GRANDVIEW RESERVE

GEICK RANCH TRIBUTARY 2

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

PROPERTY OWNER IS GRANDVIEW METRO DISTRICT, WHICH WILL BE RESPONSIBLE FOR ALL FUTURE MAINTENANCE RELATED TO THIS PROJECT

SHEET INDEX		
SHEET NUMBER	SHEET DESCRIPTION	SHEET TITLE
01	TS1	TITLE SHEET
02	GN1	GENERAL NOTES
03	SC1	SURVEY CONTROL PLAN
04	UP1	OVERALL SITE PLAN
05	GR1	TRIBUTARY 1 Grading
06	GR2	TRIBUTARY 2 Valley Grading
07	GR3	TRIBUTARY 2 Valley Grading
08	GR4	TRIBUTARY 2 Valley Grading
09	GR5	TRIBUTARY 2 Valley Grading
10	GR6	TRIBUTARY 2 Valley Grading
11	GR7	TRIBUTARY 2 Valley Grading
12	GR8	TRIBUTARY 2 Valley Grading
13	GR9	TRIBUTARY 2 Valley Grading
14	GR10	TRIBUTARY 2 Valley Grading
15	GR11	TRIBUTARY 2 Valley Grading
16	GR12	TRIBUTARY 2 Valley Grading
17	GR13	TRIBUTARY 2 Valley Grading
18	GR14	TRIBUTARY 2 Bankfull Grading
19	GR15	TRIBUTARY 2 Bankfull Grading
20	GR16	TRIBUTARY 2 Bankfull Grading
21	GR17	TRIBUTARY 2 Bankfull Grading
22	GR18	TRIBUTARY 2 Bankfull Grading
23	GR19	TRIBUTARY 2 Bankfull Grading
24	EC1	INITIAL EROSION CONTROL
25	EC2	INITIAL EROSION CONTROL
26	EC3	INITIAL EROSION CONTROL
27	EC4	FINAL EROSION CONTROL
28	EC5	FINAL EROSION CONTROL
29	EC6	FINAL EROSION CONTROL
30	PP1	DRAINAGE TRIBUTARY 1 PLAN AND PROFILE
31	PP2	DRAINAGE TRIBUTARY 2 PLAN AND PROFILE
32	PP3	DRAINAGE TRIBUTARY 2 PLAN AND PROFILE
33	PP4	DRAINAGE TRIBUTARY 2 PLAN AND PROFILE
34	PP5	DRAINAGE TRIBUTARY 2 PLAN AND PROFILE
35	PP6	DRAINAGE CULVERTS PLAN AND PROFILE
36	PP7	DRAINAGE CULVERT PLAN AND PROFILE
37	CS1	TRIBUTARY 2 CROSS SECTIONS
38	CS2	TRIBUTARY 2 CROSS SECTIONS
39	CS3	TRIBUTARY 2 CROSS SECTIONS
40	DT1	DETAILS
41	DT2	DETAILS
42	DT3	DETAILS
43	DT4	DETAILS
44	DT5	DETAILS
45	DT6	DETAILS
46	DT7	DETAILS
47	LP1	SEEDING PLAN
48	LP2	SEEDING PLAN
49	LP3	SEEDING PLAN
50	LP4	SEEDING NOTES

SYMBOLS, ABBREVIATIONS, AND LINETYPES LEGEND

- CWA — CONCRETE WASHOUT AREA
- VTC — VEHICLE TRACKING CONTROL
- SSA — STABILIZED STAGING AREA
- LOC — LIMITS OF CONSTRUCTION
- CD — CHECK DAM
- SM — SEEDING AND MULCHING
- RS — ROCK SOCK
- PROPERTY LINE
- EXISTING EASEMENT
- EXISTING GAS LINE
- EXISTING TELEPHONE LINE
- EXISTING FENCE LINE
- EXISTING SECTION LINE
- EXISTING SWALE
- EXISTING OVERHEAD ELECTRIC
- EXISTING TELEPHONE POLE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- FLOW ARROW
- PROPOSED 100-YR FLOODPLAIN
- EXISTING 100-YR FLOODPLAIN
- EXISTING WETLANDS - JURISDICTIONAL
- EXISTING WETLANDS - NONJURISDICTIONAL
- PROPOSED MAINTENANCE TRAIL

ARV	AIR RELEASE VALVE
CP	CATHODIC PROTECTION
STA	STATION
MUE	MULTI USE EASEMENT
APRX	APPROXIMATE
PR	PROPOSED
FT	FEET
DIA	DIAMETER
LF	LINEAL FEET
EL	ELEVATION

VICINITY MAP

SCALE: 1" = 5000'

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.

BENCHMARK:

DESIGNATION = F 24
PID = JK0240
DESCRIPTION = DISK ON TOP OF CONCRETE MONUMENT
CONTROL POINT COORDINATE SYSTEM: NAVD88
NORTHING: 1421049.80
EASTING: 3273631.55
ELEVATION: 6866.33

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:

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 2117.66 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 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, AND 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 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.

GREGORY PANZA PE # 37081 _____ 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.

MELODY HOMES _____ DATE _____
7700 E ARAPAHOE RD STE 220, CENTENNIAL, CO, 80112

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.

JOSHUA PALMER, P.E. _____ DATE _____
COUNTY ENGINEER / ECM ADMINISTRATOR

EL PASO PDC FILE NO.

CDR-228

ENGINEER CONTACT(S):
HR GREEN DEVELOPMENT, LLC
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DRAWN BY: ACH
APPROVED: GLP
CAD DATE: 7/11/2024
CAD FILE: J:\2020\201662.03\CAD\Dwgs\C\TITLE SHEET
JOB DATE: 6/13/2024
JOB NUMBER: 201662.03

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

NO.	DATE	BY	REVISION DESCRIPTION

HRGreen
HR GREEN - DENVER
5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

CONSTRUCTION DOCUMENTS
TITLE SHEET

SHEET TS1

01

HR GREEN Xrefs: xgl-1-dh01_01-XL-CONCEPT

STANDARD NOTES FOR EL PASO COUNTY CONSTRUCTION PLANS

1. ALL DRAINAGE AND ROADWAY CONSTRUCTION SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD NOTIFICATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, BEFORE BEGINNING CONSTRUCTION. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CALL 811 TO CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC).
3. CONTRACTOR SHALL KEEP A COPY OF THESE APPROVED PLANS, THE GRADING AND EROSION CONTROL PLAN, THE STORMWATER MANAGEMENT PLAN (SWMP), THE SOILS AND GEOTECHNICAL REPORT, AND THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES, INCLUDING THE FOLLOWING:
   A. EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)
   B. CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2
   C. COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
   D. CDOT M & S STANDARDS
4. 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.
5. 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.
6. CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT (PCD) - INSPECTIONS, PRIOR TO STARTING CONSTRUCTION.
7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND THE REQUIREMENTS OF ALL JURISDICTIONAL AGENCIES AND TO OBTAIN ALL REQUIRED PERMITS, INCLUDING BUT NOT LIMITED TO EL PASO COUNTY EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP), REGIONAL BUILDING FLOODPLAIN DEVELOPMENT PERMIT, U.S. ARMY CORPS OF ENGINEERS-ISSUED 401 AND/OR 404 PERMITS, AND COUNTY AND STATE FUGITIVE DUST PERMITS.
8. CONTRACTOR SHALL NOT DEVIATE FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE DESIGN ENGINEER AND PCD. CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY ERRORS OR INCONSISTENCIES.
9. ALL STORM DRAIN PIPE SHALL BE CLASS III RCP UNLESS OTHERWISE NOTED AND APPROVED BY PCD.
10. CONTRACTOR SHALL COORDINATE GEOTECHNICAL TESTING PER ECM STANDARDS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY PCD PRIOR TO PLACEMENT OF CURB AND GUTTER AND PAVEMENT.
11. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
12. 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.
13. SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY AND MUTCD CRITERIA. [IF APPLICABLE, ADDITIONAL SIGNING AND STRIPING NOTES WILL BE PROVIDED.]
14. CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS (DPW), INCLUDING WORK WITHIN THE RIGHT-OF-WAY AND SPECIAL TRANSPORT PERMITS.
15. 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.

STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL PLANS

1. 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.
2. 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.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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.
11. 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 LOOSENED PRIOR TO INSTALLATION OF THE CONTROL MEASURE(S).
12. 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.
13. 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.
14. 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.
15. EROSION CONTROL BLANKETING OR OTHER PROTECTIVE COVERING SHALL BE USED ON SLOPES STEEPER THAN 3:1.
16. 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.
17. 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.
18. TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFF-SITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.
19. 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.
20. 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.
21. 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.
22. 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.
23. NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE CURB AND GUTTER OR DITCH EXCEPT WITH APPROVED SEDIMENT CONTROL MEASURES.
24. 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.
25. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE ONLY AT APPROVED CONSTRUCTION ACCESS POINTS.
26. PRIOR TO CONSTRUCTION THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
27. 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.
28. THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY [CTL THOMPSON, JANUARY 6, 2022] AND SHALL BE CONSIDERED A PART OF THESE PLANS.
29. 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

Design Parameter	Grandview Reserve Design Value	Design Value From MHFD	El Paso County
Roughness values	EPC DCM Table 10-2	Per Table 8-5	EPC DCM Table 10-2
Maximum 5-year velocity, main channel (within bankfull channel width) (ft/s)	5 ft/s	5 ft/s	EPC DCM 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 DCM 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 concrte lined or rip rap, ECM 10.5.4
Minimum bankfull channel geometry*		70% of 2-year discharge or 10% of 100-yr discharge, whichever is greater*	
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**	34-92 (x=56)***		
Belt Width**	18-55 (x=32)***		
Radius of Curvature**	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 lease 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
Freeboard			
* These values were derived from empirical data and will be used as guidelines for design and will be used in conjunction with hydraulic regime equations as outlined in "Spreadsheet Tools for River Evaluation, Assessment, and Monitoring: The STREAM Diagnostic Modules"			
**These values are derived from "Spreadsheet Tools for River Evaluation, Assessment, and Monitoring: The STREAM Diagnostic Modules"			
***These values are derived from HR Green Design Calculations			

NOTES:
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 DISTRICT'S (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.

EPC DCM = EL PASO COUNTY DRAINAGE CRITERIA MANUAL.

DRAINAGE A NOTES
1 - MIX THE VL RIPRAP WITH NATIVE SOIL (65% ROCK AND 35% SOIL).
2 - DROP THE VL RIPRAP 6-9 INCHES FURTHER INTO THE GROUND AND TOP LOAD THE SOIL-RIPRAP WITH 6-9 INCHES OF NATIVE SOIL (A SANDY CLAY LOAM).
3 - APPLY WETLAND SEED MIX AND STRAW MULCH (WEED FREE) AND THEN ENCAPSULATE THE SOIL/SOIL-RIPRAP WITH AN EROSION CONTROL FABRIC (ECF). USE NEDIA KOIRMAT 700 OR SIMILAR.
4 - WETLAND AND UPLAND SEEDING IN THE LATE FALL JUST BEFORE WINTER. WILLOW PLANTING (ROOTED OR CUTTINGS) IN THE SPRING DEPENDING ON WHEN THE SITE IS READY AND THE PLANTS ARE COLLECTED/ACQUIRED; OTHER TIMES/PROCEDURES REQUIRE ENGINEER APPROVAL. RESTORATION OF THE UTILITY LINE CROSSINGS WITH WETLAND SEED AND WILLOW IS ALSO REQUIRED.

EXISTING FLOWS FOR MAIN STEM (DRAINAGE A)			
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

EXISTING FLOWS FOR MAIN STEM TRIBUTARY (DRAINAGE B)			
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

FUTURE FLOWS FOR MAIN STEM (DRAINAGE A)			
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

FUTURE FLOWS FOR MAIN STEM TRIBUTARY (DRAINAGE B)			
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

DRAWN BY: TBI JOB DATE: 5/3/2024
APPROVED: GLP JOB NUMBER: 201662.03
CAD DATE: 7/11/2024
CAD FILE: J:\2020\201662.03\CAD\Dwgs\C\GENERAL NOTES

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NO.	DATE	BY	REVISION DESCRIPTION

HRGreen
HR GREEN - DENVER
5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

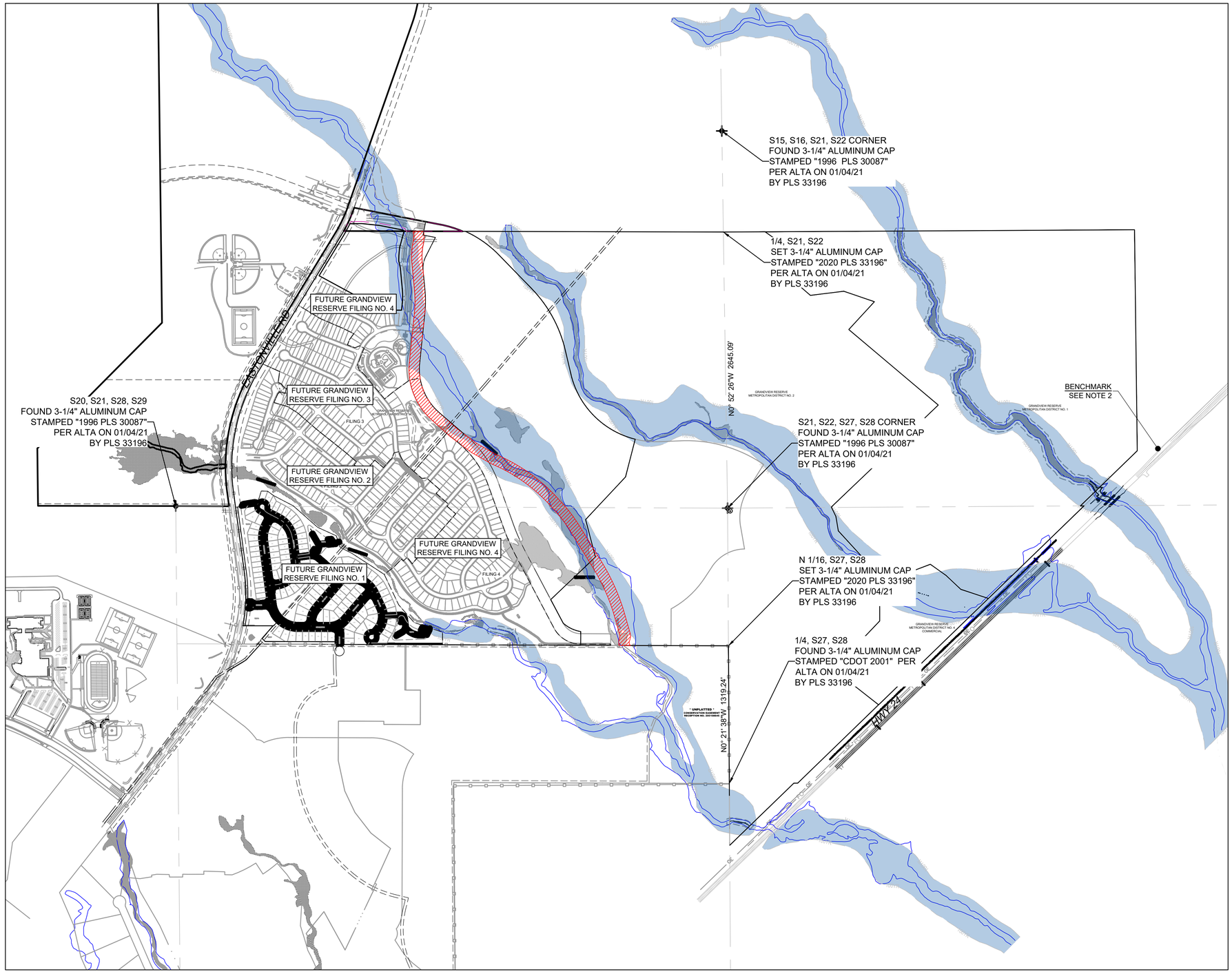
GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

CONSTRUCTION DOCUMENTS
GENERAL NOTES

SHEET GN1

02

HR GREEN Xrefs: xgt-t-db01



KEYMAP

PROJECT LEGEND:

- PROPERTY LINE
- SECTION LINE
- SECTION CORNER

NOTES:

1. 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.
2. BENCHMARK:
   DESIGNATION = F 24, E 24
   PID = JK0240
   DESCRIPTION = DISK ON TOP OF CONCRETE MONUMENT
   CONTROL POINT COORDINATE SYSTEM: NAVD88
   NORTHING: 1421049.80
   EASTING: 3273631.55
   ELEVATION: 6866.33

811 UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

COLORADO LICENSED GREGORY L. PAYNE 37081 PROFESSIONAL ENGINEER 1/25/24

DRAWN BY:	ACH	JOB DATE:	1/25/2024
APPROVED:	GLP	JOB NUMBER:	201662.03
CAD DATE:	7/11/2024		
CAD FILE:	J:\2020\201662.03\CAD\Dwgs\C\Survey_Control_Plan		

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NO.	DATE	BY	REVISION DESCRIPTION

HR GREEN - DENVER
5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

CONSTRUCTION DOCUMENTS
SURVEY CONTROL PLAN

SHEET SC1 | 03

HR GREEN Xrefs: sgt-1-dh01_Survey_Control_Key; xx-row-662; xx-dsgn-F1-662 10; xx-row-F1-662 10; xx-dsgn-F2; xx-row-F2; xx-dsgn-F3; xx-row-F3; xx-dsgn-F4; xx-row-F4; xx-channel; xx-filing3ndsyc; xx-dsgn_662

PROPOSED TRIBUTARY 2 UPPER GRADING. SEE SHEETS GR13

EXISTING TRIBUTARY 2 ALIGNMENT

PROPOSED TRIBUTARY 2 ALIGNMENT. SEE SHEETS GR2 - GR13

EXISTING HIGH VOLTAGE OVERHEAD POWER LINES

EXISTING TELEPHONE

EXISTING GAS LINE

EASTONVILLE RD

FUTURE GRANDVIEW RESERVE FILING NO. 4

FUTURE GRANDVIEW RESERVE FILING NO. 3

FUTURE GRANDVIEW RESERVE FILING NO. 2

FUTURE GRANDVIEW RESERVE FILING NO. 1

FUTURE GRANDVIEW RESERVE FILING NO. 4

FILING 3

FILING 2

FILING 4

EXISTING TRIBUTARY 2 ALIGNMENT

PROPOSED TRIBUTARY 2 GRADING. SEE SHEETS GR2 - GR11

PROPOSED TRIBUTARY 1 GRADING. SEE SHEET GR1

EXISTING JURISDICTIONAL WETLANDS

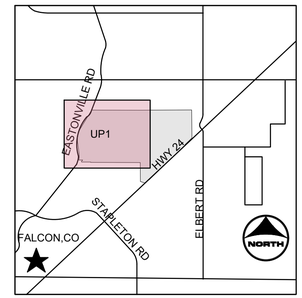
EFFECTIVE 100-YR FLOODPLAIN

EXISTING NON-JURISDICTIONAL WETLANDS

EXISTING JURISDICTIONAL WETLANDS

TRIBUTARY 1 ALIGNMENT

38+75
35+00
30+00
25+00
20+00
15+00
10+00
5+00
0+00
40+00
45+00
50+00
55+00
60+00



KEYMAP

PROJECT LEGEND:

- PROPERTY LINE
- EXISTING EASEMENT
- EXISTING GAS LINE
- EXISTING TELEPHONE LINE
- EXISTING FENCE LINE
- EXISTING SECTION LINE
- EXISTING SWALE
- EXISTING OVERHEAD ELECTRIC
- EXISTING TELEPHONE POLE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED 100-YR FLOODPLAIN
- EXISTING 100-YR FLOODPLAIN
- EXISTING WETLANDS - JURISDICTIONAL
- EXISTING WETLANDS - NONJURISDICTIONAL

NOTES:

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   ELEVATION: 6866.33

NORTH
0 250
125

811 UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

COLORADO LICENSED GREGORY L. PAYNE 37081 PROFESSIONAL ENGINEER

DRAWN BY:	TBI	JOB DATE:	5/22/2023
APPROVED:	GLP	JOB NUMBER:	201662.03
CAD DATE:	7/11/2024		
CAD FILE:	J:\2020\201662.03\CAD\Dwgs\C\OSP		

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NO.	DATE	BY	REVISION DESCRIPTION

HR GREEN - DENVER
5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

CONSTRUCTION DOCUMENTS
OVERALL SITE PLAN

SHEET UP1 | 04

HR GREEN Xrefs: xg-t-dh01 OUP KEY; xv-dsgn_662; xv-util_662; xc-dsgn-F1-662.10; xc-cnw-F1-662.10; xc-dsgn-F2; xc-cnw-F2; xc-dsgn-F3; xc-cnw-F3; xc-dsgn-F4; xc-cnw-F4; xc-channel; xc-filing-bndys; xv-cnw-662

TRIBUTARY 1 VALLEY				
LINE #/ CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
C1	250.30	281.21	N43° 22' 24.25"W	242.11
C2	131.62	9969.09	N69° 14' 59.97"W	131.62

LIMITS OF GRADING

LIMITS OF CONSTRUCTION

TAG #C2 END
STA 27+74.14
N: 1420392.46
E: 3265513.8824

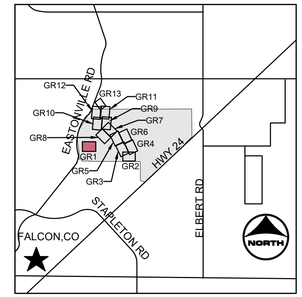
LIMITS OF CONSTRUCTION
STA 24+59.29
N: 1420230.76
E: 3265775.5055

TAG #C1 START
STA 23+92.22
N: 1420169.84
E: 3265803.2394

PROPOSED CHANNEL CENTERLINE

20.00' EX GAS EASEMENT

CAUTION GAS TRANSMISSION LINE CROSSING
CONTACT: NUSTAR ENERGY
CHAD RENSLOW
CHAD.RENSLOW@NUSTARENERGY.COM
PLEASE CONTACT 2 WEEKS PRIOR TO ANY CONSTRUCTION ACTIVITY



KEYMAP

PROJECT LEGEND:

- PROPERTY LINE
- EXISTING EASEMENT
- EXISTING GAS LINE
- EXISTING TELEPHONE LINE
- EXISTING FENCE LINE
- EXISTING SECTION LINE
- EXISTING SWALE
- EXISTING OVERHEAD ELECTRIC
- EXISTING TELEPHONE POLE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- FLOW ARROW
- LIMITS OF CONSTRUCTION
- LIMITS OF GRADING
- EXISTING WETLANDS - JURISDICTIONAL
- EXISTING WETLANDS - NONJURISDICTIONAL
- PROPOSED MAINTENANCE TRAIL

NOTES:

1. 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.
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   DESCRIPTION = DISK ON TOP OF CONCRETE MONUMENT
   CONTROL POINT COORDINATE SYSTEM: NAVD88
   NORTHING: 1421049.80
   EASTING: 3273631.55
   ELEVATION: 6866.33

811 UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

COLORADO LICENSED GREGORY L. GLP 37081 PROFESSIONAL ENGINEER

0 40
20

DRAWN BY:	ACH	JOB DATE:	6/6/2024
APPROVED:	GLP	JOB NUMBER:	201662.03
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CAD FILE:	J:\2020\201662.03\CAD\Dwgs\C\GRADING		

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HRGreen
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5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

CONSTRUCTION DOCUMENTS
TRIBUTARY 1 GRADING

SHEET GR1 05

(4) 8' X 4' CONCRETE BOX CULVERTS 53' LONG WITH 45 DEGREE WING WALLS (PUBLIC). REFER TO PP6 FOR PLAN AND PROFILE

MATCH LINE STA. 8+50 SEE SHEET GR3

L5

100.00' TRACT SA

VALLEY CHANNEL CENTERLINE

BANKFULL CHANNEL CENTERLINE

PROPOSED 15.00' MAINTENANCE TRAIL SEE DT2

PROPOSED 100 YEAR FLOODPLAIN

C5

L4

C4

MATCH LINE SEE SHEET GR4

LIMITS OF CONSTRUCTION

LIMITS OF GRADING

BEGIN LIMITS OF CONTRUCTION
STA 5+77.43
N: 1419144.80
E: 3268530.87

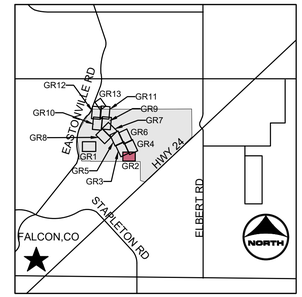
TEMPORARY CONSTRUCTION EASEMENT FOR OFFSITE GRADING

TAG #C4 START
STA 5+35.84
N: 1419117.23'
E: 3268561.35

What does this blue line represent?

Removed from CDs

TRIBUTARY 2 UPSTREAM				
LINE #/ CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
C4	55.21	90.32	N4° 03' 37.62"E	54.35
L4	19.06		N15° 57' 12.45"E	
C5	30.10	64.61	N3° 11' 43.90"W	29.83
L5	249.66		N16° 01' 39.50"W	



KEYMAP

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- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- FLOW ARROW
- PROPOSED 100-YR FLOODPLAIN
- LIMITS OF CONSTRUCTION
- LIMITS OF GRADING
- EFFECTIVE 100-YR FLOODPLAIN
- EXISTING WETLANDS - JURISDICTIONAL
- EXISTING WETLANDS - NONJURISDICTIONAL
- PROPOSED MAINTENANCE TRAIL

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   NORTHING: 1421049.80
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   ELEVATION: 6866.33

811 UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

COLORADO LICENSED GREGORY L. PAYNE 37081 PROFESSIONAL ENGINEER 2-24-13

NORTH 0 40 20

DRAWN BY:	ACH	JOB DATE:	6/6/2024
APPROVED:	GLP	JOB NUMBER:	201662.03
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HR GREEN - DENVER
5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

CONSTRUCTION DOCUMENTS
TRIBUTARY 2 VALLEY GRADING

SHEET GR2

06

MATCH LINE
SEE SHEET GR4

PROPOSED 100 YEAR FLOODPLAIN

BANKFULL CHANNEL CENTERLINE

100.00' TRACT SA

PROPOSED 15.00' MAINTENANCE TRAIL SEE DT2

VALLEY CHANNEL CENTERLINE

MATCH LINE STA. 18+50 SEE SHEET GR7

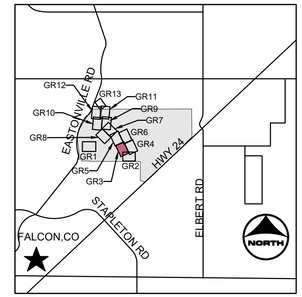
MATCH LINE STA. 8+50 SEE SHEET GR2

(4) 8' X 4' CONCRETE BOX CULVERTS 53' LONG WITH 45 DEGREE WING WALLS (PUBLIC). REFER TO PP6 FOR PLAN AND PROFILE

LIMITS OF CONSTRUCTION

LIMITS OF GRADING

TRIBUTARY 2 UPSTREAM				
LINE #/ CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
C6	452.43	1990.27	N24° 32' 36.87"W	451.46
L6	428.69		N31° 44' 28.34"W	



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- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- FLOW ARROW
- PROPOSED 100-YR FLOODPLAIN
- LIMITS OF CONSTRUCTION
- LIMITS OF GRADING
- EFFECTIVE 100-YR FLOODPLAIN
- EXISTING WETLANDS - JURISDICTIONAL
- EXISTING WETLANDS - NONJURISDICTIONAL
- PROPOSED MAINTENANCE TRAIL

NOTES:

1. 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.
2. BENCHMARK:
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   PID = JK0240
   DESCRIPTION = DISK ON TOP OF CONCRETE MONUMENT
   CONTROL POINT COORDINATE SYSTEM: NAVD88
   NORTHING: 1421049.80
   EASTING: 3273631.55
   ELEVATION: 6866.33

811 UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

COLORADO LICENSED GREGORY L. PATZ 37081 PROFESSIONAL ENGINEER 12-03-24

0 40 20

DRAWN BY:	ACH	JOB DATE:	6/6/2024
APPROVED:	GLP	JOB NUMBER:	201662.03
CAD DATE:	7/11/2024		
CAD FILE:	J:\2020\201662.03\CAD\Dwgs\C\GRADING		

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NO.	DATE	BY	REVISION DESCRIPTION

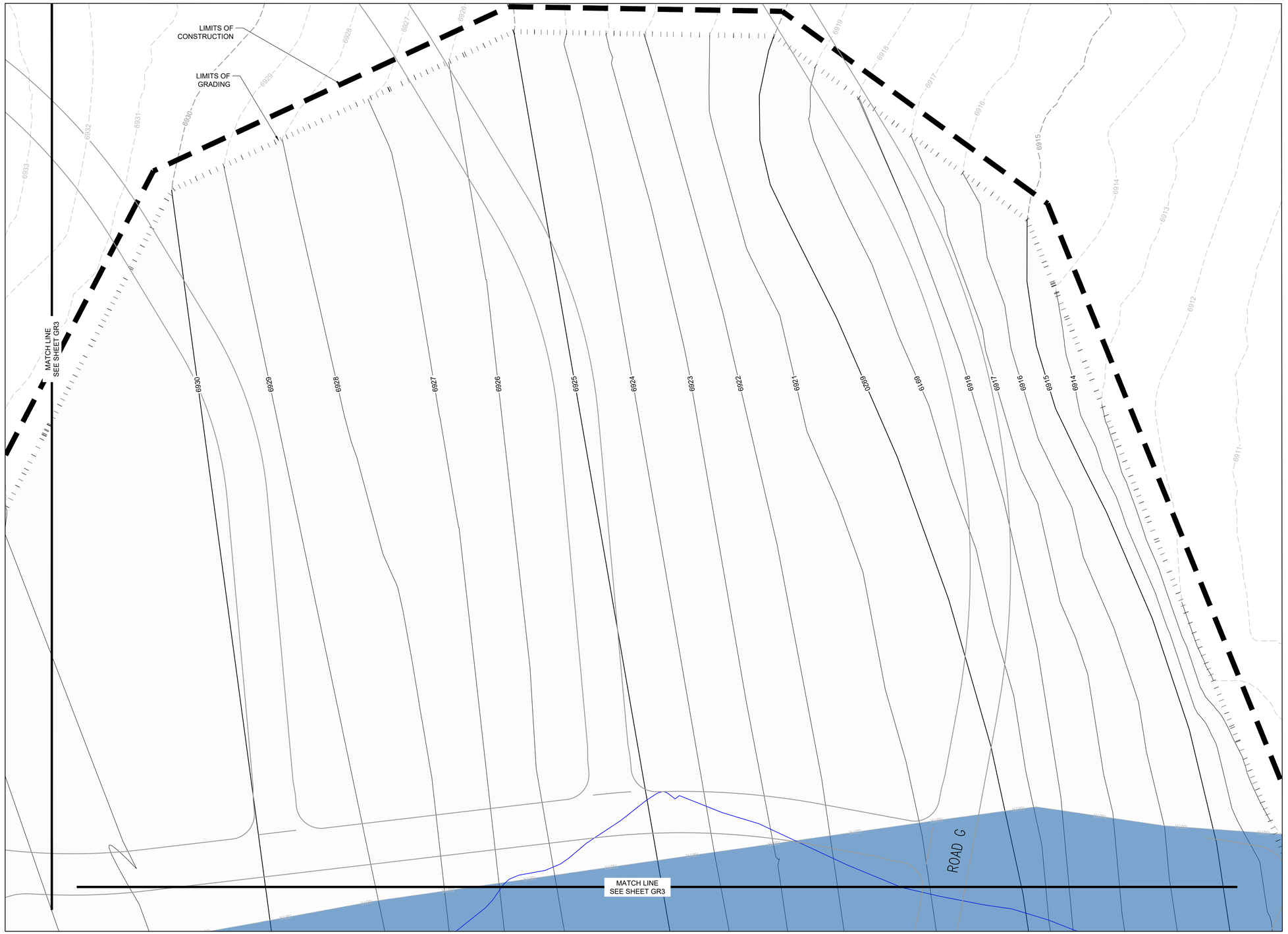
HRGreen
HR GREEN - DENVER
5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

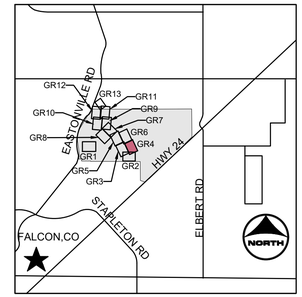
GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

CONSTRUCTION DOCUMENTS
TRIBUTARY 2 VALLEY GRADING

SHEET GR3

07





KEYMAP

PROJECT LEGEND:

- PROPERTY LINE
- EXISTING EASEMENT
- EXISTING GAS LINE
- EXISTING TELEPHONE LINE
- EXISTING FENCE LINE
- EXISTING SECTION LINE
- EXISTING SWALE
- EXISTING OVERHEAD ELECTRIC
- EXISTING TELEPHONE POLE
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COLORADO LICENSED GREGORY L. PAUL 37081 PROFESSIONAL ENGINEER 12-04-24

DRAWN BY:	ACH	JOB DATE:	6/6/2024
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HR GREEN - DENVER
5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

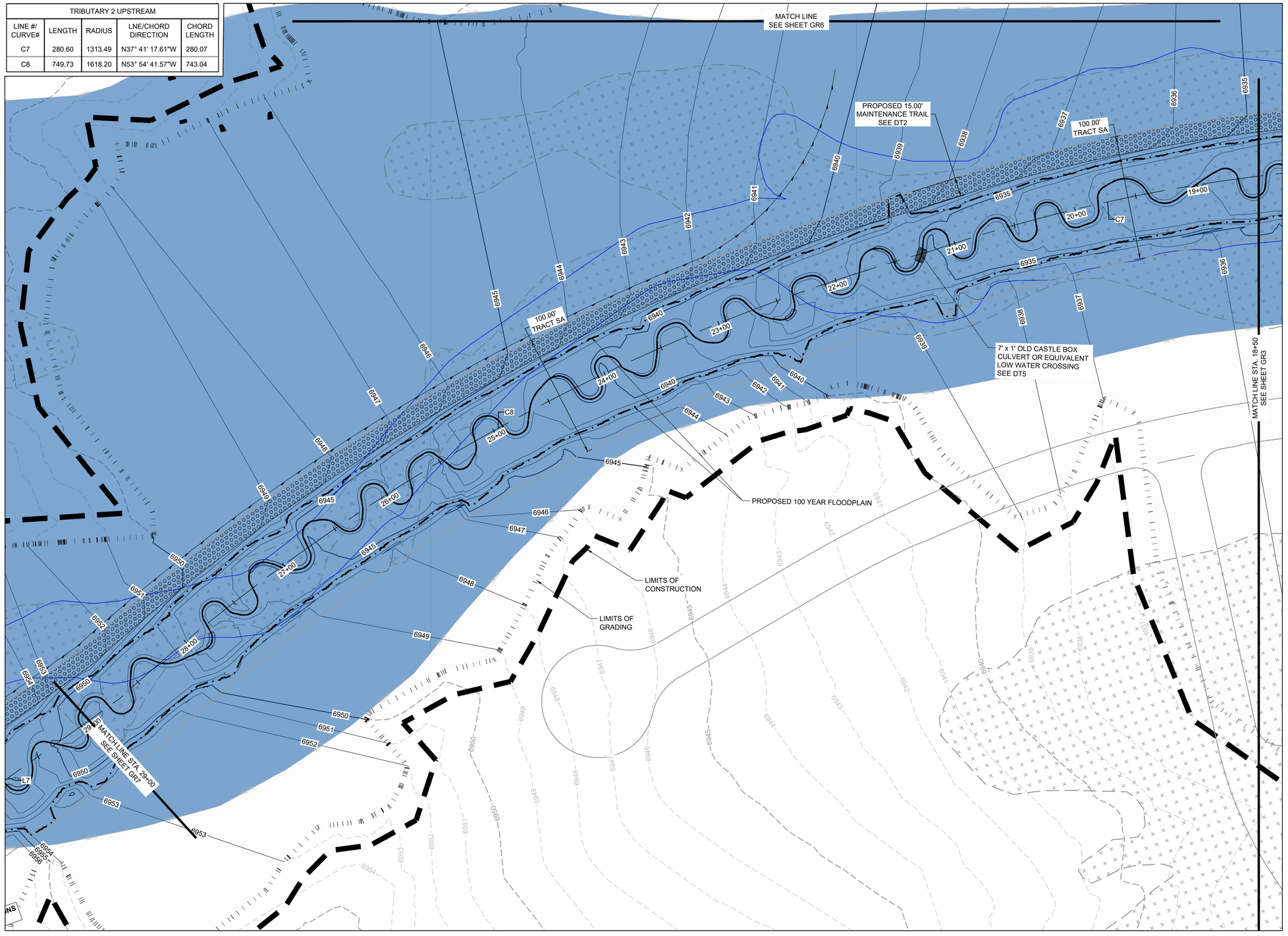
GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

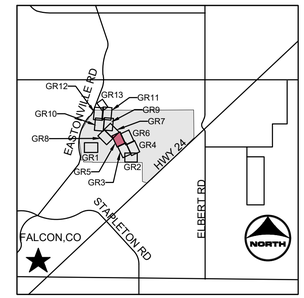
CONSTRUCTION DOCUMENTS
TRIBUTARY 2 VALLEY GRADING

SHEET GR4

08

TRIBUTARY 2 UPSTREAM				
LINE #/ CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
C7	280.60	1313.49	N37° 41' 17.61"W	280.07
C8	749.73	1618.20	N53° 54' 41.57"W	743.04





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COLORADO LICENSED GREGORY L. PAYNE 37081 PROFESSIONAL ENGINEER 12-03-24

NORTH 0 40 20

DRAWN BY:	TBI	JOB DATE:	6/6/2024
APPROVED:	GLP	JOB NUMBER:	201662.03
CAD DATE:	7/11/2024		
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5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

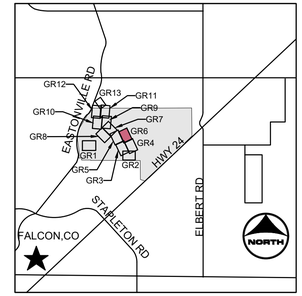
GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

CONSTRUCTION DOCUMENTS
TRIBUTARY 2 VALLEY GRADING

SHEET GR5

09

TRIBUTARY 2 UPSTREAM				
LINE #/ CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
C7	280.60	1313.49	N37° 41' 17.61"W	280.07
C8	749.73	1618.20	N53° 54' 41.57"W	743.04



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COLORADO LICENSED GREGORY L. PAYNE 37081 PROFESSIONAL ENGINEER 12-13-24

DRAWN BY:	TBI	JOB DATE:	6/6/2024
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CAD DATE:	7/11/2024		
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HR GREEN - DENVER
5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

CONSTRUCTION DOCUMENTS
TRIBUTARY 2 VALLEY GRADING

SHEET GR6

10

TRIBUTARY 2 UPSTREAM				
LINE #/ CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
L7	217.60		N60° 22' 39.34"W	
L8	250.42		N53° 13' 21.07"W	
L9	224.94		N47° 47' 51.42"W	

LIMITS OF CONSTRUCTION

LIMITS OF GRADING

CAUTION GAS TRANSMISSION LINE CROSSING
CONTACT: NUSTAR ENERGY
CHAD RENSLOW
CHAD.RENSLOW@NUSTARENERGY.COM
PLEASE CONTACT 2 WEEKS PRIOR TO ANY CONSTRUCTION ACTIVITY

16.50' TELEPHONE EASEMENT

20.00' GAS LINE EASEMENT

MATCH LINE STA. 37+50 SEE SHEET GR9

MATCH LINE STA. 29+00 SEE SHEET GR5

VALLEY CENTERLINE

PROPOSED 15.00' MAINTENANCE TRAIL. SEE DT2

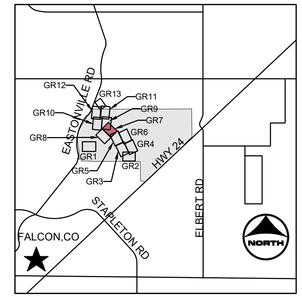
BANKFULL CHANNEL CENTERLINE

TELECOMMUNICATIONS EASEMENT

PROPOSED 100 YEAR FLOODPLAIN

100.00' TRACT SA

MATCH LINE SEE SHEET GR8



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COLORADO LICENSED GREGORY L. PAYNE 37081 PROFESSIONAL ENGINEER 7-24-24

0 40 20

DRAWN BY:	ACH	JOB DATE:	6/6/2024
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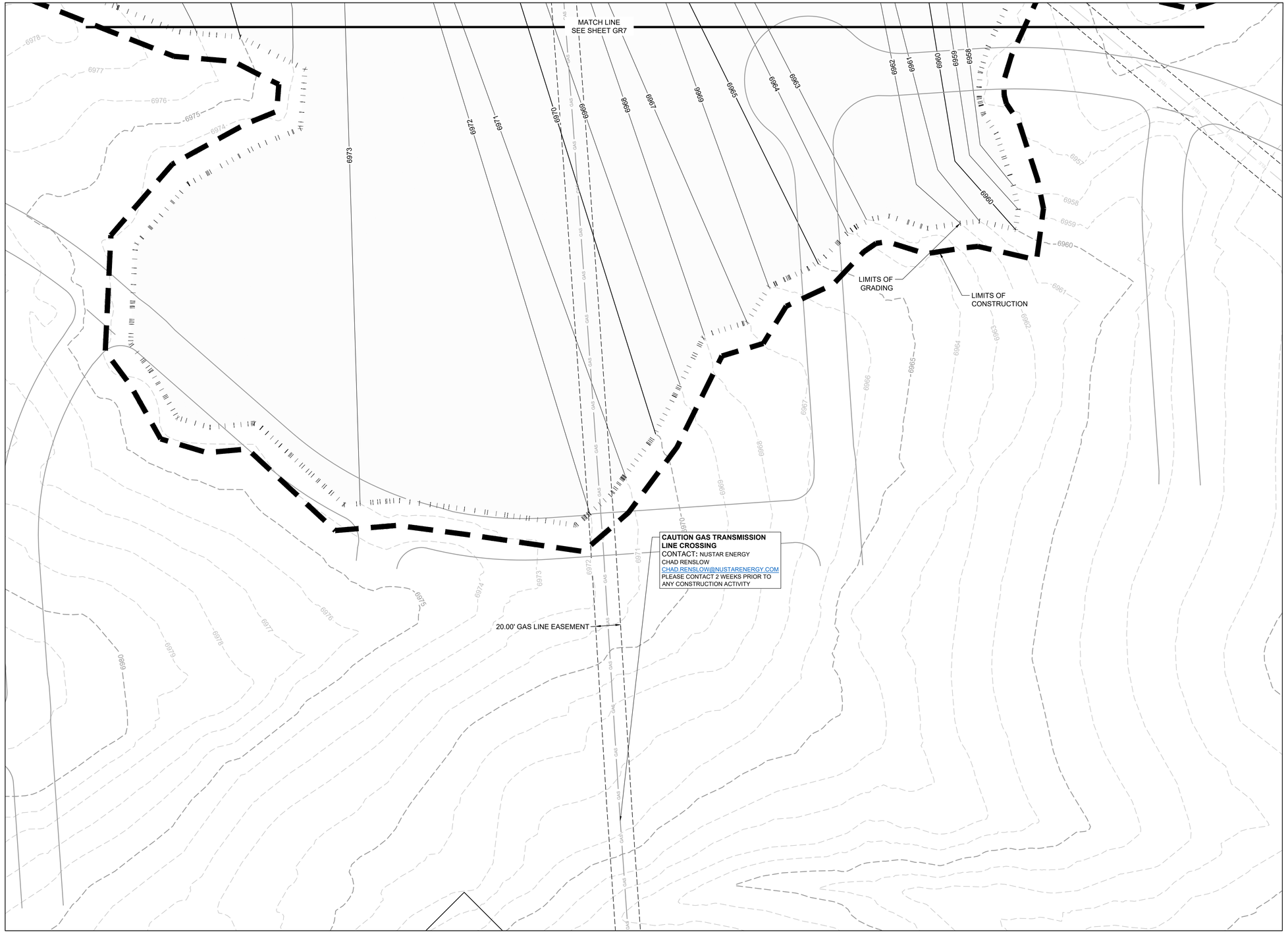
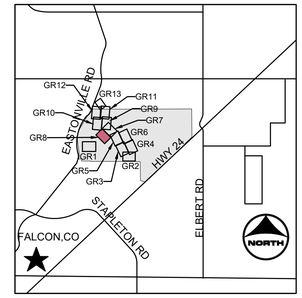
5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

CONSTRUCTION DOCUMENTS
TRIBUTARY 2 VALLEY GRADING

SHEET GR7 | 11





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PROJECT LEGEND:

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COLORADO LICENSED GREGORY L. ACH 37081 PROFESSIONAL ENGINEER

NORTH

0 40

20

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PHONE: 720.602.4999
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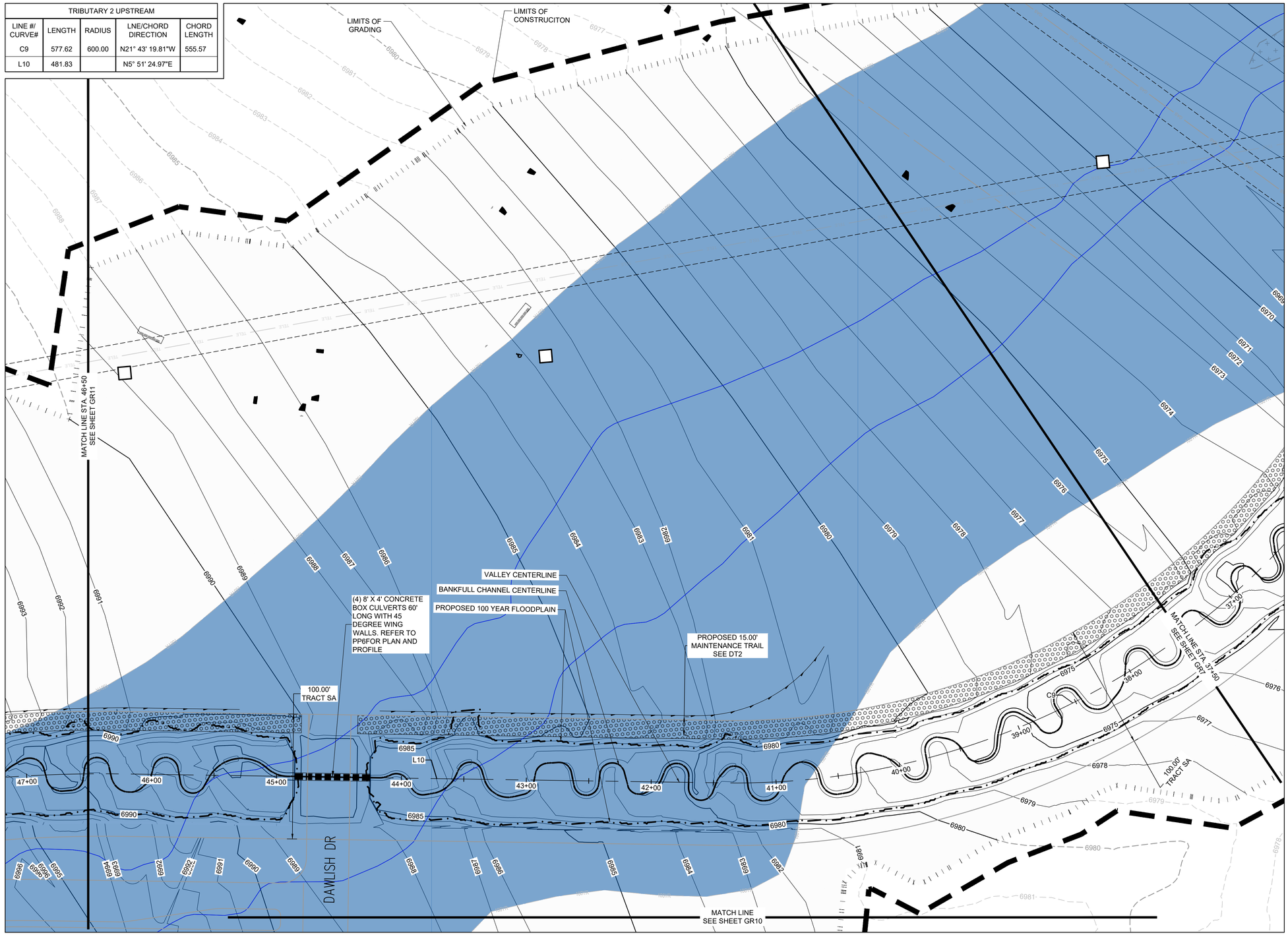
GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

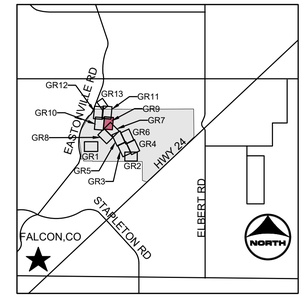
CONSTRUCTION DOCUMENTS
TRIBUTARY 2 VALLEY GRADING

SHEET GR8

12

TRIBUTARY 2 UPSTREAM				
LINE #/ CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
C9	577.62	600.00	N21° 43' 19.81"W	555.57
L10	481.83		N5° 51' 24.97"E	





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COLORADO LICENSED GREGORY L. PAEZ 37081 PROFESSIONAL ENGINEER 12-23-24

0 40 20

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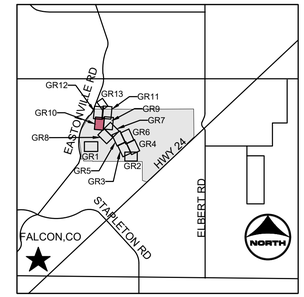
GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

CONSTRUCTION DOCUMENTS
TRIBUTARY 2 VALLEY GRADING

SHEET GR9 13



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811 UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

COLORADO LICENSED GREGORY L. PAYNE 37081 PROFESSIONAL ENGINEER 2-24-25

DRAWN BY:	ACH	JOB DATE:	6/6/2024
APPROVED:	GLP	JOB NUMBER:	201662.03
CAD DATE:	7/11/2024		
CAD FILE:	J:\2020\201662.03\CAD\Dwgs\C\GRADING		

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

NO.	DATE	BY	REVISION DESCRIPTION

HRGreen

HR GREEN - DENVER
5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

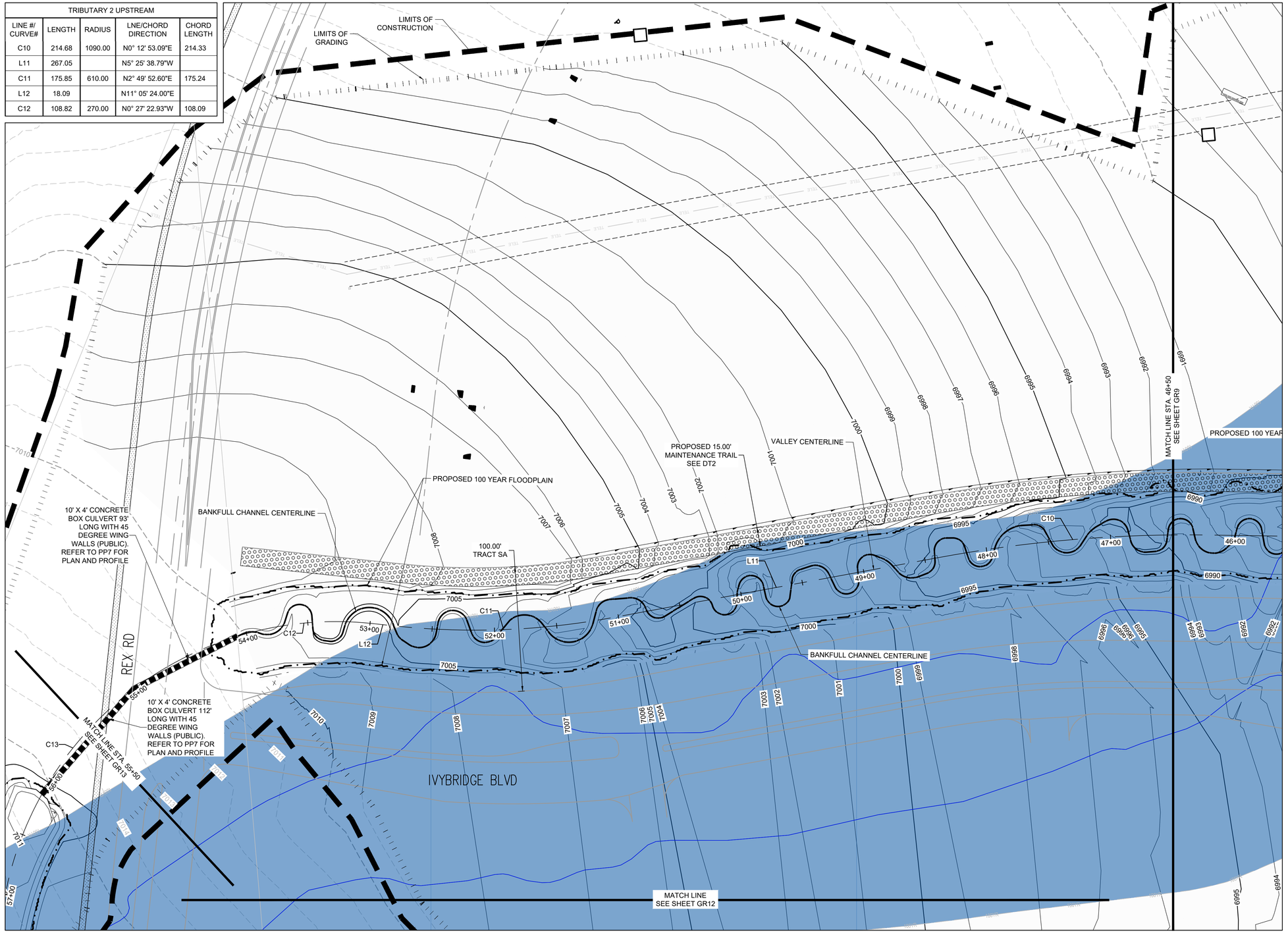
GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

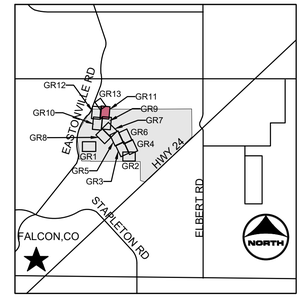
CONSTRUCTION DOCUMENTS
TRIBUTARY 2 VALLEY GRADING

SHEET GR10

14

TRIBUTARY 2 UPSTREAM				
LINE #/ CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
C10	214.68	1090.00	N0° 12' 53.09"E	214.33
L11	267.05		N5° 25' 38.79"W	
C11	175.85	610.00	N2° 49' 52.60"E	175.24
L12	18.09		N11° 05' 24.00"E	
C12	108.82	270.00	N0° 27' 22.93"W	108.09





KEYMAP

PROJECT LEGEND:

- PROPERTY LINE
- EXISTING EASEMENT
- EXISTING GAS LINE
- EXISTING TELEPHONE LINE
- EXISTING FENCE LINE
- EXISTING SECTION LINE
- EXISTING SWALE
- EXISTING OVERHEAD ELECTRIC
- EXISTING TELEPHONE POLE
- EXISTING MAJOR CONTOUR
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- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- FLOW ARROW
- PROPOSED 100-YR FLOODPLAIN
- LIMITS OF CONSTRUCTION
- LIMITS OF GRADING
- EFFECTIVE 100-YR FLOODPLAIN
- EXISTING WETLANDS - JURISDICTIONAL
- EXISTING WETLANDS - NONJURISDICTIONAL
- PROPOSED MAINTENANCE TRAIL

NOTES:

1. 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.
2. BENCHMARK
   DESIGNATION = F 24, E 24
   PID = JK0240
   DESCRIPTION = DISK ON TOP OF CONCRETE MONUMENT
   CONTROL POINT COORDINATE SYSTEM: NAVD88
   NORTHING: 1421049.80
   EASTING: 3273631.55
   ELEVATION: 6866.33

0 20 40

811 UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

COLORADO LICENSED GREGORY C. PAZ 37081 PROFESSIONAL ENGINEER

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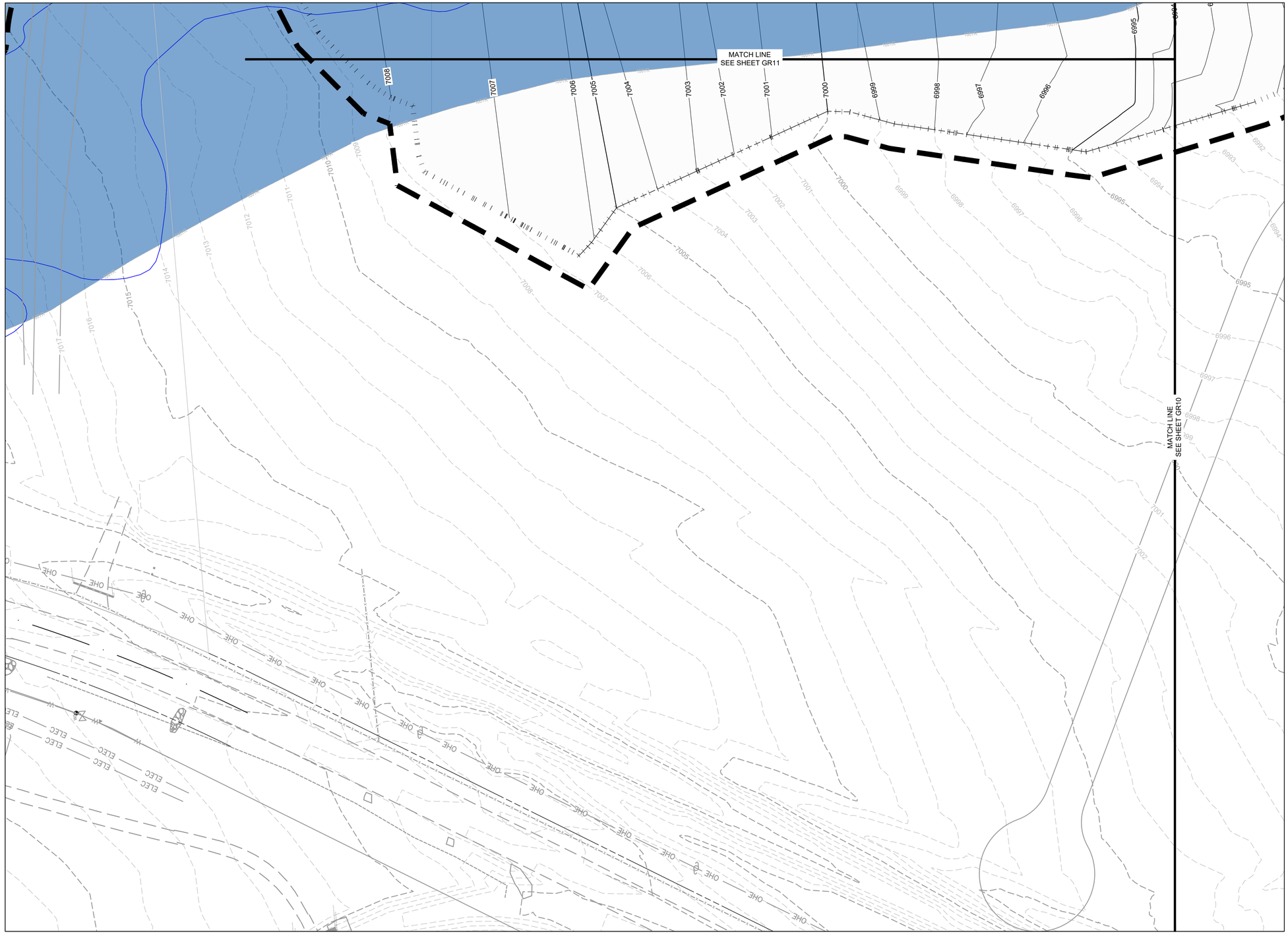
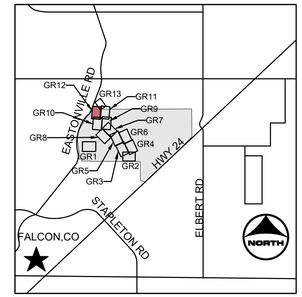
GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

CONSTRUCTION DOCUMENTS
TRIBUTARY 2 VALLEY GRADING

SHEET GR11

15





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811 UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

COLORADO LICENSED GREGORY L. PAYNE 37081 PROFESSIONAL ENGINEER 12-04-23

DRAWN BY:	ACH	JOB DATE:	6/6/2024
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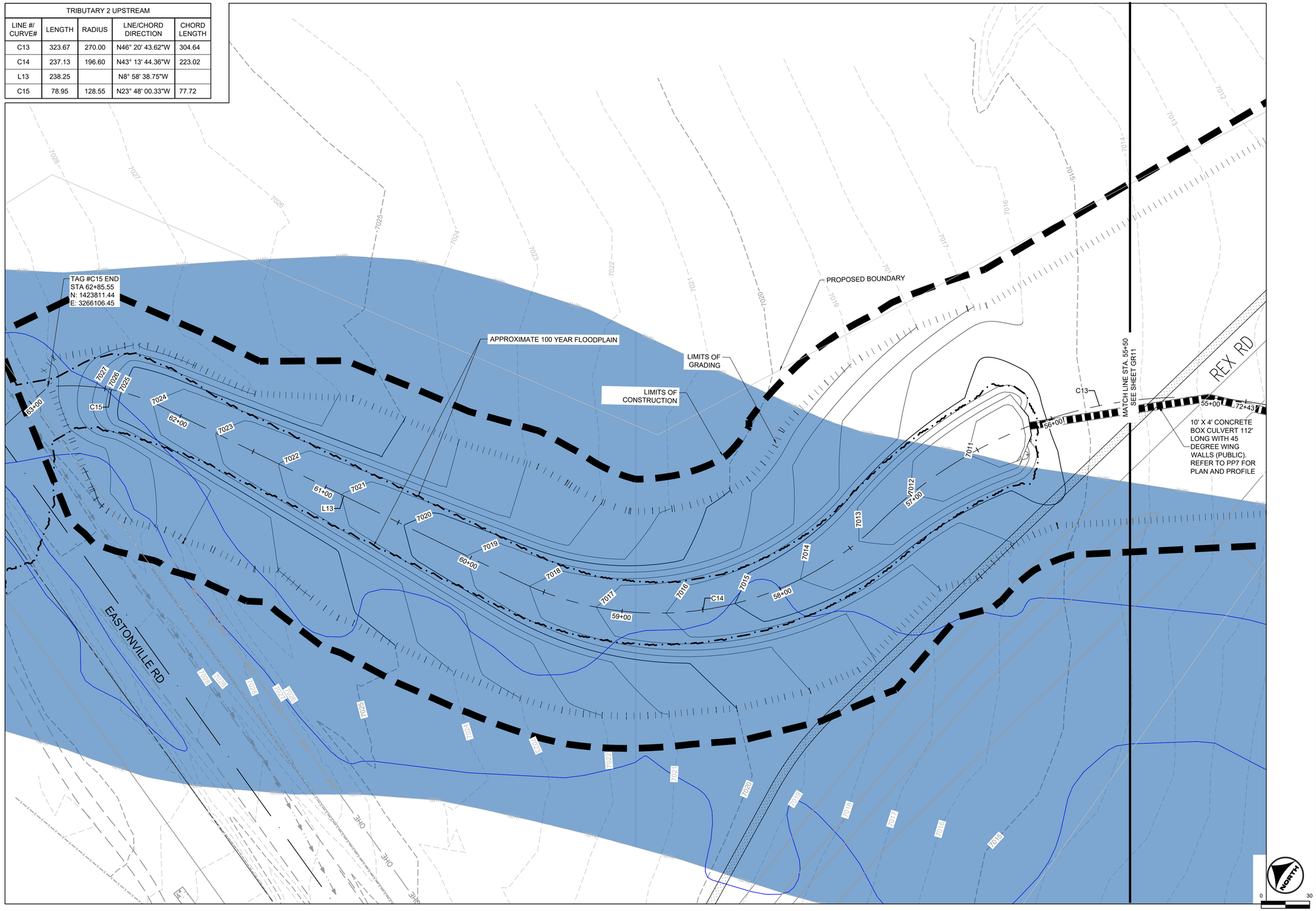
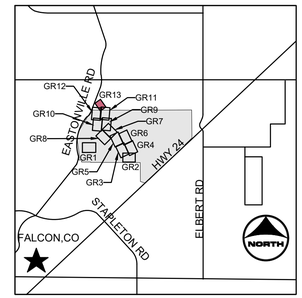
GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

CONSTRUCTION DOCUMENTS
TRIBUTARY 2 VALLEY GRADING

SHEET GR12

TRIBUTARY 2 UPSTREAM				
LINE #/ CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
C13	323.67	270.00	N46° 20' 43.62"W	304.64
C14	237.13	196.60	N43° 13' 44.36"W	223.02
L13	238.25		N8° 58' 38.75"W	
C15	78.95	128.55	N23° 48' 00.33"W	77.72





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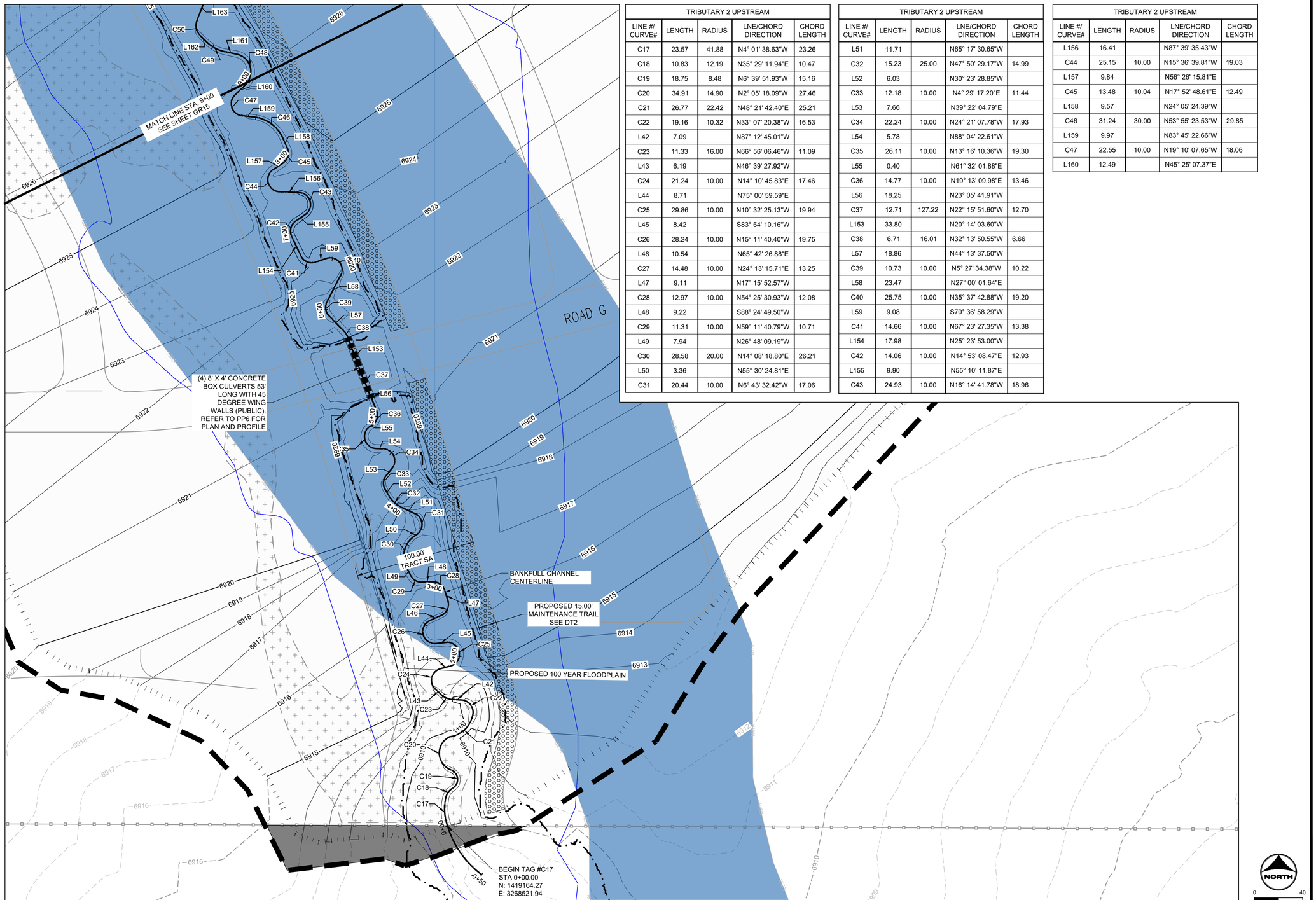
DR HORTON
FALCON, COLORADO

CONSTRUCTION DOCUMENTS
TRIBUTARY 2 VALLEY GRADING

SHEET GR13

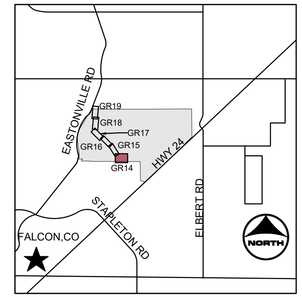
17



TRIBUTARY 2 UPSTREAM				
LINE #/ CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
C17	23.57	41.88	N4° 01' 38.63"W	23.26
C18	10.83	12.19	N35° 29' 11.94"E	10.47
C19	18.75	8.48	N6° 39' 51.93"W	15.16
C20	34.91	14.90	N2° 05' 18.09"W	27.46
C21	26.77	22.42	N48° 21' 42.40"E	25.21
C22	19.16	10.32	N33° 07' 20.38"W	16.53
L42	7.09		N87° 12' 45.01"W	
C23	11.33	16.00	N66° 56' 06.46"W	11.09
L43	6.19		N46° 39' 27.92"W	
C24	21.24	10.00	N14° 10' 45.83"E	17.46
L44	8.71		N75° 00' 59.59"E	
C25	29.86	10.00	N10° 32' 25.13"W	19.94
L45	8.42		S83° 54' 10.16"W	
C26	28.24	10.00	N15° 11' 40.40"W	19.75
L46	10.54		N65° 42' 26.88"E	
C27	14.48	10.00	N24° 13' 15.71"E	13.25
L47	9.11		N17° 15' 52.57"W	
C28	12.97	10.00	N54° 25' 30.93"W	12.08
L48	9.22		S88° 24' 49.50"W	
C29	11.31	10.00	N59° 11' 40.79"W	10.71
L49	7.94		N26° 48' 09.19"W	
C30	28.58	20.00	N14° 08' 18.80"E	26.21
L50	3.36		N55° 30' 24.81"E	
C31	20.44	10.00	N6° 43' 32.42"W	17.06

TRIBUTARY 2 UPSTREAM				
LINE #/ CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
L51	11.71		N65° 17' 30.65"W	
C32	15.23	25.00	N47° 50' 29.17"W	14.99
L52	6.03		N30° 23' 28.85"W	
C33	12.18	10.00	N4° 29' 17.20"E	11.44
L53	7.66		N39° 22' 04.79"E	
C34	22.24	10.00	N24° 21' 07.78"W	17.93
L54	5.78		N88° 04' 22.61"W	
C35	26.11	10.00	N13° 16' 10.36"W	19.30
L55	0.40		N61° 32' 01.88"E	
C36	14.77	10.00	N19° 13' 09.98"E	13.46
L56	18.25		N23° 05' 41.91"W	
C37	12.71	127.22	N22° 15' 51.60"W	12.70
L153	33.80		N20° 14' 03.60"W	
C38	6.71	16.01	N32° 13' 50.55"W	6.66
L57	18.86		N44° 13' 37.50"W	
C39	10.73	10.00	N5° 27' 34.38"W	10.22
L58	23.47		N27° 00' 01.64"E	
C40	25.75	10.00	N35° 37' 42.88"W	19.20
L59	9.08		S70° 36' 58.29"W	
C41	14.66	10.00	N67° 23' 27.35"W	13.38
L154	17.98		N25° 23' 53.00"W	
C42	14.06	10.00	N14° 53' 08.47"E	12.93
L155	9.90		N55° 10' 11.87"E	
C43	24.93	10.00	N16° 14' 41.78"W	18.96

TRIBUTARY 2 UPSTREAM				
LINE #/ CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
L156	16.41		N87° 39' 35.43"W	
C44	25.15	10.00	N15° 36' 39.81"W	19.03
L157	9.84		N56° 26' 15.81"E	
C45	13.48	10.04	N17° 52' 48.61"E	12.49
L158	9.57		N24° 05' 24.39"W	
C46	31.24	30.00	N53° 55' 23.53"W	29.85
L159	9.97		N83° 45' 22.66"W	
C47	22.55	10.00	N19° 10' 07.65"W	18.06
L160	12.49		N45° 25' 07.37"E	



KEYMAP

PROJECT LEGEND:

- PROPERTY LINE
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COLORADO LICENSED GREGORY L. PAYNE 37081 PROFESSIONAL ENGINEER 12-24-24

0 20 40

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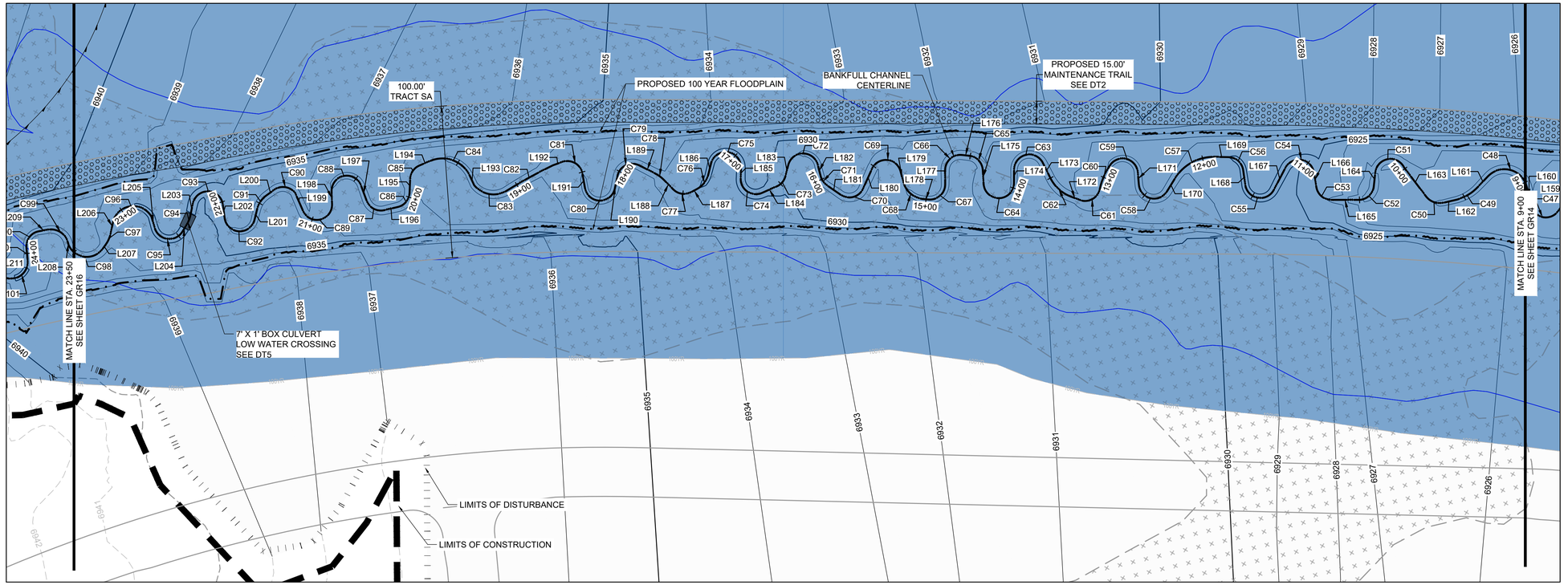
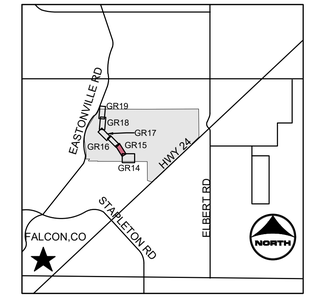
CONSTRUCTION DOCUMENTS
TRIBUTARY 2 BANKFULL GRADING

SHEET GR14 18





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COLORADO LICENSED GREGORY L. PAYNE 37081 12-04-23 PROFESSIONAL ENGINEER

NORTH 0 40 20

TRIBUTARY 2 UPSTREAM

LINE # / CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
C48	32.47	15.00	N16° 35' 11.15"W	26.49
L161	9.63		N78° 35' 29.66"W	
C49	17.93	30.03	N61° 28' 51.90"W	17.66
L162	7.72		N45° 08' 33.60"W	
C50	12.14	11.45	N12° 23' 23.33"W	11.58
L163	24.26		N20° 44' 23.85"E	
C51	25.94	10.00	N41° 41' 08.35"W	19.26
L164	9.08		S63° 59' 41.07"W	
C52	14.66	10.00	N74° 00' 44.58"W	13.38
L165	17.98		N32° 01' 10.22"W	
C53	14.06	10.00	N8° 15' 52.21"E	12.93
L166	9.90		N48° 32' 54.64"E	
C54	24.93	10.00	N22° 51' 59.01"W	18.96
L167	16.41		S85° 43' 07.34"W	
C55	25.60	10.01	N20° 58' 46.64"W	19.17
L168	9.40		N49° 48' 58.59"E	
C56	14.05	10.00	N9° 33' 07.62"E	12.93
L169	9.00		N30° 42' 41.61"W	
C57	31.24	30.00	N60° 32' 40.75"W	29.85
L170	9.97		S89° 37' 20.11"W	
C58	25.04	10.00	N18° 38' 23.93"W	18.99
L171	8.18		N53° 05' 52.02"E	
C59	23.80	10.00	N15° 05' 43.72"W	18.57
C60	17.26	44.05	S82° 23' 02.94"W	17.15
C61	18.72	9.97	N60° 15' 10.73"W	16.09
L172	5.34		N11° 11' 24.83"W	

TRIBUTARY 2 UPSTREAM

LINE # / CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
C62	18.75	25.00	N10° 17' 26.40"E	18.31
L173	10.94		N31° 46' 17.62"E	
C63	26.76	10.00	N44° 54' 09.73"W	19.46
L174	8.88		S58° 25' 21.22"W	
C64	30.75	10.00	N33° 28' 35.35"W	19.99
L175	9.16		N54° 37' 28.08"E	
C65	14.05	10.00	N14° 22' 58.06"E	12.92
L176	4.80		N25° 51' 31.97"W	
C66	16.81	10.00	N74° 00' 25.74"W	14.90
L177	9.34		S57° 50' 40.49"W	
C67	16.60	10.00	N74° 36' 36.39"W	14.76
L178	3.40		N27° 03' 52.26"W	
C68	18.39	15.00	N8° 03' 40.93"E	17.26
L179	7.45		N43° 11' 14.13"E	
C69	23.57	10.04	N24° 15' 26.45"W	18.52
L180	14.19		S82° 15' 21.06"W	
C70	18.45	10.00	N50° 24' 21.12"W	15.94
L181	11.04		N2° 27' 10.70"E	
C71	7.18	10.00	N23° 01' 12.87"E	7.03
L182	7.94		N43° 35' 16.53"E	
C72	26.39	10.00	N32° 00' 35.21"W	19.37
L183	7.71		S72° 23' 33.05"W	
C73	9.04	10.00	N81° 42' 25.16"W	8.74
L184	10.63		N55° 48' 23.38"W	
C74	20.13	10.00	N1° 52' 12.20"E	16.90
L185	7.18		N59° 32' 47.79"E	

TRIBUTARY 2 UPSTREAM

LINE # / CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
C75	29.03	10.00	N23° 37' 09.19"W	19.86
L186	7.51		S71° 48' 37.53"W	
C76	12.50	15.00	N84° 19' 12.15"W	12.14
L187	4.30		N60° 27' 01.83"W	
C77	12.86	10.00	N23° 36' 54.53"W	11.99
L188	9.31		N13° 13' 13.90"E	
C78	6.34	20.00	N4° 08' 23.72"E	6.31
L189	12.01		N4° 56' 26.46"W	
C79	18.36	10.00	N57° 32' 54.89"W	15.89
L190	8.57		S69° 50' 36.68"W	
C80	27.63	10.00	N31° 00' 59.76"W	19.64
L191	9.63		N48° 07' 22.48"E	
C81	17.41	10.00	N1° 44' 26.26"W	15.29
L192	6.55		N51° 36' 15.00"W	
C82	35.39	334.72	N60° 50' 53.22"W	35.38
C83	22.99	16.47	N21° 19' 42.83"W	21.17
L193	6.69		N33° 06' 55.32"E	
C84	30.67	20.00	N10° 49' 14.69"W	27.75
L194	7.94		N54° 45' 24.70"W	
C85	11.31	10.00	N87° 08' 55.36"W	10.71
L195	9.22		S60° 27' 33.99"W	
C86	12.97	10.00	N82° 22' 47.74"W	12.08
L196	9.11		N45° 13' 08.08"W	
C87	14.48	10.00	N3° 43' 57.81"W	13.25
L197	10.54		N37° 45' 11.38"E	
C88	28.24	10.00	N43° 08' 56.99"W	19.75

TRIBUTARY 2 UPSTREAM

LINE # / CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
L198	8.42		S55° 56' 54.65"W	
C89	28.61	10.00	N42° 05' 55.64"W	19.80
L199	11.78		N34° 20' 04.33"E	
C90	15.51	10.00	N23° 13' 49.14"W	14.00
L200	6.19		N67° 40' 08.01"W	
C91	11.33	16.00	N87° 56' 47.26"W	11.09
L201	7.09		S71° 46' 34.90"W	
C92	27.69	10.00	N28° 53' 42.24"W	19.65
L202	9.02		N50° 26' 00.63"E	
C93	28.01	10.00	N29° 47' 55.09"W	19.71
L203	8.04		S69° 58' 09.20"W	
C94	6.98	20.00	S79° 57' 45.60"W	6.94
L204	5.17		S89° 57' 22.00"W	
C95	23.02	10.00	N24° 05' 19.37"W	18.26
L205	7.78		N41° 51' 59.26"E	
C96	31.93	13.77	N38° 11' 39.40"W	25.24
L206	7.23		S70° 00' 05.78"W	
C97	9.28	20.00	S80° 05' 30.29"W	9.20
L207	3.27		N86° 36' 32.66"W	
C98	27.37	13.00	N26° 17' 21.36"W	22.59

DRAWN BY: ACH | JOB DATE: 6/6/2024
APPROVED: GLP | JOB NUMBER: 201662.03
CAD DATE: 7/11/2024
CAD FILE: J:\2020\201662.03\CAD\Dwgs\C\GRADING

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

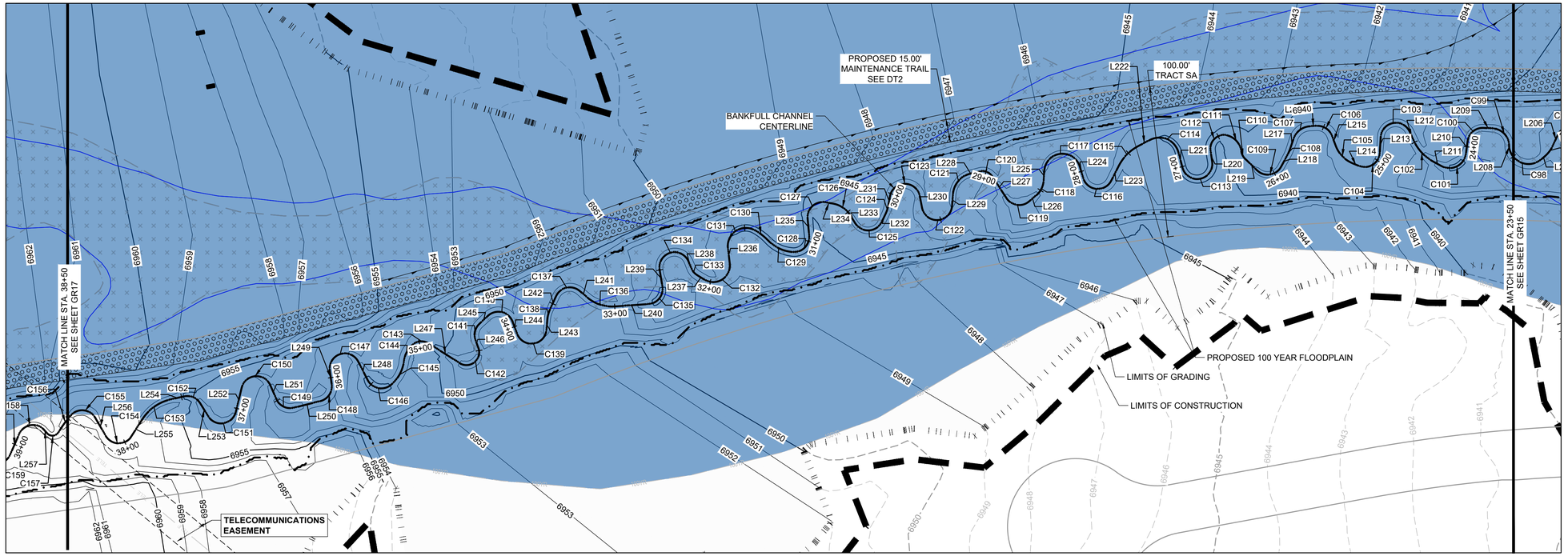
NO.	DATE	BY	REVISION DESCRIPTION

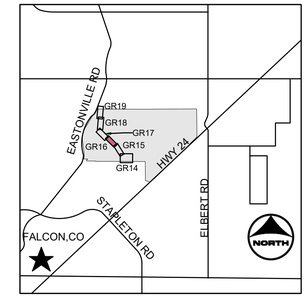
HRGreen
HR GREEN - DENVER
5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

CONSTRUCTION DOCUMENTS
TRIBUTARY 2 BANKFULL GRADING

SHEET GR15





KEYMAP

PROJECT LEGEND:

- PROPERTY LINE
- EXISTING EASEMENT
- EXISTING GAS LINE
- EXISTING TELEPHONE LINE
- EXISTING FENCE LINE
- EXISTING SECTION LINE
- EXISTING SWALE
- EXISTING OVERHEAD ELECTRIC
- EXISTING TELEPHONE POLE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
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- FLOW ARROW
- PROPOSED 100-YR FLOODPLAIN
- LIMITS OF CONSTRUCTION
- LIMITS OF GRADING
- EFFECTIVE 100-YR FLOODPLAIN
- EXISTING WETLANDS - JURISDICTIONAL
- EXISTING WETLANDS - NONJURISDICTIONAL
- PROPOSED MAINTENANCE TRAIL

NOTES:

1. 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.
2. BENCHMARK:
   DESIGNATION = F 24, E 24
   PID = JK0240
   DESCRIPTION = DISK ON TOP OF CONCRETE MONUMENT
   CONTROL POINT COORDINATE SYSTEM: NAVD88
   NORTHING: 1421049.80
   EASTING: 3273631.55
   ELEVATION: 6866.33

811 UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

COLORADO LICENSED GREGORY L. PAZ 37081 PROFESSIONAL ENGINEER

0 40 20

TRIBUTARY 2 UPSTREAM

LINE #/ CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
L208	1.73		N41° 53' 24.03"E	
C99	17.18	11.42	N1° 13' 02.63"E	15.61
L209	6.08		N41° 50' 45.40"W	
C100	14.93	10.00	N84° 36' 57.43"W	13.58
L210	8.40		S52° 36' 50.54"W	
C101	21.26	11.00	N72° 00' 20.89"W	18.10
L211	6.02		N16° 37' 32.32"W	
C102	19.50	30.00	N1° 59' 34.48"E	19.16
L212	6.39		N20° 36' 40.80"E	
C103	26.57	10.00	N55° 30' 50.85"W	19.42
L213	10.38		S48° 21' 37.51"W	
C104	19.05	10.00	N77° 03' 24.45"W	16.30
L214	4.49		N22° 28' 26.42"W	
C105	16.30	20.00	N0° 52' 04.01"E	15.85
L215	7.35		N24° 12' 34.43"E	
C106	12.68	10.00	N12° 07' 40.58"W	11.85
L216	4.63		N48° 27' 55.60"W	
C107	14.10	12.00	N82° 08' 01.06"W	13.31
L217	7.48		S64° 11' 53.48"W	
C108	5.01	30.06	S68° 58' 34.98"W	5.00
L218	8.03		S73° 31' 44.52"W	
C109	18.41	10.00	N53° 43' 58.80"W	15.92
L219	10.16		N0° 59' 42.13"W	
C110	6.71	8.87	N15° 30' 59.41"E	6.55
C111	15.56	12.49	N1° 33' 53.25"E	14.58
C112	17.28	9.02	S88° 33' 46.47"W	14.76
L220	6.95		S36° 36' 49.17"W	
C113	30.29	10.00	N56° 37' 28.74"W	19.97
L221	10.63		N30° 08' 14.43"E	

TRIBUTARY 2 UPSTREAM

LINE #/ CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
C114	23.32	13.00	N21° 15' 09.13"W	20.32
L222	8.89		N72° 38' 32.69"W	
C115	18.57	30.00	S89° 37' 21.45"W	18.28
L223	10.97		S71° 53' 15.59"W	
C116	23.85	10.00	N39° 46' 52.01"W	18.59
L224	7.78		N28° 32' 58.51"E	
C117	33.50	12.00	N51° 25' 50.20"W	23.63
L225	6.48		S48° 35' 21.08"W	
C118	11.32	14.00	S71° 45' 22.12"W	11.02
L226	6.19		N85° 04' 36.85"W	
C119	16.12	10.01	N38° 54' 34.31"W	14.43
L227	18.94		N11° 39' 57.18"E	
C120	8.87	7.66	N28° 37' 10.59"W	8.39
L228	5.88		N57° 56' 20.06"W	
C121	19.07	15.00	S85° 38' 25.55"W	17.81
L229	7.91		S49° 13' 09.23"W	
C122	28.76	10.00	N48° 23' 34.94"W	19.82
L230	7.92		N33° 59' 40.88"E	
C123	27.69	10.00	N45° 19' 19.11"W	19.65
L231	6.44		S55° 21' 40.89"W	
C124	5.15	20.00	S62° 44' 22.73"W	5.14
L232	6.17		S70° 07' 03.81"W	
C125	21.42	10.00	N48° 30' 32.07"W	17.56
L233	6.32		N12° 51' 50.87"E	
C126	14.36	17.00	N11° 20' 32.97"W	13.94
L234	4.96		N35° 32' 56.81"W	
C127	18.28	10.00	N87° 55' 40.41"W	15.84
L235	11.09		S39° 41' 37.22"W	
C128	18.49	10.13	N87° 52' 25.26"W	16.03

TRIBUTARY 2 UPSTREAM

LINE #/ CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
C129	17.56	25.25	N18° 38' 53.36"W	17.21
C130	12.52	34.40	N9° 02' 14.74"W	12.45
C131	24.08	11.98	N80° 39' 48.26"W	20.23
L236	10.86		S38° 07' 07.02"W	
C132	24.70	11.00	N77° 33' 02.36"W	19.83
L237	5.56		N13° 13' 11.74"W	
C133	6.28	10.00	N4° 46' 29.57"E	6.18
L238	4.58		N22° 46' 10.88"E	
C134	29.21	10.00	N60° 55' 11.65"W	19.88
L239	11.08		S35° 23' 25.82"W	
C135	16.69	10.00	S83° 12' 10.72"W	14.82
L240	22.46		N48° 59' 05.72"W	
C136	19.46	25.00	N26° 41' 15.43"W	18.97
L241	6.51		N4° 23' 25.15"W	
C137	18.49	10.00	N57° 22' 01.09"W	15.97
L242	9.62		S69° 39' 22.97"W	
C138	6.95	20.00	S59° 42' 29.37"W	6.91
L243	6.80		S49° 45' 35.79"W	
C139	26.96	10.00	N52° 59' 53.73"W	19.51
L244	8.77		N24° 14' 35.42"E	
C140	19.62	10.00	N31° 58' 39.54"W	16.62
L245	7.77		N88° 11' 54.49"W	
C141	11.68	10.00	S58° 20' 24.97"W	11.03
L246	4.56		S24° 52' 44.43"W	
C142	20.88	8.44	S89° 22' 23.65"W	15.95
L247	24.22		N12° 38' 45.62"W	
C143	11.75	8.95	N44° 25' 39.16"W	10.92
C144	14.21	17.19	S72° 27' 21.39"W	13.81
C145	17.07	24.50	S74° 40' 14.78"W	16.72

TRIBUTARY 2 UPSTREAM

LINE #/ CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
C146	18.13	10.00	N34° 01' 03.83"W	15.75
L248	13.71		N17° 55' 53.54"E	
C147	28.09	10.00	N62° 32' 31.87"W	19.72
L249	9.08		S36° 59' 02.72"W	
C148	14.66	10.00	S78° 58' 38.11"W	13.38
L250	17.98		N59° 01' 48.57"W	
C149	14.28	10.00	N18° 08' 03.26"W	13.10
L251	9.68		N21° 32' 16.30"E	
C150	24.93	10.00	N49° 52' 37.35"W	18.96
L252	16.41		S58° 42' 29.00"W	
C151	23.51	10.00	N53° 56' 30.21"W	18.46
L253	10.05		N13° 24' 30.57"E	
C152	12.41	10.00	N22° 09' 24.69"W	11.63
L254	9.00		N57° 43' 19.96"W	
C153	24.24	30.00	N80° 52' 06.53"W	23.58
L255	13.93		S77° 44' 49.86"W	
C154	19.03	10.00	N39° 33' 47.95"W	16.29
L256	13.71		N14° 57' 35.33"E	
C155	16.88	10.00	N33° 23' 36.03"W	14.95

DRAWN BY: ACH | JOB DATE: 6/6/2024
APPROVED: GLP | JOB NUMBER: 201662.03
CAD DATE: 7/11/2024
CAD FILE: J:\2020\201662.03\CAD\Dwgs\C\GRADING

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

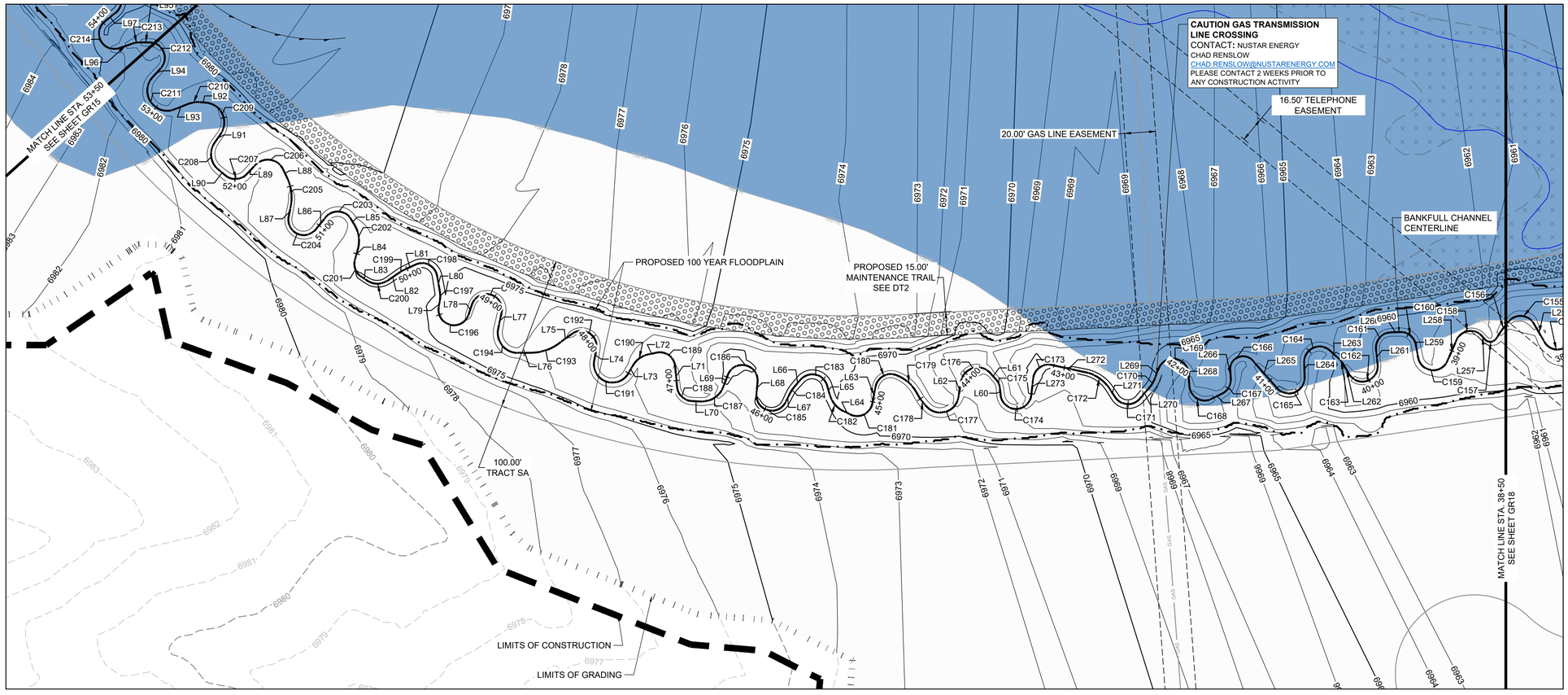
NO.	DATE	BY	REVISION DESCRIPTION

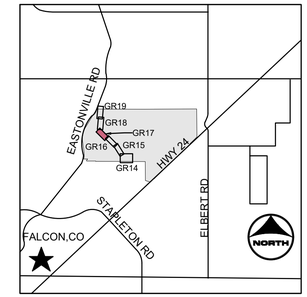
HRGreen
HR GREEN - DENVER
5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

CONSTRUCTION DOCUMENTS
TRIBUTARY 2 BANKFULL GRADING

SHEET GR16 | 20





KEYMAP

PROJECT LEGEND:

- PROPERTY LINE
- EXISTING EASEMENT
- EXISTING GAS LINE
- EXISTING TELEPHONE LINE
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- EXISTING SECTION LINE
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- EXISTING OVERHEAD ELECTRIC
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NOTES:

1. 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.
2. BENCHMARK:
   DESIGNATION = F 24, E 24
   PID = JK0240
   DESCRIPTION = DISK ON TOP OF CONCRETE MONUMENT
   CONTROL POINT COORDINATE SYSTEM: NAVD88
   NORTHING: 1421049.80
   EASTING: 3273631.55
   ELEVATION: 6866.33

811 UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

COLORADO LICENSED GREGORY L. PAYNE 37081 PROFESSIONAL ENGINEER 12-04-24

0 20 40

TRIBUTARY 2 UPSTREAM

LINE # / CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
C156	15.76	60.71	S82° 15' 15.94"W	15.72
C157	9.19	4.73	N48° 26' 22.95"W	7.81
L257	3.58		N3° 04' 06.31"E	
C158	19.37	10.00	N58° 30' 53.78"W	16.48
L258	14.86		S68° 36' 16.40"W	
C159	24.92	10.00	N36° 46' 43.51"W	18.95
L259	8.54		N34° 36' 24.38"E	
C160	14.25	10.00	N6° 12' 38.24"W	13.07
L260	6.03		N47° 01' 39.20"W	
C161	16.43	10.00	S85° 53' 35.89"W	14.65
L261	9.89		S38° 48' 50.97"W	
C162	27.21	10.00	N63° 13' 46.48"W	19.56
L262	6.59		N14° 43' 35.02"E	
C163	6.02	20.00	N6° 06' 03.29"E	6.00
L263	7.20		N2° 31' 29.50"W	
C164	23.46	10.00	N69° 43' 47.95"W	18.44
L264	9.75		S43° 03' 53.60"W	
C165	25.51	10.26	N64° 27' 12.24"W	19.43
L265	24.22		N3° 28' 47.39"E	
C166	20.88	8.44	N74° 30' 03.34"W	15.95
L266	4.56		S41° 00' 17.45"W	
C167	11.68	10.00	S74° 27' 57.98"W	11.03

TRIBUTARY 2 UPSTREAM

LINE # / CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
L267	7.77		N72° 04' 21.48"W	
C168	19.62	10.00	N15° 51' 06.52"W	16.62
L268	8.77		N40° 22' 08.43"E	
C169	26.96	10.00	N36° 52' 20.72"W	19.51
L269	6.80		S65° 53' 08.80"W	
C170	6.95	20.00	S75° 50' 02.38"W	6.91
L270	9.62		S85° 46' 55.98"W	
C171	18.49	10.00	N41° 14' 28.08"W	15.97
L271	6.51		N11° 44' 07.86"E	
C172	19.46	25.00	N10° 33' 42.42"W	18.97
L272	22.46		N32° 51' 32.70"W	
C173	16.69	10.00	N80° 40' 16.27"W	14.82
L273	11.08		S51° 30' 58.83"W	
C174	29.21	10.00	N44° 47' 38.64"W	19.88
L60	4.58		N38° 53' 43.89"E	
C175	6.28	10.00	N20° 54' 02.58"E	6.18
L61	5.56		N2° 54' 21.27"E	
C176	24.70	11.00	N61° 25' 29.35"W	19.83
L62	10.86		S54° 14' 40.03"W	
C177	24.08	11.98	N64° 32' 15.25"W	20.23
C178	12.52	34.40	N7° 05' 18.27"E	12.45
C179	17.56	25.25	N2° 31' 20.35"W	17.21

TRIBUTARY 2 UPSTREAM

LINE # / CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
C180	18.49	10.13	N71° 44' 52.25"W	16.03
L63	11.09		S55° 49' 10.23"W	
C181	18.28	10.00	N71° 48' 07.40"W	15.84
L64	4.96		N19° 25' 23.80"W	
C182	14.36	17.00	N4° 47' 00.04"E	13.94
L65	6.32		N28° 59' 23.88"E	
C183	21.42	10.00	N32° 22' 59.06"W	17.56
L66	6.17		S86° 14' 36.82"W	
C184	5.15	20.00	S78° 51' 55.74"W	5.14
L67	6.44		S71° 29' 13.91"W	
C185	27.69	10.00	N29° 11' 46.10"W	19.65
L68	7.92		N50° 07' 13.89"E	
C186	28.76	10.00	N32° 16' 01.93"W	19.82
L69	7.91		S65° 20' 42.25"W	
C187	19.07	15.00	N78° 14' 01.44"W	17.81
L70	5.88		N41° 48' 47.05"W	
C188	14.23	10.00	N1° 03' 38.55"W	13.06
L71	13.81		N39° 41' 29.96"E	
C189	16.83	10.01	N10° 00' 57.74"W	14.91
L72	6.19		N58° 12' 37.69"W	
C190	11.32	14.00	N81° 22' 38.72"W	11.02
L73	6.48		S75° 27' 20.25"W	

TRIBUTARY 2 UPSTREAM

LINE # / CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
C191	33.50	12.00	N24° 33' 51.04"W	23.63
L74	7.78		N55° 24' 57.68"E	
C192	23.85	10.00	N12° 54' 52.85"W	18.59
L75	10.97		N81° 14' 45.25"W	
C193	18.57	30.00	N63° 30' 39.38"W	18.28
L76	8.89		N45° 46' 33.52"W	
C194	23.32	13.00	N5° 36' 50.04"E	20.32
L77	10.63		N57° 00' 13.60"E	
C195	30.29	10.00	N29° 45' 29.57"W	19.97
L78	6.95		S63° 28' 48.34"W	
C196	29.92	10.00	N30° 47' 54.08"W	19.94
L79	4.15		N54° 55' 22.26"E	
C197	6.25	18.00	N44° 58' 12.97"E	6.22
L80	10.16		N35° 01' 04.53"E	
C198	18.41	10.00	N17° 43' 12.15"W	15.92
L81	8.03		N70° 27' 28.82"W	
C199	5.01	30.06	N75° 00' 38.36"W	5.00
L82	7.48		N79° 47' 19.86"W	
C200	14.10	12.00	N46° 07' 14.40"W	13.31
L83	4.63		N12° 27' 08.94"W	
C201	12.68	10.00	N23° 53' 06.07"E	11.85
L84	7.35		N60° 13' 21.09"E	

TRIBUTARY 2 UPSTREAM

LINE # / CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
C202	16.30	20.00	N36° 52' 50.66"E	15.85
L85	4.49		N13° 32' 20.24"E	
C203	19.05	10.00	N41° 02' 37.80"W	16.30
L86	10.38		S84° 22' 24.17"W	
C204	26.57	10.00	N19° 30' 04.19"W	19.42
L87	6.39		N56° 37' 27.46"E	
C205	19.50	30.00	N38° 00' 21.14"E	19.16
L88	6.02		N19° 23' 14.34"E	
C206	21.26	11.00	N35° 59' 34.23"W	18.10
L89	8.40		S88° 37' 37.20"W	
C207	14.93	10.00	N48° 36' 10.78"W	13.58
L90	6.08		N5° 49' 58.75"W	
C208	19.45	13.00	N37° 02' 16.06"E	17.69
L91	6.84		N79° 54' 30.86"E	
C209	27.37	13.00	N19° 35' 19.50"E	22.59
L92	3.27		N40° 43' 51.79"W	
C210	9.28	20.00	N54° 01' 48.85"W	9.20
L93	8.27		N67° 19' 45.91"W	
C211	35.19	13.00	N10° 12' 28.14"E	25.39
L94	7.78		N87° 44' 40.12"E	
C212	23.02	10.00	N21° 47' 21.49"E	18.26

DRAWN BY:	ACH	JOB DATE:	6/6/2024
APPROVED:	GLP	JOB NUMBER:	201662.03
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CAD FILE:	J:\2020\201662.03\CAD\Dwgs\C\GRADING		

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

NO.	DATE	BY	REVISION DESCRIPTION

HRGreen

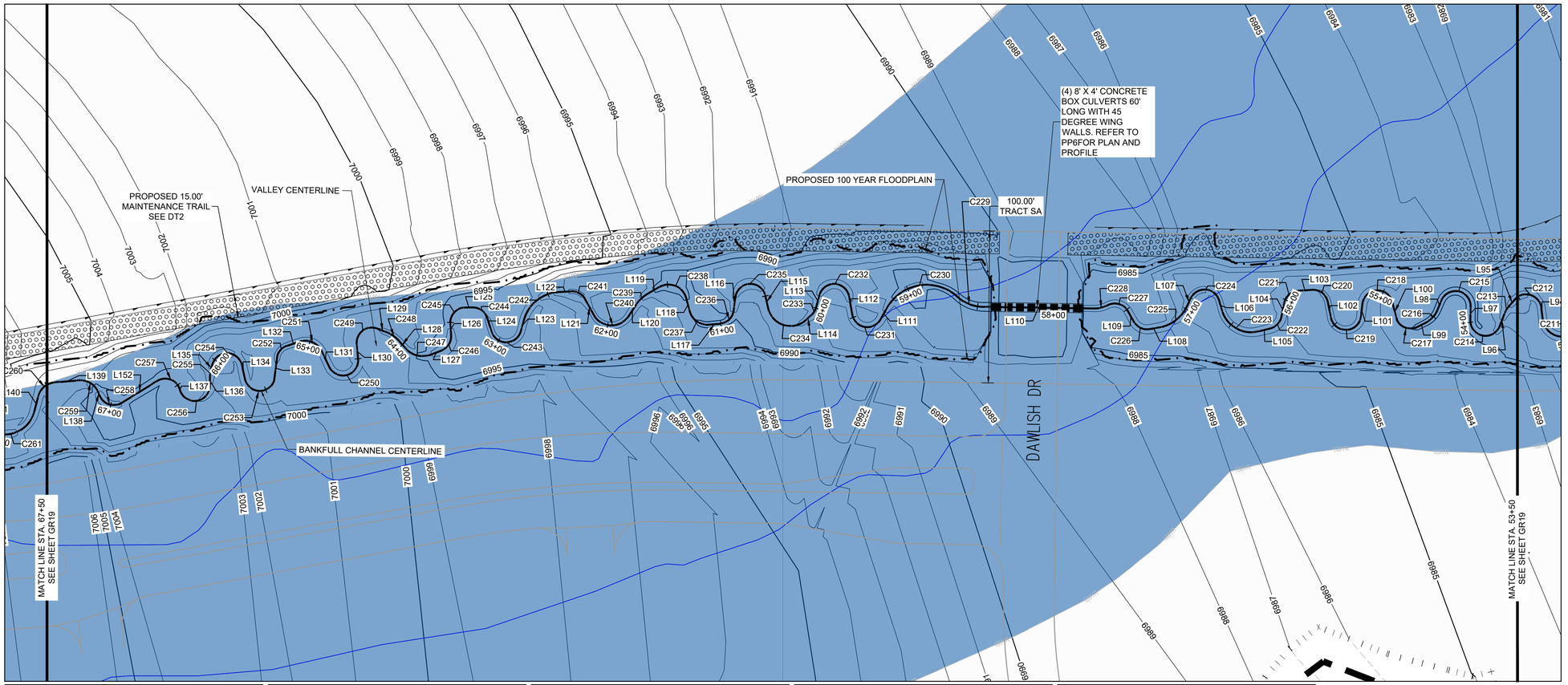
HR GREEN - DENVER
5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

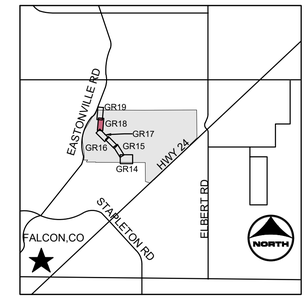
GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

CONSTRUCTION DOCUMENTS
TRIBUTARY 2 BANKFULL GRADING

SHEET GR17

21





KEYMAP

PROJECT LEGEND:

- PROPERTY LINE
- EXISTING EASEMENT
- EXISTING GAS LINE
- EXISTING TELEPHONE LINE
- EXISTING FENCE LINE
- EXISTING SECTION LINE
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- EXISTING OVERHEAD ELECTRIC
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- EXISTING MAJOR CONTOUR
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- FLOW ARROW
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- EXISTING WETLANDS - JURISDICTIONAL
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NOTES:

1. 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.
2. BENCHMARK:
   DESIGNATION = F 24, E 24
   PID = JK0240
   DESCRIPTION = DISK ON TOP OF CONCRETE MONUMENT
   CONTROL POINT COORDINATE SYSTEM: NAVD88
   NORTHING: 1421049.80
   EASTING: 3273631.55
   ELEVATION: 6866.33

811 UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

COLORADO LICENSED GREGORY L. PAGE 37081 PROFESSIONAL ENGINEER 12-20-23

0 20 40

TRIBUTARY 2 UPSTREAM

LINE # / CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
L95	5.17		N44° 09' 57.14"W	
C213	6.98	20.00	N54° 09' 33.54"W	6.94
L96	8.04		N64° 09' 09.93"W	
C214	28.01	10.00	N16° 04' 45.78"E	19.71
L97	9.02		S83° 41' 18.51"E	
C215	27.69	10.00	N16° 58' 58.63"E	19.65
L98	7.09		N62° 20' 44.23"W	
C216	11.33	16.00	N42° 04' 06.40"W	11.09
L99	6.19		N21° 47' 27.14"W	
C217	15.51	10.00	N22° 38' 51.73"E	14.00
L100	11.78		N80° 12' 45.19"E	
C218	28.61	10.00	N3° 46' 45.22"E	19.80
L101	8.42		N78° 10' 24.49"W	
C219	28.24	10.00	N2° 43' 43.88"E	19.75
L102	10.54		N83° 37' 52.24"E	
C220	14.48	10.00	N42° 08' 43.05"E	13.25
L103	9.11		N0° 39' 32.79"E	
C221	12.97	10.00	N36° 30' 06.87"W	12.08
L104	9.22		N73° 39' 45.15"W	
C222	11.31	10.00	N41° 16' 14.49"W	10.71
L105	7.94		N8° 52' 43.84"W	
C223	30.67	20.00	N35° 03' 26.18"E	27.75

TRIBUTARY 2 UPSTREAM

LINE # / CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
L106	6.69		N78° 59' 36.19"E	
C224	24.18	10.00	N9° 42' 54.27"E	18.71
L107	5.63		N59° 33' 47.65"W	
C225	24.74	25.02	N32° 09' 09.97"W	23.74
L108	6.03		N3° 48' 42.59"W	
C226	12.18	10.00	N31° 04' 04.22"E	11.44
L109	7.66		N65° 56' 51.04"E	
C227	15.54	10.00	N21° 25' 50.86"E	14.02
C228	9.09	18.00	N8° 36' 52.18"W	9.00
L110	73.49		N5° 51' 24.97"E	
C229	18.19	25.00	N26° 42' 11.88"E	17.79
C230	54.03	30.00	N4° 02' 38.02"W	47.02
L111	8.57		N55° 38' 14.84"W	
C231	24.53	10.00	N14° 38' 23.93"E	18.83
L112	12.12		N84° 55' 01.43"E	
C232	26.99	10.00	N7° 35' 33.85"E	19.51
L113	8.04		N69° 43' 52.36"W	
C233	6.99	12.00	N53° 02' 49.83"W	6.89
L114	4.55		N36° 21' 48.50"W	
C234	31.01	15.00	N22° 51' 23.94"E	25.77
L115	8.57		N82° 04' 36.38"E	
C235	27.86	10.00	N2° 16' 03.64"E	19.68

TRIBUTARY 2 UPSTREAM

LINE # / CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
L116	8.98		N77° 32' 29.10"W	
C236	13.59	10.00	N38° 36' 17.81"W	12.57
L117	7.25		N0° 19' 53.48"E	
C237	16.68	12.00	N40° 09' 12.75"E	15.37
L118	8.96		N79° 58' 33.23"E	
C238	21.88	12.00	N27° 44' 22.92"E	18.97
L119	8.16		N24° 29' 46.28"W	
C239	11.91	25.00	N38° 08' 52.11"W	11.80
L120	7.82		N51° 47' 57.21"W	
C240	26.65	13.48	N1° 49' 28.09"E	22.51
L121	15.08		N66° 02' 17.32"E	
C241	9.50	10.00	N29° 12' 46.81"E	9.14
L122	8.34		N2° 00' 28.98"E	
C242	31.18	25.00	N33° 43' 31.88"W	29.20
L123	7.80		N69° 27' 32.74"W	
C243	25.58	10.00	N3° 49' 59.88"E	19.16
L124	9.62		N77° 07' 32.51"E	
C244	12.73	10.00	N40° 39' 52.64"E	11.89
L125	4.77		N4° 12' 10.94"E	
C245	16.25	10.00	N42° 20' 24.85"W	14.52
L126	7.68		N88° 53' 00.63"W	
C246	12.69	10.00	N52° 31' 59.36"W	11.85

TRIBUTARY 2 UPSTREAM

LINE # / CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
L127	7.41		N16° 10' 58.09"W	
C247	18.38	15.00	N18° 55' 33.27"E	17.25
L128	6.36		N54° 02' 04.63"E	
C248	9.39	20.00	N40° 35' 03.09"E	9.30
L129	7.15		N27° 08' 01.54"E	
C249	20.51	10.00	N31° 37' 14.85"W	17.10
L130	9.76		S89° 37' 28.76"W	
C250	27.90	10.00	N10° 27' 09.67"W	19.69
L131	11.50		N69° 28' 12.96"E	
C251	17.33	12.00	N28° 06' 25.18"E	15.86
L132	8.67		N13° 15' 22.59"W	
C252	9.13	10.00	N39° 24' 31.73"W	8.82
L133	17.18		N77° 27' 43.71"W	
C253	25.62	10.00	N9° 01' 06.61"E	19.17
L134	9.39		N82° 24' 48.02"E	
C254	26.62	10.00	N6° 09' 26.70"E	19.43
L135	4.72		N70° 05' 54.62"W	
C255	2.40	10.00	N76° 59' 14.73"W	2.40
L136	7.28		N83° 52' 34.84"W	
C256	28.51	10.00	N2° 12' 50.31"W	19.79
L137	0.10		N79° 26' 54.22"E	
C257	18.54	10.00	N26° 20' 13.82"E	16.00

TRIBUTARY 2 UPSTREAM

LINE # / CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
L152	27.44		N26° 46' 26.58"W	
C258	16.95	10.00	N21° 46' 36.50"E	14.99
L138	3.84		N70° 19' 39.57"E	
C259	14.65	12.00	N35° 21' 09.72"E	13.76
L139	16.46		N0° 22' 41.14"E	

DRAWN BY:	ACH	JOB DATE:	6/6/2024
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NO.	DATE	BY	REVISION DESCRIPTION

HR GREEN - DENVER
5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

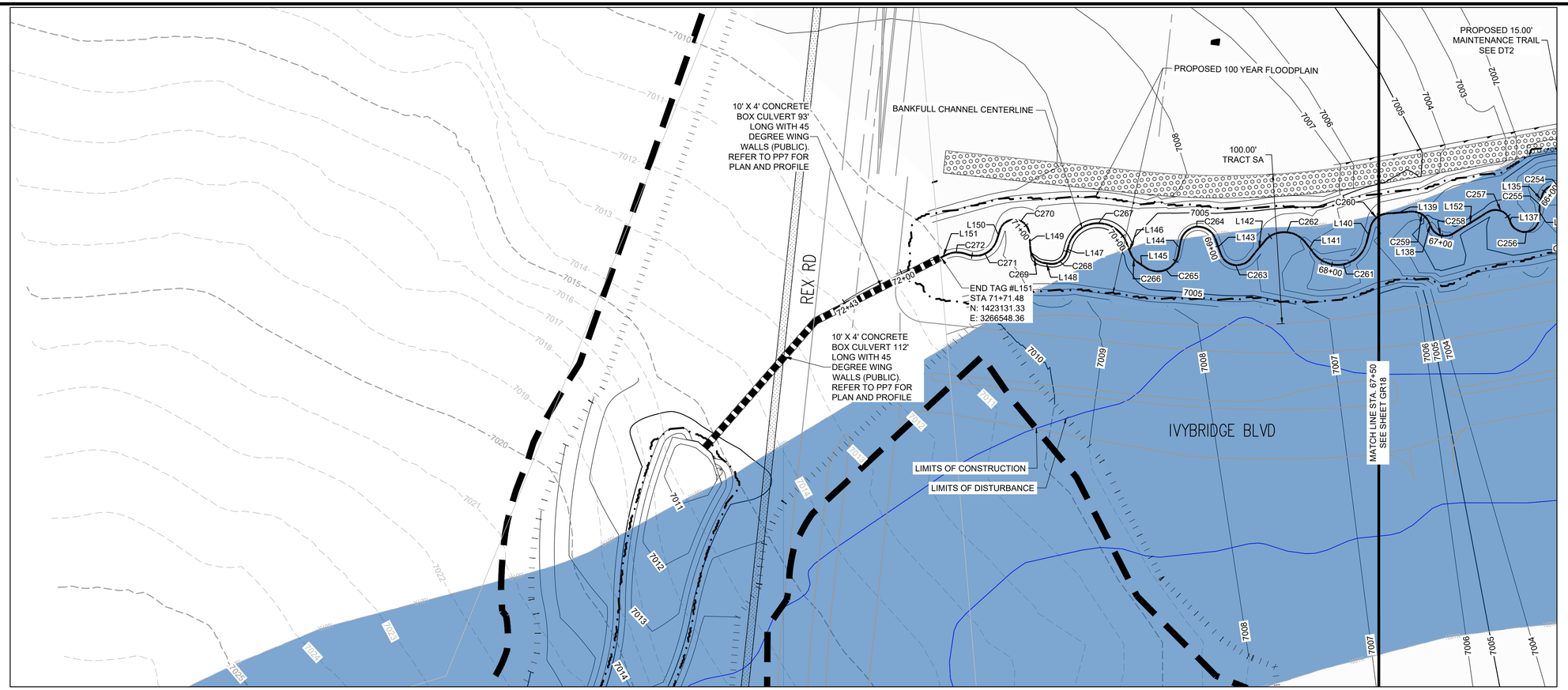
GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

CONSTRUCTION DOCUMENTS

TRIBUTARY 2 BANKFULL GRADING

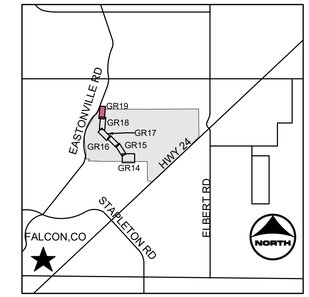
SHEET GR18

22



TRIBUTARY 2 UPSTREAM				
LINE # / CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
C260	14.80	12.00	N34° 56' 39.85"W	13.88
L140	10.77		N70° 15' 59.85"W	
C261	44.55	20.00	N6° 27' 33.85"W	35.89
L141	8.98		N57° 20' 52.15"E	
C262	29.24	18.00	N10° 48' 15.97"E	26.13
L142	16.23		N45° 31' 56.12"W	
C263	24.34	11.44	N9° 01' 06.38"E	20.00
L143	11.94		N74° 50' 42.15"E	
C264	31.22	12.00	N0° 18' 44.36"E	23.13
L144	8.82		N74° 13' 13.43"W	
C265	27.28	14.00	N18° 24' 07.71"W	23.16
L145	7.63		N38° 57' 54.40"E	
C266	5.69	10.00	N55° 15' 07.16"E	5.61
L146	6.73		N71° 32' 18.85"E	
C267	53.21	20.40	N5° 38' 58.70"E	39.35
L147	5.41		N68° 39' 59.99"W	
C268	14.28	10.00	N27° 44' 59.82"W	13.10
L148	4.50		N13° 10' 00.36"E	
C269	13.50	10.00	N51° 50' 51.43"E	12.50
L149	10.57		S89° 28' 17.51"E	
C270	27.53	10.00	N11° 39' 24.20"E	19.62

TRIBUTARY 2 UPSTREAM				
LINE # / CURVE#	LENGTH	RADIUS	LNE/CHORD DIRECTION	CHORD LENGTH
L150	7.19		N67° 12' 54.10"W	
C271	24.50	15.00	N20° 25' 45.98"W	21.86
C272	14.98	18.00	N2° 31' 05.79"E	14.55
L151	3.20		N21° 19' 11.62"W	



KEYMAP

PROJECT LEGEND:

- PROPERTY LINE
- EXISTING EASEMENT
- EXISTING GAS LINE
- EXISTING TELEPHONE LINE
- EXISTING FENCE LINE
- EXISTING SECTION LINE
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- EXISTING MAJOR CONTOUR
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- LIMITS OF CONSTRUCTION
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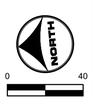
NOTES:

1. 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.
2. BENCHMARK:
   DESIGNATION = F 24, E 24
   PID = JK0240
   DESCRIPTION = DISK ON TOP OF CONCRETE MONUMENT
   CONTROL POINT COORDINATE SYSTEM: NAVD88
   NORTHING: 1421049.80
   EASTING: 3273631.55
   ELEVATION: 6866.33



811 UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

COLORADO LICENSED GREGORY L. PAZ 37081 PROFESSIONAL ENGINEER

DRAWN BY:	ACH	JOB DATE:	6/6/2024
APPROVED:	GLP	JOB NUMBER:	201662.03
CAD DATE:	7/11/2024		
CAD FILE:	J:\2020\201662.03\CAD\Dwgs\C\GRADING		

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HR GREEN - DENVER
5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

CONSTRUCTION DOCUMENTS
TRIBUTARY 2 BANKFULL GRADING

SHEET GR19

NOTES:

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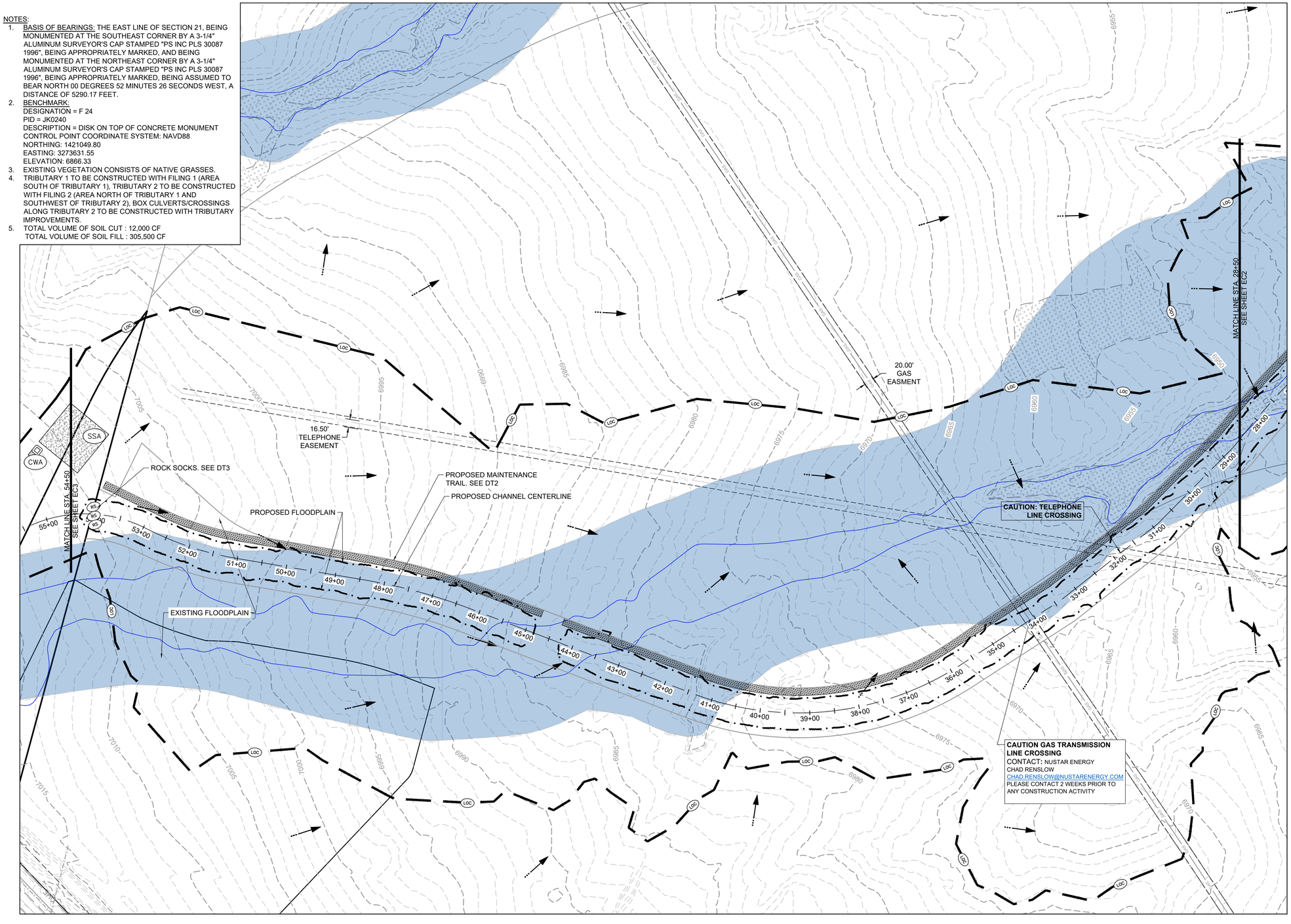
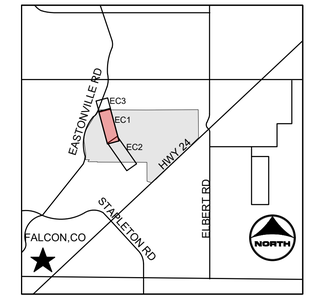
   DESIGNATION = F 24
   PID = JK0240
   DESCRIPTION = DISK ON TOP OF CONCRETE MONUMENT
   CONTROL POINT COORDINATE SYSTEM: NAVD88
   NORTHING: 1421049.80
   EASTING: 3273631.55
   ELEVATION: 6866.33
3. EXISTING VEGETATION CONSISTS OF NATIVE GRASSES.
4. TRIBUTARY 1 TO BE CONSTRUCTED WITH FILING 1 (AREA SOUTH OF TRIBUTARY 1), TRIBUTARY 2 TO BE CONSTRUCTED WITH FILING 2 (AREA NORTH OF TRIBUTARY 1 AND SOUTHWEST OF TRIBUTARY 2), BOX CULVERTS/CROSSINGS ALONG TRIBUTARY 2 TO BE CONSTRUCTED WITH TRIBUTARY IMPROVEMENTS.
5. TOTAL VOLUME OF SOIL CUT : 12,000 CF
   TOTAL VOLUME OF SOIL FILL : 305,500 CF





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- EXISTING WETLANDS - NONJURISDICTIONAL
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BMP LEGEND:

- CWA — CONCRETE WASHOUT AREA
- SF — SILT FENCE
- VTC — VEHICLE TRACKING CONTROL
- SSA — STABILIZED STAGING AREA
- LOC — LIMITS OF CONSTRUCTION /DISTURBRANCE
- CD — CHECK DAM
- RS — ROCK SOCK

811 UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

COLORADO LICENSED GREGORY L. PAGE 37061 12-23-22 PROFESSIONAL ENGINEER

0 100 50

DRAWN BY:	ACH
APPROVED:	GLP
CAD DATE:	7/11/2024
CAD FILE:	J:\2020\201662.03\CAD\Dwgs\C\INITIAL EROSION CONTROL
JOB DATE:	5/20/2024
JOB NUMBER:	201662.03

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NO.	DATE	BY	REVISION DESCRIPTION

HR GREEN - DENVER
5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

CONSTRUCTION DOCUMENTS
INITIAL EROSION CONTROL

SHEET EC1

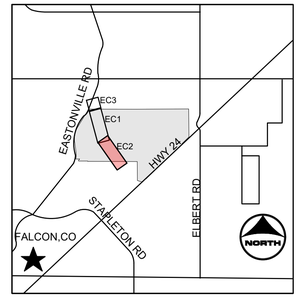
24

HR GREEN Xrefs: xg-1-dh01: INITIAL EROSION CONTROL KEY: 01-XC-INITIAL-EC; 01-XC-PR_100YR_FP_DELINEATION; xc-channel; xv-dsgn_662; xv-util_662; xv-row-662; initial erosion NOTES

NOTES:

1. 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.
2. BENCHMARK:
   DESIGNATION = F 24
   PID = JK0240
   DESCRIPTION = DISK ON TOP OF CONCRETE MONUMENT
   CONTROL POINT COORDINATE SYSTEM: NAVD88
   NORTHING: 1421049.80
   EASTING: 3273631.55
   ELEVATION: 6866.33
3. EXISTING VEGETATION CONSISTS OF NATIVE GRASSES.
4. TRIBUTARY 1 TO BE CONSTRUCTED WITH FILING 1 (AREA SOUTH OF TRIBUTARY 1), TRIBUTARY 2 TO BE CONSTRUCTED WITH FILING 2 (AREA NORTH OF TRIBUTARY 1 AND SOUTHWEST OF TRIBUTARY 2), BOX CULVERTS/CROSSINGS ALONG TRIBUTARY 2 TO BE CONSTRUCTED WITH TRIBUTARY IMPROVEMENTS.
5. TOTAL VOLUME OF SOIL CUT : 12,000 CF
   TOTAL VOLUME OF SOIL FILL : 305,500 CF

PROPOSED CHANNEL CENTERLINE
PROPOSED FLOODPLAIN
PROPOSED MAINTENANCE TRAIL. SEE DT2
EXISTING FLOODPLAIN
MATCHLINE STA. 29+00 SEE SHEET EC3
CHECK DAM. SEE DETAIL SHEET DT4 H = 2.1FT
OFFSITE WORK TEMPORARY CONSTRUCTION EASEMENT
PROPERTY BOUNDARY
20.00' TELEPHONE EASEMENT



KEYMAP

PROJECT LEGEND:

- PROPERTY LINE
- EXISTING EASEMENT
- EXISTING GAS LINE
- EXISTING TELEPHONE LINE
- EXISTING FENCE LINE
- EXISTING SECTION LINE
- EXISTING SWALE
- EXISTING OVERHEAD ELECTRIC
- EXISTING TELEPHONE POLE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- FLOW ARROW
- PROPOSED 100-YR FLOODPLAIN
- EXISTING 100-YR FLOODPLAIN
- EXISTING WETLANDS - JURISDICTIONAL
- EXISTING WETLANDS - NONJURISDICTIONAL
- PROPOSED MAINTENANCE TRAIL

BMP LEGEND:

- CWA CONCRETE WASHOUT AREA
- SF SILT FENCE
- VTC VEHICLE TRACKING CONTROL
- SSA STABILIZED STAGING AREA
- LOC LIMITS OF CONSTRUCTION /DISTURBRANCE
- CD CHECK DAM
- RS ROCK SOCK

811 UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

COLORADO LICENSED GREGORY L. PAGE 37081 7-25-24 PROFESSIONAL ENGINEER

DRAWN BY:	ACH	JOB DATE:	5/20/2024
APPROVED:	GLP	JOB NUMBER:	201662.03
CAD DATE:	7/11/2024		
CAD FILE:	J:\2020\201662.03\CAD\Dwgs\C\INITIAL EROSION CONTROL		

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

NO.	DATE	BY	REVISION DESCRIPTION

HR GREEN - DENVER
5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

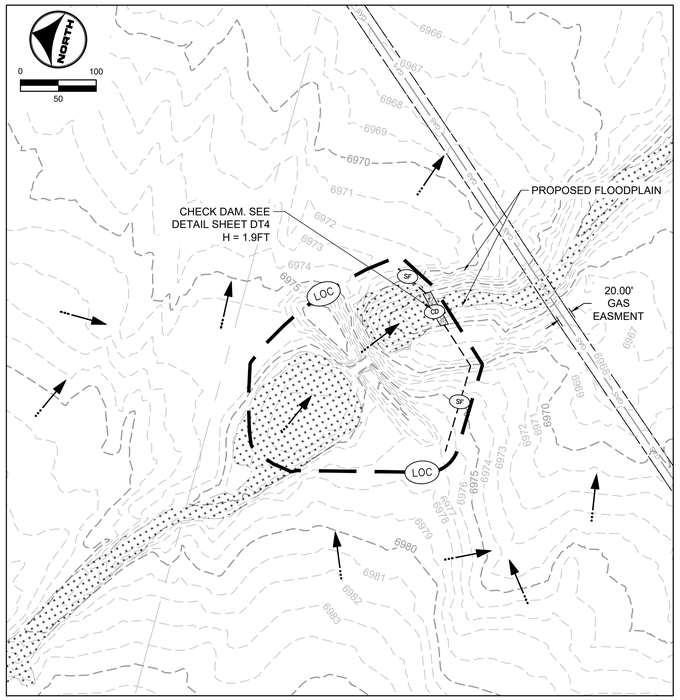
GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

CONSTRUCTION DOCUMENTS
INITIAL EROSION CONTROL

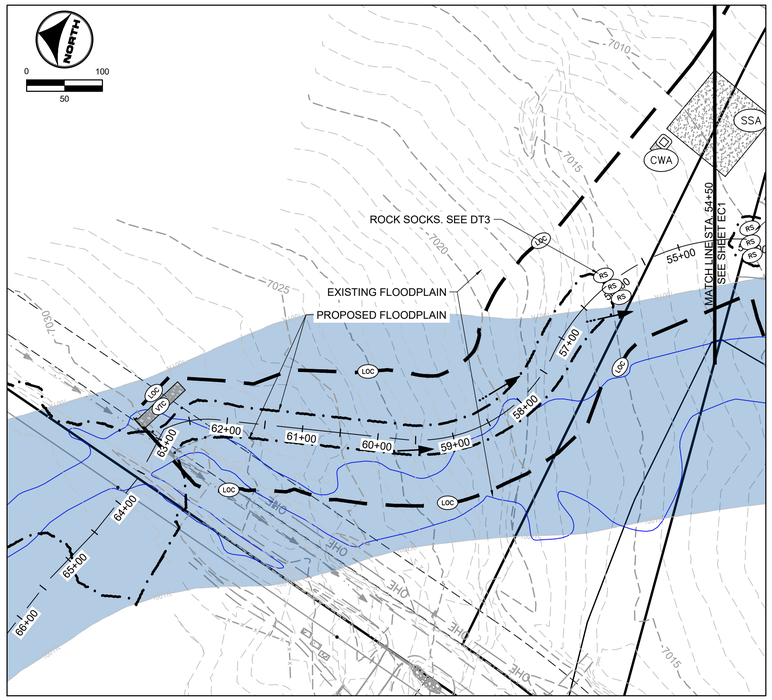
SHEET EC2

25

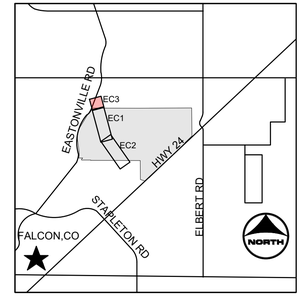
HR GREEN Xrefs: xgr-1-dfs01: INITIAL EROSION CONTROL KEY; 01-XC-INITIAL-EC; 01-XC-PR_100YR_FP_DELINEATION; xx-channel; xx-design_662; xx-util_662; xx-row-662; initial erosion NOTES



TRIBUTARY 1



TRIBUTARY 2



KEYMAP

PROJECT LEGEND:

- PROPERTY LINE
- EXISTING EASEMENT
- EXISTING GAS LINE
- EXISTING TELEPHONE LINE
- EXISTING FENCE LINE
- EXISTING SECTION LINE
- EXISTING SWALE
- EXISTING OVERHEAD ELECTRIC
- EXISTING TELEPHONE POLE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- FLOW ARROW
- PROPOSED 100-YR FLOODPLAIN
- EXISTING 100-YR FLOODPLAIN
- EXISTING WETLANDS - JURISDICTIONAL
- EXISTING WETLANDS - NONJURISDICTIONAL
- PROPOSED MAINTENANCE TRAIL

BMP LEGEND:

- CWA — CONCRETE WASHOUT AREA
- SF — SILT FENCE
- VTC — VEHICLE TRACKING CONTROL
- SSA — STABILIZED STAGING AREA
- LOC — LIMITS OF CONSTRUCTION /DISTURBRANCE
- CD — CHECK DAM
- RS — ROCK SOCK

811 UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

COLORADO LICENSED GREGORY L. PAYNE 37081 PROFESSIONAL ENGINEER 11-25-24

DRAWN BY: ACH | JOB DATE: 5/20/2024
APPROVED: GLP | JOB NUMBER: 201662.03
CAD DATE: 7/11/2024
CAD FILE: J:\2020\201662.03\CAD\Dwgs\C\INITIAL EROSION CONTROL

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

NO.	DATE	BY	REVISION DESCRIPTION

HR GREEN - DENVER
5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

CONSTRUCTION DOCUMENTS
INITIAL EROSION CONTROL

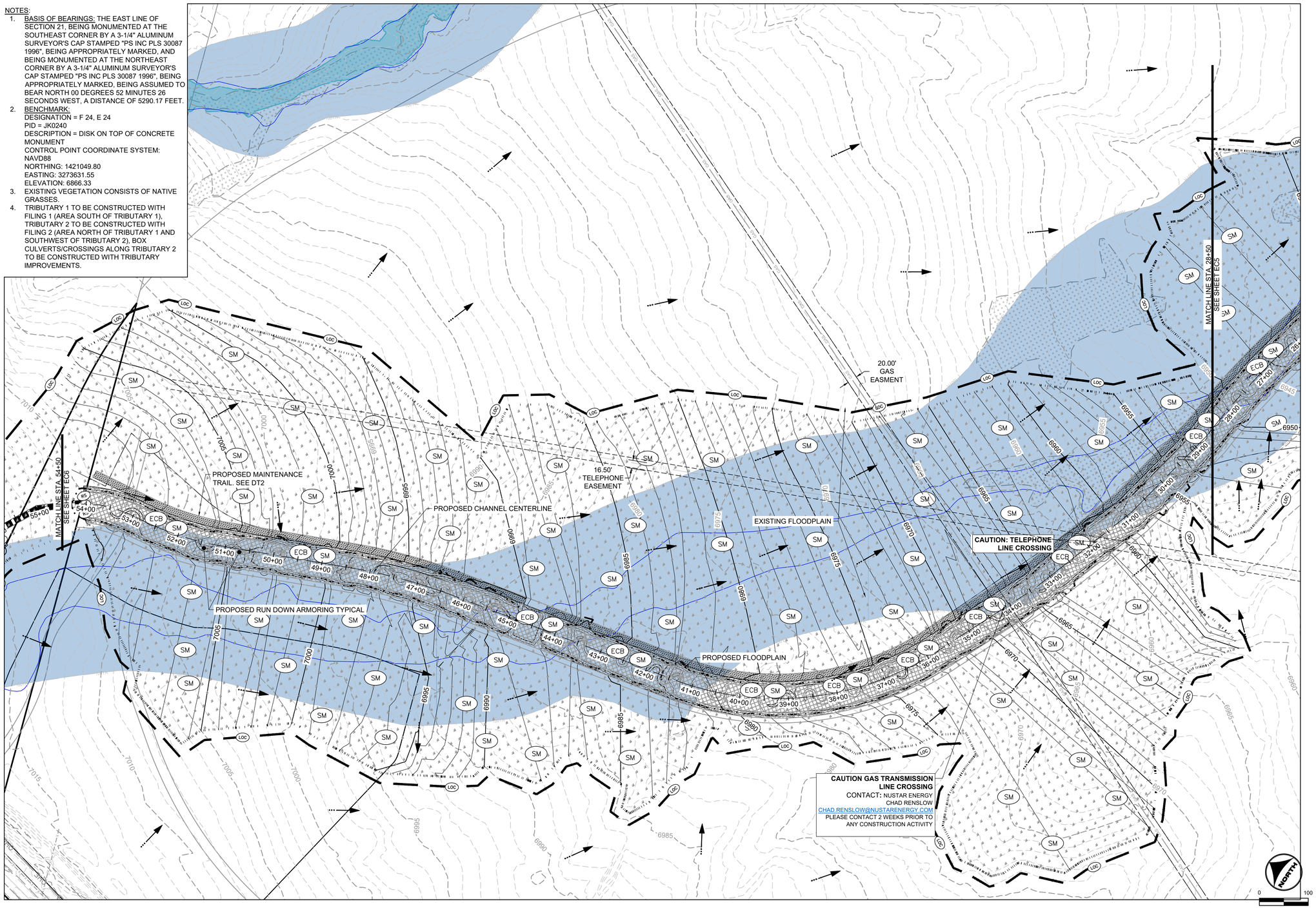
SHEET EC3

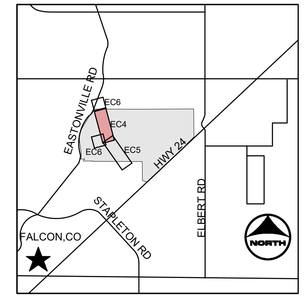
26

HR GREEN Xrefs: xg:1-dft01; INITIAL EROSION CONTROL KEY; 01-XC-INITIAL_EC; 01-XC-PR_ 100YR_FP_DELINEATION; xc-channel; xv-dsgn_662; xv-ut8_662; xv-vow-662; initial erosion NOTES

NOTES:

1. 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.
2. BENCHMARK:
   DESIGNATION = F 24, E 24
   PID = JK0240
   DESCRIPTION = DISK ON TOP OF CONCRETE MONUMENT
   CONTROL POINT COORDINATE SYSTEM: NAVD88
   NORTHING: 1421049.80
   EASTING: 3273631.55
   ELEVATION: 6866.33
3. EXISTING VEGETATION CONSISTS OF NATIVE GRASSES.
4. TRIBUTARY 1 TO BE CONSTRUCTED WITH FILING 1 (AREA SOUTH OF TRIBUTARY 1), TRIBUTARY 2 TO BE CONSTRUCTED WITH FILING 2 (AREA NORTH OF TRIBUTARY 1 AND SOUTHWEST OF TRIBUTARY 2), BOX CULVERTS/CROSSINGS ALONG TRIBUTARY 2 TO BE CONSTRUCTED WITH TRIBUTARY IMPROVEMENTS.





KEYMAP

PROJECT LEGEND:

- PROPERTY LINE
- EXISTING EASEMENT
- EXISTING GAS LINE
- EXISTING TELEPHONE LINE
- EXISTING FENCE LINE
- EXISTING SECTION LINE
- EXISTING SWALE
- EXISTING OVERHEAD ELECTRIC
- EXISTING TELEPHONE POLE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- FLOW ARROW
- PROPOSED 100-YR FLOODPLAIN
- EXISTING 100-YR FLOODPLAIN
- EXISTING WETLANDS - JURISDICTIONAL
- EXISTING WETLANDS - NONJURISDICTIONAL
- PROPOSED MAINTENANCE TRAIL

BMP LEGEND:

- LOC — LIMITS OF CONSTRUCTION
- SM — SEEDING AND MULCHING
- ECB / ECF — EROSION CONTROL MATERIAL (BLANKET OR FABRIC)
- RS — ROCK SOCK

811 UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

COLORADO LICENSED GREGORY L. ACH 37081 7-25-24 PROFESSIONAL ENGINEER

DRAWN BY:	ACH
APPROVED:	GLP
CAD DATE:	7/11/2024
CAD FILE:	J:\2020\201662.03\CAD\Dwgs\C\FINAL EROSION CONTROL
JOB DATE:	5/3/2024
JOB NUMBER:	201662.03

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

NO.	DATE	BY	REVISION DESCRIPTION

HR GREEN - DENVER
5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

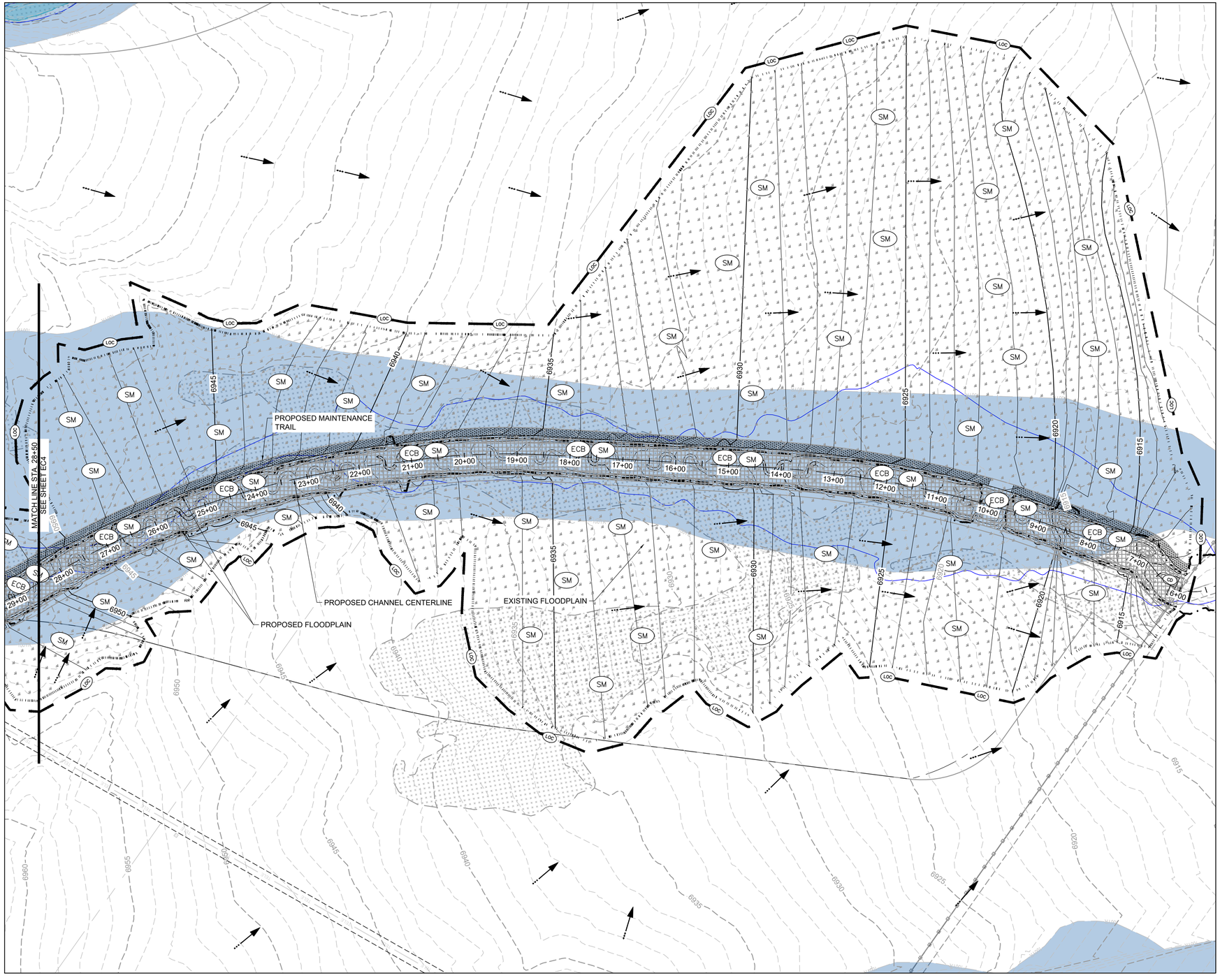
GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

CONSTRUCTION DOCUMENTS
FINAL EROSION CONTROL

SHEET EC4

27

HR GREEN Xrefs: xg1-sdh01; FINAL EROSION CONTROL KEY; 01-XC-FINAL-EC; 01_XC_RIPRAP; 01-XC-PR_100YR_FP_DELINEATION; xc-channel; xv-util_682; xv-vow-682; xv-dsgn_682; 01_DC_BOX_CULVERTS; 01-XC_Wingwalls


PROPOSED MAINTENANCE TRAIL
PROPOSED CHANNEL CENTERLINE
PROPOSED FLOODPLAIN
EXISTING FLOODPLAIN
MATCH LINE STA 28+50
SEE SHEET EC4
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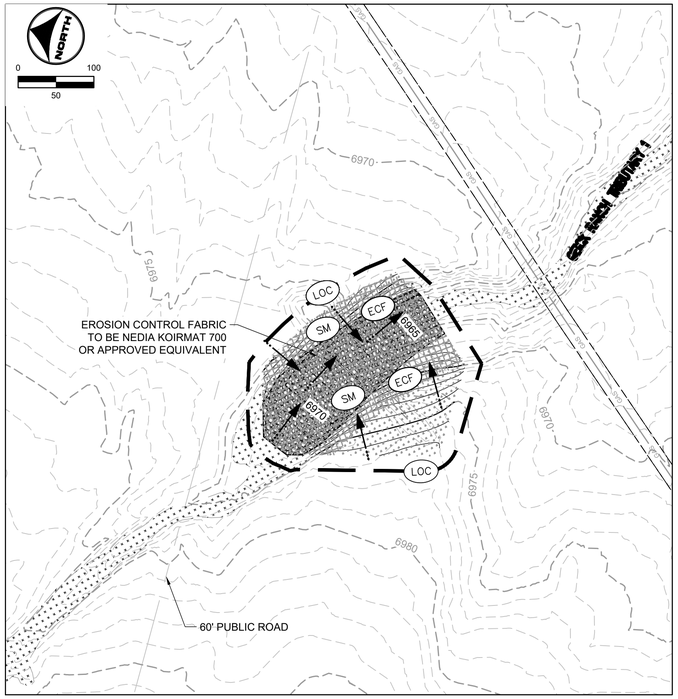
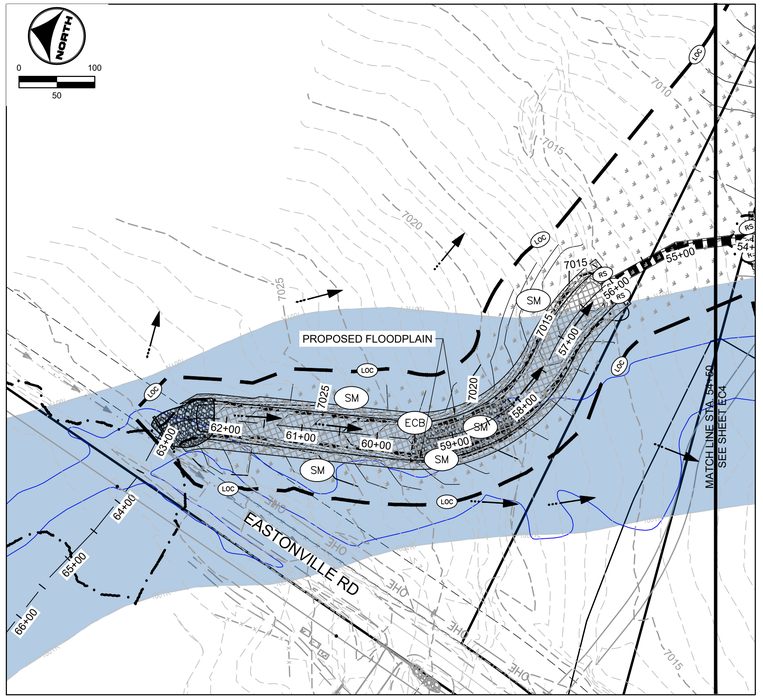
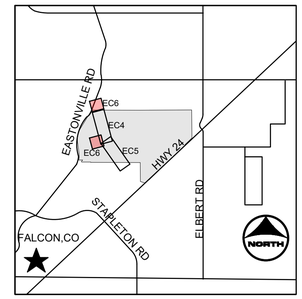


TRIBUTARY 1



TRIBUTARY 2



KEYMAP

PROJECT LEGEND:

- PROPERTY LINE
- EXISTING EASEMENT
- EXISTING GAS LINE
- EXISTING TELEPHONE LINE
- EXISTING FENCE LINE
- EXISTING SECTION LINE
- EXISTING SWALE
- EXISTING OVERHEAD ELECTRIC
- EXISTING TELEPHONE POLE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- FLOW ARROW
- PROPOSED 100-YR FLOODPLAIN
- EXISTING 100-YR FLOODPLAIN
- EXISTING WETLANDS - JURISDICTIONAL
- EXISTING WETLANDS - NONJURISDICTIONAL
- PROPOSED MAINTENANCE TRAIL

NOTES:

1. 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.
2. BENCHMARK:
   DESIGNATION = F 24, E 24
   PID = JK0240
   DESCRIPTION = DISK ON TOP OF CONCRETE MONUMENT
   CONTROL POINT COORDINATE SYSTEM: NAVD88
   NORTHING: 1421049.80
   EASTING: 3273631.55
   ELEVATION: 6866.33
3. EXISTING VEGETATION CONSISTS OF NATIVE GRASSES.
4. TRIBUTARY 1 TO BE CONSTRUCTED WITH FILING 1 (AREA SOUTH OF TRIBUTARY 1), TRIBUTARY 2 TO BE CONSTRUCTED WITH FILING 2 (AREA NORTH OF TRIBUTARY 1 AND SOUTHWEST OF TRIBUTARY 2), BOX CULVERTS/CROSSINGS ALONG TRIBUTARY 2 TO BE CONSTRUCTED WITH TRIBUTARY IMPROVEMENTS.

BMP LEGEND:

- LOC — LIMITS OF CONSTRUCTION
- SM — SEEDING AND MULCHING
- ECB / ECF — EROSION CONTROL MATERIAL (BLANKET OR FABRIC)
- RS — ROCK SOCK

811 UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

COLORADO LICENSED GREGORY L. PAYNE 37081 PROFESSIONAL ENGINEER

DRAWN BY:	ACH	JOB DATE:	5/3/2024
APPROVED:	GLP	JOB NUMBER:	201662.03
CAD DATE:	7/11/2024		
CAD FILE:	J:\2020\201662.03\CAD\Dwgs\C\FINAL EROSION CONTROL		

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

NO.	DATE	BY	REVISION DESCRIPTION

HR GREEN - DENVER
5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

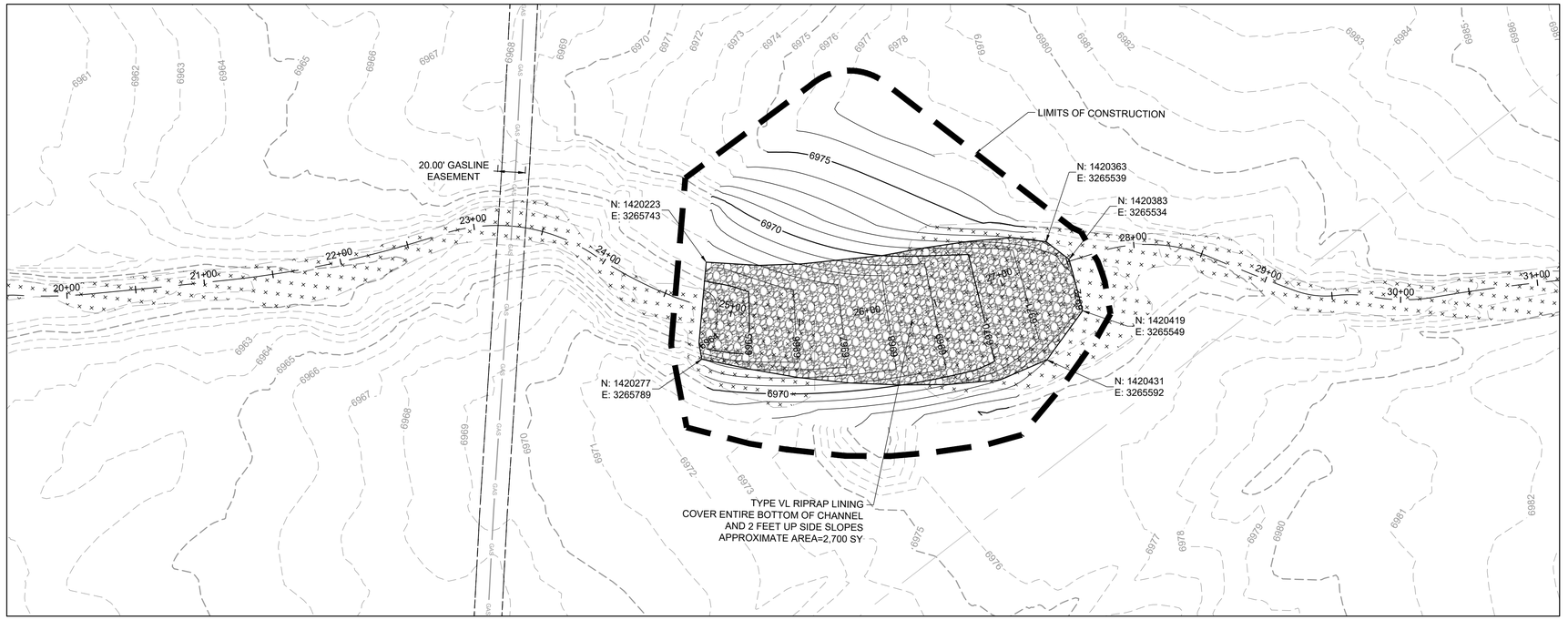
GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

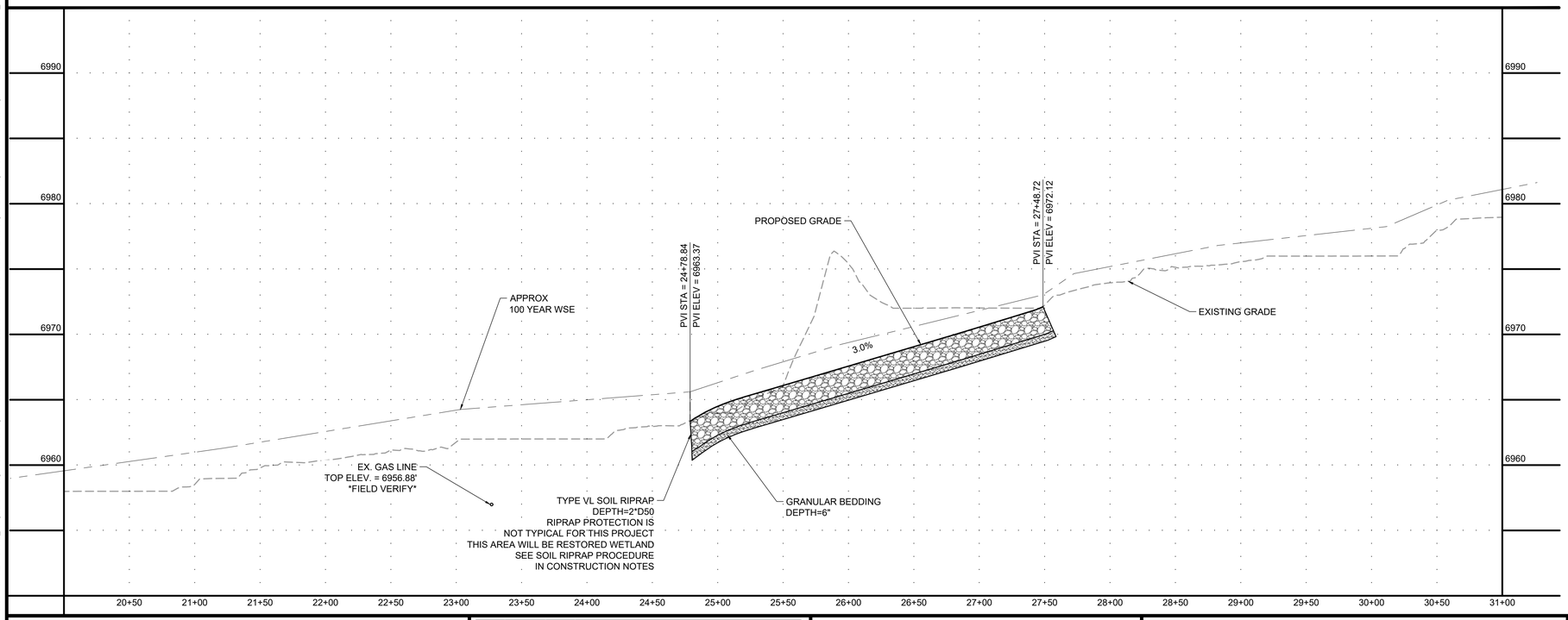
CONSTRUCTION DOCUMENTS
FINAL EROSION CONTROL

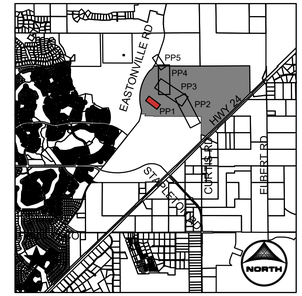
SHEET EC6

29

HR GREEN Xrefs: xg1-dh01; FINAL EROSION CONTROL KEY; 01-XC-FINAL-EC; 01_XC_RIPRAP; 01-XC-PR_100YR_FP_DELINEATION; xc-channel; xv-util_662; xv-row-662; xv-dsgn_662; 01_DC_BOX_CULVERTS; 01_XC_CULVERTS







KEYMAP

PROJECT LEGEND:

- PROPERTY LINE
- EXISTING EASEMENT
- EXISTING GAS LINE
- EXISTING TELEPHONE LINE
- EXISTING FENCE LINE
- EXISTING SECTION LINE
- EXISTING SWALE
- EXISTING OVERHEAD ELECTRIC
- EXISTING TELEPHONE POLE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- FLOW ARROW
- LIMITS OF CONSTRUCTION
- PROPOSED 100-YR FLOODPLAIN
- EXISTING WETLANDS - JURISDICTIONAL
- EXISTING WETLANDS - NONJURISDICTIONAL
- PROPOSED MAINTENANCE TRAIL

NOTES:

1. 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.
2. BENCHMARK:
   DESIGNATION = F 24, E 24
   PID = JK0240
   DESCRIPTION = DISK ON TOP OF CONCRETE MONUMENT
   CONTROL POINT COORDINATE SYSTEM: NAVD88
   NORTHING: 1421049.80
   EASTING: 3273631.55
   ELEVATION: 6866.33
3. ALIGNMENT NOT FOR USE IN CONSTRUCTION. REFER TO NORTHINGS AND EASTINGS
4. PLAN SET APPROVAL APPLIES TO THE LIMITS OF CONSTRUCTION. PLEASE SEE GRANDVIEW FILING NUMBER 1 PLAN SET FOR GRADING OUTSIDE OF THE CHANNEL LIMITS OF CONSTRUCTION.
5. TRIBUTARY 1 TO BE CONSTRUCTED WITH FILING 1 (AREA SOUTH OF TRIBUTARY 1), TRIBUTARY 2 TO BE CONSTRUCTED WITH FILING 2 (AREA NORTH OF TRIBUTARY 1 AND SOUTHWEST OF TRIBUTARY 2), BOX CULVERTS/CROSSINGS ALONG TRIBUTARY 2 TO BE CONSTRUCTED WITH TRIBUTARY IMPROVEMENTS.

HILSON

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VERTICAL 0 5 / 2.5
HORIZONTAL 0 50 / 25

811 UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

COLORADO LICENSED GREGORY L. ARAZ 37081 PROFESSIONAL ENGINEER

DRAWN BY:	TBI	JOB DATE:	7/10/2024
APPROVED:	GLP	JOB NUMBER:	201662.03
CAD DATE:	7/10/2024		
CAD FILE:	J:\2020\201662.03\CAD\Dwgs\C\PLAN AND PROFILE		

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NO.	DATE	BY	REVISION DESCRIPTION

HRGreen
HR GREEN - DENVER
5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

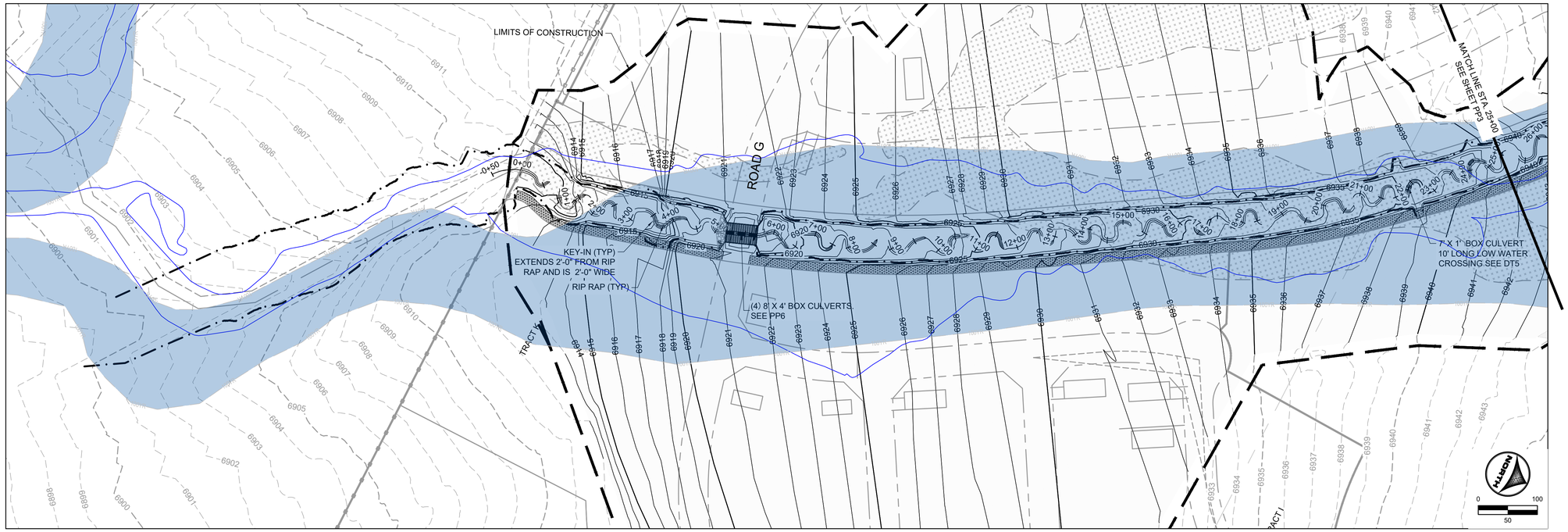
CONSTRUCTION DOCUMENTS

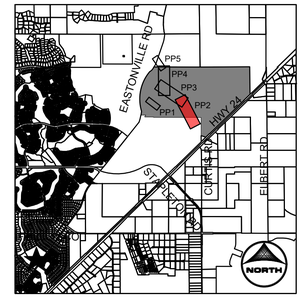
DRAINAGE TRIBUTARY 1 PLAN AND PROFILE

SHEET PP1

30

HR GREEN Xrefs: xgf-1-dh01; P&P KEY: 01-XC_Wingwalls; xc-dsgn-662.10; xc-dsgn-F1-662.10; xc-crow-F1-662.10; xx-crow-662; xc-crow-F2; xc-dsgn-F2; xc-dsgn-F3; xc-crow-F3; xx-dsgn-F4; xc-crow-F4; 01-XC-PR_100YR_FP_DELINEATION; xc-channel; xc-filling-bndys; 01-XC-INITIAL-EC; xc-crow-PH2; xx-crow-662; xc-crow-F1-662.10; xx-crow-662.10; xc-dsgn-F1-662.10; 01_XC_RIPRAP; 01_XV-Row; 01-XC-channel; xv-dsgn_662; xx-util_662; 01_DC_BOX_CULVERTS

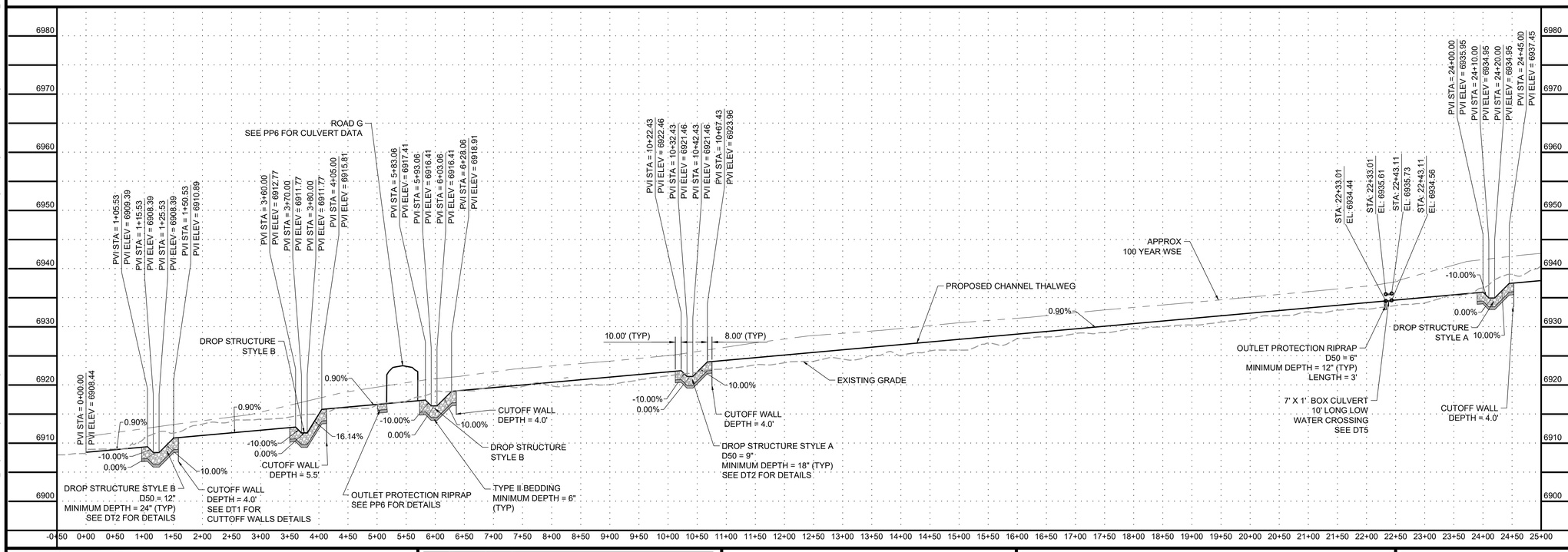




KEYMAP

PROJECT LEGEND:

- PROPERTY LINE
- EXISTING EASEMENT
- EXISTING GAS LINE
- EXISTING TELEPHONE LINE
- EXISTING FENCE LINE
- EXISTING SECTION LINE
- EXISTING SWALE
- EXISTING OVERHEAD ELECTRIC
- EXISTING TELEPHONE POLE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- FLOW ARROW
- LIMITS OF CONSTRUCTION
- PROPOSED 100-YR FLOODPLAIN
- EXISTING WETLANDS - JURISDICTIONAL
- EXISTING WETLANDS - NONJURISDICTIONAL
- PROPOSED MAINTENANCE TRAIL
- EFFECTIVE 100-YR FLOODPLAIN



NOTES:

1. 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.
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   ELEVATION: 6866.33
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HORIZONTAL 0 50 100 VERTICAL 0 5 10

811 UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

COLORADO LICENSED GREGORY L. GAZA 37081 PROFESSIONAL ENGINEER

DRAWN BY: TBI | JOB DATE: 7/10/2024
APPROVED: GLP | JOB NUMBER: 201662.03
CAD DATE: 7/10/2024
CAD FILE: J:\2020\201662.03\CAD\Dwgs\C\PLAN AND PROFILE

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NO.	DATE	BY	REVISION DESCRIPTION

HRGreen
HR GREEN - DENVER
5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

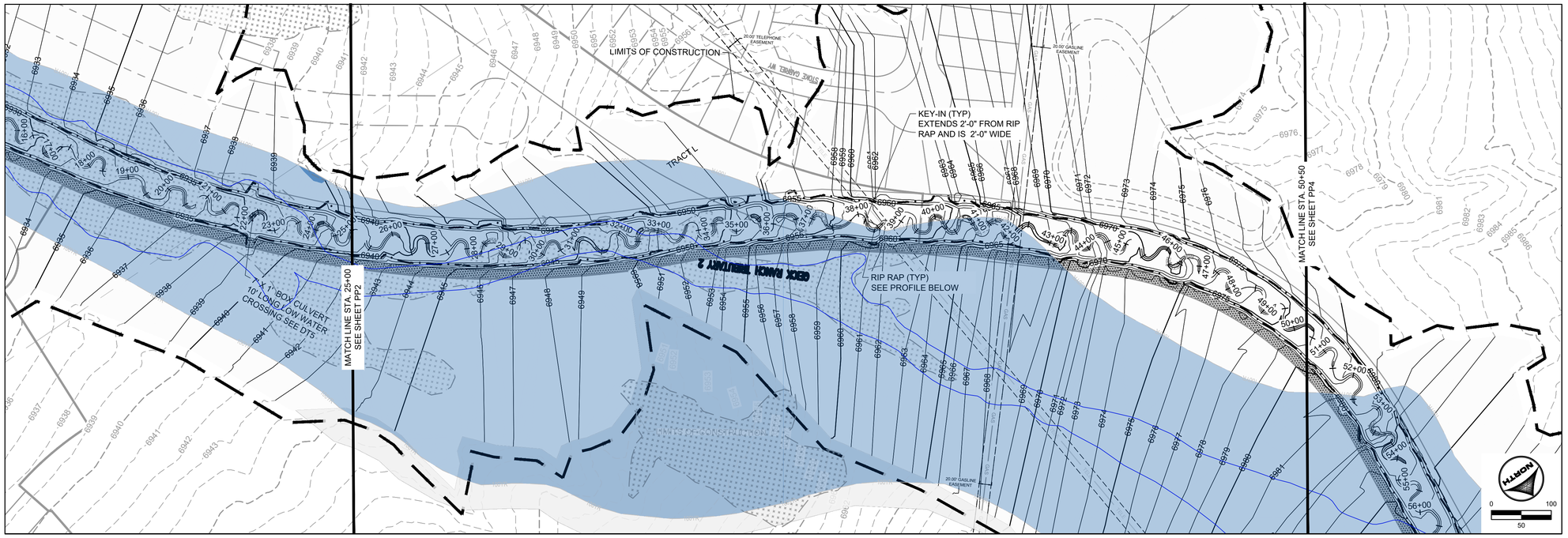
GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

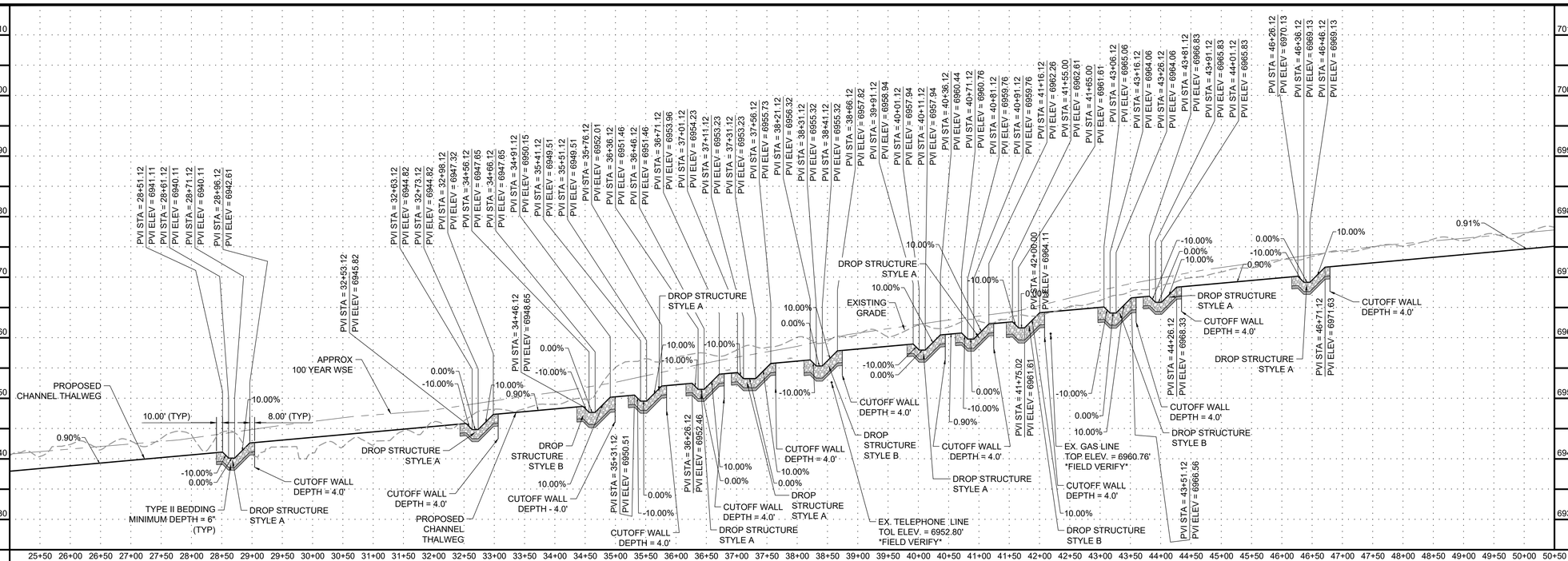
CONSTRUCTION DOCUMENTS
DRAINAGE TRIBUTARY 2 PLAN AND PROFILE

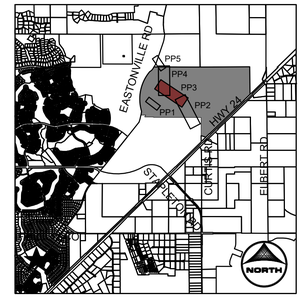
SHEET PP2 | 31

HR GREEN Xrefs: xgl-t-dh01; P&P KEY: 01-XC_Wingwalls; xc-dtgn-662.10; xc-dtgn-F1-662.10; xc-crow-F1-662.10; xc-crow-PH3; 01_XC_RIPRAP; 01_XV-Rose; 01-XC-channel; xv-dgn_662; xv-util_662; 01_DC_BOX_CULVERTS; 100YR_FP_DELINEATION; xc-channel; xc-filing-bndys; 01-XC-INITIAL-EC; xc-crow-PH2; xc-crow-F4; 01-XC-PR_100YR_FP; 01_XC_RIPRAP; 01_XV-Rose; 01-XC-channel; xv-dgn_662; xv-util_662; 01_DC_BOX_CULVERTS; xc-dtgn-F4; xc-crow-F4; 01-XC-PR_100YR_FP; xc-dtgn-F3; xc-crow-F3; xc-dtgn-F2; xc-dtgn-F3; xc-crow-F2; xc-crow-F1-662.10; xv-crow-662; xc-crow-F2; xc-dtgn-F1-662.10; xc-crow-PH3; 01_XC_RIPRAP; 01_XV-Rose; 01-XC-channel; xv-dgn_662; xv-util_662; 01_DC_BOX_CULVERTS; xc-channel; xc-filing-bndys; 01-XC-INITIAL-EC; xc-crow-PH2; xc-crow-F4; 01-XC-PR_100YR_FP; xc-dtgn-F4; xc-crow-F3; xc-dtgn-F3; xc-crow-F2; xc-dtgn-F2; xc-dtgn

HR GREEN Xrefs: xg=1-dh01; P&P KEY: 01-XC_Wingwalls; xc-dsgn-662.10; xc-dsgn-F1-662.10; xc-crow-F1-662.10; xc-crow-PH2; xc-crow-662; xc-crow-F2; xc-dsgn-F2; xc-dsgn-F3; xc-crow-F3; xc-dsgn-F4; xc-crow-F4; 01-XC-PR_100YR_FP_DELINEATION; xc-channel; xc-filling-bndys; 01-XC-INITIAL-EC; xc-crow-PH2; xc-crow-F1-662.10; xc-crow-F2-662.10; xc-crow-662; xc-crow-F2; xc-dsgn-F2; xc-dsgn-F3; xc-crow-F3; xc-dsgn-F4; xc-crow-F4; 01-XC-PR_100YR_FP_DELINEATION; xc-channel; xc-filling-bndys; 01-XC-INITIAL-EC; xc-crow-PH2; xc-crow-662; xc-crow-F2; xc-dsgn-F2; xc-dsgn-F3; xc-crow-F3; xc-dsgn-F4; xc-crow-F4; 01-XC-CHANNEL; xv-dsgn_662; xv-util_662; 01_DC_BOX_CULVERTS







KEYMAP

PROJECT LEGEND:

- PROPERTY LINE
- EXISTING EASEMENT
- EXISTING GAS LINE
- EXISTING TELEPHONE LINE
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- PROPOSED MAINTENANCE TRAIL
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NOTES:

1. 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.
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HORIZONTAL 0 50 100 VERTICAL 0 5 10

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COLORADO LICENSED GREGORY L. GAZA 37081 PROFESSIONAL ENGINEER

DRAWN BY:	TBI	JOB DATE:	7/10/2024
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NO.	DATE	BY	REVISION DESCRIPTION

HR GREEN - DENVER
5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

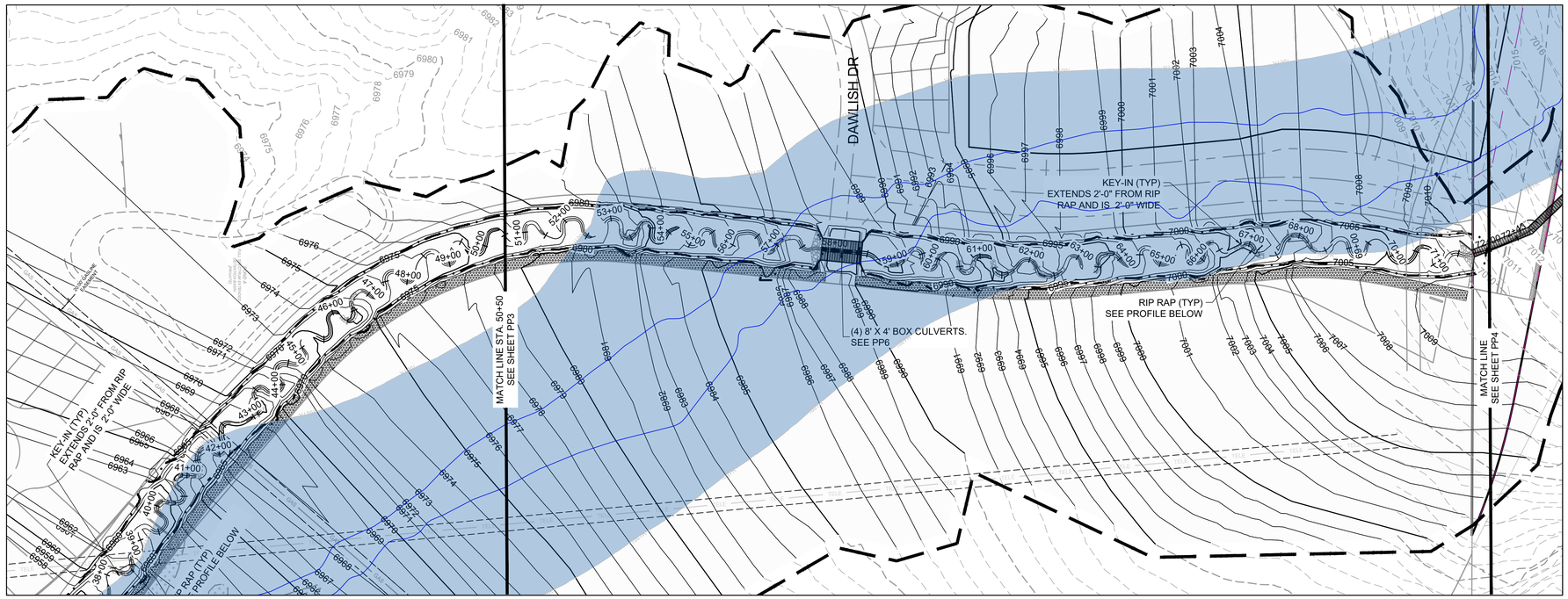
GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

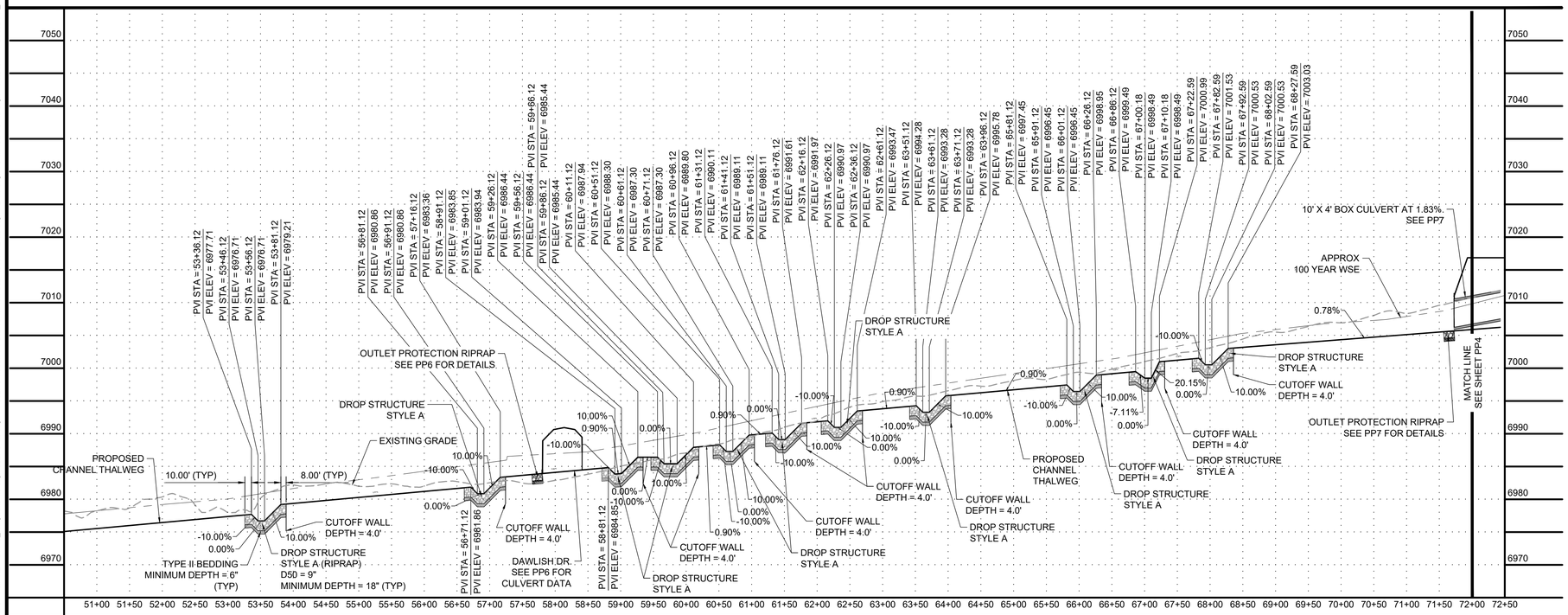
CONSTRUCTION DOCUMENTS

DRAINAGE TRIBUTARY 2 PLAN AND PROFILE

SHEET PP3

32





KEYMAP

PROJECT LEGEND:

- PROPERTY LINE
- EXISTING EASEMENT
- EXISTING GAS LINE
- EXISTING TELEPHONE LINE
- EXISTING FENCE LINE
- EXISTING SECTION LINE
- EXISTING SWALE
- EXISTING OVERHEAD ELECTRIC
- EXISTING TELEPHONE POLE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- FLOW ARROW
- LIMITS OF CONSTRUCTION
- PROPOSED 100-YR FLOODPLAIN
- EXISTING WETLANDS - JURISDICTIONAL
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NOTES:

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2. BENCHMARK:
   DESIGNATION = F 24, E 24
   PID = JK0240
   DESCRIPTION = DISK ON TOP OF CONCRETE MONUMENT
   CONTROL POINT COORDINATE SYSTEM: NAVD88
   NORTHING: 1421049.80
   EASTING: 3273631.55
   ELEVATION: 6866.33
3. ALIGNMENT NOT FOR USE IN CONSTRUCTION. REFER TO NORTHINGS AND EASTINGS
4. PLAN SET APPROVAL APPLIES TO THE LIMITS OF CONSTRUCTION. PLEASE SEE GRANDVIEW FILING NUMBER 1 PLAN SET FOR GRADING OUTSIDE OF THE CHANNEL LIMITS OF CONSTRUCTION.
5. TRIBUTARY 1 TO BE CONSTRUCTED WITH FILING 1 (AREA SOUTH OF TRIBUTARY 1), TRIBUTARY 2 TO BE CONSTRUCTED WITH FILING 2 (AREA NORTH OF TRIBUTARY 1 AND SOUTHWEST OF TRIBUTARY 2), BOX CULVERTS/CROSSINGS ALONG TRIBUTARY 2 TO BE CONSTRUCTED WITH TRIBUTARY IMPROVEMENTS.

NORTH 0 100 50

HORIZONTAL 0 100 50 VERTICAL 0 10 5

811 UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

COLORADO LICENSED GREGORY L. AZA 37081 PROFESSIONAL ENGINEER

DRAWN BY:	TBI	JOB DATE:	7/10/2024
APPROVED:	GLP	JOB NUMBER:	201662.03
CAD DATE:	7/10/2024		
CAD FILE:	J:\2020\201662.03\CAD\Dwgs\C\PLAN AND PROFILE		

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HRGreen
HR GREEN - DENVER
5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

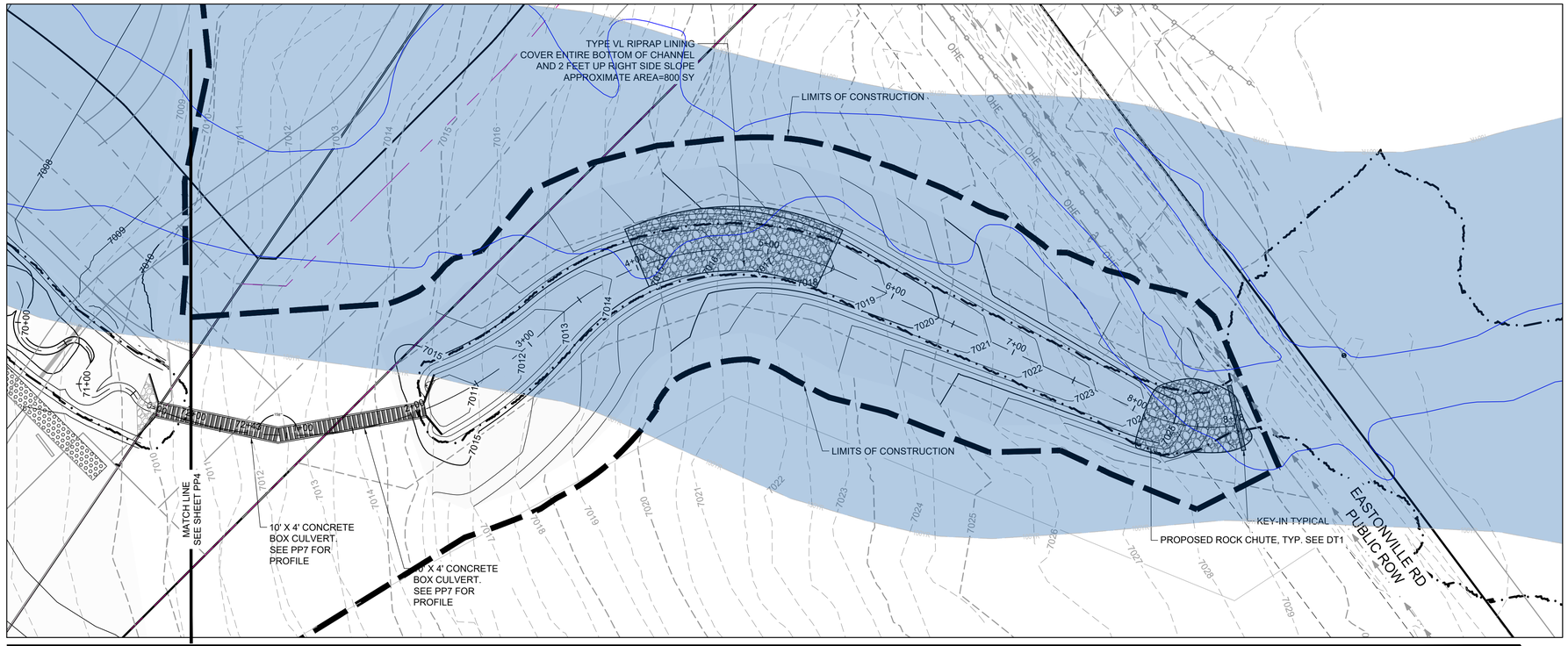
CONSTRUCTION DOCUMENTS

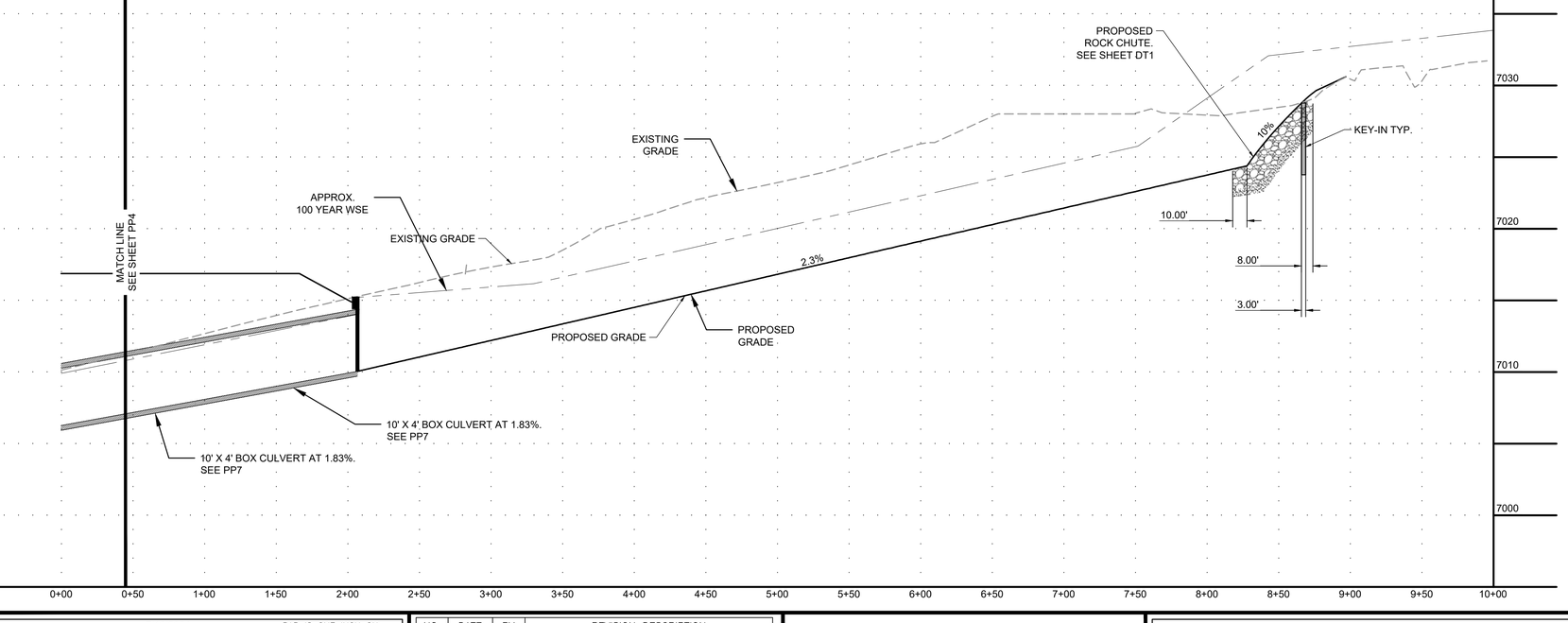
DRAINAGE TRIBUTARY 2 PLAN AND PROFILE

SHEET PP4

33

HR GREEN Xrefs: xg-t-dh01; P&P KEY: 01-XC_Wingwalls: xc-dtgn-662.10, xc-dtgn-F1-662.10, xc-crow-F1-662.10; xc-crow-PH2: xc-crow-PH3; 01_XC_RIPRAP, 01_XV-Row; 01-XC-channel; xv-dtgn_662; xv-util_662; 01_DC_BOX_CULVERTS; 100YR_FP_DELINEATION; xc-channel; xc-filling-bndys; 01-XC-INITIAL-EC; xc-crow-PH2; xc-crow-F1-662.10; xv-crow-662; xc-crow-F2; xc-dtgn-F2; xc-dtgn-F3; xc-crow-F3; xv-dtgn-F4; xc-crow-F4; 01-XC-PR_100YR_FP_DEL





KEYMAP

PROJECT LEGEND:

- PROPERTY LINE
- EXISTING EASEMENT
- EXISTING GAS LINE
- EXISTING TELEPHONE LINE
- EXISTING FENCE LINE
- EXISTING SECTION LINE
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- LIMITS OF CONSTRUCTION
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HORIZONTAL 0 50 25 VERTICAL 0 5 2.5

811 UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

COLORADO LICENSED GREGORY L. PAYNE 37081 PROFESSIONAL ENGINEER 7-25-24

DRAWN BY:	TBI	JOB DATE:	7/10/2024
APPROVED:	GLP	JOB NUMBER:	201662.03
CAD DATE:	7/10/2024		
CAD FILE:	J:\2020\201662.03\CAD\Dwgs\C\PLAN AND PROFILE		

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NO.	DATE	BY	REVISION DESCRIPTION

HR GREEN - DENVER
5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

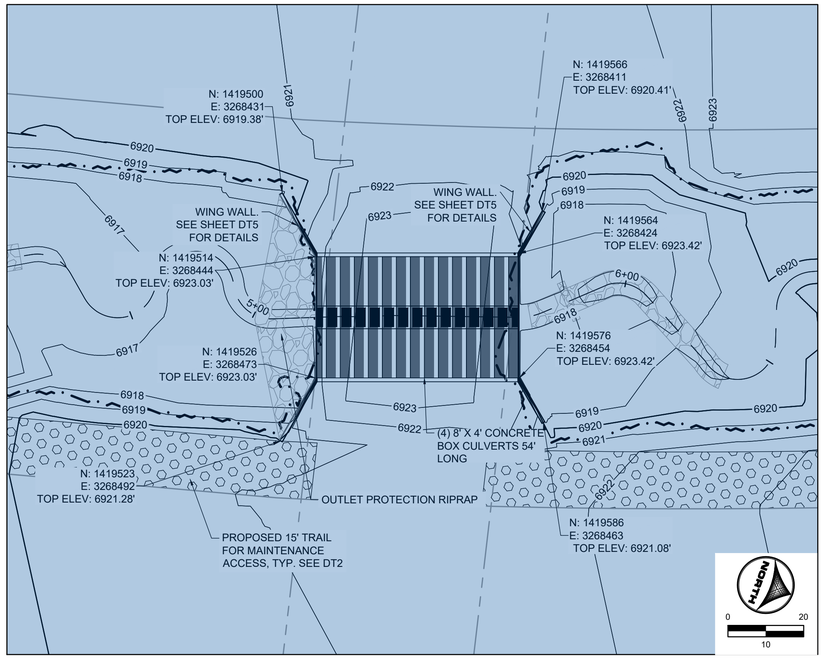
CONSTRUCTION DOCUMENTS

DRAINAGE TRIBUTARY 2 PLAN AND PROFILE

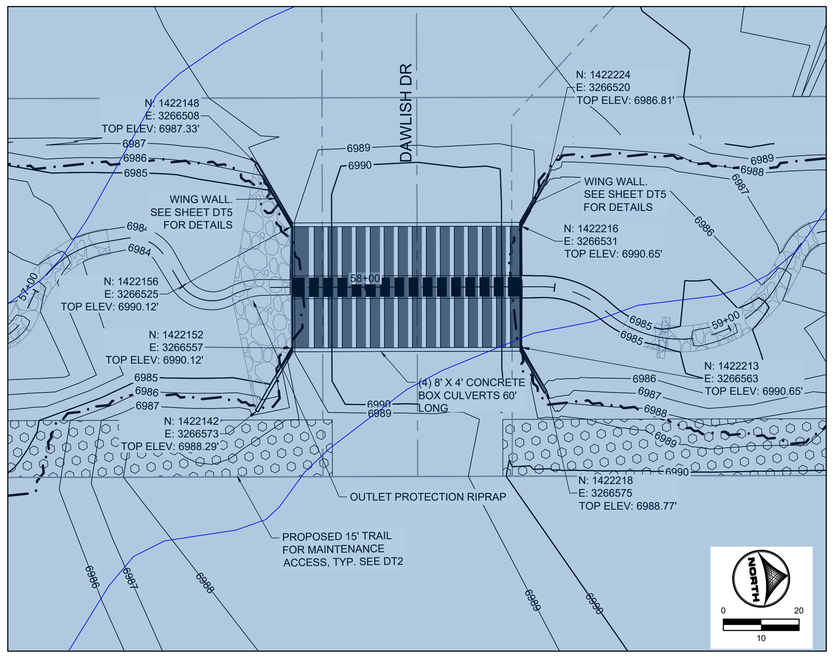
SHEET PP5

34

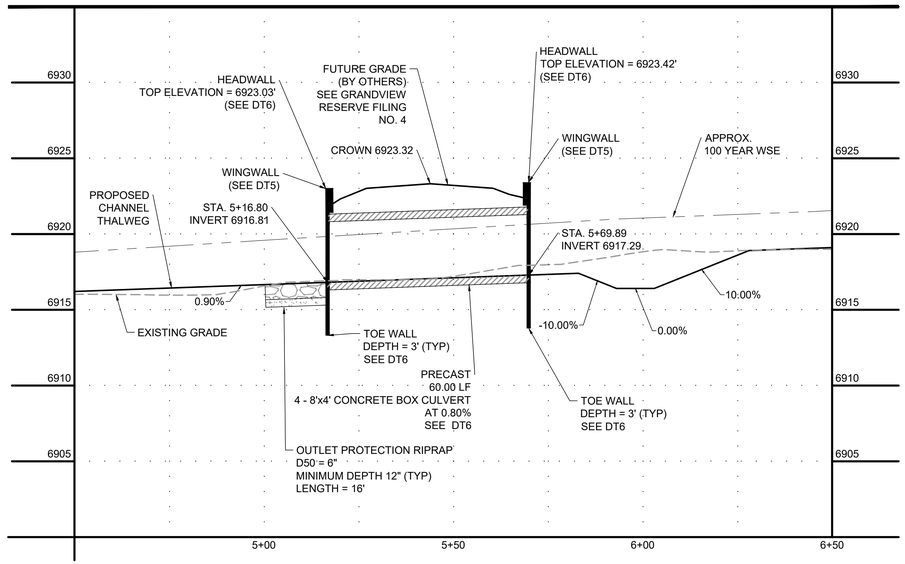
HR GREEN Xrefs: xgr-1-dh01 P&P KEY: 01-XC_Wingwalls; xc-dsgn-bt62.10; xc-dsgn-F1-bt62.10; xc-row-F1-bt62.10; xx-row-bt62; xx-row-F2; xc-dsgn-F2; xx-dsgn-F3; xx-row-F3; xx-dsgn-F4; xx-row-F4; 01-XC-PR_100YR_FP_DELINEATION; xx-channel; xc-filing-bndys; 01-XC-INITIAL-EC; xx-row-PH3; 01_XC_RIPRAP; 01_XV-Row; 01-XC-channel; xx-dsgn_662; xx-util_662; 01_DC_BOX_CULVERTS

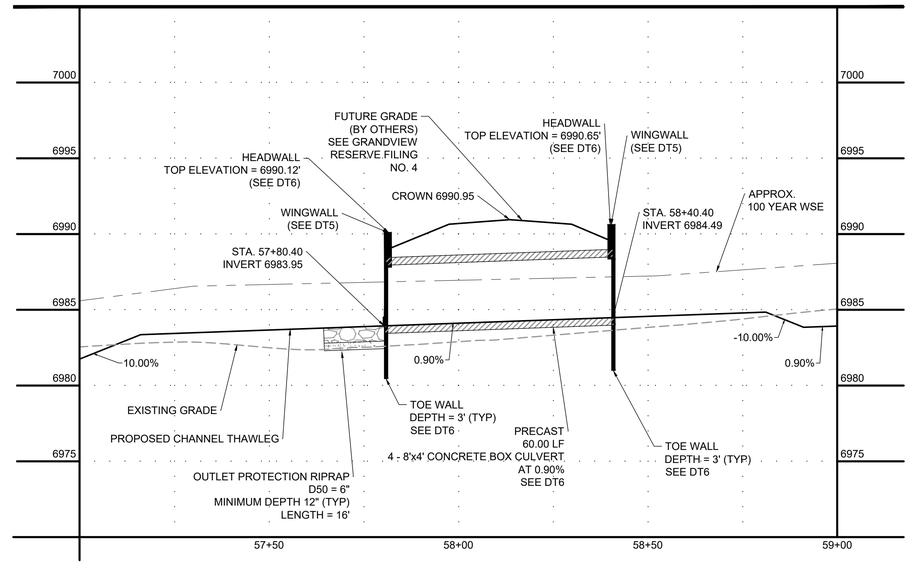


ROAD G CULVERT CROSSING

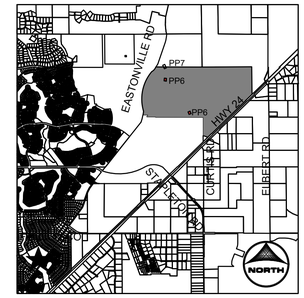


DAWLISH DR CULVERT CROSSING





HORIZONTAL 0 20 10 VERTICAL 0 5 2.5



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811 UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

COLORADO LICENSED GREGORY L. PAYNE 37081 PROFESSIONAL ENGINEER 7-25-12

DRAWN BY:	TBI	JOB DATE:	7/10/2024
APPROVED:	GLP	JOB NUMBER:	201662.03
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HRGreen

HR GREEN - DENVER
5613 DTC PARKWAY SUITE 950
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PHONE: 720.602.4999
FAX: 713.965.0044

GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

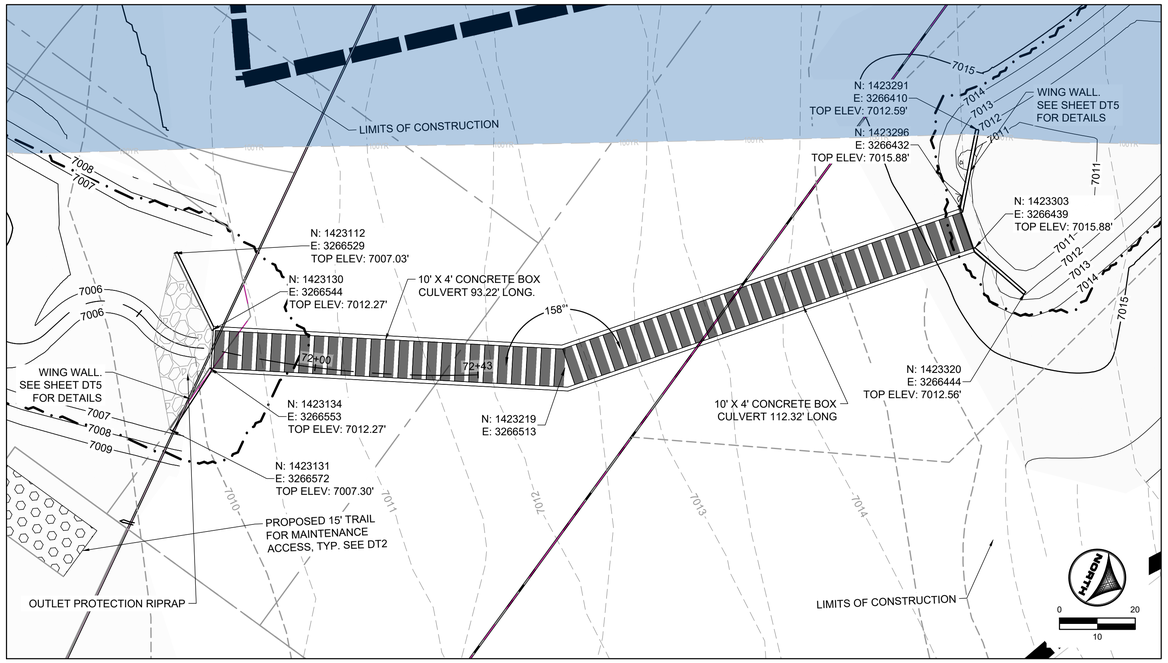
CONSTRUCTION DOCUMENTS

DRAINAGE CULVERTS PLAN AND PROFILE

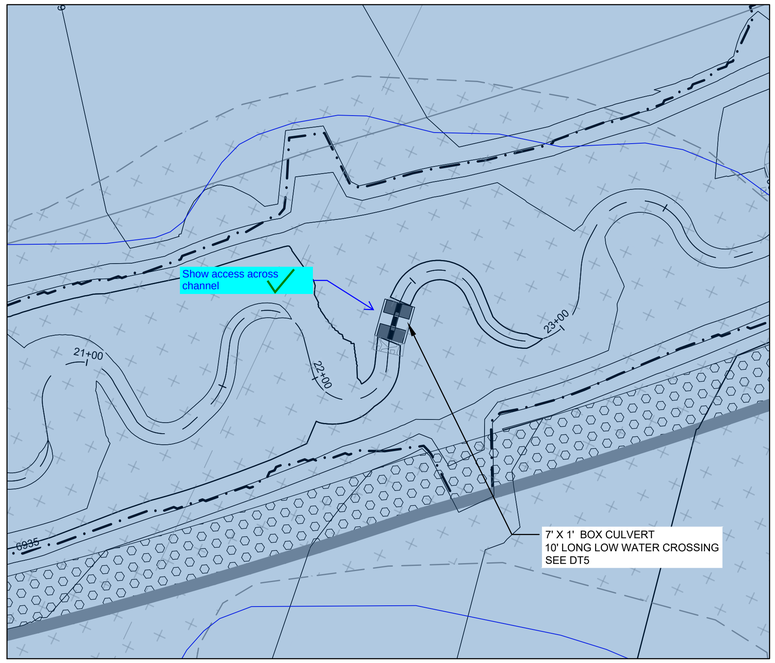
SHEET PP6

35

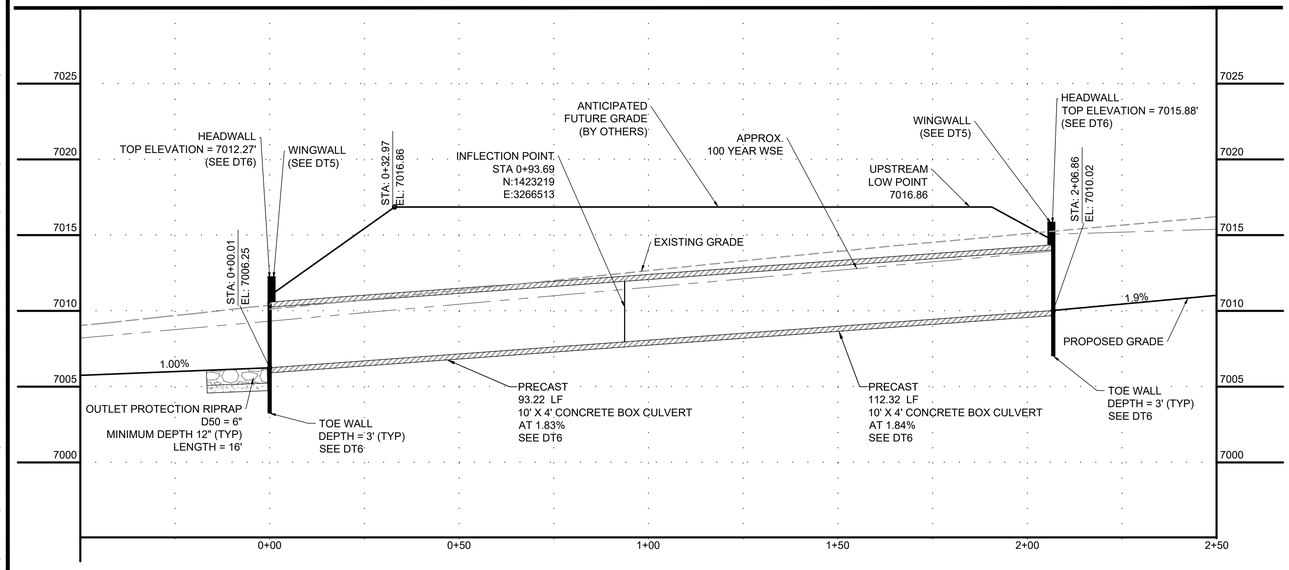
HR GREEN Xrefs: xgl-1-dh01 P&P KEY: 01-XC_Wingwalls: xc-dsgn-bh02.10; xc-dsgn-F1-bh02.10; xc-nw-F1-bh02.10; xx-nw-bh02; xx-nw-F2; xc-dsgn-F2; xx-dsgn-F3; xx-nw-F3; xx-dsgn-F4; xx-nw-F4; 01-XC-PR_100YR_FP_DELINEATION; xx-channel; xc-filing-bndys: 01-XC-INITIAL-EC; xx-nw-PH3; 01_XC_RIPRAP; 01_XV-Row; 01-XC-channel; xx-dsgn_662; xx-util_662; 01_DC_BOX_CULVERTS

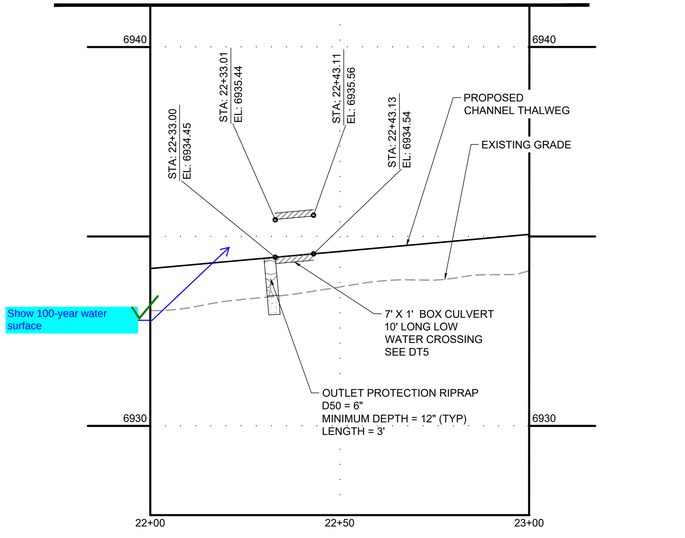


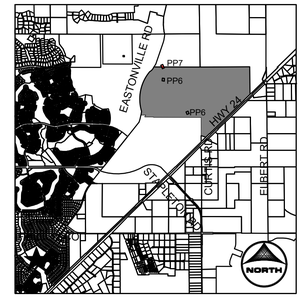
REX ROAD CULVERT CROSSING



LOW WATER CROSSING







KEYMAP

PROJECT LEGEND:

- PROPERTY LINE
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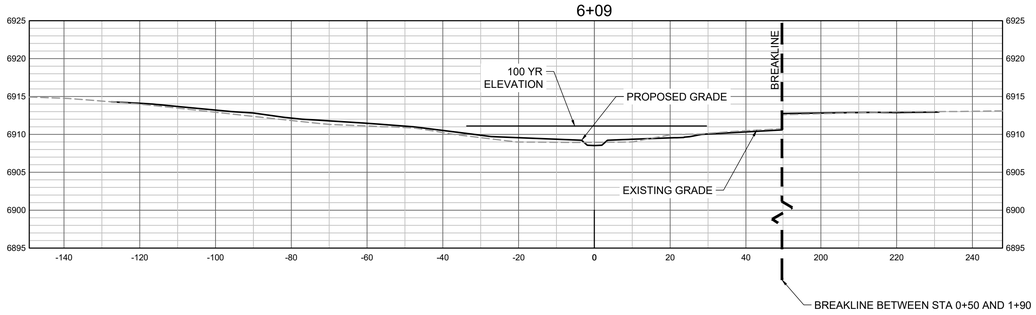
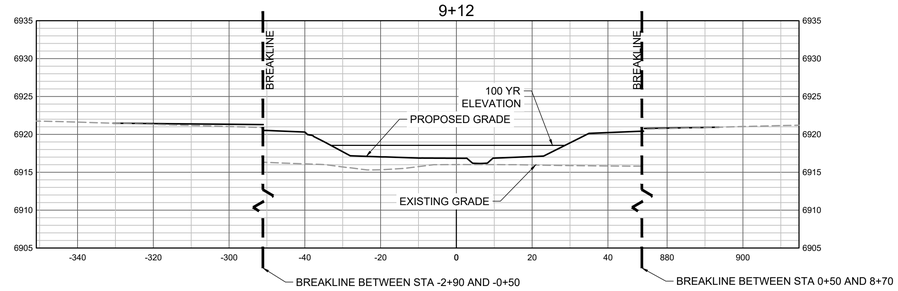
GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

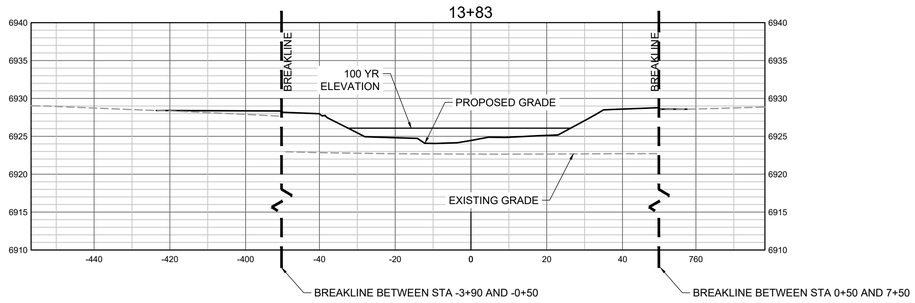
CONSTRUCTION DOCUMENTS
DRAINAGE CULVERT PLAN AND PROFILE

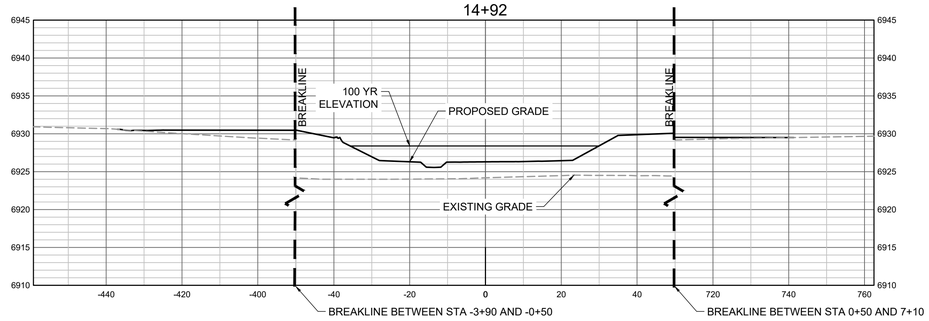
SHEET PP7 | 36

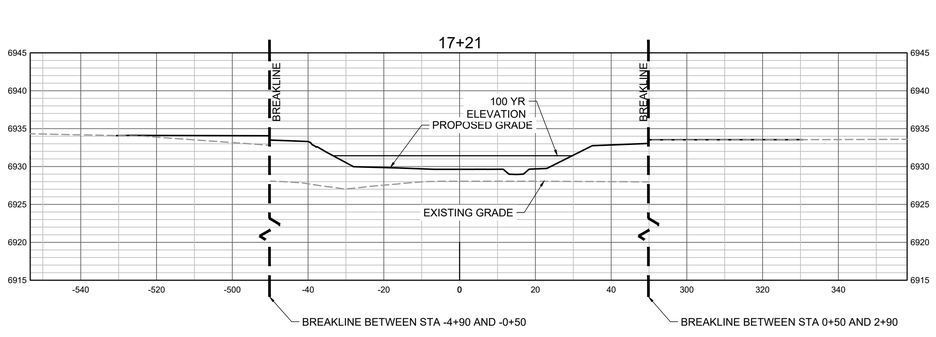
HR GREEN Xrefs: xgl-1-dh01 P&P KEY: 01-XC_Wingwalls: xc-dsgn-662.10; xc-dsgn-F1-662.10; xc-ctw-F1-662.10; xx-ctw-662; xx-ctw-F2; xc-dsgn-F2; xx-ctw-F3; xc-dsgn-F3; xx-ctw-F4; xc-dsgn-F4; 01-XC-PR_100YR_FP_DELINEATION; xx-channel; xc-filling-bndys: 01-XC-INITIAL-EC; xx-ctw-PH2; xx-ctw-PH3; 01_XC_RIPRAP; 01_XV-Row; 01-XC-channel; xx-dgn_662; xx-util_662; 01_DC_BOX_CULVERTS

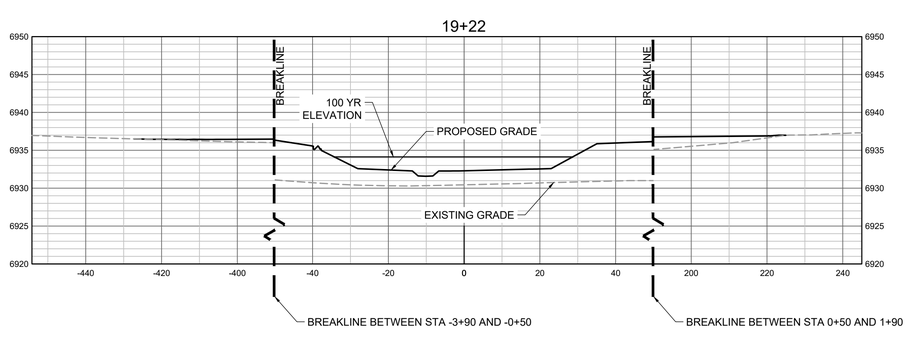


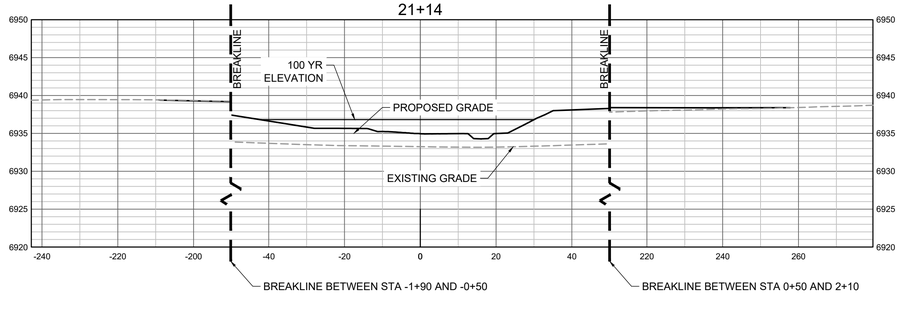


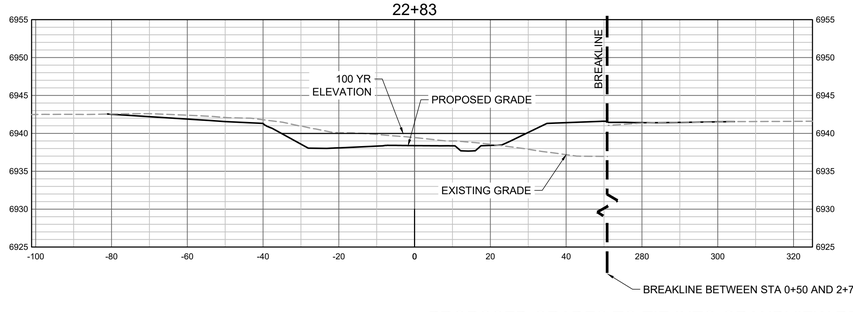












PROPOSED GRADES TO TIE INTO GRANDVIEW RESERVE FILING 1. REFER TO THE GRANDVIEW RESERVE FILING 1 PLAN SET FOR CONTINUATION OF GRADING THAT IS BEING TIED INTO OUTSIDE OF CHANNEL GRADING LIMITS.

HORIZONTAL 0 20 10 VERTICAL 0 10 5

HR GREEN X-refs: xgr1-db01.01-XC-PR_100YR_FP_DELINEATION

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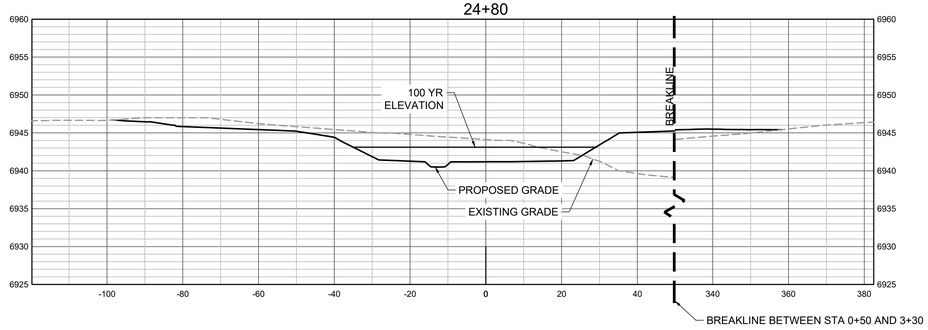
CONSTRUCTION DOCUMENTS
TRIBUTARY 2 CROSS SECTIONS

SHEET CS1

37

24+80



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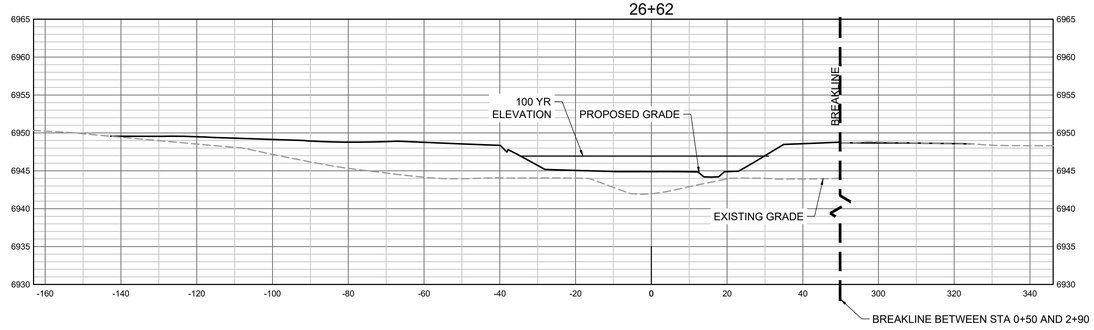

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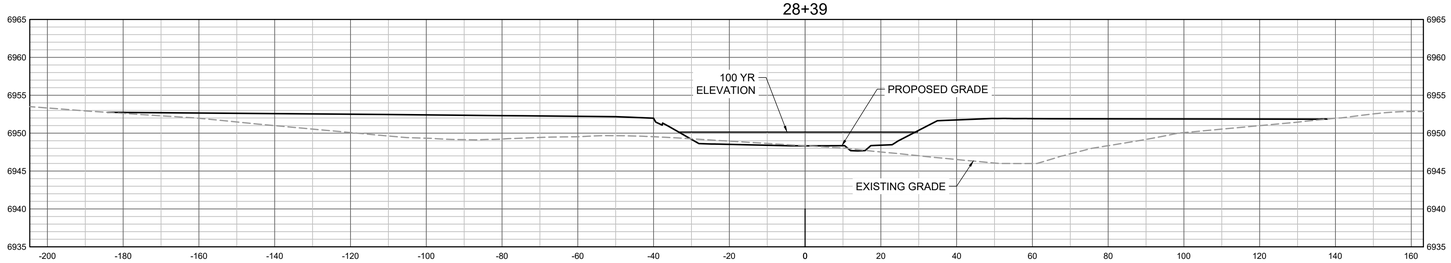

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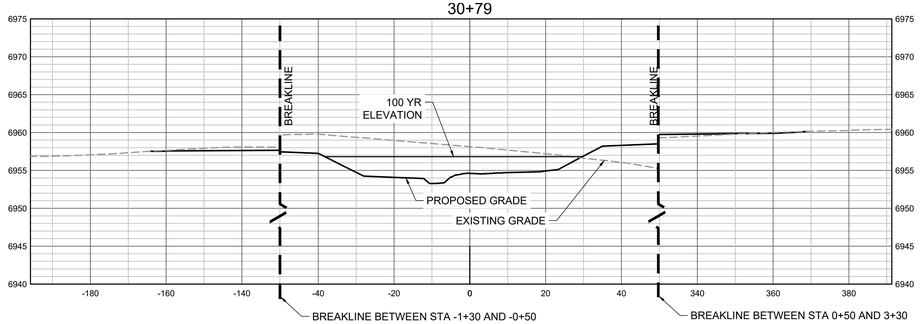

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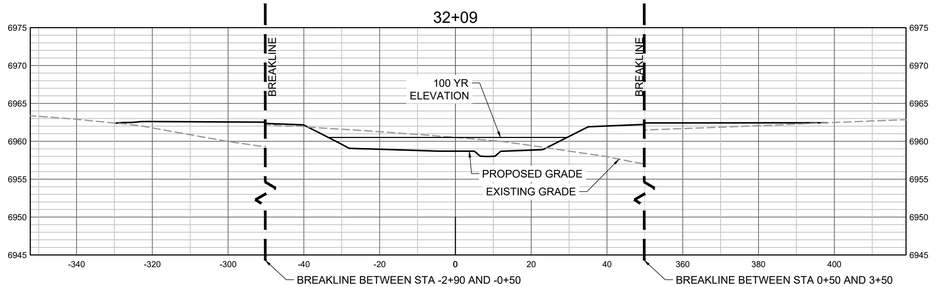

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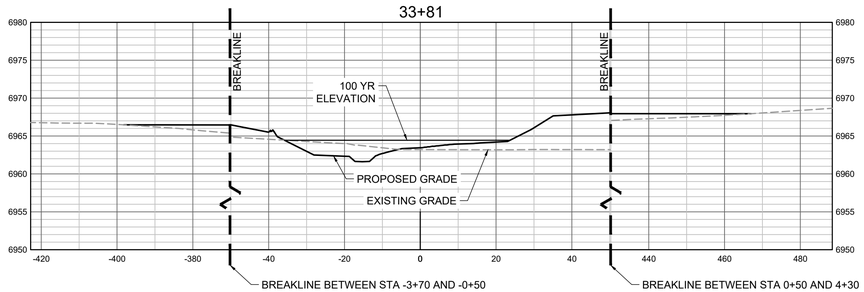

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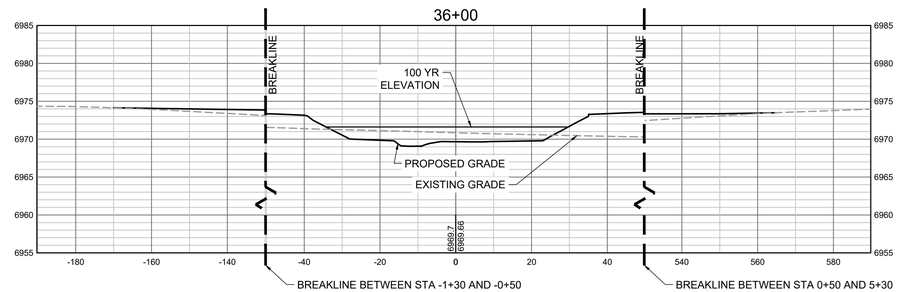

PROPOSED GRADES TO TIE INTO GRANDVIEW RESERVE FILING 1. REFER TO THE GRANDVIEW RESERVE FILING 1 PLAN SET FOR CONTINUATION OF GRADING THAT IS BEING TIED INTO OUTSIDE OF CHANNEL GRADING LIMITS.

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SHEET CS2 38

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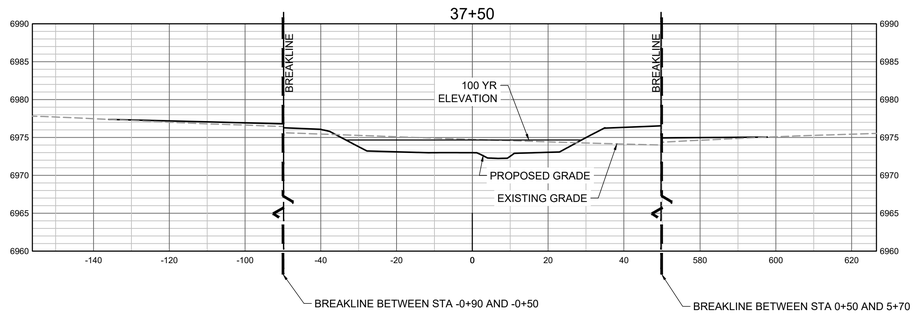

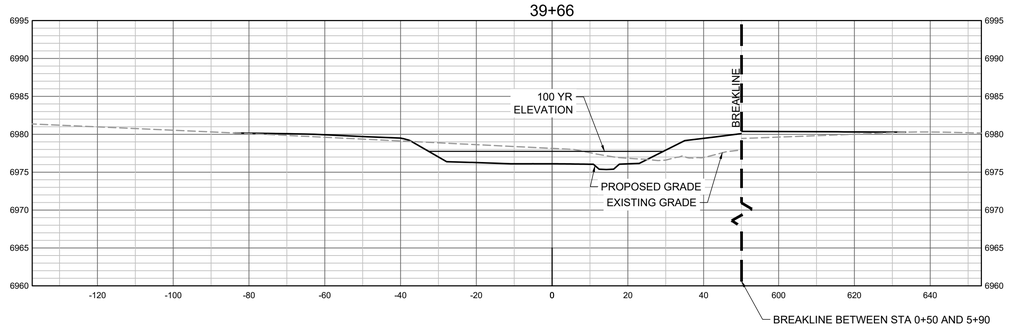

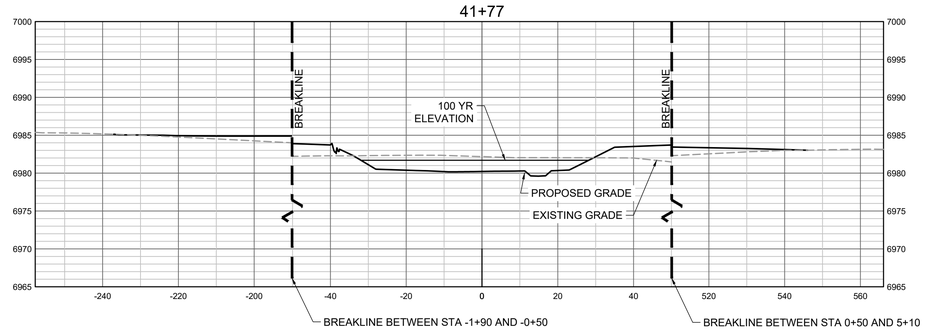

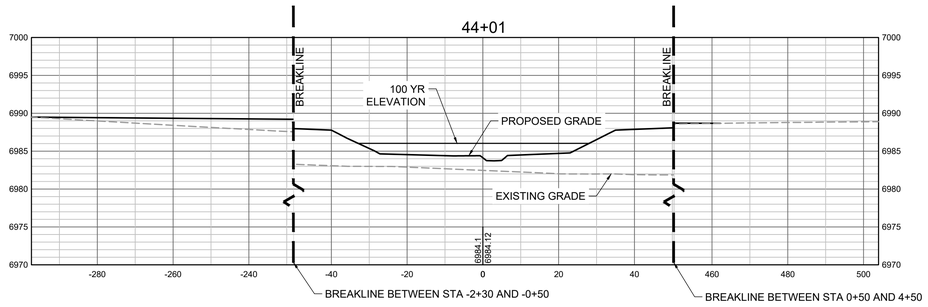

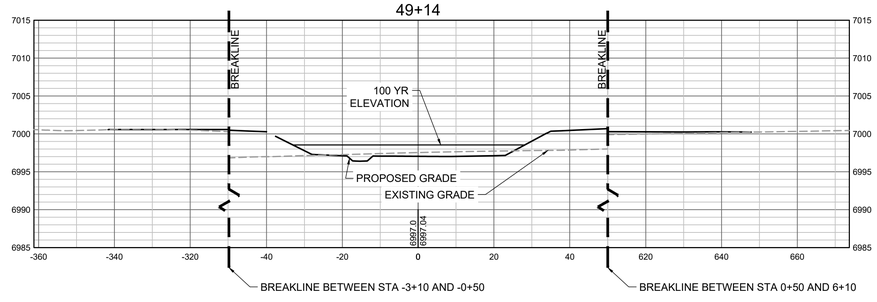

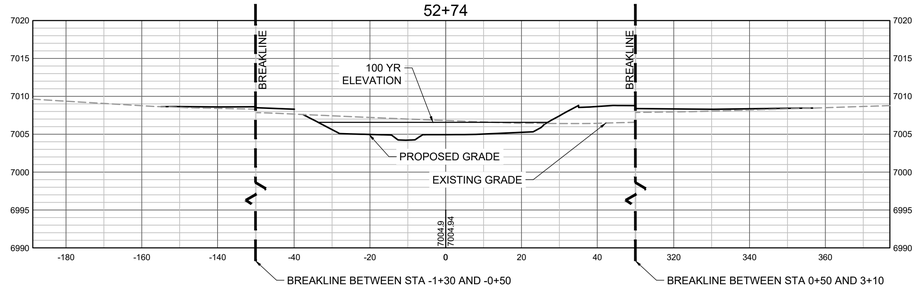

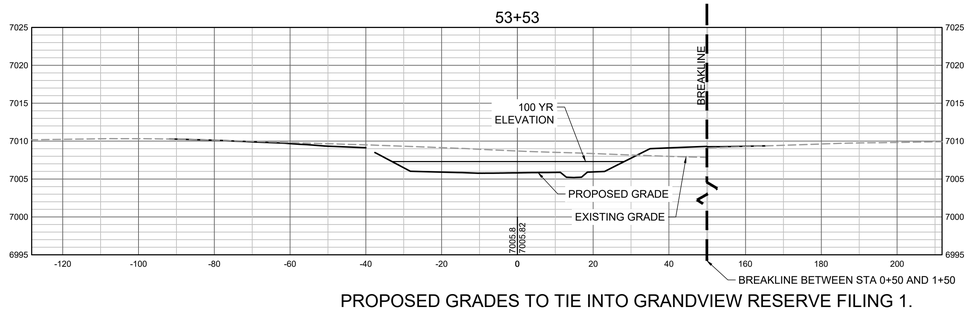

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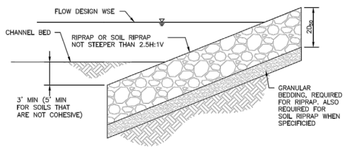


RIPRAP DESIGNATION	% SMALLER THAN GIVEN SIZE BY WEIGHT	INTERMEDIATE ROCK DIMENSION (INCHES)	D_{50}* (INCHES)
TYPE VL	70 – 100 50 – 70 35 – 50 2 – 10	12 9 6 2	6
TYPE L	70 – 100 50 – 70 35 – 50 2 – 10	15 12 9 3	9
TYPE M	70 – 100 50 – 70 35 – 50 2 – 10	21 18 12 4	12
TYPE H	70 – 100 50 – 70 35 – 50 2 – 10	30 24 18 6	18
*D_{50} = MEAN ROCK SIZE			

Figure 8-34. Riprap and soil riprap placement and gradation (part 1 of 3)

SOIL RIPRAP NOTES:

1. ELEVATION TOLERANCES FOR THE SOIL RIPRAP SHALL BE 0.10 FEET. THICKNESS OF SOIL RIPRAP SHALL BE NO LESS THAN THICKNESS SHOWN AND NO MORE THAN 2–INCHES GREATER THAN THE THICKNESS SHOWN.

2. WHERE "SOIL RIPRAP" IS DESIGNATED ON THE CONTRACT DRAWINGS, RIPRAP VOIDS ARE TO BE FILLED WITH NATIVE SOIL. THE RIPRAP SHALL BE PRE–MIXED WITH THE NATIVE SOIL AT THE FOLLOWING PROPORTIONS BY VOLUME: 65PERCENT RIPRAP AND 35 PERCENT SOIL. THE SOIL USED FOR MIXING SHALL BE NATIVE TOPSOIL AND SHALL HAVE A MINIMUM FINES CONTENT OF 15 PERCENT. THE SOIL RIPRAP SHALL BE INSTALLED IN A MANNER THAT RESULTS IN A DENSE, INTERLOCKED LAYER OF RIPRAP WITH RIPRAP VOIDS FILLED COMPLETELY WITH SOIL. SEGREGATION OF MATERIALS SHALL BE AVOIDED AND IN NO CASE SHALL THE COMBINED MATERIAL CONSIST PRIMARILY OF SOIL. THE DENSITY AND INTERLOCKING NATURE OF RIPRAP IN THE MIXED MATERIAL SHALL ESSENTIALLY BE THE SAME AS IF THE RIPRAP WAS PLACED WITHOUT SOIL.

3. WHERE SPECIFIED (TYPICALLY AS "BURIED SOIL RIPRAP"), A SURFACE LAYER OF TOPSOIL SHALL BE PLACED OVER THE SOIL RIPRAP ACCORDING TO THE THICKNESS SPECIFIED ON THE CONTRACT DRAWINGS. THE TOPSOIL SURFACE LAYER SHALL BE COMPACTED TO APPROXIMATELY 85% OF MAXIMUM DENSITY AND WITHIN TWO PERCENTAGE POINTS OF OPTIMUM MOISTURE IN ACCORDANCE WITH ASTM D698. TOPSOIL SHALL BE ADDED TO ANY AREAS THAT SETTLE.

4. ALL SOIL RIPRAP THAT IS BURIED WITH TOPSOIL SHALL BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO ANY TOPSOIL PLACEMENT.

GRADATION FOR GRANULAR BEDDING		
U.S. STANDARD SIEVE SIZE	PERCENT PASSING BY WEIGHT	
	TYPE I CDOT SECT. 703.01	TYPE II CDOT SECT. 703.09 CLASS A
3 INCHES	–	90 – 100
1½ INCHES	–	–
¾ INCHES	–	20 – 90
⅜ INCHES	100	–
#4	95 – 100	0 – 20
#16	45 – 80	–
#50	10 – 30	–
#100	2 – 10	–
#200	0 – 2	0 – 3

RIPRAP BEDDING

Figure 8-34. Riprap and soil riprap placement and gradation (part 2 of 3)

THICKNESS REQUIREMENTS FOR GRANULAR BEDDING			
RIPRAP DESIGNATION	MINIMUM BEDDING THICKNESS (INCHES)		
	FINE–GRAINED SOILS [1]		COARSE–GRAINED SOILS [2]
	TYPE I (LOWER LAYER)	TYPE II (UPPER LAYER)	TYPE II
VL (D_{50} = 6 IN)	4	4	6
L (D_{50} = 9 IN)	4	4	6
M (D_{50} = 12 IN)	4	4	6
H (D_{50} = 18 IN)	4	6	8
VH (D_{50} = 24 IN)	4	6	8

NOTES:
1. MAY SUBSTITUTE ONE 12–INCH LAYER OF TYPE II BEDDING. THE SUBSTITUTION OF ONE LAYER OF TYPE II BEDDING SHALL NOT BE PERMITTED AT DROP STRUCTURES. THE USE OF A COMBINATION OF FILTER FABRIC AND TYPE II BEDDING AT DROP STRUCTURES IS ACCEPTABLE.
2. FIFTY PERCENT OR MORE BY WEIGHT RETAINED ON THE #40 SIEVE.

Figure 8-34. Riprap and soil riprap placement and gradation (part 3 of 3)

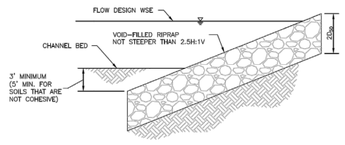


TABLE 1. MIX REQUIREMENTS FOR TYPE VL AND L VOID–FILLED RIPRAP (D_{50} = 6 TO 9 INCH)		
APPROPRIATE PROPORTIONS (BY VOLUME)	MATERIAL TYPE	MATERIAL DESCRIPTION
6 PARTS	RIPRAP	D_{50} = 6 INCH (TYPE VL) OR D_{50} = 9 INCH (TYPE L), SEE TABLE 3
1 PART	VOID–FILL MATERIAL	VTC (VEHICLE TRACKING CONTROL) ROCK (CRUSHED ROCK WITH 100% PASSING 4–INCH SIEVE, 50–70% PASSING 3–INCH SIEVE, 0–10% PASSING 2–INCH SIEVE)
1 PART	VOID–FILL MATERIAL	4–INCH MINUS PIT RUN SURGE (ROUND RIVER ROCK AND SAND, WELL GRADED, 90–100% PASSING 4–INCH SIEVE, 70–80% PASSING 1½–INCH SIEVE, 40–60% PASSING ⅜–INCH SIEVE, 10–30% PASSING #16 SIEVE)
1 PART	VOID–FILL MATERIAL	TYPE II BEDDING (CRUSHED ROCK WITH 100% PASSING 3–INCH SIEVE, 20–90% PASSING ¾–INCH SIEVE, 0–20% PASSING #4 SIEVE, 0–3% PASSING #200 SIEVE)
½ TO 1 PART	VOID–FILL MATERIAL	NATIVE TOPSOIL

VOID–FILLED RIPRAP PLACEMENT AND GRADATION

Figure 8-35. Void-filled riprap placement and gradation (part 1 of 3)

TABLE 2: MIX REQUIREMENTS FOR TYPE M AND H VOID–FILLED RIPRAP (D_{50} = 12 TO 18 INCH)		
APPROPRIATE PROPORTIONS (BY VOLUME)	MATERIAL TYPE	MATERIAL DESCRIPTION
6 PARTS	RIPRAP	D_{50} = 12–INCH (TYPE M) OR D_{50} = 18–INCH (TYPE H), SEE TABLE 3
2 PART	VOID–FILL MATERIAL	7–INCH MINUS CRUSHED ROCK SURGE (100% PASSING 7–INCH SIEVE, 80–100% PASSING 6–INCH SIEVE, 35–50% PASSING 3–INCH SIEVE, 10–20% PASSING 1½–INCH SIEVE)
1 PART	VOID–FILL MATERIAL	VTC (VEHICLE TRACKING CONTROL) ROCK (CRUSHED ROCK WITH 100% PASSING 4–INCH SIEVE, 50–70% PASSING 3–INCH SIEVE, 0–10% PASSING 2–INCH SIEVE)
1 PART	VOID–FILL MATERIAL	4–INCH MINUS PIT RUN SURGE (ROUND RIVER ROCK AND SAND, WELL GRADED, 90–100% PASSING 4–INCH SIEVE, 70–80% PASSING 1½–INCH SIEVE, 40–60% PASSING ⅜–INCH SIEVE, 10–30% PASSING #16 SIEVE)
1 PART	VOID–FILL MATERIAL	TYPE II BEDDING (CRUSHED ROCK WITH 100% PASSING 3–INCH SIEVE, 20–90% PASSING ¾–INCH SIEVE, 0–20% PASSING #4 SIEVE, 0–3% PASSING #200 SIEVE)
½ TO 1 PART	VOID–FILL MATERIAL	NATIVE TOPSOIL

TABLE 3. VOID–FILLED RIPRAP PLACEMENT AND GRADATION			
RIPRAP DESIGNATION	% SMALLER THAN GIVEN SIZE BY WEIGHT	INTERMEDIATE ROCK DIMENSION (INCHES)	D_{50}* (INCHES)
TYPE VL	70 – 100 50 – 70 35 – 50 2 – 10	12 9 6 2	6
TYPE L	70 – 100 50 – 70 35 – 50 2 – 10	15 12 9 3	9
TYPE M	70 – 100 50 – 70 35 – 50 2 – 10	21 18 12 4	12
TYPE H	70 – 100 50 – 70 35 – 50 2 – 10	30 24 18 6	18
*D_{50} = MEAN ROCK SIZE			

NOTE: MIX ON SITE AND PRIOR TO PLACEMENT

Figure 8-35. Void-filled riprap placement and gradation (part 2 of 3)

VOID–FILLED RIPRAP PLACEMENT AND GRADATION NOTES:

1. WHERE "VOID–FILLED RIPRAP" IS DESIGNATED ON THE CONTRACT DRAWINGS, RIPRAP SHALL BE MIXED WITH THE MATERIALS AND ASSOCIATED PROPORTIONS LISTED IN TABLE 1 OR TABLE 2 TO FILL THE VOIDS OF THE RIPRAP.

2. THE MIX PROPORTIONS PROVIDED IN TABLE 1 AND TABLE 2 ARE APPROXIMATE AND ARE SUBJECT TO ADJUSTMENT BY THE ENGINEER.

3. THE RIPRAP AND VOID–FILLED MATERIALS SHALL BE STOCKPILED SEPERATELY AND THOROUGHLY MIXED PRIOR TO PLACEMENT AND SHALL BE INSTALLED AND COMPACTED SO THAT A DENSE, INTERLOCKED LAYER OF RIPRAP AND VOID–FILL MATERIAL IS PROVIDED WITH RIPRAP VOIDS COMPLETELY FILLED. THE LOOSE MATERIAL SHALL BE PLACED IN A SINGLE LIFT OF SUFFICIENT HEIGHT SUCH THAT FINAL GRADE WILL BE ACHIEVED UPON COMPACTED. IF THE COMPACTED MATERIAL IS BELOW FINAL GRADE, PLACEMENT OF ONLY THE SMALLER VOID–FILL MATERIALS TO ACHIEVE FINAL GRADE IS NOT PERMITTED. IN SUCH CASES IT IS NECESSARY TO ADD MORE STANDARD SIZED VOID–FILLED RIPRAP AND REMIX THE ENTIRE THICKNESS OF ROCK TO ACHIEVE THE DESIGN SECTION. SEGREGATION OF MATERIALS SHALL BE AVOIDED AND IN NO CASE SHALL THE COMBINED MATERIAL CONSIST PRIMARILY OF THE VOID–FILL MATERIALS. THE DENSITY AND INTERLOCKING NATURE OF RIPRAP IN THE MIXED MATERIAL SHALL ESSENTIALLY BE THE SAME AS IF THE RIPRAP WAS PLACED WITHOUT FILLING THE VOIDS.

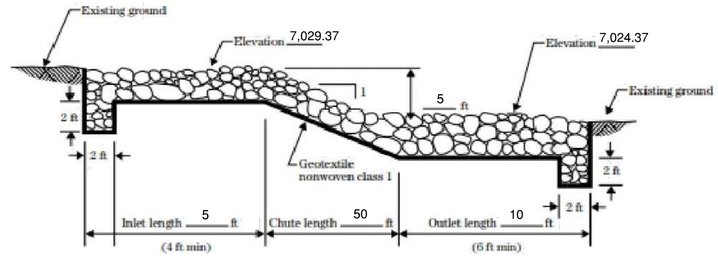
4. COMPACTION OF THE VOID–FILLED RIPRAP SHALL BE PERFORMED BY WHEEL ROLLING WITH HEAVY RUBBER–TIRED EQUIPMENT (E.G. FRONT END LOADER). THE MOISTURE CONTENT OF THE MIXTURE SHALL BE AT OPTIMUM CONDITIONS PRIOR TO COMPACTION AND WATER SHALL BE ADDED, AS NECESSARY, AT THE DIRECTION OF THE ENGINEER.

5. WHERE INDICATED ON THE DRAWINGS, A SURFACE LAYER OF MOIST TOPSOIL SHALL BE PLACED OVER THE VOID–FILLED RIPRAP. THE TOPSOIL SURFACE LAYER SHALL BE COMPACTED TO APPROXIMATELY 85% OF MAXIMUM DENSITY AND WITHIN TWO PERCENTAGE POINTS OF OPTIMUM MOISTURE IN ACCORDANCE WITH ASTM D698. TOPSOIL SHALL BE ADDED TO ANY AREAS THAT SETTLE.

6. ALL VOID–FILLED RIPRAP THAT IS BURIED WITH TOPSOIL SHALL BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO ANY TOPSOIL PLACEMENT.

Figure 8-35. Void-filled riprap placement and gradation (part 3 of 3)

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



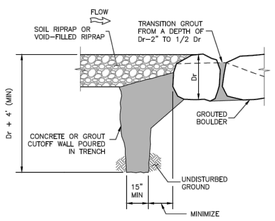


Figure 9-9. Concrete or grout cutoff wall upstream of drop structure

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

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SHEET DT1

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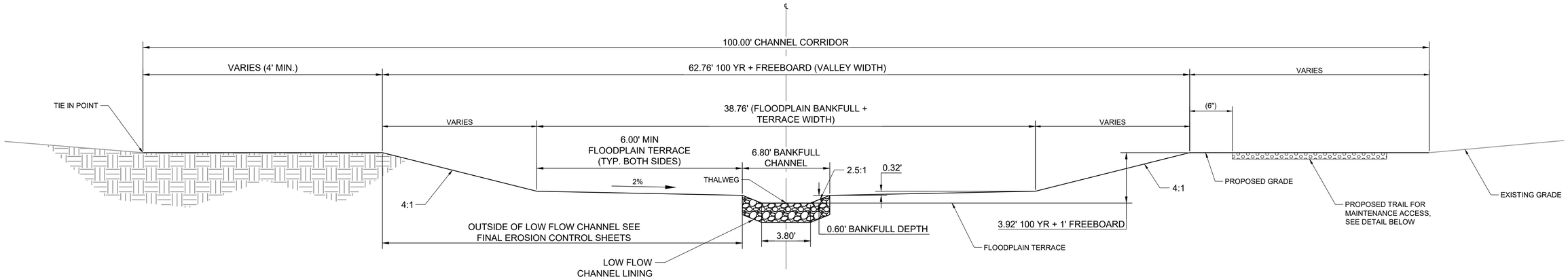

NOTES:
1. BANKFULL CHANNEL MAY SHIFT LEFT OR RIGHT WITHIN THE BANKFULL +TERRACE WIDTH SO LONG AS THE MINIMUM FLOOD PLAIN TERRACE WIDTH OF 6' IS MAINTAINED ON BOTH SIDES.
2. VALLEY WIDTH MAY SHIFT WITHIN THE 100' CHANNEL CORRIDOR.
3. SEE PROFILES FOR ELEVATION AT THALWEG.

1 TYPICAL CROSS SECTION – TRIBUTARY 2

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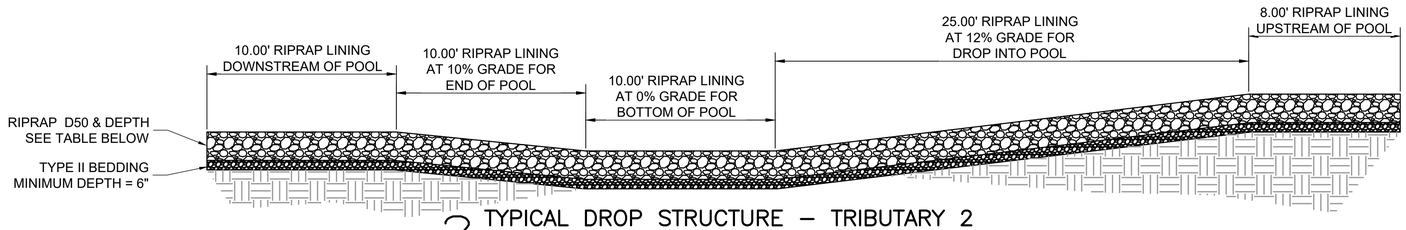
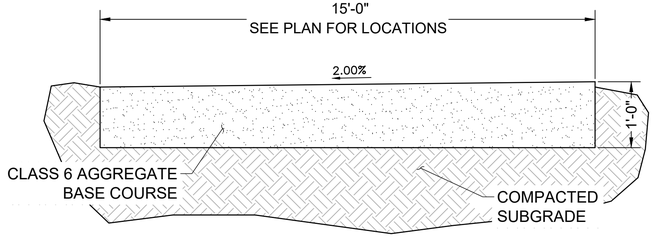


2 TYPICAL DROP STRUCTURE – TRIBUTARY 2

SCALE: N.T.S.

DROP STRUCTURES RIPRAP			
DROP STRUCTURE STYLE	RIPRAP TYPE	D50 SIZE (IN)	MINIMUM DEPTH (IN)
A	L	9	18
B	M	12	24



MAINTENANCE ROAD TYPICAL SECTION

SCALE: NTS

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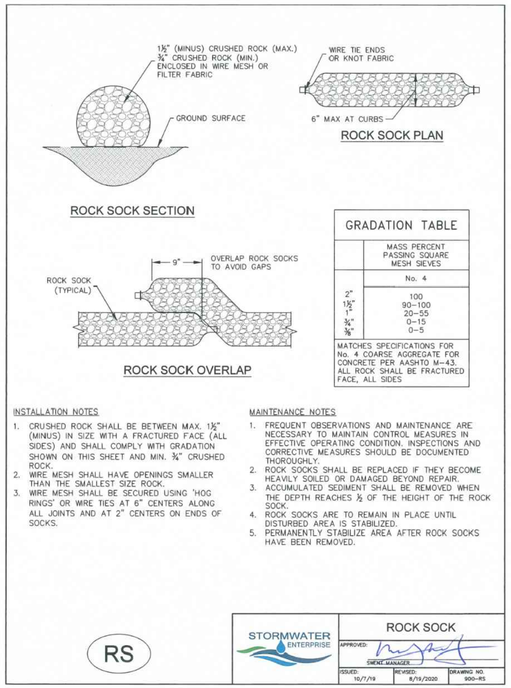


GRADATION TABLE	
	MASS PERCENT PASSING SQUARE MESH SIEVES
	No. 4
2"	100
1½"	90–100
1"	20–55
¾"	0–15
⅜"	0–5

MATCHES SPECIFICATIONS FOR No. 4 COARSE AGGREGATE FOR CONCRETE PER AASHTO M–43. ALL ROCK SHALL BE FRACTURED FACE, ALL SIDES

INSTALLATION NOTES

1. CRUSHED ROCK SHALL BE BETWEEN MAX. 1½" (MINUS) IN SIZE WITH A FRACTURED FACE (ALL SIDES) AND SHALL COMPLY WITH GRADATION SHOWN ON THIS SHEET AND MIN. ¾" CRUSHED ROCK.
2. WIRE MESH SHALL HAVE OPENINGS SMALLER THAN THE SMALLEST SIZE ROCK.
3. WIRE MESH SHALL BE SECURED USING 'HOG RINGS' OR WIRE TIES AT 6" CENTERS ALONG ALL JOINTS AND AT 2" CENTERS ON ENDS OF SOCKS.

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. ROCK SOCKS SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED OR DAMAGED BEYOND REPAIR.
3. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN THE DEPTH REACHES ½ OF THE HEIGHT OF THE ROCK SOCK.
4. ROCK SOCKS ARE TO REMAIN IN PLACE UNTIL DISTURBED AREA IS STABILIZED.
5. PERMANENTLY STABILIZE AREA AFTER ROCK SOCKS HAVE BEEN REMOVED.

RS

STORMWATER ENTERPRISE

ROCK SOCK

APPROVED: ENGINEERING MANAGER

ISSUED:	REVISED:	DRAWING NO.
10/7/19	8/19/2020	900–RS

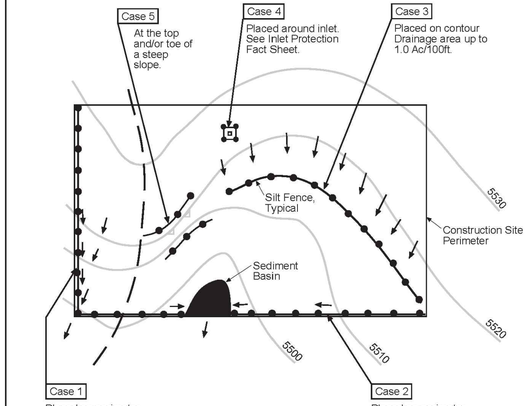


Table SF-1

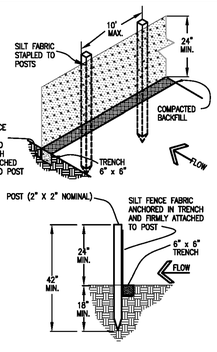
Silt Fence Used as Perimeter Control	Case 1		Case 2
	DA < 0.25 AC	0.25 < DA < 1 AC	DA > 1.0 AC
Continuous Grade	OK (1)	OK (1)	OK (1)
Area of Concentrated Flow	OK	NO (2)	NO (3)

(1) Temporary Swale or Straw Bale Barrier may be used as alternative to a Silt Fence.
(2) Check Dam may also be used as alternative to Silt Fence at low point.
(3) Sediment Basin is required for concentrated flow from drainage areas > 1.0 AC.

City of Colorado Springs
Storm Water Quality

Figure SF-1
Silt Fence
Application Examples

DEN/M/153722.CS.CB/FigSF-1/9-99



SILT FENCE

SILT FENCE NOTES

INSTALLATION REQUIREMENTS

1. SILT FENCES SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

2. WHEN JOINTS ARE NECESSARY, SILT FENCE GEOTEXTILE SHALL BE SPLICED TOGETHER ONLY AT SUPPORT POST AND SECURELY SEALED.

3. METAL POSTS SHALL BE "STUDDED TEE" OR "U" TYPE WITH MINIMUM WEIGHT OF 1.33 POUNDS PER LINEAR FOOT. WOOD POSTS SHALL HAVE A MINIMUM DIAMETER OR CROSS SECTION DIMENSION OF 2 INCHES.

4. THE FILTER MATERIAL SHALL BE FASTENED SECURELY TO METAL OR WOOD POSTS USING WIRE TIES, OR TO WOOD POSTS WITH 3/4" LONG #9 HEAVY-DUTY STAPLES. THE SILT FENCE GEOTEXTILE SHALL NOT BE STAPLED TO EXISTING TREES.

5. WHILE NOT REQUIRED, WIRE MESH FENCE MAY BE USED TO SUPPORT THE GEOTEXTILE. WIRE FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY-DUTY WIRE STAPLES AT LEAST 3/4" LONG, TIE WIRES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 6" AND SHALL NOT EXTEND MORE THAN 3' ABOVE THE ORIGINAL GROUND SURFACE.

6. ALONG THE TOE OF FILLS, INSTALL THE SILT FENCE ALONG A LEVEL CONTOUR AND PROVIDE AN AREA BEHIND THE FENCE FOR RUNOFF TO POND AND SEDIMENT TO SETTLE. A MINIMUM DISTANCE OF 5 FEET FROM THE TOE OF THE FILL IS RECOMMENDED.

7. THE HEIGHT OF THE SILT FENCE FROM THE GROUND SURFACE SHALL BE MINIMUM OF 24 INCHES AND SHALL NOT EXCEED 36 INCHES; HIGHER FENCES MAY INPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE.

MAINTENANCE REQUIREMENTS

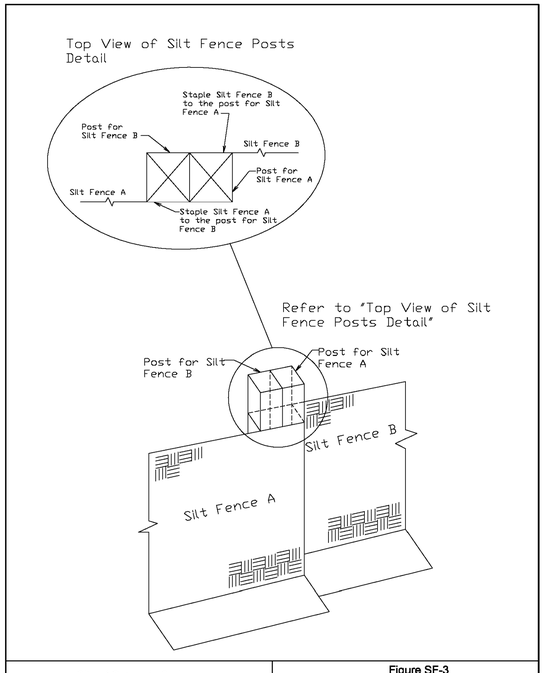
1. CONTRACTOR SHALL INSPECT SILT FENCES IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL. DAMAGED, COLLAPSED, UNENTRENCHED OR INEFFECTIVE SILT FENCES SHALL BE PROMPTLY REPAIRED OR REPLACED.

2. SEDIMENT SHALL BE REMOVED FROM BEHIND SILT FENCE WHEN IT ACCUMULATES TO HALF THE EXPOSED GEOTEXTILE HEIGHT.

3. SILT FENCES SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED AS APPROVED BY THE CITY.

City of Colorado Springs
Stormwater Quality

Figure SF-2
Silt Fence
Construction Detail and Maintenance Requirements



City of Colorado Springs
Stormwater Quality

Figure SF-3
Silt Fence Joint Tying
Construction Detail and Maintenance Requirements

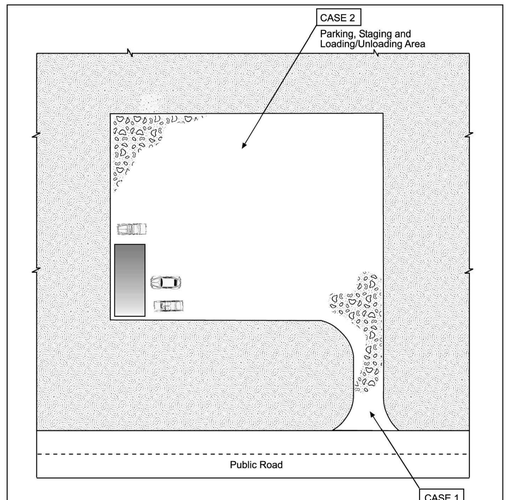


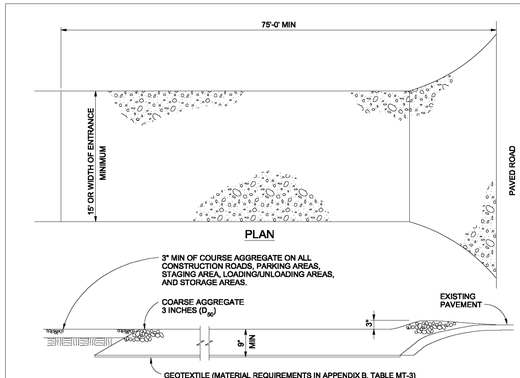
Table VT-1

	Case 1	Case 2
Gravel Thickness	9"	3"
Filter Fabric	YES	NO

City of Colorado Springs
Storm Water Quality

Figure VT-1
Vehicle Tracking
Application Examples

DEN/M/153722.CS.CB/FigVT-1/9-99



VEHICLE TRACKING
NTS

VEHICLE TRACKING NOTES

INSTALLATION REQUIREMENTS

1. ALL ENTRANCES TO THE CONSTRUCTION SITE ARE TO BE STABILIZED PRIOR TO CONSTRUCTION BEGINNING.

2. CONSTRUCTION ENTRANCES ARE TO BE BUILT WITH AN APRON TO ALLOW FOR TURNING TRAFFIC, BUT SHOULD NOT BE BUILT OVER EXISTING PAVEMENT EXCEPT FOR A SLIGHT OVERLAP.

3. AREAS TO BE STABILIZED ARE TO BE PROPERLY GRADED AND COMPACTED PRIOR TO LAYING DOWN GEOTEXTILE AND STONE.

4. CONSTRUCTION ROADS, PARKING AREAS, LOADING/UNLOADING ZONES, STORAGE AREAS, AND STAGING AREAS ARE TO BE STABILIZED.

5. CONSTRUCTION ROADS ARE TO BE BUILT TO CONFORM TO SITE GRADES, BUT SHOULD NOT HAVE SIDE SLOPES OR ROAD GRADES THAT ARE EXCESSIVELY STEEP.

MAINTENANCE REQUIREMENTS

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL STABILIZED AREAS, ESPECIALLY AFTER STORM EVENTS.

2. STONES ARE TO BE REAPPLIED PERIODICALLY AND WHEN REPAIR IS NECESSARY.

3. SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED DAILY BY SHOVELING OR SWEEPING. SEDIMENT IS NOT TO BE WASHED DOWN STORM SEWER DRAINS.

4. STORM SEWER INLET PROTECTION IS TO BE IN PLACE, INSPECTED, AND CLEANED IF NECESSARY.

5. OTHER ASSOCIATED SEDIMENT CONTROL MEASURES ARE TO BE INSPECTED TO ENSURE GOOD WORKING CONDITION.

City of Colorado Springs
Stormwater Quality

Figure VT-2
Vehicle Tracking
Application Examples

HR GREEN Xrefs: xgl-1.dfx01

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APPROVED: GLP
CAD DATE: 7/11/2024
CAD FILE: J:\2020\201662.03\CAD\Dwgs\C\DETAILS
JOB DATE: 6/20/2024
JOB NUMBER: 201662.03

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

NO.	DATE	BY	REVISION DESCRIPTION

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DR HORTON
FALCON, COLORADO

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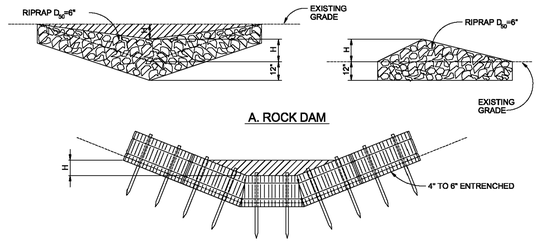
42



L= THE DISTANCE SUCH THAT POINTS A AND B ARE AT THE SAME ELEVATION.

C. SPACING CHECK DAMS

CHECK DAM
NTS

CHECK DAM NOTES

INSTALLATION REQUIREMENTS

1. STRAW BALES USED AS CHECK DAMS ARE TO MEET THE REQUIREMENTS STATED IN FIGURE SBB-2.

2. THE "H" DIMENSION SHALL BE SELECTED TO PROVIDE WEIR FLOW CONVEYANCE FOR 2-YEAR FLOW OR GREATER.

MAINTENANCE REQUIREMENTS

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL CHECK DAMS, ESPECIALLY AFTER STORM EVENTS.

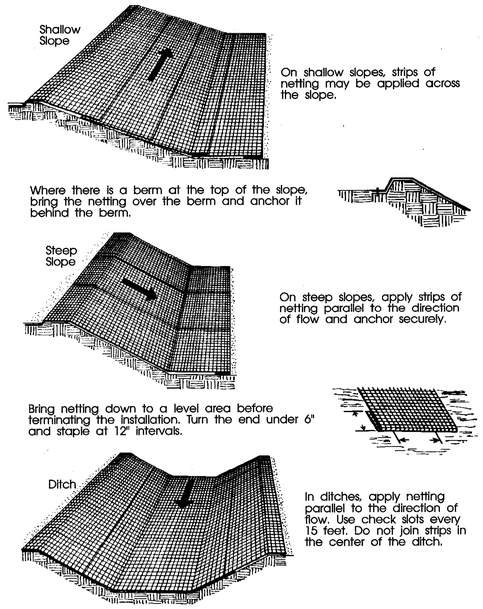
2. REPLACE STONE AS NECESSARY TO MAINTAIN THE CORRECT HEIGHT OF THE DAM.

3. ACCUMULATED SEDIMENT AND DEBRIS IS TO BE REMOVED FROM BEHIND THE DAMS AFTER EACH STORM OR WHEN 1/2 OF THE ORIGINAL HEIGHT OF THE DAM IS REACHED.

3. CHECK DAMS ARE TO REMAIN IN PLACE AND OPERATIONAL UNTIL THE DRAINAGE AREA AND CHANNEL ARE PERMANENTLY STABILIZED.

4. WHEN CHECK DAMS ARE REMOVED THE CHANNEL LINING OR VEGETATION IS TO BE RESTORED.

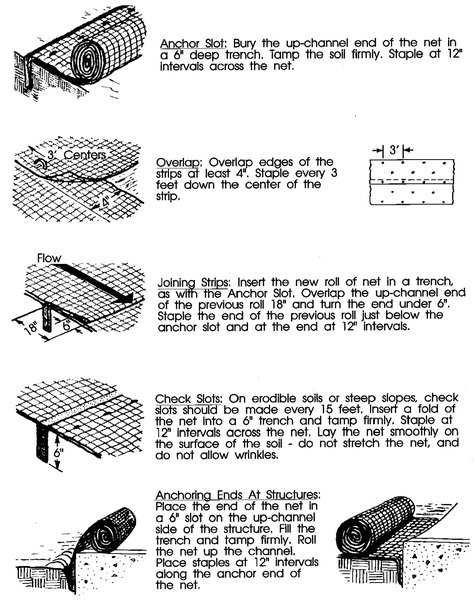
City of Colorado Springs Stormwater Quality	Figure CD-1 Check Dam Construction Detail and Maintenance Requirements



From: Virginia Soil and Water Conservation Commission, 1985

City of Colorado Springs Storm Water Quality	Figure ECB-1 Erosion Control Blanket Application Examples

CENM153722 CS CBR\[ECB-1\9-95



From: Virginia Soil and Water Conservation Commission, 1985

City of Colorado Springs Storm Water Quality	Figure ECB-2 Erosion Control Blanket Installation Requirements

CENM153722 CS CBR\[ECB-2\9-90

RECOMMENDED ANNUAL GRASSES

SPECIES (COMMON NAME)	GROWTH SEASON	SEEDING DATE	POUNDS OF PURE LIVE SEED (PLS) (PLS/ACRE)	PLANTING DEPTH (INCHES)
1. OATS	COOL	MARCH 16 - APRIL 30	35-50	1-2
2. SPRING WHEAT	COOL	MARCH 16 - APRIL 30	25-35	1-2
3. SPRING BARLEY	COOL	MARCH 16 - APRIL 30	25-35	1-2
4. ANNUAL RYEGRASS	COOL	MARCH 16 - JUNE 30	10-15	1/2
5. MILLET	WARM	MAY 16 - JULY 15	3-15	1/2-3/4
6. SUDANGRASS	WARM	MAY 16 - JULY 15	5-10	1/2-3/4
7. SORGHUM	WARM	MAY 16 - JULY 15	5-10	1/2-3/4
8. WINTER WHEAT	COOL	SEPTEMBER 1 - 30	20-35	1-2
9. WINTER BARLEY	COOL	SEPTEMBER 1 - 30	20-35	1-2
10. WINTER RYE	COOL	SEPTEMBER 1 - 30	20-35	1-2
11. TRITICALE	COOL	SEPTEMBER 1 - 30	25-40	1-2

THIS TABLE WAS TAKEN FROM UDFCD FOR RECOMMENDED ANNUAL GRASSES FOR THE DENVER METROPOLITAN AREA. THIS TABLE MAY BE USED UNLESS A SITE-SPECIFIC SEED MIX IS REQUESTED AND APPROVED.

TABLE TS-1

TEMPORARY SEEDING NOTES

INSTALLATION REQUIREMENTS

1. DISTURBED AREAS ARE TO BE SEEDED WITHIN 21 DAYS AFTER CONSTRUCTION ACTIVITY OR GRADING ENDS IF SEASON ALLOWS.

2. IF NECESSARY, SOIL IS TO BE CONDITIONED FOR PLANT GROWTH BY APPLYING TOPSOIL, FERTILIZER, OR LIME.

3. SOIL IS TO BE TILLED IMMEDIATELY PRIOR TO APPLYING SEEDS. COMPACT SOILS ESPECIALLY NEED TO BE LOOSENED.

4. SEEDBED DEPTH IS TO BE 4 INCHES FOR SLOPES FLATTER THAN 2:1, AND 1 INCH FOR SLOPES STEEPER THAN 2:1.

5. ANNUAL GRASSES LISTED IN TABLE TS-1 ARE TO BE USED FOR TEMPORARY SEEDING. SEED MIXES ARE NOT TO CONTAIN ANY NOXIOUS WEED SEEDS INCLUDING RUSSIAN OR CANADIAN THISTLE, KNAPWEED, PURPLE LOOSESTRIFE, EUROPEAN BINDWEED, JOHNSON GRASS, AND LEAFY SPURGE.

6. TABLE TS-1 ALSO PROVIDES REQUIREMENTS FOR SEEDING RATES, SEEDING DATES, AND PLANTING DEPTHS FOR THE APPROVED TYPES OF ANNUAL GRASSES.

7. SEEDING IS TO BE APPLIED USING MECHANICAL TYPE DRILLS EXCEPT WHERE SLOPES ARE STEEP OR ACCESS IS LIMITED THEN HYDRAULIC SEEDING MAY BE USED.

8. ALL SEEDED AREAS ARE TO BE MULCHED (SEE FACTSHEET ON MULCHING).

9. IF HYDRAULIC SEEDING IS USED THEN HYDRAULIC MULCHING SHALL BE DONE SEPARATELY TO AVOID SEEDS BECOMING ENCAPSULATED IN THE MULCH.

MAINTENANCE REQUIREMENTS

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL SEEDED AREAS TO ENSURE GROWTH.

2. AREAS WHERE GROWTH IS NOT OCCURRING QUICKLY OR THE MULCH HAS BEEN REMOVED SHALL BE RE-SEEDED AS SOON AS POSSIBLE AND RE-MULCHED IF NEEDED.

3. SEEDED AREAS ARE NOT TO BE DRIVEN OVER WITH CONSTRUCTION EQUIPMENT OR VEHICLES.

City of Colorado Springs Stormwater Quality	Figure TS-1 Temporary Seeding Construction Detail and Maintenance Requirements

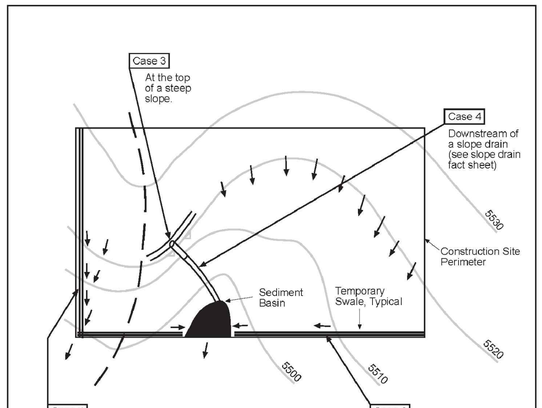
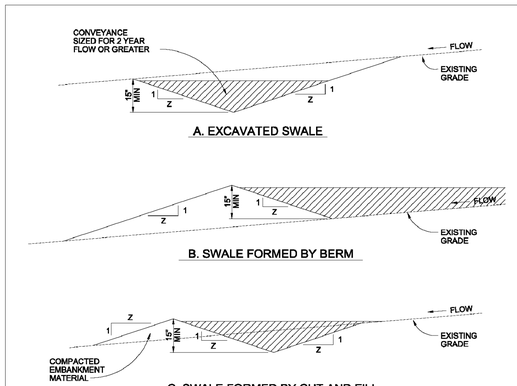


Table TSW-1

Temporary Swale Used as Perimeter Control	Case 1 DA < 1.0 AC	Case 2 DA > 1.0 AC
Continuous Grade	OK (1)	OK (1)
Area of Concentrated Flow	NO (3)	NO (2)

(1) Silt Fence or Straw Bale Barrier may be used as alternative to a Temporary Swale.
(2) With Temporary Swales Sediment Basin is required for concentrated flow from drainage areas > 1.0 AC.
(3) Check Dam is required at concentrated flow for drainage areas >1.0 acres.

City of Colorado Springs Storm Water Quality	Figure TSW-1 Temporary Swale Application Examples



TEMPORARY SWALE
NTS

TEMPORARY SWALE NOTES

INSTALLATION REQUIREMENTS

1. TEMPORARY SWALES SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

2. THE AREA UNDER WHICH THE EMBANKMENT IS TO BE INSTALLED SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ALL VEGETATION AND ROOT MAT.

3. EMBANKMENT MATERIAL SHALL CONSIST OF SOIL WITH A MINIMUM OF 15% PASSING A #200 SIEVE. EXCAVATED SOIL CAN BE USED IF IT MEETS THIS REQUIREMENT.

4. EMBANKMENT IS TO BE COMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D 698.

5. SWALES WITH SLOPE > 2% SHALL BE LINED, SEE FIGURE TSW-3.

6. SWALES ARE TO DRAIN INTO A SEDIMENT BASIN OR OTHER STABILIZED OUTLET.

7. Z SHALL BE 3 OR GREATER.

MAINTENANCE REQUIREMENTS

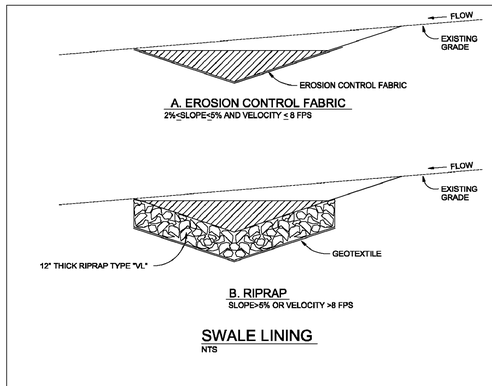
1. CONTRACTOR SHALL INSPECT SWALES AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL.

2. SWALES SHALL BE ROUTINELY CLEARED OF ANY DEBRIS OR ACCUMULATION OF SEDIMENT.

3. ERODED SLOPES OR DAMAGED LININGS SHALL IMMEDIATELY BE REPAIRED.

4. TEMPORARY SWALES SHALL REMAIN OPERATIONAL AND PROPERLY MAINTAINED UNTIL THE SITE AREA IS PERMANENTLY STABILIZED WITH ADEQUATE VEGETATIVE COVER AND/OR OTHER PERMANENT STRUCTURE AS APPROVED BY THE CITY.

City of Colorado Springs Storm Water Quality	Figure TSW-2 Temporary Swale



SWALE LINING
NTS

SWALE LINING NOTES

INSTALLATION REQUIREMENTS

1. REFER TO THE EROSION CONTROL BLANKETS FACTSHEET FOR PROPER INSTALLATION OF EROSION CONTROL FABRIC LINING.

2. SWALES WITH EASILY EROSIVE SOILS AND SLOPES LESS THAN 2%, SHALL BE LINED WITH EROSION CONTROL FABRIC.

3. VELOCITIES FOR EROSION CONTROL FABRICS SHALL NOT EXCEED 8 FPS. SWALES WITH VELOCITIES GREATER THAN 8 FPS SHALL BE LINED WITH RIP RAP.

MAINTENANCE REQUIREMENTS

1. CONTRACTOR SHALL INSPECT SWALE LININGS AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL AND WEEKLY DURING PERIODS OF NO RAINFALL.

2. DAMAGED LININGS SHALL IMMEDIATELY BE REPAIRED.

3. REFER TO THE EROSION CONTROL BLANKETS FACTSHEET FOR PROPER MAINTENANCE.

4. DISPLACED RIPRAP OR COARSE AGGREGATE IS TO BE REPLACED AS SOON AS POSSIBLE.

5. SWALE LININGS ARE TO REMAIN IN PLACE AND BE PROPERLY MAINTAINED UNTIL THE TEMPORARY SWALE IS REMOVED.

City of Colorado Springs Stormwater Quality	Figure TSW-3 Swale Linings

MULCHING NOTES

INSTALLATION REQUIREMENTS

1. ALL DISTURBED AREAS MUST BE MULCHED WITHIN 21 DAYS AFTER FINAL GRADE AND SEEDED AREAS ARE TO BE MULCHED WITHIN 24 HOURS AFTER SEEDING.

2. MATERIAL USED FOR MULCH CAN BE CERTIFIED CLEAN, WEED- AND SEED-FREE LONG STEMMED FIELD OR MARSH HAY, OR STRAW OF OATS, BARLEY, WHEAT, RYE, OR TRITICALE CERTIFIED BY THE COLORADO DEPARTMENT OF AGRICULTURE WEED FREE FORAGE CERTIFICATION PROGRAM.

3. HYDRAULIC MULCHING MATERIAL SHALL CONSIST OF VIRGIN WOOD FIBER MANUFACTURED FROM CLEAN WHOLE WOOD CHIPS. WOOD CHIPS CANNOT CONTAIN ANY GROWTH OR GERMINATION INHIBITORS OR BE PRODUCED FROM RECYCLED MATERIAL. GRAVEL CAN ALSO BE USED.

4. MULCH IS TO BE APPLIED EVENLY AT A RATE OF 2 TONS PER ACRE.

5. MULCH IS TO BE ANCHORED EITHER BY CRIMPING (TUCKING MULCH FIBERS 4 INCHES INTO THE SOIL), USING NETTING (USED ON SMALL AREAS WITH STEEP SLOPES), OR WITH A TACKIFIER.

6. HYDRAULIC MULCHING AND TACKIFIERS ARE NOT TO BE USED IN THE PRESENCE OF FREE SURFACE WATER.

MAINTENANCE REQUIREMENTS

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL MULCHED AREAS.

2. MULCH IS TO BE REPLACED IMMEDIATELY IN THOSE AREAS IT HAS BEEN REMOVED, AND IF NECESSARY THE AREA SHOULD BE RESEEDED.

City of Colorado Springs Stormwater Quality	Figure MU-1 Mulching Construction Detail and Maintenance

HR GREEN Xrefs: xgt-t-dh01

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APPROVED: GLP | JOB NUMBER: 201662.03
CAD DATE: 7/11/2024
CAD FILE: J:\2020\201662.03\CAD\Dwgs\C\DETAILS

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

NO.	DATE	BY	REVISION DESCRIPTION

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DR HORTON
FALCON, COLORADO

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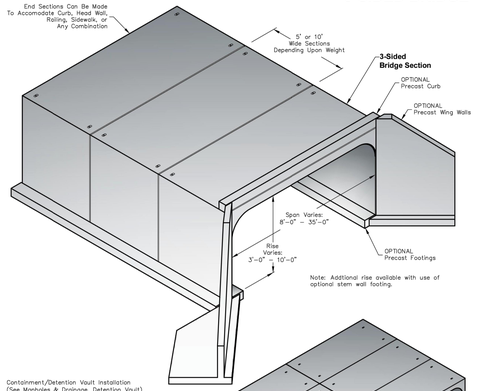
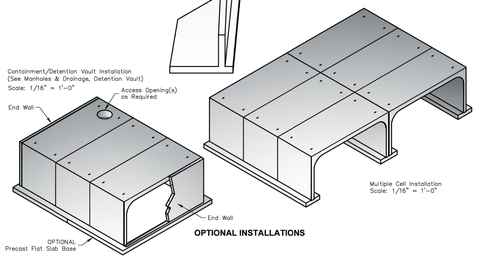
43

3-SIDED BRIDGE





OPTIONAL INSTALLATIONS

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PO Box 323, Wilsonville, Oregon 97070-0323
Tel: (503) 682-2844 Fax: (503) 682-2657

3-SIDED BRIDGE	3-SIDED BRIDGE
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Issue Date: 2016	
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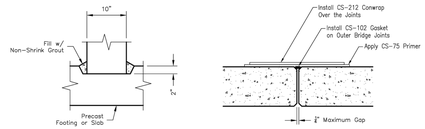
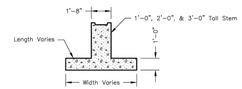
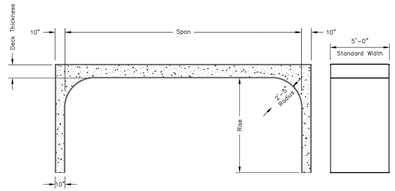
3-SIDED BRIDGE



Grout Detail - Bridge to Footing **Joint Detail**



Optional Stem Wall Footing Detail



Bridge Section **Side**

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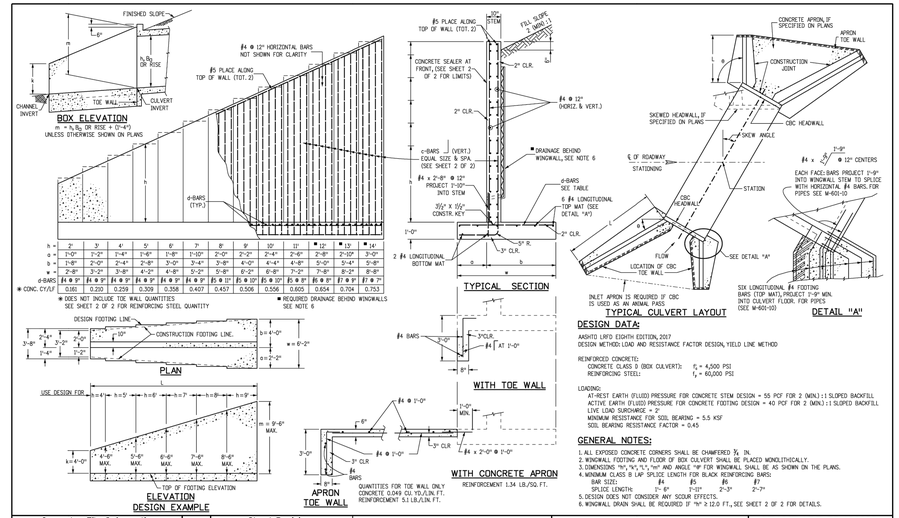


DESIGN DATA:

AASHTO LRFD EIGHTH EDITION, 2017
DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN, YIELD LINE METHOD

REINFORCED CONCRETE:
CONCRETE CLASS B (BOX CULVERT): f'_c = 4,500 PSI
REINFORCING STEEL: f_y = 60,000 PSI

LOADING:
AT-REST EARTH (FLUID) PRESSURE FOR CONCRETE STEM DESIGN = 55 PCF FOR 2 (MIN.) : 1 SLOPED BACKFILL
ACTIVE EARTH (FLUID) PRESSURE FOR CONCRETE FOOTING DESIGN = 40 PCF FOR 2 (MIN.) : 1 SLOPED BACKFILL
LIVE LOAD SURCHARGE = 2'
MINIMUM RESISTANCE FOR SOIL BEARING = 5.5 KSF
SOIL BEARING RESISTANCE FACTOR = 0.45

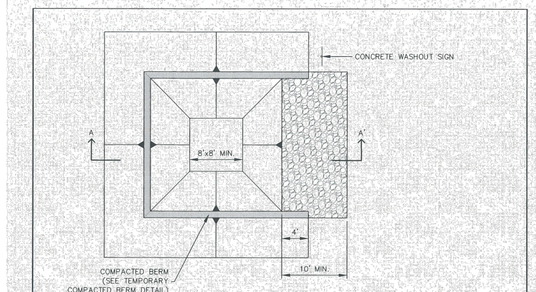
GENERAL NOTES:

1. ALL EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED ¾ IN.
2. WINGWALL FOOTING AND FLOOR OF BOX CULVERT SHALL BE PLACED MONOLITHICALLY.
3. DIMENSIONS "H", "A", "L", "m" AND ANGLE "Φ" FOR WINGWALL SHALL BE AS SHOWN ON THE PLANS.
4. MINIMUM CLASS B LAP SPLICE LENGTH FOR BLACK REINFORCING BARS:

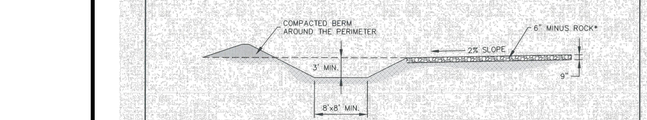
BAR SIZE:	#4	#5	#6	#7
SPLICE LENGTH:	1'- 6"	1'-11"	2'-3"	2'-7"

5. DESIGN DOES NOT CONSIDER ANY SCOUR EFFECTS.
6. WINGWALL DRAIN SHALL BE REQUIRED IF "H" ≥ 12.0 FT., SEE SHEET 2 OF 2 FOR DETAILS.

Computer File Information		Sheet Revisions		Colorado Department of Transportation	WINGWALLS FOR PIPE OR BOX CULVERTS	STANDARD PLAN NO.
Creation Date: 07/31/19		Date:	Comments	2829 West Howard Place		M-601-20
Designer Initials: JBK	CE/O			CDOT HQ, 3rd Floor		Standard Sheet No. 1 of 2
Last Modification Date: 07/31/19	CE/O			Denver, CO 80204		
Detailer Initials: LTA	CE/O			Phone: 303-757-9021 FAX: 303-757-9868		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	CE/O			Project Development Branch JBK	Issued by the Project Development Branch: July 31, 2019	Project Sheet Number:



CONCRETE WASHOUT AREA PLAN



SECTION A-A'

*ROCK REQUIRED BASED ON SITE CONDITIONS AT THE DISCRETION OF THE GEC INSPECTOR.

CWA

STORMWATER ENTERPRISE

CONCRETE WASHOUT AREA

APPROVED:

SHEET MANAGER

ISSUED:	REVISED:	DRAWING NO.
10/7/19	8/19/2020	900-CWA-1

INSTALLATION NOTES:

1. SEE PLAN VIEW FOR:
   - LOCATION OF CONCRETE WASHOUT AREA
   - LOCATE AT LEAST 50' AWAY FROM STATE WATERS MEASURED HORIZONTALLY.
3. AN IMPERMEABLE LINER (16 MIL. MINIMUM THICKNESS) IS REQUIRED IF CONCRETE WASH AREA IS LOCATED WITHIN 400' OF STATE WATERS OR 1000' OF WELLS OR DRINKING WATER SOURCES.
4. DO NOT LOCATE IN AREAS WHERE SHALLOW GROUNDWATER MAY BE PRESENT.
5. THE CONCRETE WASH AREA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
6. CONCRETE WASH AREA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 5' BY 8'.
7. BERM SURROUNDING SIDES AND BACK OF CONCRETE WASH AREA SHALL HAVE A MINIMUM HEIGHT OF 2 FEET.
8. CONCRETE WASH AREA ENTRANCE SHALL BE SLOPED 2% TOWARDS THE CONCRETE WASH AREA.
9. SIGNS SHALL BE PLACED AT THE CONCRETE WASH AREA.
10. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

MAINTENANCE NOTES:

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. THE CONCRETE WASH AREA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS ACCUMULATED IN THE PIT SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF ¾ THE HEIGHT OF THE CONCRETE WASH AREA.
3. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE, AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.
4. THE CONCRETE WASH AREA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
5. PERMANENTLY STABILIZE AREA AFTER CONCRETE WASH AREA IS REMOVED.

CWA

STORMWATER ENTERPRISE

CONCRETE WASHOUT AREA

APPROVED:

SHEET MANAGER

ISSUED:	REVISED:	DRAWING NO.
10/7/19	8/19/2020	900-CWA-2

c-BARS AND REINFORCING STEEL QUANTITY (EXCLUDE TOE WALL)

* REINFORCING STEEL QUANTITY INCLUDES STEM AND FOOTING QUANTITIES, BUT DOES NOT INCLUDE TOE WALL QUANTITIES.

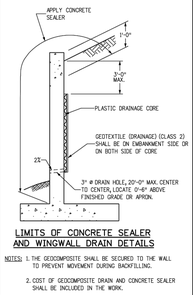
L (MULTIPLE OF m)		≤ (1.0 x m)		≤ (1.25 x m)		≤ (1.5 x m)		≤ (1.75 x m)		≤ (2.0 x m)		≤ (2.25 x m)		≤ (2.5 x m)		≤ (2.75 x m)		≤ (3.0 x m)		≤ (3.25 x m)		≤ (3.5 x m)	
m (FT)	k (FT)	c-BARS	*REINF. LB./L.F.	c-BARS	*REINF. LB./L.F.	c-BARS	*REINF. LB./L.F.	c-BARS	*REINF. LB./L.F.	c-BARS	*REINF. LB./L.F.	c-BARS	*REINF. LB./L.F.	c-BARS	*REINF. LB./L.F.	c-BARS	*REINF. LB./L.F.	c-BARS	*REINF. LB./L.F.	c-BARS	*REINF. LB./L.F.	c-BARS	*REINF. LB./L.F.
14	4	#4 @ 10"	53.60	#5 @ 10"	57.95	#5 @ 10"	57.10	#5 @ 10"	60.22	#5 @ 7"	62.43	#5 @ 7"	62.09	#5 @ 6"	65.38	#5 @ 6"	65.15	#6 @ 8"	67.10	#6 @ 8"	66.94	#6 @ 7"	70.66
	5	#5 @ 10"	55.86	#5 @ 10"	60.46	#5 @ 10"	59.60	#5 @ 8"	62.89	#5 @ 7"	65.23	#5 @ 7"	64.88	#5 @ 6"	68.34	#5 @ 6"	68.11	#6 @ 8"	70.17	#6 @ 8"	70.00	#6 @ 7"	73.90
	6	#5 @ 10"	64.43	#5 @ 10"	70.60	#5 @ 10"	69.69	#5 @ 8"	74.93	#5 @ 6"	74.45	#5 @ 7"	78.30	#5 @ 6"	83.64	#5 @ 6"	83.40	#6 @ 6"	83.22	#6 @ 6"	83.05	#7 @ 7"	89.64
	7	#5 @ 10"	67.29	#5 @ 10"	73.76	#5 @ 10"	72.83	#5 @ 8"	78.32	#5 @ 6"	77.84	#5 @ 7"	81.87	#5 @ 6"	87.45	#5 @ 6"	87.21	#6 @ 6"	87.02	#6 @ 6"	86.86	#7 @ 7"	93.73
	8	#5 @ 8"	74.71	#5 @ 8"	81.46	#5 @ 7"	87.09	#5 @ 6"	92.54	#7 @ 7"	99.47	#7 @ 7"	99.08	#7 @ 6"	107.12	#7 @ 6"	106.86	#7 @ 6"	106.66	#7 @ 6"	106.48	#7 @ 6"	106.32
	9	#5 @ 8"	78.10	#5 @ 8"	87.23	#5 @ 7"	91.03	#5 @ 6"	96.72	#7 @ 7"	103.93	#7 @ 7"	103.54	#7 @ 6"	111.90	#7 @ 6"	111.65	#7 @ 6"	111.45	#7 @ 6"	111.28	#7 @ 6"	111.13
13	4	#4 @ 10"	50.51	#4 @ 10"	49.25	#5 @ 10"	53.71	#5 @ 10"	53.09	#5 @ 10"	52.36	#5 @ 9"	53.85	#5 @ 8"	55.54	#5 @ 7"	57.85	#5 @ 7"	57.67	#5 @ 7"	57.51	#6 @ 9"	59.93
	5	#4 @ 10"	52.66	#4 @ 10"	51.37	#5 @ 10"	56.09	#5 @ 10"	55.46	#5 @ 10"	54.99	#5 @ 9"	56.29	#5 @ 8"	58.08	#5 @ 7"	60.51	#5 @ 7"	60.33	#5 @ 7"	60.17	#6 @ 9"	62.72
	6	#4 @ 10"	54.92	#5 @ 10"	59.48	#5 @ 9"	60.31	#5 @ 9"	67.56	#6 @ 9"	67.08	#6 @ 9"	66.70	#6 @ 8"	69.53	#6 @ 8"	69.28	#6 @ 7"	73.12	#6 @ 7"	72.95	#6 @ 7"	72.81
	7	#4 @ 10"	57.36	#5 @ 10"	62.16	#5 @ 9"	63.05	#6 @ 9"	70.66	#6 @ 9"	70.18	#6 @ 9"	69.78	#6 @ 8"	72.75	#6 @ 8"	72.50	#6 @ 7"	76.52	#6 @ 7"	76.35	#6 @ 7"	76.20
	8	#5 @ 9"	66.39	#5 @ 9"	72.82	#6 @ 9"	77.11	#6 @ 9"	81.68	#6 @ 9"	81.19	#6 @ 9"	80.87	#6 @ 8"	84.37	#7 @ 8"	83.18	#7 @ 7"	92.97	#7 @ 7"	92.80	#7 @ 7"	92.64
	9	#5 @ 10"	69.37	#6 @ 10"	76.10	#6 @ 8"	80.49	#6 @ 7"	85.37	#6 @ 7"	84.87	#6 @ 6"	90.59	#6 @ 6"	90.29	#7 @ 7"	97.39	#7 @ 7"	97.18	#7 @ 7"	97.00	#7 @ 7"	96.85
12	2	#4 @ 10"	43.16	#4 @ 10"	42.65	#4 @ 10"	41.82	#4 @ 10"	41.22	#4 @ 10"	40.78	#4 @ 9"	41.29	#5 @ 10"	44.81	#5 @ 10"	44.37	#5 @ 10"	44.18	#5 @ 10"	44.05	#5 @ 10"	43.87
	3	#4 @ 10"	45.02	#4 @ 10"	44.55	#4 @ 10"	43.71	#4 @ 10"	43.11	#4 @ 10"	42.66	#4 @ 9"	43.22	#5 @ 10"	46.75	#5 @ 10"	46.32	#5 @ 10"	46.12	#5 @ 10"	46.00	#5 @ 10"	46.01
	4	#4 @ 10"	47.80	#4 @ 10"	46.51	#4 @ 10"	45.65	#5 @ 10"	50.06	#5 @ 10"	49.59	#5 @ 10"	49.23	#5 @ 10"	48.94	#5 @ 10"	48.69	#5 @ 9"	50.00	#5 @ 8"	51.72	#5 @ 8"	51.57
	5	#4 @ 10"	49.84	#4 @ 10"	48.53	#4 @ 10"	47.66	#5 @ 10"	52.53	#5 @ 10"	51.85	#5 @ 10"	51.48	#5 @ 10"	51.19	#5 @ 10"	50.94	#5 @ 9"	52.33	#5 @ 8"	54.14	#5 @ 8"	54.00
	6	#4 @ 10"	51.99	#4 @ 10"	50.65	#5 @ 10"	55.34	#5 @ 8"	58.41	#5 @ 8"	57.83	#5 @ 10"	60.60	#5 @ 10"	60.29	#5 @ 9"	62.42	#5 @ 9"	62.22	#5 @ 9"	62.04	#5 @ 8"	64.89
	7	#4 @ 10"	54.30	#5 @ 10"	58.80	#5 @ 10"	57.87	#5 @ 8"	61.10	#5 @ 8"	60.61	#5 @ 10"	63.43	#5 @ 10"	63.11	#6 @ 9"	65.35	#6 @ 9"	65.15	#6 @ 9"	64.97	#6 @ 8"	67.96
	8	#5 @ 10"	62.81	#5 @ 10"	61.45	#5 @ 9"	67.46	#5 @ 9"	70.68	#5 @ 7"	70.20	#5 @ 7"	76.44	#6 @ 7"	79.13	#6 @ 7"	75.87	#6 @ 7"	81.30	#6 @ 7"	81.12	#6 @ 6"	80.98
	9	#5 @ 10"	65.64	#5 @ 10"	64.15	#5 @ 9"	70.44	#5 @ 9"	73.82	#5 @ 8"	73.33	#6 @ 7"	79.86	#6 @ 7"	79.54	#6 @ 7"	79.28	#6 @ 6"	84.95	#6 @ 6"	84.77	#6 @ 6"	84.62
11	2	#4 @ 10"	41.70	#4 @ 10"	40.42	#4 @ 10"	39.57	#4 @ 10"	38.96	#4 @ 10"	38.50	#4 @ 10"	38.15	#4 @ 10"	37.87	#4 @ 10"	37.63	#4 @ 9"	38.25	#4 @ 9"	41.46	#5 @ 10"	41.31
	3	#4 @ 10"	43.57	#4 @ 10"	42.27	#4 @ 10"	41.40	#4 @ 10"	40.79	#4 @ 10"	40.33	#4 @ 10"	39.97	#4 @ 10"	39.69	#4 @ 10"	39.45	#4 @ 9"	40.12	#5 @ 10"	43.54	#5 @ 10"	43.39
	4	#4 @ 10"	45.48	#4 @ 10"	44.16	#4 @ 10"	43.28	#4 @ 10"	42.66	#4 @ 9"	43.09	#5 @ 10"	46.57	#5 @ 10"	46.27	#5 @ 10"	46.02	#5 @ 10"	45.82	#5 @ 10"	45.65	#5 @ 10"	45.50
	5	#4 @ 10"	47.46	#4 @ 10"	46.08	#4 @ 10"	45.21	#4 @ 9"	47.34	#5 @ 10"	47.81	#5 @ 10"	47.49	#5 @ 10"	47.24	#5 @ 10"	47.03	#5 @ 10"	46.84	#5 @ 10"	46.68	#5 @ 10"	47.67
	6	#4 @ 10"	49.52	#4 @ 10"	48.14	#4 @ 9"	48.23	#5 @ 10"	51.88	#5 @ 10"	51.38	#5 @ 9"	52.57	#5 @ 9"	52.27	#5 @ 9"	53.99	#5 @ 8"	53.79	#5 @ 7"	56.18	#5 @ 7"	56.01
	7	#4 @ 10"	51.73	#4 @ 10"	50.31	#4 @ 9"	50.43	#5 @ 10"	54.29	#5 @ 10"	53.78	#5 @ 9"	55.04	#5 @ 9"	54.73	#5 @ 9"	56.55	#5 @ 8"	56.35	#5 @ 7"	58.84	#5 @ 7"	58.70
	8	#4 @ 10"	54.00	#5 @ 10"	58.44	#5 @ 10"	57.45	#5 @ 9"	60.64	#5 @ 7"	62.92	#5 @ 6"	66.25	#5 @ 6"	65.94	#5 @ 6"	65.69	#6 @ 8"	67.76	#6 @ 8"	67.57	#6 @ 7"	71.45
	9	#4 @ 10"	56.20	#5 @ 10"	60.87	#5 @ 10"	59.85	#5 @ 8"	63.21	#5 @ 7"	65.60	#5 @ 6"	69.09	#5 @ 6"	68.78	#5 @ 6"	68.52	#6 @ 8"	70.69	#6 @ 8"	70.51	#6 @ 7"	74.57
10	2	#4 @ 10"	39.84	#4 @ 10"	38.53	#4 @ 10"	37.65	#4 @ 10"	37.03	#4 @ 10"	36.57	#4 @ 10"	36.20	#4 @ 10"	35.91	#4 @ 10"	35.67	#4 @ 9"	36.07	#4 @ 9"	38.97	#5 @ 10"	38.83
	3	#4 @ 10"	41.68	#4 @ 10"	40.35	#4 @ 10"	39.47	#4 @ 10"	38.84	#4 @ 10"	38.36	#4 @ 10"	38.00	#4 @ 10"	37.71	#4 @ 10"	37.46	#4 @ 10"	37.27	#4 @ 9"	37.91	#4 @ 9"	37.76
	4	#4 @ 10"	43.58	#4 @ 10"	42.22	#4 @ 10"	41.31	#4 @ 10"	40.67	#4 @ 10"	40.19	#4 @ 10"	39.82	#4 @ 10"	39.53	#4 @ 10"	39.28	#4 @ 10"	39.08	#4 @ 9"	39.77	#4 @ 9"	39.63
	5	#4 @ 10"	45.53	#4 @ 10"	44.14	#4 @ 10"	43.21	#4 @ 10"	42.56	#4 @ 10"	42.07	#4 @ 10"	41.44	#5 @ 10"	46.13	#5 @ 10"	45.87	#5 @ 10"	45.67	#5 @ 10"	45.49	#5 @ 10"	45.34
	6	#4 @ 10"	47.58	#4 @ 10"	46.14	#4 @ 10"	45.20	#4 @ 10"	44.53	#4 @ 10"	44.03	#5 @ 10"	48.67	#5 @ 10"	48.35	#5 @ 10"	48.08	#5 @ 10"	47.88	#5 @ 10"	47.69	#5 @ 10"	47.54
	7	#4 @ 10"	49.79	#4 @ 10"	48.31	#4 @ 10"	47.34	#4 @ 10"	46.67	#4 @ 10"	51.45	#5 @ 10"	51.04	#5 @ 9"	52.29	#5 @ 9"	52.03	#5 @ 8"	53.79	#5 @ 8"	53.61	#5 @ 7"	56.00
	8	#4 @ 10"	52.06	#4 @ 10"	50.54	#4 @ 9"	49.54	#5 @ 10"	54.43	#5 @ 10"	53.89	#5 @ 10"	53.47	#5 @ 9"	54.80	#5 @ 9"	54.53	#5 @ 8"	56.39	#5 @ 8"	56.20	#5 @ 7"	58.72
9	2	#4 @ 10"	38.01	#4 @ 10"	36.75	#4 @ 10"	35.85	#4 @ 10"	35.21	#4 @ 10"	34.73	#4 @ 10"	34.36	#4 @ 10"	34.06	#4 @ 10"	33.81	#4 @ 10"	33.61	#4 @ 10"	33.44	#4 @ 10"	33.30
	3	#4 @ 10"	39.93	#4 @ 10"	38.56	#4 @ 10"	37.64	#4 @ 10"	36.99	#4 @ 10"	36.51	#4 @ 10"	36.13	#4 @ 10"	35.83	#4 @ 10"	35.58	#4 @ 10"	35.38	#4 @ 10"	35.21	#4 @ 10"	35.06
	4	#4 @ 10"	41.81	#4 @ 10"	40.40	#4 @ 10"	39.47	#4 @ 10"	38.81	#4 @ 10"	38.31	#4 @ 10"	37.93	#4 @ 10"	37.63	#4 @ 10"	37.37	#4 @ 10"	37.17	#4 @ 10"	36.99	#4 @ 10"	36.84
	5	#4 @ 10"	43.75	#4 @ 10"	42.30	#4 @ 10"	41.35	#4 @ 10"	40.67	#4 @ 10"	40.17	#4 @ 10"	39.78	#4 @ 10"	39.47	#4 @ 10"	39.20	#4 @ 9"	39.88	#5 @ 10"	43.28	#5 @ 10"	43.12
	6	#4 @ 10"	45.79	#4 @ 10"	44.30	#4 @ 10"	43.31	#4 @ 10"	42.62	#4 @ 10"	42.10	#4 @ 10"	41.71	#4 @ 10"	41.39	#4 @ 10"	41.12	#4 @ 9"	41.82	#5 @ 10"	45.45	#5 @ 10"	45.30
	7	#4 @ 10"	48.04	#4 @ 10"	46.50	#4 @ 10"	45.49	#4 @ 10"	44.77	#5 @ 10"	49.29	#5 @ 10"	48.86	#5 @ 10"	48.53	#5 @ 10"	48.24	#5 @ 10"	48.03	#5 @ 10"	47.84	#5 @ 10"	47.67
	8	#4 @ 10"	50.43	#4 @ 10"	48.84	#4 @ 10"	47.80	#4 @ 10"	47.06	#5 @ 10"	51.83	#5 @ 10"	51.40	#5 @ 10"	51.05	#5 @ 10"	50.77	#5 @ 10"	50.54	#5 @ 10"	50.35	#5 @ 10"	50.18
8	2	#4 @ 10"	36.41	#4 @ 10"	35.01	#4 @ 10"	34.08	#4 @ 10"	33.42	#4 @ 10"	32.92	#4 @ 10"	32.54	#4 @ 10"	32.23	#4 @ 10"	31.97	#4 @ 10"	31.77	#4 @ 10"	31.59	#4 @ 10"	31.44
	3	#4 @ 10"	38.23	#4 @ 10"	36.80	#4 @ 10"	35.85	#4 @ 10"	35.18	#4 @ 10"	34.67	#4 @ 10"	34.28	#4 @ 10"	33.97	#4 @ 10"	33.70	#4 @ 10"	33.50	#4 @ 10"	33.32	#4 @ 10"	33.17
	4	#4 @ 10"	40.09	#4 @ 10"	38.61	#4 @ 10"	37.64	#4 @ 10"	36.95	#4 @ 10"	36.44	#4 @ 10"	36.04	#4 @ 10"	35.72	#4 @ 10"	35.45	#4 @ 10"	35.25	#4 @ 10"	35.07	#4 @ 10"	34.91
	5	#4 @ 10"	41.99	#4 @ 10"	40.47	#4 @ 10"	39.47	#4 @ 10"	38.76	#4 @ 10"	38.24	#4 @ 10"	37.83	#4 @ 10"	37.50	#4 @ 10"	37.23	#4 @ 10"	37.02	#4 @ 10"	36.84	#4 @ 10"	36.68
	6	#4 @ 10"	43.97	#4 @ 10"	42.40	#4 @ 10"	41.36	#4 @ 10"	40.64	#4 @ 10"	40.10	#4 @ 10"	39.68	#4 @ 10"	39.35	#4 @ 10"	39.07	#4 @ 10"	38.83	#4 @ 10"	43.13	#5 @ 10"	42.96
	7	#4 @ 10"	46.19	#4 @ 10"	44.56	#4 @ 10"	43.49	#4 @ 10"	42.74	#4 @ 10"	42.18	#4 @ 10"	41.75	#4 @ 10"	41.41	#4 @ 10"	41.13	#4 @ 9"	45.65	#5 @ 10"	45.45	#5 @ 10"	45.28
7	2	#4 @ 10"	34.90	#4 @ 10"	33.44	#4 @ 10"	32.47	#4 @ 10"	31.78	#4 @ 10"	31.27	#4 @ 10"	30.86	#4 @ 10"	30.54	#4 @ 10"	30.27	#4 @ 10"	30.06	#4 @ 10"	29.88	#4 @ 10"	29.72
	3	#4 @ 10"	36.72	#4 @ 10"	35.23	#4 @ 10"	34.23	#4 @ 10"	33.53	#4 @ 10"	33.00	#4 @ 10"	32.59	#4 @ 10"	32.26	#4 @ 10"	31.99	#4 @ 10"	31.78	#4 @ 10"	31.59	#4 @ 10"	31.43
	4	#4 @ 10"	38.59	#4 @ 10"	37.04	#4 @ 10"	36.01	#4 @ 10"	35.29	#4 @ 10"	34.75	#4 @ 10"	34.33	#4 @ 10"	33.99	#4 @ 10"	33.71	#4 @ 10"	33.50	#4 @ 10"	33.31	#4 @ 10"	33.14
	5	#4 @ 10"	40.48	#4 @ 10"	38.86	#4 @ 10"	37.80	#4 @ 10"	37.06	#4 @ 10"	36.50	#4 @ 10"	36.07	#4 @ 10"	35.73	#4 @ 10"	35.44	#4 @ 10"	35.22	#4 @ 10"	35.03	#4 @ 10"	34.86
	6	#4 @ 10"	42.39	#4 @ 10"	40.71	#4 @ 10"	39.61	#4 @ 10"	38.84	#4 @ 10"	38.26	#4 @ 10"	37.82	#4 @ 10"	37.47	#4 @ 10"	37.17	#4 @ 10"	36.95	#4 @ 10"	36.75	#4 @ 10"	36.58

EXAMPLE:

SELECT THE c-BARS SIZE, SPACING AND STEEL QUANTITY FOR A 25.0 FEET LONG WINGWALL WITH m = 11.8 FT. AND k = 6.3 FT.

SOLUTION:

1. DETERMINE WINGWALL LENGTH IN MULTIPLE OF m:
   L / m = 25.0 / 11.8 = 2.12
   L = (2.12 x m), USE L ≤ (2.25 x m)
2. ROUND TO NEAREST WHOLE NUMBER FOR m AND k:
   m = 11.8 FT., USE m = 12.0 FT.
   k = 6.3 FT., USE k = 6.0 FT.
3. DETERMINE c-BARS BY USING THE TABLE:
   L ≤ (2.25 x m)
   m = 12
   k = 6
   c-BARS: #6 @ 10"
   REINF. STEEL = 60.60 LB / LF
4. DETERMINE REINFORCING STEEL QUANTITY OF WHOLE WINGWALL:
   REINFORCING STEEL QUANTITY = 25.0 x 60.60 = 1,515 LB.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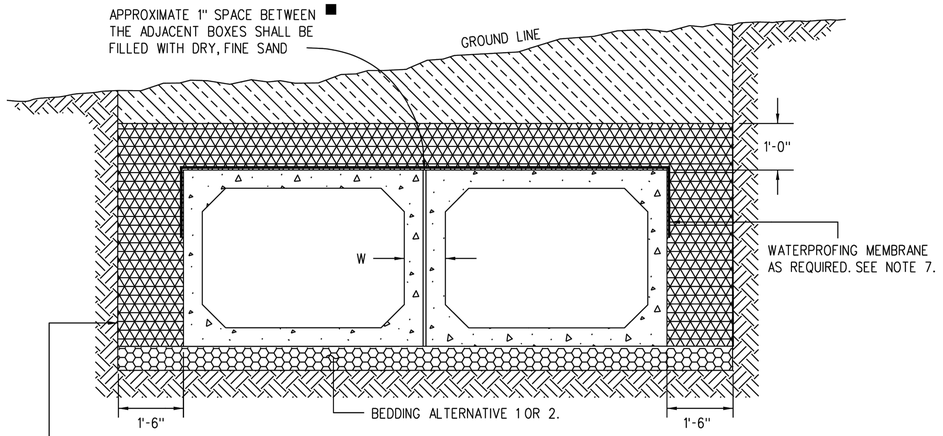
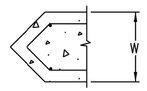


■ GROUT OR FOAM SEALANT SHALL BE USED WHEN SPECIFIED ON THE PLANS.

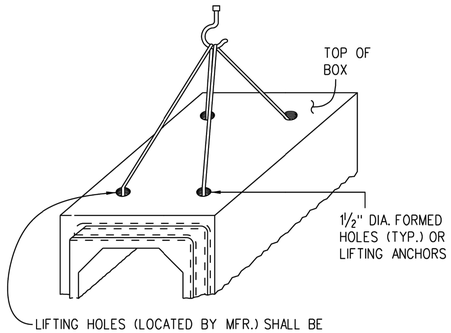
EXCAVATION & BACKFILL

(DOUBLE PARALLEL PRECAST BOX CULVERT INSTALLATION SHOWN)

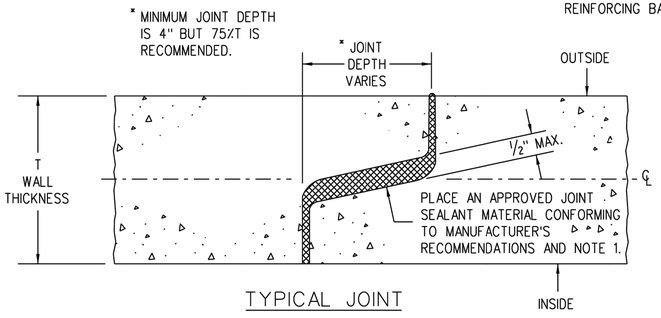


NOSE ANGLE DETAIL

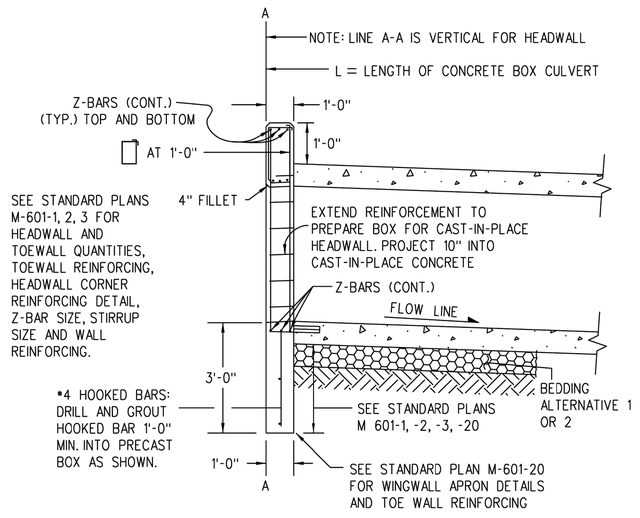
SEE STANDARD PLANS M-601-2, AND 3 TYPICAL AT ADJACENT BOXES DRILL AND GROUT REINFORCING BARS (TYP.)



LIFTING

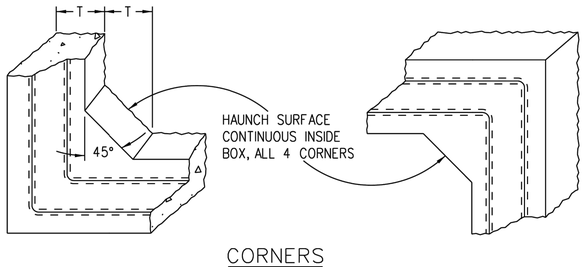


TYPICAL JOINT

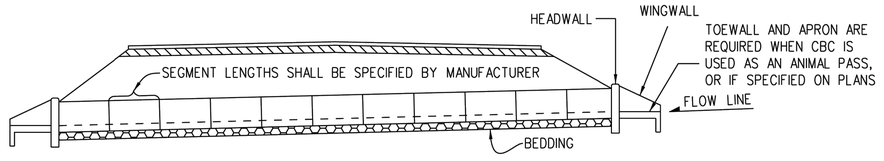


CULVERT END

(WITH HEADWALL)



CORNERS



TYPICAL CULVERT INSTALLATION

GENERAL NOTES

1. ALL PRECAST CONCRETE BOX CULVERTS SHALL CONFORM TO THE LRFD DESIGN REQUIREMENTS OF ASTM C 1577, AND THE FOLLOWING SPECIFICATIONS:

ITEM OR CONDITION	AASHTO	EQUIV. ASTM	CDOT SPECIFICATION
PREFORMED JOINT MATERIAL	M 198, 6.1 OR 6.2	C 990, 6.1 OR 6.2	705.01

   ELECTRONICALLY SEALED DESIGN CALCULATIONS, INDEPENDENT CHECK, AND RATING FOR A PRECAST CONCRETE BOX WITH SPANS NOT INCLUDED IN C 1577 SHALL BE PROVIDED BY THE MANUFACTURER IN ACCORDANCE WITH THE CURRENT CDOT BRIDGE DESIGN AND RATING MANUALS.

2. THE CONTRACTOR SHALL SUBMIT ELECTRONICALLY SEALED SHOP DRAWINGS TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION.

3. BEDDING ALTERNATIVE 1 OR 2 IS REQUIRED:

   BEDDING ALTERNATIVE IS AT THE CONTRACTOR'S OPTION. BEDDING AND EXCAVATION FOR BEDDING WILL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.

   BEDDING ALTERNATIVE 1 CONSISTS OF 6 IN. OF AGGREGATE BASE COURSE (CLASS 6) COMPACTED TO NOT LESS THAN 95% MAXIMUM DENSITY DETERMINED IN CONFORMANCE WITH AASHTO T 180.

   BEDDING ALTERNATIVE 2 CONSISTS OF AN 3 IN. THICK, MINIMUM, LEAN CONCRETE BASE. CEMENT CONTENT = 250 LBS./CU. YD.

   AGGREGATE GRADATION FOR ALTERNATIVE 2 BEDDING:

PASSING 2 IN. SIEVE	—	100%
PASSING NO. 4 SIEVE	—	20% TO 70%
PASSING NO. 200 SIEVE	—	5% TO 15%

4. CBC JOINTS USING RUBBER GASKETS SHALL MEET ASTM C1677.

5. CLASS 1 DRAINAGE GEOTEXTILE SHALL BE COMPLETELY WRAPPED AROUND ALL CBC JOINTS WHICH DO NOT HAVE RUBBER GASKETS. THE GEOTEXTILE SHALL EXTEND A MINIMUM OF 1 FT. ON EACH SIDE OF JOINTS AND SHALL OVERLAP AND BE SECURELY ATTACHED FOR AT LEAST 1 FT. AT ITS ENDS. THE WRAP SHALL BE A SMOOTH FIT (NOT LOOSE OR STRETCHED) JUST PRIOR TO BACKFILL. THE GEOTEXTILE MATERIAL SHALL MEET THE APPLICABLE REQUIREMENTS OF SECTION 420. COST FOR GEOTEXTILE WILL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.

6. FOR ANY CULVERT SPAN OR COMBINATION OF SPANS FOR MULTIPLE BOXES 20 FEET OR GREATER, A FOUNDATION INVESTIGATION AND REPORT ARE REQUIRED.

7. FOR FILL HEIGHTS LESS THAN 2 FEET, A WATERPROOFING MEMBRANE OR 30 MIL THICK GEOMEMBRANE SHALL BE PROVIDED FOR THE TOP OF THE TOP SLAB AND 18 INCHES DOWN ALONG THE TOPS OF THE EXTERIOR WALLS.

8. SEE M-601-1, 2, AND 3 FOR CAST-IN-PLACE CONCRETE BOX CULVERT DETAILS.

LEGEND

STRUCTURE EXCAVATION LIMITS
STRUCTURE BACKFILL, (CLASS 1)
EMBANKMENT MATERIAL
EARTH
BEDDING
CONCRETE

Computer File Information		Sheet Revisions	
Creation Date: 07/31/19		Date:	Comments
Designer Initials: JBK	(R-X)	09/10/20	Added the Waterproofing Membrane in the "Excavation and Backfill" detail and revised General Note 7. Added ASTM C 1577 design requirements in General Note 1, and revised the table. Added Electronically Sealed requirements in notes 1 and 2. Revised note 6.
Last Modification Date: 09/10/20	(R-X)		
Detailer Initials: LTA	(R-X)		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)		

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Project Development Branch JBK

PRECAST CONCRETE BOX CULVERT

Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO.
M-603-3
Standard Sheet No. 1 of 1
Project Sheet Number:

HR GREEN.Xrefs: xgr-1-dh01

DRAWN BY:	TBI	JOB DATE:	6/20/2024
APPROVED:	GLP	JOB NUMBER:	201662.03
CAD DATE:	7/11/2024		
CAD FILE:	J:\2020\201662.03\CAD\Dwgs\C\DETAILS		

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

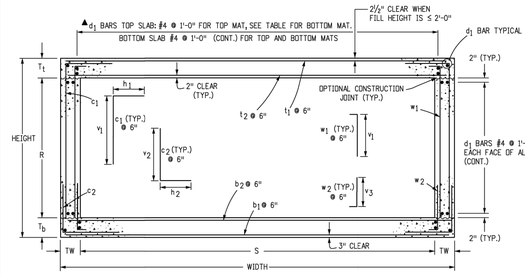
NO.	DATE	BY	REVISION DESCRIPTION

HR GREEN - DENVER
5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

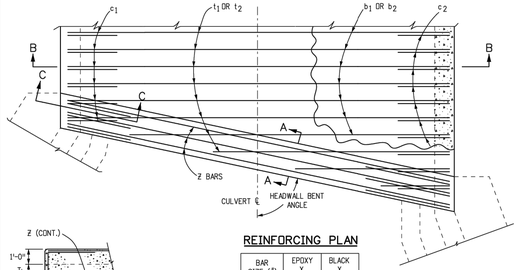
GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

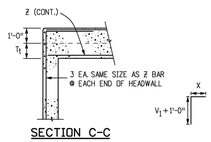
CONSTRUCTION DOCUMENTS
DETAILS

SHEET DT6



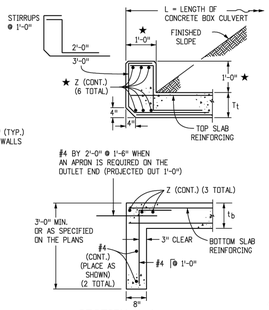
SECTION B-B



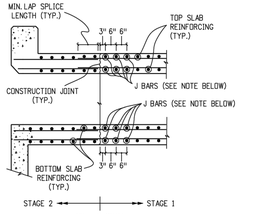


SECTION C-C

HEADWALL CORNER REINFORCING DETAIL



SECTION A-A



NOT TO SCALE

CONSTRUCTION JOINT DETAIL FOR STAGED CONSTRUCTION

NOTE: THIS DETAIL IS FOR CONSTRUCTION JOINTS INSTALLED PERPENDICULAR TO THE ℄ OF THE BOX ONLY. THE CONTRACTOR CAN DESIGN AND INSTALL J BARS AT HIS EXPENSE TO SUPPORT TEMPORARY LIVE LOADS DURING STAGE 1 CONSTRUCTION. J BARS SHALL BE THE SAME SIZE AS THE TOP AND BOTTOM SLAB REINFORCING WHEN THERE ARE NO TEMPORARY LIVE LOADS TO SUPPORT.

REINFORCING PLAN

BAR SIZE (#)	EPOXY X (FT.-IN.)	BLACK X (FT.-IN.)
4	2'-4	1'-11
5	2'-10	2'-4
6	3'-5	2'-10
7	4'-1	3'-3
8	5'-3	4'-3
9	6'-8	5'-5

GENERAL NOTES

1. ALL CONCRETE SHALL BE CLASS D (BOX CULVERT).
2. ALL CONSTRUCTION JOINTS SHALL BE THOROUGHLY CLEANED BEFORE FRESH CONCRETE IS PLACED.
3. ALL CONSTRUCTION JOINTS NOT SHOWN ON THE PLANS SHALL BE CONSTRUCTED ONLY IF APPROVED BY THE ENGINEER.
4. THE CONTRACTOR SHALL MAINTAIN THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION.
5. STRUCTURE EXCAVATION AND BACKFILL SHALL BE IN ACCORDANCE WITH STANDARD PLAN M-206-1.
6. ANY CULVERT SPAN 20 FT. OR GREATER, A FOUNDATION INVESTIGATION AND REPORT ARE REQUIRED.
7. BACKFILL SHALL NOT BEGIN UNTIL TOP SLAB HAS REACHED DESIGN STRENGTH, f'c.
8. SPLICE QUANTITIES FOR LONGITUDINAL AND TRANSVERSE BARS ARE NOT INCLUDED.
9. REINFORCING STEEL SHALL BE GRADE 60.
10. THE MINIMUM LAP SPLICE LENGTH FOR EPOXY COATED REINFORCING BARS SHALL BE:

BAR SIZE:	#4	#5	#6	#7	#8	#9	#10	#11
SPLICE LENGTH:	1'-3"	1'-7"	2'-5"	2'-10"	3'-8"	4'-8"	5'-11"	7'-3"

THE MINIMUM LAP SPLICE LENGTH FOR BLACK REINFORCING BARS SHALL BE:

BAR SIZE:	#4	#5	#6	#7	#8	#9	#10	#11
SPLICE LENGTH:	1'-1"	1'-4"	1'-7"	1'-11"	2'-6"	3'-1"	3'-11"	4'-10"

THE ABOVE SPLICE LENGTHS ARE FOR CLASS B SPLICES.

11. ALL DIMENSIONS ARE PERPENDICULAR TO THE CENTERLINE OF THE BOX.
12. WINGWALLS SHALL BE TIED TO CONCRETE BOX CULVERT IN ACCORDANCE WITH STANDARD PLAN M-601-20.
13. ALL TRANSVERSE REINFORCING SHALL BE NORMAL TO THE CENTERLINE OF THE BOX.
14. THE FILL HEIGHT IS THE DISTANCE MEASURED FROM THE TOP OF THE TOP SLAB TO THE TOP OF PAVEMENT.
15. ALL EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED ¾".
16. FOR FILL HEIGHTS LESS THAN 2 FT. A WATERPROOFING MEMBRANE SHALL BE PROVIDED FOR THE TOP OF THE TOP SLAB AND 18 INCHES DOWN FROM THE TOP OF THE EXTERIOR WALLS.
17. FOR FILL HEIGHTS LESS THAN 2 FT, THE d_1 BARS FOR THE BOTTOM MAT OF THE TOP SLAB SHALL BE AS FOLLOWS:

S	6	8	10	12, 14, 16, 18, 20
BAR SIZE:	#5	#6	#6	#5
SPACING	1'-0"	1'-0"	0'-6"	0'-6"

DESIGN DATA: 7TH EDITION, 2014, OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

RATING DATA: 2ND EDITION, 2011, OF THE AASHTO MANUAL FOR BRIDGE EVALUATION
f_y = 60,000 psi.,
f'_c = 4,500 psi.,

LOADING DATA:
LIVE LOAD = AASHTO LRFD, HL-93 TRUCK, HL-93 TANDEM, COLORADO PERMIT TRUCK, AND NRL
DEAD LOAD CASE 1: VERTICAL EARTH LOAD = 120 LBS./CU.FT.
HORIZONTAL EARTH LOAD = 30 LBS./CU.FT.
DEAD LOAD CASE 2: VERTICAL EARTH LOAD = 120 LBS./CU.FT.
HORIZONTAL EARTH LOAD = 60 LBS./CU.FT.
THRUST IS NOT CONSIDERED IN THIS STANDARD, I.E. THRUST = 0.
WEARING SURFACE - 12 INCHES THICK CONCRETE PAVEMENT.
DEAD LOAD - TYPE 7 BARRIER.
EXTREME HEADWATER TO DEPTH RATIO IS IN ACCORDANCE WITH THE CDOT DRAINAGE MANUAL.
EXTREME HEADWATER TO DEPTH RATIO WAS INCLUDED IN THE DESIGN BUT EXCLUDED FROM THE RATINGS AS PER THE AASHTO MANUAL FOR BRIDGE EVALUATION.
LIVE LOAD SURCHARGE ON EXTERIOR WALLS = 2 FT. OF EARTH

★ IF HEADWALL MOUNT GUARDRAIL IS USED (SEE STANDARD PLAN M-606-1, SHEET 19, AND THE INFORMATION BELOW):
- ALL REINFORCING STEEL SHALL BE ACCORDING TO THIS BOX CULVERT PLAN.
- ANY SPECIAL DESIGN FOR STIRRUPS WILL NOT BE MEASURED AND PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.
- HEADWALL DIMENSION AND CONCRETE QUANTITY SHALL BE ACCORDING TO STANDARD PLAN M-606-1, SHEET 19.
- POST ANCHORS SHALL BE PROVIDED ACCORDING TO STANDARD PLAN M-606-1, SHEET 19.
- POST ANCHORS AND CONCRETE FOR HEADWALL MOUNT OF GUARDRAIL WILL NOT BE MEASURED AND PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.
- POST ANCHORS WHEN REQUIRED AND ENCASED IN HEADWALL CONCRETE, SHALL CONFORM TO ASTM A 36 OR AASHTO M 169 STEEL.

18. SEE M-603-3 FOR PRECAST CONCRETE BOX CULVERT DETAILS.

Computer File Information		Sheet Revisions	
Creation Date: 07/31/19		Date:	Comments
Designer Initials: JBE	(R-X)		
Last Modification Date: 07/31/19	(R-X)		
Detailer Initials: LTA	(R-X)		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)		

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Project Development Branch JBK

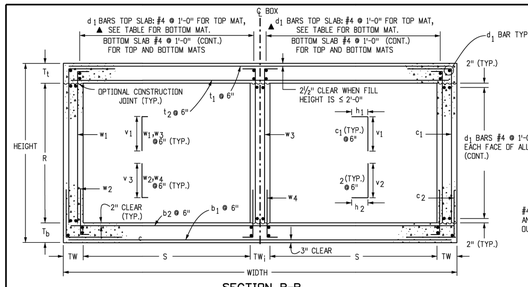
SINGLE CONCRETE BOX CULVERT (CAST-IN-PLACE)

Issued by the Project Development Branch: July 31, 2019

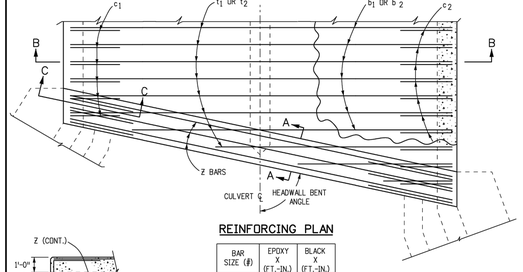
STANDARD PLAN NO. M-601-1

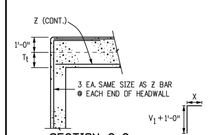
Standard Sheet No. 1 of 2

Project Sheet Number:



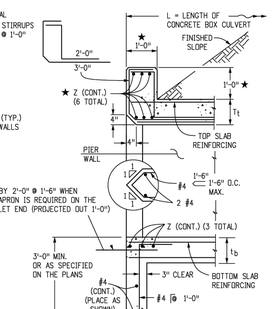
SECTION B-B



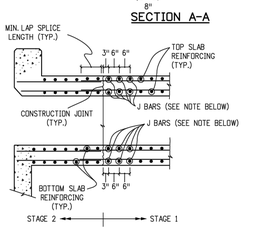


SECTION C-C

HEADWALL CORNER REINFORCING DETAIL



SECTION A-A



NOT TO SCALE

CONSTRUCTION JOINT DETAIL FOR STAGED CONSTRUCTION

NOTE: THIS DETAIL IS FOR CONSTRUCTION JOINTS INSTALLED PERPENDICULAR TO THE ℄ OF THE BOX ONLY. THE CONTRACTOR CAN DESIGN AND INSTALL J BARS AT HIS EXPENSE TO SUPPORT TEMPORARY LIVE LOADS DURING STAGE 1 CONSTRUCTION. J BARS SHALL BE THE SAME SIZE AS THE TOP AND BOTTOM SLAB REINFORCING WHEN THERE ARE NO TEMPORARY LIVE LOADS TO SUPPORT.

REINFORCING PLAN

BAR SIZE (#)	EPOXY X (FT.-IN.)	BLACK X (FT.-IN.)
4	2'-4	1'-11
5	2'-10	2'-4
6	3'-5	2'-10
7	4'-1	3'-3
8	5'-3	4'-3
9	6'-8	5'-5

GENERAL NOTES

1. ALL CONCRETE SHALL BE CLASS D (BOX CULVERT).
2. ALL CONSTRUCTION JOINTS SHALL BE THOROUGHLY CLEANED BEFORE FRESH CONCRETE IS PLACED.
3. ALL CONSTRUCTION JOINTS NOT SHOWN ON THE PLANS SHALL BE CONSTRUCTED ONLY IF APPROVED BY THE ENGINEER.
4. THE CONTRACTOR SHALL MAINTAIN THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION.
5. STRUCTURE EXCAVATION AND BACKFILL SHALL BE IN ACCORDANCE WITH STANDARD PLAN M-206-1.
6. FOR ANY CULVERT SPAN 20 FT.OR GREATER, A FOUNDATION INVESTIGATION AND REPORT ARE REQUIRED.
7. BACKFILL SHALL NOT BEGIN UNTIL TOP SLAB HAS REACHED DESIGN STRENGTH, f'c.
8. SPLICE QUANTITIES FOR LONGITUDINAL AND TRANSVERSE BARS ARE NOT INCLUDED.
9. REINFORCING STEEL SHALL BE GRADE 60.
10. THE MINIMUM LAP SPLICE LENGTH FOR EPOXY COATED REINFORCING BARS SHALL BE:

BAR SIZE:	#4	#5	#6	#7	#8	#9	#10	#11
SPLICE LENGTH:	1'-3"	1'-7"	2'-5"	2'-10"	3'-8"	4'-8"	5'-11"	7'-3"

THE MINIMUM LAP SPLICE LENGTH FOR BLACK REINFORCING BARS SHALL BE:

BAR SIZE:	#4	#5	#6	#7	#8	#9	#10	#11
SPLICE LENGTH:	1'-1"	1'-4"	1'-7"	1'-11"	2'-6"	3'-1"	3'-11"	4'-10"

THE ABOVE SPLICE LENGTHS ARE FOR CLASS B SPLICES.

11. ALL DIMENSIONS ARE PERPENDICULAR TO THE CENTERLINE OF THE BOX.
12. WINGWALLS SHALL BE TIED TO CONCRETE BOX CULVERT IN ACCORDANCE WITH STANDARD PLAN M-601-20.
13. ALL TRANSVERSE REINFORCING SHALL BE NORMAL TO THE CENTERLINE OF THE BOX.
14. THE FILL HEIGHT IS THE DISTANCE MEASURED FROM THE TOP OF THE TOP SLAB TO THE TOP OF PAVEMENT.
15. ALL EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED ¾".
16. FOR FILL HEIGHTS LESS THAN 2 FT, A WATERPROOFING MEMBRANE SHALL BE PROVIDED FOR THE TOP OF THE TOP SLAB AND 18" DOWN ALONG THE TOPS OF THE EXTERIOR WALLS.
▲17. FOR FILL HEIGHTS LESS THAN 2 FT, THE d_1 BARS FOR THE BOTTOM MAT OF THE TOP SLAB SHALL BE AS FOLLOWS:

S	5, 8	10, 12, 16	14, 18	20
BAR SIZE:	#4	#5	#6	#7
SPACING	0'-6"	1'-0"	1'-2"	1'-2"

DESIGN DATA: 7TH EDITION, 2014, OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

RATING DATA: 2ND EDITION, 2011, OF THE AASHTO MANUAL FOR BRIDGE EVALUATION
f_y = 60,000 psi.,
f'_c = 4,500 psi.,

LOADING DATA:
LIVE LOAD = AASHTO LRFD, HL-93 TRUCK, HL-93 TANDEM, COLORADO PERMIT TRUCK AND NRL
DEAD LOAD CASE 1: VERTICAL EARTH LOAD = 120 LBS./CU.FT.
HORIZONTAL EARTH LOAD = 30 LBS./CU.FT.
DEAD LOAD CASE 2: VERTICAL EARTH LOAD = 120 LBS./CU.FT.
HORIZONTAL EARTH LOAD = 60 LBS./CU.FT.
WEARING SURFACE - 12 IN. THICK CONCRETE PAVEMENT.
DEAD LOAD - TYPE 7 BARRIER.
THRUST IS NOT CONSIDERED IN THIS STANDARD, I.E. THRUST = 0.
EXTREME HEADWATER TO DEPTH RATIO IS IN ACCORDANCE WITH THE CDOT DRAINAGE MANUAL.
EXTREME HEADWATER TO DEPTH RATIO WAS INCLUDED IN THE CULVERT DESIGNS BUT EXCLUDED FROM THE RATINGS AS PER THE AASHTO MANUAL FOR BRIDGE EVALUATION.
LIVE LOAD SURCHARGE ON EXTERIOR WALLS = 2 FT. OF EARTH

★ IF HEADWALL MOUNT GUARDRAIL IS USED (SEE STANDARD PLAN M-606-1, SHEET 19) AND THE NOTES BELOW:
- ALL REINFORCING STEEL SHALL BE ACCORDING TO THIS BOX CULVERT PLAN.
- ANY SPECIAL DESIGN FOR STIRRUPS WILL NOT BE MEASURED AND PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.
- HEADWALL DIMENSION AND CONCRETE QUANTITY SHALL BE ACCORDING TO STANDARD PLAN M-606-1, SHEET 19.
- POST ANCHORS SHALL BE PROVIDED ACCORDING TO STANDARD PLAN M-606-1, SHEET 19.
- POST ANCHORS AND CONCRETE FOR HEADWALL MOUNT OF GUARDRAIL WILL NOT BE MEASURED AND PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.
- POST ANCHORS WHEN REQUIRED AND ENCASED IN HEADWALL CONCRETE, SHALL CONFORM TO ASTM A 36 OR AASHTO M 169 STEEL.

18. SEE M-603-3 FOR PRECAST CONCRETE BOX CULVERT DETAILS.

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Colorado Department of Transportation
2829 West Howard Place
CDOT HQ, 3rd Floor
Denver, CO 80204
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Project Development Branch JBK

DOUBLE CONCRETE BOX CULVERT (CAST-IN-PLACE)

Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO. M-601-2

Standard Sheet No. 1 of 2

Project Sheet Number:

HR GREEN Xrefs: xgf-1-dN01

DRAWN BY: TBI JOB DATE: 6/20/2024
APPROVED: GLP JOB NUMBER: 201662.03
CAD DATE: 7/11/2024
CAD FILE: J:\2020\201662.03\CAD\Dwgs\C\DETAILS

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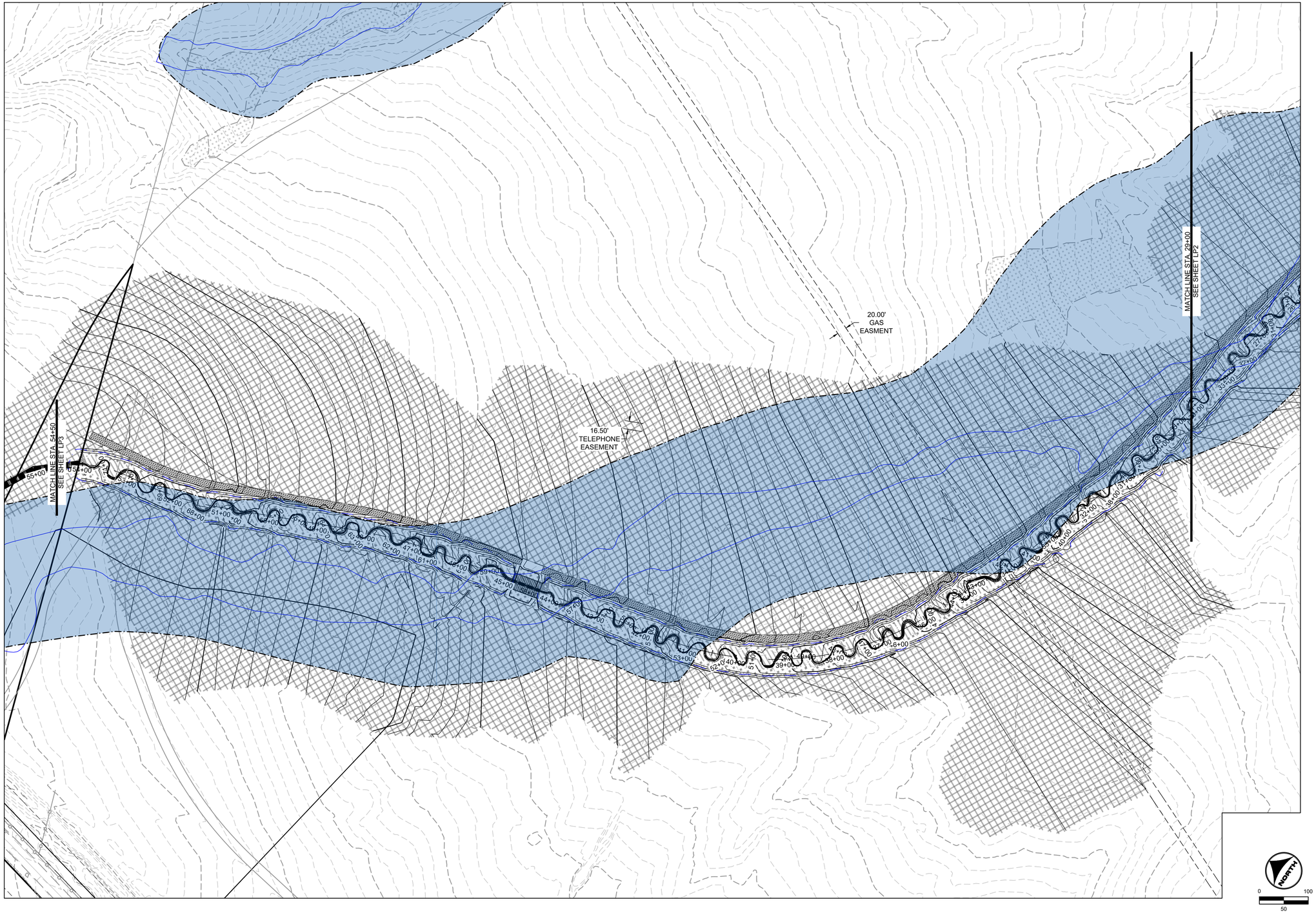
HR GREEN - DENVER
5613 DTC PARKWAY SUITE 950
DENVER CO 80111
PHONE: 720.602.4999
FAX: 713.965.0044

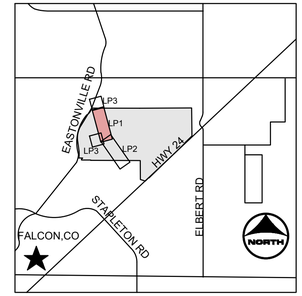
GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

CONSTRUCTION DOCUMENTS
DETAILS

SHEET DT7

46





KEYMAP

GROUNDCOVER LEGEND

SYMBOL	DESCRIPTION
	UPLAND AREA SEED MIX
	RIPARIAN SEED MIX
	WETLAND SEED MIX
	MAINTENANCE TRAIL
	PROPOSED 100-YR FLOODPLAIN
	EXISTING 100 YR FLOODPLAIN

811 UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

COLORADO LICENSED GREGORY L. PAYNE 37061 PROFESSIONAL ENGINEER

DRAWN BY:	ACH	JOB DATE:	5/20/2024
APPROVED:	GLP	JOB NUMBER:	201662.03
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GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

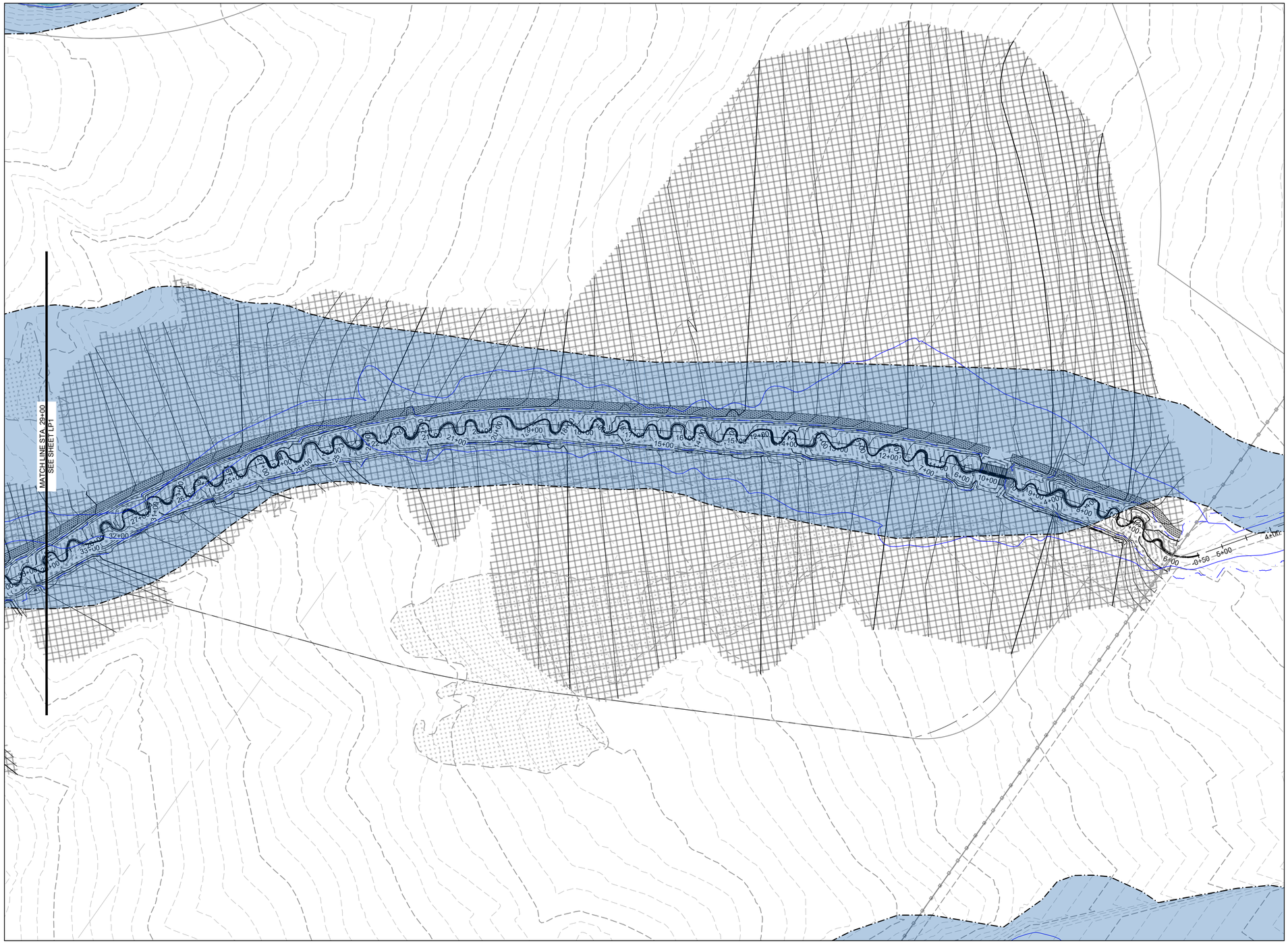
CONSTRUCTION DOCUMENTS

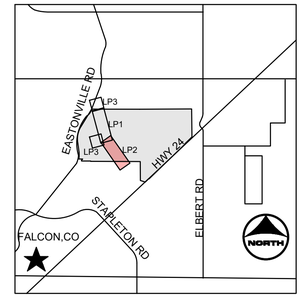
SEEDING PLAN

SHEET LP1

47

HR GREEN X-refs: xgh:1-db01_FINAL EROSION CONTROL KEY; 01-XC-FINAL-EC; 01_XC_RIPRAP; 01-XC-PR_100YR_FP_DELINEATION; xs-dsgn; 01-XC-channel; xv-cov-662; xv-dsgn_662; 01_DC_BOX_CULVERTS; 01-XC_W





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GROUNDCOVER LEGEND

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	RIPARIAN SEED MIX
	WETLAND SEED MIX
	MAINTENANCE TRAIL
	PROPOSED 100-YR FLOODPLAIN
	EXISTING 100 YR FLOODPLAIN

NORTH

0 100

50

811 UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

COLORADO LICENSED GREGORY L. ARCH 37081 PROFESSIONAL ENGINEER

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DENVER CO 80111
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FAX: 713.965.0044

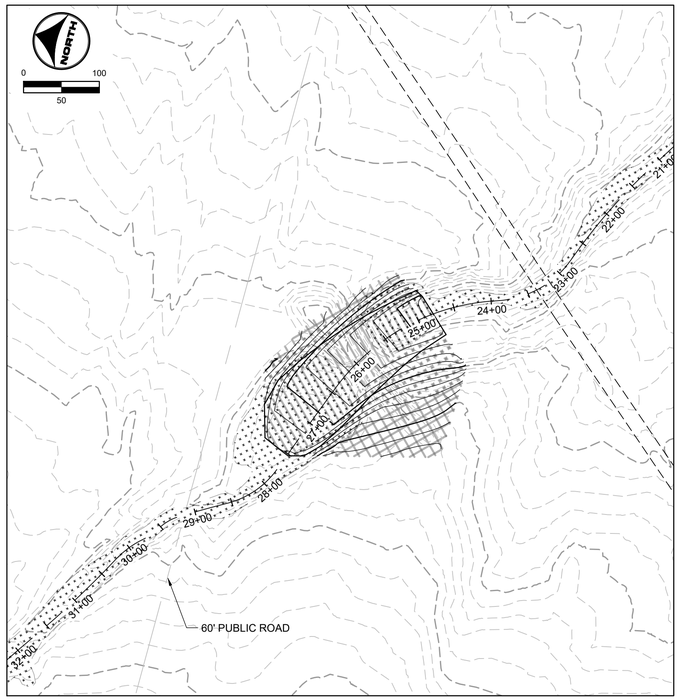
GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

CONSTRUCTION DOCUMENTS
SEEDING PLAN

SHEET LP2

48

HR GREEN Xrefs: xgl-1-dh01: FINAL EROSION CONTROL KEY; 01-XC-FINAL-EC; 01_XC_RIPRAP; 01-XC-PR_100YR_FP_DELINEATION; xl-dsgn; 01-XC-channel; xx-vnw-662; xl-dsgn_662; 01_DC_BOX_CULVERTS; 01-XC_Wingwalls



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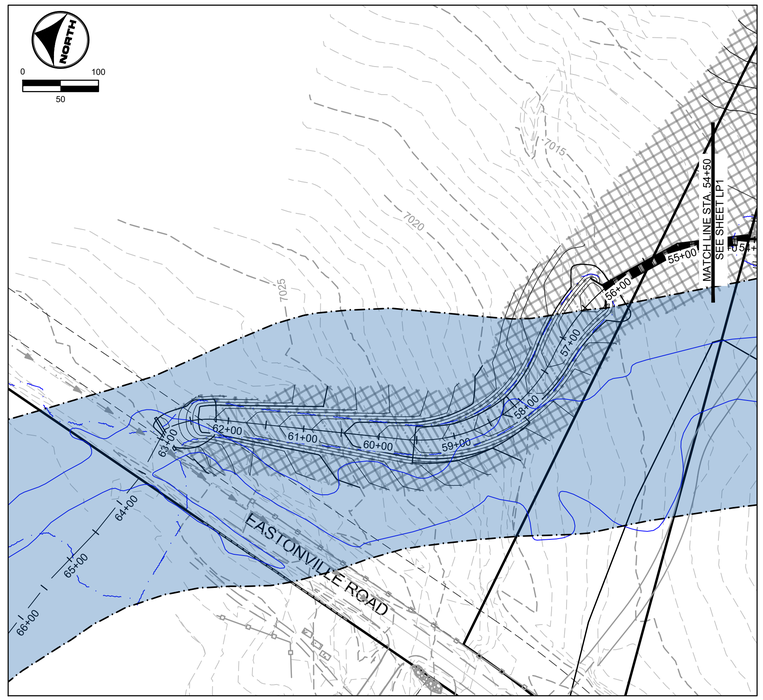

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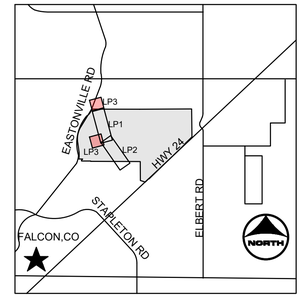

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GROUNDCOVER LEGEND

SYMBOL	DESCRIPTION
	UPLAND AREA SEED MIX
	RIPARIAN SEED MIX
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	MAINTENANCE TRAIL
	PROPOSED 100-YR FLOODPLAIN
	EXISTING 100 YR FLOODPLAIN

811 UNCC CALL BEFORE YOU DIG 811 OR 1-800-922-1987 Utility Notification Center of Colorado

COLORADO LICENSED GREGORY L. PAYNE 37081 PROFESSIONAL ENGINEER 7/25/24

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SEEDING PLAN

SHEET LP3

HR GREEN Xrefs: xgt-1-dh01_FINAL EROSION CONTROL KEY; 01-XC-FINAL-EC; 01_XC_RIPRAP; 01-XC-PR_100YR_FP_DELINEATION; xl-dsgn; 01-XC-channel; xx-row-662; xx-dsgn_662; 01_DC_BOX_CULVERTS_01-XC_Wingwalls

GENERAL SEEDING PLAN NOTES:

1. LANDSCAPE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS AND SERVICES NECESSARY TO FURNISH AND INSTALL SEEDING AS SPECIFIED HEREIN AND AS SHOWN ON THESE PLANS.
2. NO MATERIAL SUBSTITUTIONS SHALL BE MADE WITHOUT LANDSCAPE ARCHITECT'S APPROVAL. ALTERNATE MATERIALS OF SIMILAR SIZE AND CHARACTER MAY BE CONSIDERED IF SPECIFIED PLANT MATERIALS CANNOT BE OBTAINED. OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO REVISE PLANT LIST AS DEEMED NECESSARY.
3. CONTRACTOR SHALL LOCATE ALL UTILITIES BEFORE WORK. UTILITIES HAVE BEEN SHOWN ON PLAN FOR ROUGH LOCATION OF SERVICES. LOCATE EXACT UTILITY LOCATIONS BY CONTACTING "CALL BEFORE YOU DIG" AT (800) 922-1987 OR 811. CONTRACTOR WILL BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGE HE MAY CAUSE TO UTILITIES.
4. REMOVE ALL RUBBISH, EQUIPMENT, AND MATERIAL AND LEAVE THE AREA IN A NEAT, CLEAN CONDITION EACH DAY. MAINTAIN PAVED AREAS UTILIZED FOR HAULING EQUIPMENT AND MATERIALS BY OTHER TRADES IN A CLEAN AND UNOBSTRUCTED CONDITION AT ALL TIMES.
5. STORAGE OF ANY MATERIALS, BUILDINGS, VEHICLES OR EQUIPMENT, FENCING AND WARNING SIGNS SHALL BE MAINTAINED THROUGHOUT THE SITE WORK AND CONSTRUCTION PERIODS BY THE CONTRACTOR.

IRRIGATION:

1. ALL NATIVE LOW GROW SEEDING SHALL BE TEMPORARILY IRRIGATED UNTIL ESTABLISHMENT.
2. THE CONTRACTOR SHALL PROVIDE WATER, WATERING DEVICES, AND LABOR NEEDED TO IRRIGATE PLANT MATERIALS UNTIL AUTOMATIC IRRIGATION SYSTEMS ARE OPERATIONAL AND ACCEPTED. THE CONTRACTOR SHALL SUPPLY ENOUGH WATER TO MAINTAIN THE PLANT'S HEALTHY CONDITION BASED ON SEASONAL CONSIDERATIONS

REVEGETATION NOTES:

1. MATERIALS PLANTED PRIOR TO INSPECTION AND ACCEPTANCE OF PLANTS DELIVERED TO THE SITE ARE SUBJECT TO REJECTION.
2. CONTRACTOR IS RESPONSIBLE FOR DETERMINING SOURCE LOCATIONS (ON- OR OFF-SITE) FOR ALL HARVESTED MATERIALS. OFF-SITE PLANT MATERIALS SHALL ONLY BE USED UPON APPROVAL.
3. SEEDING OR PLANTING SHALL NOT OCCUR WHEN THE GROUND IS FROZEN, WHEN FREEZING TEMPERATURES ARE FORECASTED WITHIN 24 HOURS, OR WHEN CONDITIONS ARE OTHERWISE UNSUITABLE.
4. CONTRACTOR SHALL CONDUCT A SOIL TEST FOR TOP SOIL STOCKPILED ON THE SITE PRIOR TO APPLICATION OF SOIL CONDITIONER, SEEDING OR PLANTING. SOIL TEST SAMPLES SHALL ALSO BE TAKEN APPROXIMATELY EVERY 1,000 FEET ALONG THE GRADED CHANNEL FOR THE SUBGRADE SOILS AND TESTED. A RECOMMENDED SOIL CONDITIONING AMENDMENT AND APPLICATION RATE SHALL BE DETERMINED BASED ON THE SOIL TEST RESULTS. NO SOIL CONDITIONING, SEEDING, OR PLANTING SHALL OCCUR PRIOR TO SOIL TEST AND UNTIL A SOIL CONDITIONING AMENDMENT IS ACCEPTED.
5. CONTRACTOR SHALL BE REQUIRED TO SUBMIT SIGNED STATEMENTS OF GUARANTEE AND/OR CERTIFICATIONS FROM VENDORS WHO SUPPLY SEED AND SOIL CONDITIONER STATING THAT THE SEED FURNISHED IS FROM A LOT THAT HAS BEEN TESTED BY A RECOGNIZED LABORATORY FOR SEED TESTING WITHIN TWELVE (12) MONTHS PRIOR TO THE DATE OF SEEDING.
6. CONTRACTOR SHALL SUBMIT A LAB TEST OF COMPOST SAMPLE TO BE USED FOR APPROVAL. LAB TEST OF COMPOST SHALL BE TAKEN FROM THE SAME SOURCE THAT IS TO BE USED ON THIS PROJECT. LAB TEST SHALL BE TAKEN A MAXIMUM OF SIX (6) MONTHS PRIOR TO APPLICATION. THE COMPOST SHALL BE TESTED IN ACCORDANCE WITH THE U.S. COMPOSTING COUNCIL'S TEST METHODS FOR EXAMINING OF COMPOSTING AND COMPOST (TMECC) MANUAL.
7. ALL MATERIALS SHALL BE FURNISHED IN ORIGINAL MANUFACTURER'S SHIPPING BAGS OR CONTAINERS AND REMAIN IN THESE BAGS OR CONTAINERS UNTIL THEY ARE USED. ALL MATERIALS SHALL BE STORED IN A MANNER THAT WILL PREVENT THEM FROM COMING INTO CONTACT WITH PRECIPITATION, SURFACE WATER, OR ANY OTHER CONTAMINATING SUBSTANCE. ANY MATERIALS THAT HAVE BECOME WET, MOLDY, OR OTHERWISE DAMAGED IN TRANSIT OR IN STORAGE SHALL NOT BE USED.
8. ALL MATERIALS AND EQUIPMENT FURNISHED SHALL BE FREE OF NOXIOUS WEEDS INCLUDING BUT NOT LIMITED TO RUSSIAN KNAPWEED, DIFFUSE KNAPWEED, CANADA THISTLE, FIELD BINDWEED, JOHNSONGRASS, LEAFY SPURGE, KOCHIA, OR ANY STATE OR DISTRICT CRITERIA MANUAL-LISTED NOXIOUS WEED SPECIES.

SOIL AMENDMENTS:

10. PLACE TOPSOIL IN ALL WORK AREAS AND AMEND WITH 2 CUBIC YARDS PER 1,000 SQUARE FEET OF COMPOST
11. SOIL AMENDMENT SOLUTIONS WILL BE COMPLETED UPON THE COMPLETION OF SOIL TESTING.
12. INCORPORATE COMPOST INTO TOPSOIL TO A DEPTH OF 8 TO 12 INCHES

SEEDING:

13. ALL SEED SHALL BE FURNISHED IN BAGS OR CONTAINERS CLEARLY AND PROPERLY LABELED TO SHOW THE NAME AND ADDRESS OF THE SUPPLIER, THE SEED NAME, THE LOT NUMBER, NET WEIGHT, ORIGIN, THE PERCENT OF WEED SEED CONTENT, THE GUARANTEED PERCENTAGE OF PURITY AND GERMINATION, POUNDS OF PURE LIVE SEED (PLS) OF EACH SEED SPECIES, AND THE TOTAL POUNDS OF PLS IN THE CONTAINER. ALL SEED SHALL BE GUARANTEED FOR PURITY AND GERMINATION, FREE OF NOXIOUS WEED SEED AND SUPPLIED ON A PURE LIVE SEED (PLS) BASIS.
14. ALL SPECIFIED SEED MIXES SHALL CONSIST OF CERTIFIED SEED VARIETIES THAT ARE FREE OF NOXIOUS WEEDS AND HAVE BEEN TESTED FOR PURITY AND GERMINATION WITHIN SIX MONTHS OF THE PLANTING DATE. CERTIFICATION LABELS WHICH INDICATE THE SPECIES, PURITY, GERMINATION, WEED CONTENT, ORIGIN, AND TEST DATE SHALL BE SUBMITTED FOR ALL SEED MATERIALS.

SITE PREPARATION:

15. ALL DISTURBED AREAS SHALL BE RIPPED TO A MINIMUM DEPTH OF EIGHT (8) INCHES, WITH NO MORE THAN A TEN (10) INCH INTERVAL BETWEEN FURROWS. SLOPES FLATTER THAN 2:1 SHALL HAVE A WELL SETTLED SEEDBED EIGHT (8) INCHES DEEP. SLOPES 2:1 OR STEEPER SHALL BE LEFT IN A ROUGHENED CONDITION.
    - SLOPES SHALL BE FREE OF SOIL CLODS, STICKS, STONES, AND DEBRIS IN EXCESS OF FOUR (4) INCHES IN ANY DIMENSION, AND BE BROUGHT TO THE DESIRED GRADE AND LINE. SOIL PREPARATION FOR SEEDING SHALL NOT OCCUR WHEN SOIL IS FROZEN OR IN AN EXTREME WET OR DRY CONDITION.
13. SEEDING:
    - SEEDING SHALL BE RESTRICTED TO BETWEEN SPRING THAW AND JUNE 1 AND BETWEEN SEPTEMBER 1 UNTIL CONSISTENT GROUND FREEZE AND SHALL NOT BE APPLIED DURING INCLEMENT WEATHER INCLUDING RAIN AND HIGH WINDS, OR WHEN SOIL MOISTURE IS TOO HIGH TO EVENLY DISTRIBUTE SEED. SEEDING SHALL BE ACCOMPLISHED WITHIN 24 HOURS OF PREPARING THE SEEDING SURFACE.
    - DRILL SEEDING OR BROADCAST SEEDING SHALL BE USED FOR REVEGETATION. AS OUTLINED BELOW, THE SIZE AND SLOPE OF THE DISTURBED AREA SHALL DETERMINE WHICH SEEDING METHOD(S) IS APPROPRIATE AND ACCEPTABLE. WHERE FEASIBLE, DRILL SEEDING IS THE REQUIRED METHOD. IF BROADCAST SEEDING IS EMPLOYED, EITHER BY HAND, SPREADER, OR OTHER APPROVED MEANS, THE SEEDING RATE (PLS LBS/ACRE) SHALL BE DOUBLED AS SHOWN ON THE DESIGN PLAN. HYDROMULCHING, HYDRAULIC SEEDING AND STRAW MULCHING WILL NOT BE ACCEPTED.
    - FOR SLOPES EQUAL TO OR LESS THAN 3:1, SEED SHALL BE PLANTED USING A RANGELAND DRILL WITH A SMALL SEED/LEGUME BOX AND AN AGITATOR BOX FOR FLUFFY OR BULKY SEED. SEED ROWS SHALL BE SPACED SEVEN (7) TO TEN (10) INCHES APART, AND PLANTED ½ INCH TO ¾ INCH DEEP. THE DRILL SHALL HAVE DOUBLE-DISK FURROW OPENERS WITH DEPTH BANDS AND PACKER WHEELS. SEEDING SHALL BE ACCOMPLISHED USING BI-DIRECTIONAL DRILLING AND WITH THE SECOND DIRECTION FOLLOWING THE SLOPE CONTOUR. THE DRILL EQUIPMENT SHALL BE CALIBRATED EACH DAY OR WHENEVER THERE IS A CHANGE IN THE SEED MIX TO ENSURE PROPER SEED DISTRIBUTION AND RATE.
    - FOR SLOPES GREATER THAN 3:1, SEED SHALL BE BROADCAST BY HAND OR MECHANICAL SPREADER. ALL SEED SOWN BY BROADCAST-TYPE SEEDERS SHALL BE "RAKED IN" OR COVERED WITH SOIL TO A DEPTH OF AT LEAST ¼ INCH. BROADCAST SEEDING SHALL PROCEED ON FRESHLY DISTURBED (RAKED OR HARROWED) SOIL SURFACE AND BROADCAST SEED SHALL BE IMMEDIATELY RAKED OR HARROWED INTO THE SURFACE. RAKING SHALL BE ACCOMPLISHED USING METAL-TINED GARDEN OR LANDSCAPE RAKES; NO PLASTIC LEAF RAKES SHALL BE ALLOWED. IF HARROWING IS USED, AN ENGLISH HARROW OR ITS EQUIVALENT SHALL BE REQUIRED. BROADCAST SEEDING SHALL BE AVOIDED WHEN WIND SPEED EXCEEDS 15 MILES-PER-HOUR.
    - FOLLOWING SEEDING, ALL SEEDED AREAS SHALL BE WATERED SUFFICIENTLY AS TO SATURATE THE SOILS.

TOPSOIL, SEEDING, AND COCONUT FABRIC NOTES:

1. WITHIN THE PROJECT AREA, ANY AREAS WITH ADEQUATE TOPSOIL (IN PLACES WHERE NOT HARVESTING SOD) SHALL BE STRIPPED AND STOCKPILED FOR REUSE.
2. ALL AREAS OF SEEDING WILL RECEIVE 4" OF TOPSOIL.
3. IF ONSITE CONDITIONS DO NOT YIELD ADEQUATE TOPSOIL, SOIL CONDITIONER SHALL BE APPLIED.
4. IMPORTED SOIL CONDITIONER WILL BE AT A RATE OF 5 CUBIC YARDS PER 1,000 SQUARE FEET. SOIL CONDITIONER SHALL BE EVENLY DISTRIBUTED AND TILLED TO A DEPTH OF 8" MINIMUM.

GROUNDCOVER SQUARE FOOTAGE

SYMBOL	DESCRIPTION
	UPLAND NATIVE SEED MIX 2,623,838 SF
	RIPARIAN NATIVE SEED MIX 530,962 SF
	WETLAND NATIVE SEED MIX 327,903 SF

UPLAND NATIVE SEED MIX

Common Name	Scientific Name	Growth Season	Growth Form	% Mix	Lb/Ac (PLS[1])
Grasses					
Blue grama	Bouteloua gracilis	Warm	Sod	25	1.8
Sand dropseed	Sporobolus cryptandrus	Warm	Bunch	20	0.2
Sideoats grama	Bouteloua curtipendula	Warm	Sod	20	6.3
Western wheatgrass	Pascopyrum smithii	Cool	Sod	15	8.2
Buffalograss	Bouteloua dactyloides	Warm	Sod	10	10.7
Inland saltgrass	Distichlis spicata	Warm	Sod	5	0.6
Herbaceous/Wildflowers					
Pasture sage	Artemisia frigida			1	0.01
Blanket flower	Gaillardia aristata			1	0.5
Prairie coneflower	Ratibida columnifera			1	0.1
Purple prairieclover	Dalea (Petalostemum) purpurea			1	0.3
Blue flax	Linum lewisii			1	0.4
TOTAL PLS POUNDS/ACRE				100	29.11
[1]PLS=PURE LIVE SEED - IF BROADCAST SEEDING, DOUBLE THE RATE					

RIPARIAN NATIVE SEED MIX

Common Name	Scientific Name	Growth Season	Growth Form	% Mix	Lb/Ac (PLS[1])
Grasses					
Blue grama	Bouteloua gracilis	Warm	Sod	25	1.8
Sand dropseed	Sporobolus cryptandrus	Warm	Bunch	20	0.2
Switchgrass	Panicum virgatum	Warm	Sod/Bunch	20	3.2
Sideoats grama	Bouteloua curtipendula	Warm	Sod	20	6.3
Western wheatgrass	Pascopyrum smithii	Cool	Sod	15	8.2
Green needlegrass	Nasella viridula	Cool	Bunch	10	3.3
Herbaceous/Wildflowers					
Smooth aster	Aster laevis			1	0.1
Louisiana sage	Artemisia ludovisciana			1	0.1
Showy goldeneye	Heliomeris multiflora (aka Viguiera)			1	0.1
Blanket flower	Gaillardia aristata			1	0.5
Prairie coneflower	Ratibida columnifera			1	0.1
TOTAL PLS POUNDS/ACRE				100	19.3
[1]PLS=PURE LIVE SEED - IF BROADCAST SEEDING, DOUBLE THE RATE					

WETLAND NATIVE SEED MIX

Common Name	Scientific Name	Growth Season	Growth Form	% Mix	Wetland Indicator*	Lb/Ac (PLS[1])
Grasses						
American Sloughgrass	Beckmannia syzigachne	Cool	Sod	15	OBL	0.8
Prairie cordgrass	Spartina pectinata	Warm	Sod	15	FACW	4.6
Switchgrass	Panicum virgatum	Warm	Sod/Bunch	15	FAC	2.3
Western wheatgrass	Pascopyrum smithii	Cool	Sod	10	FACU	5.5
Fowl mannagrass	Glyceria striata	Cool	Sod	10	OBL	3.3
Hardstem bulrush	Scirpus acutus			10	OBL	1.6
Baltic rush	Jancus balticus			10	OBL	0.1
Creeping spikerush	Eleocharis palustris			10	OBL	1.0
Wildflowers						
Blue vervain	Vferbena hastata			2.5	FACW	0.1
Nuttall's sunflower	Helianthus nuttallii			2.5	FAC	0.5
TOTAL PLS POUNDS/ACRE				100		19.8
[1]PLS=PURE LIVE SEED - IF BROADCAST SEEDING, DOUBLE THE RATE						

HR GREEN Xrefs: xgl-1-db01: FINAL EROSION CONTROL KEY: 01-XC-FINAL-EC; 01_XC_RIPRAP; 01-XC-PR_100YR_FP_DELINEATION; xk-dsgn; 01-XC-channel; xx-row-662; xx-dsgn_662-01_DC_BOX_CULVERTS; 01-XC_Wingwalls

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GRANDVIEW RESERVE
DR HORTON
FALCON, COLORADO

CONSTRUCTION DOCUMENTS
SEEDING NOTES

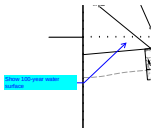
SHEET LP4

V5_CDs.pdf Markup Summary

Callout (3)

Subject: Callout
Page Label: [6] 06 TRIBUTARY 2 Valley Grading
Author: CDurham
Date: 8/1/2024 12:28:42 PM
Status:
Color:
Layer:
Space:

What does this blue line represent?



Subject: Callout
Page Label: [7] 36 DRAINAGE CULVERT PLAN AND PROFILE
Author: CDurham
Date: 8/1/2024 1:35:44 PM
Status:
Color:
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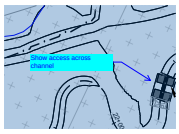
Show 100-year water surface



Subject: Callout
Page Label: [7] 36 DRAINAGE CULVERT PLAN AND PROFILE
Author: CDurham
Date: 8/1/2024 1:38:57 PM
Status:
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Show access across channel