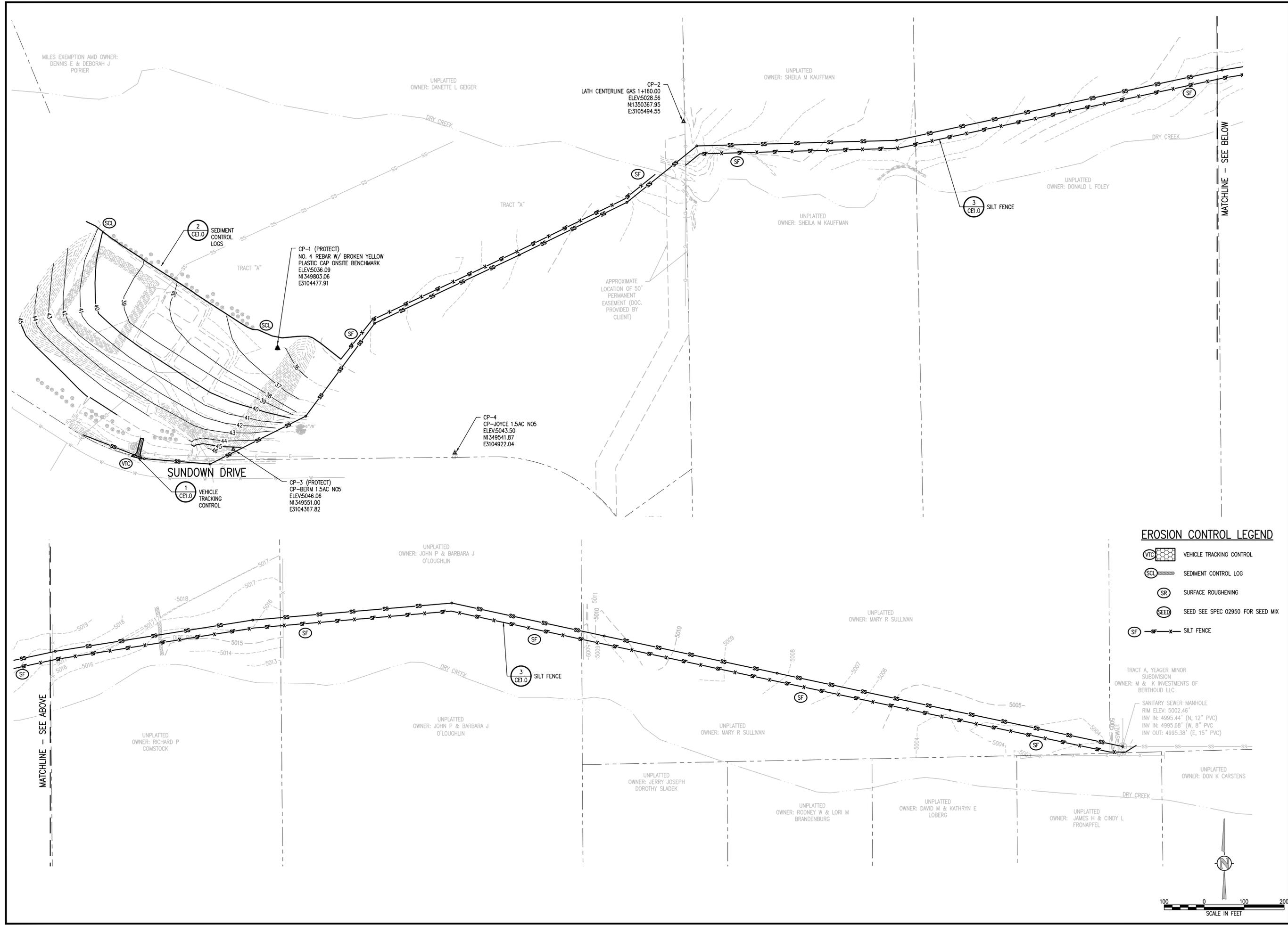
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SWMP AND EROSION CONTROL DETAILS

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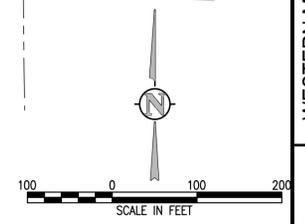


EROSION CONTROL LEGEND

- VEHICLE TRACKING CONTROL
- SEDIMENT CONTROL LOG
- SURFACE ROUGHENING
- SEED SEE SPEC 02950 FOR SEED MIX
- SILT FENCE

TRACT A, YEAGER MINOR SUBDIVISION
 OWNER: M & K INVESTMENTS OF BERTHOUD LLC

SANITARY SEWER MANHOLE
 RIM ELEV: 5002.46'
 INV IN: 4995.44' (N, 12" PVC)
 INV IN: 4995.68' (W, 8" PVC)
 INV OUT: 4995.38' (E, 15" PVC)

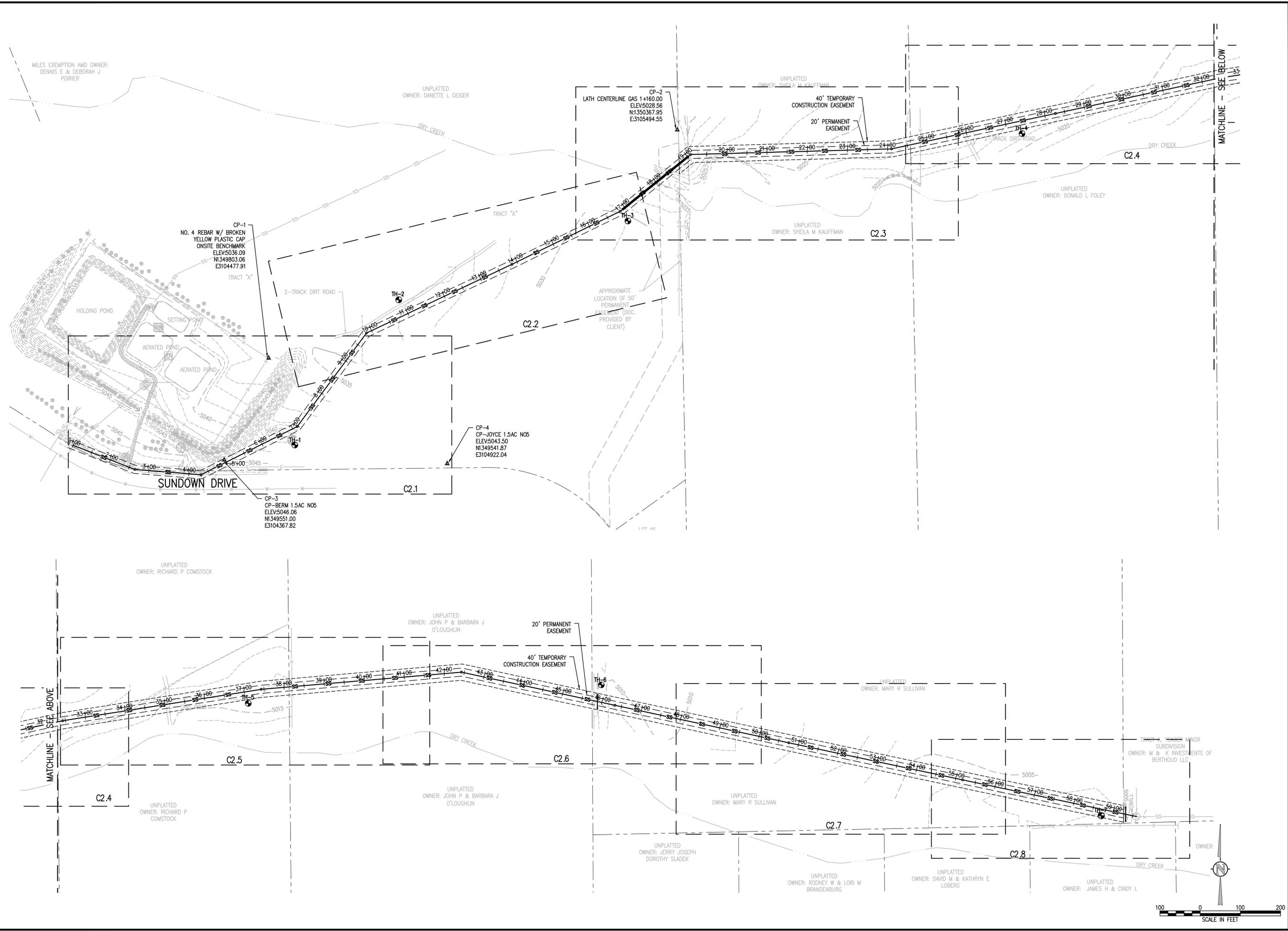


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OVERALL EROSION CONTROL PLAN	
SHEET NO. C1.1	

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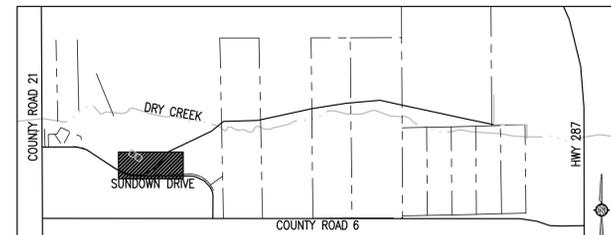
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OVERALL SANITARY SEWER PLAN

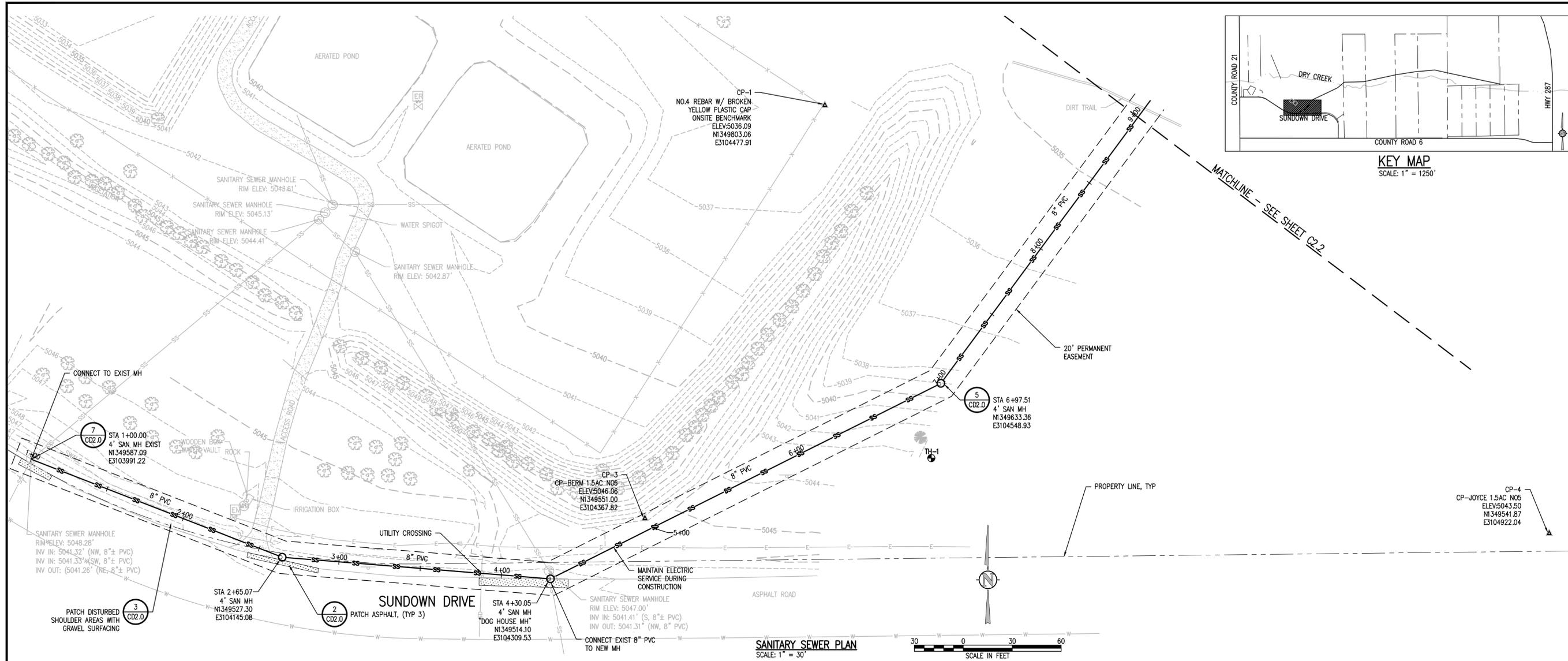
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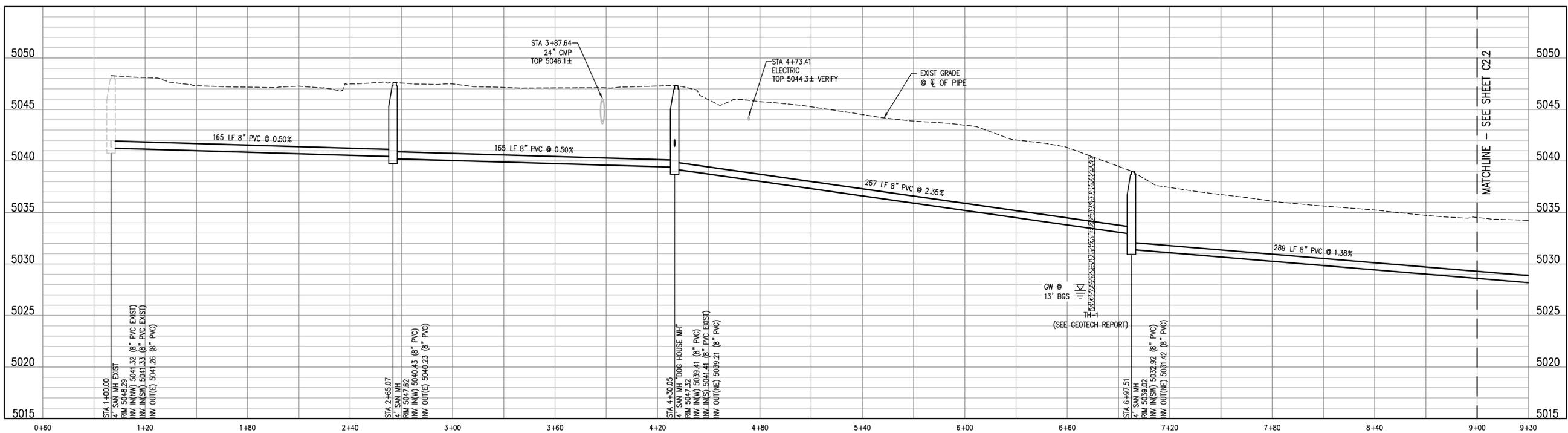
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KEY MAP
SCALE: 1" = 1250'



SANITARY SEWER PLAN
SCALE: 1" = 30'



SANITARY SEWER PROFILE
SCALE: 1"=30' HORIZ
1"=5' VERT

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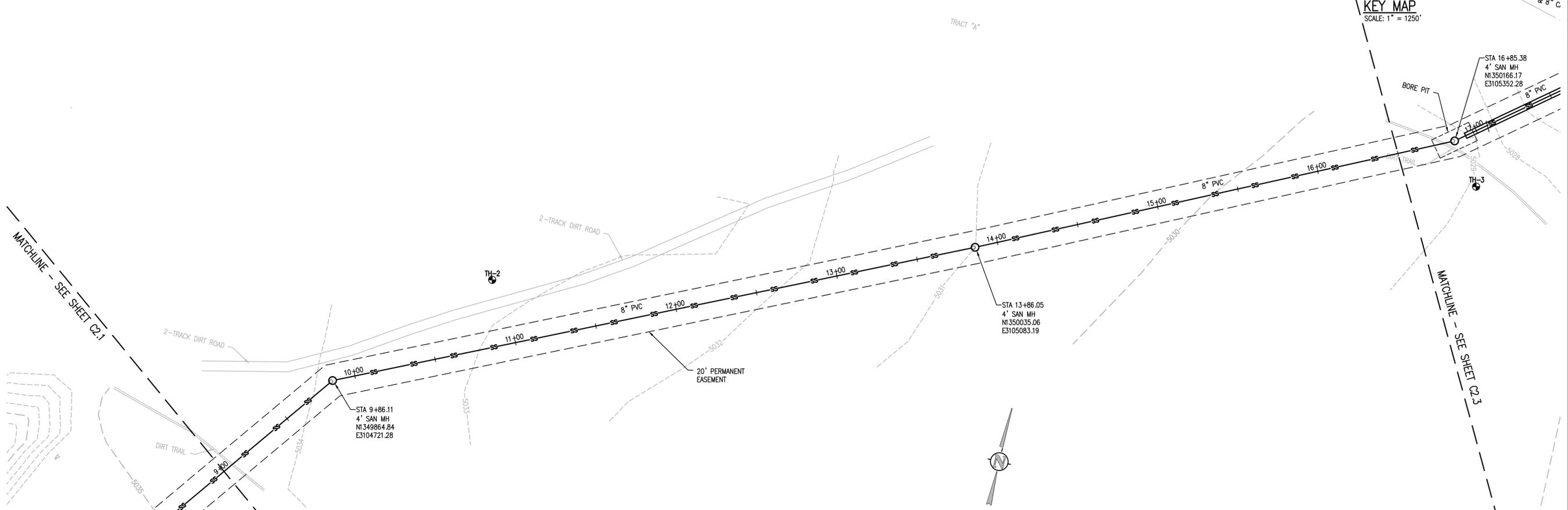
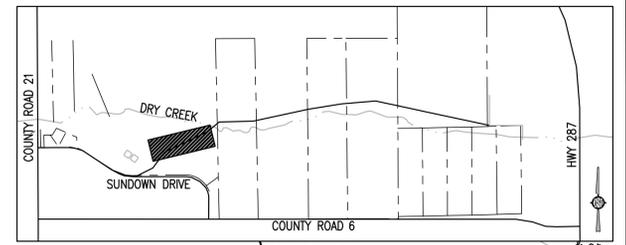
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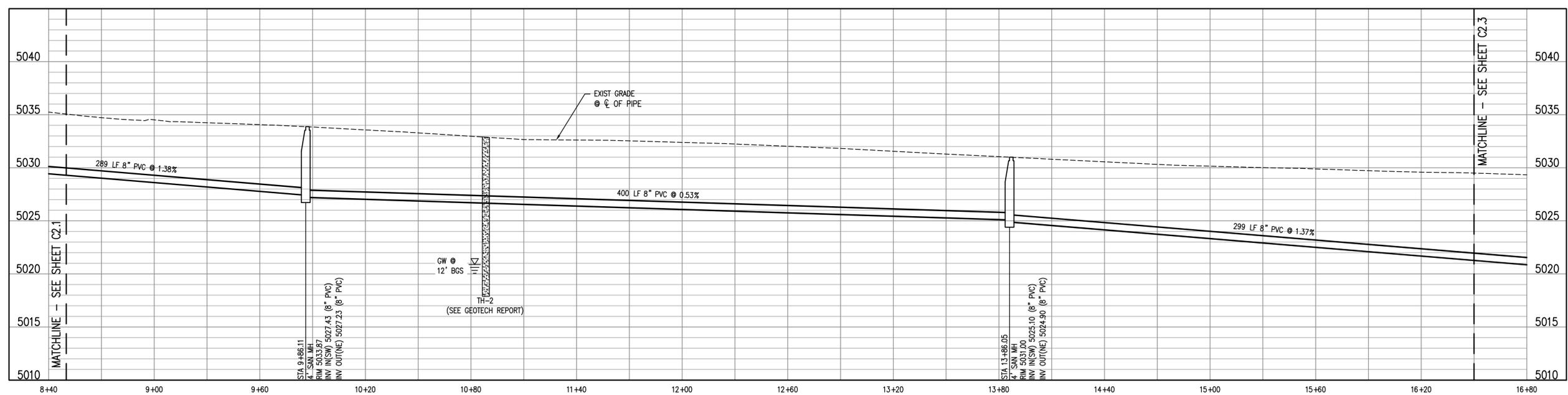
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SANITARY SEWER PLAN
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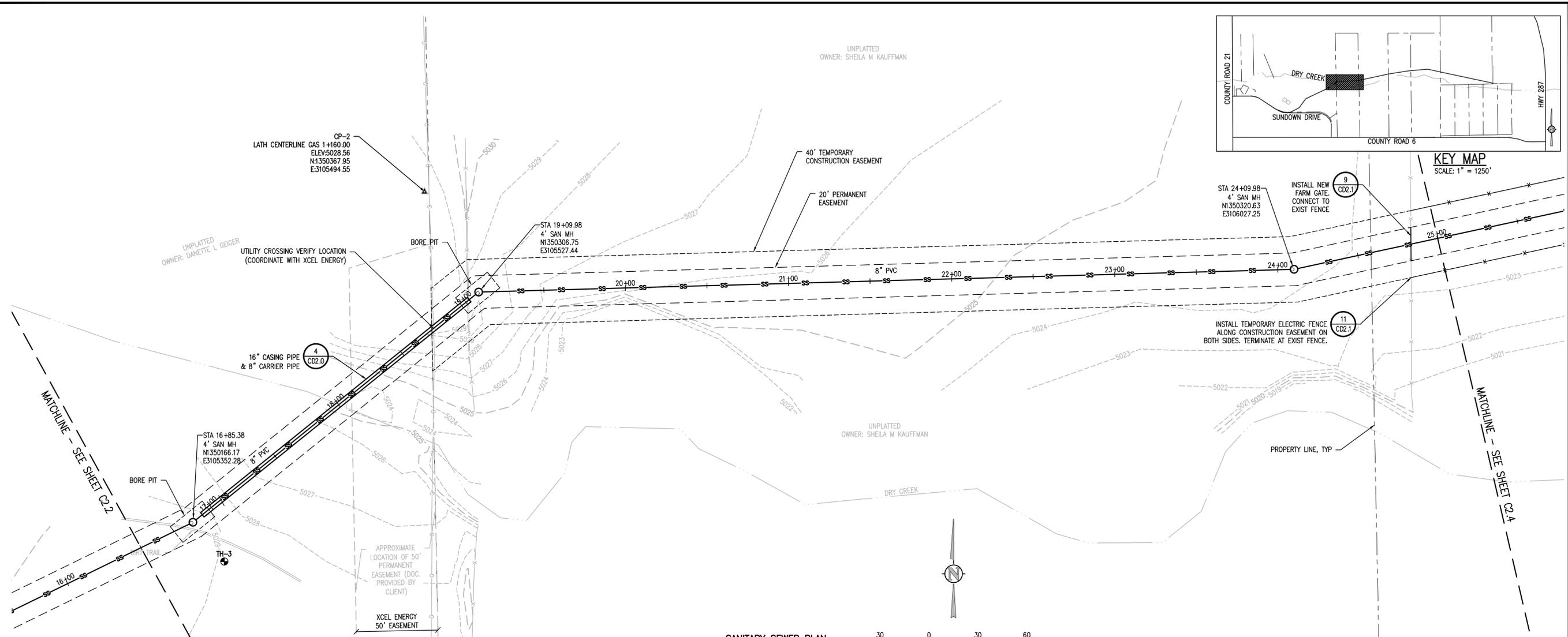
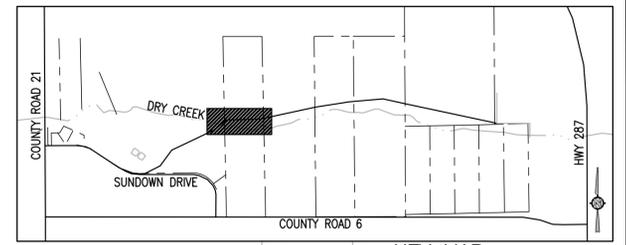
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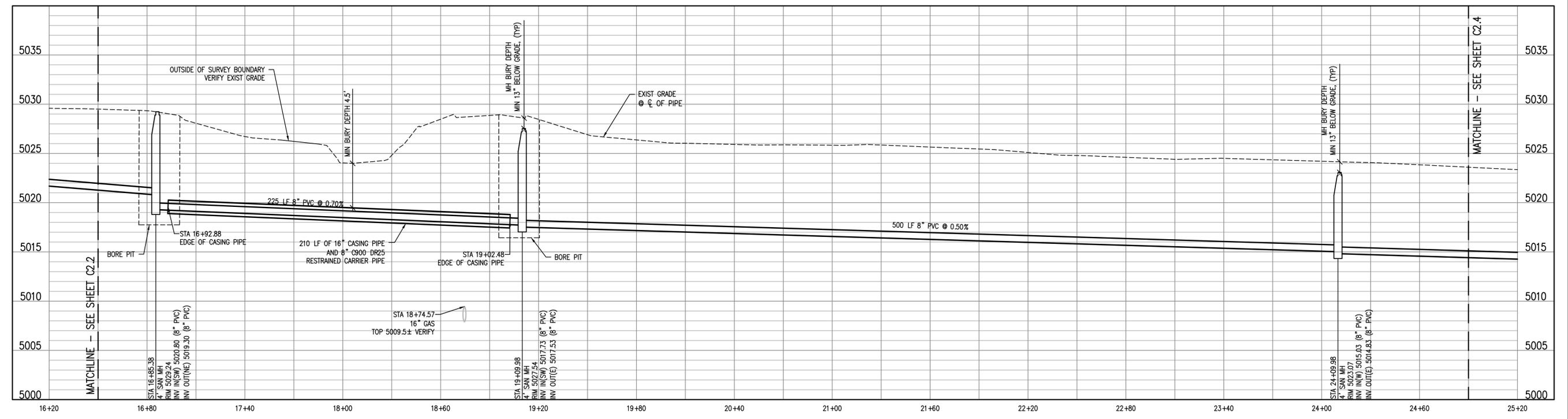
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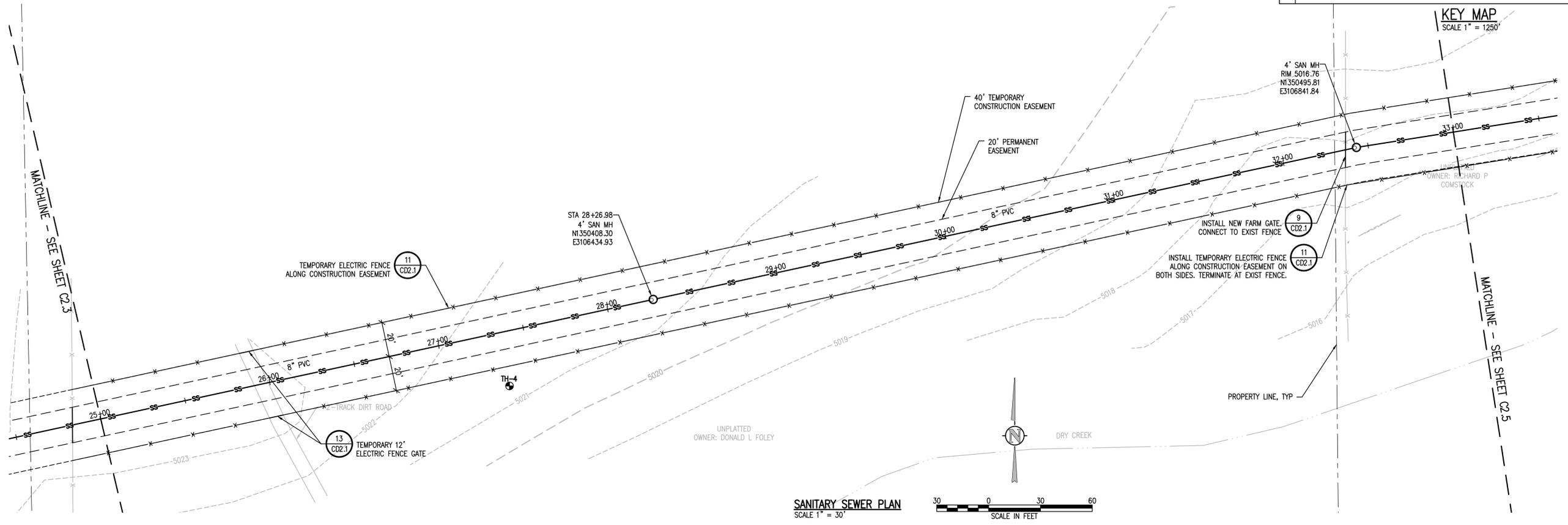
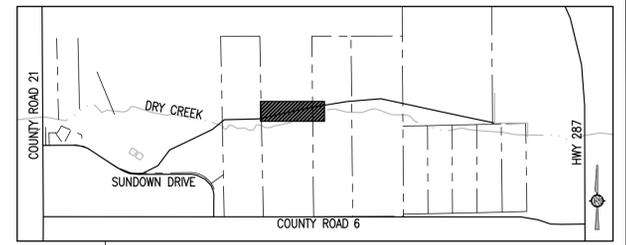
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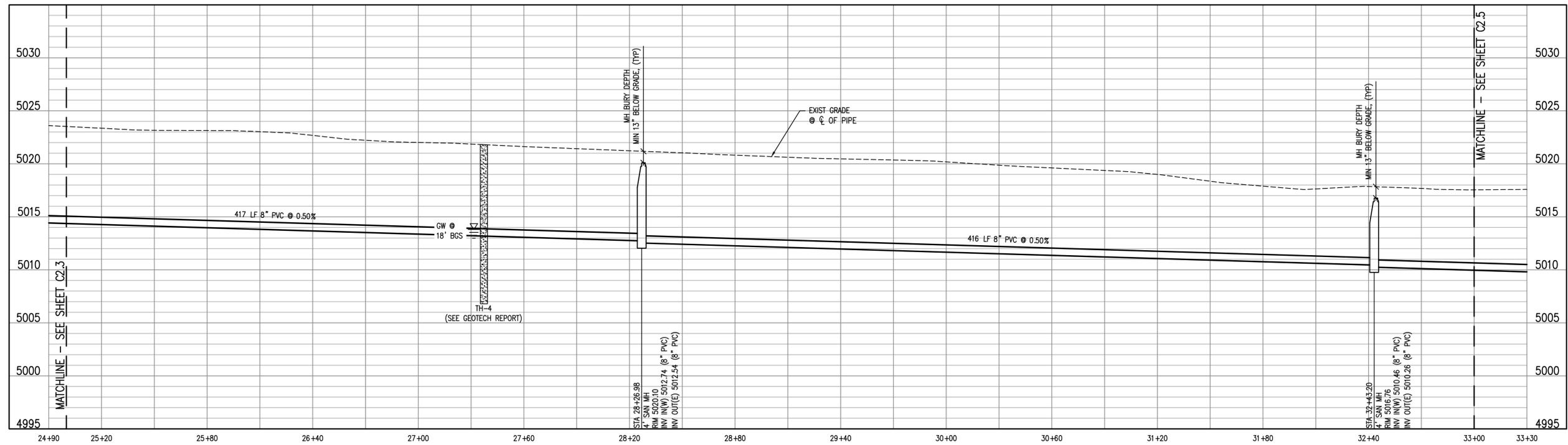
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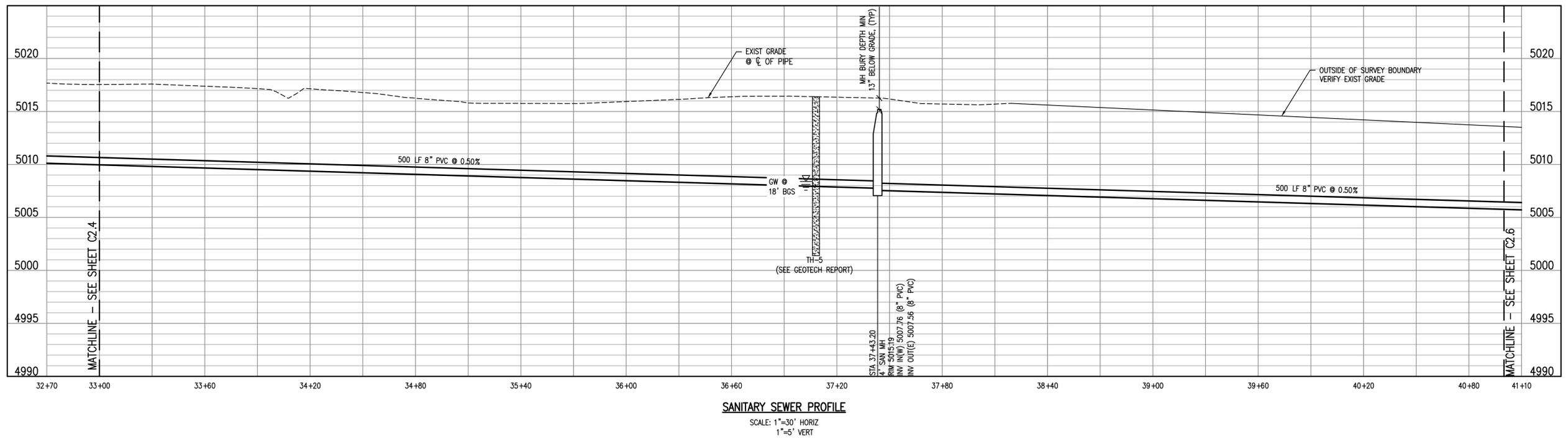
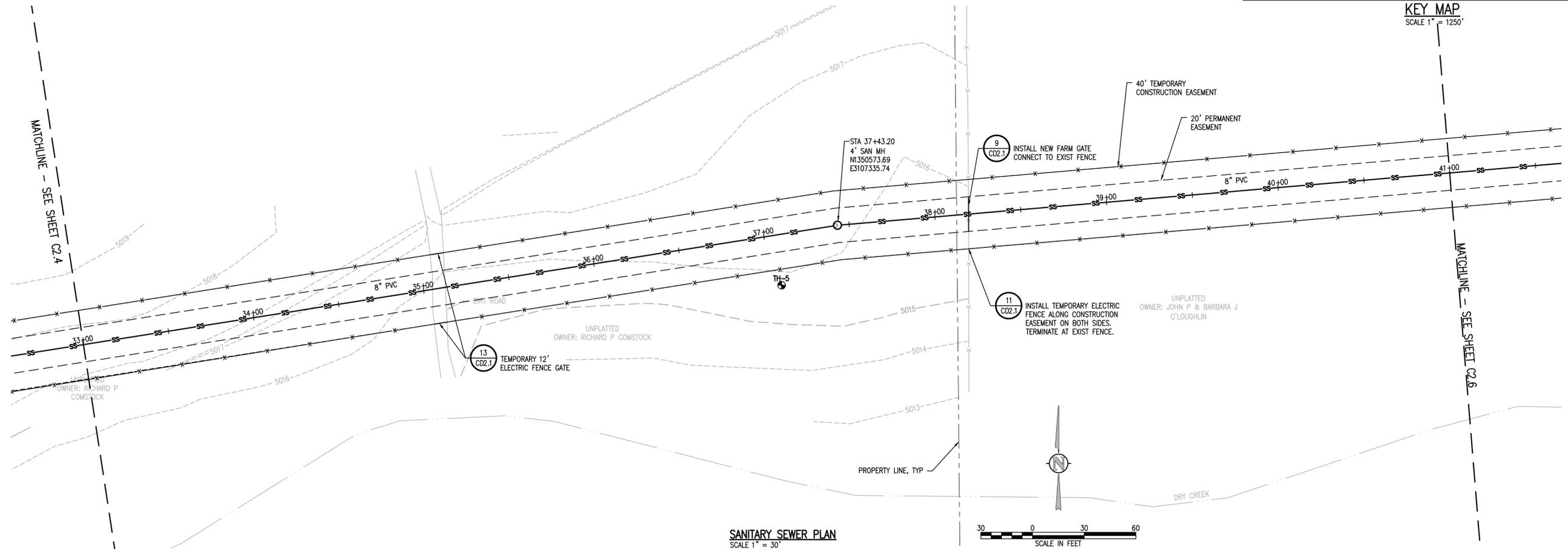
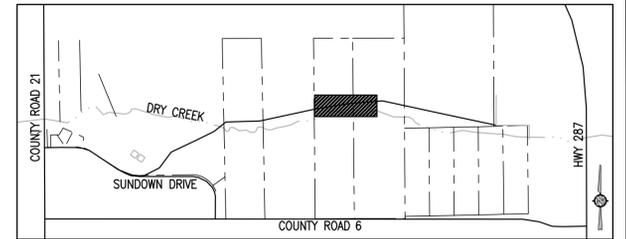
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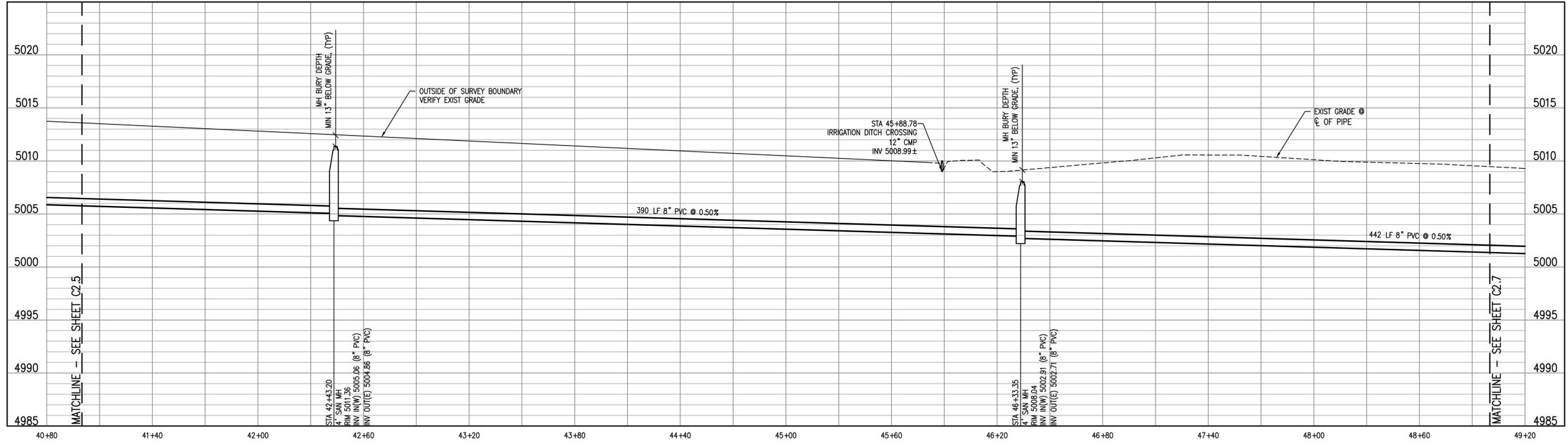
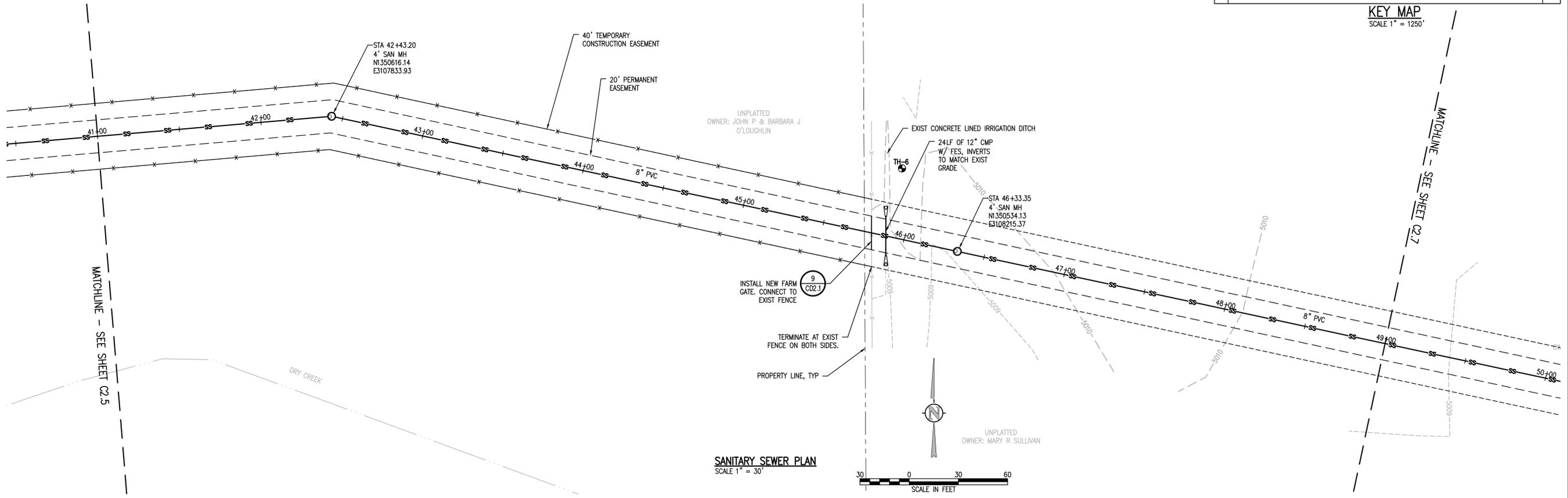
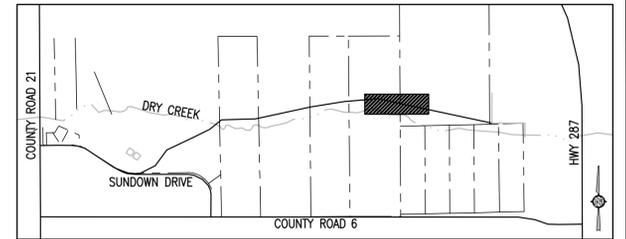
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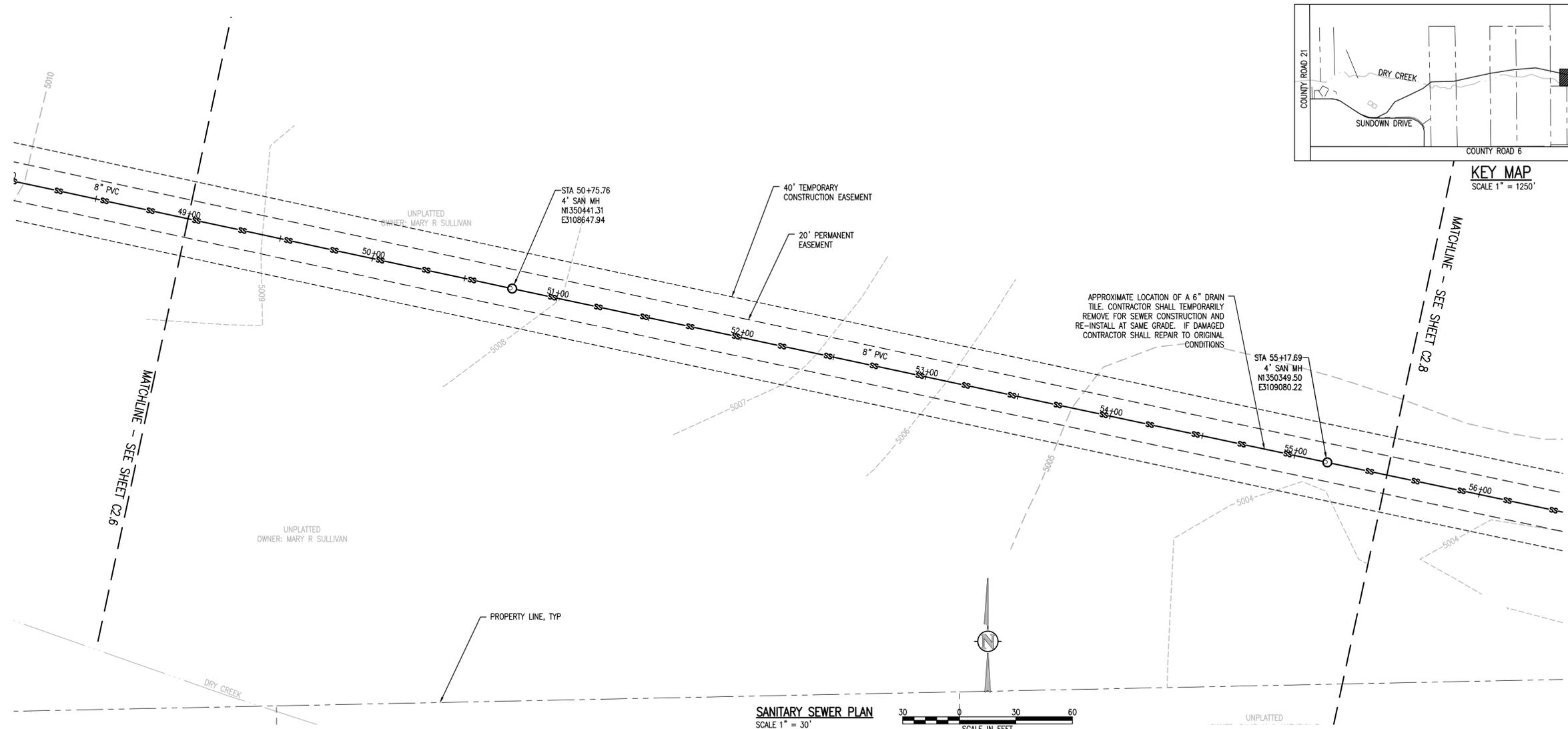
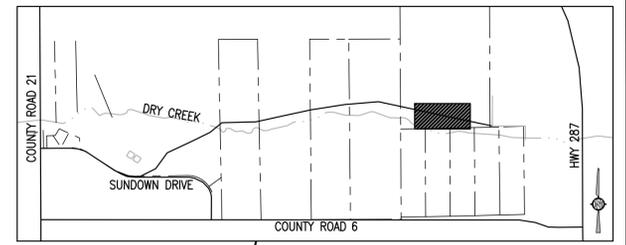
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 PLAN AND PROFILE

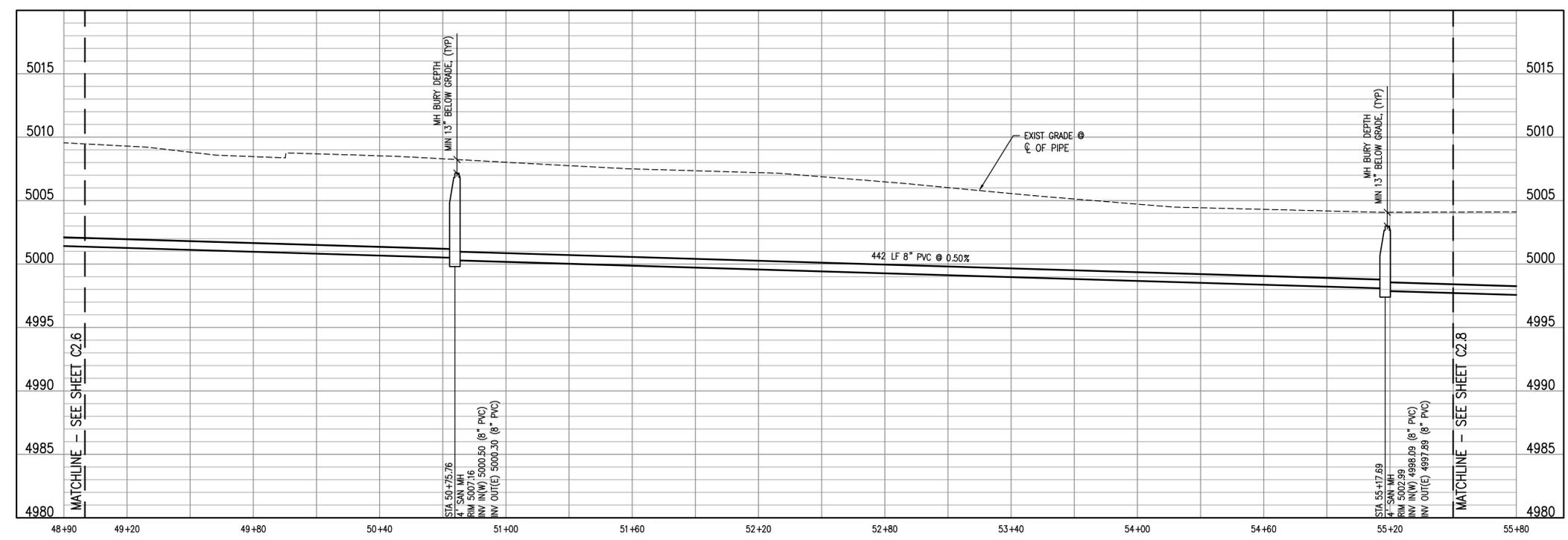
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JVA, Incorporated 25 Old Town Square
 Suite 200 Fort Collins, CO 80524
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SANITARY SEWER PLAN
 SCALE 1" = 30'



SANITARY SEWER PROFILE
 SCALE: 1"=30' HORIZ
 1"=5' VERT

NO.	DATE	DES'D	DWN	REVISION DESCRIPTION

DESIGNED BY:	MMR / JPM
DRAWN BY:	LAT
CHECKED BY:	KAT
JOB #:	2192.2c
DATE:	OCTOBER 2016
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 SANITARY SEWER IMPROVEMENTS
 LARIMER COUNTY, COLORADO

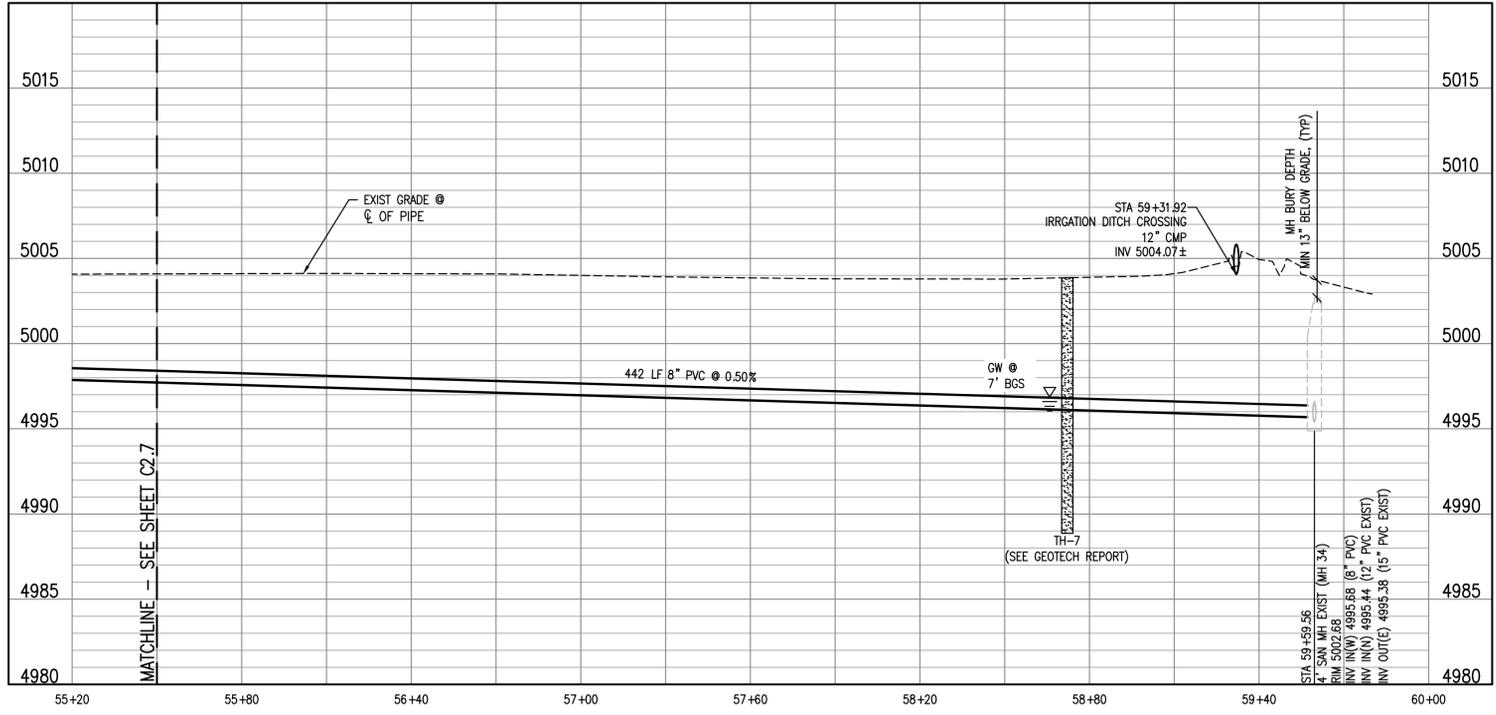
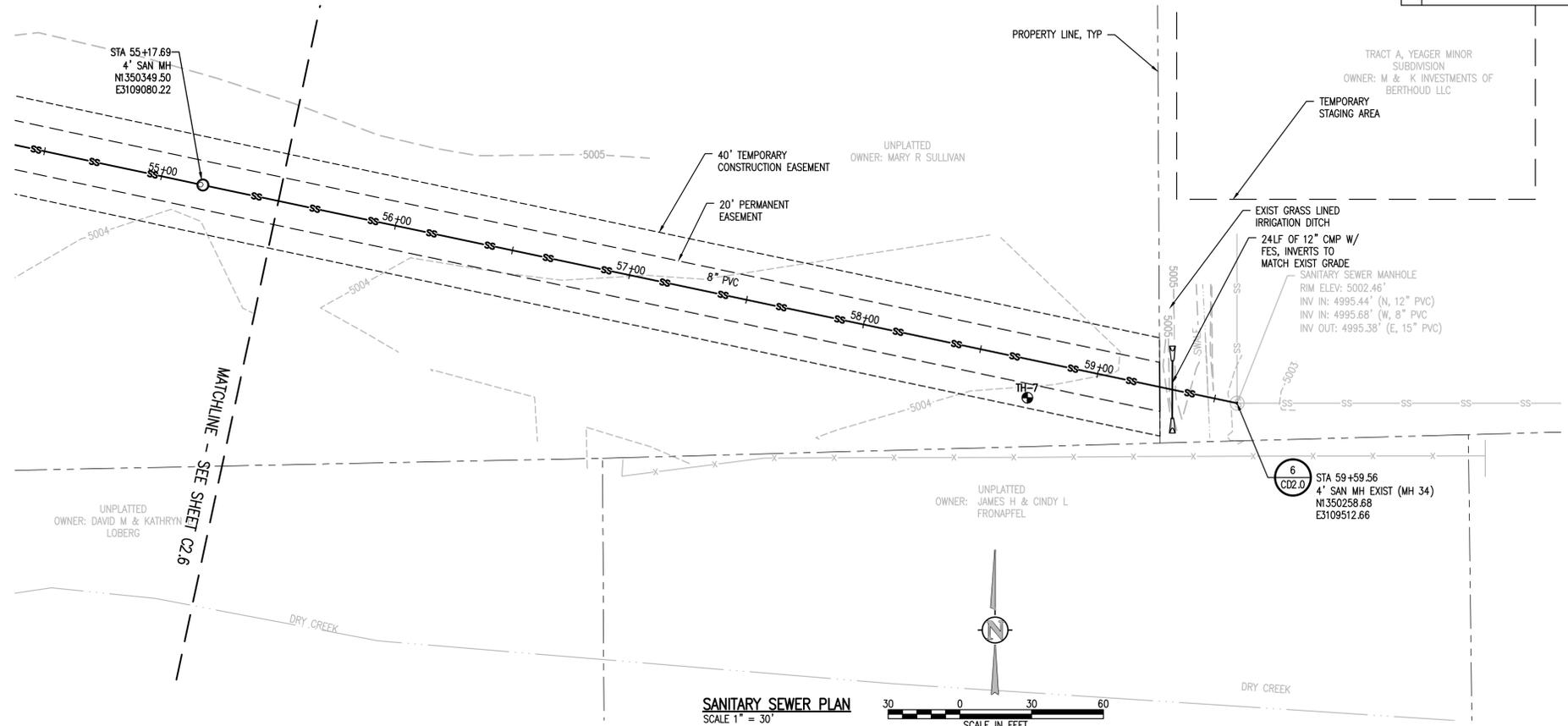
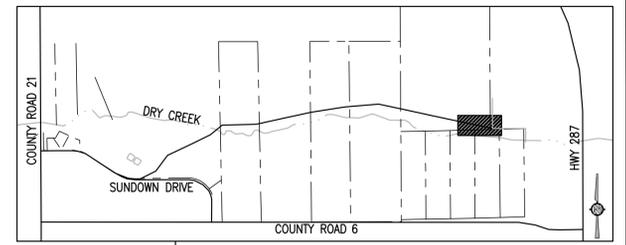
PLAN AND PROFILE

SHEET NO.
C2.7

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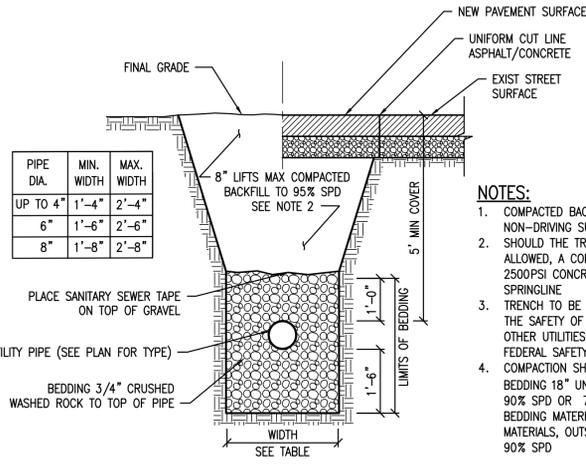
SANITARY SEWER PROFILE
 SCALE: 1"=30' HORIZ
 1"=5' VERT

NO.	DATE	DES'D	DWN	REVISION DESCRIPTION

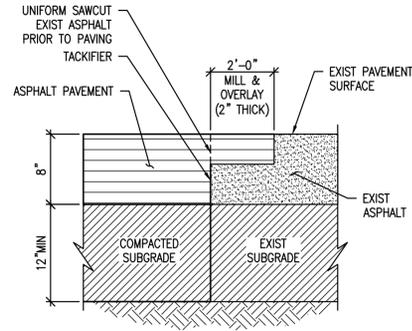
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 SANITARY SEWER IMPROVEMENTS
 LARIMER COUNTY, COLORADO

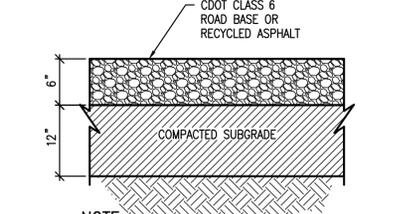
PLAN AND PROFILE



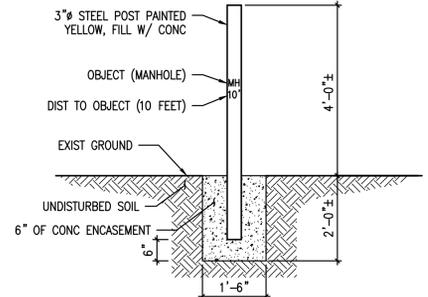
TRENCH WITH EXPANSIVE SOILS DETAIL (1)
 NTS



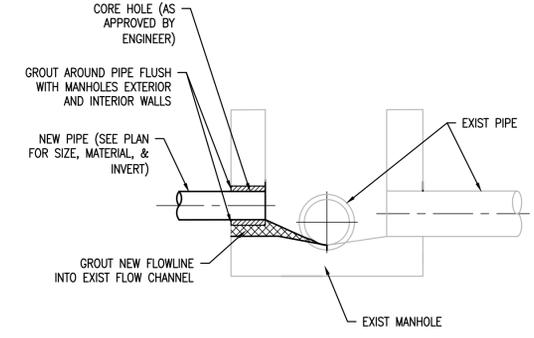
ASPHALT "T" PATCH DETAIL (2)
 NTS



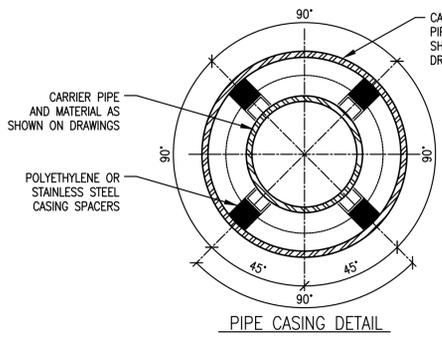
GRAVEL PAVING SECTION DETAIL (3)
 NTS



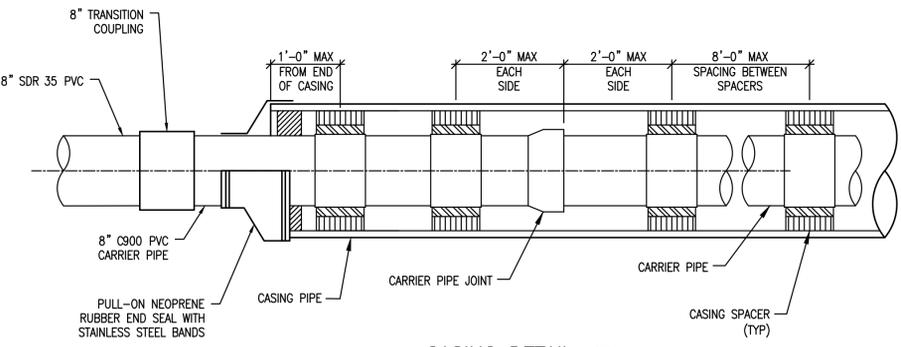
MANHOLE MARKER POST DETAIL (12)
 NTS



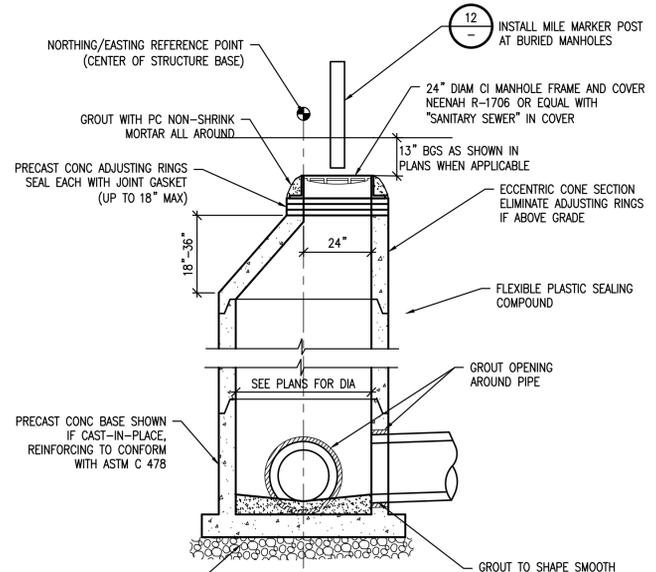
CORE HOLE DETAIL FOR MANHOLE WALL PENETRATION (8)
 NTS



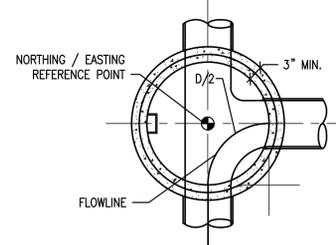
- NOTES:**
- SEE SPEC 0222 FOR CARRIER PIPE AND CASING PIPE DIAMETERS AND MATERIALS.
 - CASING PIPE TO BE INSTALLED USING BORING/JACKING OR OTHER TRENCHLESS CONSTRUCTION TO THE LINES AND GRADES SHOWN ON THE PIPELINE PROFILE. SEE SPEC 0222.
 - CASING PIPE THICKNESS SIZED BY CONTRACTOR TO CARRY THE LOADS IMPOSED BY THE FORCES CREATED BY THE TRENCHLESS METHOD USED HOWEVER, SIZING, USE MIN WALL THICKNESS.
 - AFTER CASING INSTALLATION, LOW PRESSURE GROUT ANY VOIDS BETWEEN EXTERIOR CASING AND EARTH.
 - CASING SPACERS SHALL BE RESTRAINED-TYPE BOLTED SPACERS AND SHALL HAVE A MAXIMUM SPACING AS SHOWN, OR AS RECOMMENDED BY MANUFACTURER, WHICHEVER IS CLOSER.



CASING DETAIL (4)
 NTS

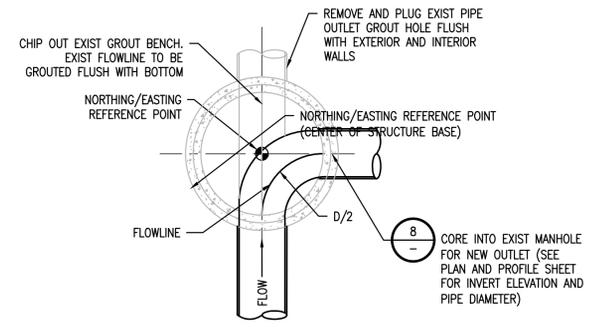


MANHOLE SECTION WITH ECCENTRIC CONE TOP



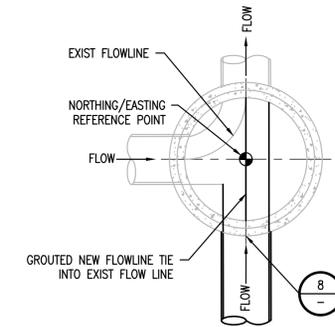
TYPICAL PRECAST MANHOLE DETAIL (5)
 NTS

- NOTES:**
- SHAPING FOR SMOOTH MANHOLE INVERTS MUST BE DONE BY FORMING OR SHAPING BASE CONCRETE.
 - BLOCK-OUTS WHEN APPROVED SHALL EXTEND A MAX OF 6" PAST MANHOLE OD AND BE SATISFACTORILY PLUGGED AND SEALED.
 - CONCRETE MANHOLES MAY BE POURED IN PLACE ONLY WITH PRIOR APPROVAL.
 - ALL MORTAR SHALL BE MIXED WITH A TYPE II CEMENT.
 - BENCH MUST HAVE A BRUSHED, NON-SKID SURFACE.
 - FLEXIBLE PIPE CONNECTOR SHALL BE A-LOK OR EQUAL.



- NOTES:**
- SHAPING FOR SMOOTH MANHOLE INVERTS MUST BE DONE BY FORMING OR SHAPING BASE CONCRETE.

EXIST MANHOLE OUTLET CORE DETAIL (7)
 NTS



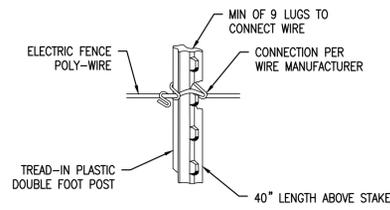
- NOTES:**
- SHAPING FOR SMOOTH MANHOLE INVERTS MUST BE DONE BY FORMING OR SHAPING BASE CONCRETE.

EXIST MANHOLE INLET CORE DETAIL (6)
 NTS

NO.	DATE	DESIGN	DRAWN	REVISION DESCRIPTION

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 DATE: OCTOBER 2016
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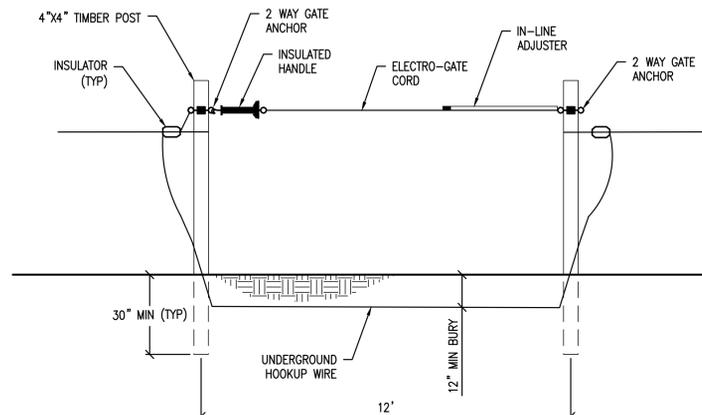
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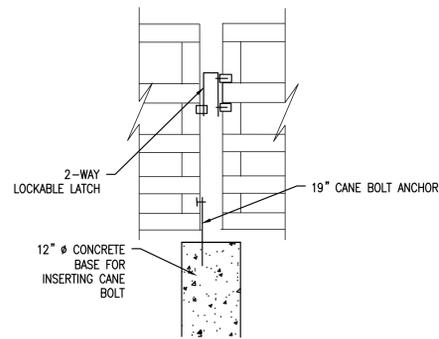
NOTES:

1. MAXIMUM SPACING DISTANCE BETWEEN POSTS IS 20'
2. LAND OWNER TO PROVIDE RECTIFIER AND POWER SOURCE FOR ELECTRIC FENCE
3. REFERENCE DRAWING C2.4 FOR PLAN VIEW AND LOCATION
4. CONTRACTOR TO COORDINATE WITH LAND OWNER FOR ELECTRIC FENCE INSTALLATION ONCE CONSTRUCTION IS SUBSTANTIALLY COMPLETE

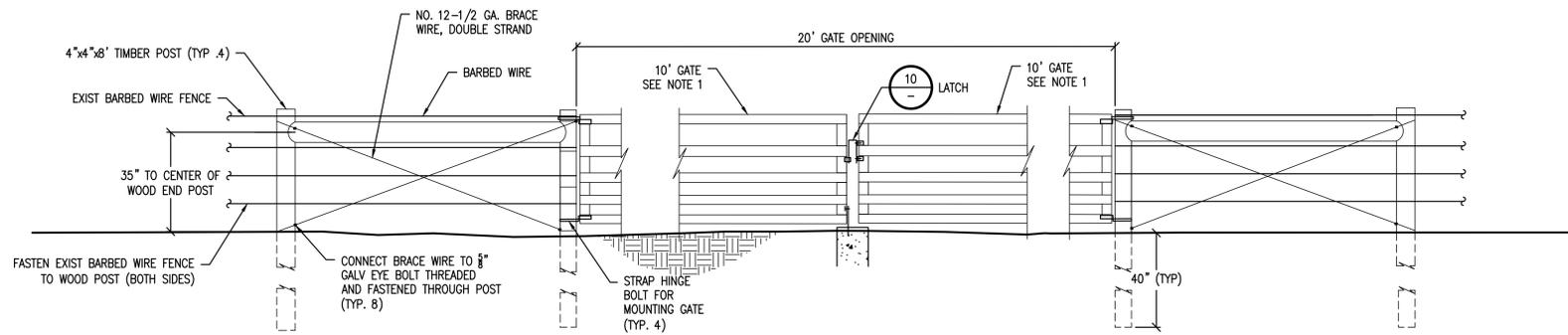
TEMPORARY ELECTRIC FENCE DETAIL 11
 NTS C2.3



TEMPORARY ELECTRIC GATE DETAIL 13
 NTS 2.4



LATCH DETAIL 10
 NTS



NOTES:

1. EACH GATE PANEL SHALL BE A 10' IN LENGTH, 5 BAR 1 1/2\"/>

FARM GATE DETAIL 9
 NTS C2.3

REVISION DESCRIPTION

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 LARIMER COUNTY, COLORADO

CIVIL DETAILS

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