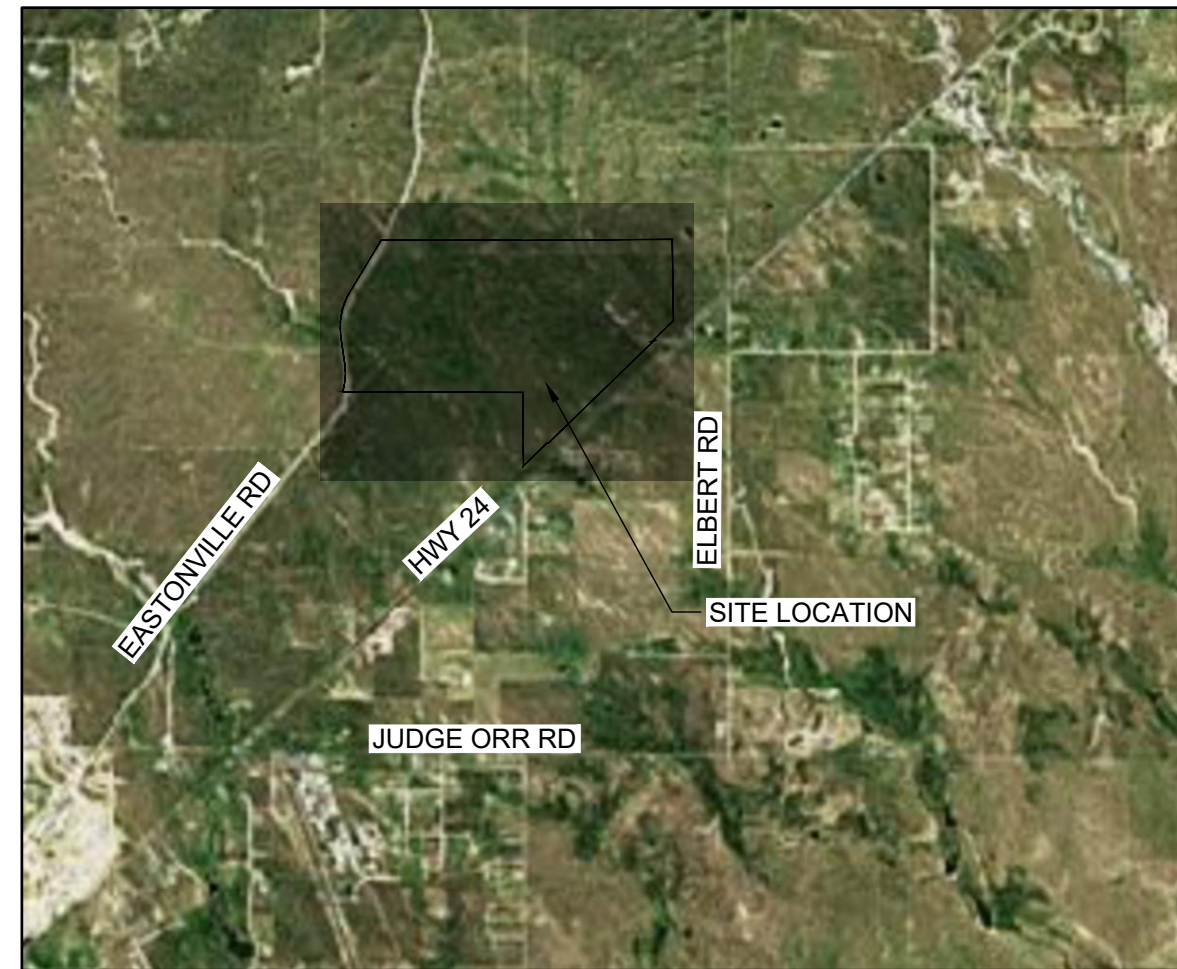


# GRANDVIEW, DRAINAGE A & B GIECK RANCH MAIN STEM TRIBUTARY 1 & 2

SECTIONS 21, 22, 27 & 28, TOWNSHIP 12 S, RANGE 64 W  
CITY OF FALCON, EL PASO COUNTY, STATE OF COLORADO

### SYMBOLS, ABBREVIATIONS, AND LINETYPES LEGEND

	<b>CWA</b>	CONCRETE WASHOUT AREA
	<b>CF</b>	CONSTRUCTION FENCE
	<b>IP</b>	INLET PROTECTION
	<b>OP</b>	OUTLET PROTECTION
	<b>SF</b>	SILT FENCE
	<b>SSA</b>	STABILIZED STAGING AREA
	<b>VTC</b>	VEHICLE TRACKING CONTROL
	<b>LOC</b>	LIMITS OF CONSTRUCTION
	<b>CD</b>	CHECK DAM
	<b>SM</b>	SEEDING AND MULCHING
	<b>SB</b>	SEDIMENT BASIN
	<b>SR</b>	SURFACE ROUGHENING
	<b>ECB</b>	EROSION CONTROL BLANKET
	<b>CIP</b>	CULVERT INLET PROTECTION
	<b>RS</b>	ROCK SOCK
	<b>STORM INLET TYPE R</b>	
	<b>STORM END SECTION</b>	
	<b>STORM MANHOLE</b>	
	<b>SANITARY MANHOLE</b>	
	<b>FIRE HYDRANT</b>	
	<b>LIGHT POLE</b>	
	<b>WATER VALVE</b>	
	<b>PROPERTY LINE</b>	
	<b>ROAD CENTERLINE</b>	
	<b>RIGHT-OF-WAY LINE</b>	
	<b>PROPOSED DRAINAGE</b>	
	<b>PROPOSED MAJOR CONTOUR</b>	
	<b>PROPOSED MINOR CONTOUR</b>	
	<b>EXISTING MAJOR CONTOUR</b>	
	<b>EXISTING MINOR CONTOUR</b>	
	<b>FLOW ARROW</b>	
	<b>EFFECTIVE 100-YR FLOODPLAIN</b>	
	<b>EFFECTIVE 100-YR FLOODWAY</b>	
	<b>POTENTIAL WALL</b>	
	<b>STORM SEWER</b>	
	<b>WATERMAIN</b>	
	<b>SANITARY SEWER</b>	
	<b>SANITARY SERVICE</b>	
	<b>ARV</b>	AIR RELEASE VALVE
	<b>CP</b>	CATHODIC PROTECTION STATION
	<b>MUE</b>	MULTI USE EASEMENT
	<b>APRX</b>	APPROXIMATE
	<b>PR</b>	PROPOSED
	<b>FT</b>	FEET
	<b>DIA</b>	DIAMETER
	<b>LF</b>	LINEAL FEET
	<b>EL</b>	ELEVATION



VICINITY MAP  
SCALE: 1" = 5000'

INDEX OF SHEETS		
PAGE NUMBER	SHEET NUMBER	SHEET TITLE
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28	CS10	CROSS SECTIONS
29	CS11	CROSS SECTIONS
30	DT1	DETAILS
31	DT2	DETAILS

### Include Benchmark

### BASIS OF BEARINGS:

THE EAST LINE OF SECTION 21, BEING MONUMENTED AT THE SOUTHEAST CORNER BY A 3-1/4" ALUMINUM SURVEYOR'S CAP STAMPED "PS INC PLS 30087 1996", BEING APPROPRIATELY MARKED, AND BEING MONUMENTED AT THE NORTHEAST CORNER BY A 3-1/4" ALUMINUM SURVEYOR'S CAP STAMPED "PS INC PLS 30087 1996", BEING APPROPRIATELY MARKED, BEING ASSUMED TO BEAR NORTH 00 DEGREES 52 MINUTES 26 SECONDS WEST, A DISTANCE OF 5290.17 FEET.

### LEGAL DESCRIPTION:

A TRACT OF LAND BEING PORTIONS OF THE SOUTH HALF OF SECTION 21, SOUTH HALF OF SECTION 22, NORTH HALF OF SECTION 28 AND SECTION 27, TOWNSHIP 12 SOUTH, RANGE 64 WEST OF THE SIXTH PRINCIPAL MERIDIAN, EL PASO COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS:

BASIS OF BEARINGS: THE EAST LINE OF SECTION 21, BEING MONUMENTED AT THE SOUTHEAST CORNER BY A 3-1/4" ALUMINUM SURVEYOR'S CAP STAMPED "PS INC PLS 30087 1996", BEING APPROPRIATELY MARKED, AND BEING MONUMENTED AT THE NORTHEAST CORNER BY A 3-1/4" ALUMINUM SURVEYOR'S CAP STAMPED "PS INC PLS 30087 1996", BEING APPROPRIATELY MARKED, BEING ASSUMED TO BEAR NORTH 00 DEGREES 52 MINUTES 26 SECONDS WEST, A DISTANCE OF 5290.17 FEET.

COMMENCING AT THE SOUTHEAST CORNER OF SAID SECTION 21; THENCE NORTH 00 DEGREES 52 MINUTES 26 SECONDS WEST ON THE EAST LINE OF SAID SECTION, A DISTANCE OF 2645.09 FEET TO THE NORTHEAST CORNER OF THE SOUTHEAST QUARTER OF SAID SECTION 21, SAID POINT BEING THE POINT OF BEGINNING; THENCE NORTH 89 DEGREES 41 MINUTES 03 SECONDS EAST ON THE NORTH LINE OF THE SOUTH HALF OF SAID SECTION 22, A DISTANCE OF 3938.20 FEET; THENCE SOUTH 00 DEGREES 41 MINUTES 58 SECONDS EAST ON THE EAST LINE OF THE WEST HALF OF THE SOUTHEAST QUARTER OF SECTION 22, A DISTANCE OF 2117.86 FEET TO A POINT ON THE NORTHWESTERLY RIGHT OF WAY LINE OF THE ROCK ISLAND REGIONAL TRAIL AS GRANTED TO EL PASO COUNTY IN THAT WARRANTY DEED RECORDED OCTOBER 21, 1994 IN BOOK 6548 AT PAGE 892, RECORDS OF EL PASO COUNTY, COLORADO; THENCE ON SAID NORTHWESTERLY RIGHT OF WAY, THE FOLLOWING FIVE (5) COURSES:

- (1) SOUTH 45 DEGREES 55 MINUTES 49 SECONDS WEST, A DISTANCE OF 758.36 FEET TO A POINT ON THE SOUTH LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 22;
- (2) NORTH 89 DEGREES 38 MINUTES 06 SECONDS EAST ON SAID SOUTH LINE, A DISTANCE OF 36.18 FEET;
- (3) SOUTH 45 DEGREES 55 MINUTES 49 SECONDS WEST, A DISTANCE OF 3818.92 FEET TO A POINT ON THE NORTH LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 27;
- (4) SOUTH 89 DEGREES 39 MINUTES 01 SECONDS WEST ON SAID NORTH LINE, A DISTANCE OF 36.17 FEET;
- (5) SOUTH 45 DEGREES 55 MINUTES 49 SECONDS WEST, A DISTANCE OF 855.35 FEET TO A POINT ON THE EASTERLY LINE OF SAID SECTION 28;

THENCE NORTH 00 DEGREES 21 MINUTES 45 SECONDS WEST ON THE EAST LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 28, A DISTANCE OF 591.16 FEET TO THE NORTHEAST CORNER OF SAID SOUTHEAST QUARTER; THENCE NORTH 00 DEGREES 21 MINUTES 38 SECONDS WEST ON THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 28, A DISTANCE OF 1319.24 FEET TO THE SOUTH LINE OF THE NORTH HALF OF SAID SECTION 28; THENCE NORTH 89 DEGREES 47 MINUTES 08 SECONDS WEST ON SAID SOUTH LINE, A DISTANCE OF 4692.55 FEET TO A POINT ON THE EASTERLY RIGHT OF WAY LINE OF EXISTING EASTONVILLE ROAD (60.00 FOOT WIDE); THENCE ON SAID EASTERLY RIGHT OF WAY AS DEFINED BY CERTIFIED BOUNDARY SURVEY, AS RECORDED JULY 18, 2001 UNDER RECEPTION NO. 201900096, THE FOLLOWING FIVE (5) COURSES:

- (1) ON THE ARC OF A CURVE TO THE LEFT, WHOSE CENTER BEARS NORTH 73 DEGREES 08 MINUTES 46 SECONDS WEST, HAVING A DELTA OF 24 DEGREES 31 MINUTES 32 SECONDS, A RADIUS OF 1630.00 FEET, A DISTANCE OF 697.73 FEET TO A POINT OF TANGENT;
- (2) NORTH 07 DEGREES 40 MINUTES 18 SECONDS WEST, A DISTANCE OF 777.34 FEET TO A POINT OF CURVE;
- (3) ON THE ARC OF A CURVE TO THE RIGHT, HAVING A DELTA OF 39 DEGREES 01 MINUTES 10 SECONDS, A RADIUS OF 1770.00 FEET, A DISTANCE OF 1205.40 FEET TO A POINT OF TANGENT;
- (4) NORTH 31 DEGREES 20 MINUTES 52 SECONDS EAST, A DISTANCE OF 1517.37 FEET TO A POINT OF CURVE;
- (5) ON THE ARC OF A CURVE TO THE LEFT, HAVING A DELTA OF 02 DEGREES 07 MINUTES 03 SECONDS, A RADIUS OF 1330.00 FEET, A DISTANCE OF 49.15 FEET TO A POINT ON THE NORTH LINE OF THE SOUTH HALF OF SAID SECTION 21;

THENCE SOUTH 89 DEGREES 50 MINUTES 58 SECONDS EAST ON SAID NORTH LINE, A DISTANCE OF 3635.53 FEET TO THE POINT OF BEGINNING;

### ENGINEER'S STATEMENT

THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION. SAID PLANS AND SPECIFICATIONS HAVE BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR DETAILED ROADWAY, DRAINAGE, GRADING AND EROSION CONTROL PLANS AND SPECIFICATIONS. SAID PLANS AND SPECIFICATIONS ARE IN CONFORMITY WITH APPLICABLE MASTER DRAINAGE PLANS AND MASTER TRANSPORTATION PLANS. SAID PLANS AND SPECIFICATIONS MEET THE PURPOSES FOR WHICH THE PARTICULAR ROADWAY AND DRAINAGE FACILITIES ARE DESIGNED AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARATION OF THESE DETAILED PLANS AND SPECIFICATIONS.

ENGINEER OF RECORD SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

### OWNER'S STATEMENT

I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN AND ALL OF THE REQUIREMENTS SPECIFIED IN THESE DETAILED PLANS AND SPECIFICATIONS.

OWNER SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

### EL PASO COUNTY:

COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY THROUGH THE APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT. FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA MANUAL VOLUMES 1 AND 2, AND ENGINEERING CRITERIA MANUAL, AS AMENDED. IN ACCORDANCE WITH ECM SECTION 1.12, THESE CONSTRUCTION DOCUMENTS WILL BE VALID FOR CONSTRUCTION FOR A PERIOD OF 2 YEARS FROM THE DATE SIGNED BY THE EL PASO COUNTY ENGINEER. IF CONSTRUCTION HAS NOT STARTED WITHIN THOSE 2 YEARS, THE PLANS WILL NEED TO BE RESUBMITTED FOR APPROVAL, INCLUDING PAYMENT OF REVIEW FEES AT THE PLANNING AND COMMUNITY DEVELOPMENT DIRECTOR'S DISCRETION.

COUNTY PROJECT ENGINEER SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

Add business name and address under signature.

Revise County Project Engineer to state "Joshua Palmer, P.E. Interim County Engineer / ECM Administrator"

Add PDC File No. CDR-228

**ENGINEER CONTACT(S):**  
HR GREEN DEVELOPMENT, LLC  
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DRAWN BY: CMM JOB DATE: 3/3/2022  
APPROVED: TBI JOB NUMBER: 201662.03  
CAD DATE: 5/10/2022  
CAD FILE: J:\2020\201662.03\CAD\dwgs\CITITLE SHEET

BAR IS ONE INCH ON OFFICIAL DRAWINGS.  
IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.

NO.	DATE	BY	REVISION DESCRIPTION



**GRANDVIEW RESERVE**  
DR HORTON  
FALCON, COLORADO

GRANDVIEW METRO DISTRICT  
TITLE SHEET

SHEET NO.  
**TS1 01**

**STANDARD NOTES FOR EL PASO COUNTY CONSTRUCTION PLANS**

- ALL DRAINAGE AND ROADWAY CONSTRUCTION SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF COLORADO SPRINGS/EL PASO COUNTY DR AND 2, AND THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD NOTIFICATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CALL 811 TO CONTACT THE UTILITY NOTIFICATION CENTER C
- CONTRACTOR SHALL KEEP A COPY OF THESE APPROVED PLANS, THE GRADING AND EROSION CONTROL PLAN, THE STORMWATER MANAGEMENT PLAN (SWMP) REPORT, AND THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES, INCLUDING THE FOLLOWING:
  - EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)
  - CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2
  - COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
  - CDOT M & S STANDARDS
- NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING. ANY MODIFICATIONS NECESSARY TO MEET CRITERIA AFTER-THE-FACT WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
- IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ACCURATELY SHOW EXISTING CONDITIONS, BOTH ONSITE AND OFFSITE, ON THE CONSTRUCTION PLANS. ANY MODIFICATIONS NECESSARY DUE TO CONFLICTS, OMISSIONS, OR CHANGED CONDITIONS WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
- CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT (PCDD) PRIOR TO STARTING CONSTRUCTION.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND THE REQUIREMENTS OF ALL JURISDICTIONAL AGENCIES AND TO OBTAIN ALL REQUIRED PERMITS LIMITED TO EL PASO COUNTY EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP), REGIONAL BUILDING FLOODPLAIN DEVELOPMENT PERMIT, U.S. ARMY CORPS OF ENGINEERS PERMITS, AND COUNTY AND STATE FUGITIVE DUST PERMITS.
- CONTRACTOR SHALL NOT DEVIATE FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE DESIGN ENGINEER AND PCDD. CONTRACTOR SHALL BE RESPONSIBLE FOR IMMEDIATELY UPON DISCOVERY OF ANY ERRORS OR INCONSISTENCIES.
- ALL STORM DRAIN PIPE SHALL BE CLASS III RCP UNLESS OTHERWISE NOTED AND APPROVED BY PCDD.
- CONTRACTOR SHALL COORDINATE GEOTECHNICAL TESTING PER ECM STANDARDS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY PCDD PRIOR TO PLACEMENT OF CURB AND GUTTER AND PAVEMENT.
- ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
- SIGHT VISIBILITY TRIANGLES AS IDENTIFIED IN THE PLANS SHALL BE PROVIDED AT ALL INTERSECTIONS. OBSTRUCTIONS GREATER THAN 18 INCHES ABOVE FLOWLINE ARE NOT ALLOWED WITHIN SIGHT TRIANGLES.
- SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY AND MUTCD CRITERIA. [IF APPLICABLE, ADDITIONAL SIGNING AND STRIPING NOTES WILL BE PROVIDED.]
- CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DPW, INCLUDING WORK WITHIN THE RIGHT-OF-WAY AND SPECIAL TRANSPORT PERMITS.
- THE LIMITS OF CONSTRUCTION SHALL REMAIN WITHIN THE PROPERTY LINE UNLESS OTHERWISE NOTED. THE OWNER/DEVELOPER SHALL OBTAIN WRITTEN PERMISSION AND EASEMENTS, WHERE REQUIRED, FROM ADJOINING PROPERTY OWNER(S) PRIOR TO ANY OFF-SITE DISTURBANCE, GRADING, OR CONSTRUCTION.

Provide channel lining detail. What grass lining was assumed. The 7fps velocity exceeds the permissible velocity for native grass. Short native grass permissible velocity is around 3 to 4 fps.

Per DCM Table 10-4, 7fps permissible velocity only corresponds to sodded grass.

Allowable shear stress seems high. Assuming short native grass lining then the range should be around 0.7-0.95 lbs/sf

Identify the design parameter for this row

Update to specify either Engineering Criteria Manual (ECM) or Drainage Criteria Manual (DCM) for all "EPC" references.

# CHANNEL DESIGN PARAMETERS

Design Parameter	Grandview Reserve Design Value	Design Value From MHFD	El Paso County
	5 ft	5 ft	5 ft
Roughness values	EPC Table 10-2	Per Table 8-5	EPC Table 10-2
Maximum 5-year velocity, main channel (within bankfull channel width) (ft/s)	5 ft/s	5 ft/s	EPC Table 10-3 and 10-4
Maximum 100-year velocity, main channel (within bankfull channel width) (ft/s)	7 ft/s	7 ft/s	EPC Table 10-3 and 10-4
Froude No., 5-year, main channel (within bankfull channel width)	0.7	0.7	
Froude No., 100-year, main channel (within bankfull channel width)	0.8	0.8	0.9 (From section 10.7)
Maximum shear stress, 100-year, main channel (within bankfull channel width)	1.2 lb/sf	1.2 lb/sf	
Minimum bankfull capacity of bankfull channel (based on future development conditions)	70% of 2 year, 10.5 cfs	70% of 2-year discharge or 10% of 100-yr discharge, whichever is greater*	10-yr storm, to be concrete lined or rip rap, ECM 10.5.4
Minimum bankfull channel geometry <sup>1</sup>		Per Table 8-2	
Design Channel Type	C4		
Entrenchment Ratio	2.7-31.65 (x=5.26)		
Width to depth ratio	13.5-75.0 (x=29.28)		
Sinuosity	1.43-2.80 (x=1.92)		
Slope	0.0001-0.0184 (x=0.0045)		
D50	12-14mm (~0.5 in)		
d84	32-48mm (~1.6in)		
Meander Length <sup>2</sup>	34-92 (x=56)		
Belt Width <sup>2</sup>	18-55 (x=32)		
Radius of Curvature <sup>2</sup>	7-28 (x=11)		
Minimum Floodplain Terrace	6 ft		
Maximum overbank side slope	4(H):1(V)	4(H):1(V)	4(H):1(V) when grassed, 2(H):1(V) when concrete, 2.5(H):1(V) when riprap
Maximum bankfull side slope	2.5(H):1(V)	2.5(H):1(V)	
Minimum bottom width	3.8 ft		At least twice depth, but not less than 8 ft for channels conveying at least 400 cfs
Freeboard	1.5 ft	18 inch min	freeboard in ft = 1.0 + 0.025 (velocity in fps)(depth in ft)0.33, to be 12 inch minimum

\*THE DESIGN'S BANKFULL CROSS SECTION GEOMETRY WAS ESTIMATED ASSUMING 70% OF THE 2-YEAR FLOW (AN OPTION DESCRIBED IN MILE HIGH FLOOD DISTRICT'S DESIGN MANUAL VOLUME 1). LEOPOLD (A VIEW OF THE RIVER, 1994; FLUVIAL PROCESSES ON GEOMORPHOLOGY, 1992) SHOWED A VERY STRONG CORRELATION BETWEEN THE EFFECTIVE DISCHARGE CHANNEL AND FIELD-DETERMINED BANKFULL GEOMETRY WHERE THE OBSERVED EQUILIBRIUM CHANNEL'S SPILL-OVER POINT TO THE FLOODPLAIN. THIS POINT IS MOST OFTEN CORRELATED TO A FLOW RETURN INTERVAL BETWEEN 1.0-2.0 YEARS WITH AN AVERAGE OF 1.5-YEARS (THOUGH EXCEPTIONS DO EXIST). AS WE DO NOT HAVE GAUGE DATA TO PERFORM A FLOW FREQUENCY ANALYSIS FOR THIS PROJECT'S CHANNEL, NOR A SUITABLE REFERENCE REACH TO SERVE AS AN ANALOGUE WITH WHICH TO SCALE USING DIMENSIONLESS RATIOS RELATED TO THE BANKFULL WIDTH, WE HAVE CHOSEN TO USE THE 2-YEAR FREQUENCY RAINFALL TO APPROXIMATE THE HYDROLOGIC CONDITION OF THE WATERSHED THAT WOULD RESULT IN THE 1.5-1.8 YR FLOW INTERVAL (APPROXIMATELY 70% OF THE 2-YR FLOW INTERVAL).

MILE HIGH FLOOD DISTRICTS' (MHFD) DESIGN MANUAL VOLUME 1 ALSO PRESENTS THE OPTION OF USING 10% OF THE 100-YR DISCHARGE TO SIZE THE BANKFULL CHANNEL'S CAPACITY. IN THE CASE OF THIS PROJECT, WE HAVE NOT OPTED FOR THIS ALTERNATIVE. OUR CONCERN IS THAT THE RESULTING CHANNEL CROSS SECTIONAL AREA DERIVED FROM THIS ALTERNATIVE WOULD BE OVERSIZED AND LEAD TO SEDIMENT ACCUMULATION ON THE BED THROUGH TIME (AGGRADATION). AGGRADATION OCCURS WHEN INSUFFICIENT STREAM POWER IS PRESENT TO TRANSPORT SEDIMENT THROUGH THE CHANNEL, WHICH CAN RESULT FROM AN OVERSIZED BANKFULL CHANNEL. IN THESE CASES, MID-CHANNEL BARS CAN FORM WHICH PUSH FLOWS INTO THE BANKS INCREASING THE RISK OF EROSION AND LATERAL MIGRATION OF THE CHANNEL.

**STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL PLANS**

- STORMWATER DISCHARGES FROM CONSTRUCTION SITES SHALL NOT CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR DEGRADATION OF STATE WATERS. ALL WORK AND EARTH DISTURBANCE SHALL BE DONE IN A MANNER THAT MINIMIZES POLLUTION OF ANY ON-SITE OR OFF-SITE WATERS, INCLUDING WETLANDS.
- NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING.
- A SEPARATE STORMWATER MANAGEMENT PLAN (SMWP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) ISSUED PRIOR TO COMMENCING CONSTRUCTION. MANAGEMENT OF THE SWMP DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE DESIGNATED QUALIFIED STORMWATER MANAGER OR CERTIFIED EROSION CONTROL INSPECTOR. THE SWMP SHALL BE LOCATED ON-SITE AT ALL TIMES DURING CONSTRUCTION AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE FIELD.
- ONCE THE ESQCP IS APPROVED AND A "NOTICE TO PROCEED" HAS BEEN ISSUED, THE CONTRACTOR MAY INSTALL THE INITIAL STAGE EROSION AND SEDIMENT CONTROL MEASURES AS INDICATED ON THE APPROVED GEC. A PRECONSTRUCTION MEETING BETWEEN THE CONTRACTOR, ENGINEER, AND EL PASO COUNTY WILL BE HELD PRIOR TO ANY CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE APPLICANT TO COORDINATE THE MEETING TIME AND PLACE WITH COUNTY STAFF.
- CONTROL MEASURES MUST BE INSTALLED PRIOR TO COMMENCEMENT OF ACTIVITIES THAT COULD CONTRIBUTE POLLUTANTS TO STORMWATER. CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, AND DISTURBED LAND AREAS SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF THE DISTURBANCE.
- ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE MAINTAINED AND REMAIN IN EFFECTIVE OPERATING CONDITION UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND FINAL STABILIZATION IS ESTABLISHED. ALL PERSONS ENGAGED IN LAND DISTURBANCE ACTIVITIES SHALL ASSESS THE ADEQUACY OF CONTROL MEASURES AT THE SITE AND IDENTIFY IF CHANGES TO THOSE CONTROL MEASURES ARE NEEDED TO ENSURE THE CONTINUED EFFECTIVE PERFORMANCE OF THE CONTROL MEASURES. ALL CHANGES TO TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES MUST BE INCORPORATED INTO THE STORMWATER MANAGEMENT PLAN.
- TEMPORARY STABILIZATION SHALL BE IMPLEMENTED ON DISTURBED AREAS AND STOCKPILES WHERE GROUND DISTURBING CONSTRUCTION ACTIVITY HAS PERMANENTLY CEASED OR TEMPORARILY CEASED FOR LONGER THAN 14 DAYS.
- FINAL STABILIZATION MUST BE IMPLEMENTED AT ALL APPLICABLE CONSTRUCTION SITES. FINAL STABILIZATION IS ACHIEVED WHEN ALL GROUND DISTURBING ACTIVITIES ARE COMPLETE AND ALL DISTURBED AREAS EITHER HAVE A UNIFORM VEGETATIVE COVER WITH INDIVIDUAL PLANT DENSITY OF 70 PERCENT OF PRE-DISTURBANCE LEVELS ESTABLISHED OR EQUIVALENT PERMANENT ALTERNATIVE STABILIZATION METHOD IS IMPLEMENTED. ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REMOVED UPON FINAL STABILIZATION AND BEFORE PERMIT CLOSURE.
- ALL PERMANENT STORMWATER MANAGEMENT FACILITIES SHALL BE INSTALLED AS DESIGNED IN THE APPROVED PLANS. ANY PROPOSED CHANGES THAT EFFECT THE DESIGN OR FUNCTION OF PERMANENT STORMWATER MANAGEMENT STRUCTURES MUST BE APPROVED BY THE ECM ADMINISTRATOR PRIOR TO IMPLEMENTATION.
- EARTH DISTURBANCES SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO EFFECTIVELY MINIMIZE ACCELERATED SOIL EROSION AND RESULTING SEDIMENTATION. ALL DISTURBANCES SHALL BE DESIGNED, CONSTRUCTED, AND COMPLETED SO THAT THE EXPOSED AREA OF ANY DISTURBED LAND SHALL BE LIMITED TO THE SHORTEST PRACTICAL PERIOD OF TIME. PRE-EXISTING VEGETATION SHALL BE PROTECTED AND MAINTAINED WITHIN 50 HORIZONTAL FEET OF A WATERS OF THE STATE UNLESS SHOWN TO BE INFEASIBLE AND SPECIFICALLY REQUESTED AND APPROVED.
- COMPACTION OF SOIL MUST BE PREVENTED IN AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES OR WHERE FINAL STABILIZATION WILL BE ACHIEVED BY VEGETATIVE COVER. AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES SHALL ALSO BE PROTECTED FROM SEDIMENTATION DURING CONSTRUCTION UNTIL FINAL STABILIZATION IS ACHIEVED. IF COMPACTION PREVENTION IS NOT FEASIBLE DUE TO SITE CONSTRAINTS, ALL AREAS DESIGNATED FOR INFILTRATION AND VEGETATION CONTROL MEASURES MUST BE LOOSEEN PRIOR TO INSTALLATION OF THE CONTROL MEASURE(S).
- ANY TEMPORARY OR PERMANENT FACILITY DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF STORMWATER AROUND, THROUGH, OR FROM THE EARTH DISTURBANCE AREA SHALL BE A STABILIZED CONVEYANCE DESIGNED TO MINIMIZE EROSION AND THE DISCHARGE OF SEDIMENT OFF-SITE.
- CONCRETE WASH WATER SHALL BE CONTAINED AND DISPOSED OF IN ACCORDANCE WITH THE SWMP. NO WASH WATER SHALL BE DISCHARGED TO OR ALLOWED TO ENTER STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES. CONCRETE WASHOUTS SHALL NOT BE LOCATED IN AN AREA WHERE SHALLOW GROUNDWATER MAY BE PRESENT, OR WITHIN 50 FEET OF A SURFACE WATER BODY, CREEK OR STREAM.
- DURING DEWATERING OPERATIONS, UNCONTAMINATED GROUNDWATER MAY BE DISCHARGED ON-SITE, BUT SHALL NOT LEAVE THE SITE IN THE FORM OF SURFACE RUNOFF UNLESS AN APPROVED STATE DEWATERING PERMIT IS IN PLACE.
- EROSION CONTROL BLANKETING OR OTHER PROTECTIVE COVERING SHALL BE USED ON SLOPES STEEPER THAN 3:1.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL WASTES FROM THE CONSTRUCTION SITE FOR DISPOSAL IN ACCORDANCE WITH LOCAL AND STATE REGULATORY REQUIREMENTS. NO CONSTRUCTION DEBRIS, TREE SLASH, BUILDING MATERIAL WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURIED, DUMPED, OR DISCHARGED AT THE SITE.
- WASTE MATERIALS SHALL NOT BE TEMPORARILY PLACED OR STORED IN THE STREET, ALLEY, OR OTHER PUBLIC WAY, UNLESS IN ACCORDANCE WITH AN APPROVED TRAFFIC CONTROL PLAN. CONTROL MEASURES MAY BE REQUIRED BY EL PASO COUNTY ENGINEERING IF DEEMED NECESSARY, BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES.
- TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFF-SITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.
- THE OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION DEBRIS, DIRT, TRASH, ROCK, SEDIMENT, SOIL, AND SAND THAT MAY ACCUMULATE IN ROADS, STORM DRAINS AND OTHER DRAINAGE CONVEYANCE SYSTEMS AND STORMWATER APPURTENANCES AS A RESULT OF SITE DEVELOPMENT.
- THE QUANTITY OF MATERIALS STORED ON THE PROJECT SITE SHALL BE LIMITED, AS MUCH AS PRACTICAL, TO THAT QUANTITY REQUIRED TO PERFORM THE WORK IN AN ORDERLY SEQUENCE. ALL MATERIALS STORED ON-SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER, IN THEIR ORIGINAL CONTAINERS, WITH ORIGINAL MANUFACTURER'S LABELS.
- NO CHEMICAL(S) HAVING THE POTENTIAL TO BE RELEASED IN STORMWATER ARE TO BE STORED OR USED ON-SITE UNLESS PERMISSION FOR THE USE OF SUCH CHEMICAL(S) IS GRANTED IN WRITING BY THE ECM ADMINISTRATOR. IN GRANTING APPROVAL FOR THE USE OF SUCH CHEMICAL(S), SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.
- BULK STORAGE OF ALLOWED PETROLEUM PRODUCTS OR OTHER ALLOWED LIQUID CHEMICALS IN EXCESS OF 55 GALLONS SHALL REQUIRE ADEQUATE SECONDARY CONTAINMENT PROTECTION TO CONTAIN ALL SPILLS ON-SITE AND TO PREVENT ANY SPILLED MATERIALS FROM ENTERING STATE WATERS, ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR OTHER FACILITIES.
- NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE CURB AND GUTTER OR DITCH EXCEPT WITH APPROVED SEDIMENT CONTROL MEASURES.
- OWNER/DEVELOPER AND THEIR AGENTS SHALL COMPLY WITH THE "COLORADO WATER QUALITY CONTROL ACT" (TITLE 25, ARTICLE 8, CRS), AND THE "CLEAN WATER ACT" (33 USC 1344), IN ADDITION TO THE REQUIREMENTS OF THE LAND DEVELOPMENT CODE, DCM VOLUME II AND THE ECM APPENDIX I. ALL APPROPRIATE PERMITS MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION (1041, NPDES, FLOODPLAIN, 404, FUGITIVE DUST, ETC.), IN THE EVENT OF CONFLICTS BETWEEN THESE REQUIREMENTS AND OTHER LAWS, RULES, OR REGULATIONS OF OTHER FEDERAL, STATE, LOCAL, OR COUNTY AGENCIES, THE MOST RESTRICTIVE LAWS, RULES, OR REGULATIONS SHALL APPLY.
- ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE ONLY AT APPROVED CONSTRUCTION ACCESS POINTS.
- PRIOR TO CONSTRUCTION THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
- A WATER SOURCE SHALL BE AVAILABLE ON-SITE DURING EARTHWORK OPERATIONS AND SHALL BE UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.
- THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY [COMPANY NAME, DATE OF REPORT] AND SHALL BE CONSIDERED A PART OF THESE PLANS.
- AT LEAST TEN (10) DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB ONE (1) ACRE OR MORE, THE OWNER OR OPERATOR OF CONSTRUCTION ACTIVITY SHALL SUBMIT A PERMIT APPLICATION FOR STORMWATER DISCHARGE TO THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, WATER QUALITY DIVISION. THE APPLICATION CONTAINS CERTIFICATION OF COMPLETION OF A STORMWATER MANAGEMENT PLAN (SWMP), OF WHICH THIS GRADING AND EROSION CONTROL PLAN MAY BE A PART. FOR INFORMATION OR APPLICATION MATERIALS CONTACT:

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT  
 WATER QUALITY CONTROL DIVISION  
 WQCD - PERMITS  
 4300 CHERRY CREEK DRIVE SOUTH  
 DENVER, CO 80246-1530  
 ATTN: PERMITS UNIT

Please provide a copy of the soils report.

To be verified on resubmittal once the complete HEC-Ras model is provided in the FDR.

STATION	2-YR STORM	5-YR STORM	100-YR STORM
37+13	23 cfs	67 cfs	413 cfs
25+92	26.45 cfs	80.03 cfs	479.80 cfs
15+57	26.45 cfs	80.03 cfs	479.80 cfs

STATION	2-YR STORM	5-YR STORM	100-YR STORM
37+13	23 cfs	67 cfs	413 cfs
25+92	23 cfs	67 cfs	413 cfs
15+57	27.75 cfs	67.69 cfs	466.95 cfs

STATION	2-YR STORM	5-YR STORM	100-YR STORM
45+30	19 cfs	59 cfs	280 cfs
22+59	20.14 cfs	68.95 cfs	390.70 cfs
6+14	22.14 cfs	85.99 cfs	597.42 cfs

STATION	2-YR STORM	5-YR STORM	100-YR STORM
47+49	19 cfs	59 cfs	280 cfs
36+50	31.72 cfs	60.52 cfs	395.83 cfs
5+54	33.53 cfs	63.16 cfs	553.68 cfs

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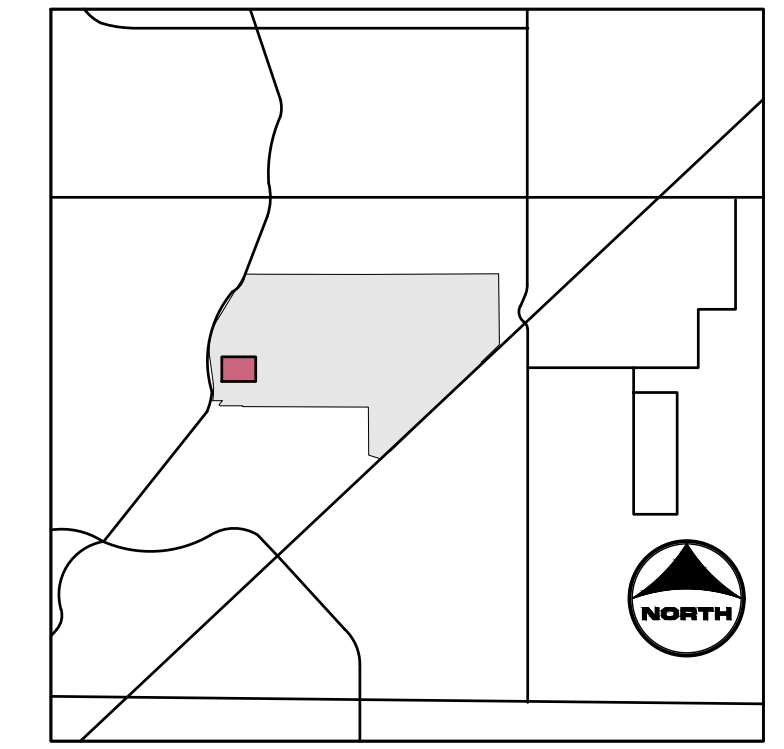
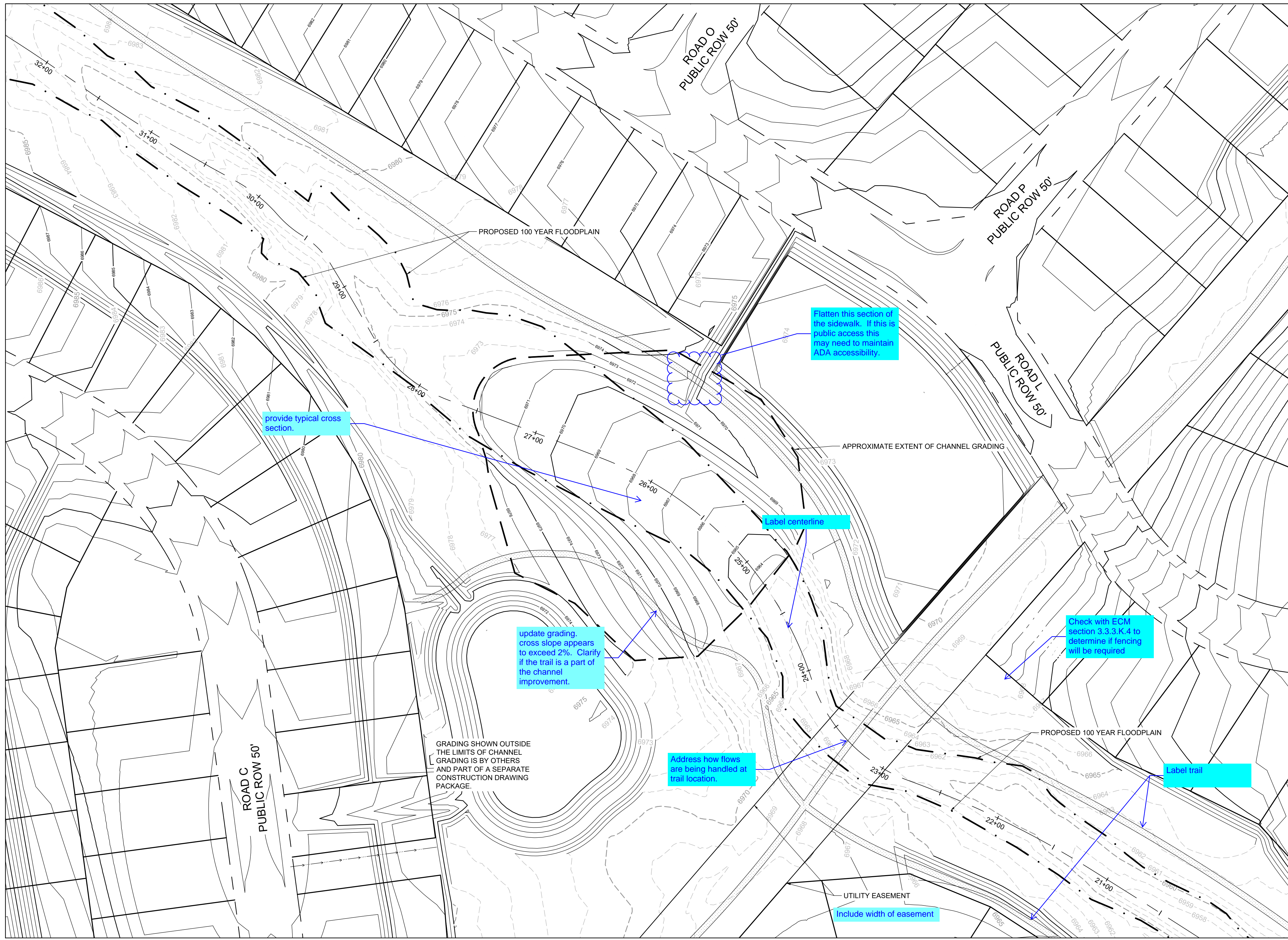


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GRANDVIEW METRO DISTRICT  
 GENERAL NOTES

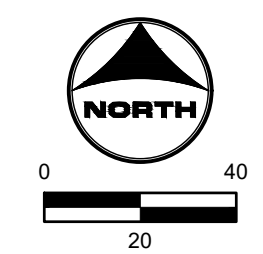
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**GN1 02**





- KEYMAP**
- PROJECT LEGEND:**
- PROPERTY LINE
  - ROAD CENTERLINE
  - RIGHT-OF-WAY LINE
  - PROPOSED DETENTION BASIN
  - 5250— PROPOSED MAJOR CONTOUR
  - 5250— EXISTING MAJOR CONTOUR
  - EXISTING MINOR CONTOUR
  - FLOW ARROW
  - EFFECTIVE 100-YR FLOODPLAIN
  - EFFECTIVE 100-YR FLOODWAY
  - POTENTIAL WALL
  - STORM SEWER
  - STORM INLET TYPE R
  - STORM MANHOLE
  - STORM END SECTION

Show and label all wetland areas



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HR GREEN Xref: xref.dwg; GRADING KEY: HRG1\_20X\_PBase\_01-XC-PR\_100YR\_FP\_DELINEATION\_A\_01\_LDC\_BOX\_CULVERTS

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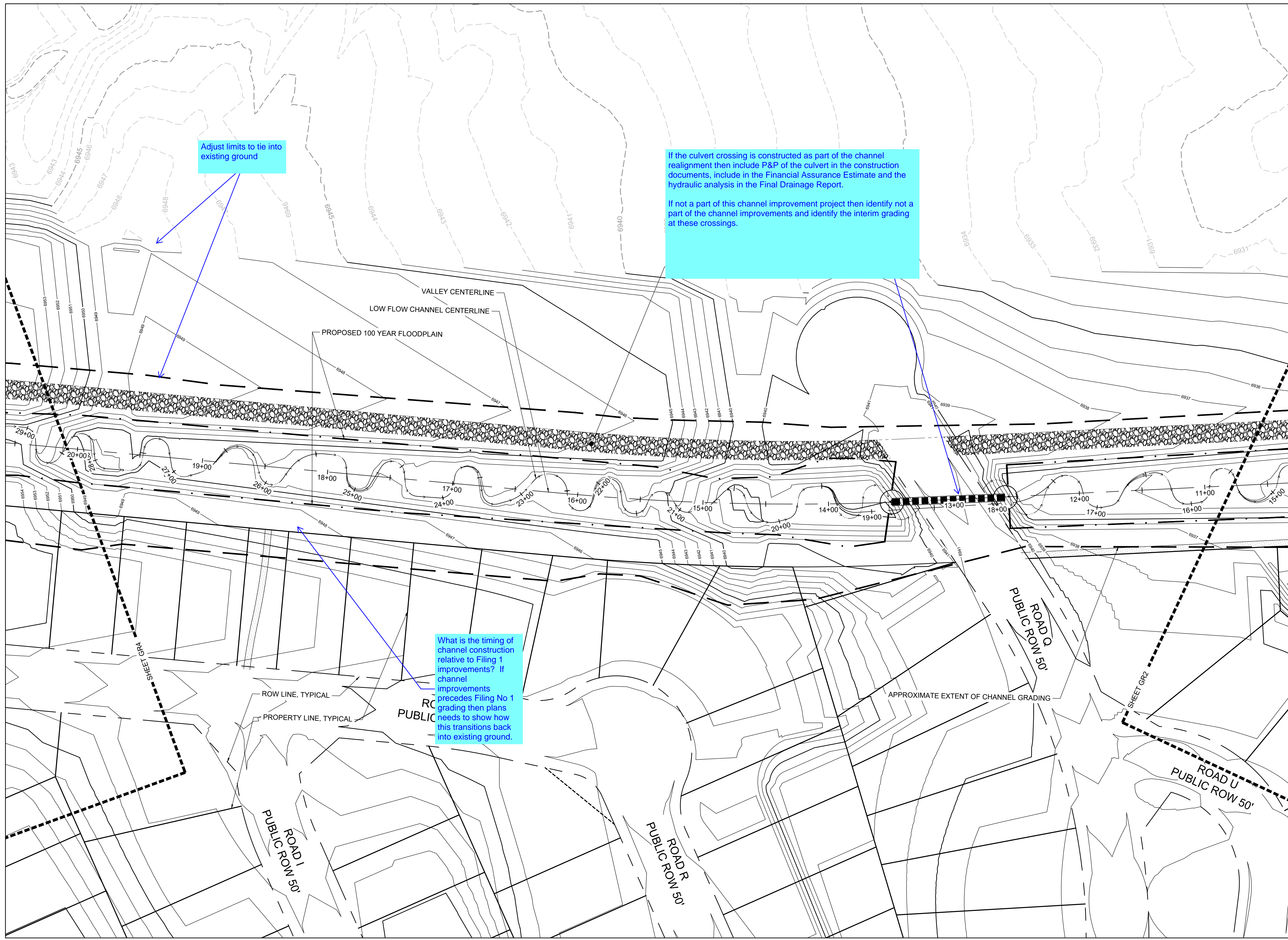
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FALCON, COLORADO

GRANDVIEW METRO DISTRICT  
CHANNEL A GRADING

SHEET NO.  
**GR1 04**



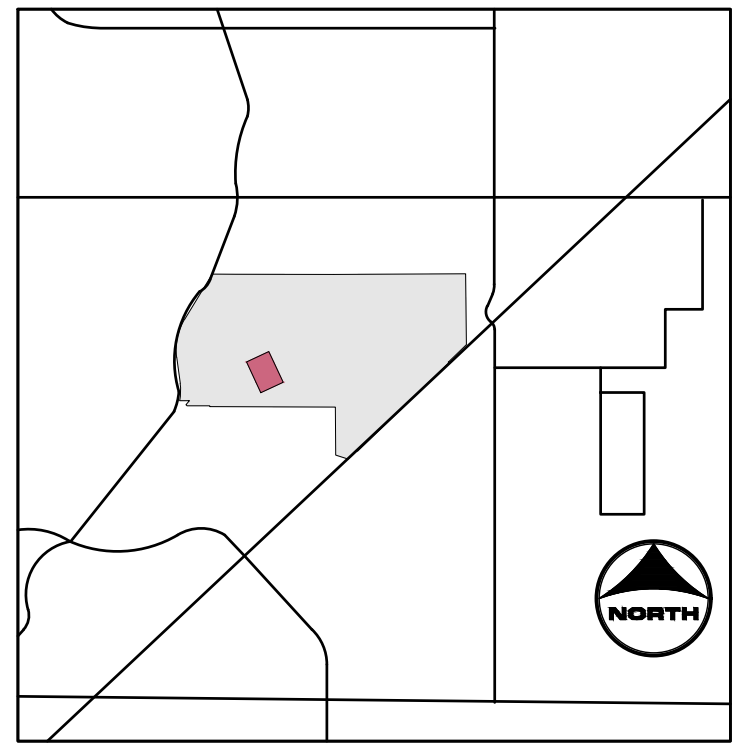


Adjust limits to tie into existing ground

If the culvert crossing is constructed as part of the channel realignment then include P&P of the culvert in the construction documents, include in the Financial Assurance Estimate and the hydraulic analysis in the Final Drainage Report.

If not a part of this channel improvement project then identify not a part of the channel improvements and identify the interim grading at these crossings.

What is the timing of channel construction relative to Filing 1 improvements? If channel improvements precedes Filing No 1 grading then plans needs to show how this transitions back into existing ground.



- KEYMAP**
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- PROPERTY LINE
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  - PROPOSED DETENTION BASIN
  - 5250— PROPOSED MAJOR CONTOUR
  - PROPOSED MINOR CONTOUR
  - - -5250- - - EXISTING MAJOR CONTOUR
  - - - EXISTING MINOR CONTOUR
  - FLOW ARROW
  - - - EFFECTIVE 100-YR FLOODPLAIN
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  - STORM END SECTION

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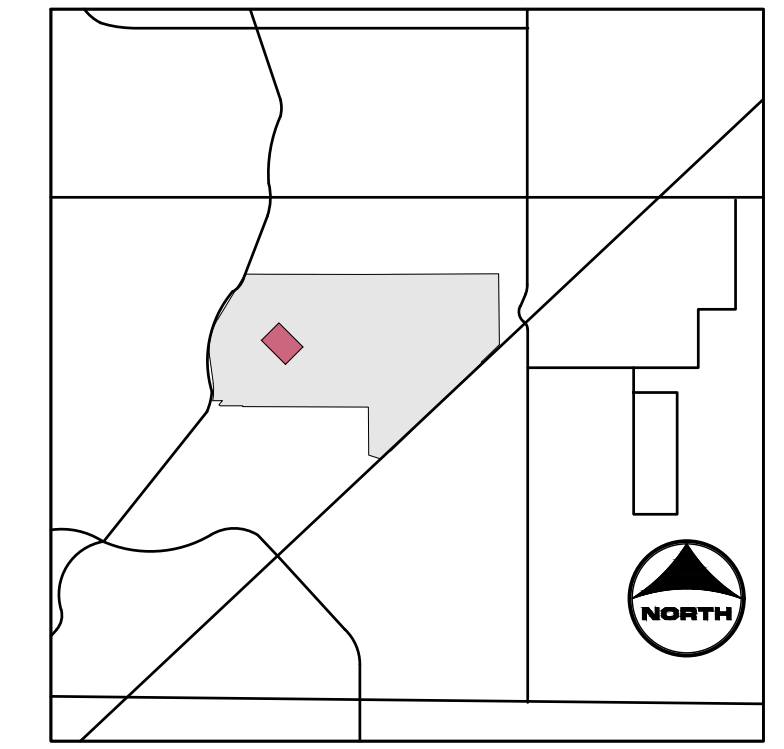
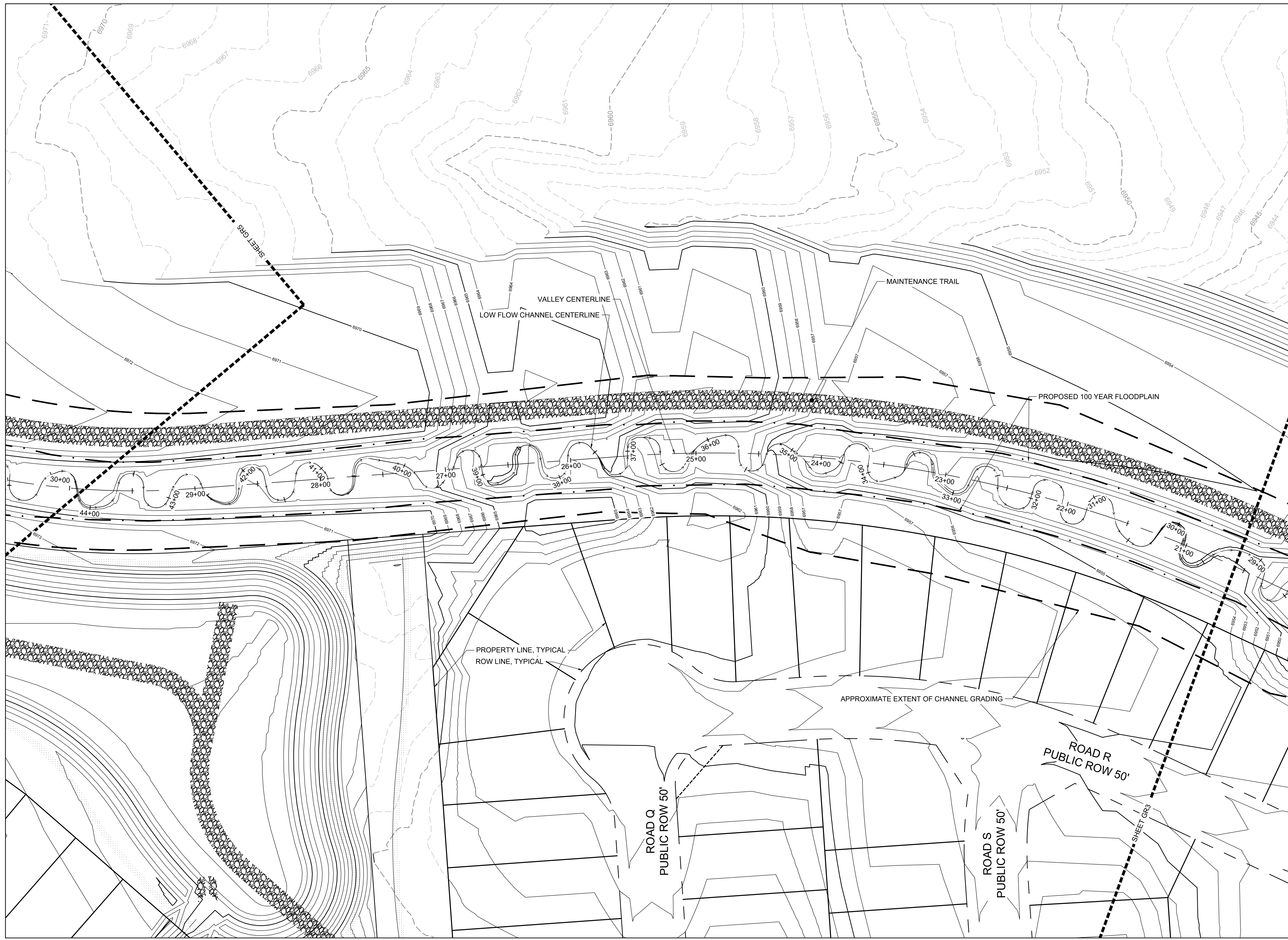
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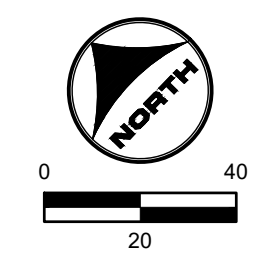
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GRANDVIEW METRO DISTRICT  
 CHANNEL B GRADING

SHEET NO.  
**GR3 06**



- KEYMAP**
- PROJECT LEGEND:**
- PROPERTY LINE
  - ROAD CENTERLINE
  - RIGHT-OF-WAY LINE
  - PROPOSED DETENTION BASIN
  - 5250— PROPOSED MAJOR CONTOUR
  - PROPOSED MINOR CONTOUR
  - - -5250- - - EXISTING MAJOR CONTOUR
  - - - EXISTING MINOR CONTOUR
  - FLOW ARROW
  - EFFECTIVE 100-YR FLOODPLAIN
  - EFFECTIVE 100-YR FLOODWAY
  - ▬ POTENTIAL WALL
  - STORM SEWER
  - STORM INLET TYPE R
  - STORM MANHOLE
  - ▬ STORM END SECTION



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GRANDVIEW METRO DISTRICT  
 CHANNEL B GRADING

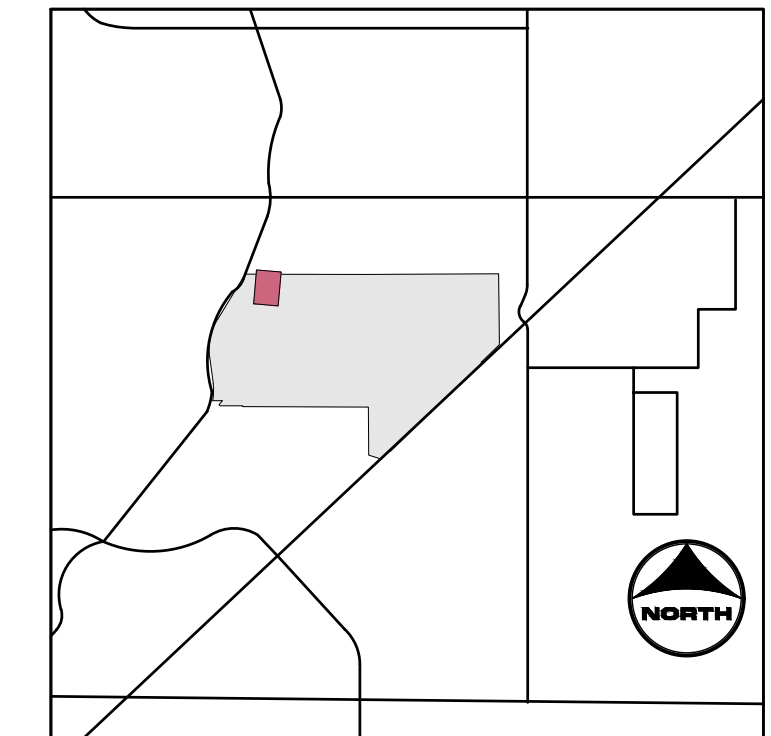
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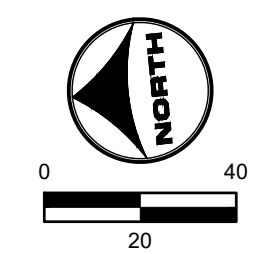
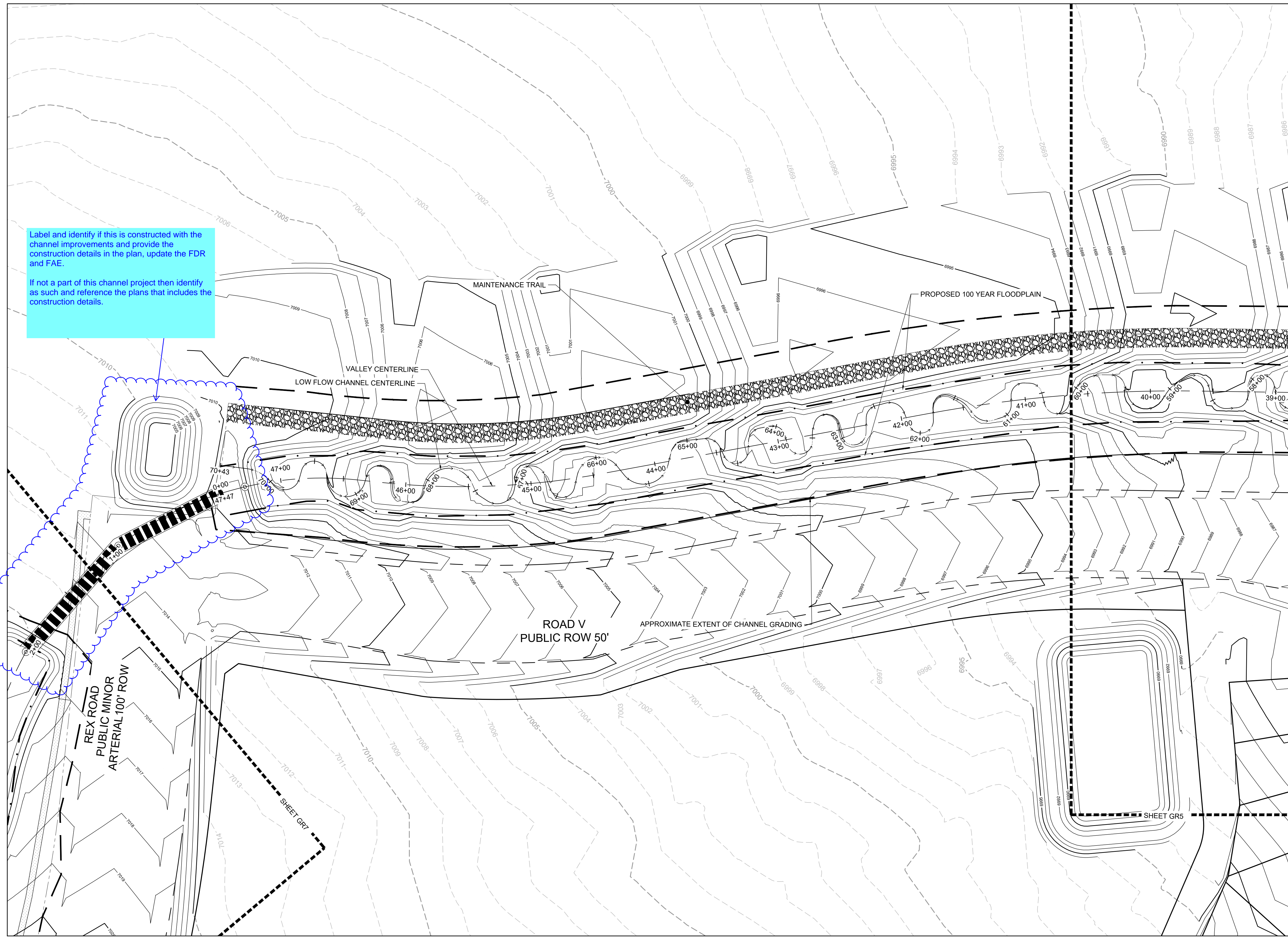


Label and identify if this is constructed with the channel improvements and provide the construction details in the plan, update the FDR and FAE.

If not a part of this channel project then identify as such and reference the plans that includes the construction details.



- KEYMAP**
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  - STORM END SECTION



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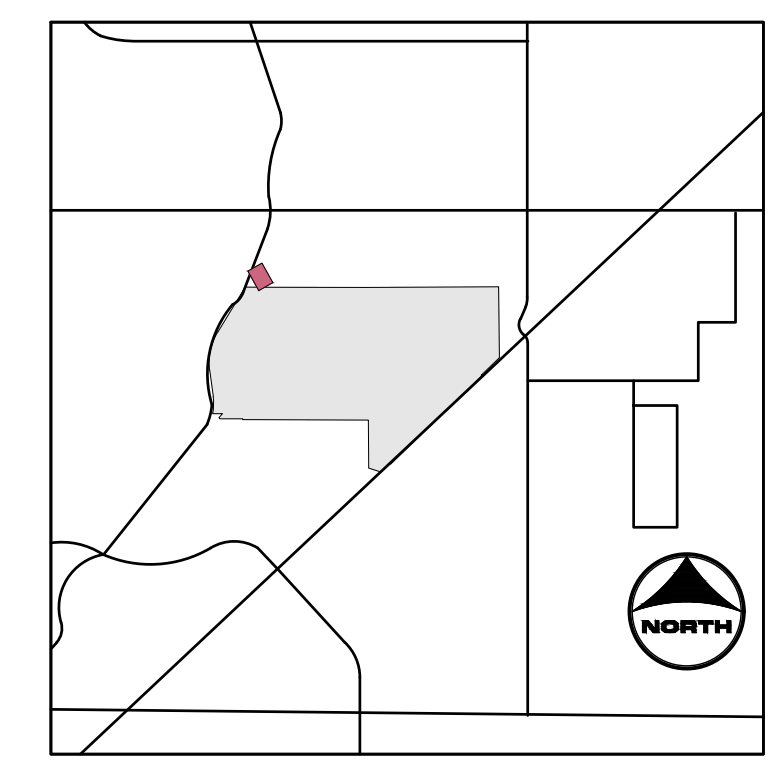
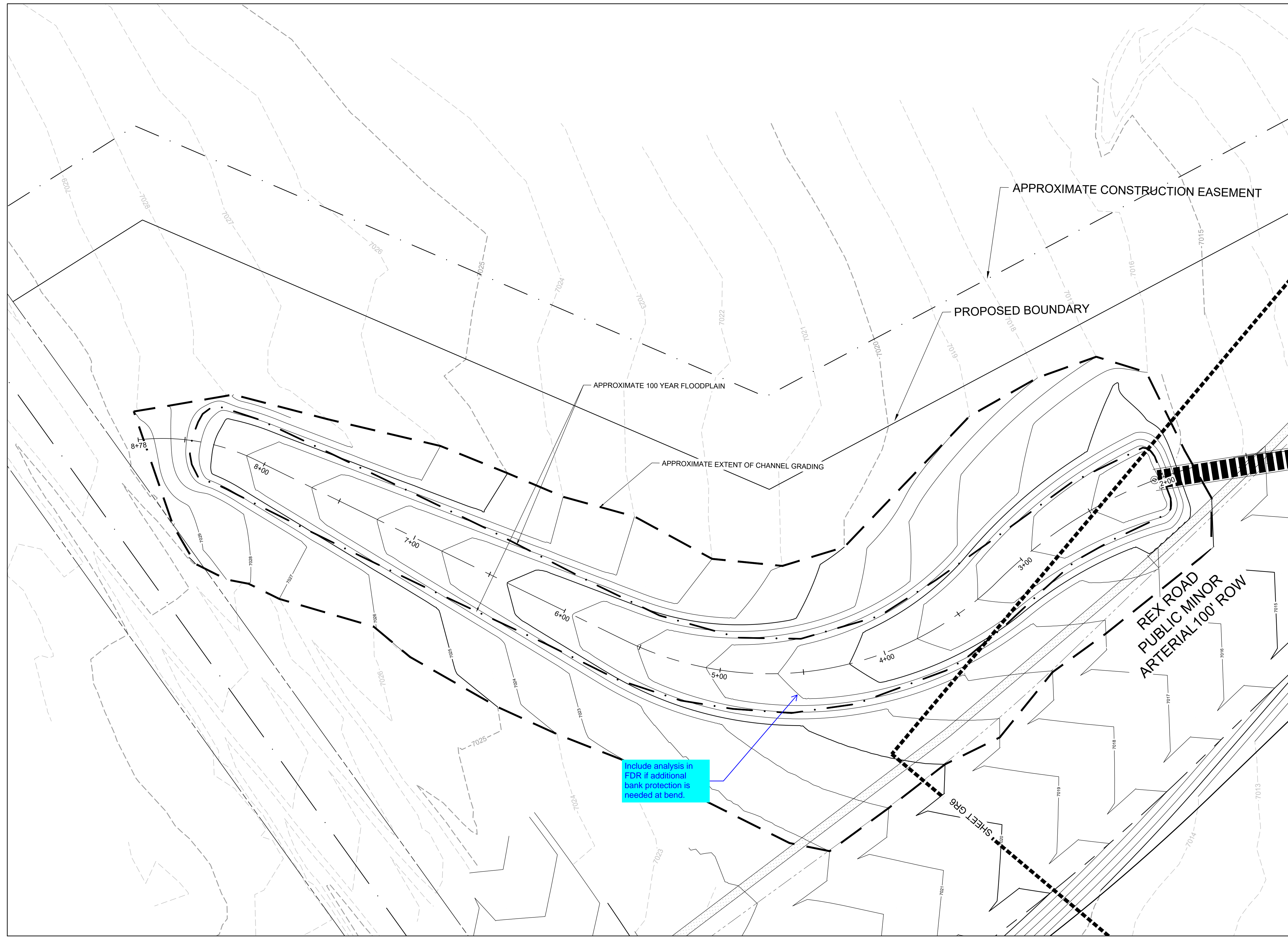


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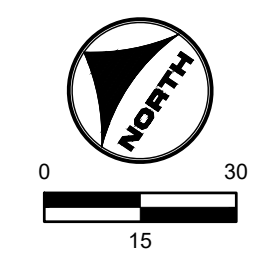
GRANDVIEW METRO DISTRICT  
CHANNEL B GRADING

SHEET NO.  
**GR6 09**

HR GREEN Xref: xref: -d:\01: GRADING KEY: HRG1\_20X\_PBase\_01x10xPR\_100YR\_FP\_DELINEATION\_01.DWG\_BOX\_CULVERTS



- PROJECT LEGEND:**
- PROPERTY LINE
  - ROAD CENTERLINE
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  - PROPOSED DETENTION BASIN
  - 5250— PROPOSED MAJOR CONTOUR
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  - - - EFFECTIVE 100-YR FLOODPLAIN
  - - - EFFECTIVE 100-YR FLOODWAY
  - ▨ POTENTIAL WALL
  - STORM SEWER
  - ⊕ STORM INLET TYPE R
  - ⊙ STORM MANHOLE
  - STORM END SECTION



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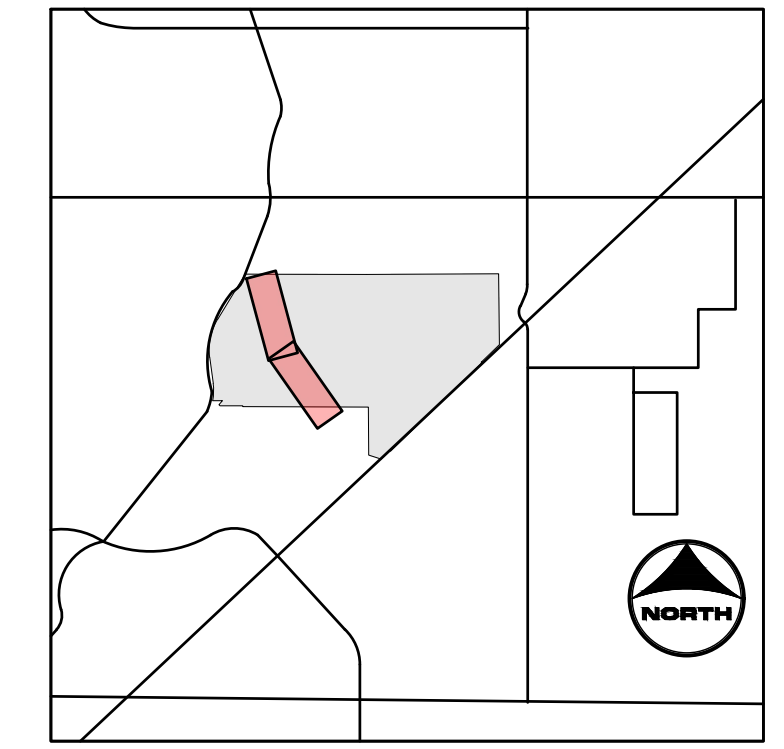
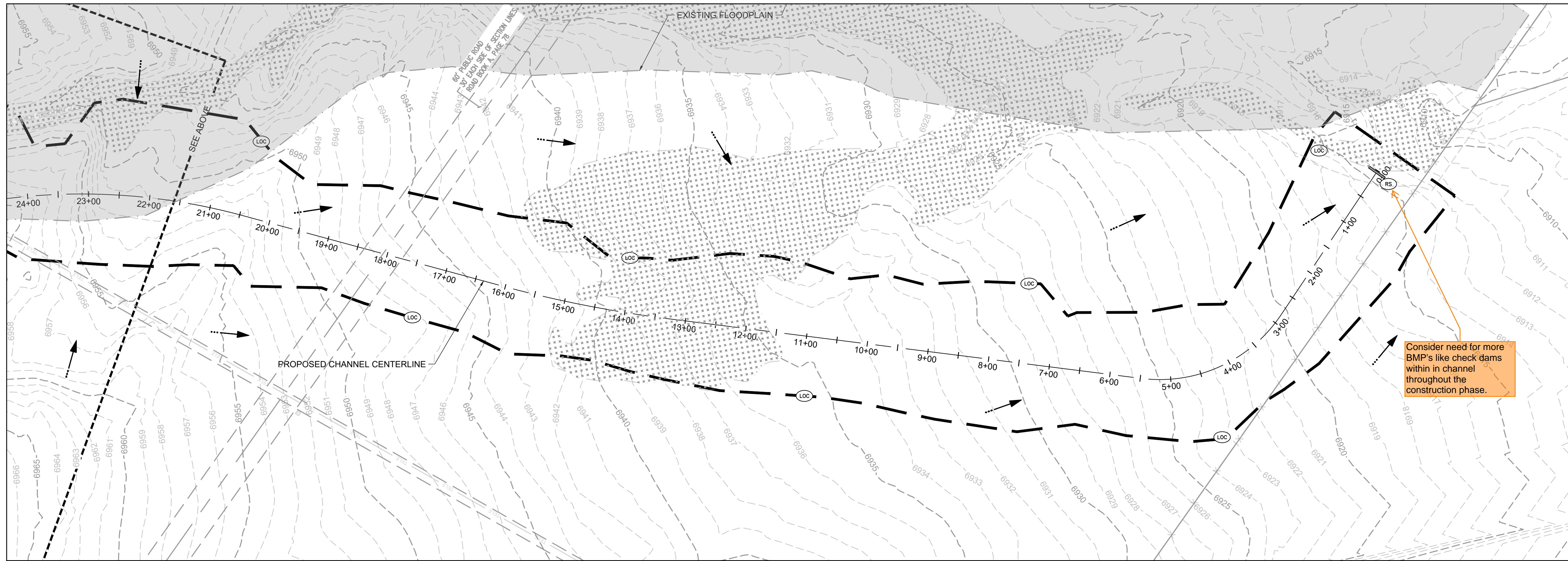
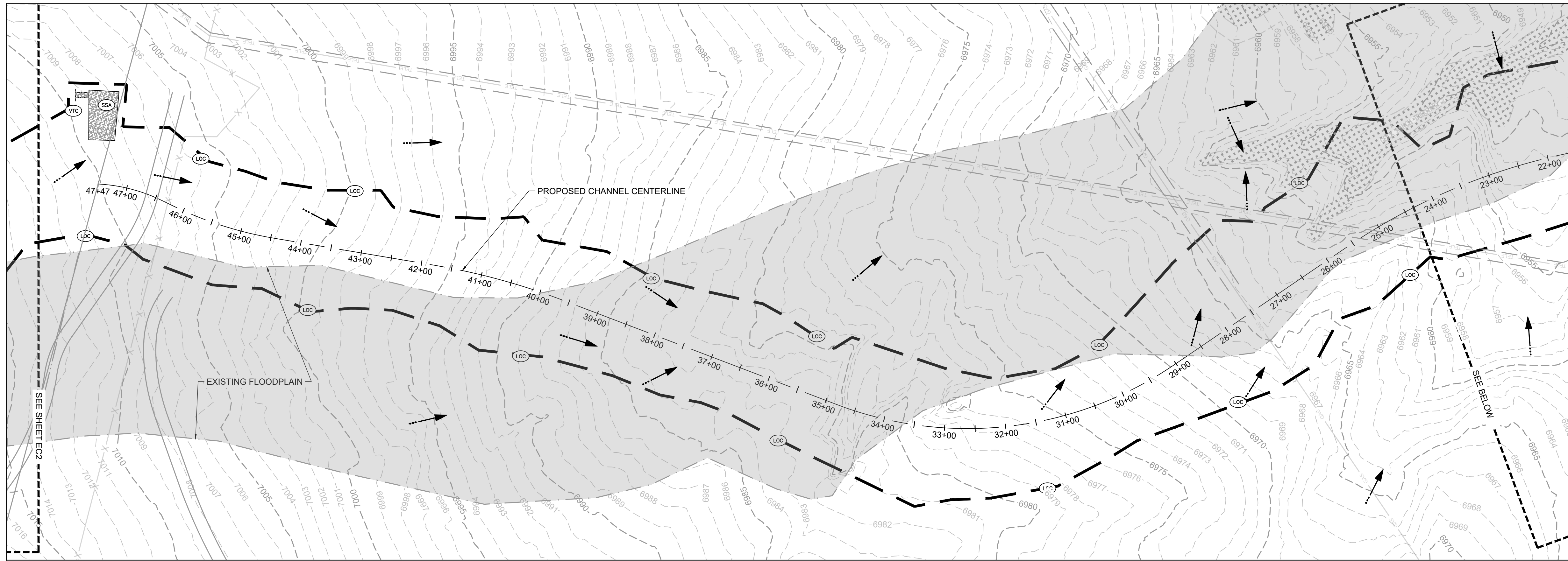
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GRANDVIEW METRO DISTRICT  
 CHANNEL B GRADING

SHEET NO.  
**GR7 10**



- KEYMAP**
- PROJECT LEGEND:**
- PROPERTY LINE
  - ROAD CENTERLINE
  - RIGHT-OF-WAY LINE
  - PROPOSED DETENTION BASIN
  - 5250— PROPOSED MAJOR CONTOUR
  - 5250— PROPOSED MINOR CONTOUR
  - EXISTING MAJOR CONTOUR
  - EXISTING MINOR CONTOUR
  - FLOW ARROW
  - - - - EFFECTIVE 100-YR FLOODPLAIN
  - - - - EFFECTIVE 100-YR FLOODWAY

- BMP LEGEND:**
- CWA CONCRETE WASHOUT AREA
  - CF CONSTRUCTION FENCE
  - DD DIVERSION DITCH
  - IP INLET PROTECTION
  - OP OUTLET PROTECTION
  - SF SILT FENCE
  - SSA STABILIZED STAGING AREA
  - VTC VEHICLE TRACKING CONTROL
  - LOC LIMITS OF CONSTRUCTION
  - CD CHECK DAM
  - SM SEEDING AND MULCHING
  - SB SEDIMENT BASIN
  - SR SURFACE ROUGHENING
  - ECB EROSION CONTROL BLANKET
  - CIP CULVERT INLET PROTECTION
  - RS ROCK SOCK

NOTE: EXISTING VEGETATION CONSISTS OF NATIVE GRASSES

Consider need for more BMP's like check dams within in channel throughout the construction phase.

HR GREEN Xref: xref.dwg; -d101; INITIAL EROSION CONTROL KEY; 01-XCINITIAL.EC; HRG-20X\_EBase

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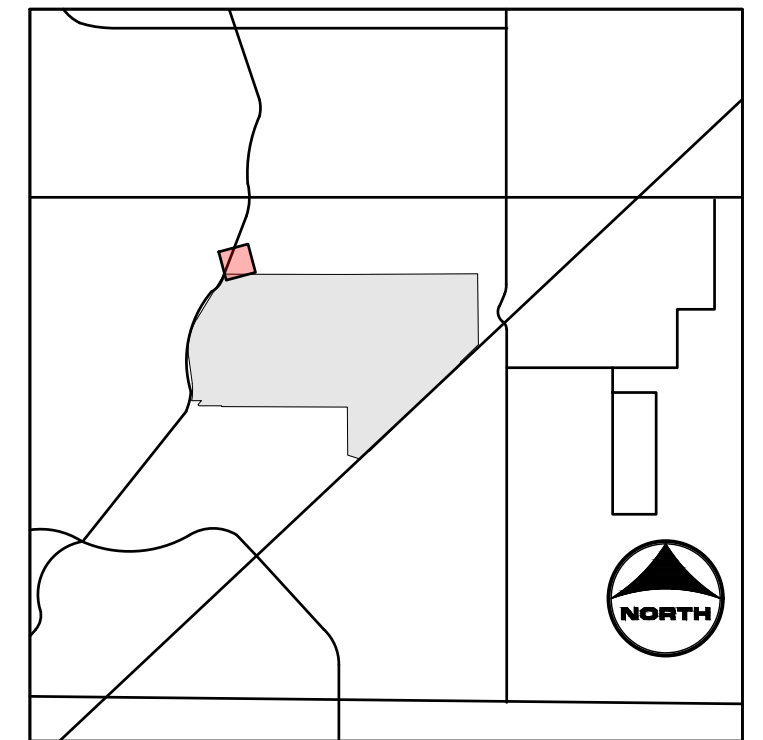
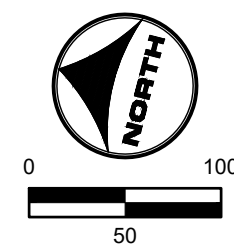
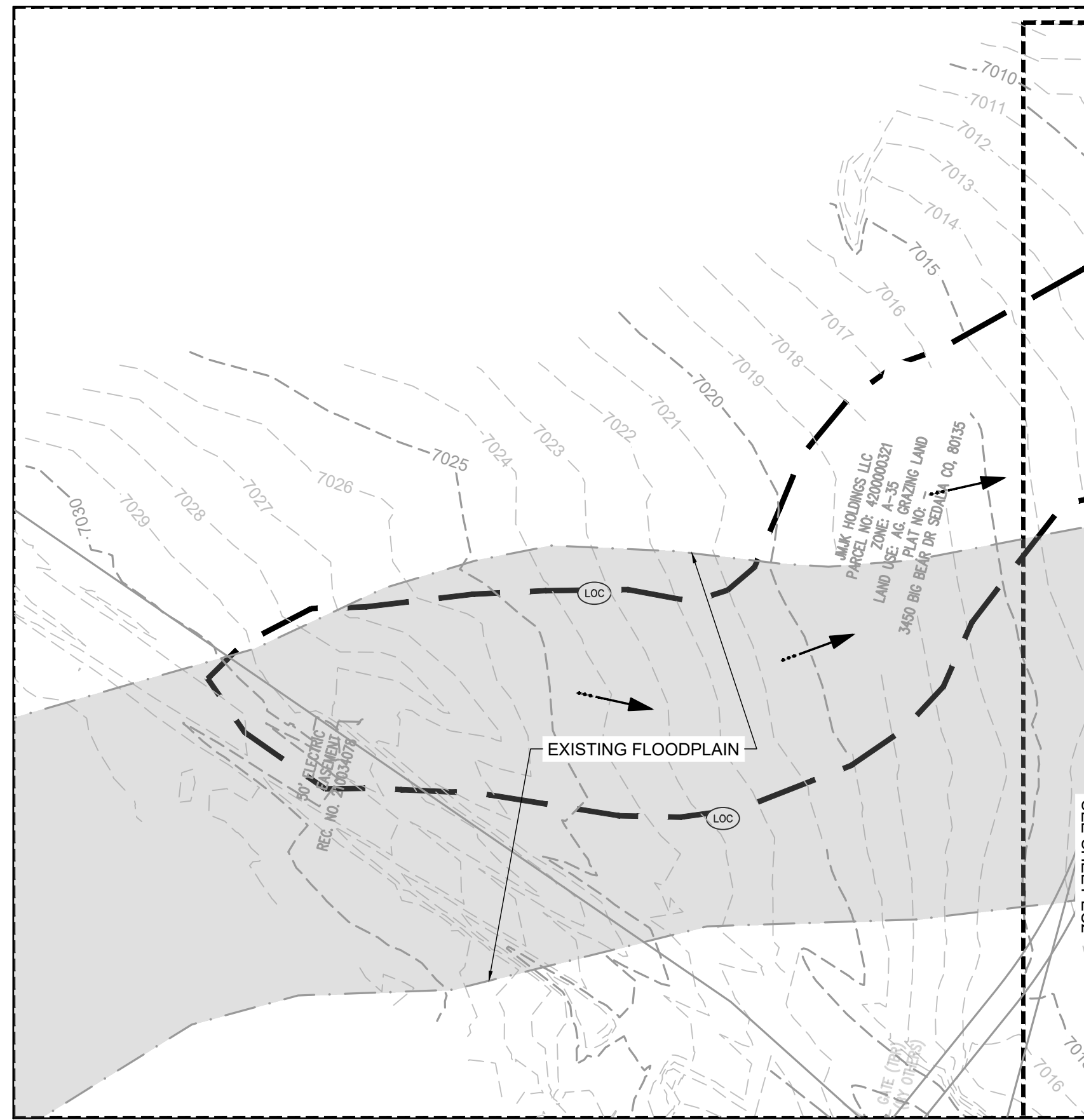


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GRANDVIEW METRO DISTRICT  
 INITIAL EROSION CONTROL

SHEET NO.  
**EC1 11**





**KEYMAP**

**PROJECT LEGEND:**

- PROPERTY LINE
- ROAD CENTERLINE
- RIGHT-OF-WAY LINE
- PROPOSED DETENTION BASIN
- 5250— PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- - -5250- - - EXISTING MAJOR CONTOUR
- - - EXISTING MINOR CONTOUR
- FLOW ARROW
- - - EFFECTIVE 100-YR FLOODPLAIN
- - - EFFECTIVE 100-YR FLOODWAY

**BMP LEGEND:**

- CWA CONCRETE WASHOUT AREA
- CF CONSTRUCTION FENCE
- DD DIVERSION DITCH
- IP INLET PROTECTION
- OP OUTLET PROTECTION
- SF SILT FENCE
- SSA STABILIZED STAGING AREA
- VTC VEHICLE TRACKING CONTROL
- LOC LIMITS OF CONSTRUCTION
- CD CHECK DAM
- SM SEEDING AND MULCHING
- SB SEDIMENT BASIN
- SR SURFACE ROUGHENING
- ECB EROSION CONTROL BLANKET
- CIP CULVERT INLET PROTECTION
- RS ROCK SOCK

NOTE: EXISTING VEGETATION CONSISTS OF NATIVE GRASSES



HR GREEN Xref: xref: xref: d:\01 - INITIAL EROSION CONTROL KEY: 01-XC-INITIAL.EC: HRG: 20X\_EBase

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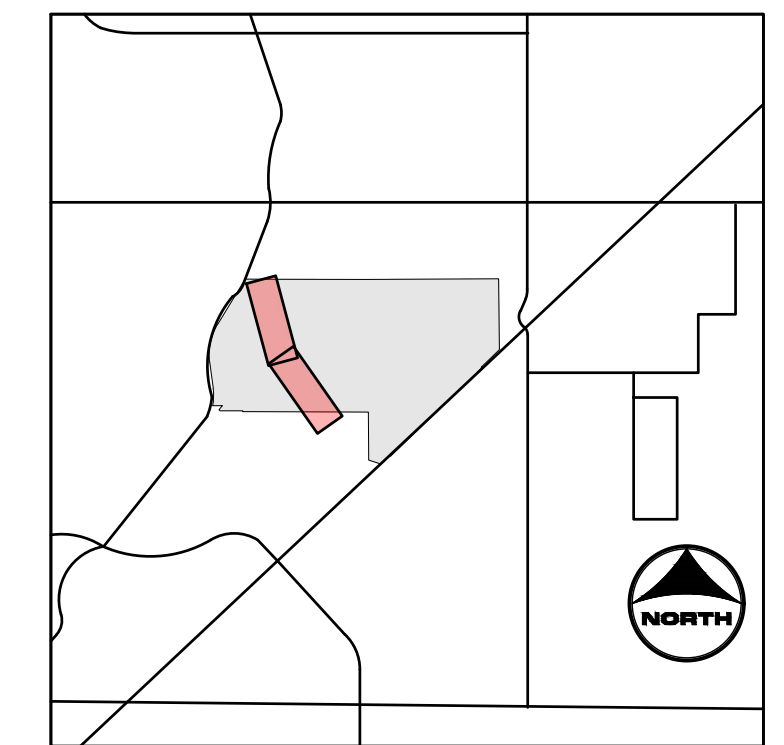
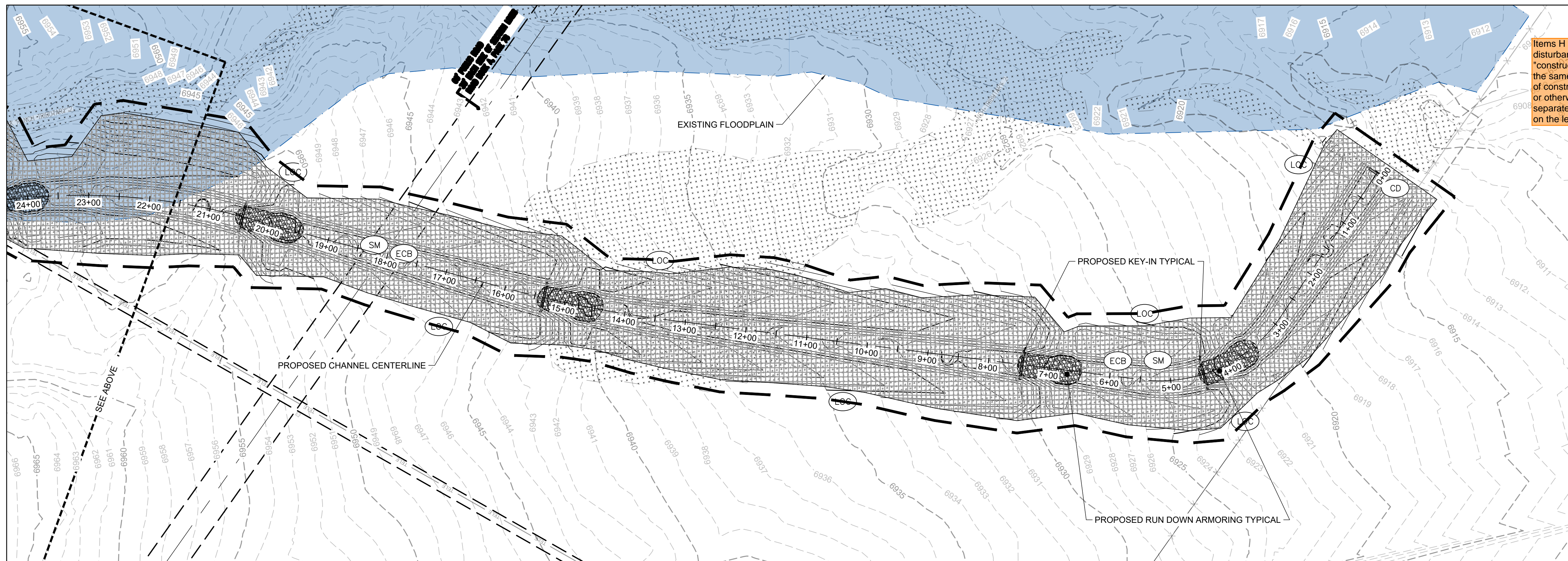
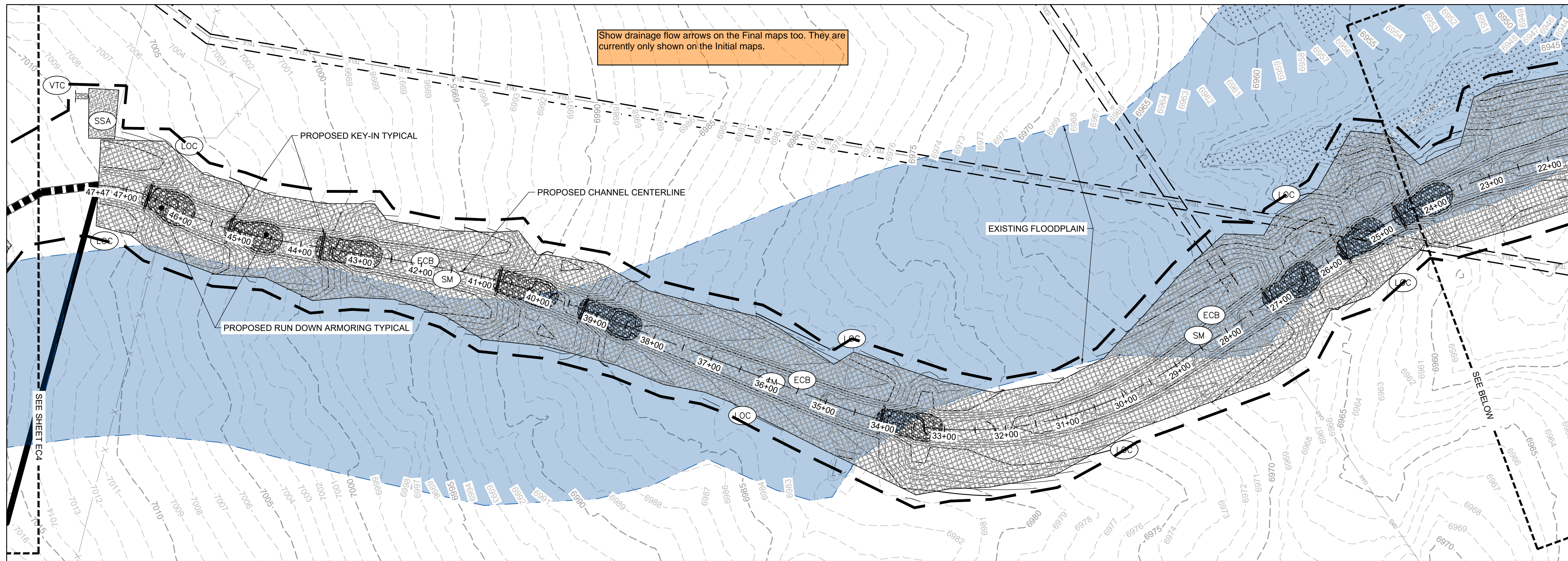
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 FALCON, COLORADO

GRANDVIEW METRO DISTRICT  
 INITIAL EROSION CONTROL

SHEET NO.  
 EC2 12



**KEYMAP**

**PROJECT LEGEND:**

- PROPERTY LINE
- ROAD CENTERLINE
- RIGHT-OF-WAY LINE
- PROPOSED DETENTION BASIN
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- FLOW ARROW
- EFFECTIVE 100-YR FLOODPLAIN
- EFFECTIVE 100-YR FLOODWAY

**BMP LEGEND:** provide details for all BMPs used throughout initial and final GEC Plans

- CWA CONCRETE WASHOUT AREA
- CF CONSTRUCTION FENCE
- DD DIVERSION DITCH
- IP INLET PROTECTION
- OP OUTLET PROTECTION
- SF SILT FENCE
- SSA STABILIZED STAGING AREA
- VTC VEHICLE TRACKING CONTROL
- LOC LIMITS OF CONSTRUCTION
- CD CHECK DAM
- SM SEEDING AND MULCHING
- SB SEDIMENT BASIN
- SR SURFACE ROUGHENING
- ECB EROSION CONTROL BLANKET
- CIP CULVERT INLET PROTECTION
- RS ROCK SOCK

Identify the specific ECB to be used in the typical cross section detail.

Include the product specification in the Final Drainage Report that verifies it can handle the design velocities and shear



HR GREEN \xrefs\811.dwg - d:\01 - FINAL EROSION CONTROL KEY 01-XC-FINAL-EC-01\_XC\_RIFRAP-F-HRG120X\_EBases

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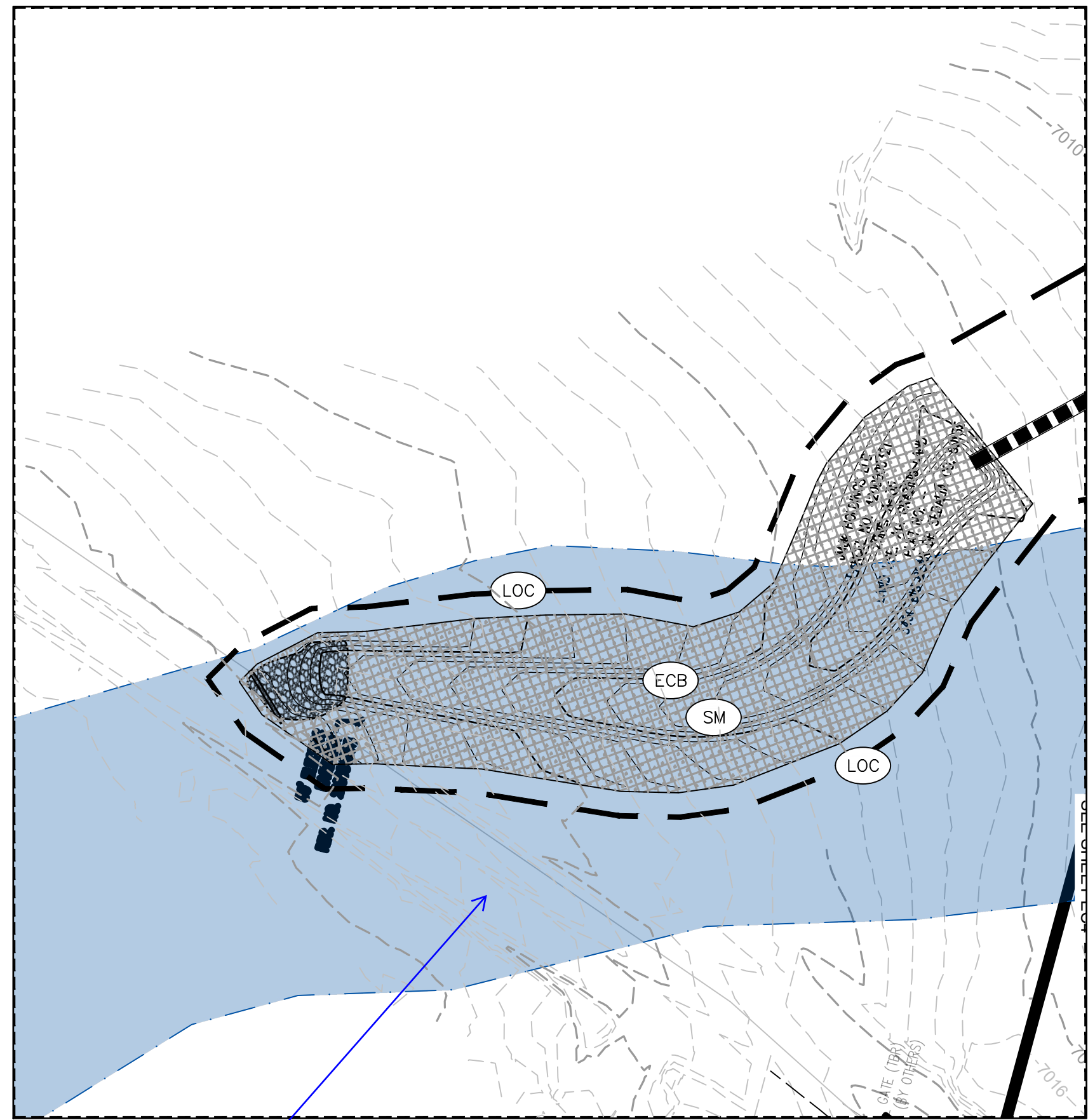
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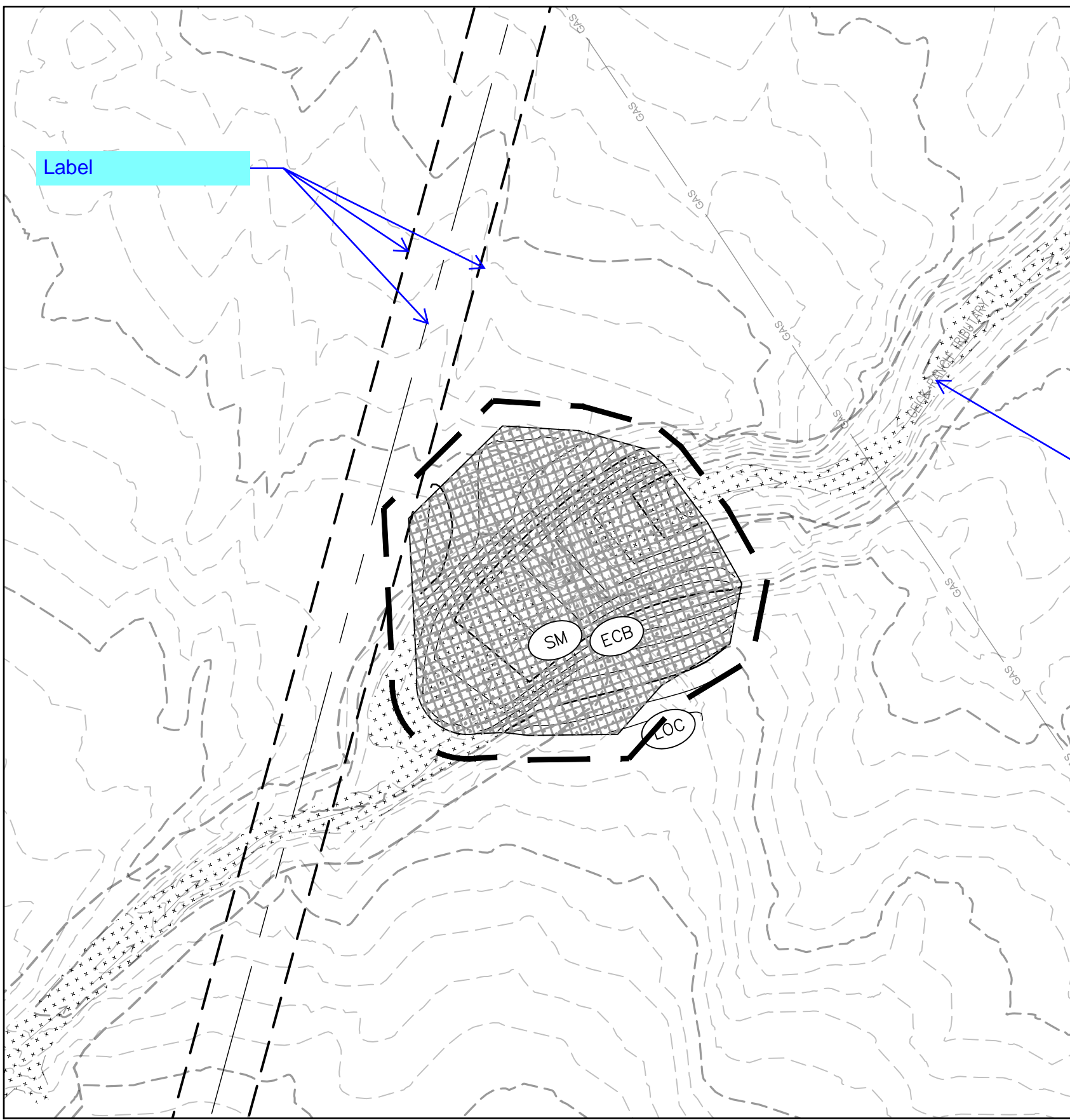
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 FINAL EROSION CONTROL

SHEET NO.  
**EC3 13**



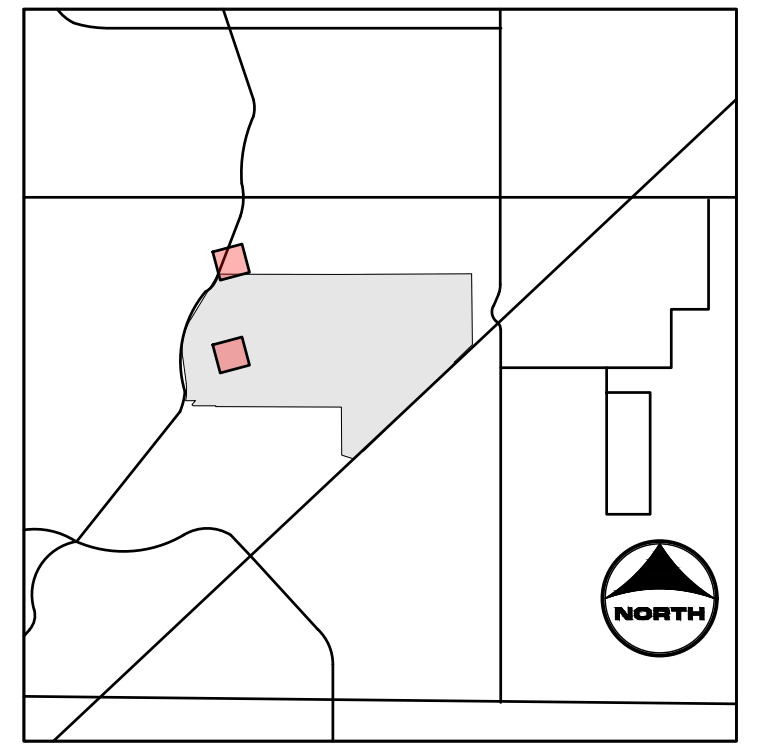
Label Street Name



Label

Label channel

Provide label on both the plan view and the key map to clearly show which area in the keymap these correspond with.



KEYMAP

PROJECT LEGEND:

- — — — — PROPERTY LINE
- — — — — ROAD CENTERLINE
- — — — — RIGHT-OF-WAY LINE
- — — — — PROPOSED DETENTION BASIN
- — — — — PROPOSED MAJOR CONTOUR
- — — — — PROPOSED MINOR CONTOUR
- — — — — EXISTING MAJOR CONTOUR
- — — — — EXISTING MINOR CONTOUR
- — — — — FLOW ARROW
- — — — — EFFECTIVE 100-YR FLOODPLAIN
- — — — — EFFECTIVE 100-YR FLOODWAY

BMP LEGEND:

- CWA CONCRETE WASHOUT AREA
- CF CONSTRUCTION FENCE
- DD DIVERSION DITCH
- IP INLET PROTECTION
- OP OUTLET PROTECTION
- SF SILT FENCE
- SSA STABILIZED STAGING AREA
- VTC VEHICLE TRACKING CONTROL
- LOC LIMITS OF CONSTRUCTION
- CD CHECK DAM
- SM SEEDING AND MULCHING
- SB SEDIMENT BASIN
- SR SURFACE ROUGHENING
- ECB EROSION CONTROL BLANKET
- CIP CULVERT INLET PROTECTION
- RS ROCK SOCK

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OR  
1-800-922-1987  
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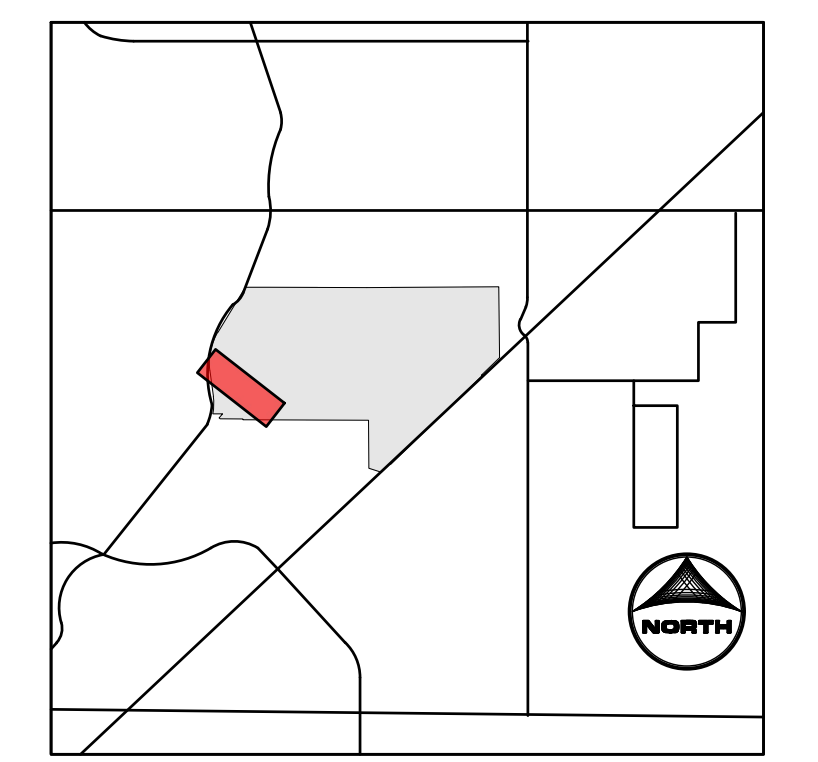
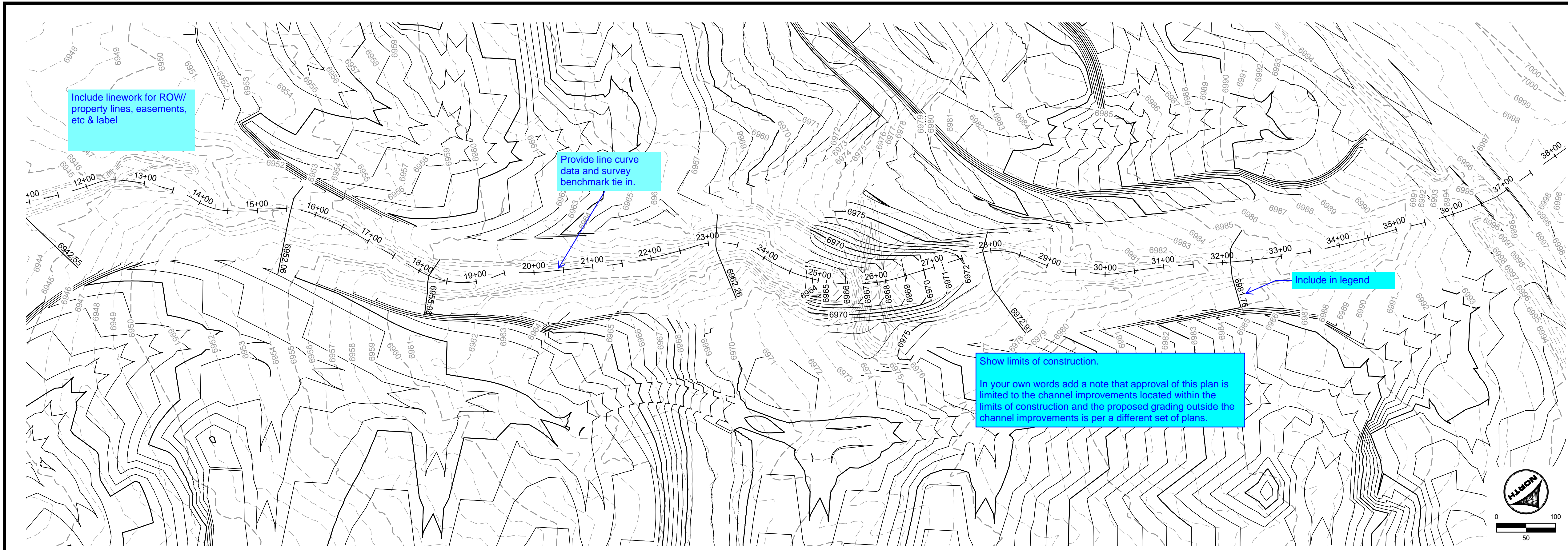
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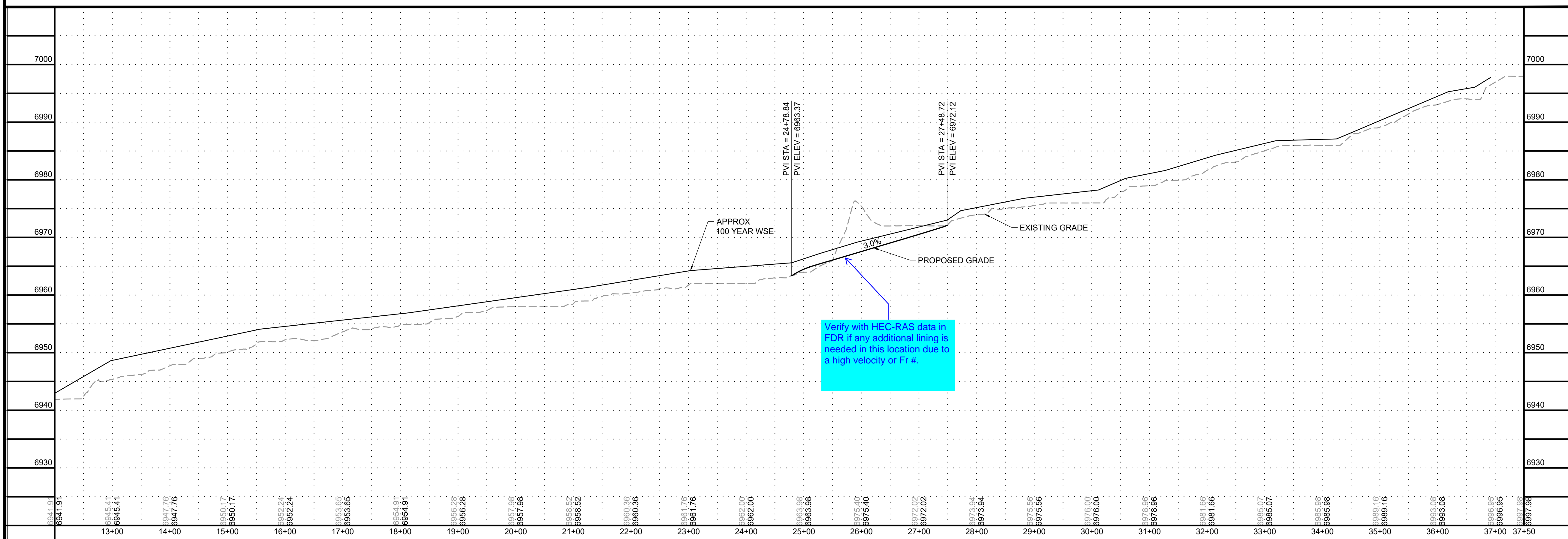
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FALCON, COLORADO

GRANDVIEW METRO DISTRICT  
FINAL EROSION CONTROL

SHEET NO.  
EC4 14



- KEYMAP**
- PROJECT LEGEND:**
- PROPERTY LINE
  - ROAD CENTERLINE
  - RIGHT-OF-WAY LINE
  - PROPOSED D
  - PROPOSED MAJOR CONTOUR
  - PROPOSED MINOR CONTOUR
  - - - 5250 EXISTING MAJOR CONTOUR
  - - - EXISTING MINOR CONTOUR
  - FLOW ARROW
  - - - EFFECTIVE 100-YR FLOODPLAIN
  - - - EFFECTIVE 100-YR FLOODWAY
  - ▬ POTENTIAL WALL
  - STORM SEWER
  - STORM INLET TYPE R
  - STORM MANHOLE
  - STORM END SECTION



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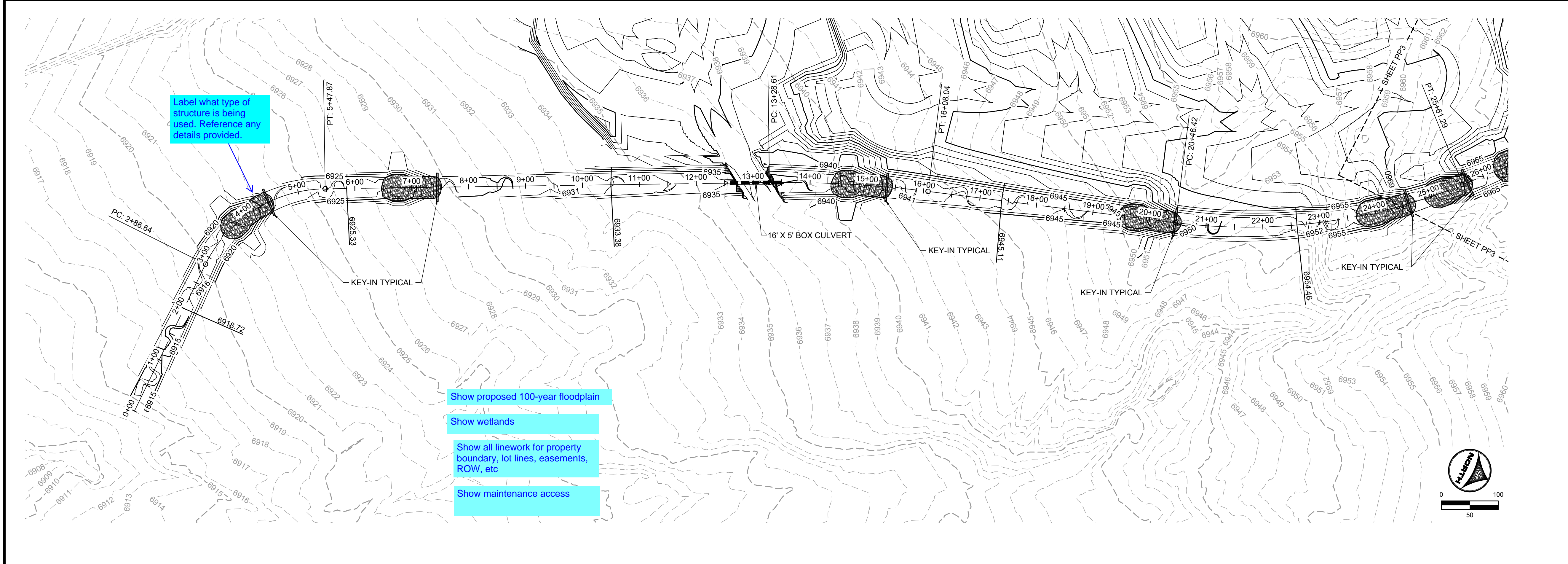
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**DRAINAGE A PLAN AND PROFILE**

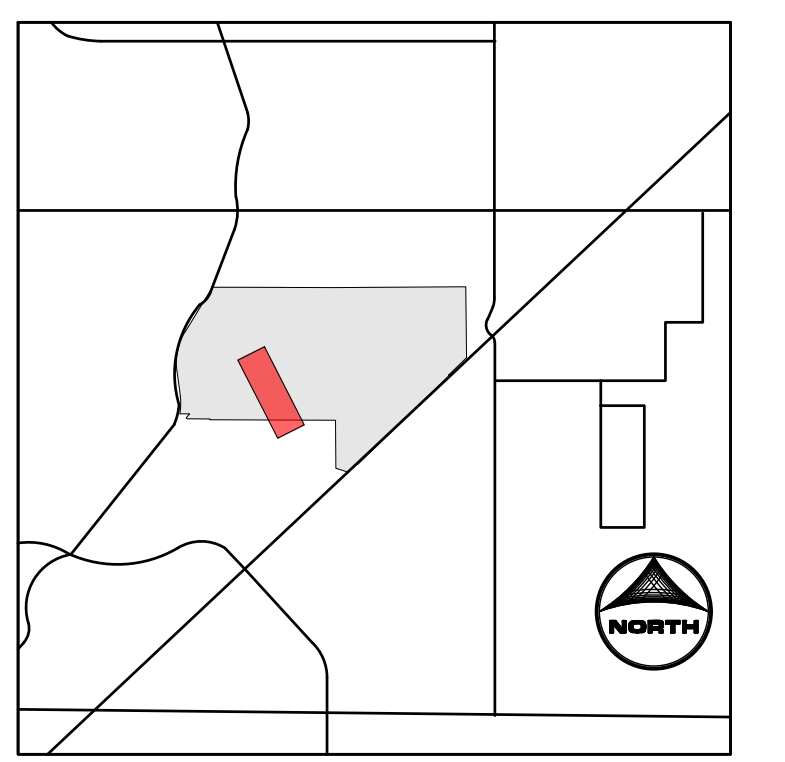
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**PP1 15**

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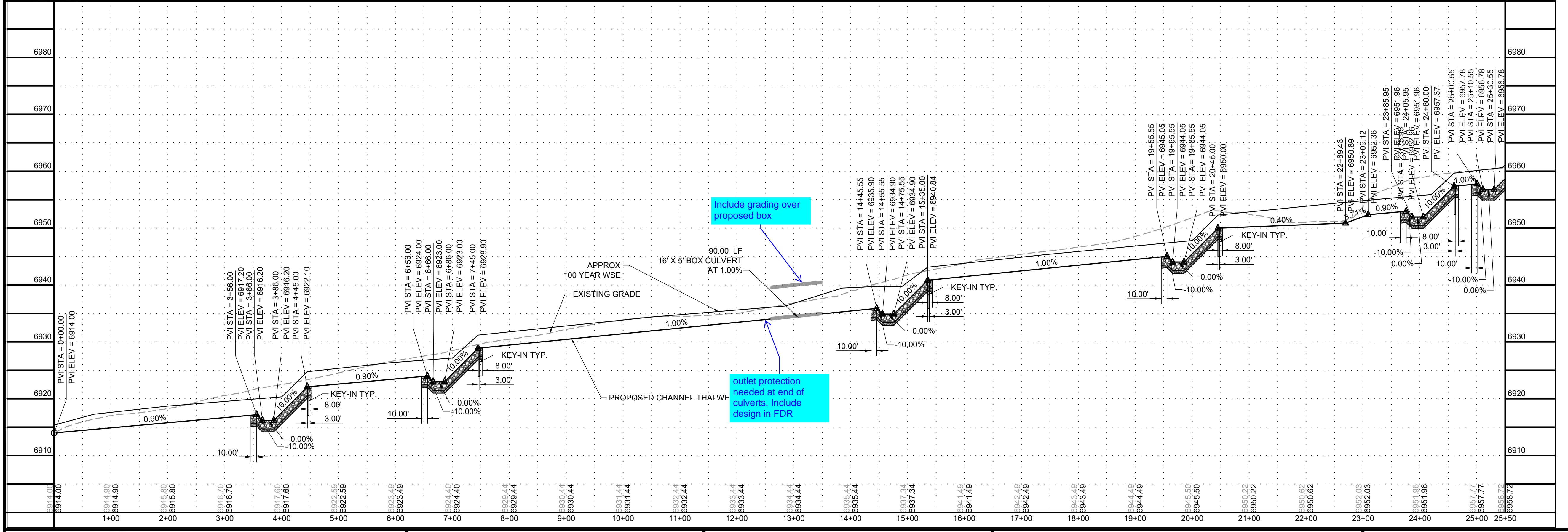


Label what type of structure is being used. Reference any details provided.

- Show proposed 100-year floodplain
- Show wetlands
- Show all linework for property boundary, lot lines, easements, ROW, etc
- Show maintenance access



- KEYMAP**
- PROJECT LEGEND:**
- PROPERTY LINE
  - ROAD CENTERLINE
  - RIGHT-OF-WAY LINE
  - PROPOSED D
  - PROPOSED MAJOR CONTOUR
  - PROPOSED MINOR CONTOUR
  - EXISTING MAJOR CONTOUR
  - EXISTING MINOR CONTOUR
  - FLOW ARROW
  - EFFECTIVE 100-YR FLOODPLAIN
  - EFFECTIVE 100-YR FLOODWAY
  - POTENTIAL WALL
  - STORM SEWER
  - STORM INLET TYPE R
  - STORM MANHOLE
  - STORM END SECTION



Include grading over proposed box

outlet protection needed at end of culverts. Include design in FDR

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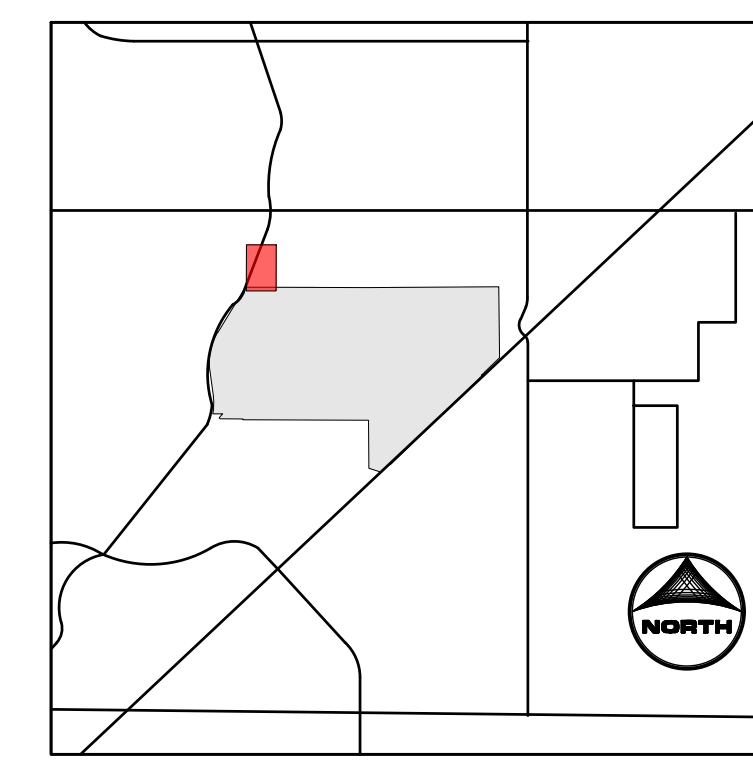
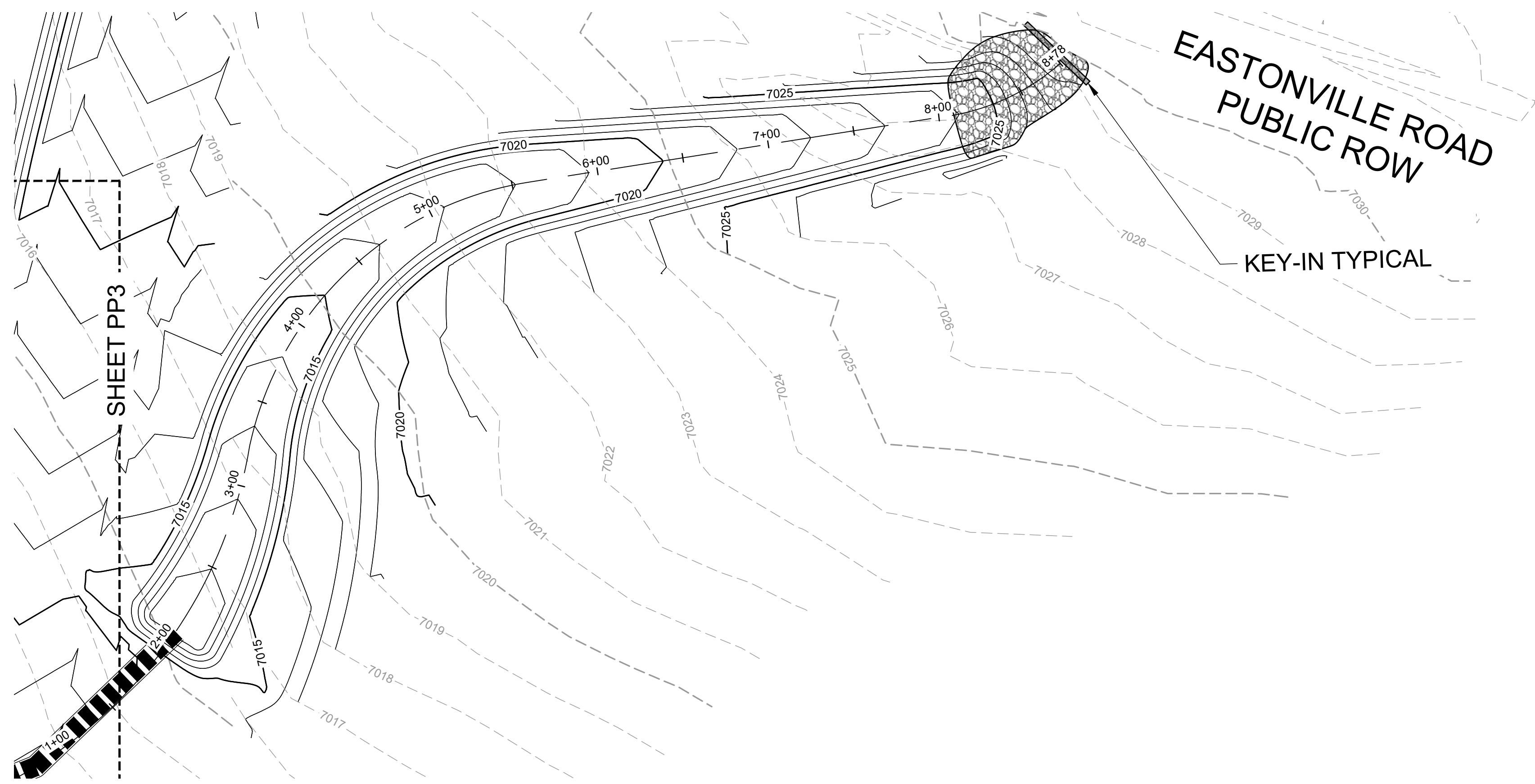
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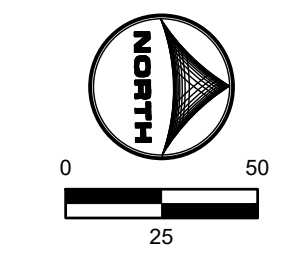
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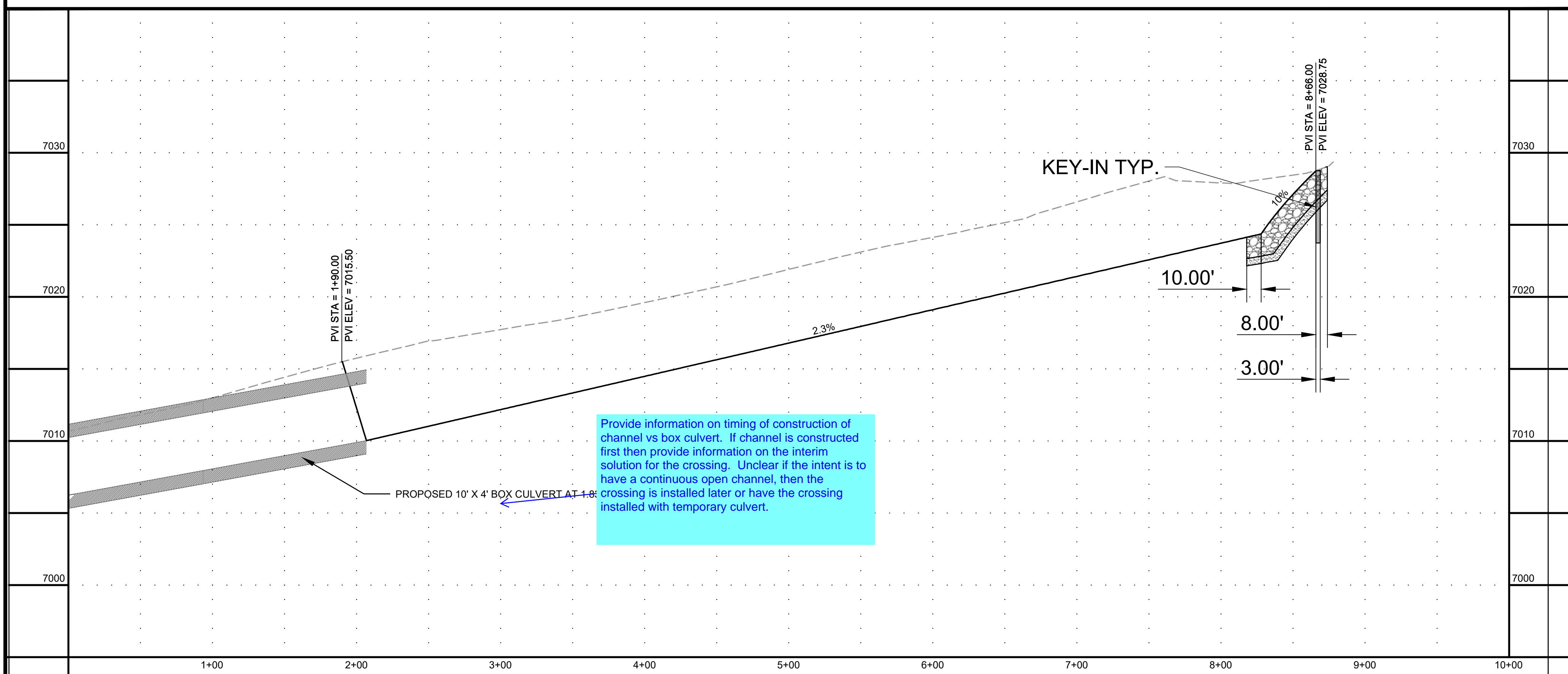




- KEYMAP**
- PROJECT LEGEND:**
- PROPERTY LINE
  - ROAD CENTERLINE
  - RIGHT-OF-WAY LINE
  - PROPOSED D
  - 5250 PROPOSED MAJOR CONTOUR
  - 5250 EXISTING MAJOR CONTOUR
  - EXISTING MINOR CONTOUR
  - FLOW ARROW
  - EFFECTIVE 100-YR FLOODPLAIN
  - EFFECTIVE 100-YR FLOODWAY
  - POTENTIAL WALL
  - STORM SEWER
  - STORM INLET TYPE R
  - STORM MANHOLE
  - STORM END SECTION



Sheet should be at same scale as previous sheets (1=50')



Provide information on timing of construction of channel vs box culvert. If channel is constructed first then provide information on the interim solution for the crossing. Unclear if the intent is to have a continuous open channel, then the crossing is installed later or have the crossing installed with temporary culvert.

HR GREEN Xref: xref: -d:\01: P&P KEY: 01\_XC\_RIPRAP

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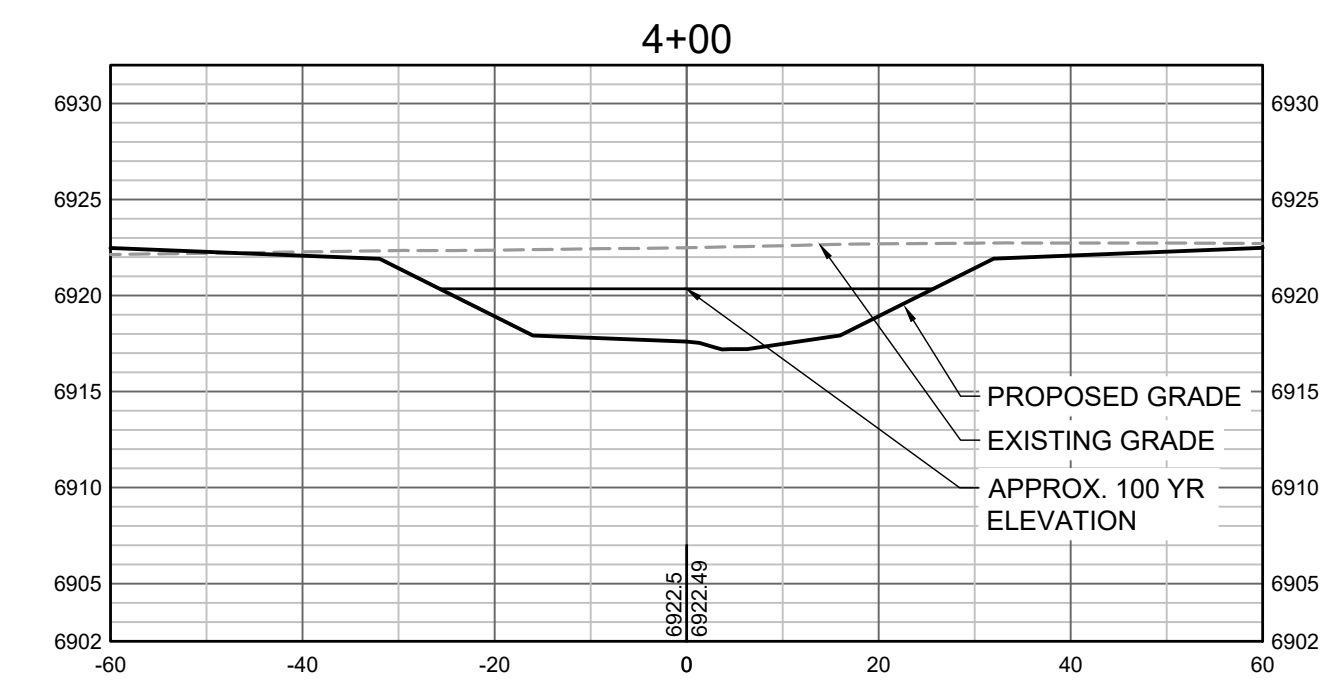
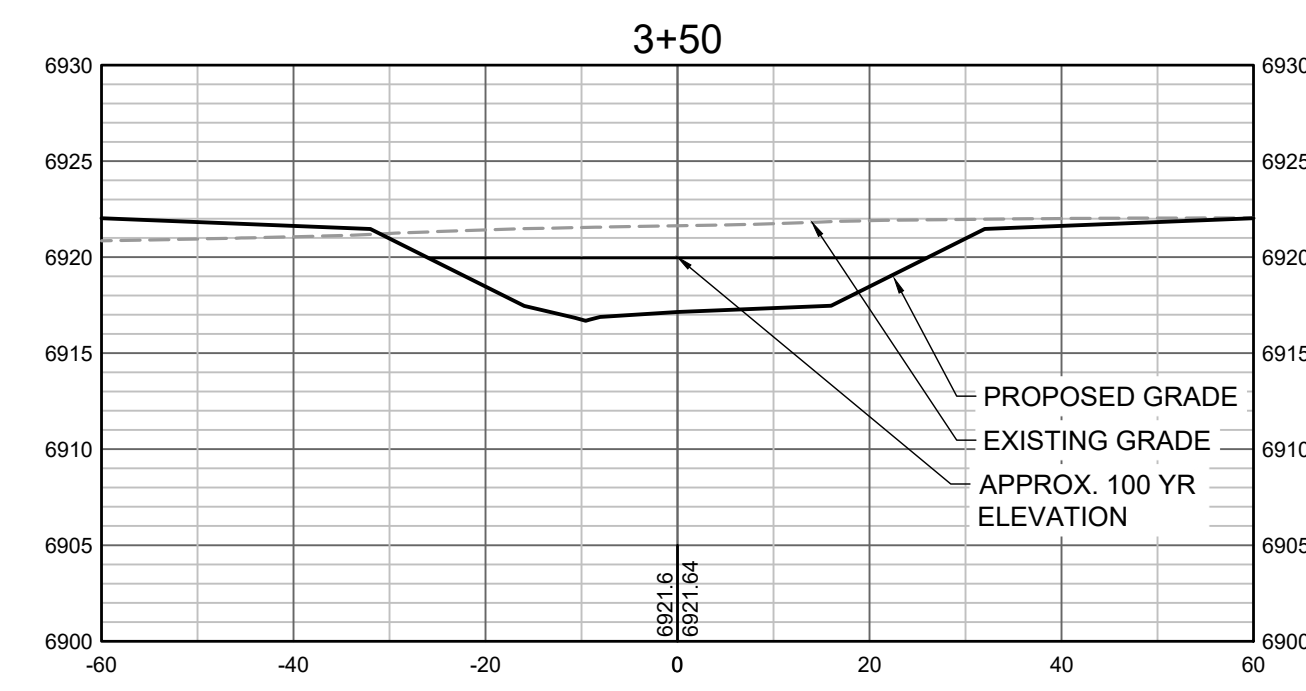
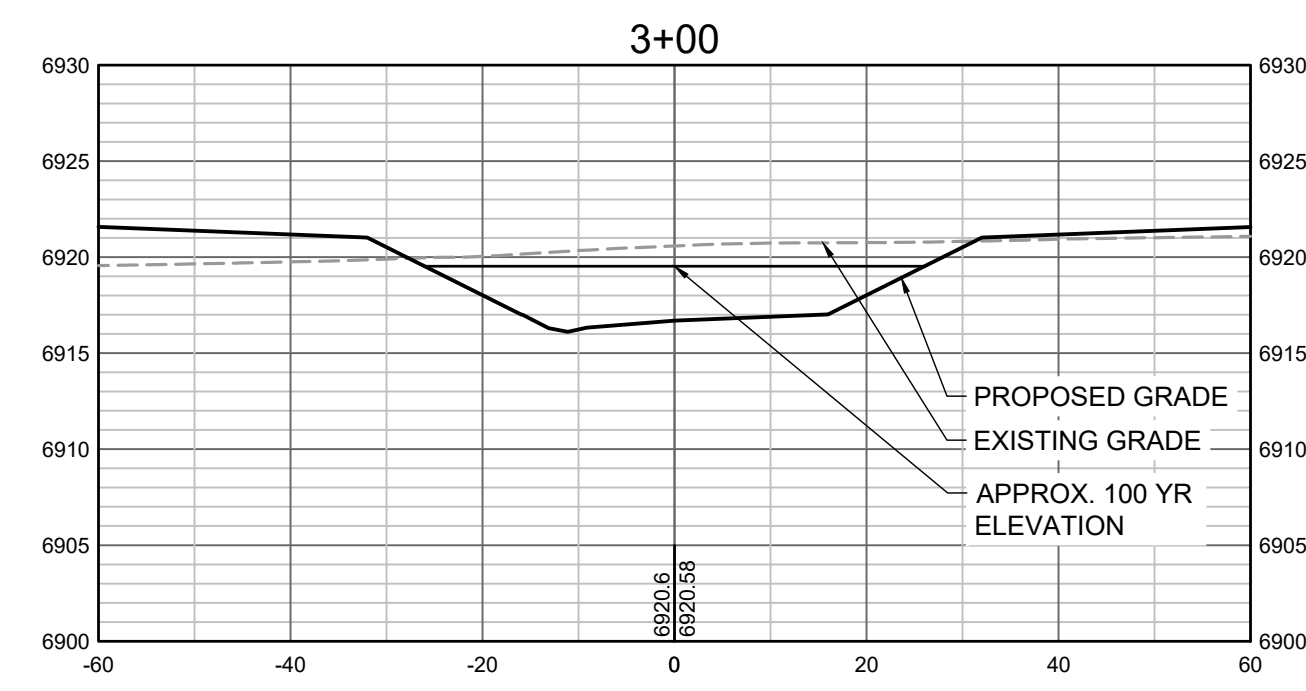
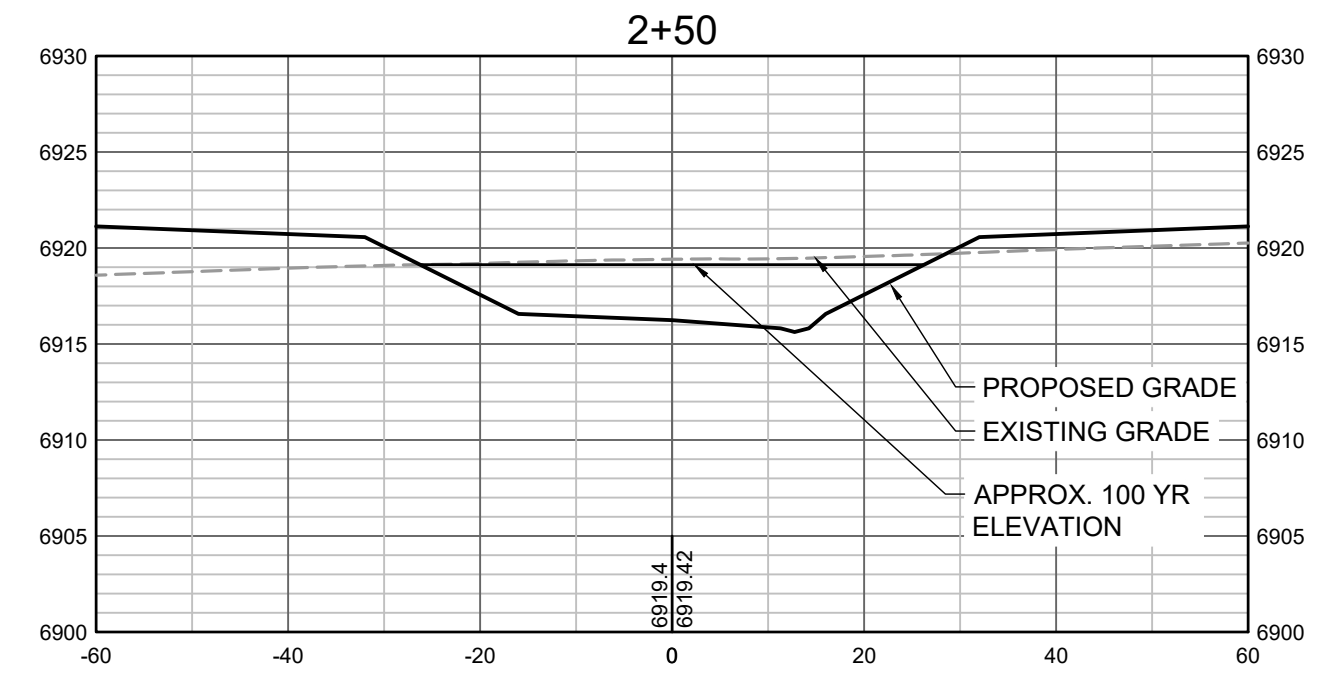
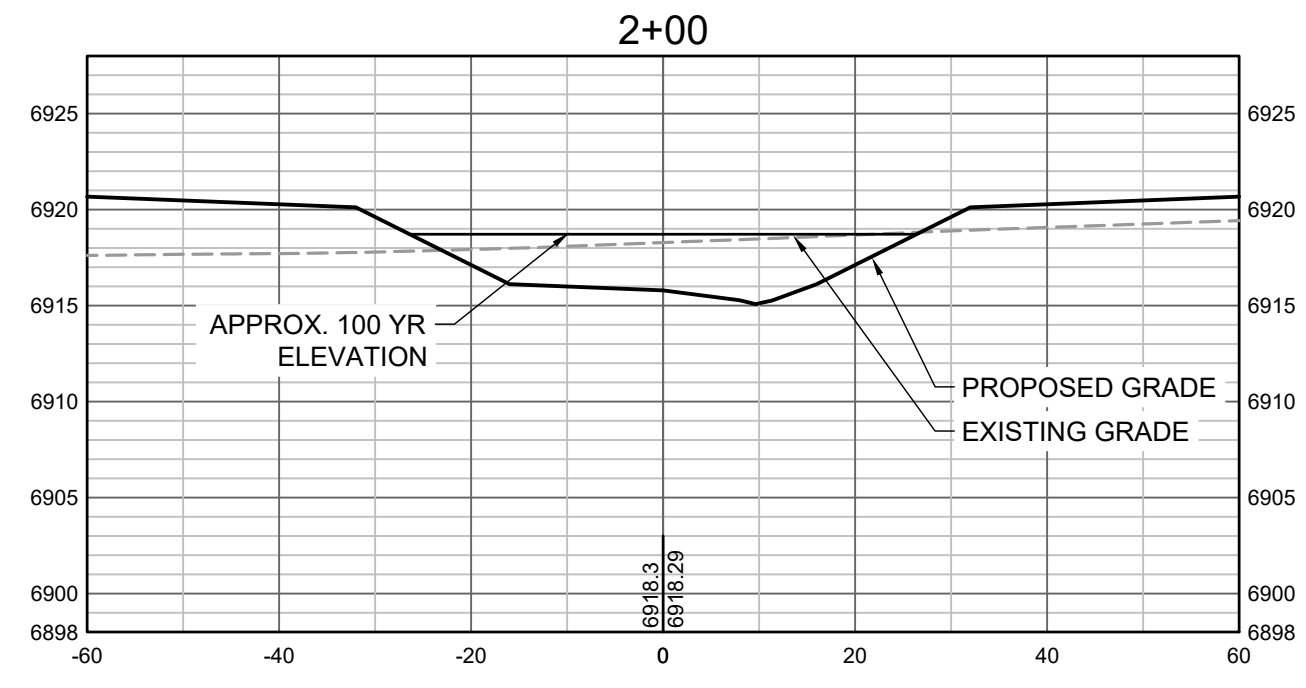
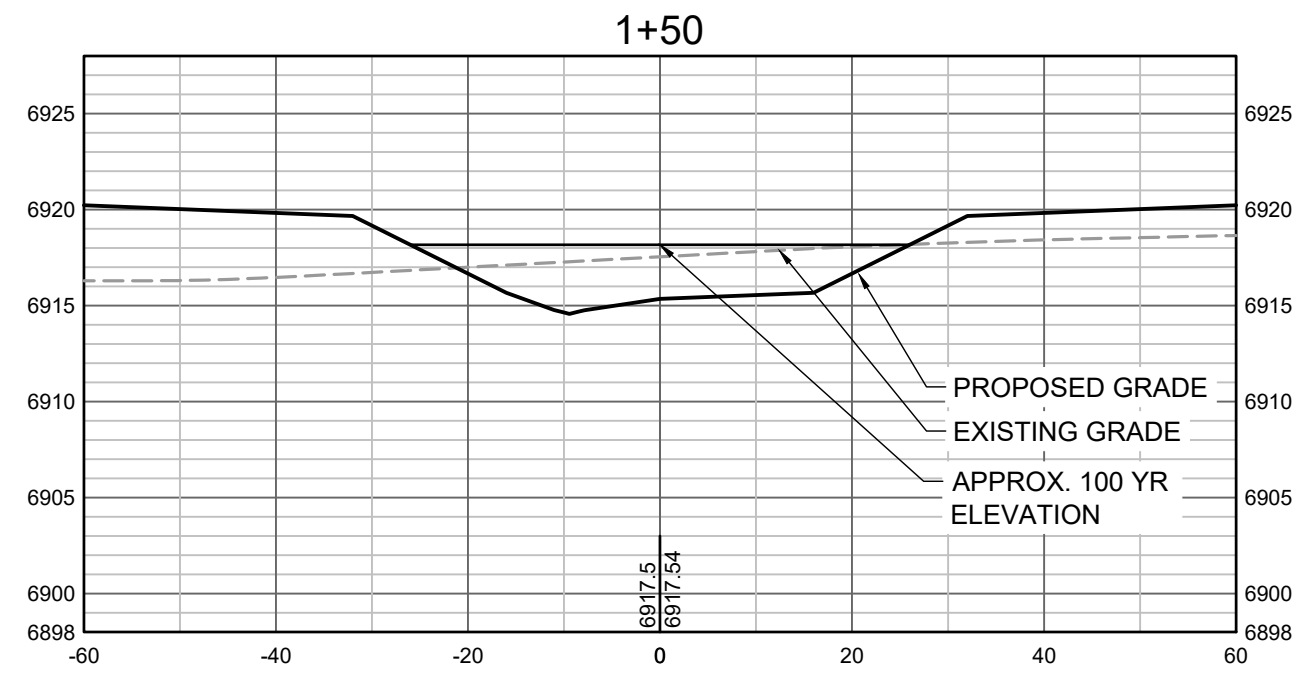
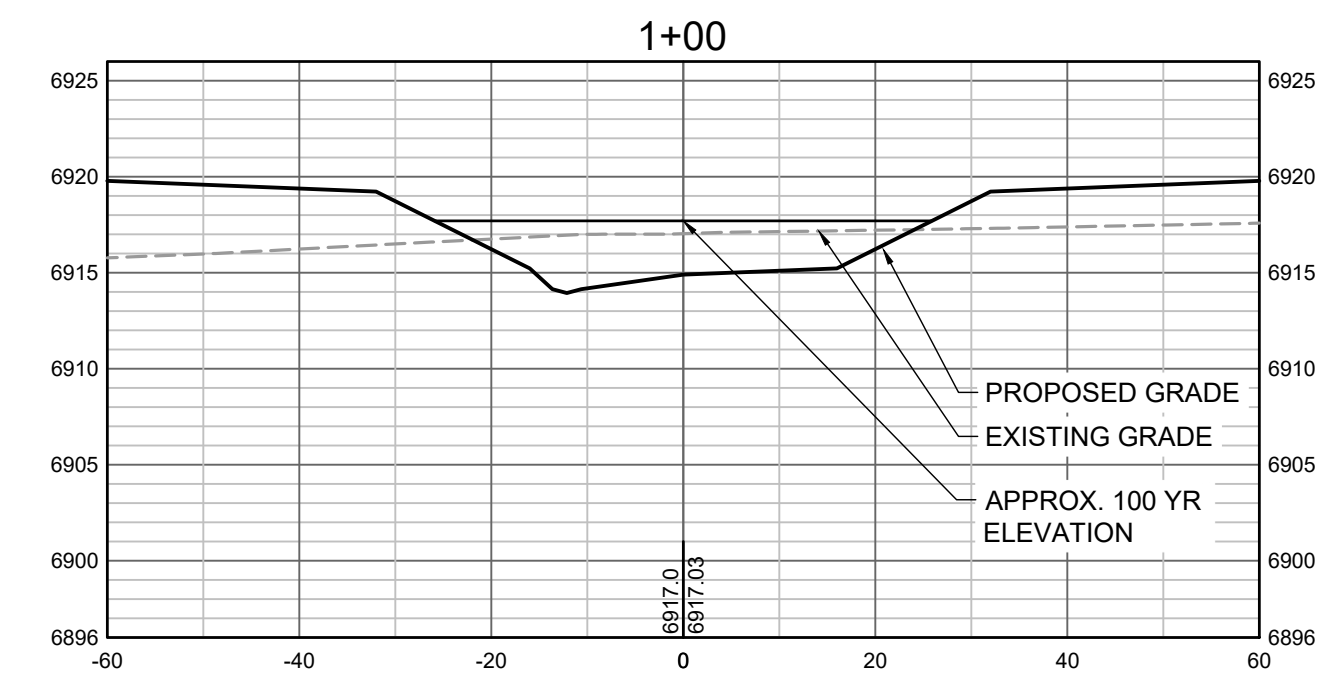
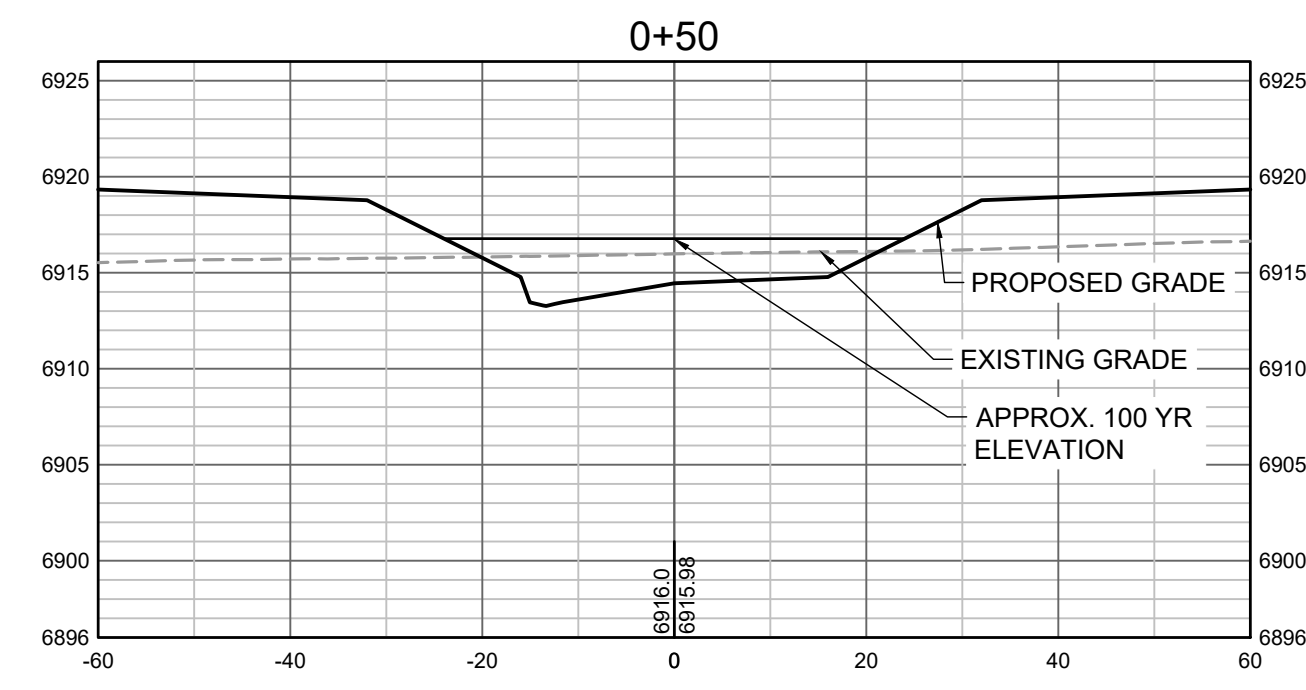
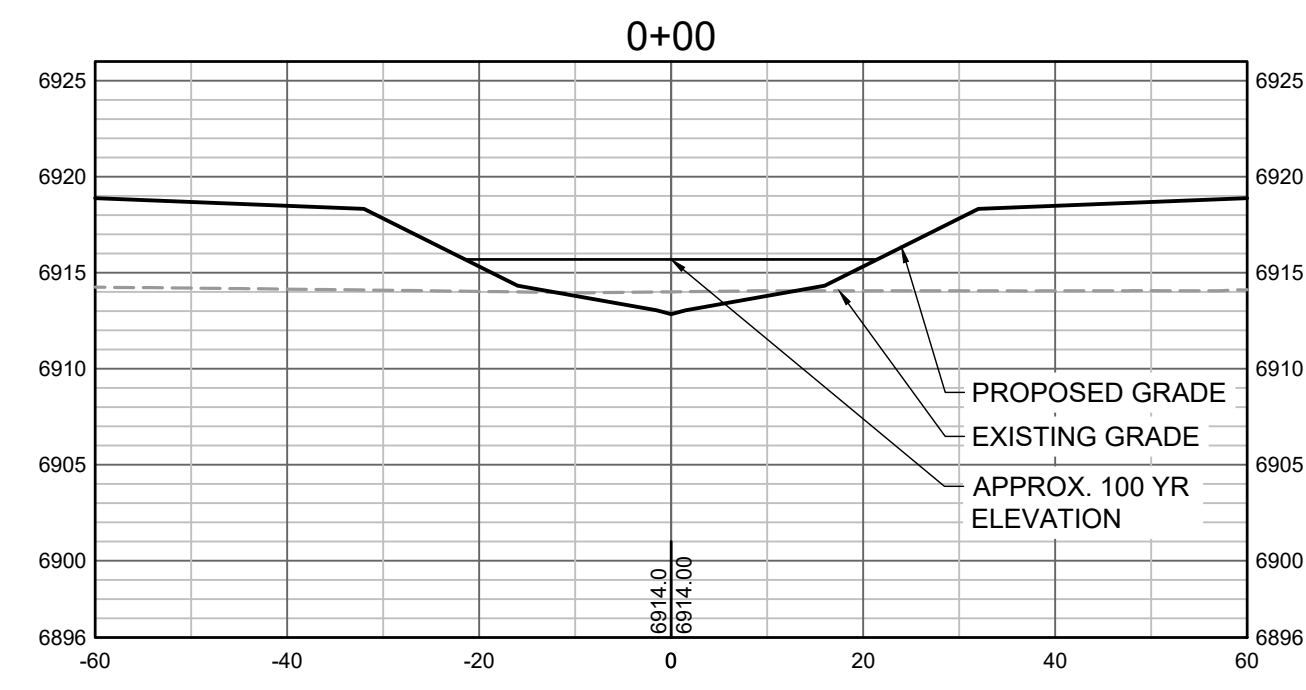
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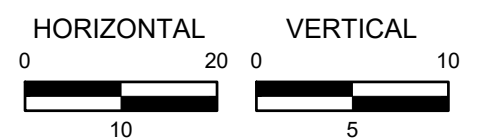
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 DRAINAGE B PLAN AND PROFILE

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**PP4 18**





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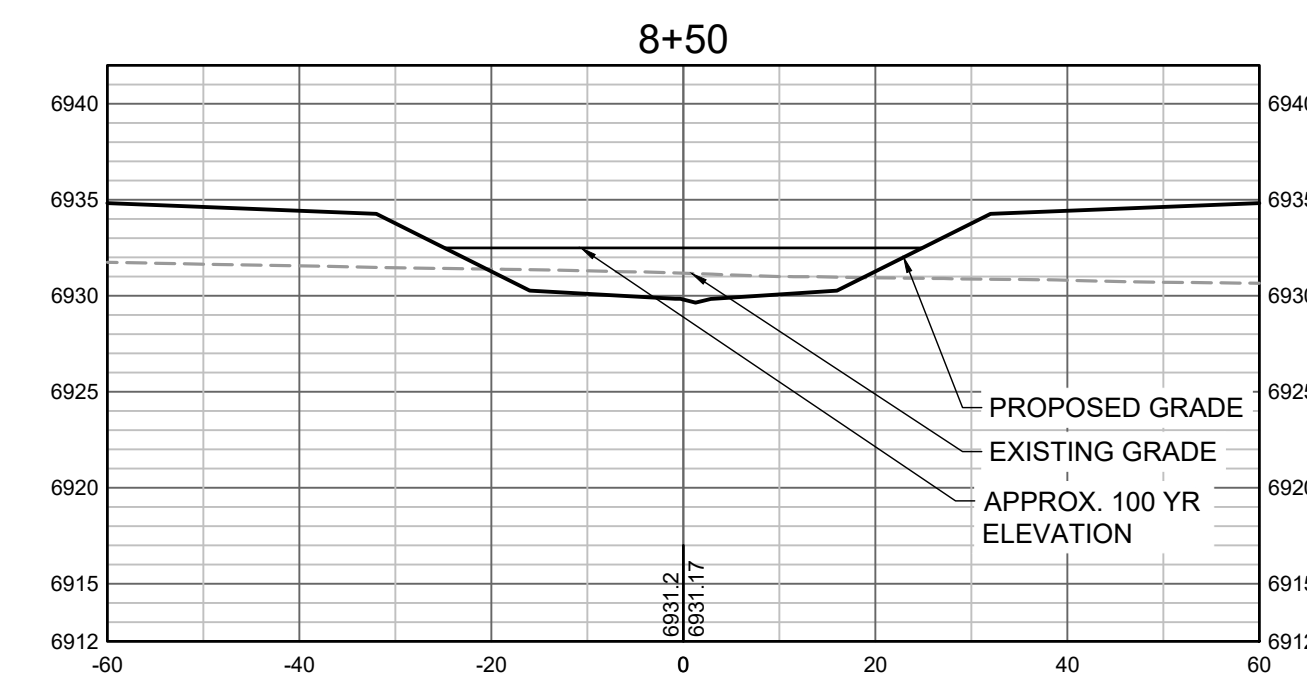
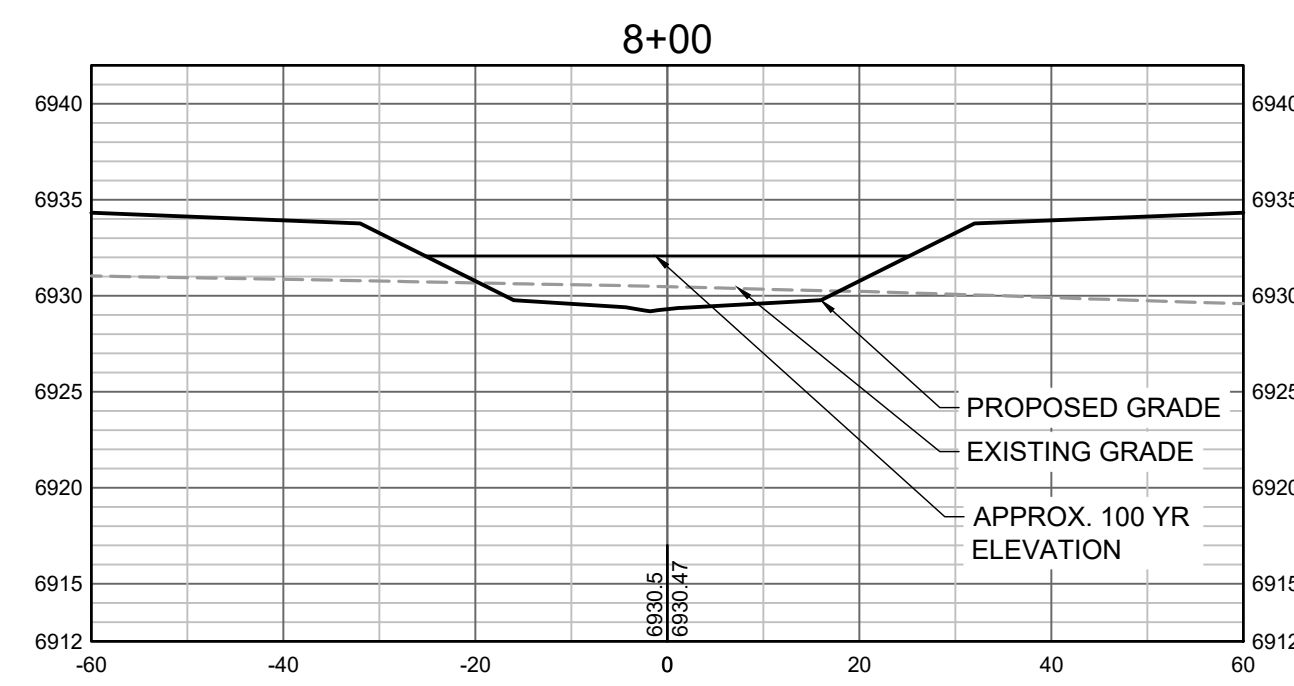
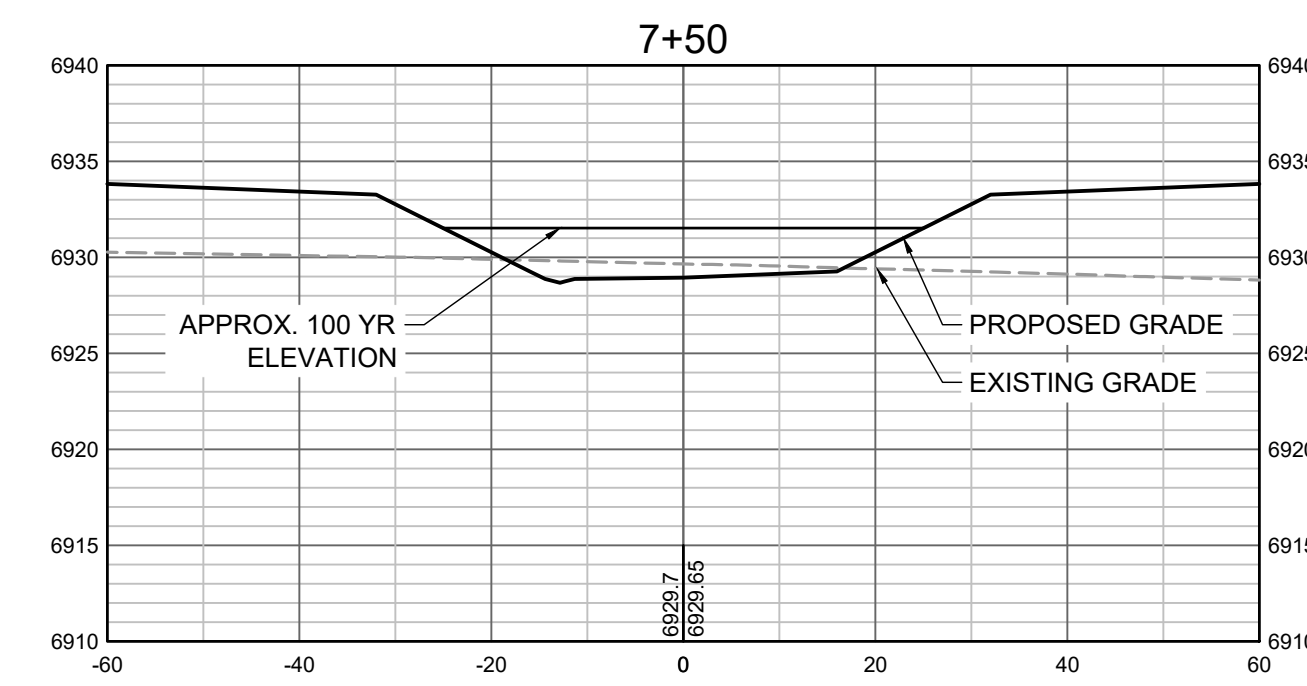
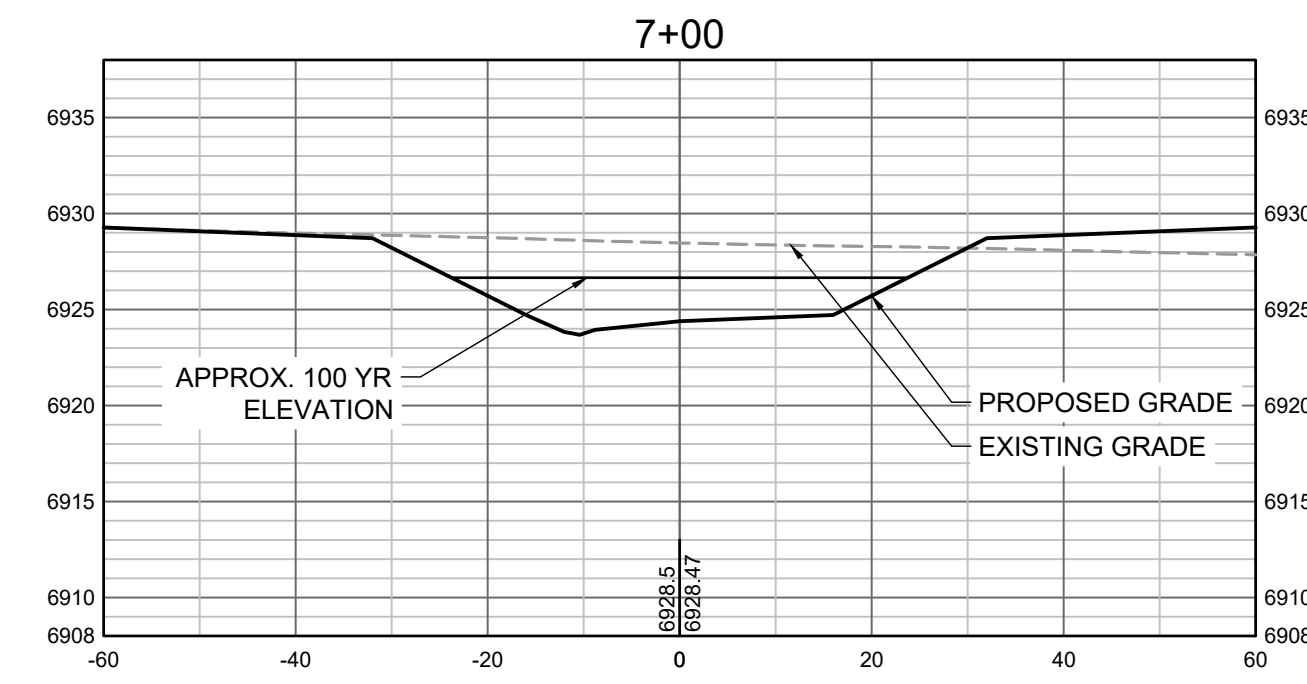
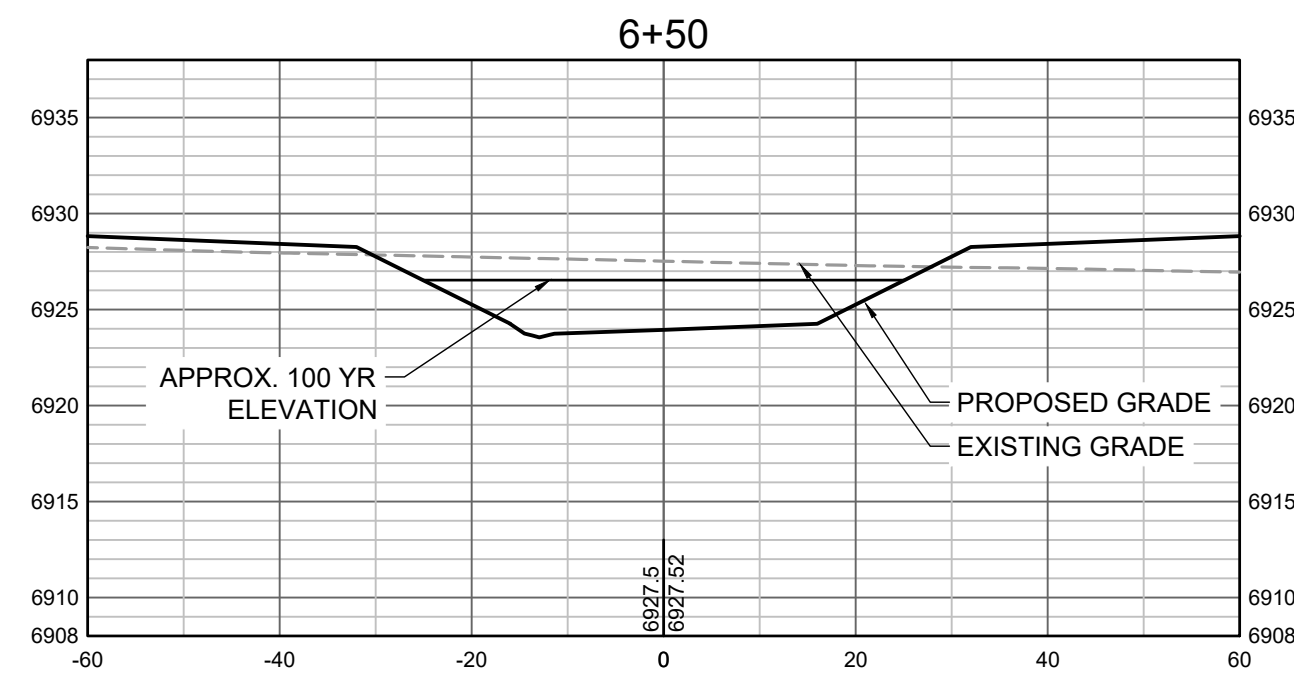
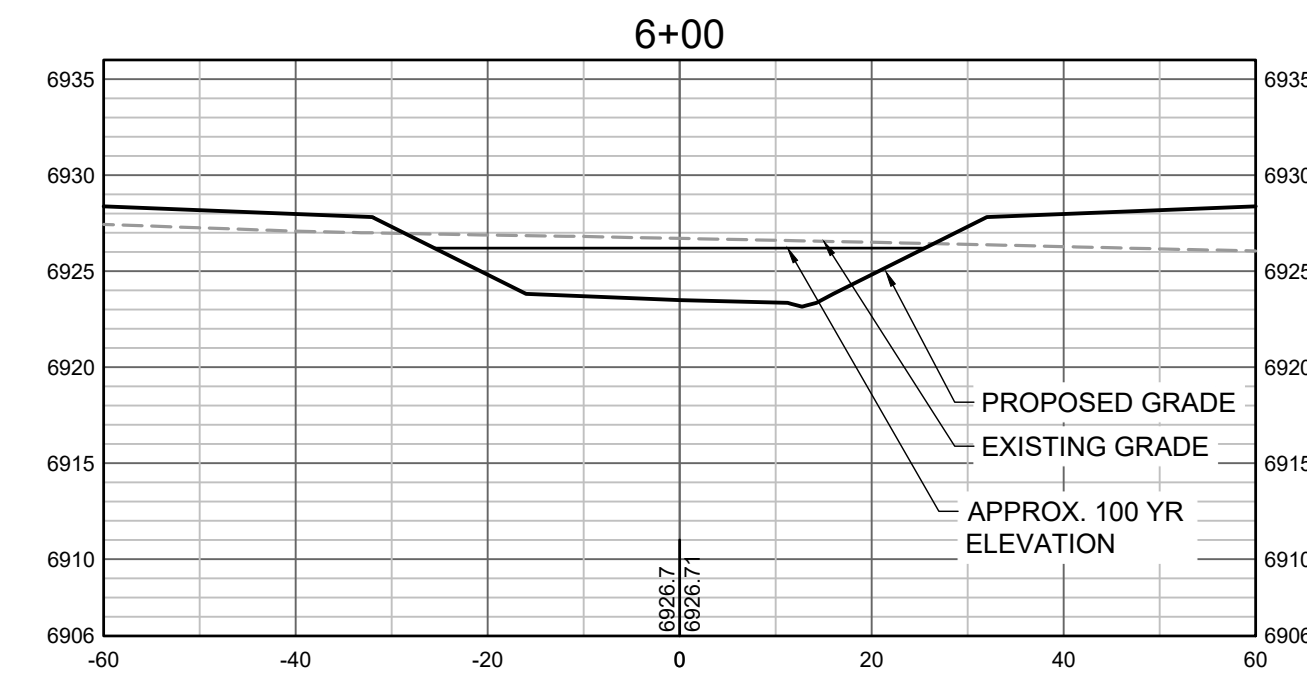
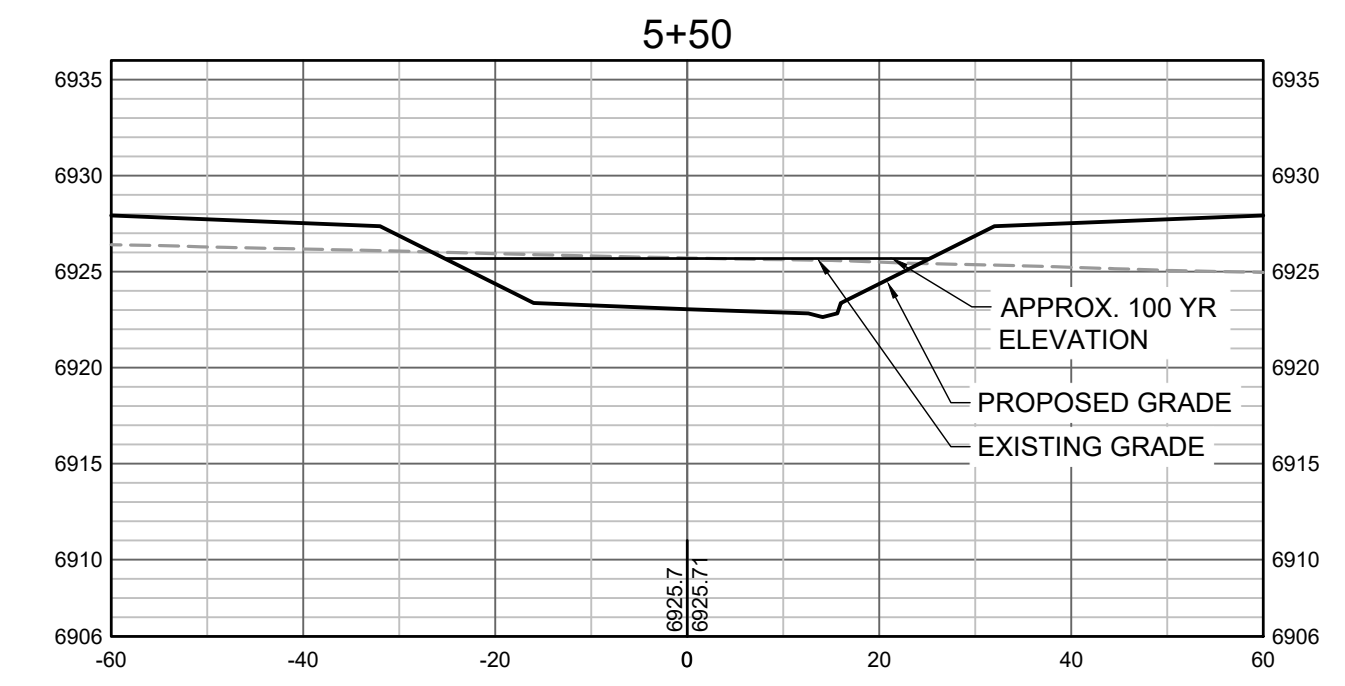
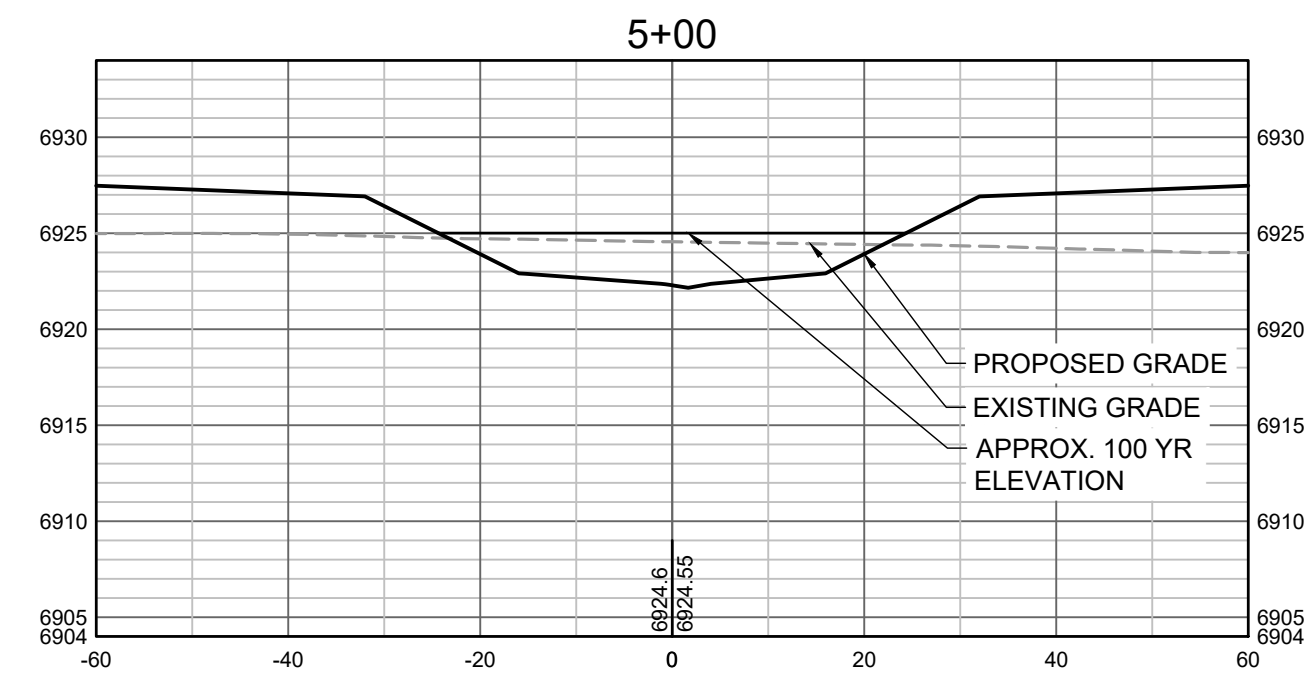
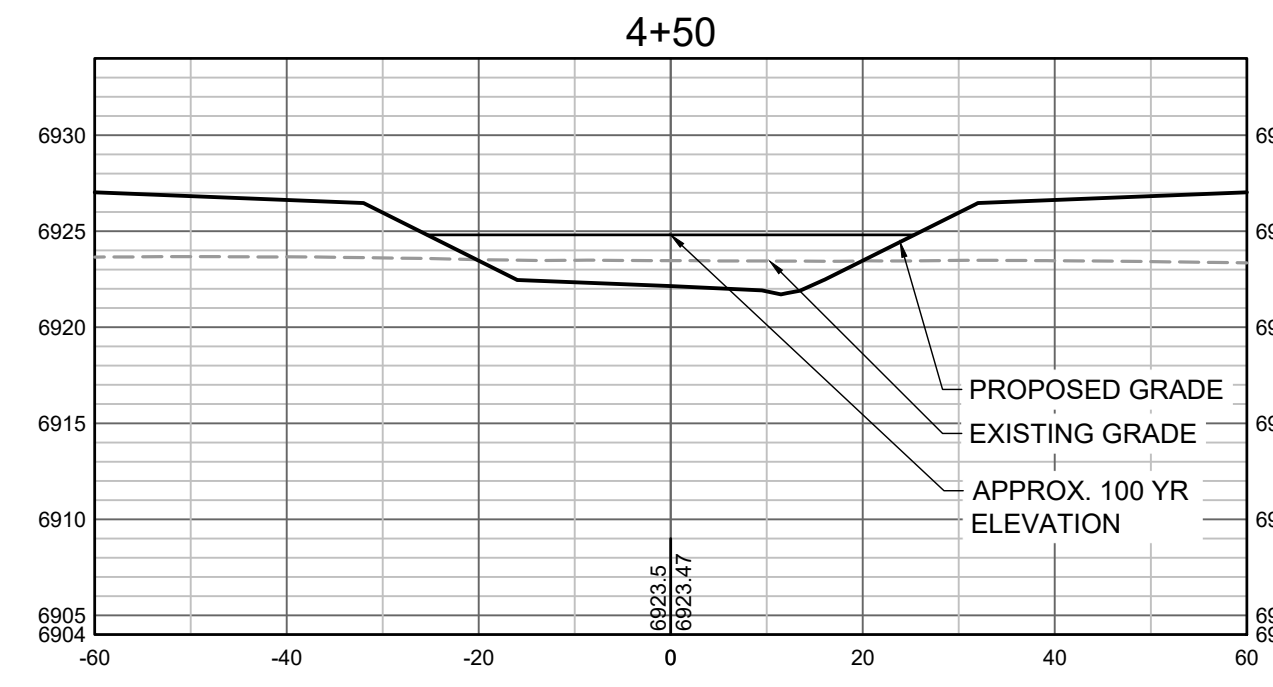
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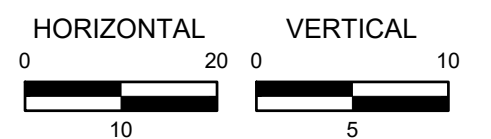
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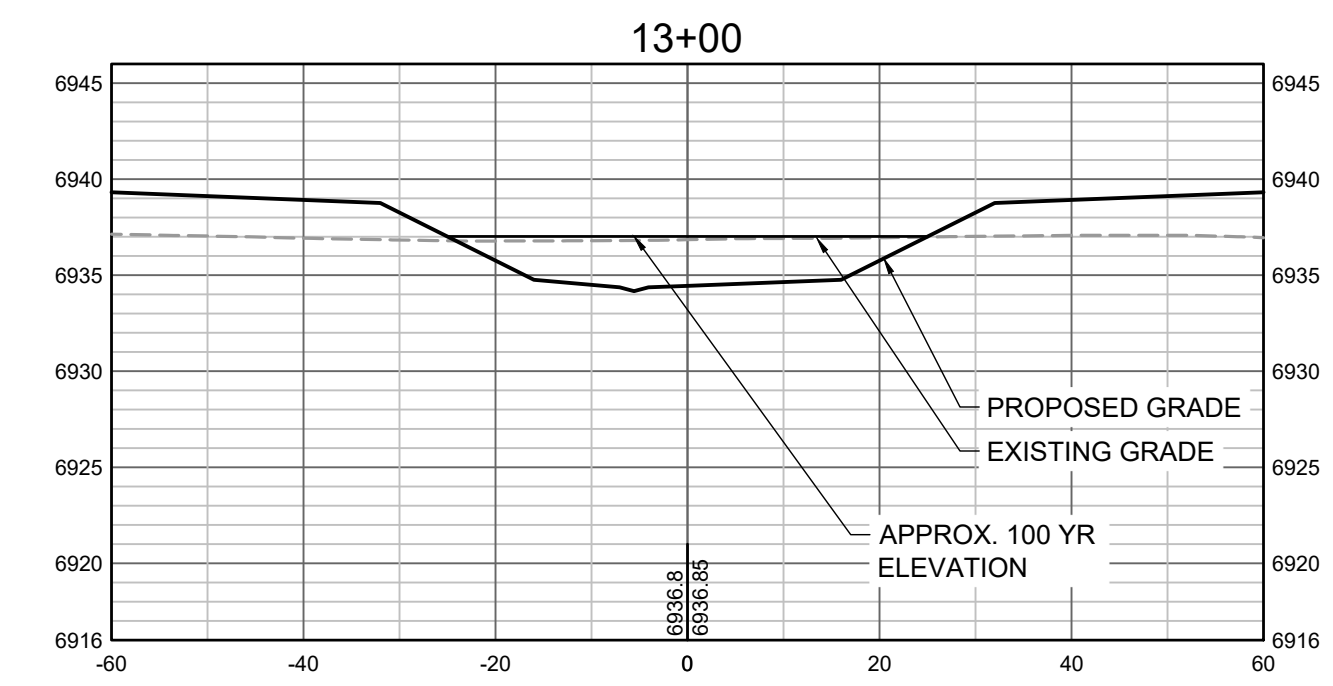
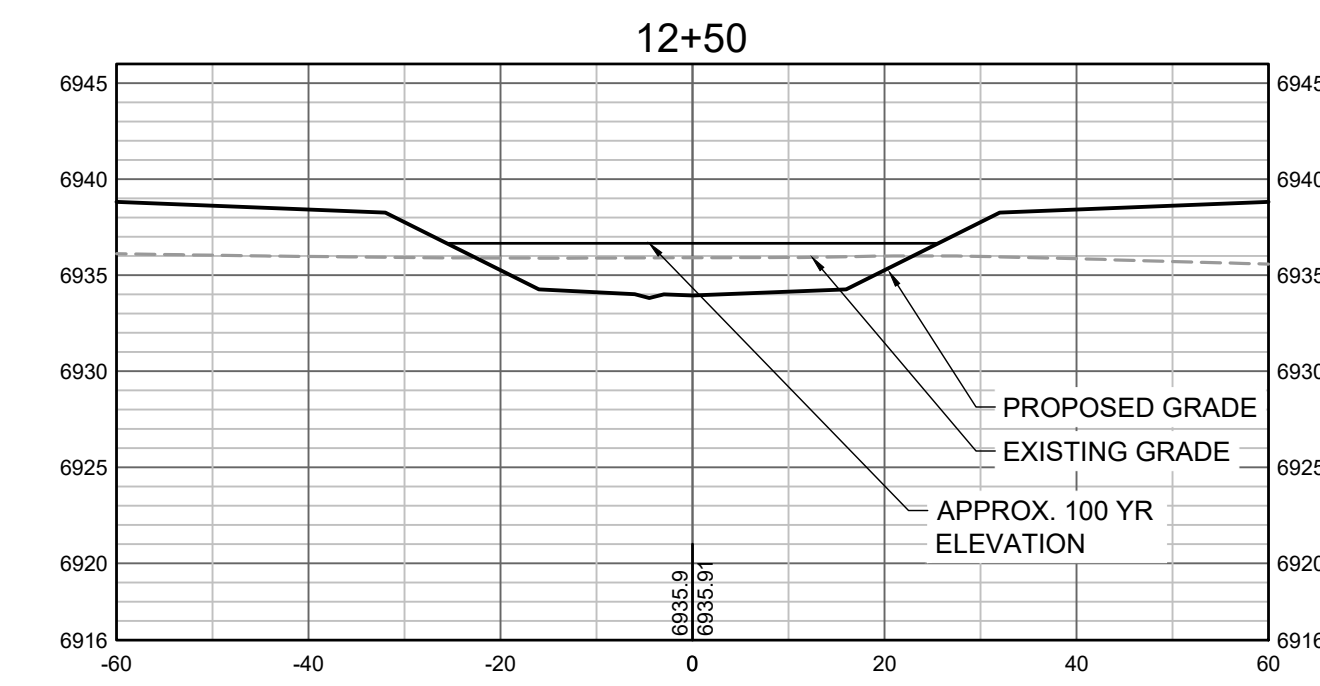
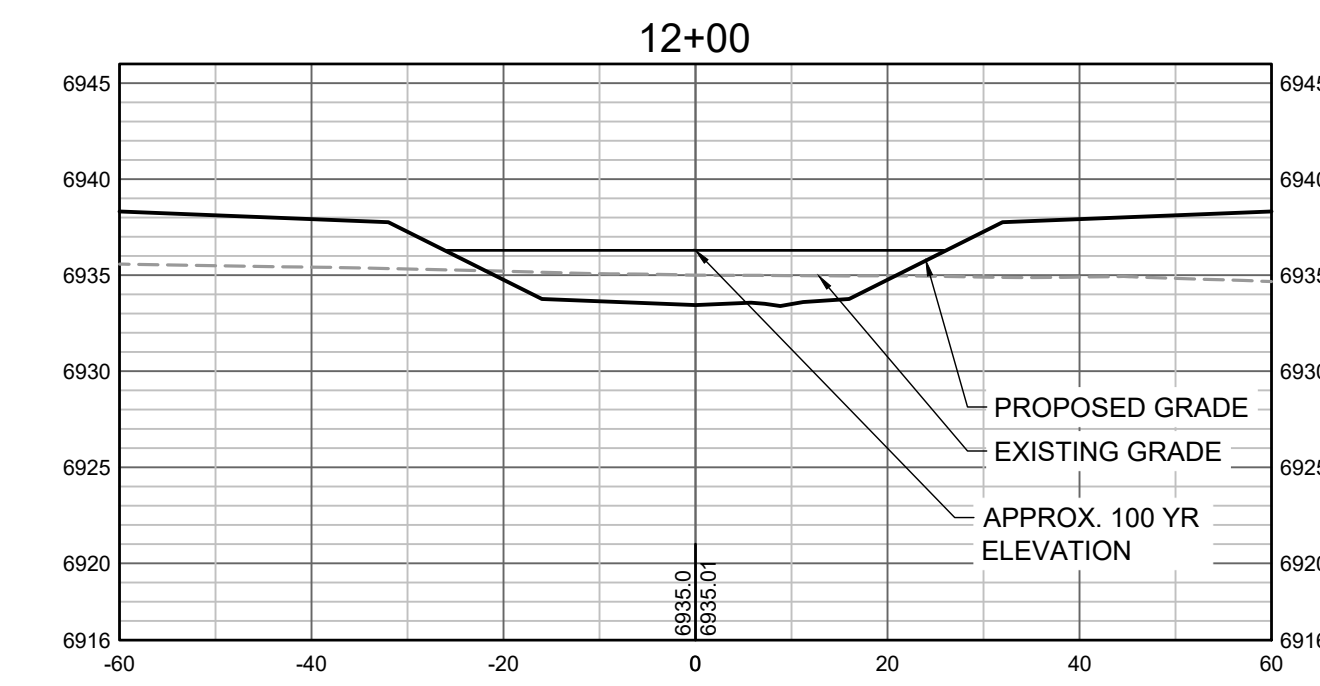
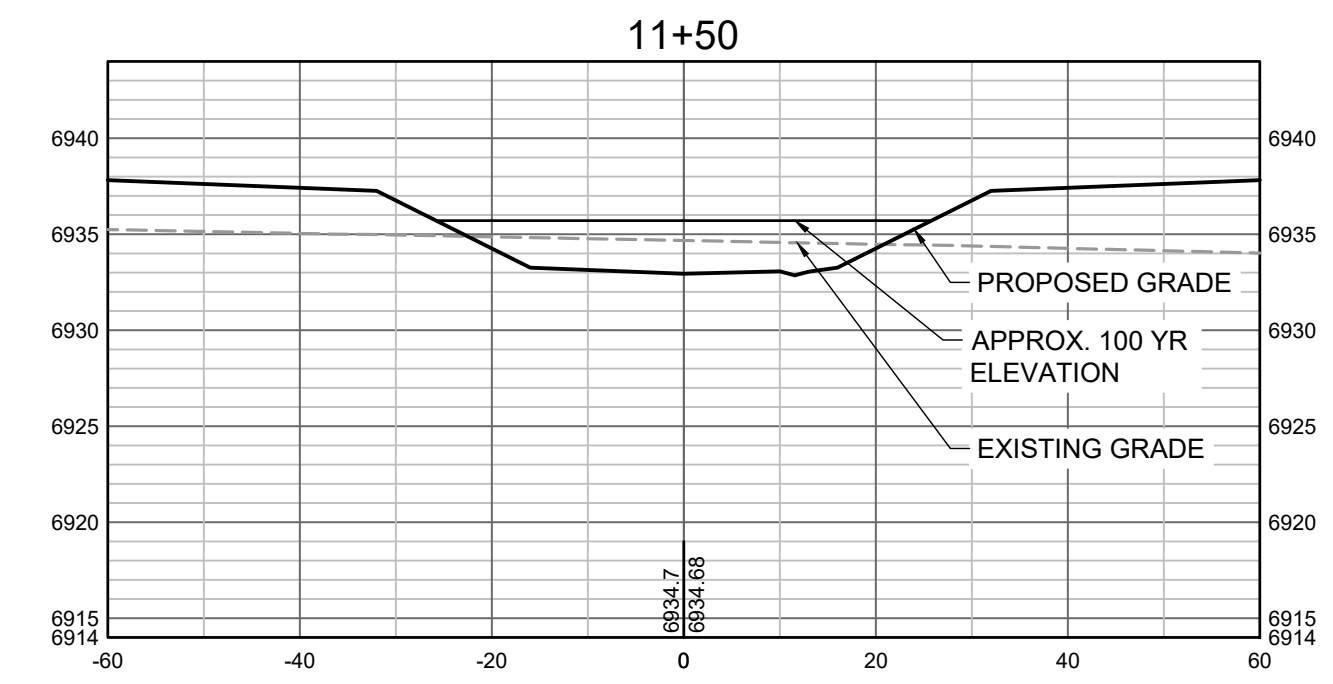
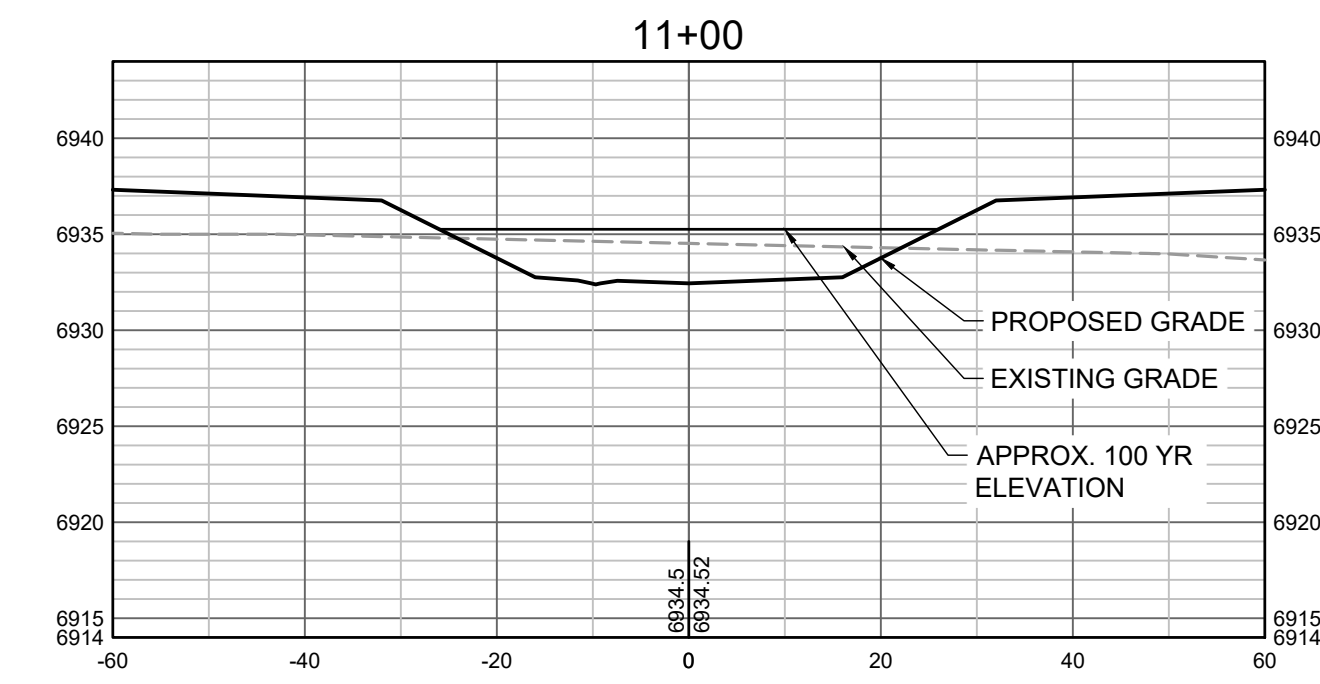
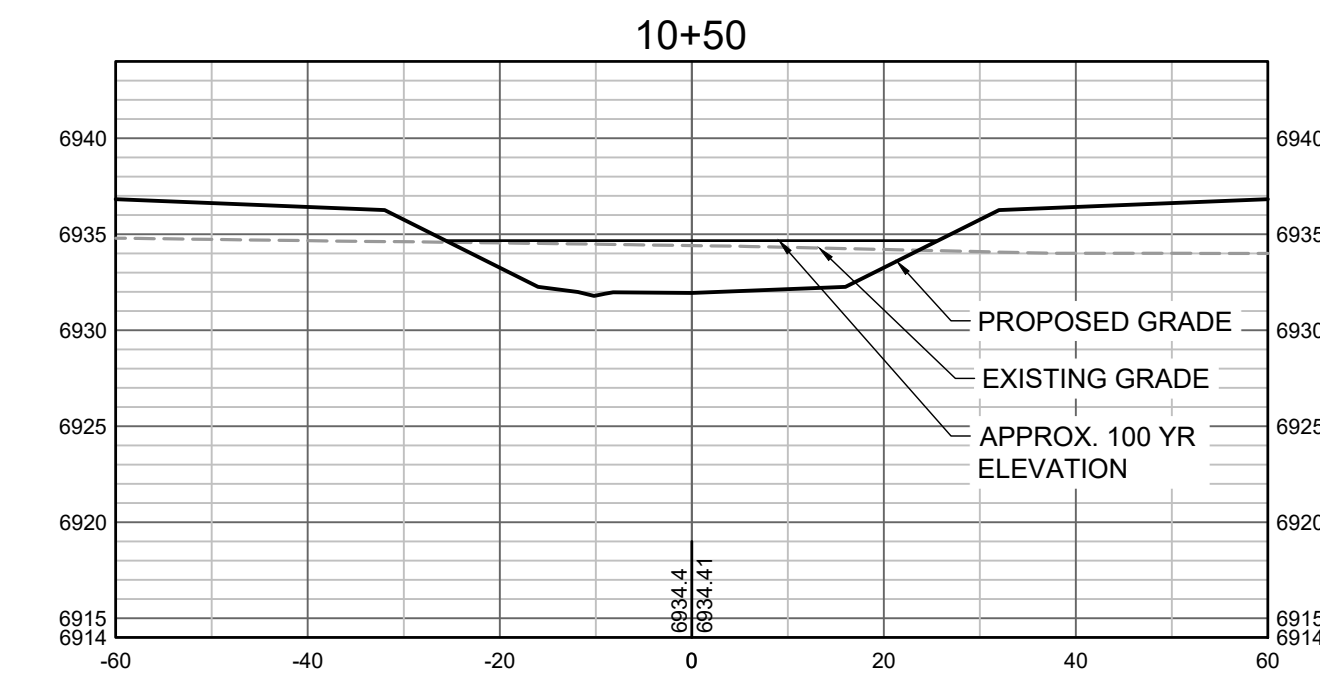
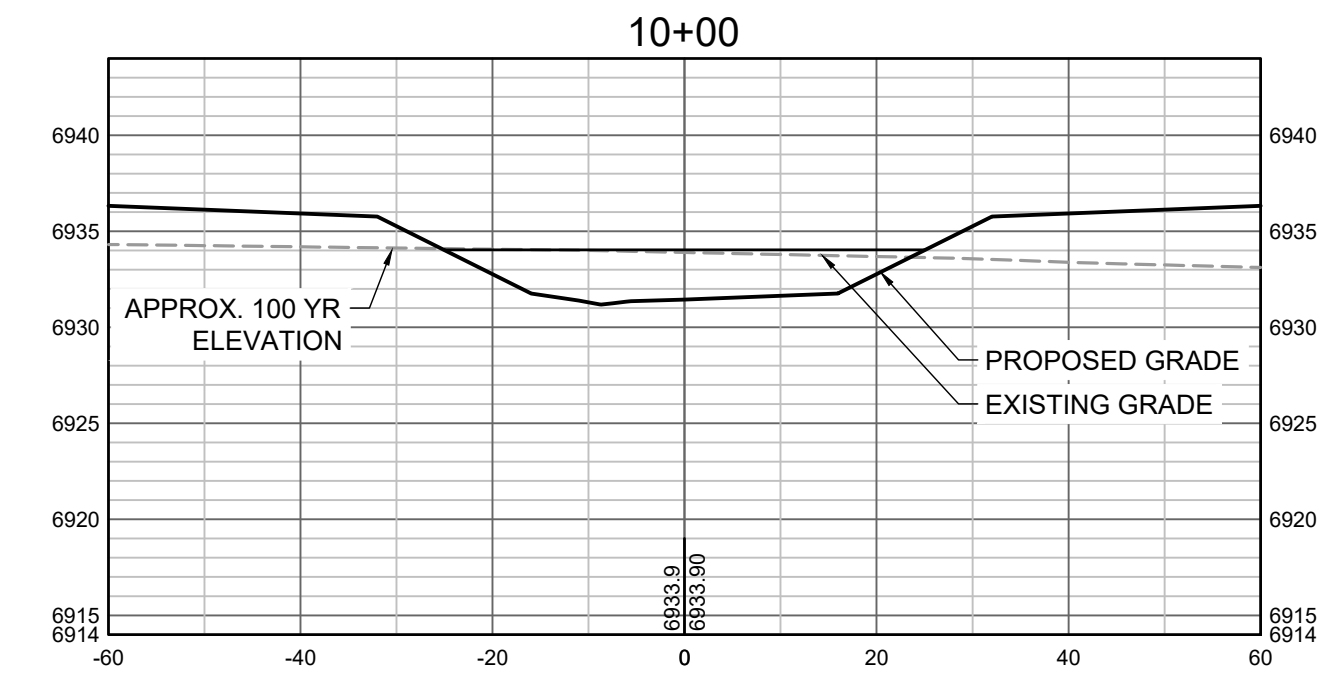
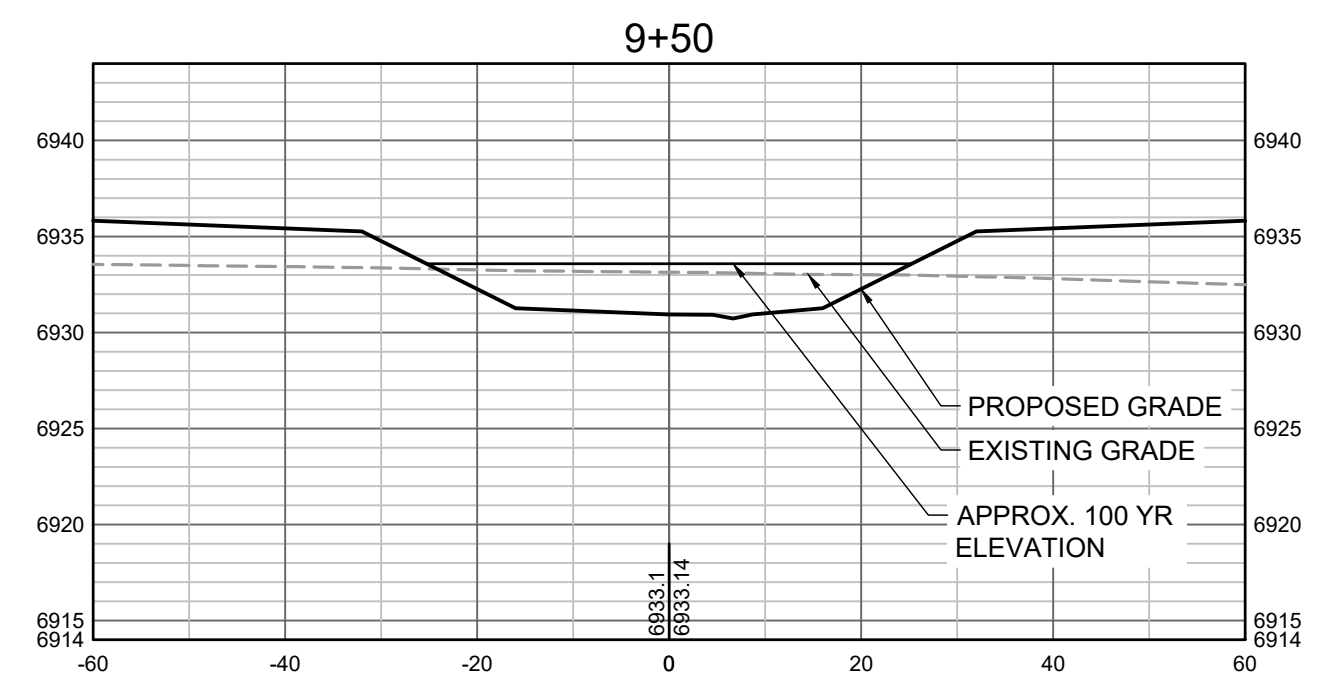
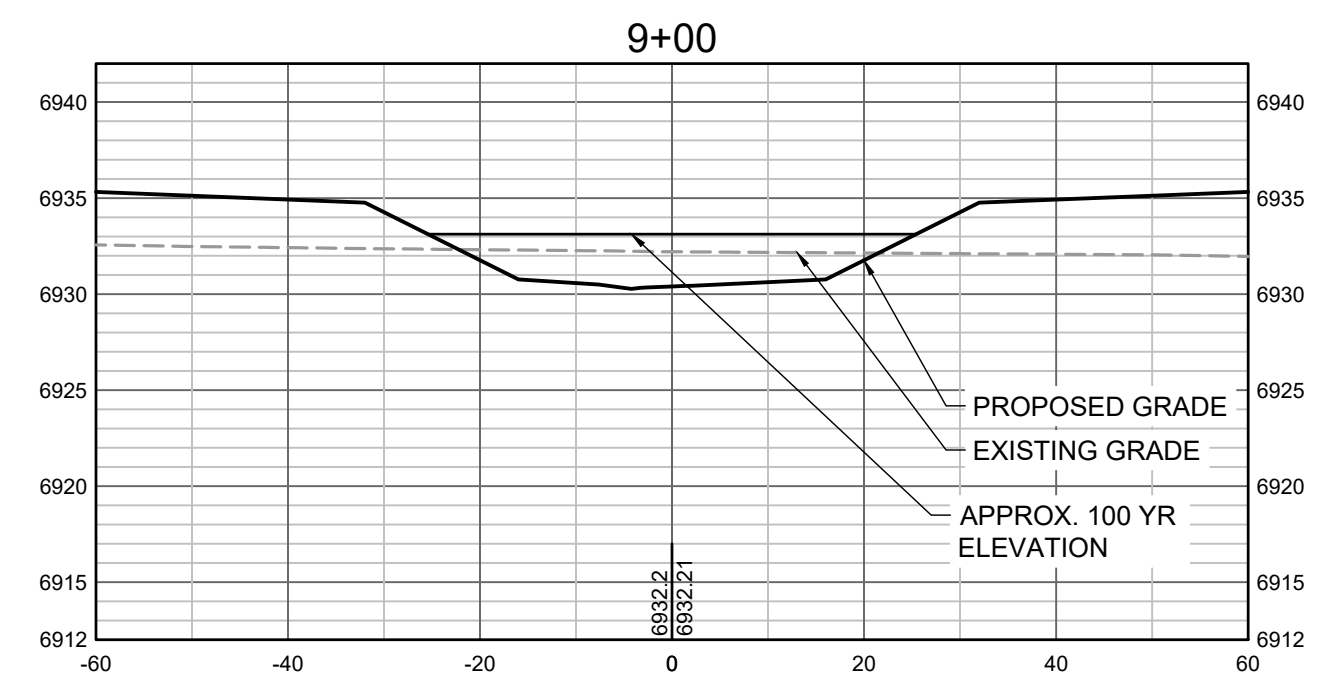
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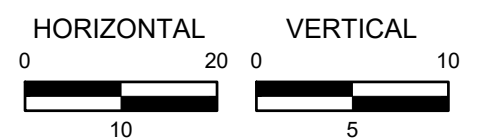
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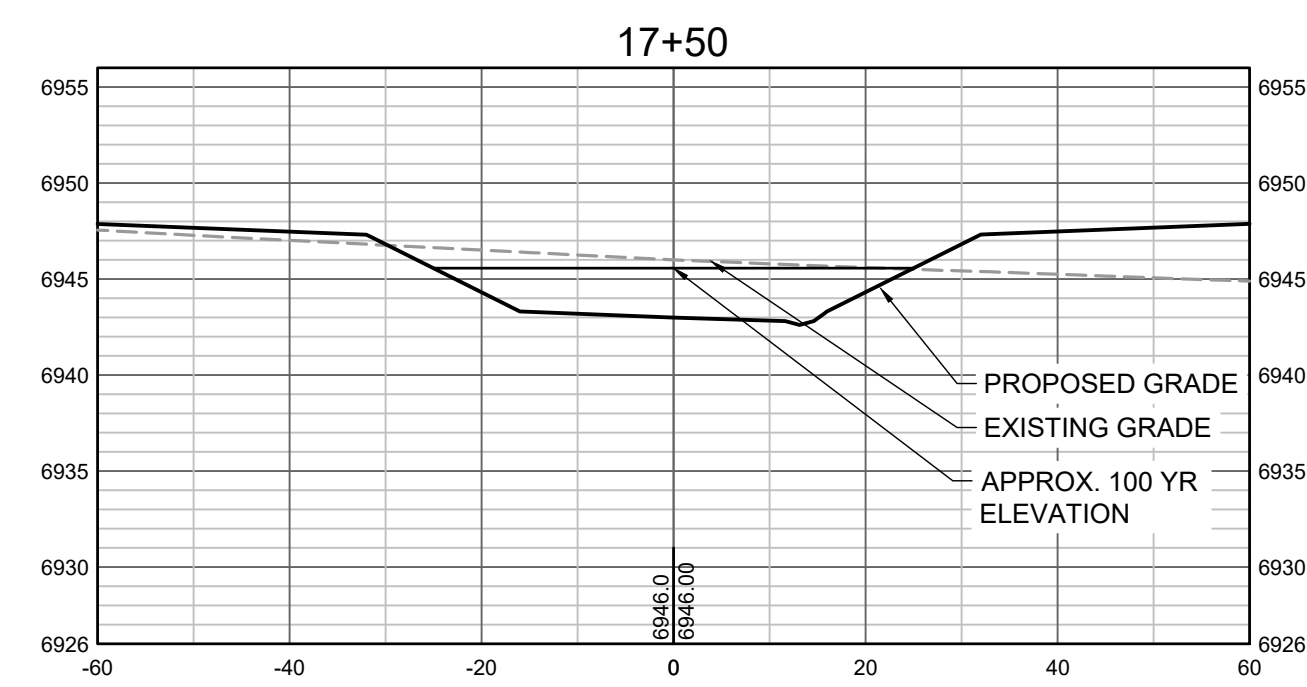
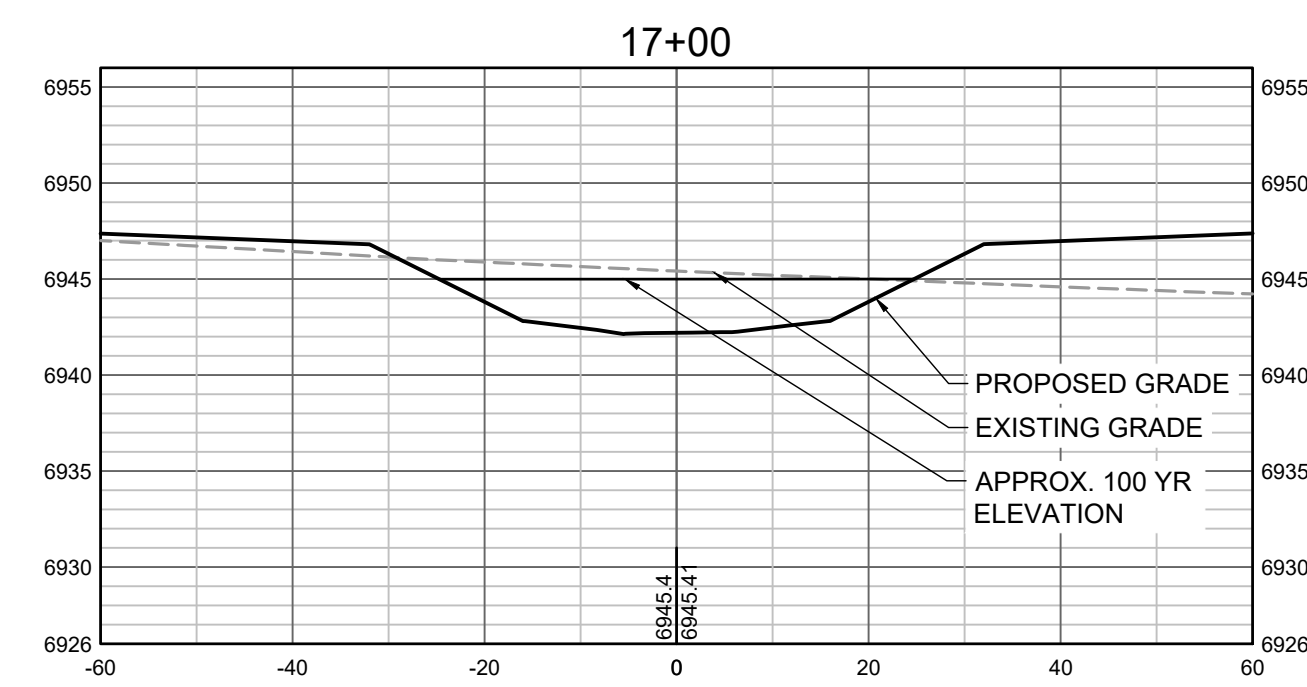
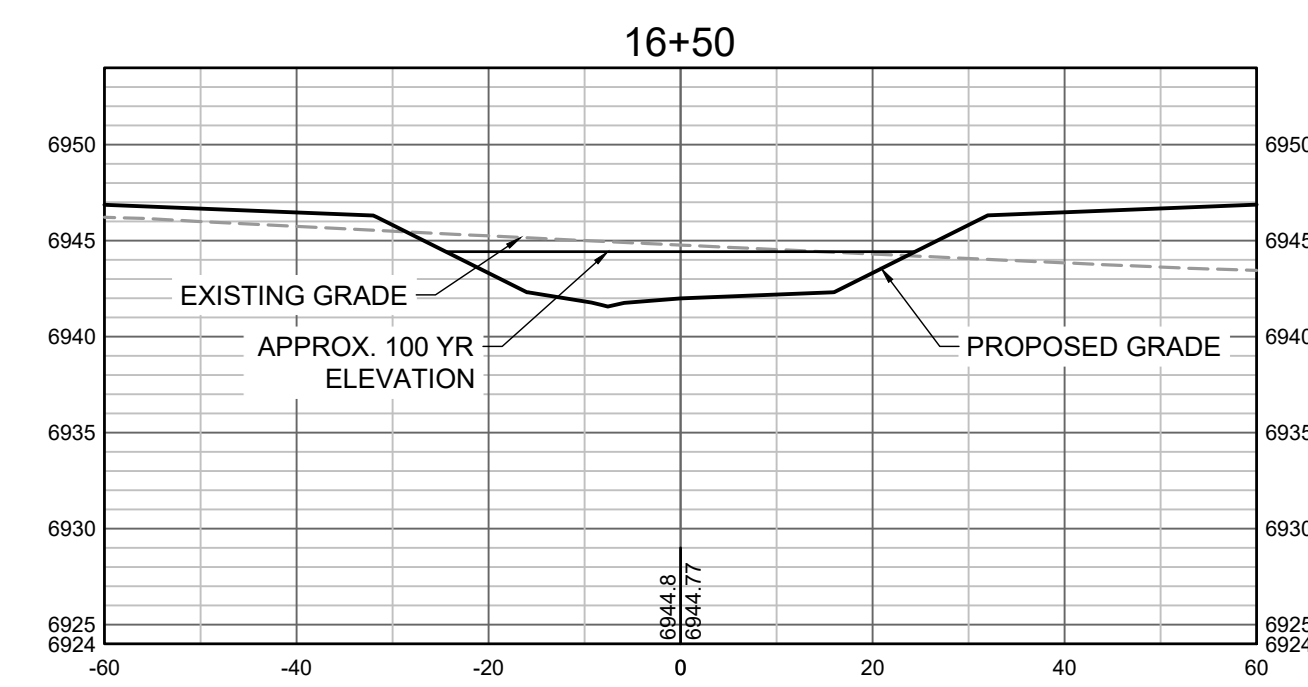
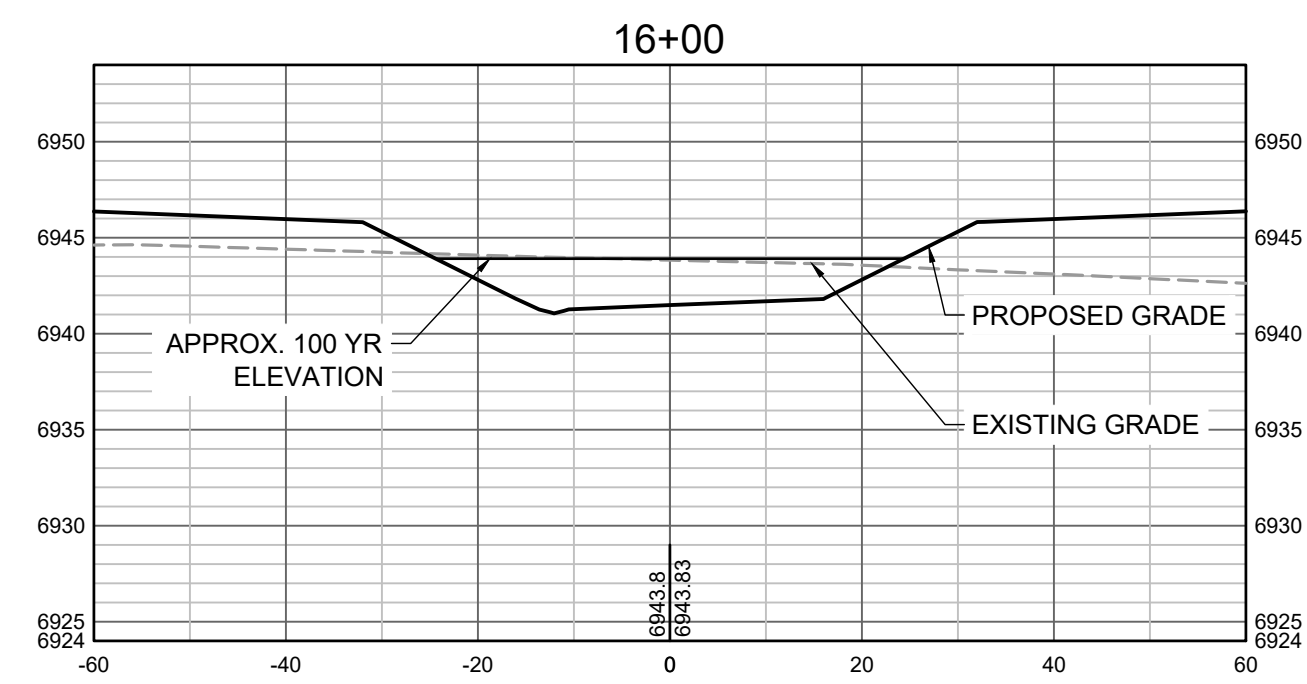
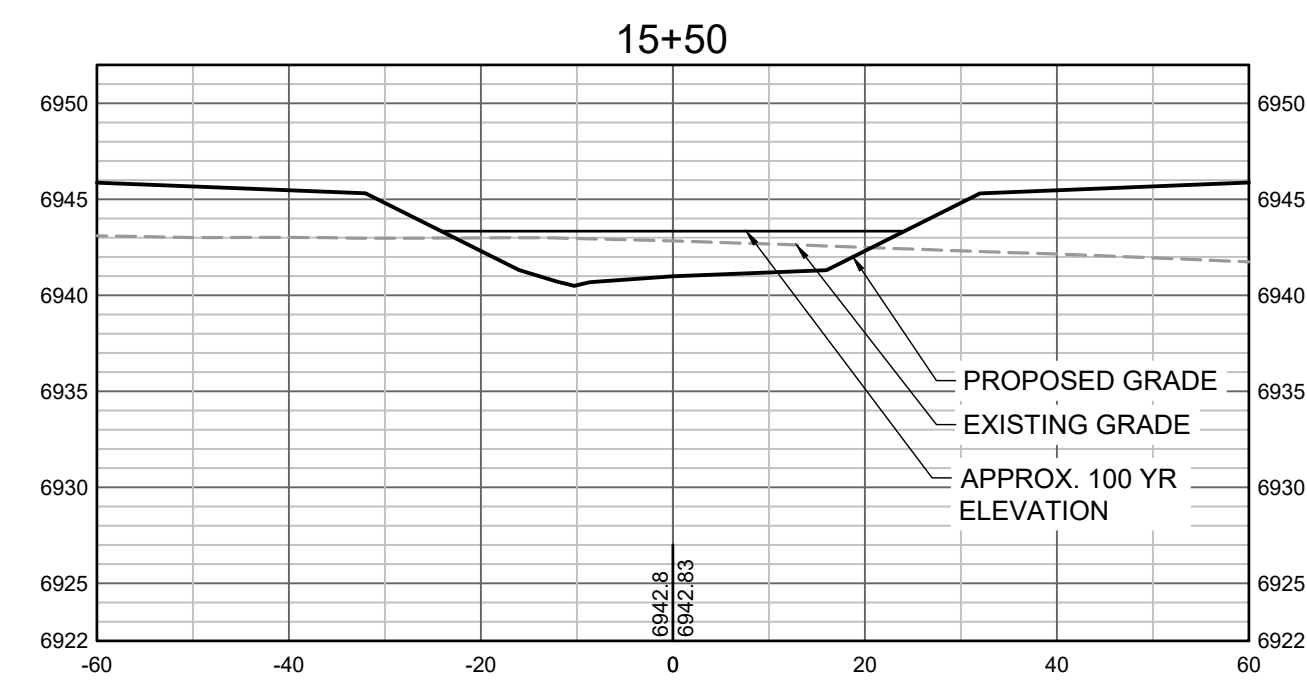
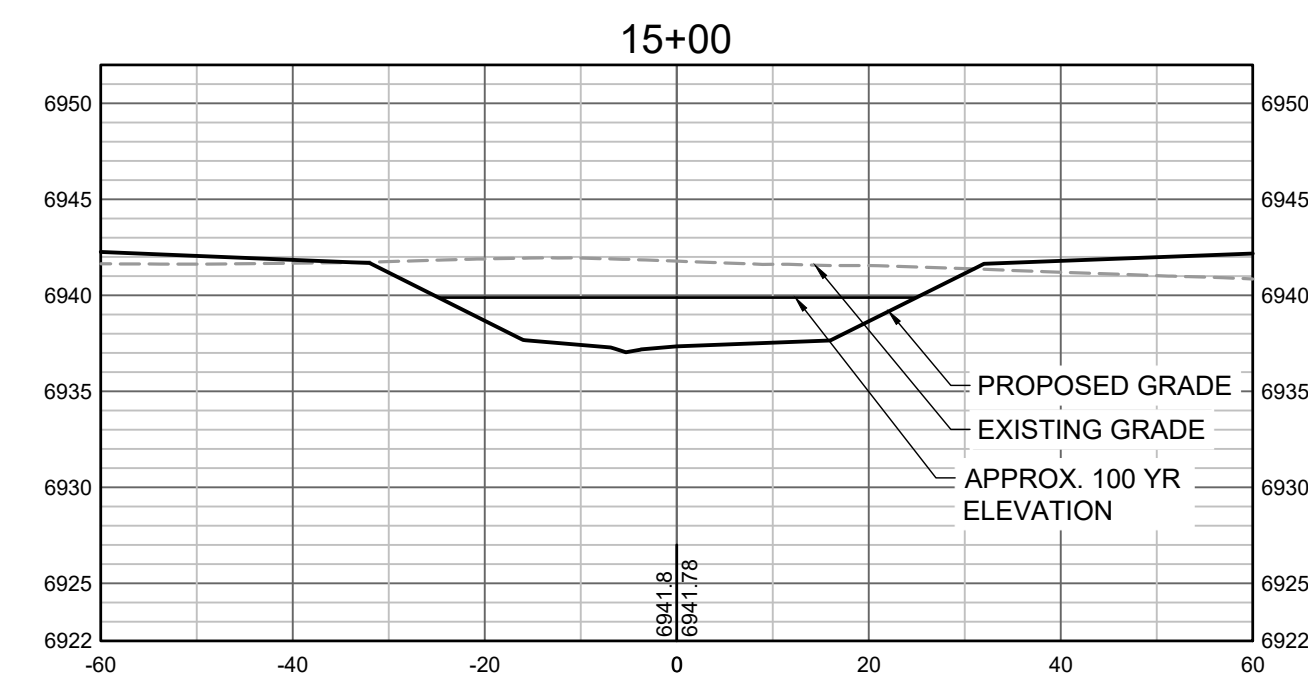
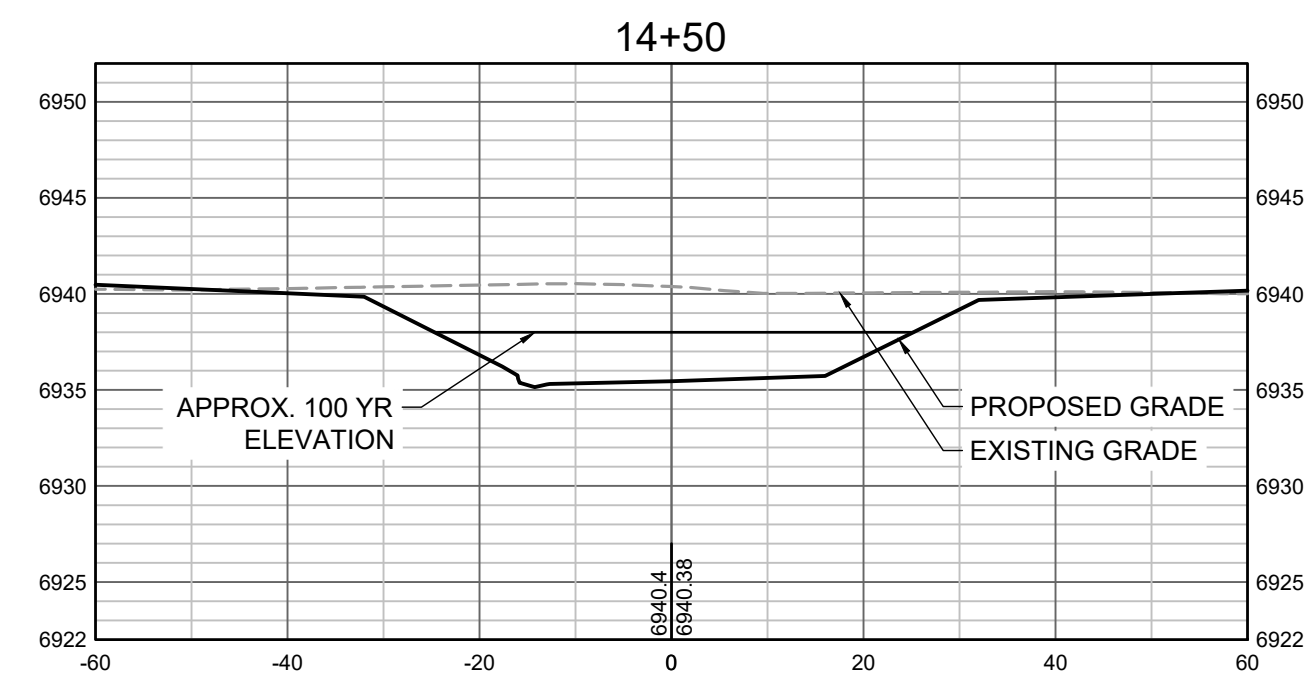
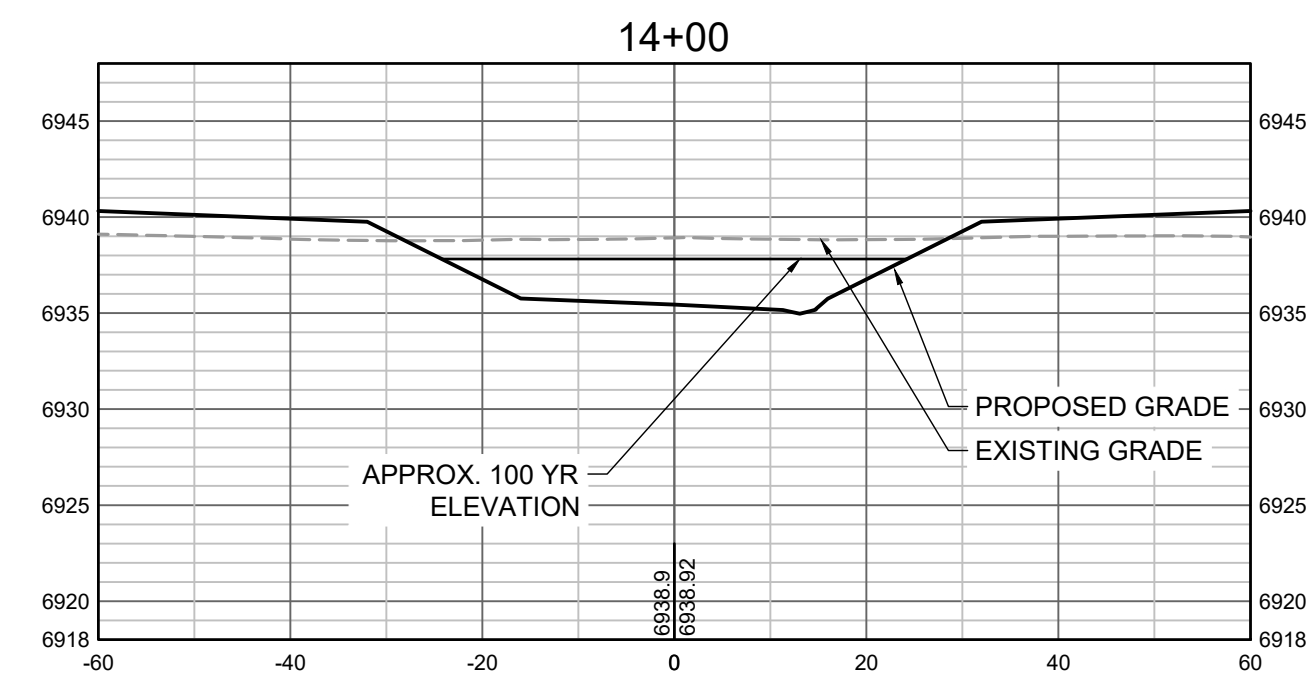
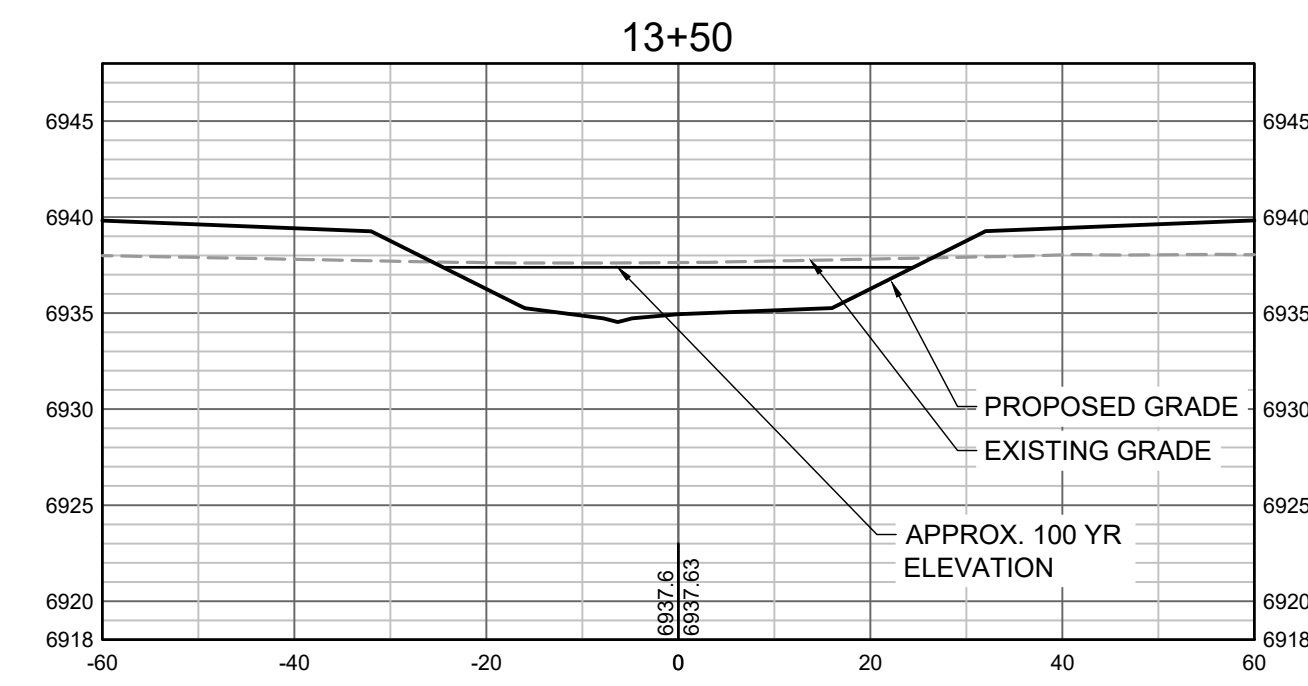
NO.	DATE	BY	REVISION DESCRIPTION



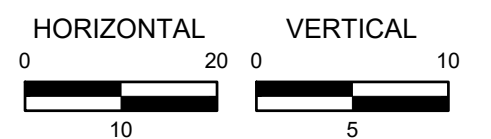
GRANDVIEW RESERVE  
DR HORTON  
FALCON, COLORADO

GRANDVIEW METRO DISTRICT  
CROSS SECTIONS

SHEET NO.  
CS3 21



PROPOSED GRADES TO TIE INTO GRANDVIEW RESERVE FILING 1. REFER TO THE GRANDVIEW RESERVE FILING 1 PLAN SET FOR CONTINUATION OF GRADING THAT IS BEING TIED INTO.



HR GREEN Xrefs.xgs;1-df01

DRAWN BY: TBI JOB DATE: 5/9/2022  
 APPROVED: CMM JOB NUMBER: 201662.03  
 CAD DATE: 5/10/2022  
 CAD FILE: J:\2020\201662.03\CAD\DWGS\C\CROSS SECTIONS

BAR IS ONE INCH ON OFFICIAL DRAWINGS.  
 IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.

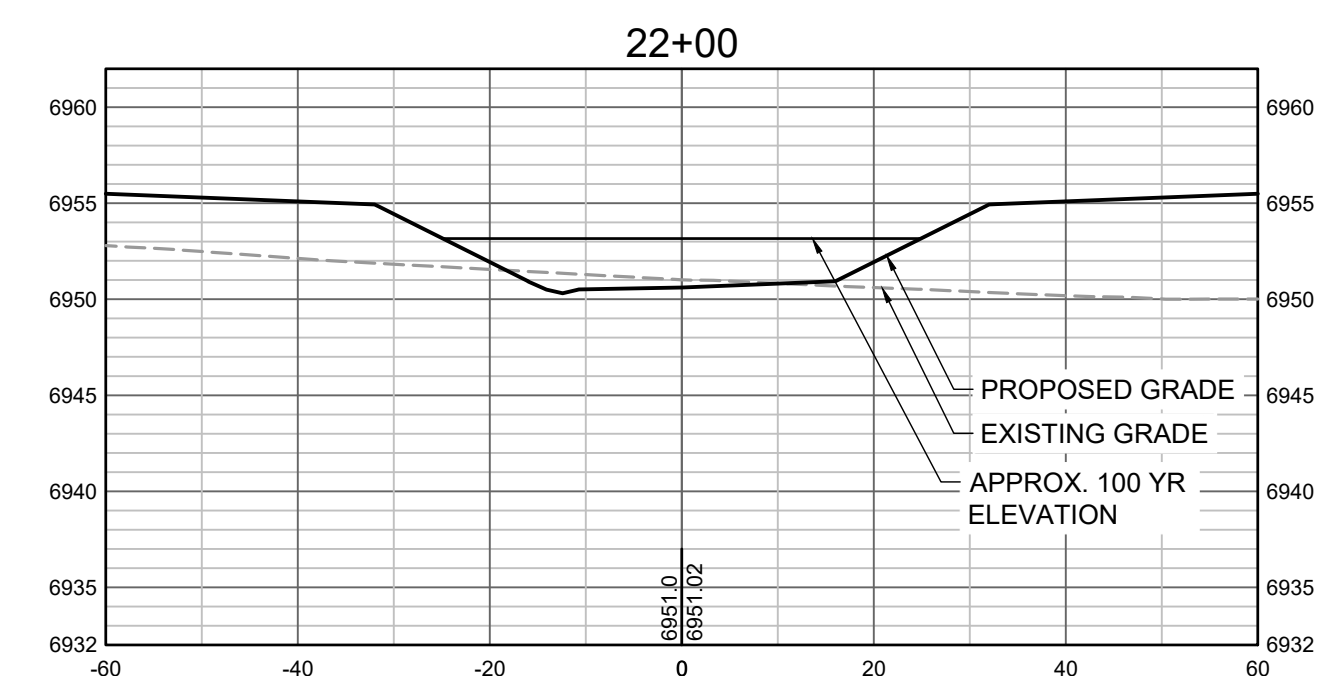
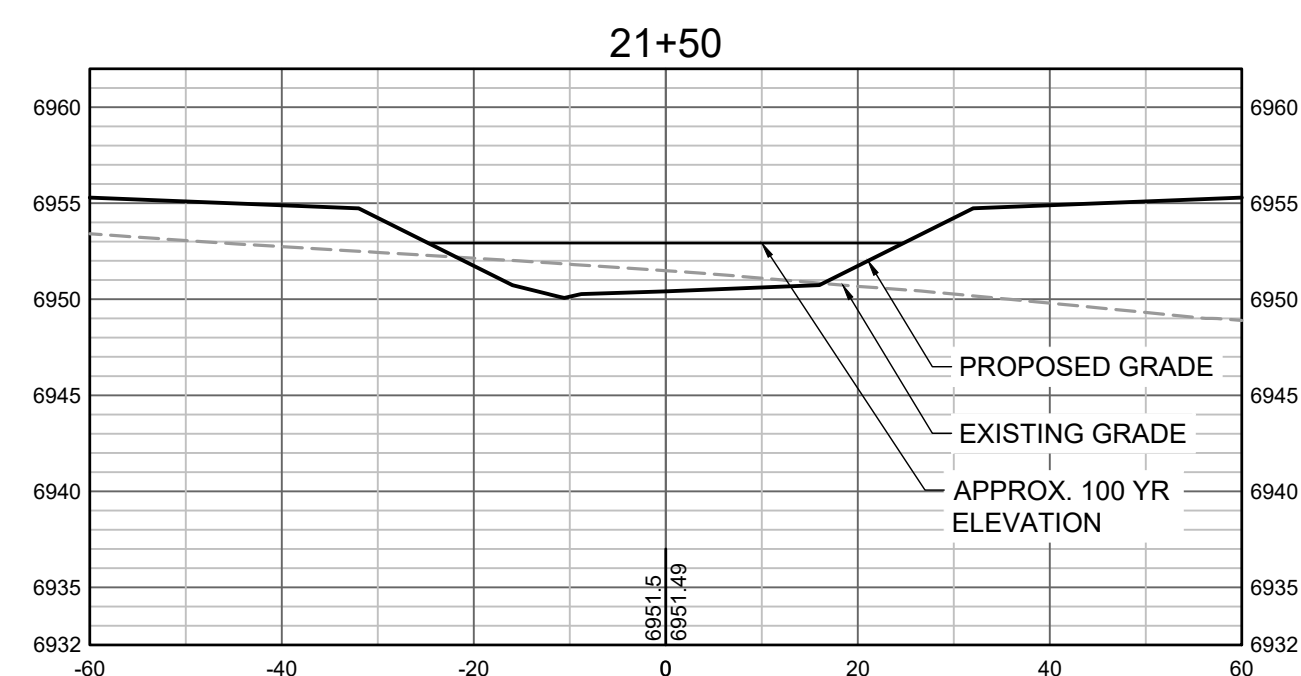
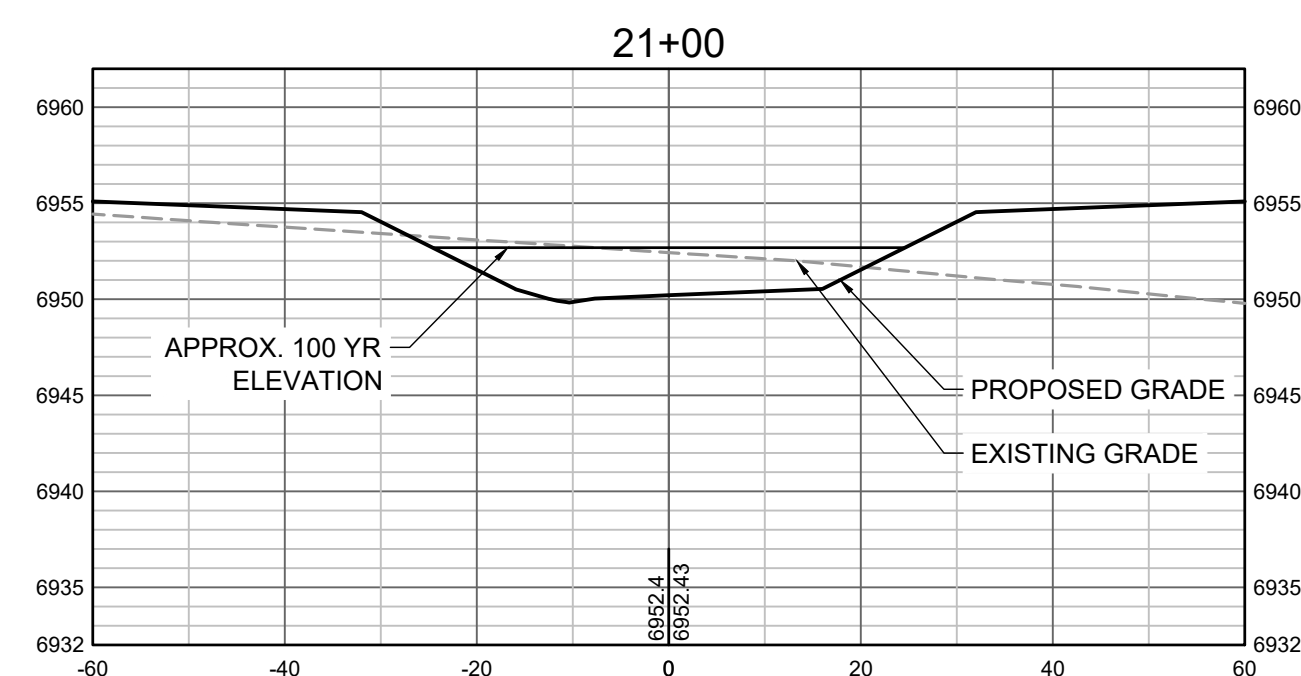
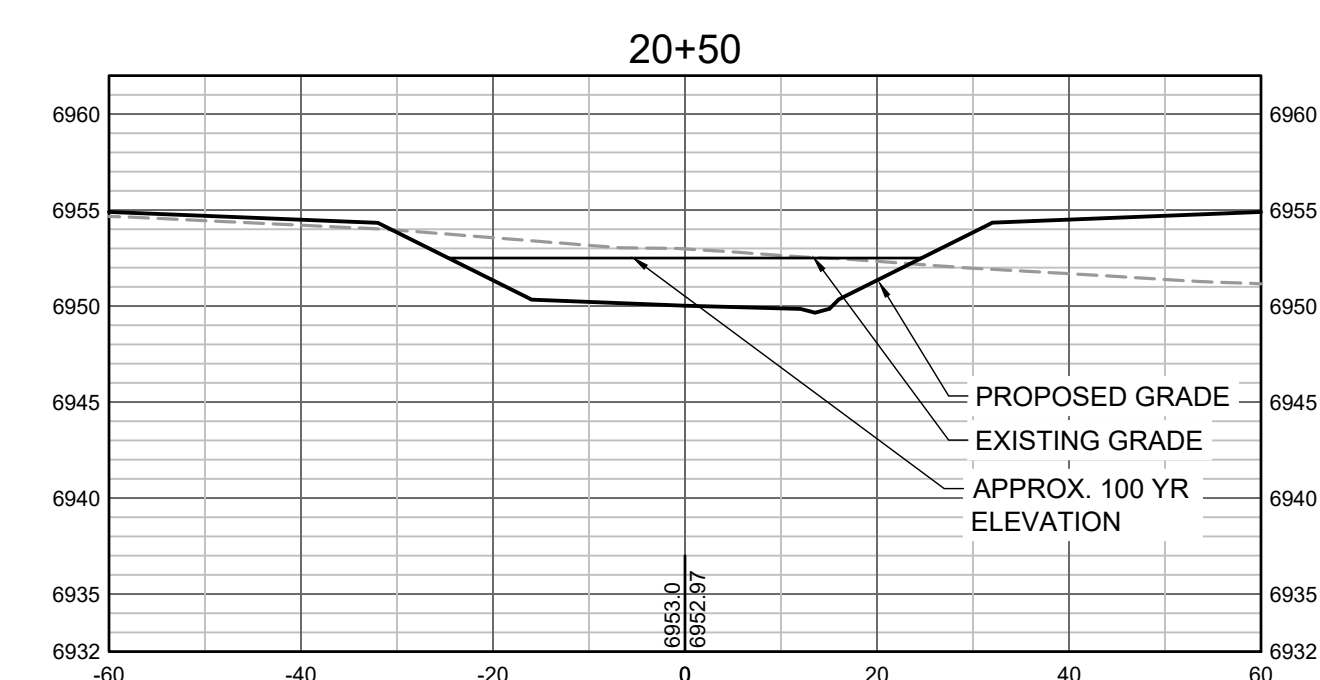
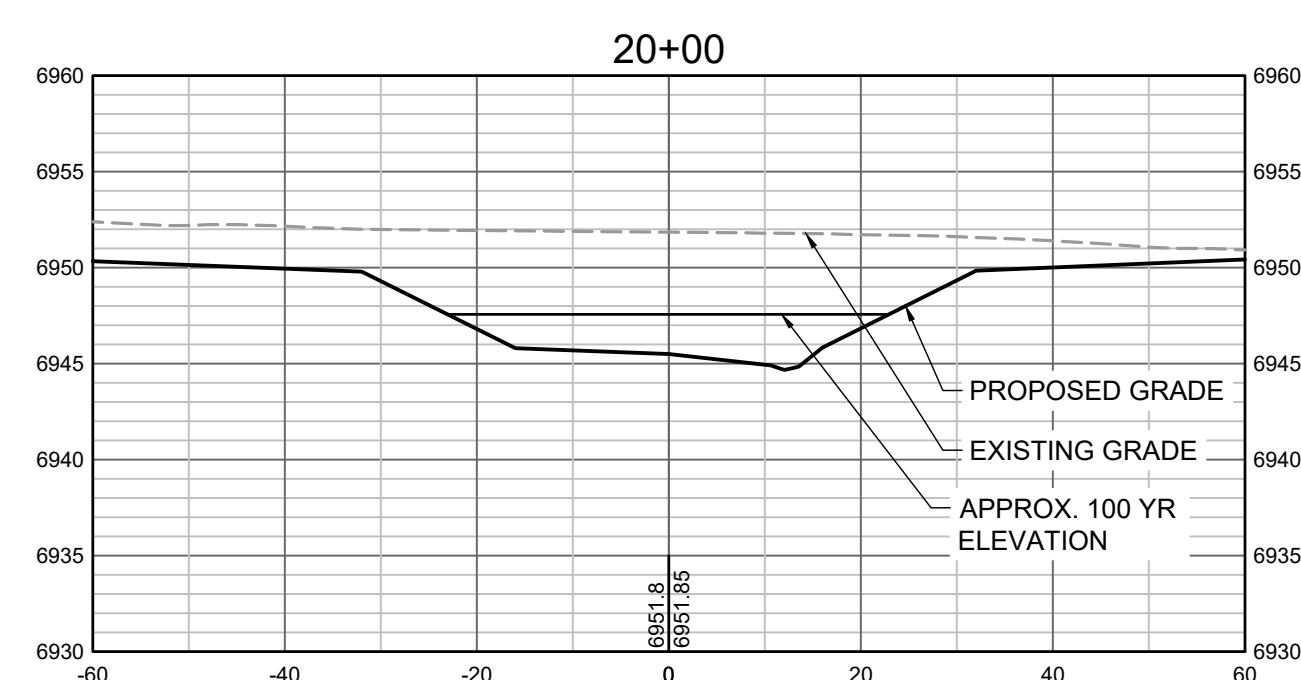
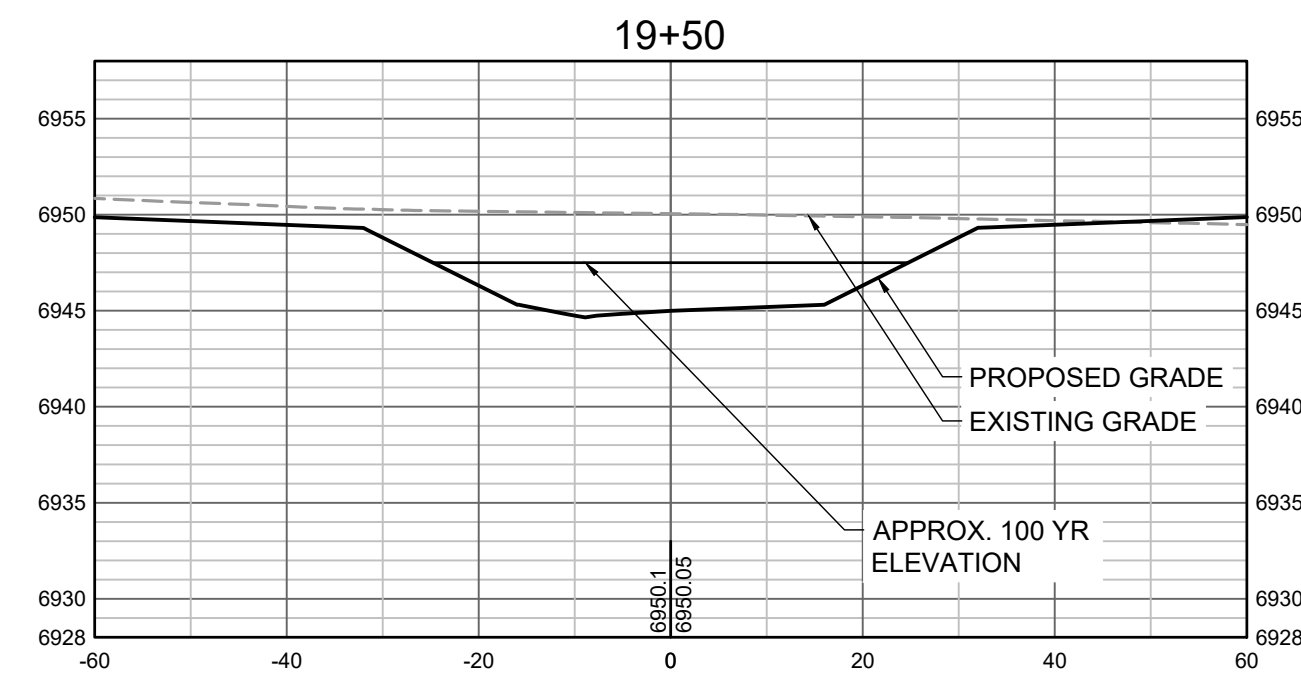
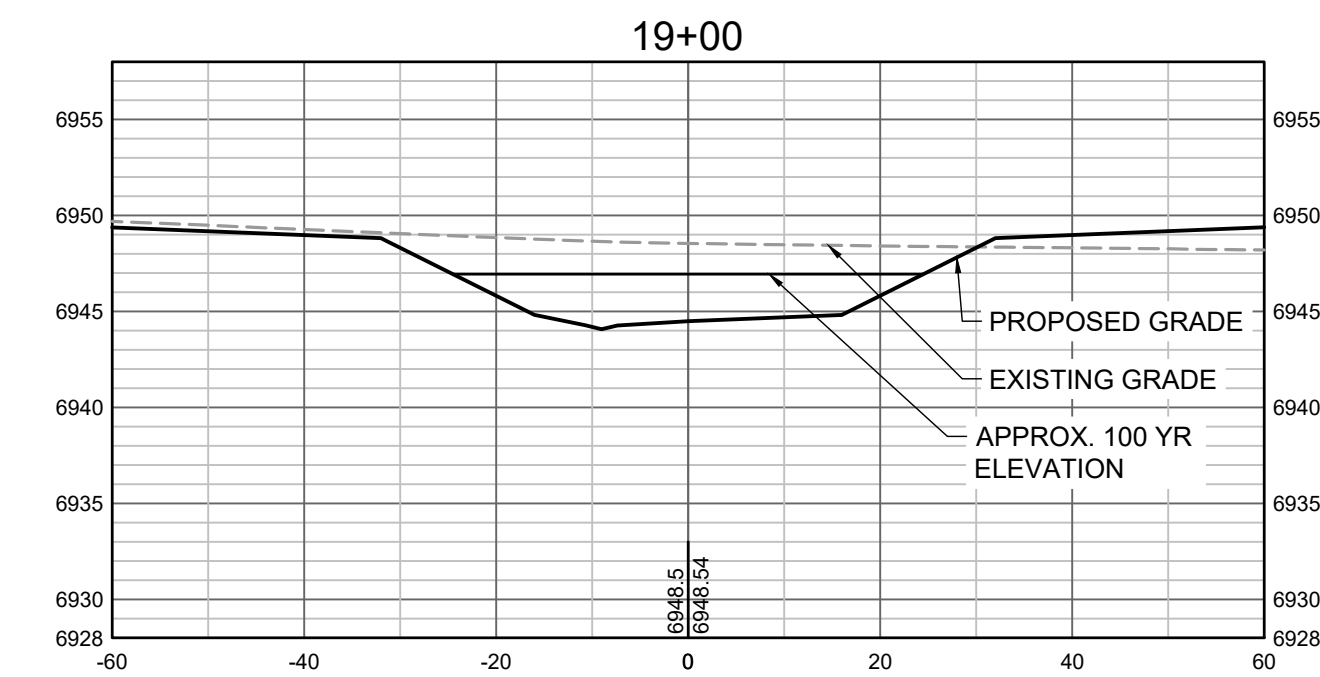
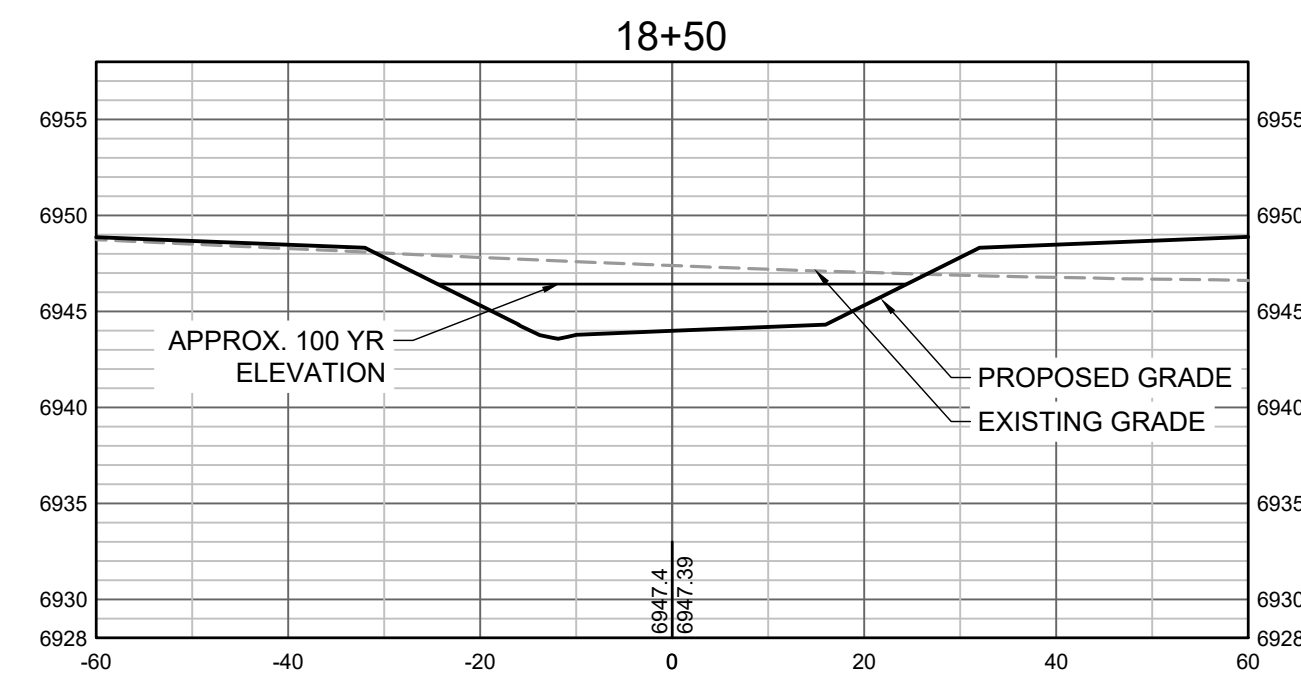
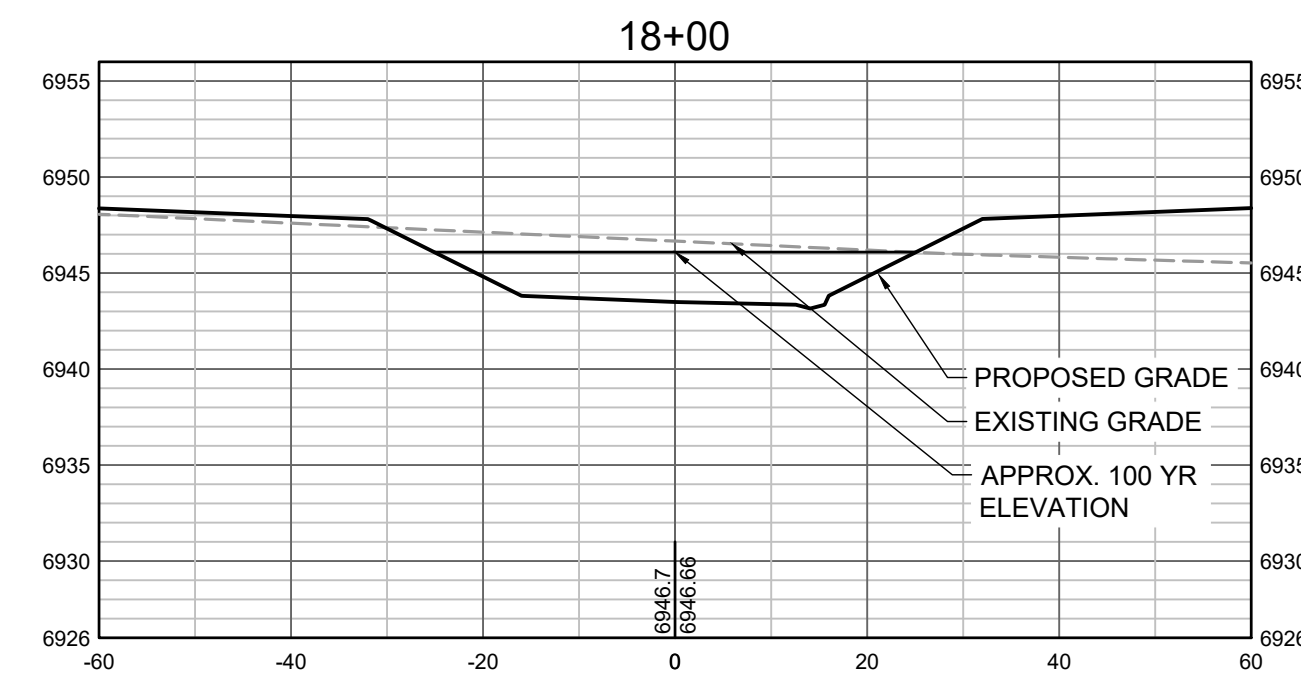
NO.	DATE	BY	REVISION DESCRIPTION



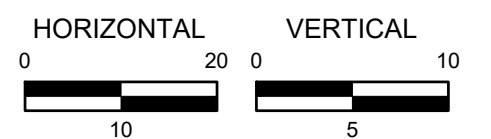
**GRANDVIEW RESERVE**  
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GRANDVIEW METRO DISTRICT  
 CROSS SECTIONS

SHEET NO.  
**CS4 22**



PROPOSED GRADES TO TIE INTO GRANDVIEW RESERVE FILING 1. REFER TO THE GRANDVIEW RESERVE FILING 1 PLAN SET FOR CONTINUATION OF GRADING THAT IS BEING TIED INTO.



HR GREEN Xrefs: xgs-dwg1-dh01

DRAWN BY: TBI JOB DATE: 5/9/2022  
 APPROVED: CMM JOB NUMBER: 201662.03  
 CAD DATE: 5/10/2022  
 CAD FILE: J:\2020\201662.03\CAD\DWGS\C\CROSS SECTIONS

BAR IS ONE INCH ON OFFICIAL DRAWINGS.  
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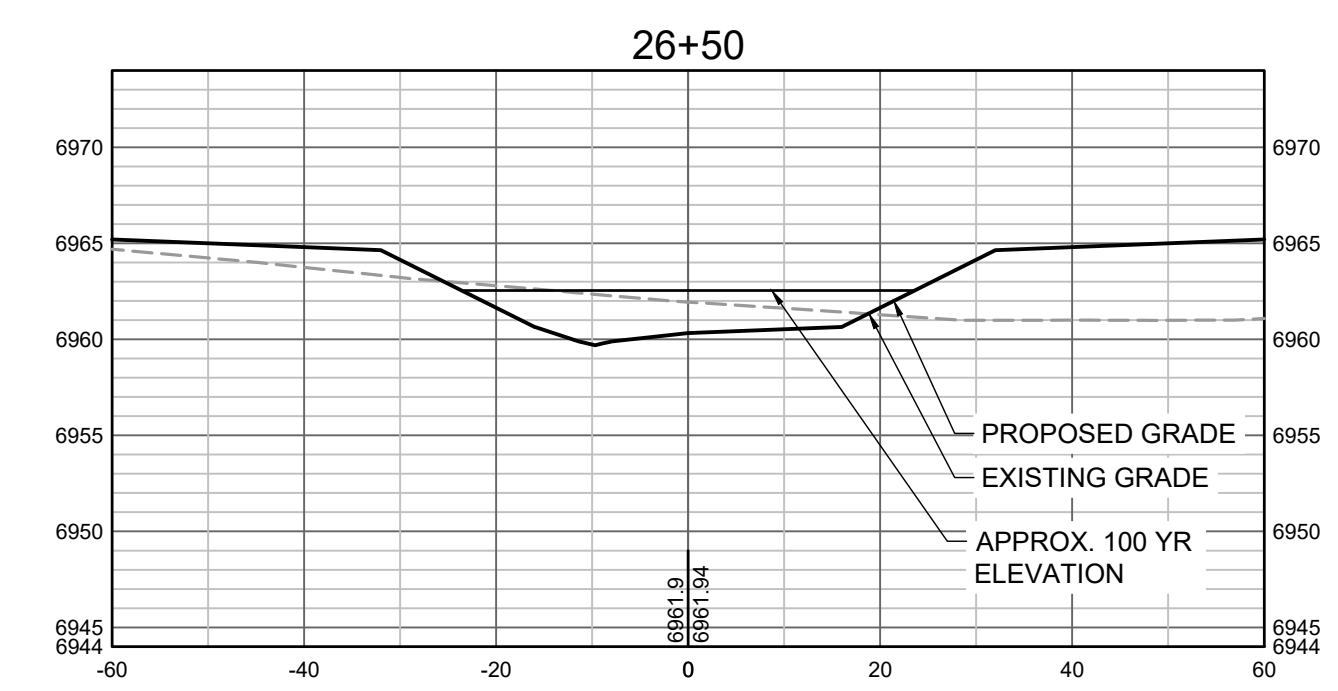
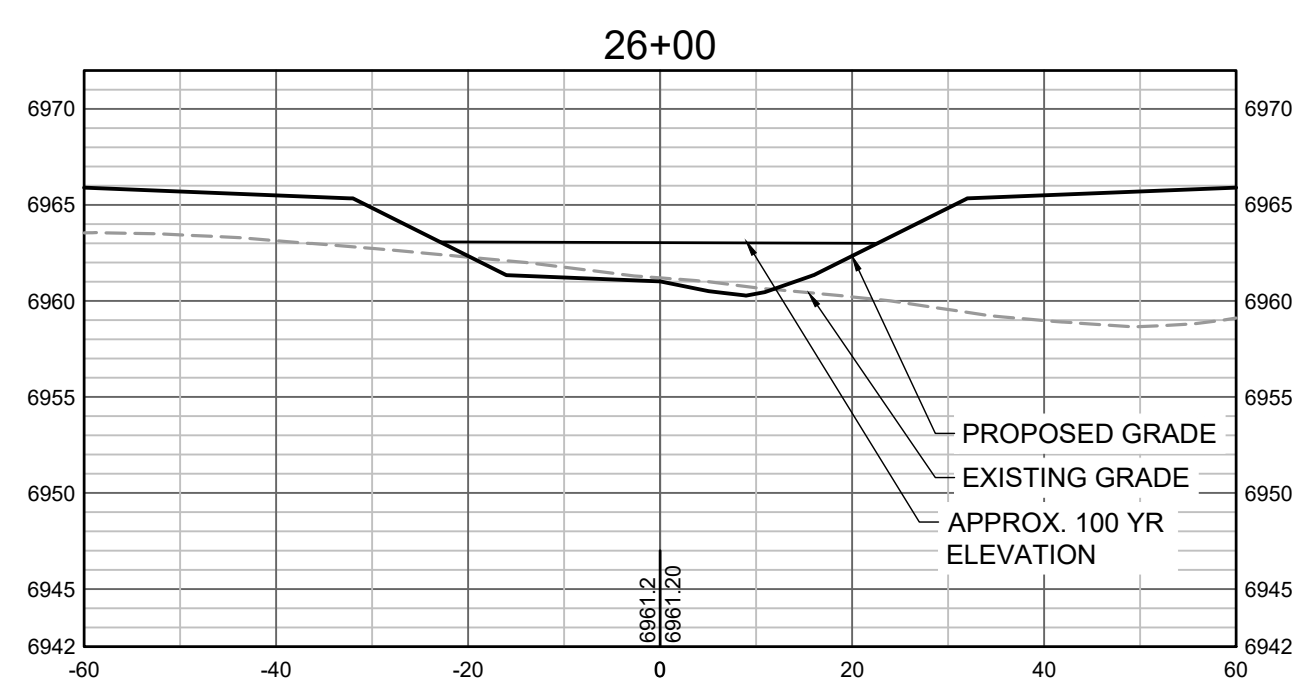
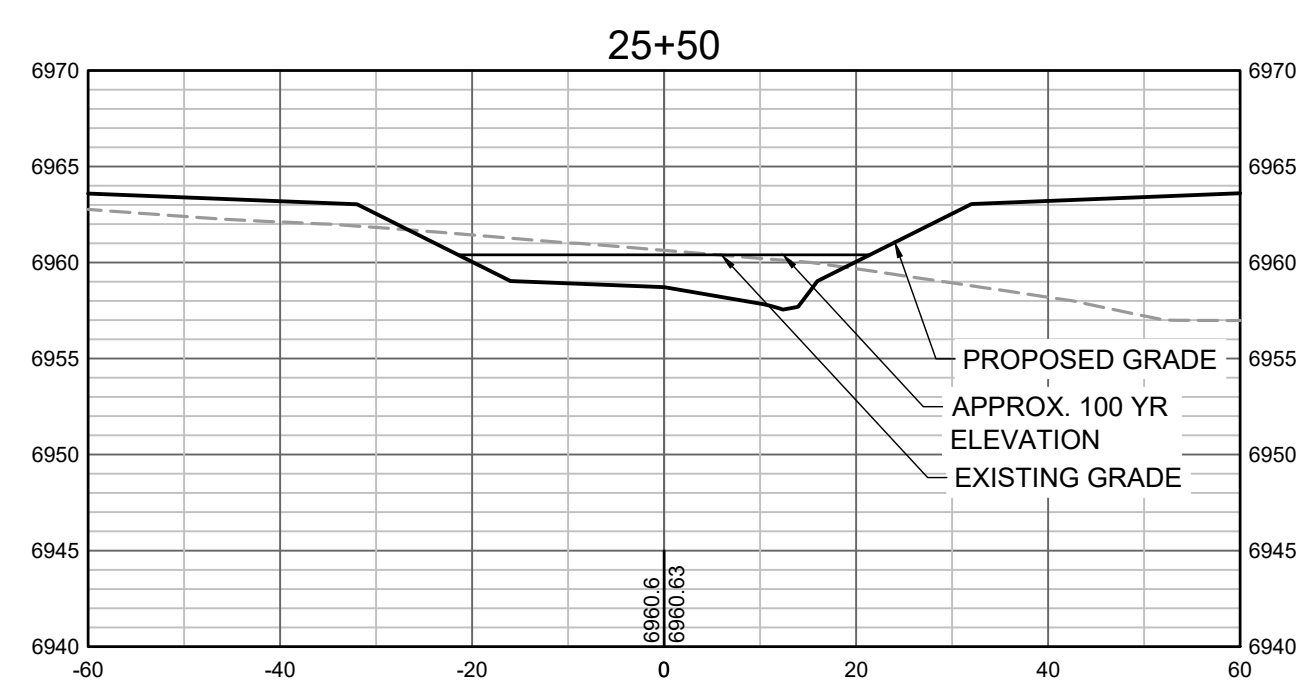
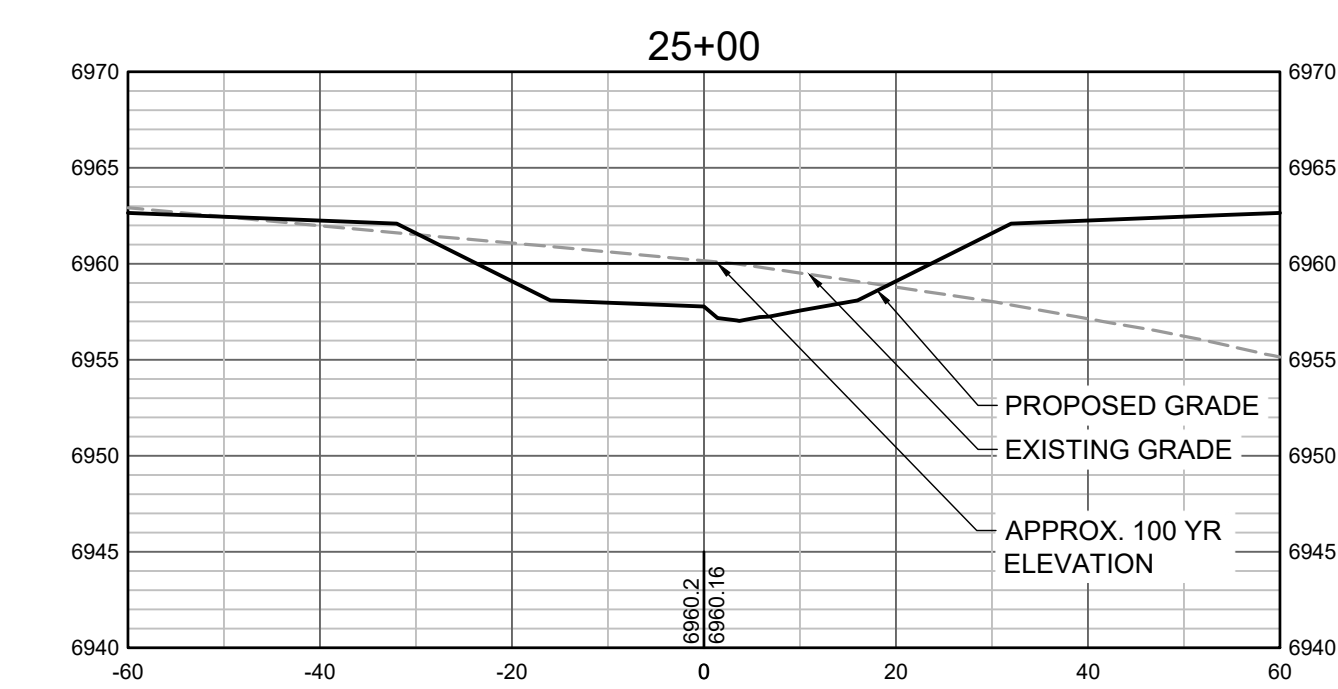
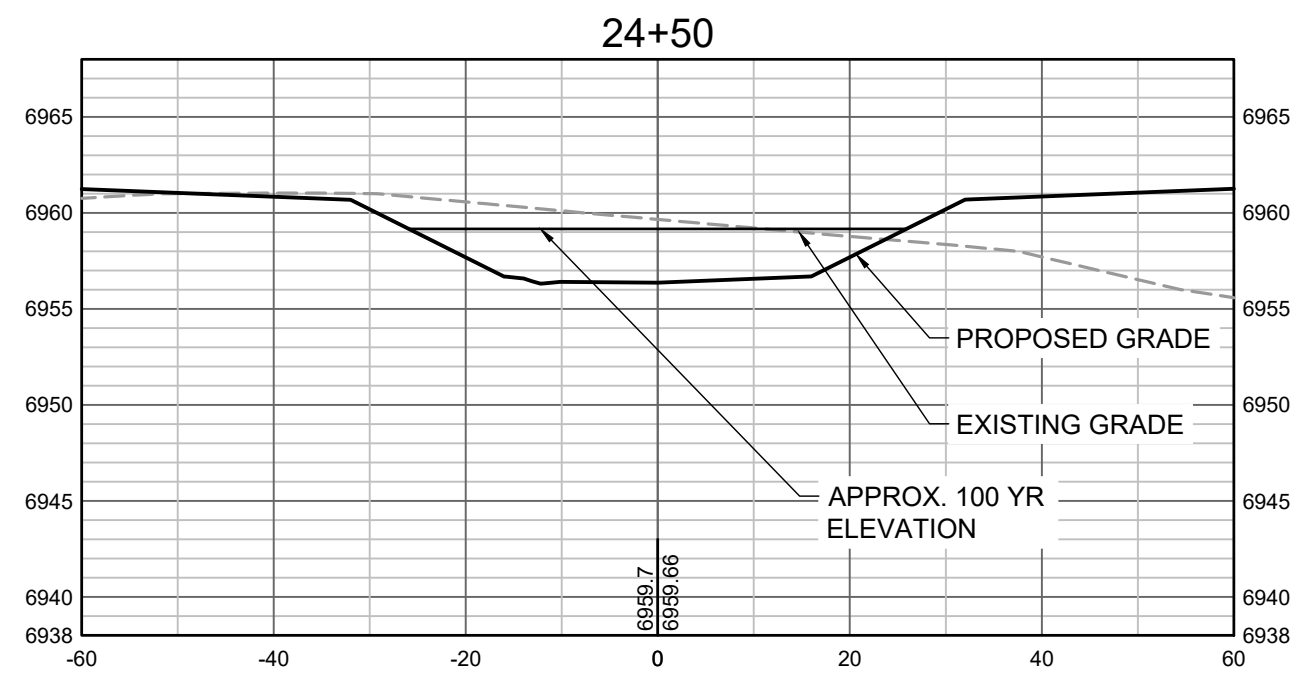
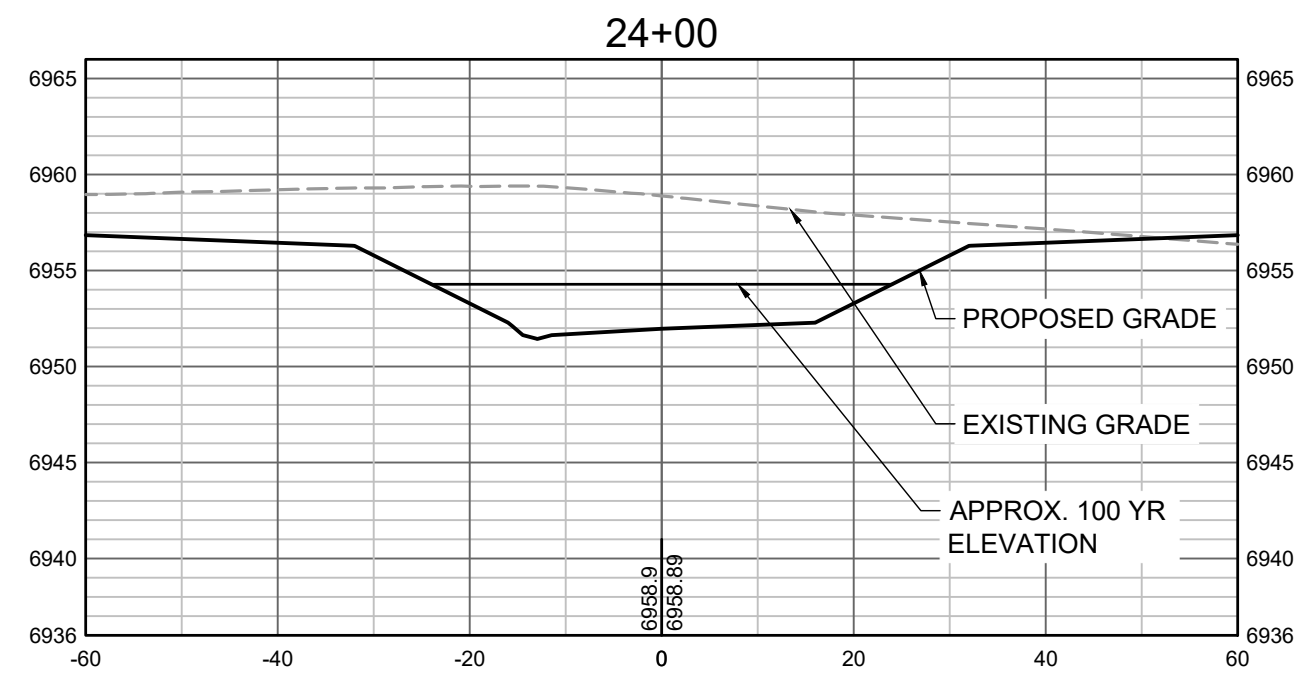
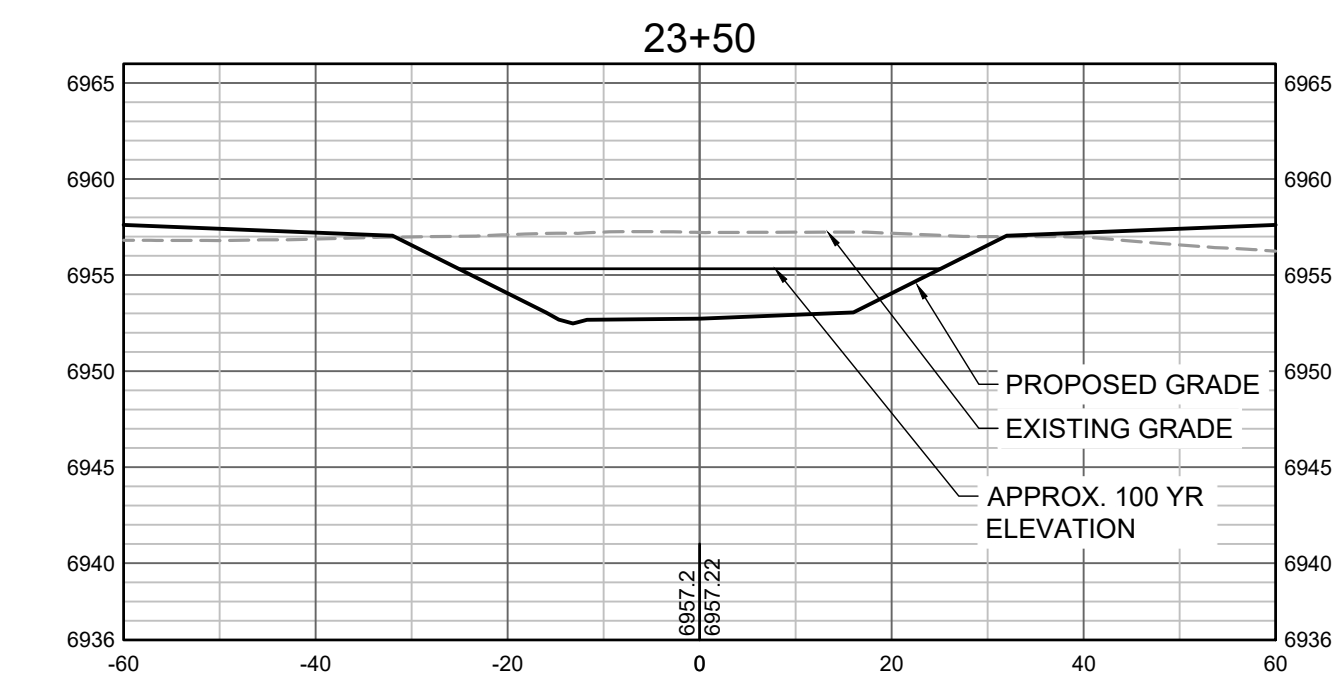
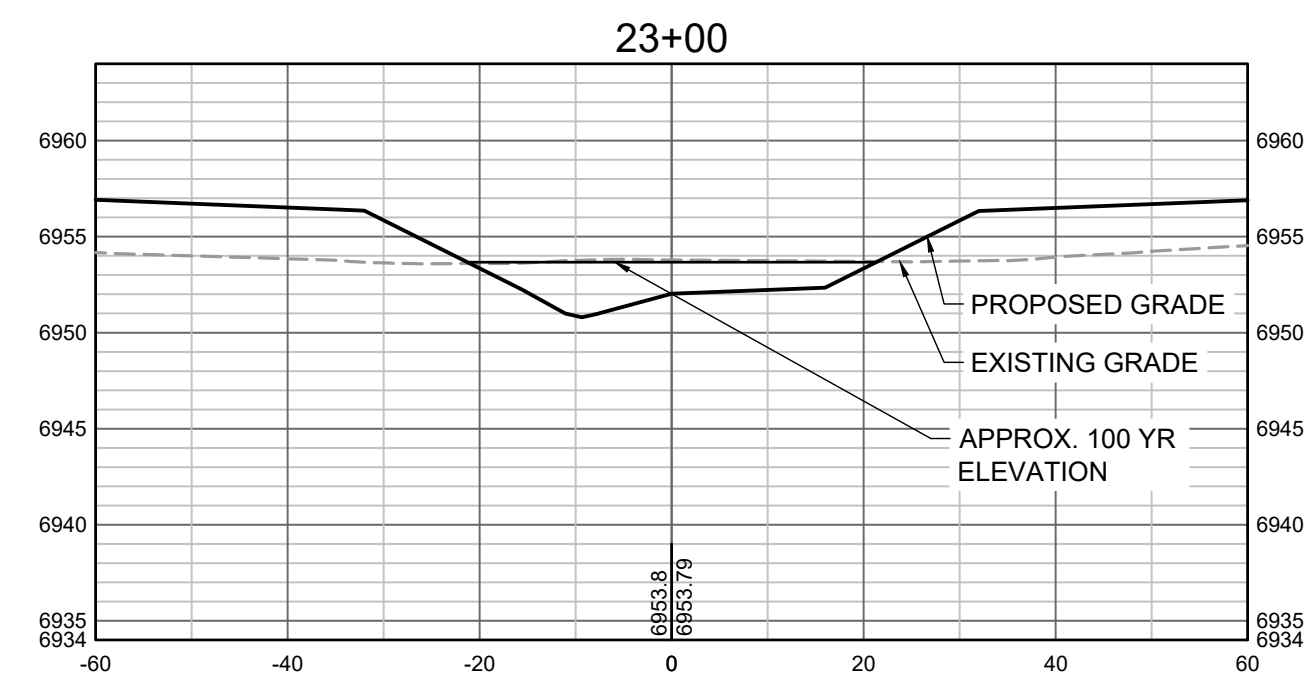
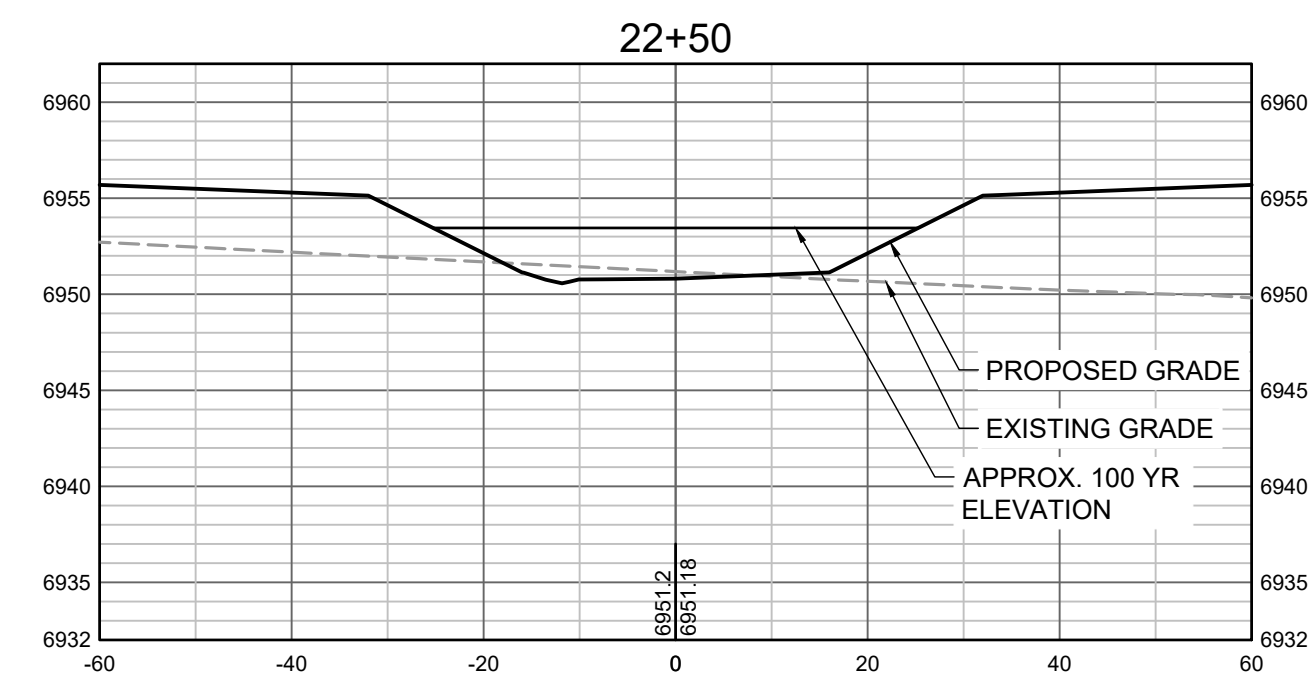
NO.	DATE	BY	REVISION DESCRIPTION



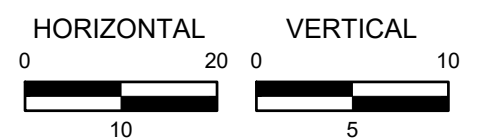
GRANDVIEW RESERVE  
 DR HORTON  
 FALCON, COLORADO

GRANDVIEW METRO DISTRICT  
 CROSS SECTIONS

SHEET NO.  
**CS5 23**



PROPOSED GRADES TO TIE INTO GRANDVIEW RESERVE FILING 1.  
REFER TO THE GRANDVIEW RESERVE FILING 1 PLAN SET FOR  
CONTINUATION OF GRADING THAT IS BEING TIED INTO.



HR GREEN Xrefs: xgs-1-dh01

DRAWN BY: TBI    JOB DATE: 5/9/2022    BAR IS ONE INCH ON OFFICIAL DRAWINGS.  
 APPROVED: CMM    JOB NUMBER: 201662.03    0" = 1"  
 CAD DATE: 5/10/2022    IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.  
 CAD FILE: J:\2020\201662.03\CAD\dwgs\C\CROSS SECTIONS

NO.	DATE	BY	REVISION DESCRIPTION

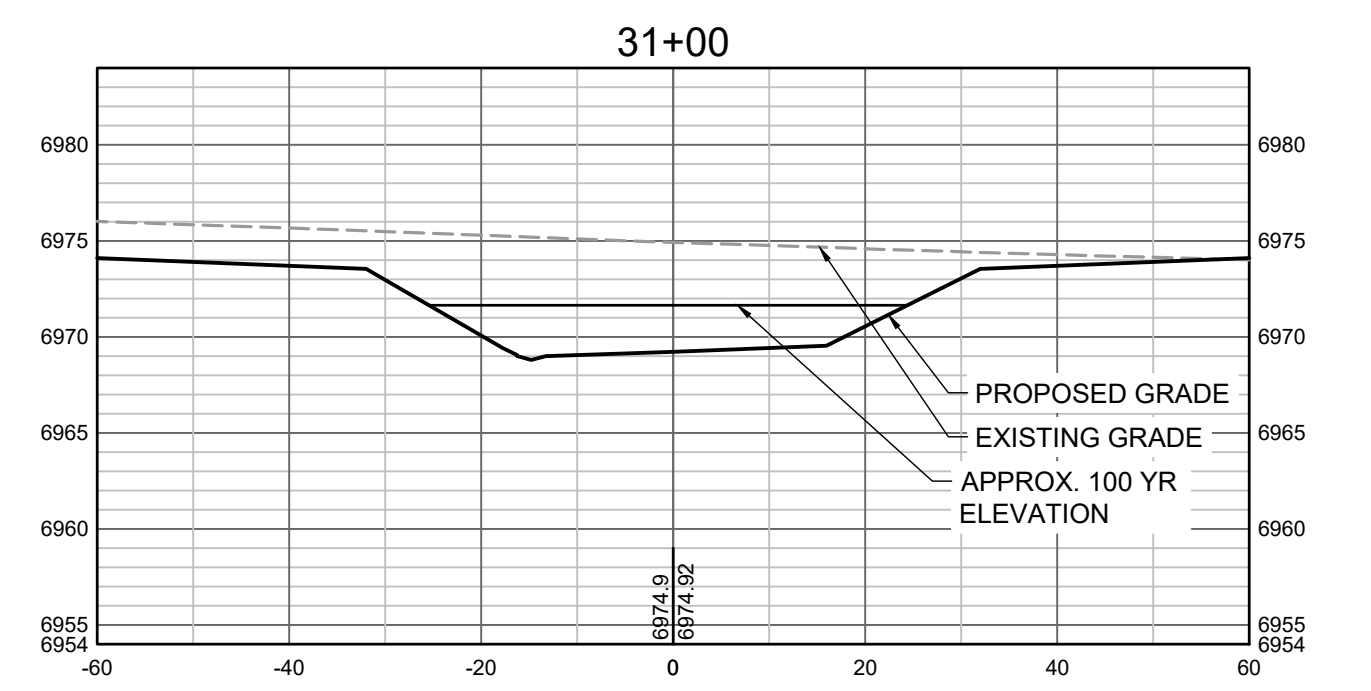
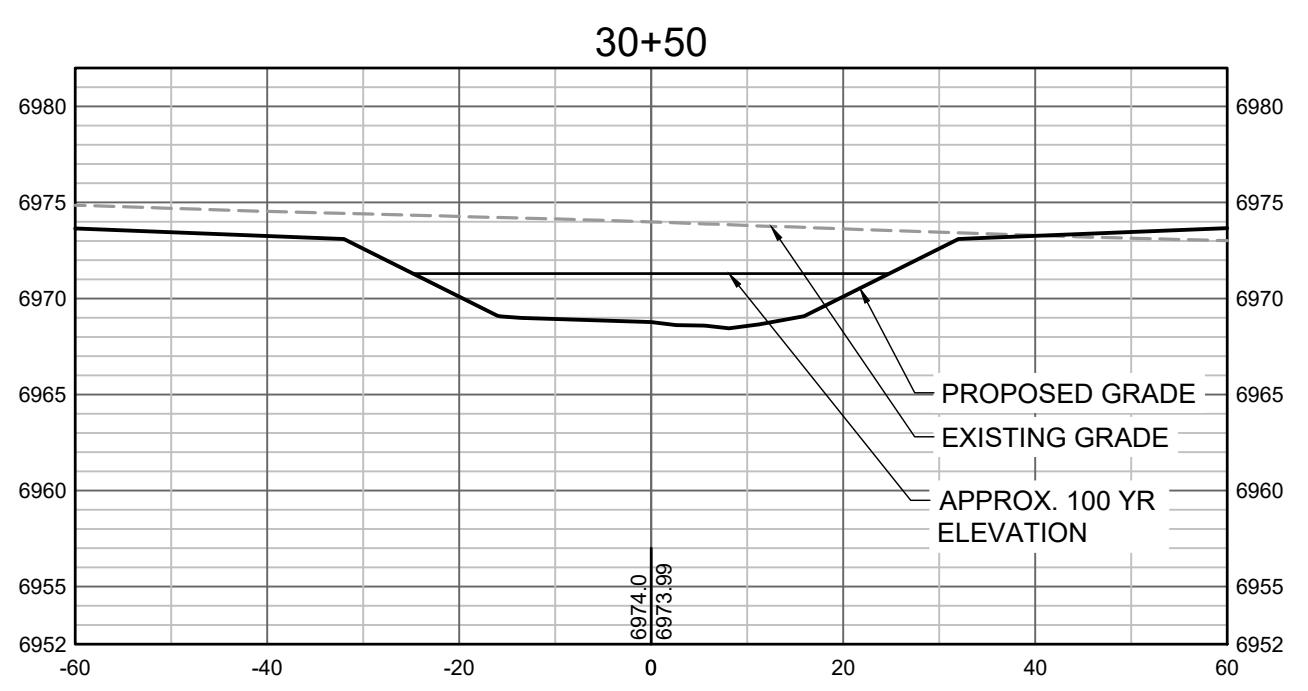
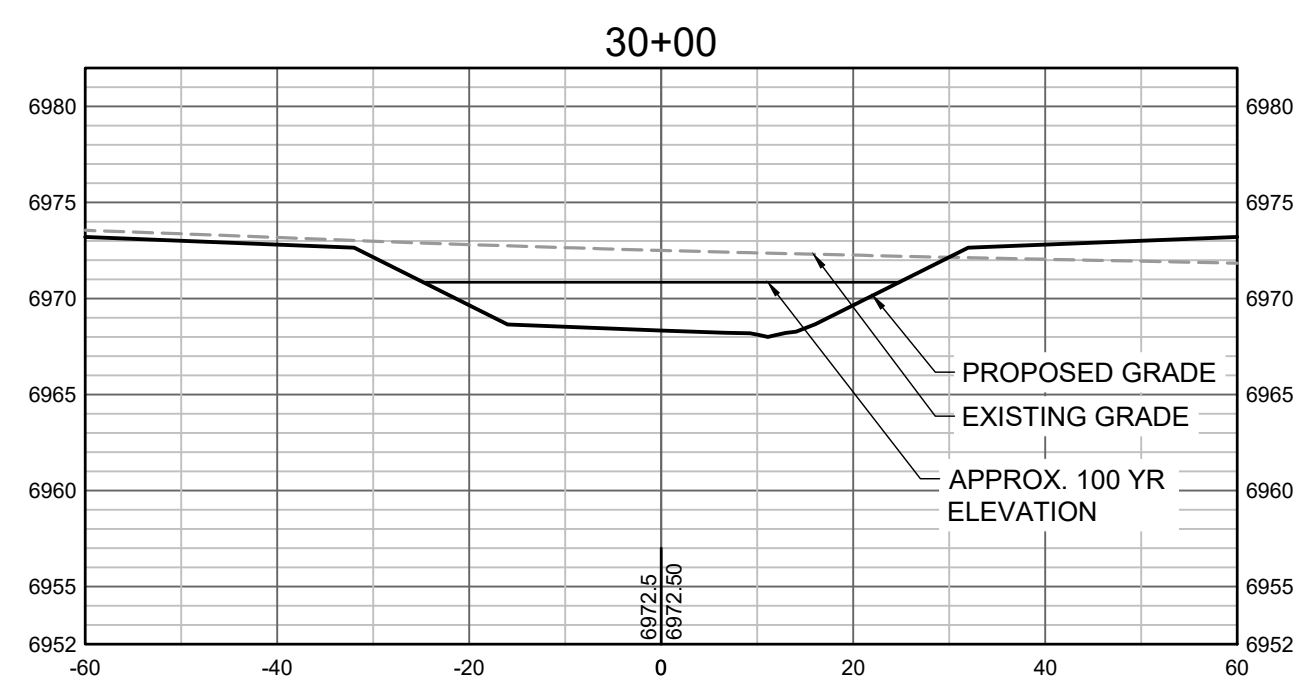
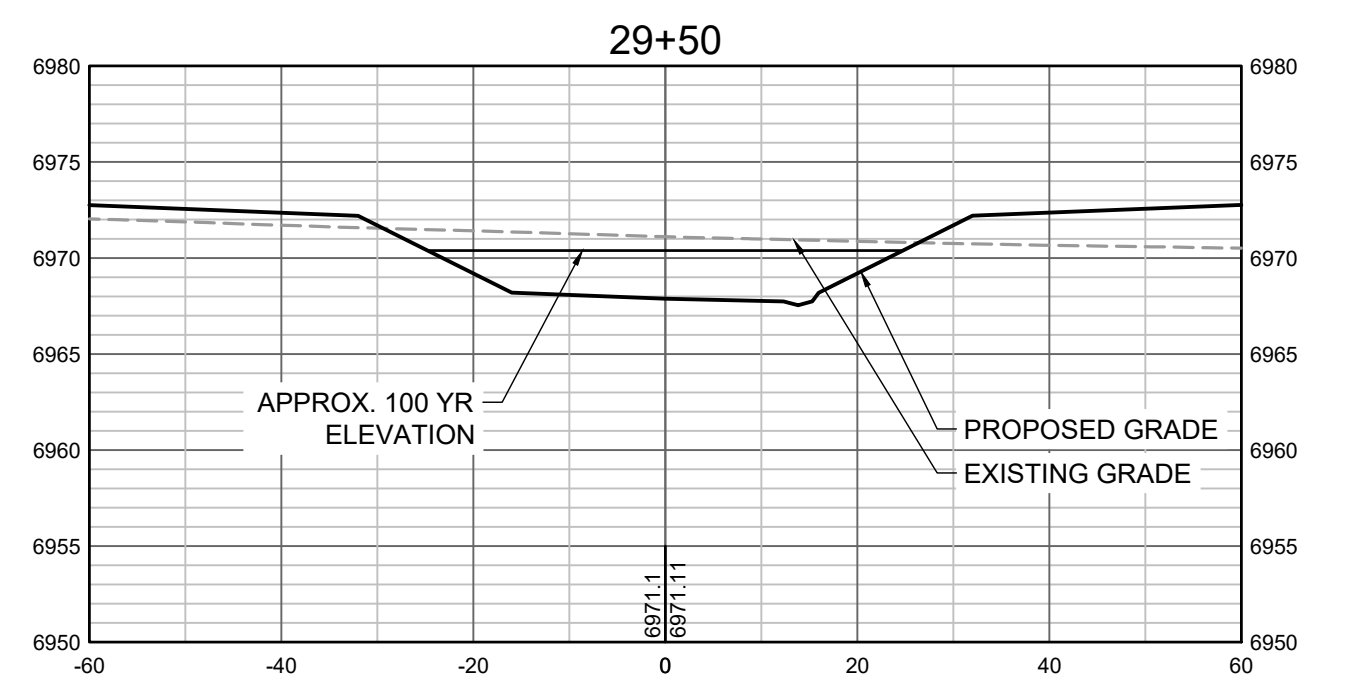
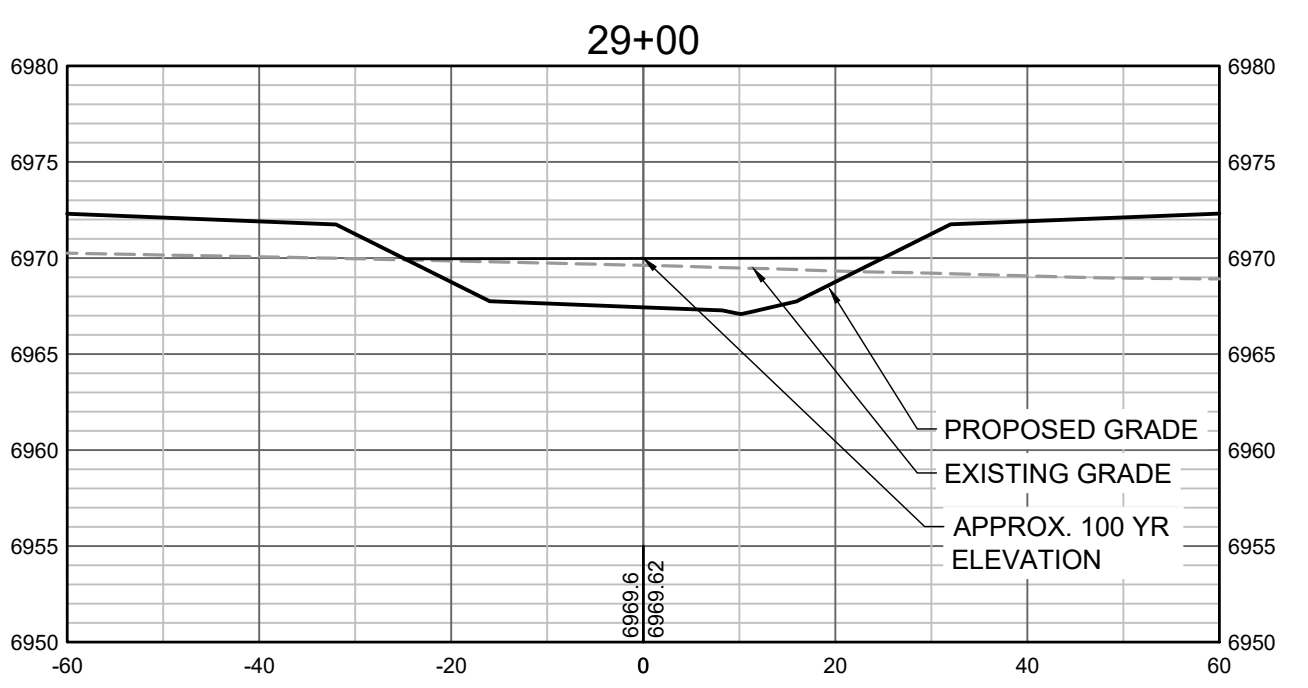
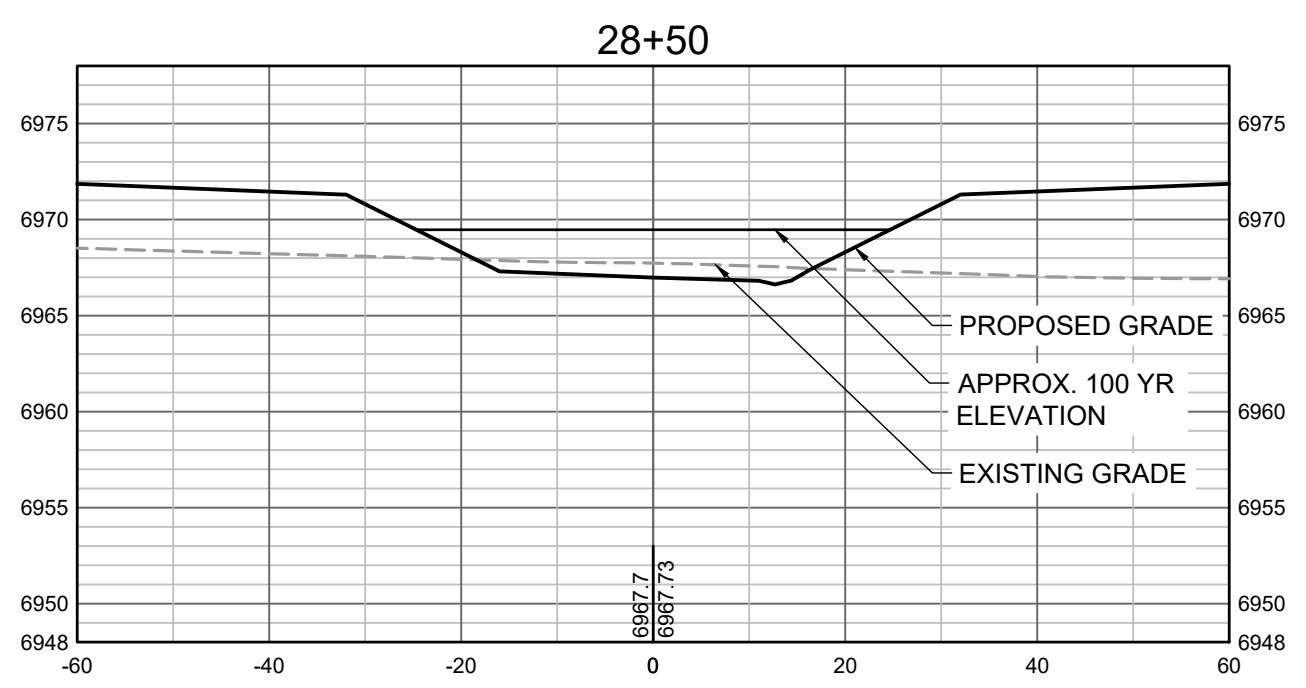
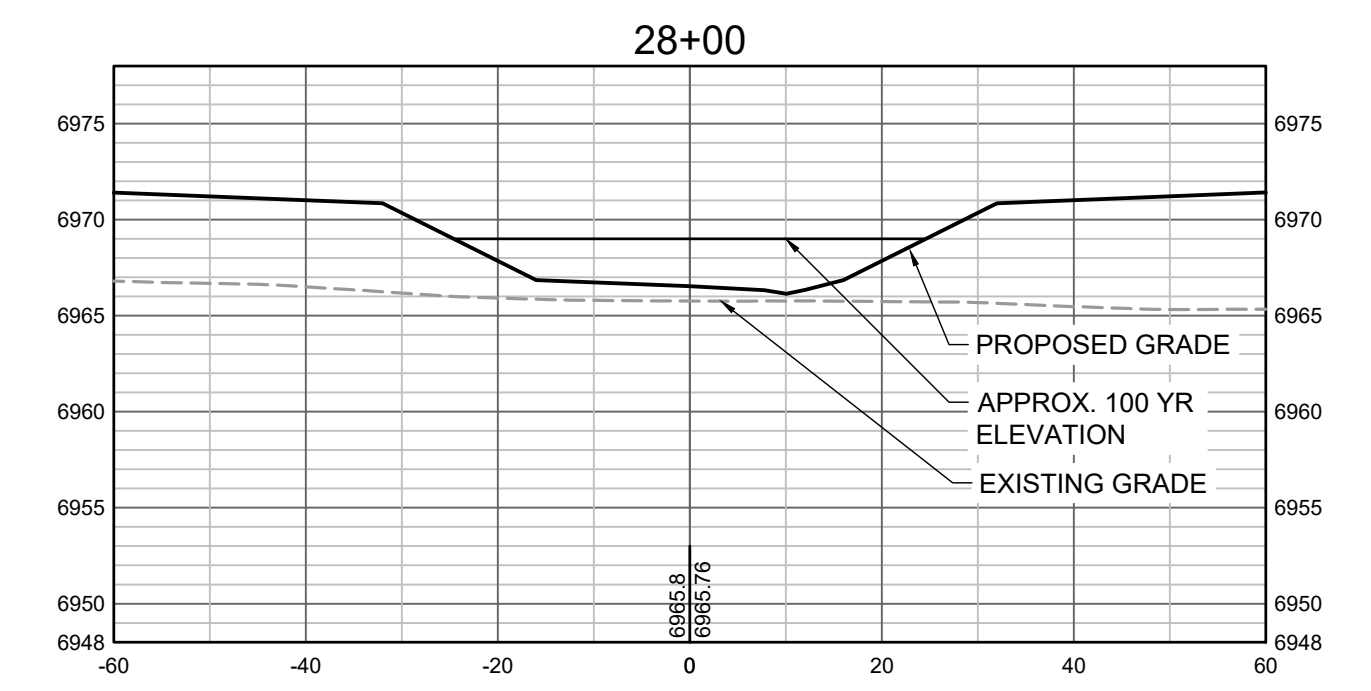
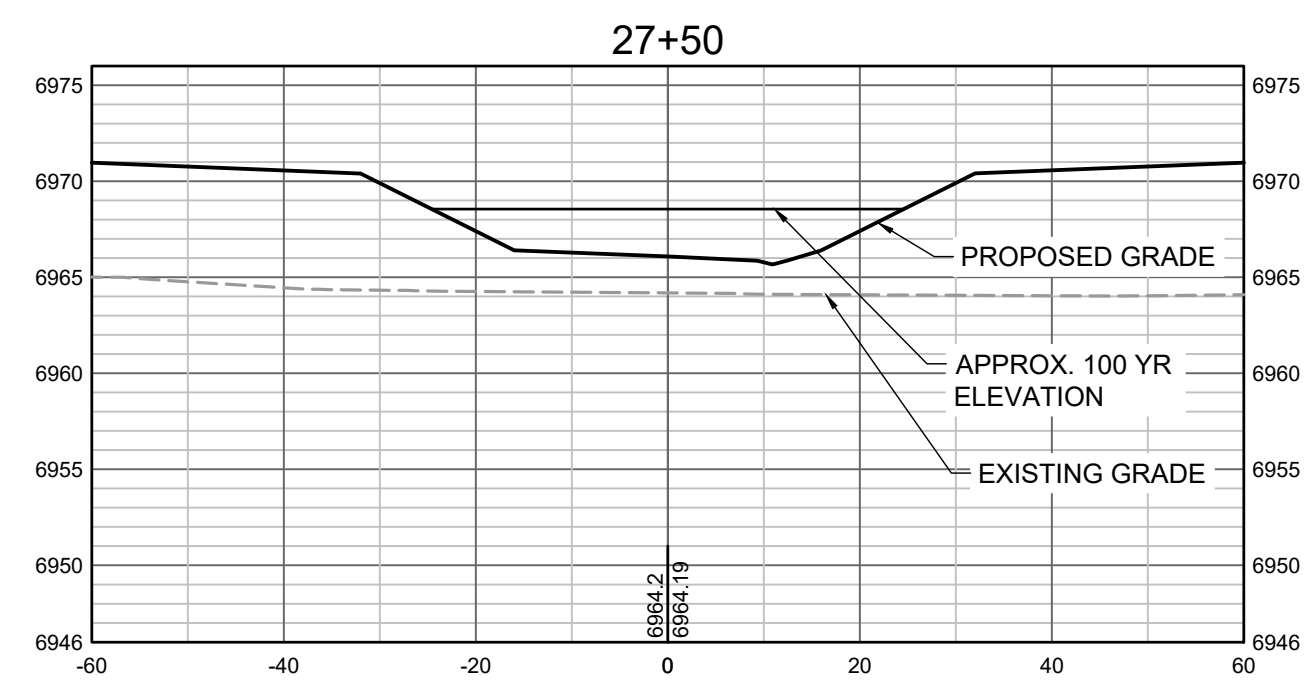
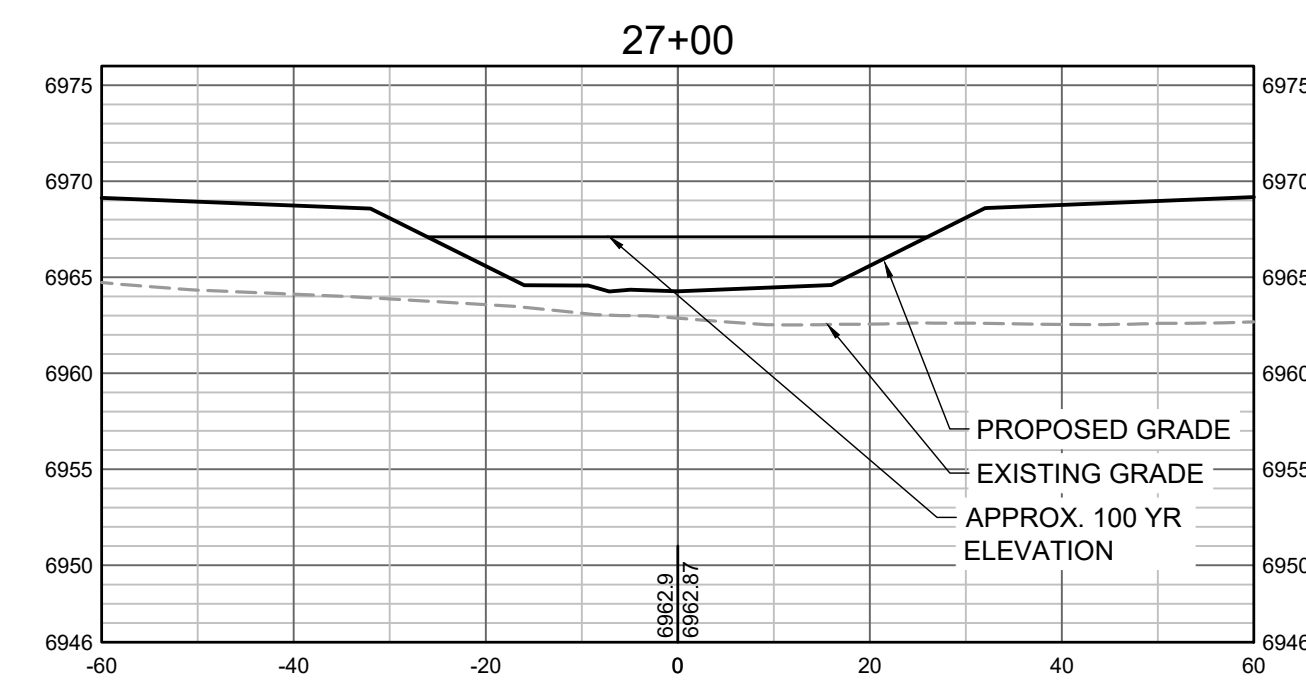


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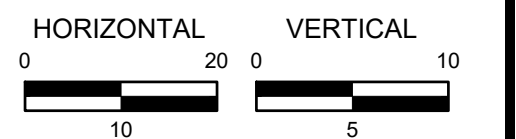
GRANDVIEW METRO DISTRICT  
 CROSS SECTIONS

SHEET NO.  
**CS6 24**





PROPOSED GRADES TO TIE INTO GRANDVIEW RESERVE FILING 1.  
REFER TO THE GRANDVIEW RESERVE FILING 1 PLAN SET FOR  
CONTINUATION OF GRADING THAT IS BEING TIED INTO.



HR GREEN Xrefs.xgs; 5/10/2022

DRAWN BY: TBI JOB DATE: 5/9/2022  
 APPROVED: CMM JOB NUMBER: 201662.03  
 CAD DATE: 5/10/2022  
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BAR IS ONE INCH ON OFFICIAL DRAWINGS.  
 IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.

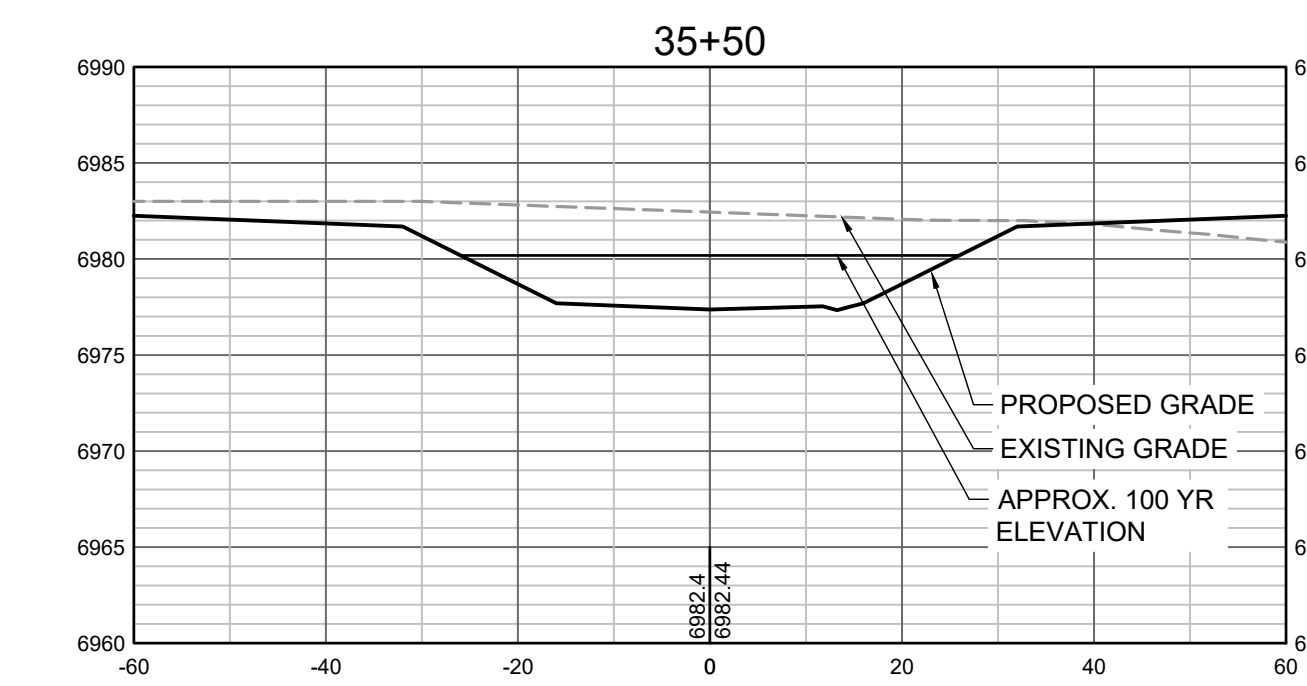
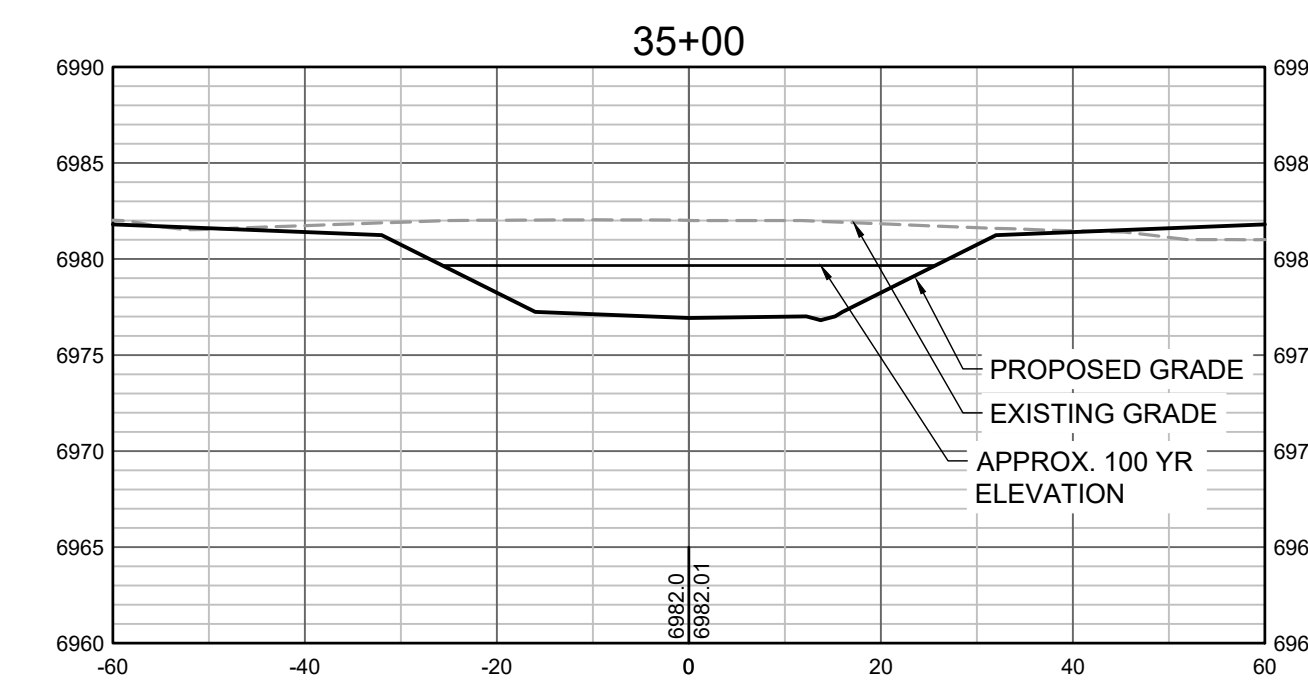
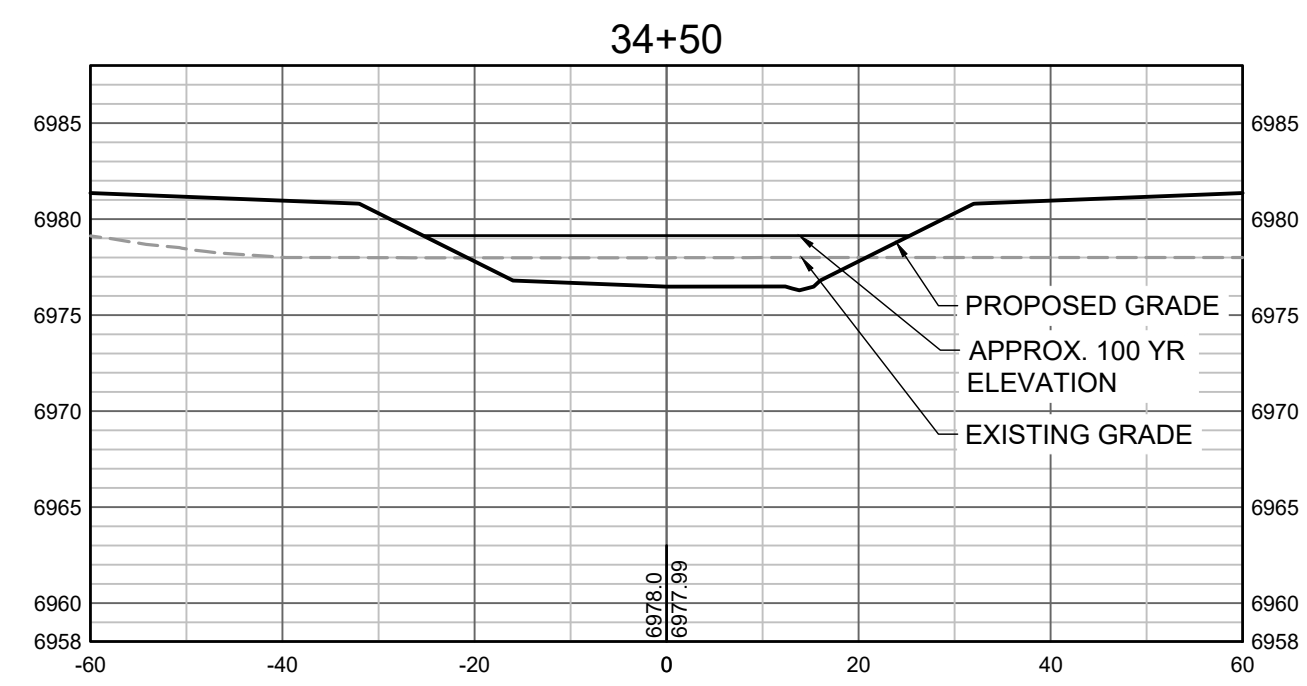
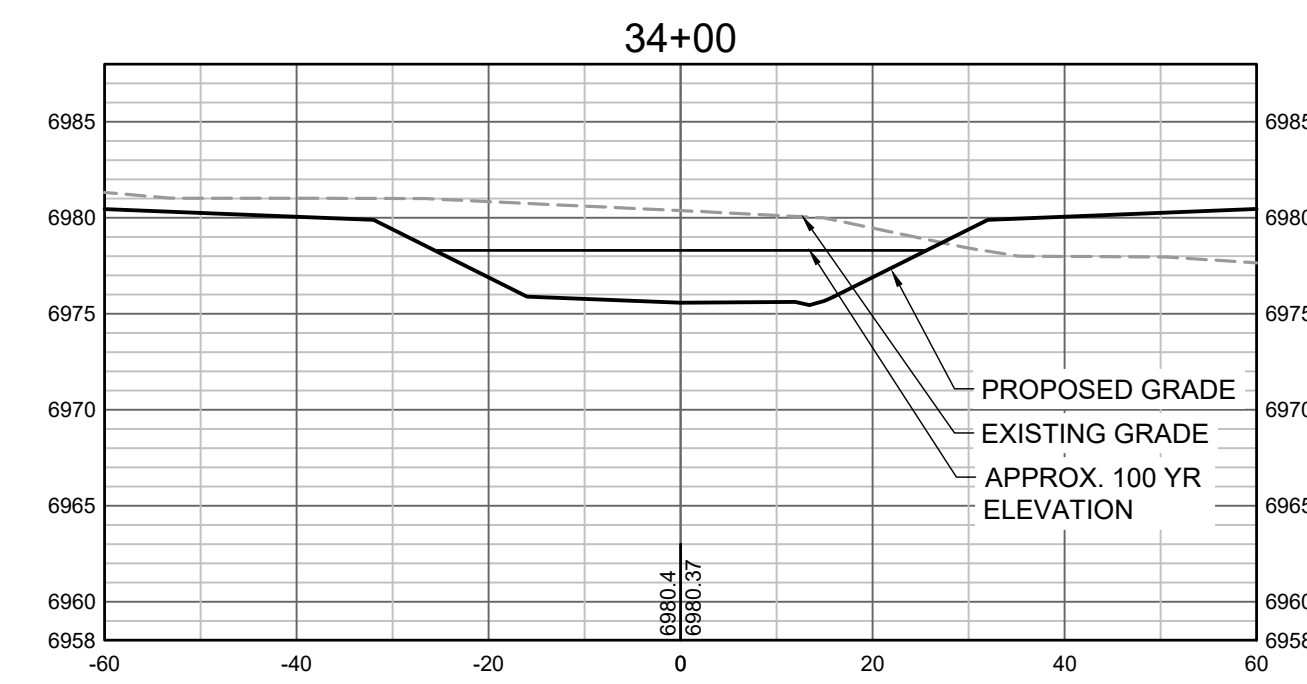
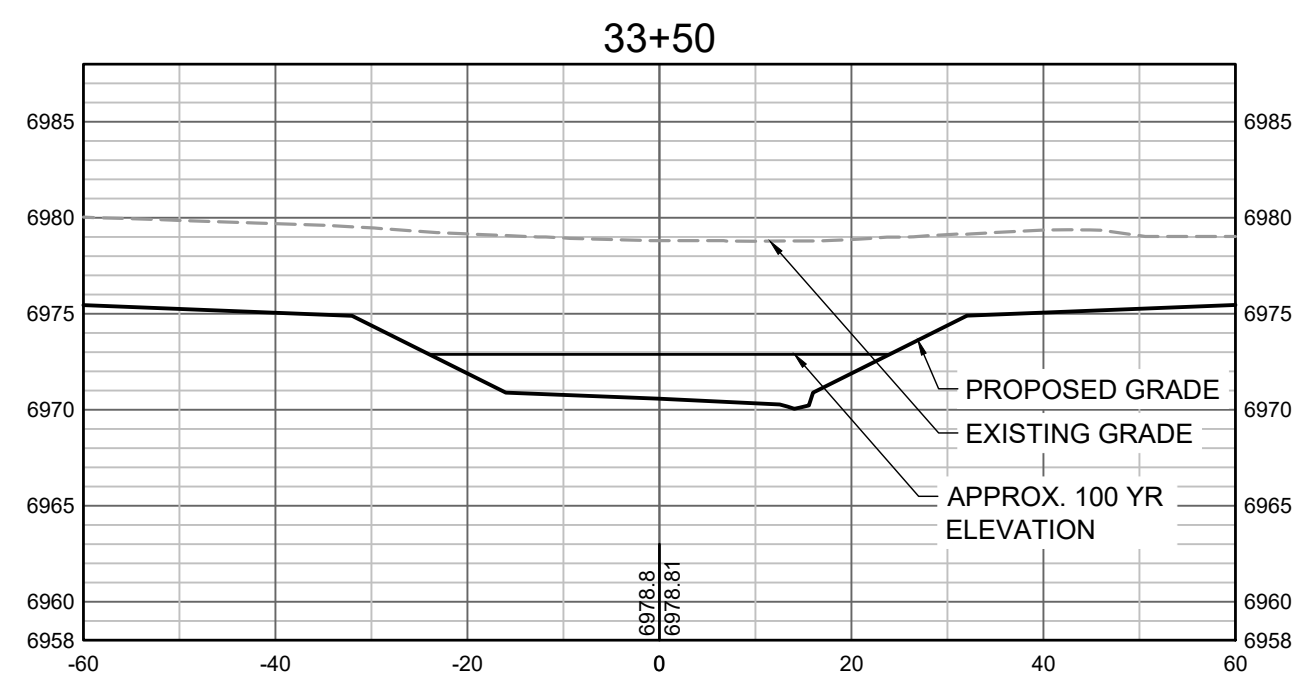
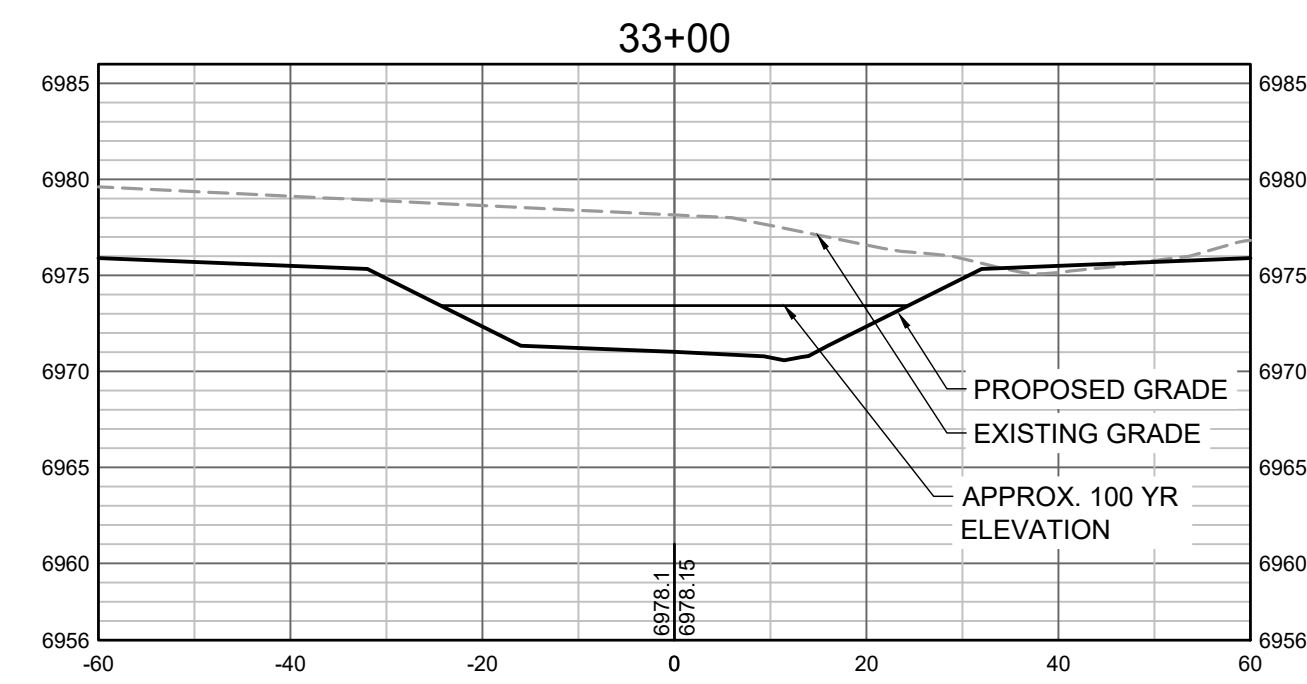
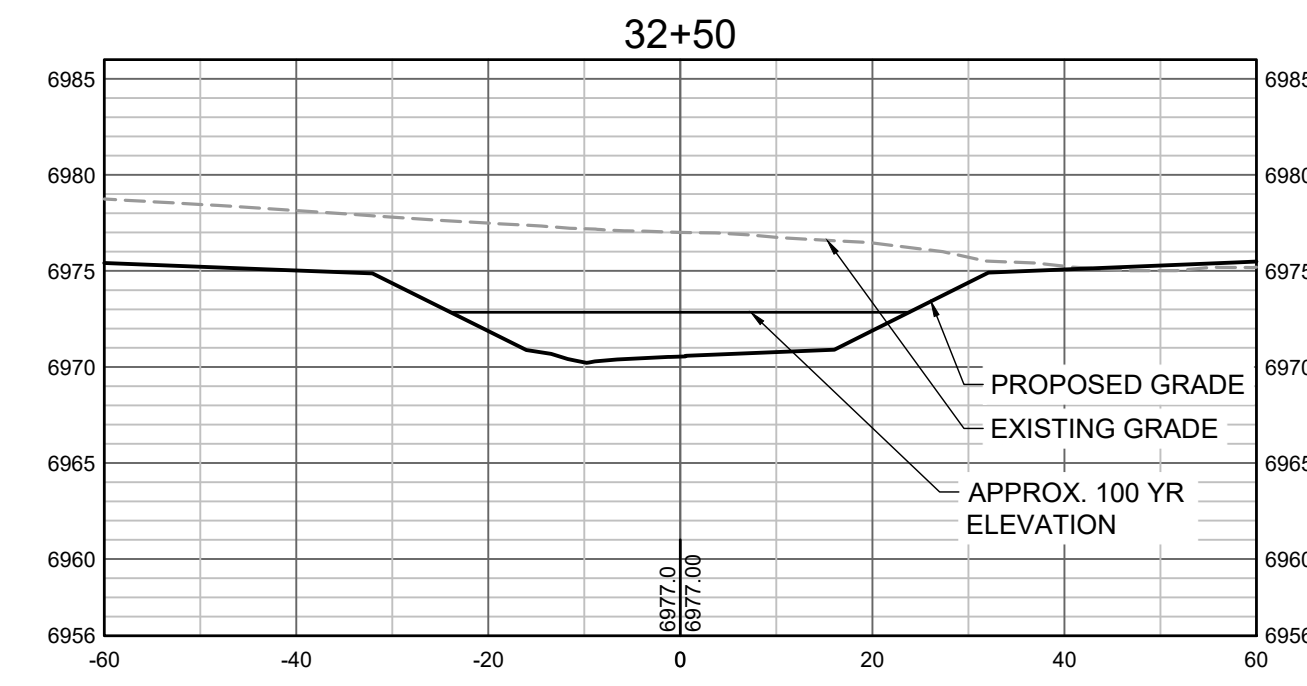
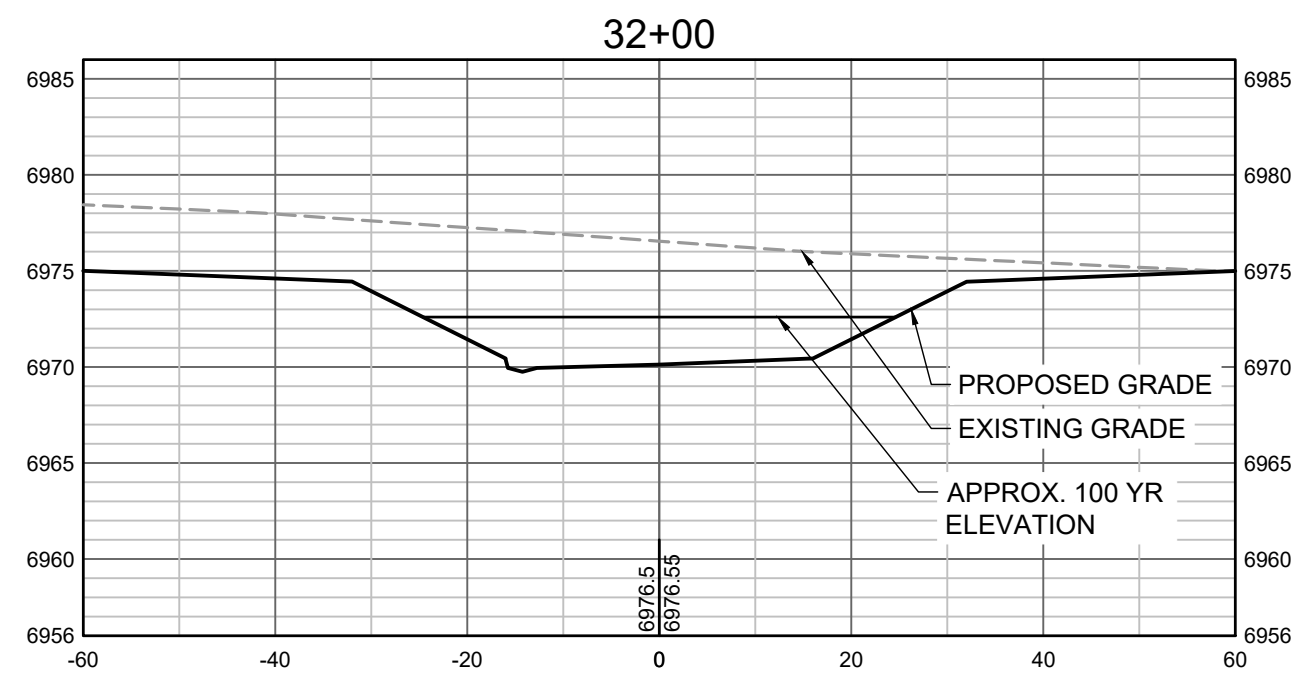
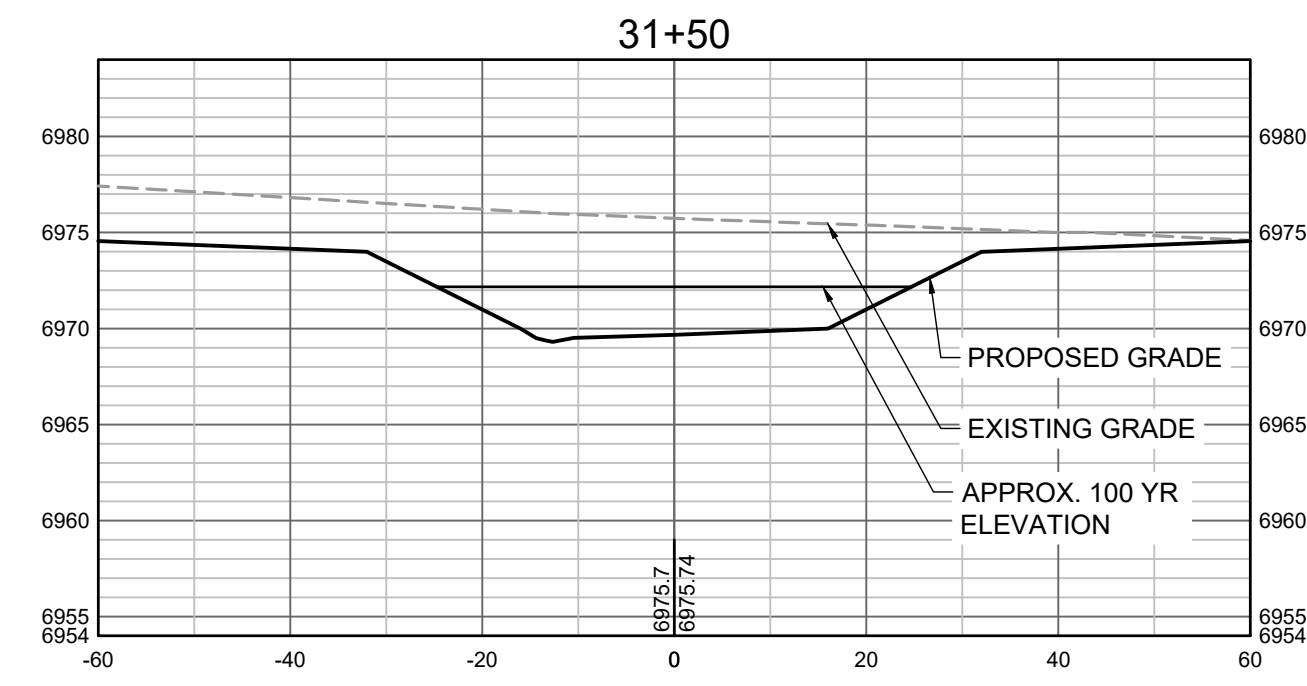
NO.	DATE	BY	REVISION DESCRIPTION



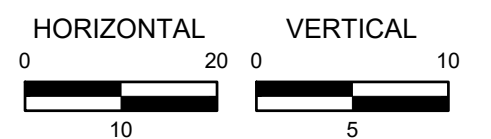
**GRANDVIEW RESERVE**  
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 FALCON, COLORADO

GRANDVIEW METRO DISTRICT  
 CROSS SECTIONS

SHEET NO.  
**CS7 25**



PROPOSED GRADES TO TIE INTO GRANDVIEW RESERVE FILING 1.  
REFER TO THE GRANDVIEW RESERVE FILING 1 PLAN SET FOR  
CONTINUATION OF GRADING THAT IS BEING TIED INTO.



HR GREEN Xref: xref.dwg

DRAWN BY: TBI JOB DATE: 5/9/2022  
 APPROVED: CMM JOB NUMBER: 201662.03  
 CAD DATE: 5/10/2022  
 CAD FILE: J:\2020\201662.03\CAD\DWG\CROSS SECTIONS

BAR IS ONE INCH ON OFFICIAL DRAWINGS.  
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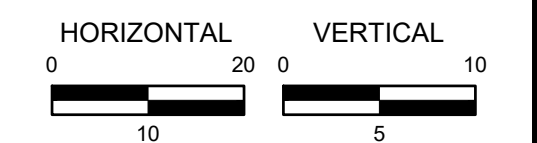
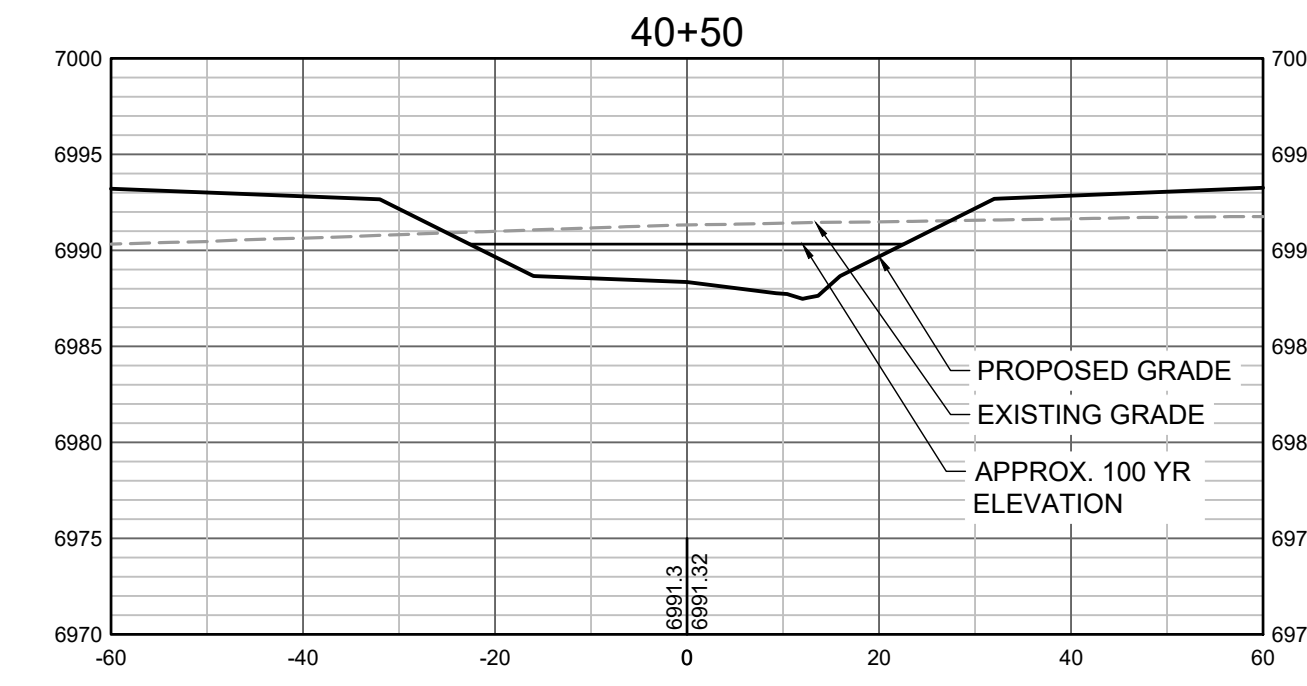
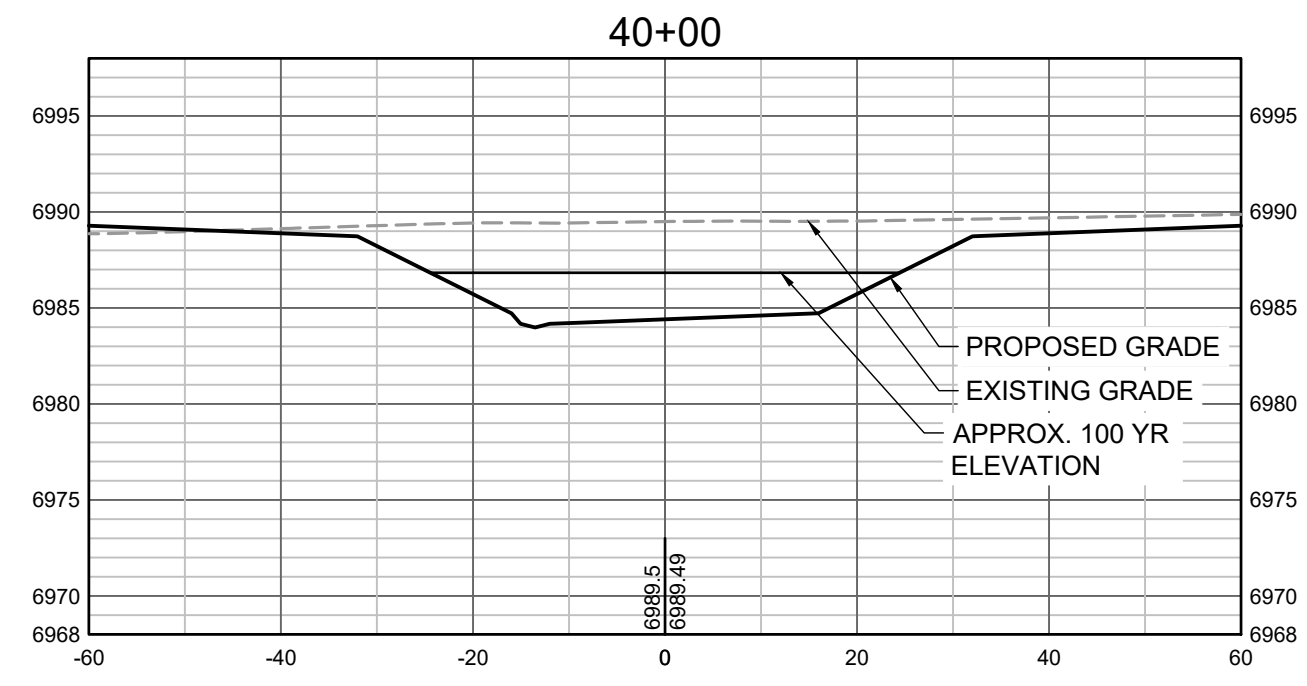
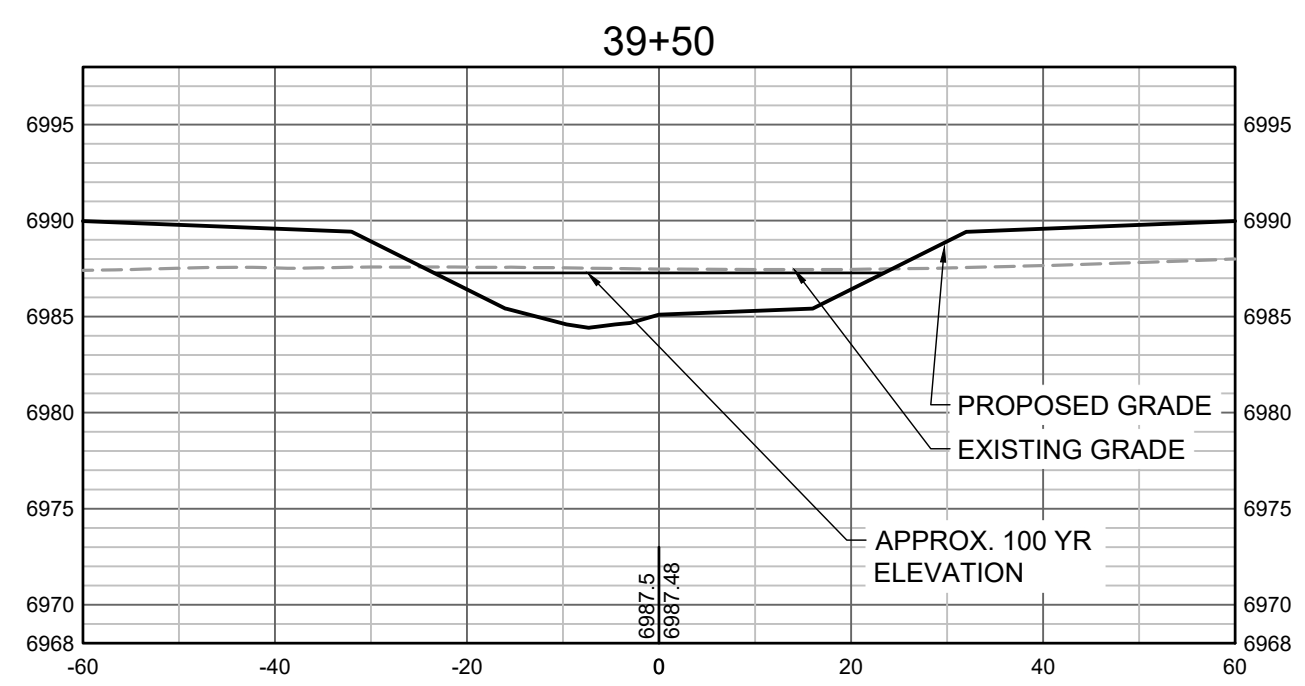
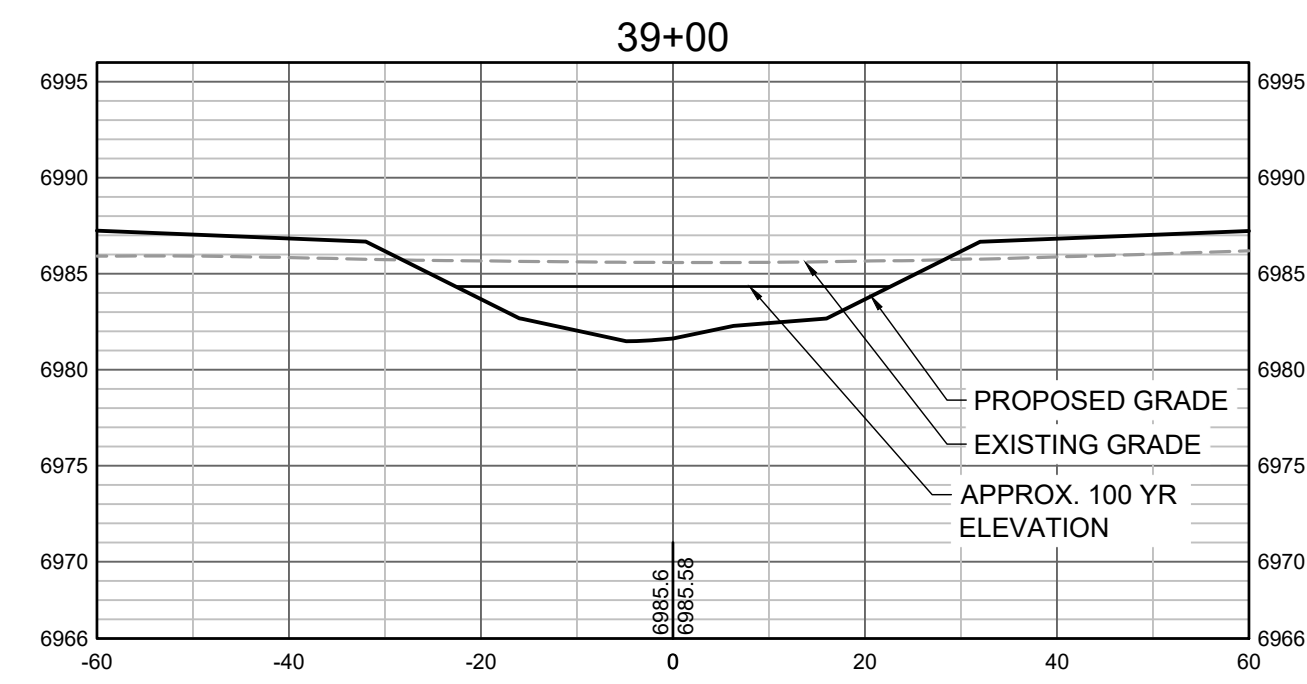
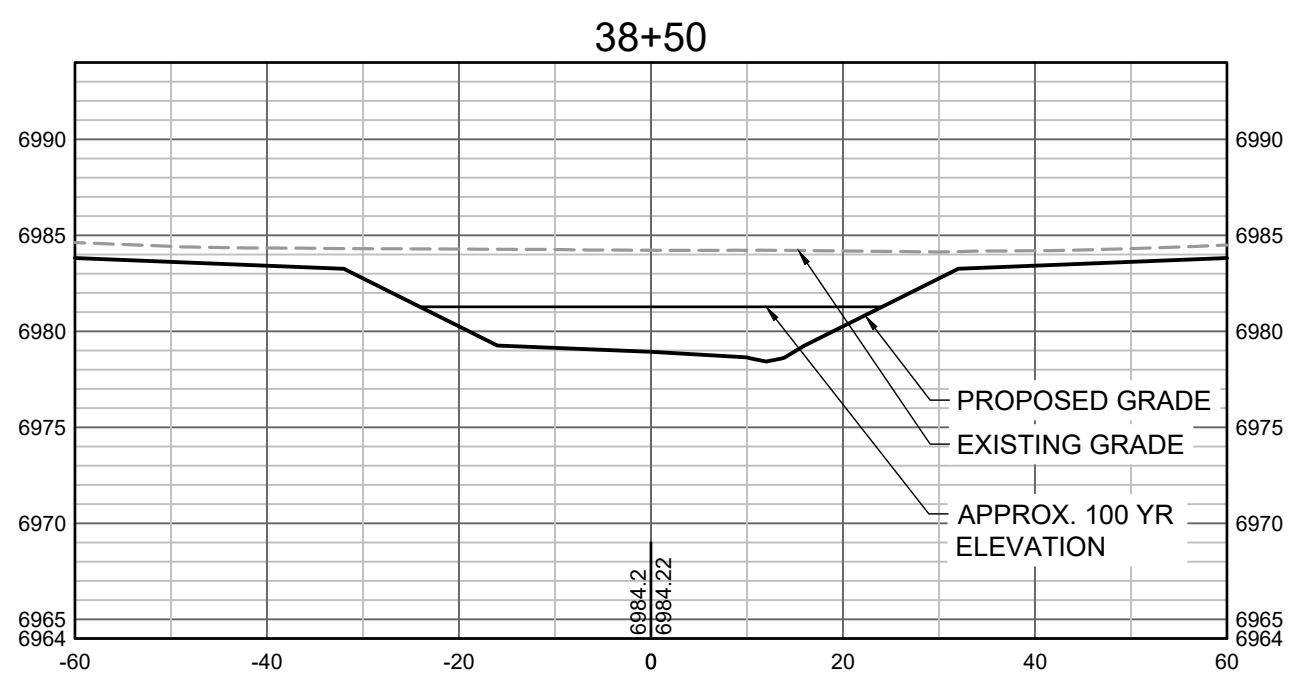
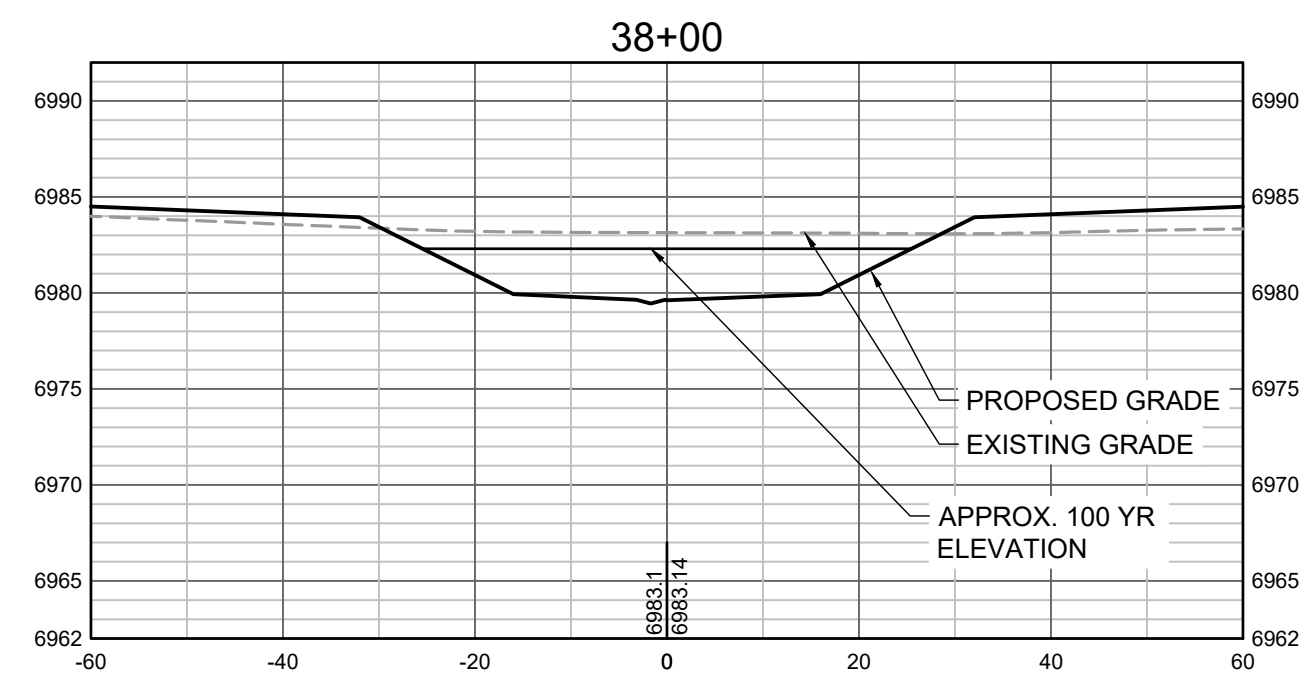
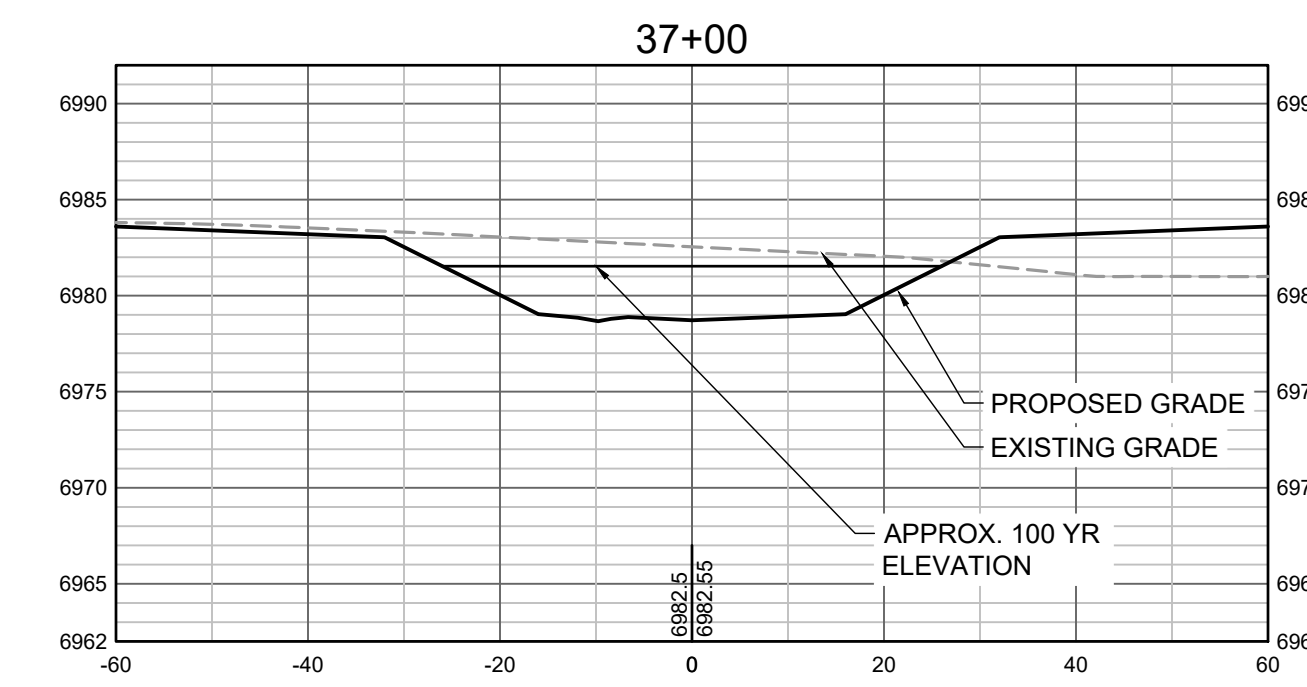
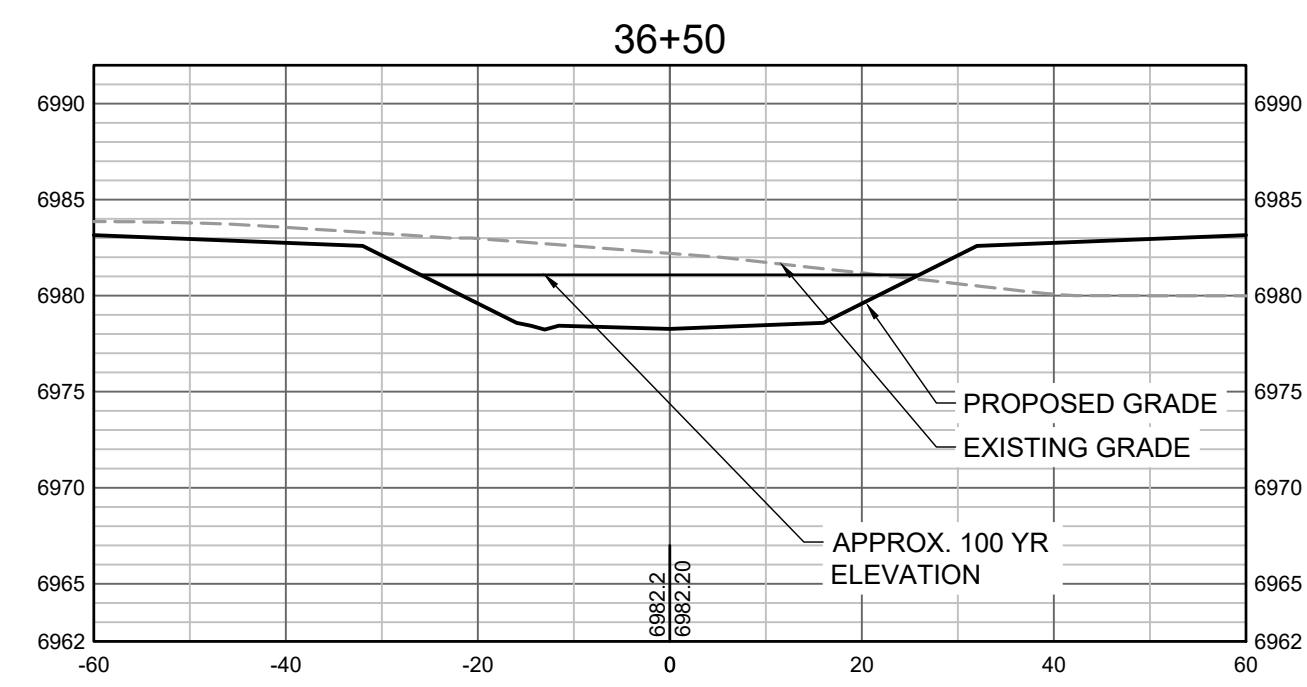
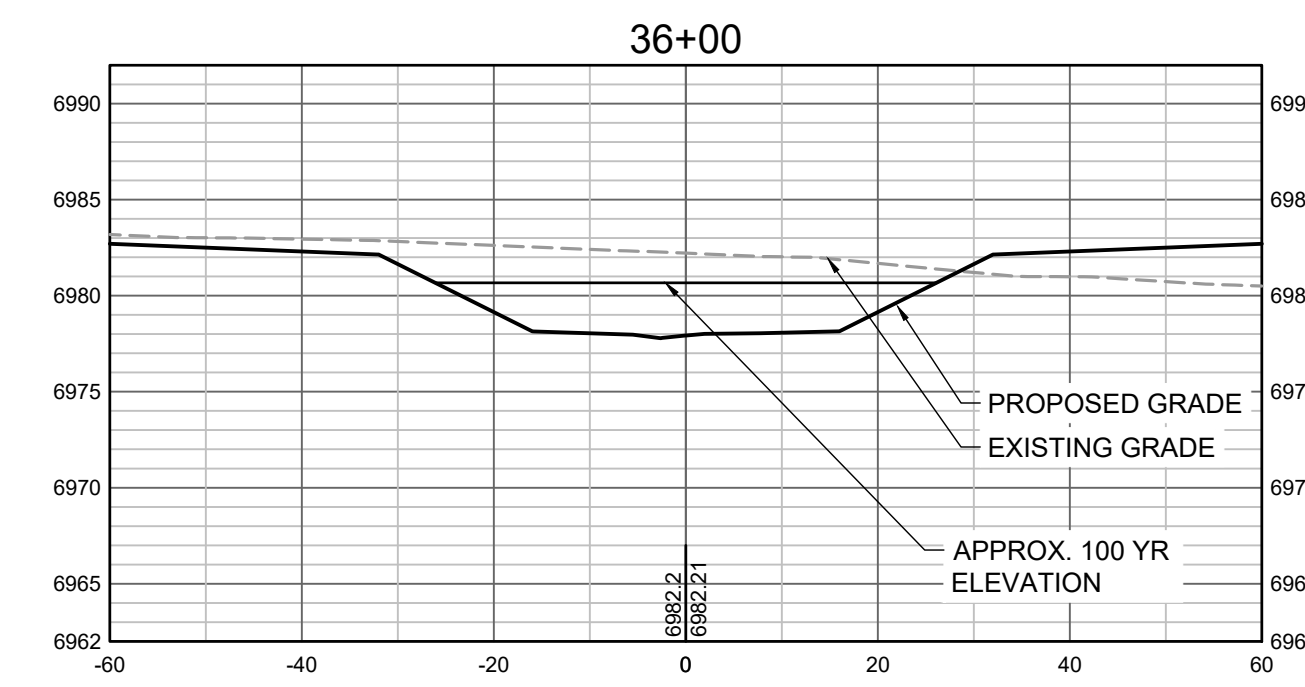
NO.	DATE	BY	REVISION DESCRIPTION



GRANDVIEW RESERVE  
 DR HORTON  
 FALCON, COLORADO

GRANDVIEW METRO DISTRICT  
 CROSS SECTIONS

SHEET NO.  
**CS8 26**



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 APPROVED: CMM JOB NUMBER: 201662.03  
 CAD DATE: 5/10/2022  
 CAD FILE: J:\2020\201662.03\CAD\DWG\C\CROSS SECTIONS

BAR IS ONE INCH ON OFFICIAL DRAWINGS.  
 IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.

NO.	DATE	BY	REVISION DESCRIPTION

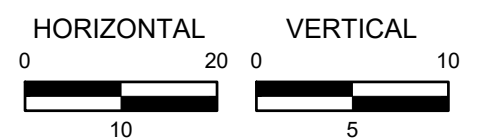
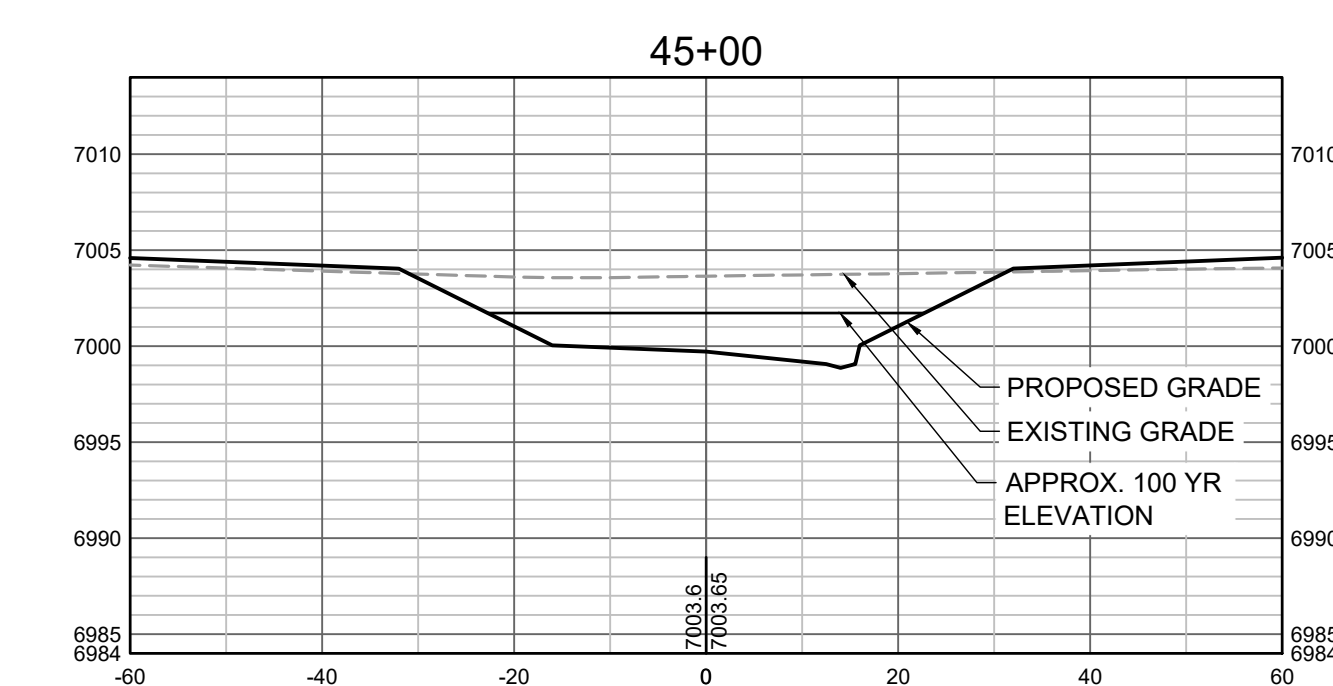
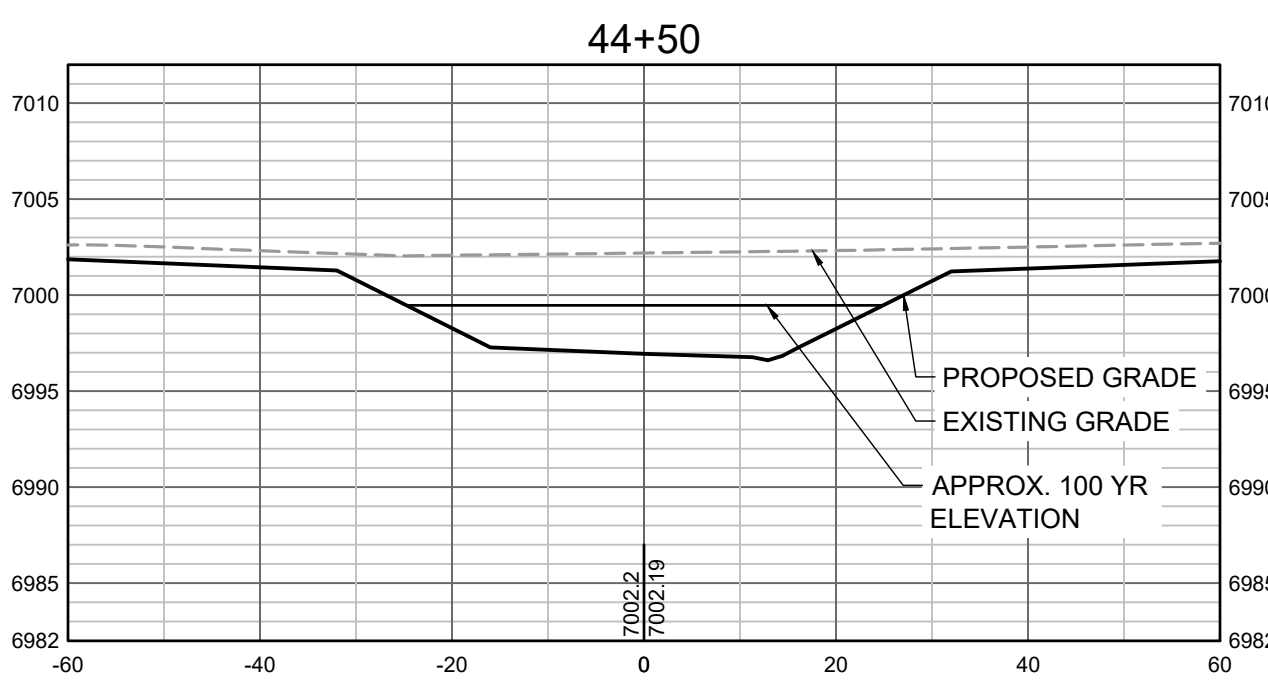
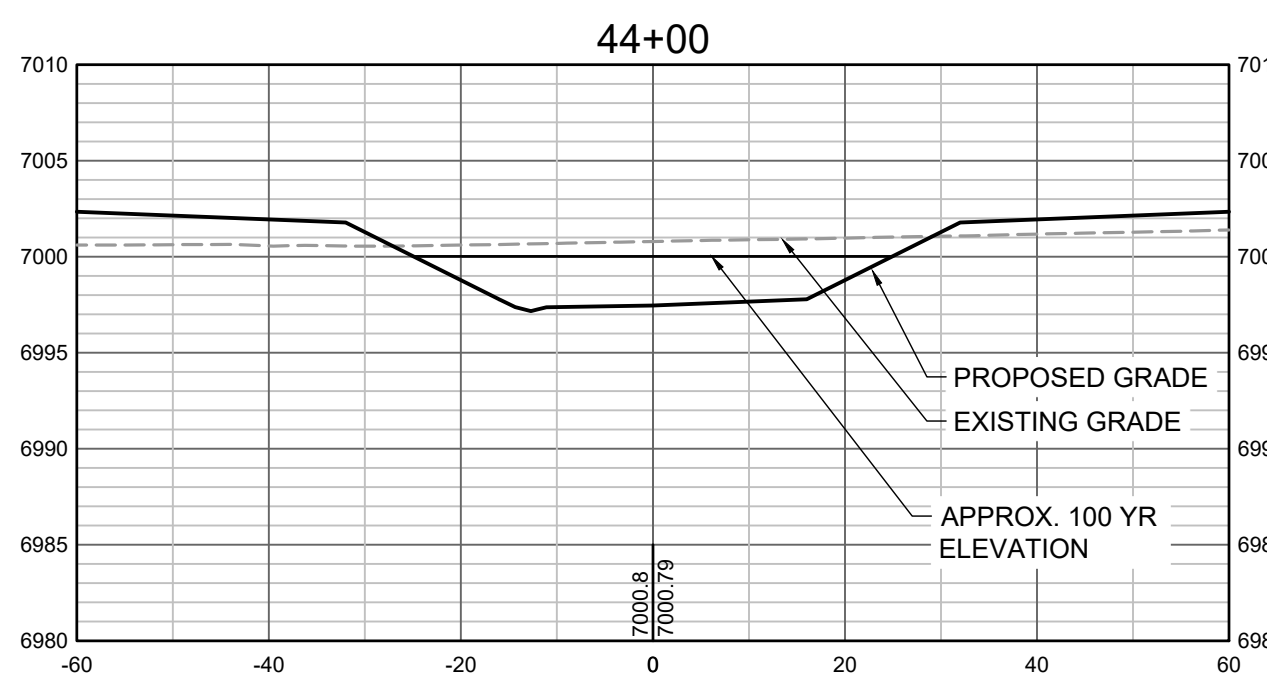
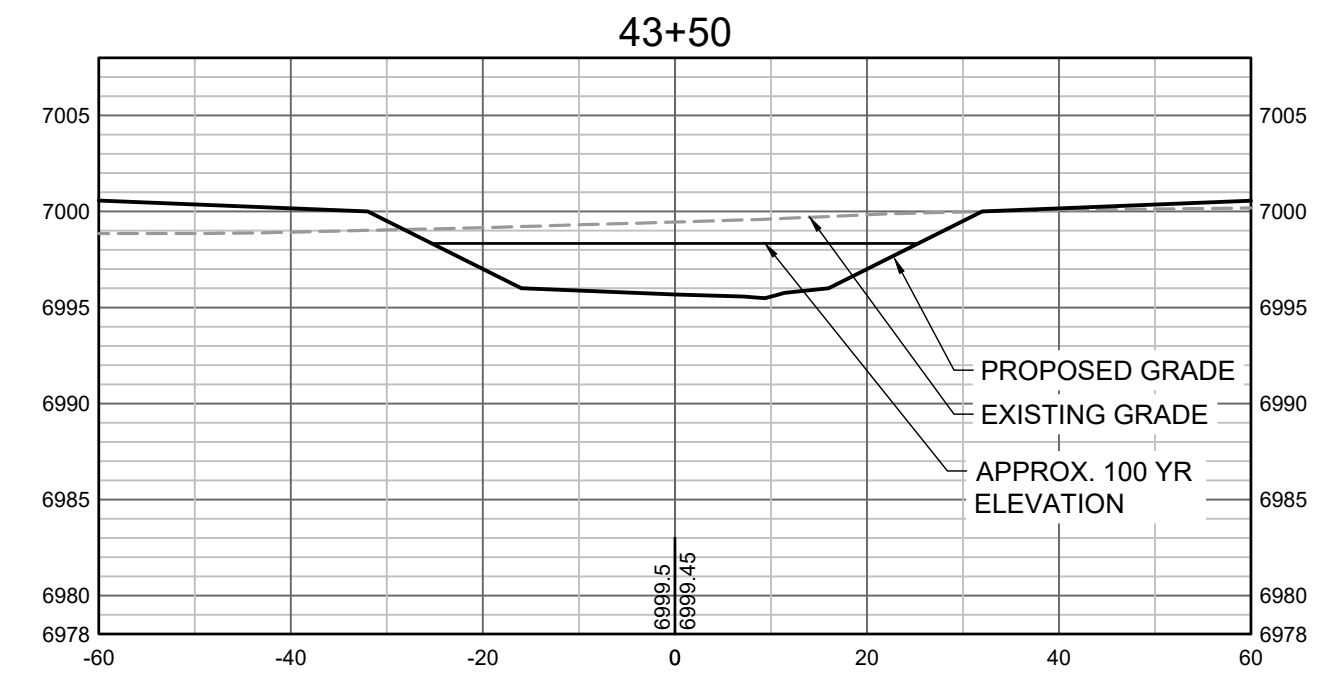
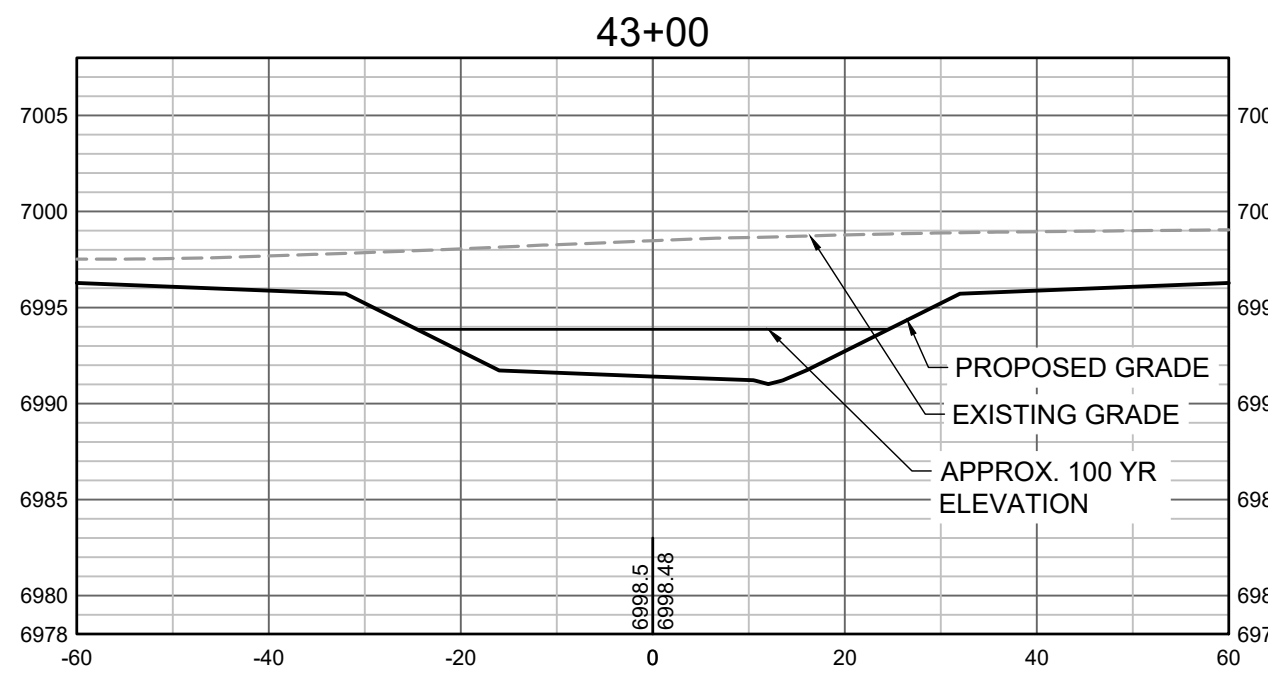
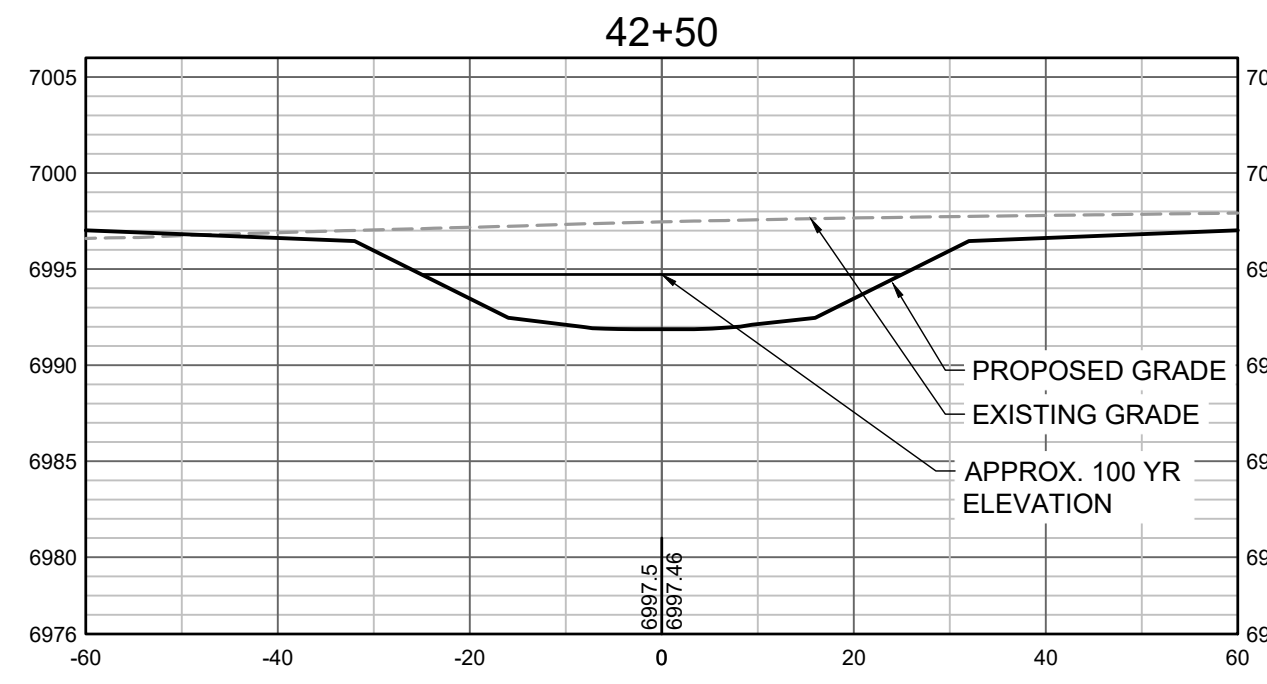
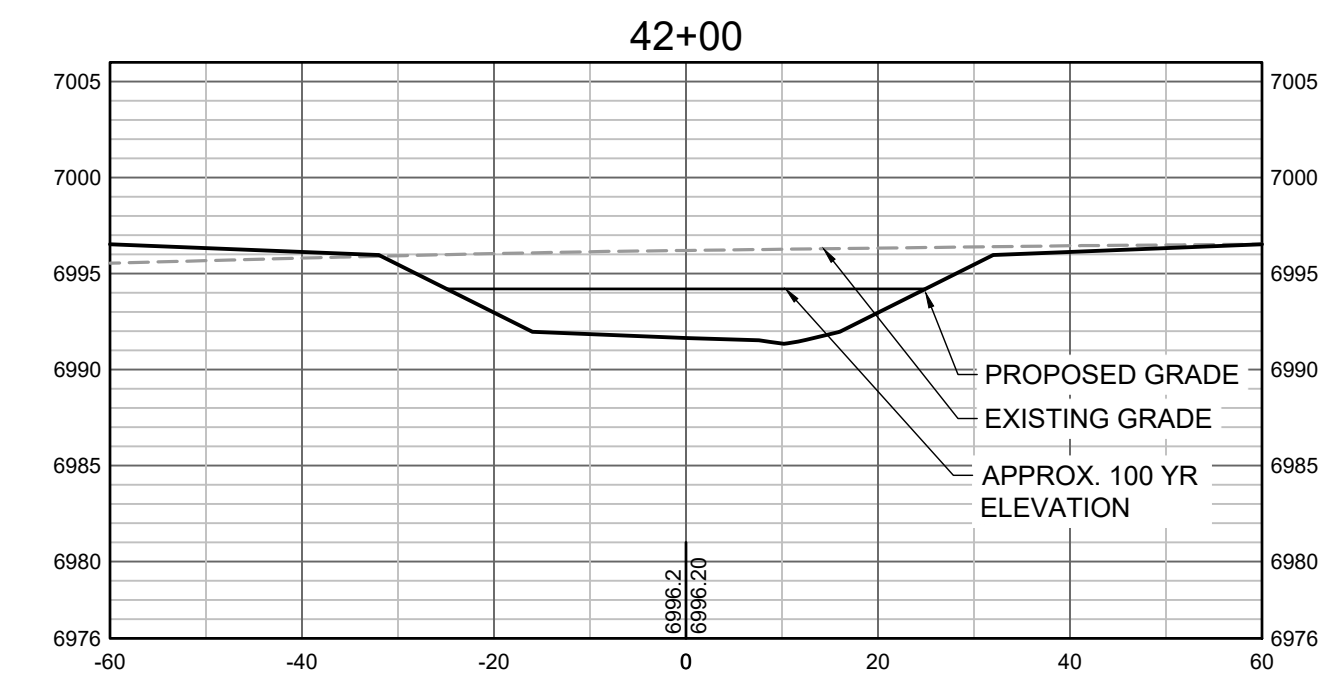
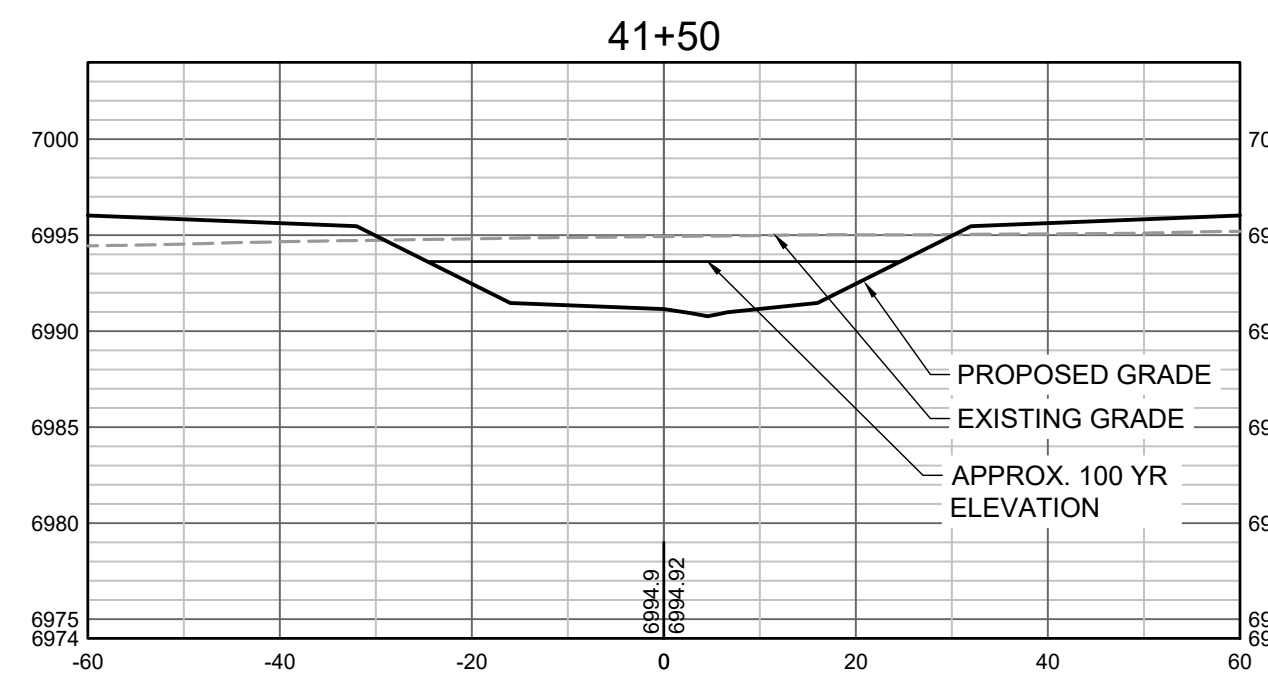
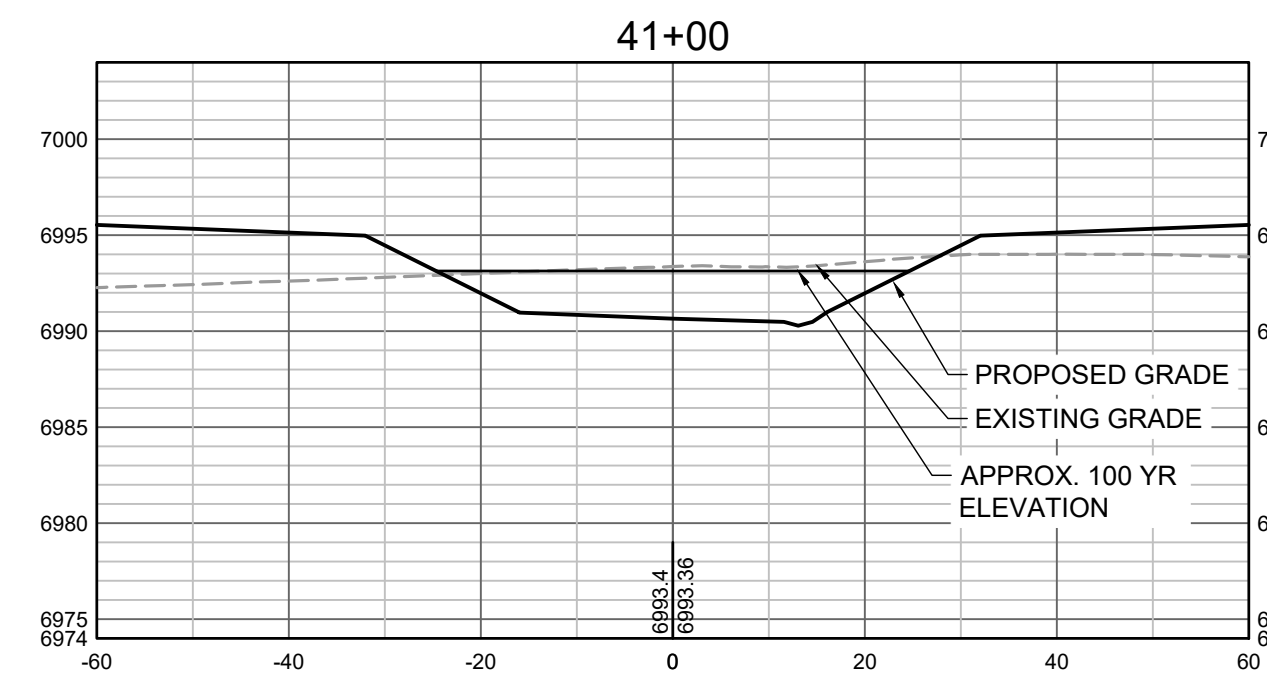


GRANDVIEW RESERVE  
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 FALCON, COLORADO

GRANDVIEW METRO DISTRICT  
 CROSS SECTIONS

SHEET NO.  
 CS9 27

HR GREEN Xrefs.xgt;-d101



DRAWN BY: TBI JOB DATE: 5/9/2022  
 APPROVED: CMM JOB NUMBER: 201662.03  
 CAD DATE: 5/10/2022  
 CAD FILE: J:\2020\201662.03\CAD\DWGS\C\CROSS SECTIONS

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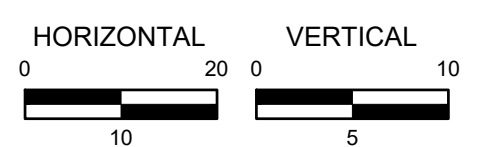
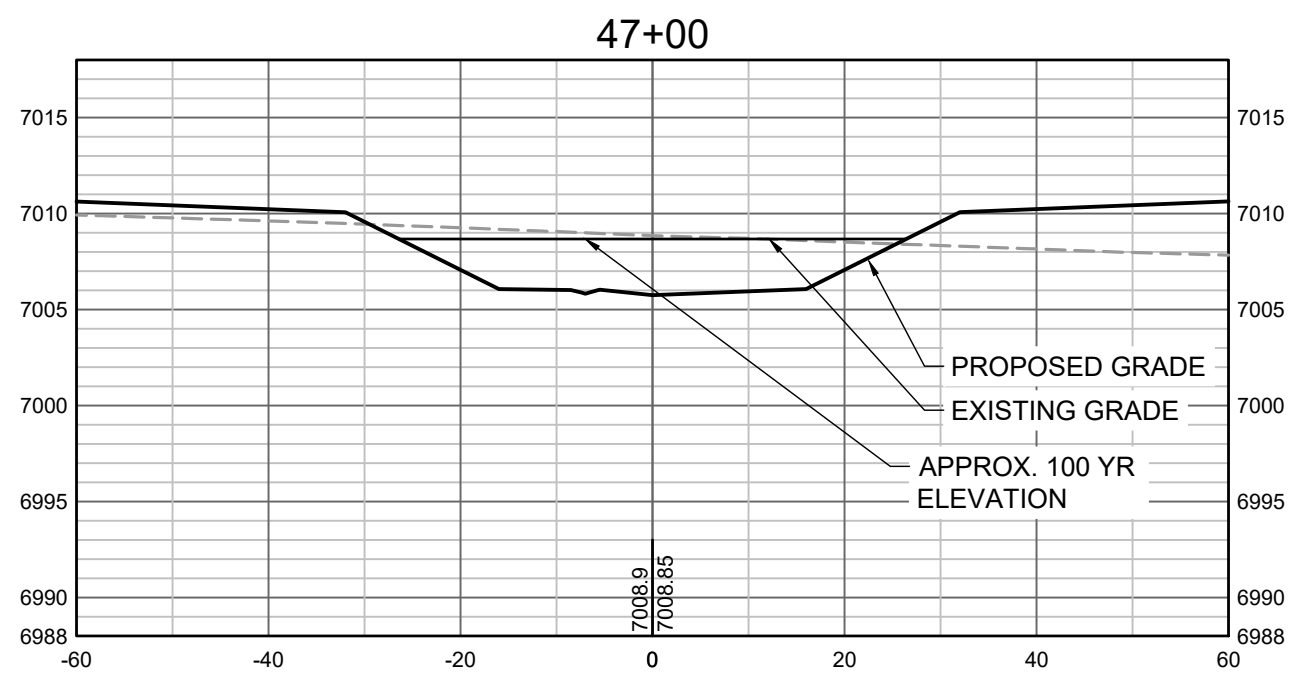
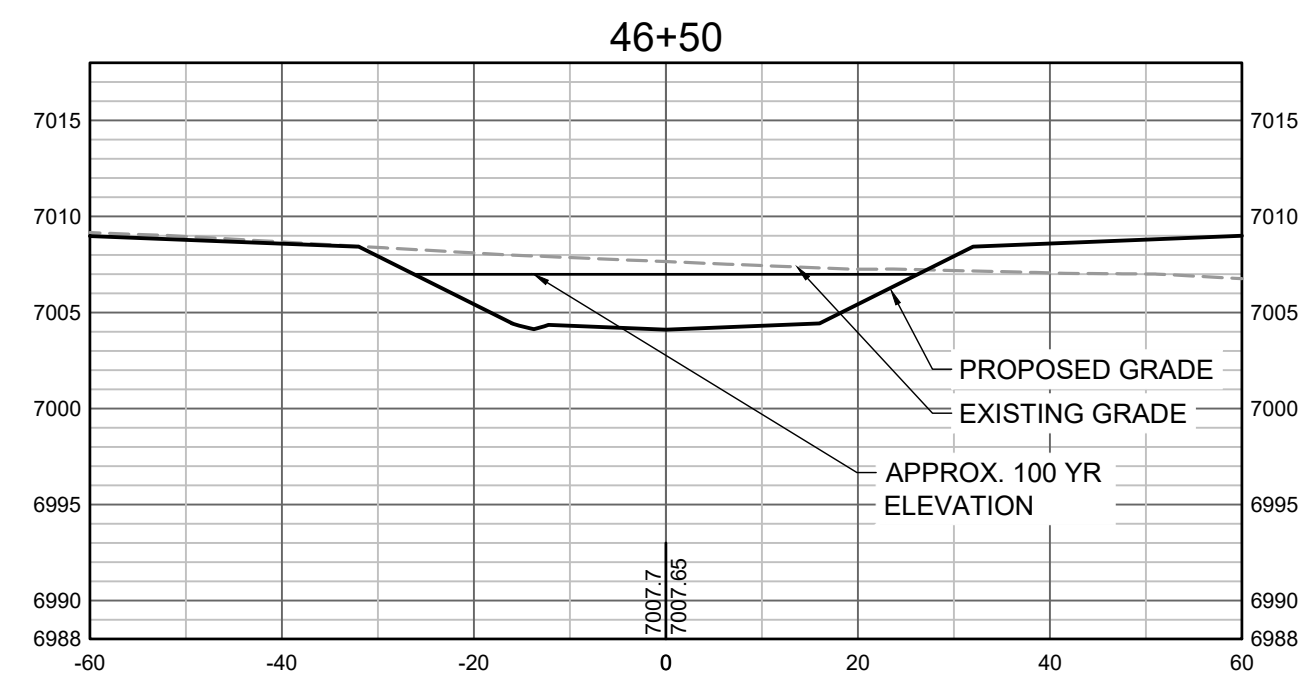
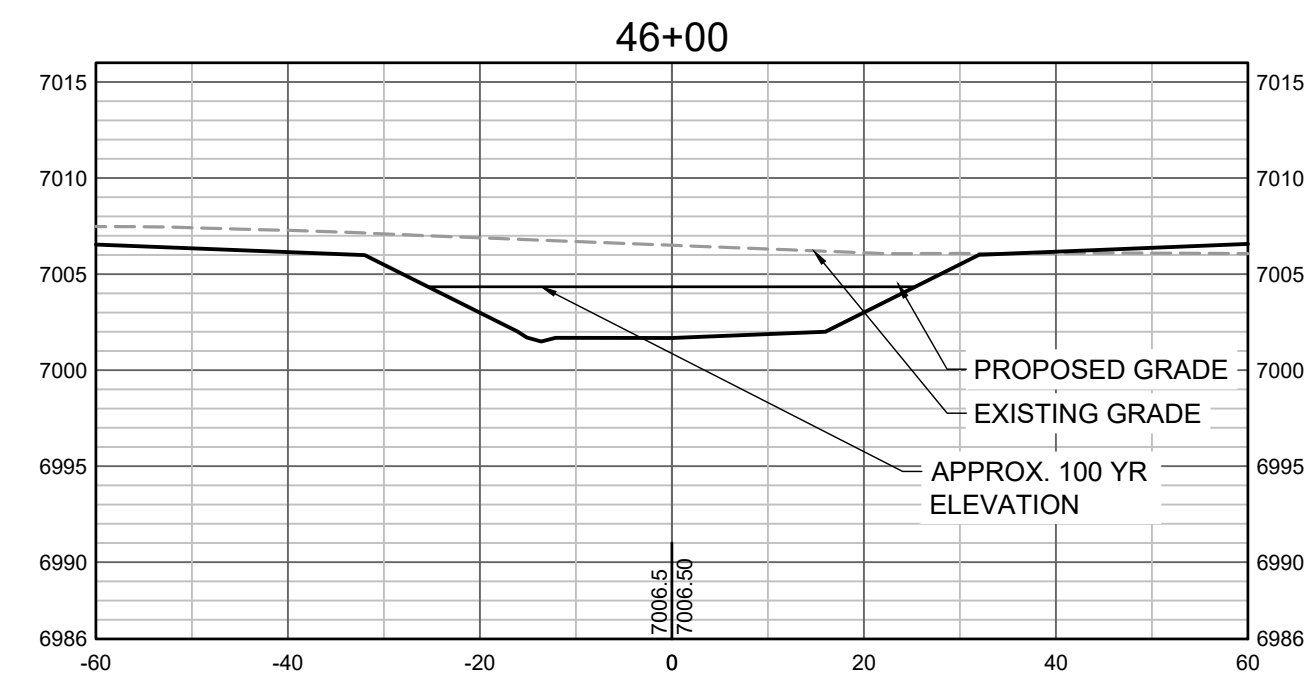
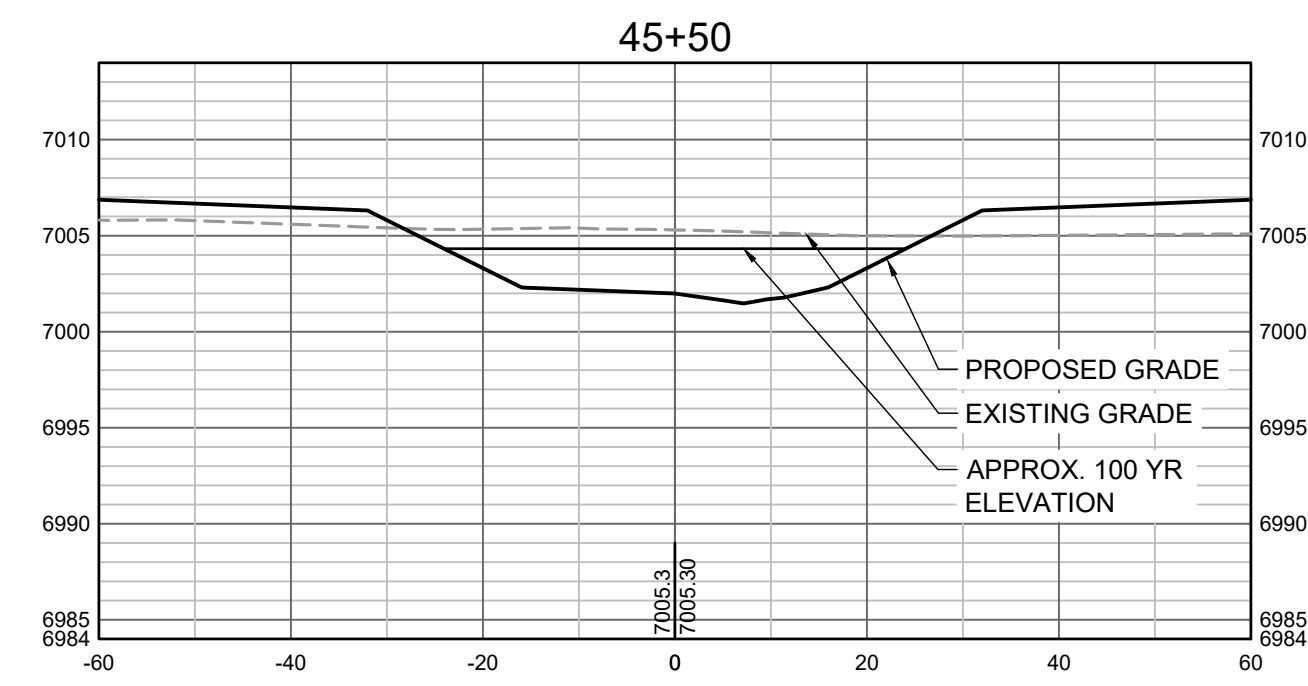
NO.	DATE	BY	REVISION DESCRIPTION



GRANDVIEW RESERVE  
 DR HORTON  
 FALCON, COLORADO

GRANDVIEW METRO DISTRICT  
 CROSS SECTIONS

SHEET NO.  
 CS10 28



DRAWN BY: TBI      JOB DATE: 5/9/2022  
 APPROVED: CMM      JOB NUMBER: 201662.03  
 CAD DATE: 5/10/2022  
 CAD FILE: J:\2020\201662.03\CAD\DWG\CROSS SECTIONS

BAR IS ONE INCH ON OFFICIAL DRAWINGS.  
 IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.

NO.	DATE	BY	REVISION DESCRIPTION



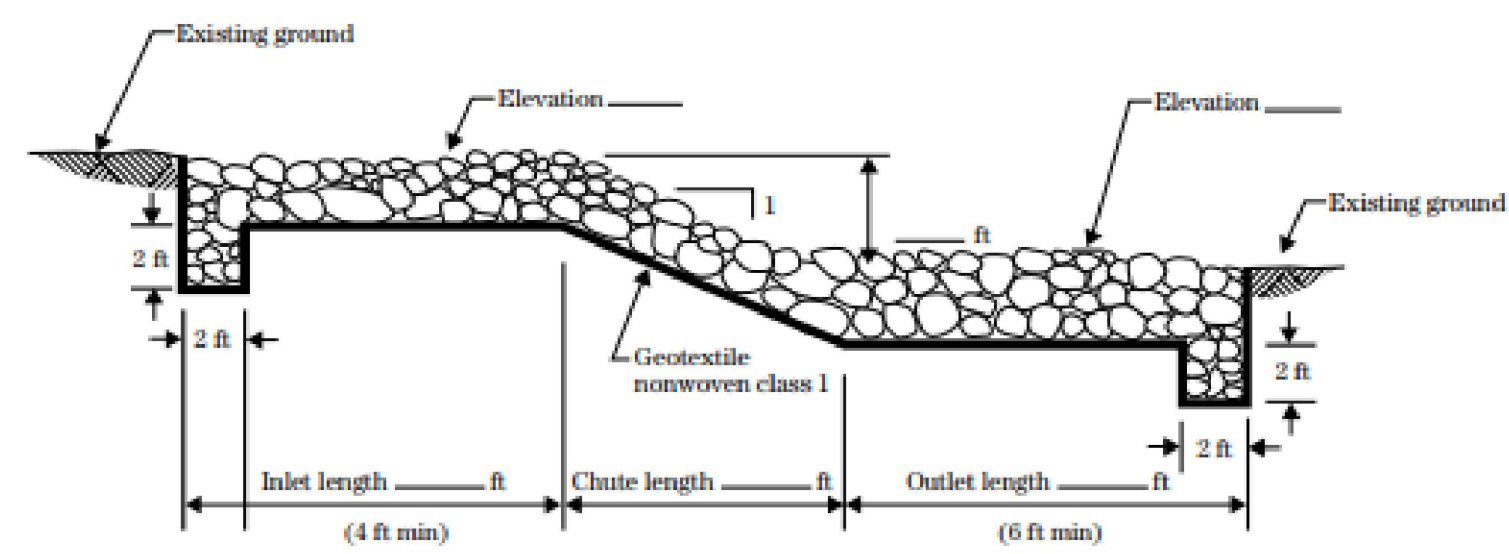
**GRANDVIEW RESERVE**  
**DR HORTON**  
 FALCON, COLORADO

GRANDVIEW METRO DISTRICT  
 CROSS SECTIONS

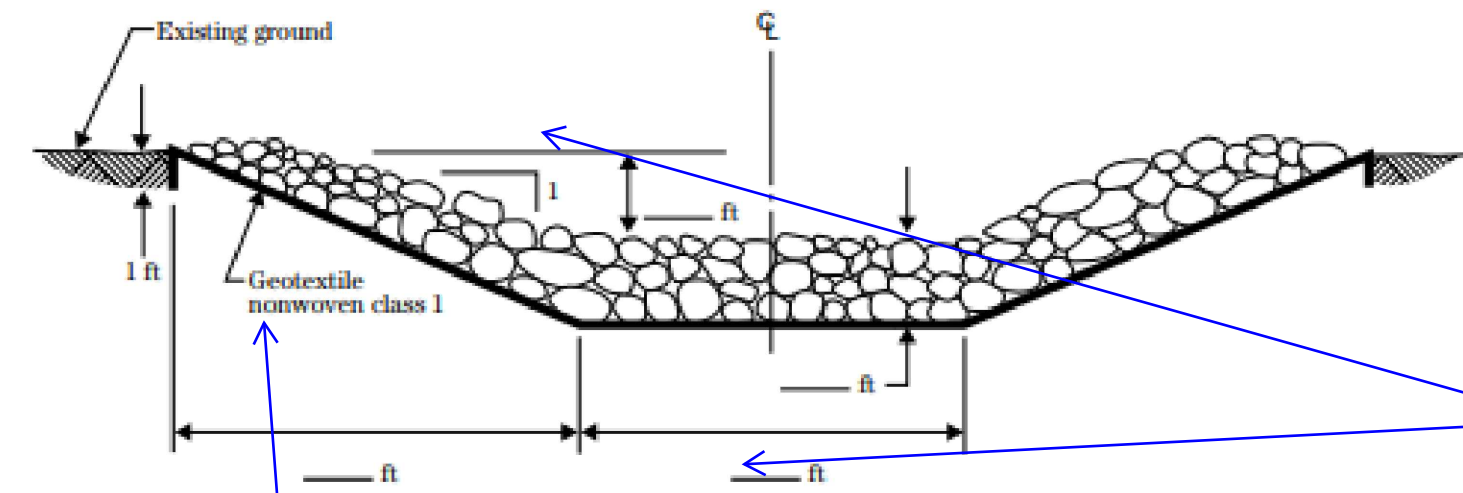
SHEET NO.  
**CS11 29**

HR GREEN Xref: xref.dwg

Figure TS14P-32 Design drawings for rock chute grade control structure



Profile along centerline



Typical section of chute

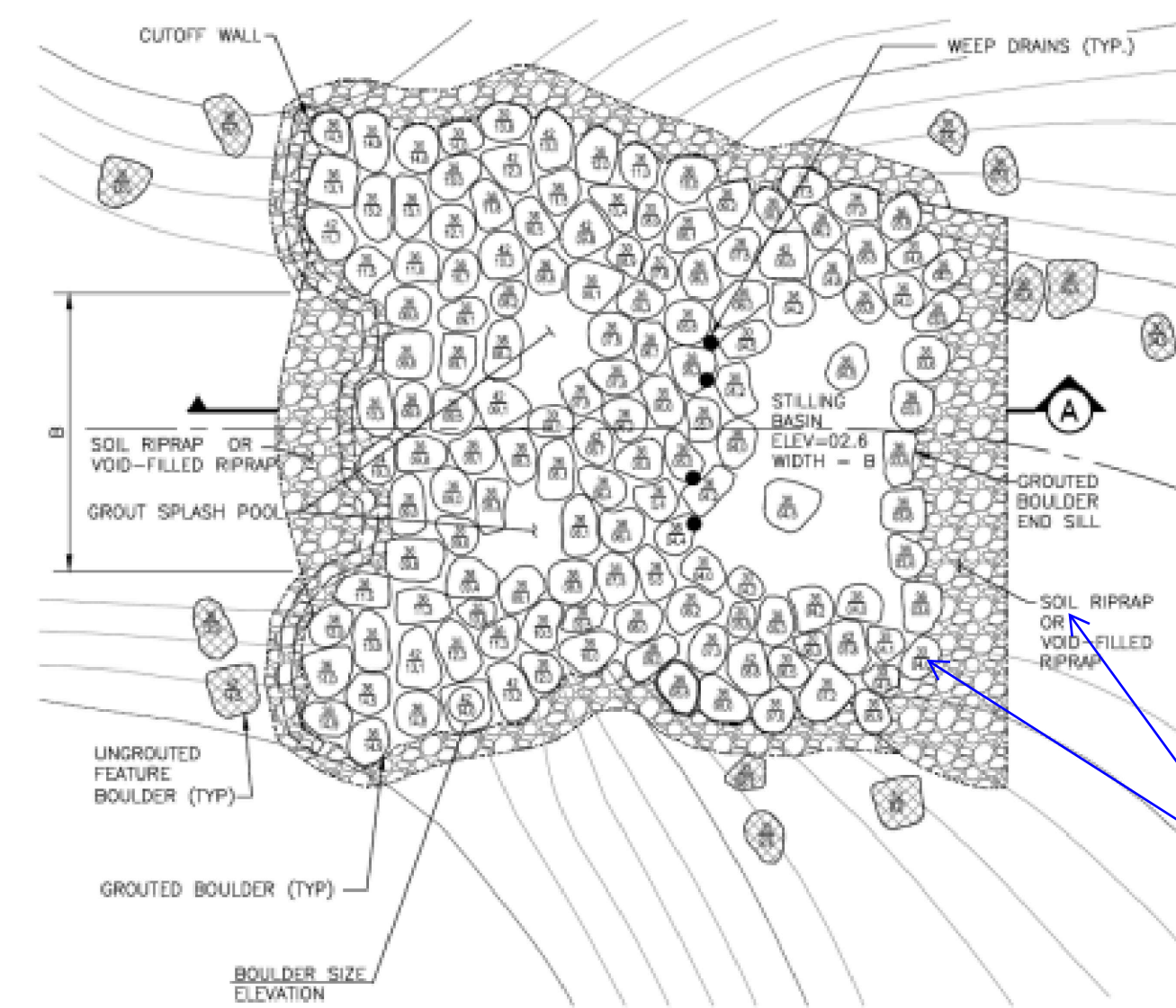
(210-VI-NEH, August 2007)

Identify the specific product to be used.

fill in the blanks for the dimensions and label slopes

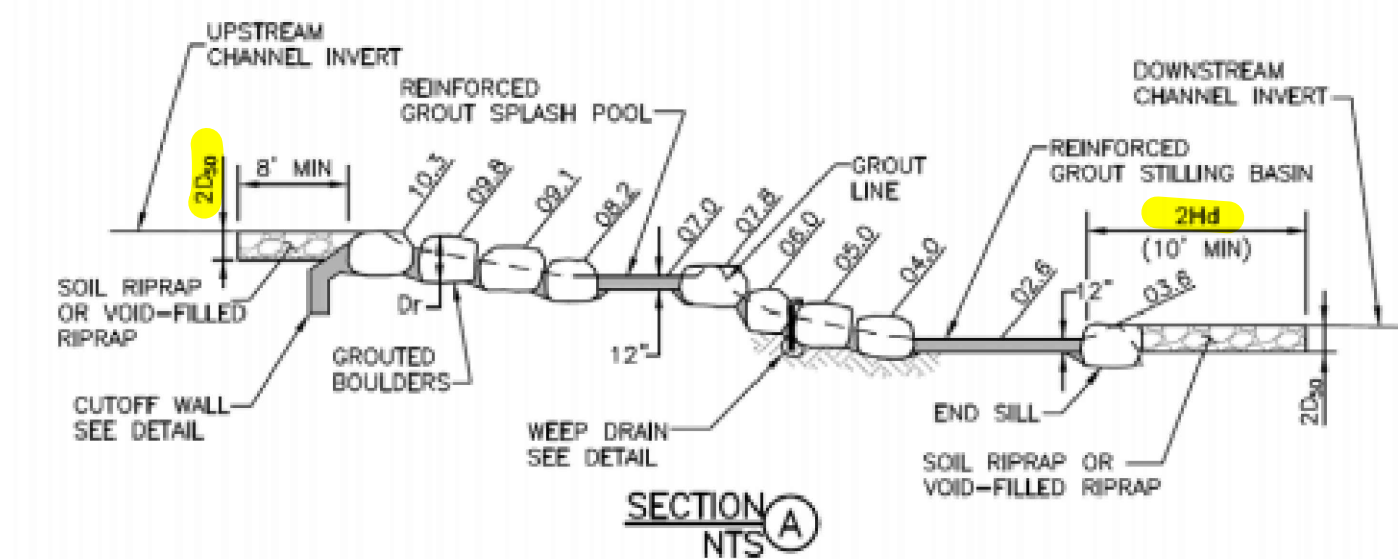
Add detail/cross section for maintenance road. Per DCM Vol. 1 maintenance roads shall have a minimum width of 15'.

Please provide details for the box culverts.



Provide drop structure hydraulic analysis in the final drainage report

update detail. Boulder size text is not legible. Identify the specific riprap sizes.



Include details for grouted boulders, soil riprap & cutoff walls

Figure 9-14. Example of complex grouted stepped boulder drop structure

DRAWN BY: TBI JOB DATE: 5/9/2022  
 APPROVED: CMM JOB NUMBER: 201662.03  
 CAD DATE: 5/10/2022  
 CAD FILE: J:\2020\201662.03\CAD\dwgs\CIDDETAILS

BAR IS ONE INCH ON OFFICIAL DRAWINGS.  
 IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.

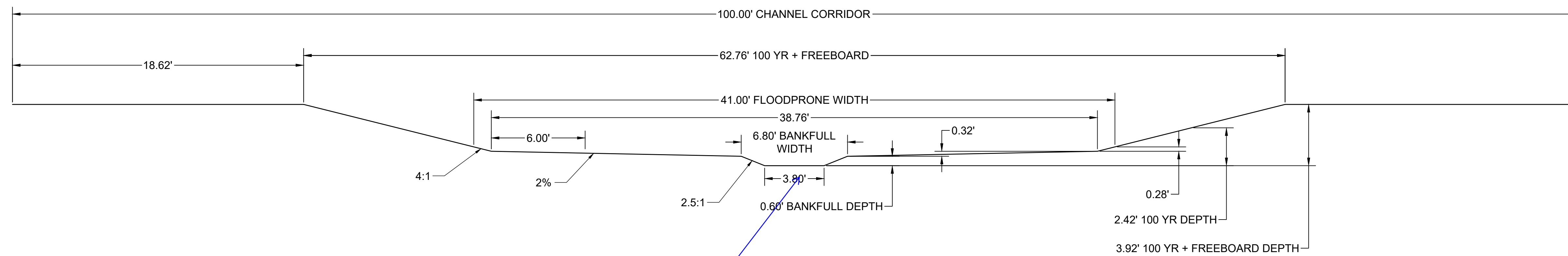
NO.	DATE	BY	REVISION DESCRIPTION



GRANDVIEW RESERVE  
 DR HORTON  
 FALCON, COLORADO

GRANDVIEW METRO DISTRICT  
 DETAILS

SHEET NO.  
 DT1 30



Show the trail

Label low flow channel lining.  
Add note to identify this is meandering

Provide channel lining detail.

HR GREEN Xref: xref.dwg

DRAWN BY: TBI      JOB DATE: 5/9/2022  
 APPROVED: CMM      JOB NUMBER: 201662.03  
 CAD DATE: 5/10/2022  
 CAD FILE: J:\2020\201662.03\CAD\dwg\CI\DETAILS

BAR IS ONE INCH ON  
 OFFICIAL DRAWINGS.  
 0      1"  
 IF NOT ONE INCH,  
 ADJUST SCALE ACCORDINGLY.

NO.	DATE	BY	REVISION DESCRIPTION



GRANDVIEW RESERVE  
 DR HORTON  
 FALCON, COLORADO

GRANDVIEW METRO DISTRICT  
 DETAILS

SHEET NO.  
 DT2 31