





GENERAL CONSTRUCTION NOTES

- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF THE WORK. THE OMISSION FROM OR THE INCLUSION OF UTILITY LOCATIONS ON THE PLANS IS NOT TO BE CONSIDERED AS THE NONEXISTENCE OF OR A DEFINITE LOCATION OF EXISTING UNDERGROUND UTILITIES.
- THE CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES FROM DAMAGE DUE TO THIS OPERATION. ANY DAMAGE TO THE UTILITIES WILL BE REPLACED AT THE CONTRACTORS EXPENSE AND ANY SERVICE DISRUPTION WILL BE SETTLED BY THE CONTRACTOR.
- ADDITIONAL EROSION CONTROL STRUCTURES MAY BE REQUIRED AT THE TIME OF CONSTRUCTION.
- ALL BACKFILL, SUB-BASE AND / OR BASE COURSE (CLASS 6) MATERIAL SHALL BE COMPACTED TO THE SOILS ENGINEERS RECOMMENDATIONS, AND APPROVED BY EL PASO COUNTY DEVELOPMENT SERVICES ENGINEERING DIVISION.
- ALL STATIONING IS CENTERLINE UNLESS OTHERWISE INDICATED. ALL ELEVATIONS ARE FLOW LINE UNLESS OTHERWISE INDICATED.
- ALL DISTURBED PAVEMENT EDGES SHALL BE CUT TO NEAT LINES. REPAIR SHALL CONFORM TO THE EPC ECM APPENDIX K - 1.2C.
- ALL INTERSECTION ACCESSSES TO BE CONSTRUCTED WITH A 25 FOOT SIGHT VISIBILITY TRIANGLES AND THERE SHALL BE NO OBSTRUCTIONS GREATER THAN 18" IN THIS AREA.
- ALL CULVERT AND STORM PIPES SHALL BE SMOOTH INTERIOR CORRUGATED POLYETHYLENE PIPE (HDE), OR REINFORCED CONCRETE PIPE (RCP). ALL CULVERTS SHALL BE PLACED COMPLETE WITH FLARED END SECTIONS. ADEQUACY OF MATERIAL THICKNESS FOR ANY CSP INSTALLED SHALL BE VERIFIED BY OWNERS GEOTECHNICAL ENGINEER TO SUPPORT MINIMUM 50 YEAR DESIGN LIFE. CULVERTS MUST CONFORM TO EPC ECM SECTION 3.32 - CULVERTS.
- ASPHALT THICKNESS AND BASE COURSE THICKNESS (COMPACTED) FOR ROADS SHALL BE PER DESIGN REPORT BY OWNERS GEOTECHNICAL ENGINEER. OWNERS GEOTECHNICAL ENGINEER TO BE ON SITE AT TIME OF ROAD CONSTRUCTION TO EVALUATE SOIL CONDITIONS AND DETERMINE IF ADDITIONAL MEASURES ARE NECESSARY TO ASSURE STABILITY OF THE NEW ROADS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY DEVELOPMENT SERVICES ENGINEERING DIVISION PRIOR TO CONSTRUCTION.
- TYPE M RIP-RAP WITH 4" OF TYPE II GRANULAR BEDDING AND MIRAFI 180N OR EQUAL MAY BE SUBSTITUTED WHERE TYPE L RIP-RAP WITH MIRAFI FW 700 OR EQUAL IS SPECIFIED.
- ALL MATERIALS AND INSTALLATION PROCEDURES SHALL BE IN COMPLIANCE WITH ANY AND ALL APPLICABLE EL PASO COUNTY STANDARDS AND WITH WOODMAN HILLS METRO DISTRICT CONSULTING ENGINEER APPROVAL.
- ALL POTABLE WATER MAINS SHALL BE AWWA C900--SDR18 PVC WITH PUSH-ON SINGLE GASKET TYPE JOINTS AND SHALL MEET THE REQUIREMENTS OF ANSI / NSF 61.
- ALL WATER MAIN FITTINGS SHALL BE MADE FROM GRAY-IRON OR DUCTILE IRON AND FURNISHED WITH MECHANICAL JOINT ENDS. ALL FITTINGS SHALL HAVE A PRESSURE RATING OF 250 PSI AND SHALL MEET THE REQUIREMENTS OF ANSI / NSF 61.
- ALL WATER LINE BENDS, TEES, BLOW-OFFS AND PLUGS AT DEAD-END MAINS SHALL BE PROTECTED FROM THRUST BY USING CONCRETE THRUST BLOCKS AND / OR RODDING AND RESTRAINED PIPE PER THE PAINT BRUSH HILLS METRO DISTRICT CONSULTING ENGINEER APPROVAL.
- MAXIMUM DEFLECTION OF 8" OR 12" PVC WATER MAIN JOINTS IS 4 DEGREES. CORRESPONDING MINIMUM CURVE RADIUS IS 286'. ADDITIONAL 11.25' OR 22.5' BENDS MAY BE REQUIRED FOR PROPER ALIGNMENT.
- CONTRACTOR IS RESPONSIBLE FOR PROVIDING DETAILED AS-BUILTS OF ALL WATER MAIN, STORM SEWER AND SANITARY. SEWER MAIN INSTALLATIONS, INCLUDING ACCURATE DISTANCES OF MAIN LINES, VALVES, FITTINGS, MANHOLES AND LOCATIONS OF WATER AND SEWER SERVICES.
- SANITARY SEWER PIPE AND FITTINGS: PVC 4" - 8" ASTM D3034, TYPE PSM, SDR 35; PUSH-ON JOINTS AND MOLDED RUBBER GASKETS MAXIMUM HORIZONTAL DEFLECTIONS, AFTER INSTALLATION AND BACK FILLING SHALL NOT EXCEED 3% OF THE PIPE DIAMETER. (MINIMUM CURVE RADIUS IS 100' FOR 8" PVC SANITARY SEWER MAIN)

STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL PLANS

- STORMWATER DISCHARGES FROM CONSTRUCTION SITES SHALL NOT CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR DEGRADATION OF STATE WATERS. ALL WORK AND EARTH DISTURBANCE SHALL BE DONE IN A MANNER THAT MINIMIZES POLLUTION OF ANY ON-SITE OR OFFSITE WATERS, INCLUDING WETLANDS.
- NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING: 1. LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS TO REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING.
- A SEPARATE STORMWATER MANAGEMENT PLAN (SWMP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) ISSUED PRIOR TO COMMENCING CONSTRUCTION. DURING CONSTRUCTION THE SWMP IS THE RESPONSIBILITY OF THE DESIGNATED QUALIFIED STORMWATER MANAGER OR CERTIFIED EROSION CONTROL INSPECTOR AND SHALL BE LOCATED ON SITE AT ALL TIMES DURING CONSTRUCTION AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE FIELD.
- ONCE THE ESQCP IS APPROVED AND A NOTICE TO PROCEED HAS BEEN ISSUED, THE CONTRACTOR MAY INSTALL THE INITIAL STAGE EROSION AND SEDIMENT CONTROL MEASURES AS INDICATED ON THE APPROVED GEC. A PRECONSTRUCTION MEETING BETWEEN THE CONTRACTOR, ENGINEER, AND EL PASO COUNTY WILL BE HELD PRIOR TO ANY CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE APPLICANT TO COORDINATE THE MEETING TIME AND PLACE WITH COUNTY STAFF.
- CONTROL MEASURES MUST BE INSTALLED PRIOR TO COMMENCEMENT OF ACTIVITIES THAT MAY CONTRIBUTE POLLUTANTS TO STORMWATER. TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED IMMEDIATELY UPON COMPLETION OF THE DISTURBANCE.
- ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE MAINTAINED AND REMAIN IN EFFECTIVE OPERATING CONDITION UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND FINAL STABILIZATION IS ESTABLISHED. ALL PERSONS ENGAGED IN LAND DISTURBANCE ACTIVITIES SHALL ASSESS THE ADEQUACY OF CONTROL MEASURES AT THE SITE AND IDENTIFY IF CHANGES TO THOSE CONTROL MEASURES IS 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 PRIOR TO IMPLEMENTATION.
- 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. AN AREA THAT IS GOING TO REMAIN IN AN INTERIM STATE FOR MORE THAN 60 DAYS SHALL ALSO BE STABILIZED.
- FINAL STABILIZATION MUST BE IMPLEMENTED AT ALL APPLICABLE CONSTRUCTION SITES. FINAL STABILIZATION IS ACHIEVED WHEN ALL GROUND DISTURBING ACTIVITIES ARE COMPLETE AND ALL DISTURBED AREAS EITHER HAVE A UNIFORM VEGETATIVE COVER WITH INDIVIDUAL PLANT DENSITY OF 70 PERCENT OF PRE-DISTURBANCE LEVELS ESTABLISHED OR EQUIVALENT PERMANENT ALTERNATIVE STABILIZATION METHOD IS IMPLEMENTED. ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REMOVED UPON FINAL STABILIZATION AND BEFORE PERMIT CLOSURE.
- ALL PERMANENT STORMWATER MANAGEMENT FACILITIES SHALL BE INSTALLED AS DEFINED IN THE APPROVED PLANS. ANY PROPOSED CHANGES THAT EFFECT THE HYDROLOGY OR HYDRAULICS OF A PERMANENT STORMWATER MANAGEMENT STRUCTURES MUST BE APPROVED BY THE ECOM ADMINISTRATOR PRIOR TO IMPLEMENTATION.
- ANY EARTH DISTURBANCE 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 INFEASIBLE.
- 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 SHALL ALSO BE PROTECTED FROM SEDIMENTATION DURING CONSTRUCTION UNTIL FINAL STABILIZATION IS ACHIEVED.
- ANY TEMPORARY OR PERMANENT FACILITY DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF STORMWATER AROUND, THROUGH, OR FROM THE EARTH DISTURBANCE AREA SHALL BE A STABILIZED CONVEYANCE DESIGNED TO MINIMIZE EROSION AND THE DISCHARGE OF SEDIMENT OFF SITE.
- CONCRETE WASH WATER SHALL BE CONTAINED AND DISPOSED OF IN ACCORDANCE WITH THE NO WASH WATER SHALL BE DISCHARGED TO OR ALLOWED TO RUNOFF TO STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES. CONCRETE WASHOUT SHALL NOT BE LOCATED IN AN AREA WHERE SHALLOW GROUNDWATER MAY BE PRESENT, OR WITHIN 50 FEET OF A SURFACE WATER BODY.
- DEWATERING OPERATIONS: UNCONTAMINATED GROUND WATER MAY BE DISCHARGED ON SITE, BUT MAY NOT LEAVE THE SITE IN THE FORM OF SURFACE RUNOFF.
- EROSION CONTROL BLANKETING IS TO BE USED ON SLOPES STEEPER THAN 3:1.
- BUILDING, CONSTRUCTION, EXCAVATION, OR OTHER 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. BMP'S MAY BE REQUIRED BY EL PASO COUNTY ENGINEERING IF DEEMED NECESSARY, BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES.
- VEHICLE TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFFSITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.
- 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.
- THE OWNER, SITE DEVELOPER, CONTRACTOR, AND/OR THEIR AUTHORIZED AGENTS SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION DEBRIS, DIRT, TRASH, ROCK, SEDIMENT, AND SAND THAT MAY ACCUMULATE IN THE STORM SEWER OR OTHER DRAINAGE CONVEYANCE SYSTEM AND STORMWATER APPURTENANCES AS A RESULT OF SITE DEVELOPMENT.
- THE QUANTITY OF MATERIALS STORED ON THE PROJECT SITE SHALL BE LIMITED, AS MUCH AS PRACTICAL, TO THAT QUANTITY REQUIRED TO PERFORM THE WORK IN AN ORDERLY SEQUENCE. ALL MATERIALS STORED ON-SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER, IN THEIR ORIGINAL CONTAINERS, WITH ORIGINAL MANUFACTURER'S LABELS.
- NO CHEMICALS ARE TO BE USED BY THE CONTRACTOR, WHICH HAVE THE POTENTIAL TO BE RELEASED IN STORMWATER UNLESS PERMISSION FOR THE USE OF A SPECIFIC CHEMICAL IS GRANTED IN WRITING BY THE ECOM ADMINISTRATOR. IN GRANTING THE USE OF SUCH CHEMICALS, SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.
- BULK STORAGE OF PETROLEUM PRODUCTS OR OTHER LIQUID CHEMICALS IN EXCESS OF 55 GALLONS SHALL HAVE ADEQUATE SECONDARY CONTAINMENT PROTECTION TO CONTAIN ALL SPILLS AND PREVENT ANY SPILLED MATERIAL FROM ENTERING STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES.
- NO PERSON SHALL CAUSE THE IMPEDMENT OF STORMWATER FLOW IN THE FLOW LINE OF THE CURB AND GUTTER OR IN THE DITCH FLOW LINE.
- INDIVIDUALS 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 INCLUDED IN THE ECOM VOLUME II AND THE ECOM APPENDIX I. ALL APPROPRIATE PERMITS MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION (NPDES, FLOODPLAIN, 404, FUGITIVE DUST, ETC.). IN THE EVENT OF CONFLICTS BETWEEN THESE REQUIREMENTS AND LAWS, RULES, OR REGULATIONS OF OTHER FEDERAL, STATE, OR COUNTY AGENCIES, THE MORE RESTRICTIVE LAWS, RULES, OR REGULATIONS SHALL APPLY.
- ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
- PRIOR TO ACTUAL CONSTRUCTION THE PERMITEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
- A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.
- THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY ROCKY MOUNTAIN GROUP AND SHALL BE CONSIDERED A PART OF THESE PLANS.
- AT LEAST TEN (10) DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB 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  
WOOD - PERMITS  
4300 CHERRY CREEK DRIVE SOUTH  
DENVER, CO 80246-1530  
ATTN: PERMITS UNIT

STANDARD NOTES FOR EL PASO COUNTY CONSTRUCTION PLANS

- ALL DRAINAGE AND ROADWAY CONSTRUCTION SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD NOTIFICATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, 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).
- 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:
  - EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)
  - CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2
  - COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
  - CDOT M & S STANDARDS
- NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING. ANY MODIFICATIONS NECESSARY TO MEET CRITERIA AFTER-THE-FACT WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
- IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ACCURATELY SHOW EXISTING CONDITIONS, BOTH ONSITE AND OFFSITE, ON THE CONSTRUCTION PLANS. ANY MODIFICATIONS NECESSARY DUE TO CONFLICTS, OMISSIONS, OR CHANGED CONDITIONS WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
- CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT (PCD) - INSPECTIONS, PRIOR TO STARTING CONSTRUCTION.
- 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.
- 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.
- ALL STORM DRAIN PIPE SHALL BE CLASS II RCP UNLESS OTHERWISE NOTED AND APPROVED BY PCD.
- CONTRACTOR SHALL COORDINATE GEOTECHNICAL TESTING PER ECOM STANDARDS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY PCD PRIOR TO PLACEMENT OF CURB AND GUTTER AND PAVEMENT.
- ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
- SIGHT VISIBILITY TRIANGLES AS IDENTIFIED IN THE PLANS SHALL BE PROVIDED AT ALL INTERSECTIONS. OBSTRUCTIONS GREATER THAN 18 INCHES ABOVE FLOWLINE ARE NOT ALLOWED WITHIN SIGHT TRIANGLES.
- SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY DOT AND MUTCD CRITERIA. [IF APPLICABLE, ADDITIONAL SIGNING AND STRIPING NOTES WILL BE PROVIDED.]
- CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DOT, INCLUDING WORK WITHIN THE RIGHT-OF-WAY AND SPECIAL TRANSPORT PERMITS.
- THE LIMITS OF CONSTRUCTION SHALL REMAIN WITHIN THE PROPERTY LINE UNLESS OTHERWISE NOTED. THE OWNER/DEVELOPER SHALL OBTAIN WRITTEN PERMISSION AND EASEMENTS, WHERE REQUIRED, FROM ADJOINING PROPERTY OWNER(S) PRIOR TO ANY OFF-SITE DISTURBANCE, GRADING, OR CONSTRUCTION.

SIGNING AND STRIPING NOTES

- ALL SIGNS AND PAVEMENT MARKINGS SHALL BE IN COMPLIANCE WITH THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL BE ACCOMPLISHED BY A METHOD THAT DOES NOT MATERIALLY DAMAGE THE PAVEMENT. THE PAVEMENT MARKINGS SHALL BE REMOVED TO THE EXTENT THAT THEY WILL NOT BE VISIBLE UNDER DAY OR NIGHT CONDITIONS. AT NO TIME WILL IT BE ACCEPTABLE TO PAINT OVER EXISTING PAVEMENT MARKINGS.
- ANY DEVIATION FROM THE STRIPING AND SIGNING PLAN SHALL BE APPROVED BY EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT.
- ALL SIGNS SHOWN ON THE SIGNING AND STRIPING PLAN SHALL BE NEW SIGNS. EXISTING SIGNS MAY REMAIN OR BE REUSED IF THEY MEET CURRENT EL PASO COUNTY AND MUTCD STANDARDS.
- STREET NAME AND REGULATORY STOP SIGNS SHALL BE ON THE SAME POST AT INTERSECTIONS.
- ALL REMOVED SIGNS SHALL BE DISPOSED OF IN A PROPER MANNER BY THE CONTRACTOR.
- ALL STREET NAME SIGNS SHALL HAVE 'D'SERIES LETTERS, WITH LOCAL ROADWAY SIGNS BEING 4"UPPER-LOWER CASE LETTERING ON 8"BLANK AND NON-LOCAL ROADWAY SIGNS BEING 6" LETTERING, UPPER-LOWER CASE ON 12"BLANK, WITH A WHITE BORDER THAT IS NOT RECESSED. MULTI-LANE ROADWAYS WITH SPEED LIMITS OF 40 MPH OR HIGHER SHALL HAVE 8" UPPER-LOWER CASE LETTERING ON 18"BLANK WITH A WHITE BORDER THAT IS NOT RECESSED. THE WIDTH OF THE NON-RECESSED WHITE BORDERS SHALL MATCH PAGE 255 OF THE 2012 MUTCD "STANDARD HIGHWAY SIGNS"
- ALL TRAFFIC SIGNS SHALL HAVE A MINIMUM HIGH INTENSITY PRISMATIC GRADE SHEETING.
- ALL LOCAL RESIDENTIAL STREET SIGNS SHALL BE MOUNTED ON A 1.75"X 1.75" SQUARE TUBE SIGN POST AND STUB POST BASE. FOR OTHER APPLICATIONS, REFER TO THE CDOT STANDARD S-614-8 REGARDING USE OF THE P2 TUBULAR STEEL POST SUBBASE DESIGN.
- ALL SIGNS SHALL BE SINGLE SHEET ALUMINUM WITH 0.100" MINIMUM THICKNESS.
- ALL LIMIT LINES/STOP LINES, CROSSWALK LINES, PAVEMENT LEGENDS, AND ARROWS SHALL BE A MINIMUM 125 MIL THICKNESS PREFORMED THERMOPLASTIC PAVEMENT MARKINGS WITH TAPERED LEADING EDGES PER CDOT STANDARD S-627-1. WORD AND SYMBOL MARKINGS SHALL BE THE NARROW TYPE. STOP BARS SHALL BE 24"IN WIDTH. CROSSWALKS LINES SHALL BE 12" WIDE AND 8' LONG PER CDOT S-627-1.
- ALL LONGITUDINAL LINES SHALL BE A MINIMUM 15MIL THICKNESS EPOXY PAINT. ALL NON-LOCAL RESIDENTIAL ROADWAYS SHALL INCLUDE BOTH RIGHT AND LEFT EDGE LINE STRIPING AND ANY ADDITIONAL STRIPING AS REQUIRED BY CDOT S-627-1.
- THE CONTRACTOR SHALL NOTIFY EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT (719) 520-6819 PRIOR TO AND UPON COMPLETION OF SIGNING AND STRIPING.
- THE CONTRACTOR SHALL OBTAIN A WORK IN THE RIGHT OF WAY PERMIT FROM THE EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS (DPW) PRIOR TO ANY SIGNAGE OR STRIPING WORK WITHIN AN EXISTING EL PASO COUNTY ROADWAY.

LEGAL DESCRIPTION

BENT GRASS RESIDENTIAL FLING NO. 2, LOCATED IN THE NORTHWEST QUARTER AND SOUTHWEST QUARTER OF SECTION 1 T13S R65W OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF EL PASO, STATE OF COLORADO

BASIS OF BEARINGS

ALL BEARINGS ARE GRID BEARINGS OF THE COLORADO STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, NORTH AMERICAN DATUM 1983. THE BEARING OF THE LINE BETWEEN THE SOUTHWEST CORNER OF SECTION 1, T13S, R65W AND THE WEST QUARTER CORNER SECTION 1, T13S, R65W IS N007°3'46"W AND MONUMENTED AS SHOWN:

BENCHMARK

THE SOUTHWESTERLY CORNER OF LOT 1 WOODMAN HILLS FLING NO. 4, MONUMENTED BY A YELLOW PLASTIC SURVEYORS CAP ON A NO. 4 REBAR L5# 24954 ELEVATION = 6947.67

CAUTION - NOTICE TO CONTRACTOR

- ALL UTILITY LOCATIONS SHOWN ARE BASED ON MAPS PROVIDED BY THE APPROPRIATE UTILITY COMPANY AND FIELD SURFACE EVIDENCE AT THE TIME OF SURVEY AND IS TO BE CONSIDERED AN APPROXIMATE LOCATION ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE FIELD LOCATION OF ALL UTILITIES, PUBLIC OR PRIVATE, WHETHER SHOWN ON THE PLANS OR NOT, PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.
- WHERE A PROPOSED UTILITY CROSSES AN EXISTING UTILITY, IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF SUCH EXISTING UTILITY, EITHER THROUGH POT-HOLING OR ALTERNATIVE METHOD. REPORT INFORMATION TO THE ENGINEER PRIOR TO CONSTRUCTION.



Know what's below.  
Call before you dig.

Galloway

1155 Kelly Johnson Blvd., Suite 305  
Colorado Springs, CO 80920  
719.900.7220  
GallowayUS.com



04/20/2020

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CHALLENGER  
HOMES

CONSTRUCTION DOCUMENTS  
BENT GRASS RESIDENTIAL FILING NO. 2  
FOR  
CHALLENGER COMMUNITIES, LLC

BENT GRASS MEADOWS DRIVE & MERIDIAN ROAD  
FALCON, CO 80831 - EL PASO COUNTY

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Checked By:	RGD
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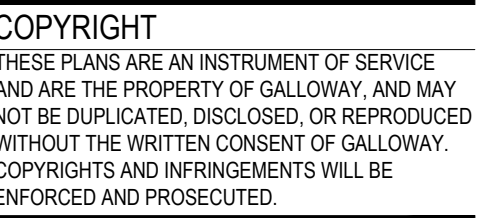
GENERAL NOTES

C0.02

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SF1914  
5/13/2020



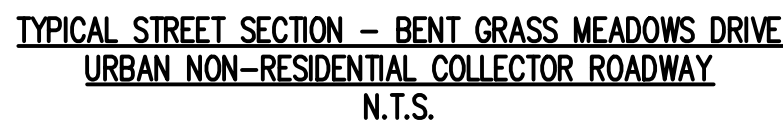


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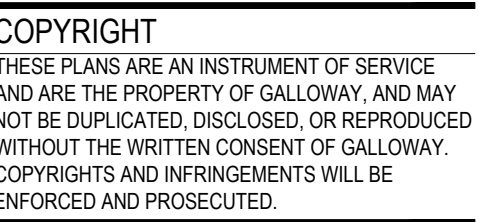
Project No:	CLH000014.20
Drawn By:	JDP
Checked By:	RGD
Date:	4/17/2020

## TYPICAL ROADWAY SECTIONS

Sheet 3 of 38







# CHALLENGER HOMES

CONSTRUCTION DOCUMENTS  
BENT GRASS RESIDENTIAL FILING NO. 2  
FOR  
CHALLENGER COMMUNITIES, LLC  
BENT GRASS MEADOWS DRIVE & MERIDIAN ROAD  
FALCON, CO 80831 - EL PASO COUNTY

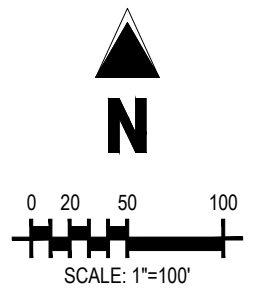
[illegible]

Project No:	CLH000014.20
Drawn By:	JDP
Checked By:	RGD
Date:	4/17/2020

## CONSTRUCTION PHASING PLAN

C0.04

Sheet 4 of 38

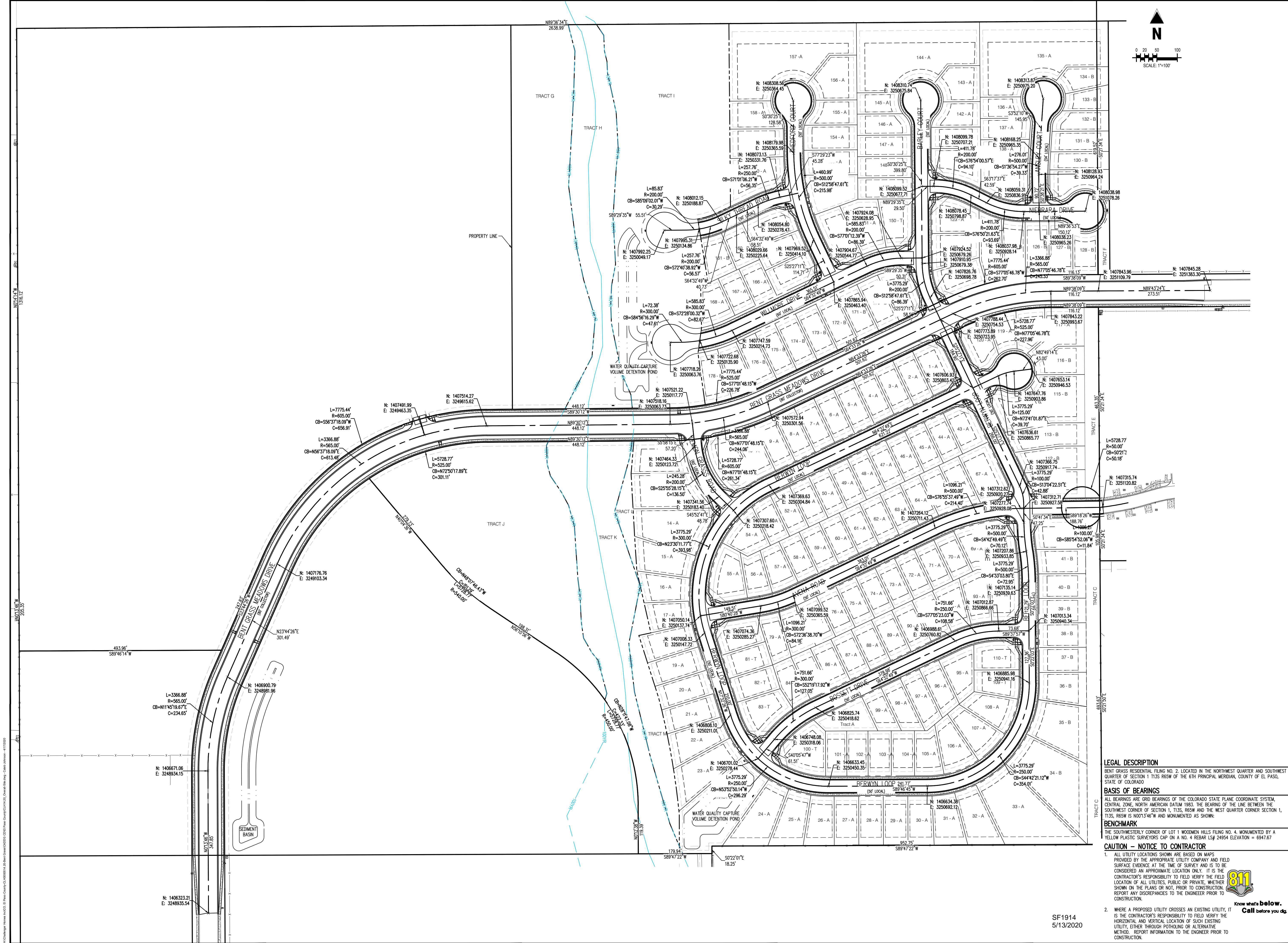


### LEGEND

PROPERTY BOUNDARY  
PHASING LINE

SF1914  
5/13/2020





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**CHALLENGER HOMES**

CONSTRUCTION DOCUMENTS  
BENT GRASS RESIDENTIAL FILING NO. 2  
FOR  
CHALLENGER COMMUNITIES, LLC  
BENT GRASS MEADOWS DRIVE & MERIDIAN ROAD  
FALCON, CO 80831 - EL PASO COUNTY

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**LEGAL DESCRIPTION**  
BENT GRASS RESIDENTIAL FILING NO. 2, LOCATED IN THE NORTHWEST QUARTER AND SOUTHWEST QUARTER OF SECTION 1 T13S R65W OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF EL PASO, STATE OF COLORADO

**BASIS OF BEARINGS**  
ALL BEARINGS ARE GRID BEARINGS OF THE COLORADO STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, NORTH AMERICAN DATUM 1983. THE BEARING OF THE LINE BETWEEN THE SOUTHWEST CORNER OF SECTION 1, T13S, R65W AND THE WEST QUARTER CORNER SECTION 1, T13S, R65W IS N001°3'46"W AND MONUMENTED AS SHOWN:

**BENCHMARK**  
THE SOUTHWESTERLY CORNER OF LOT 1 WOODMEN HILLS FILING NO. 4, MONUMENTED BY A YELLOW PLASTIC SURVEYORS CAP ON A NO. 4 REBAR L.S.# 24954 ELEVATION = 6947.67

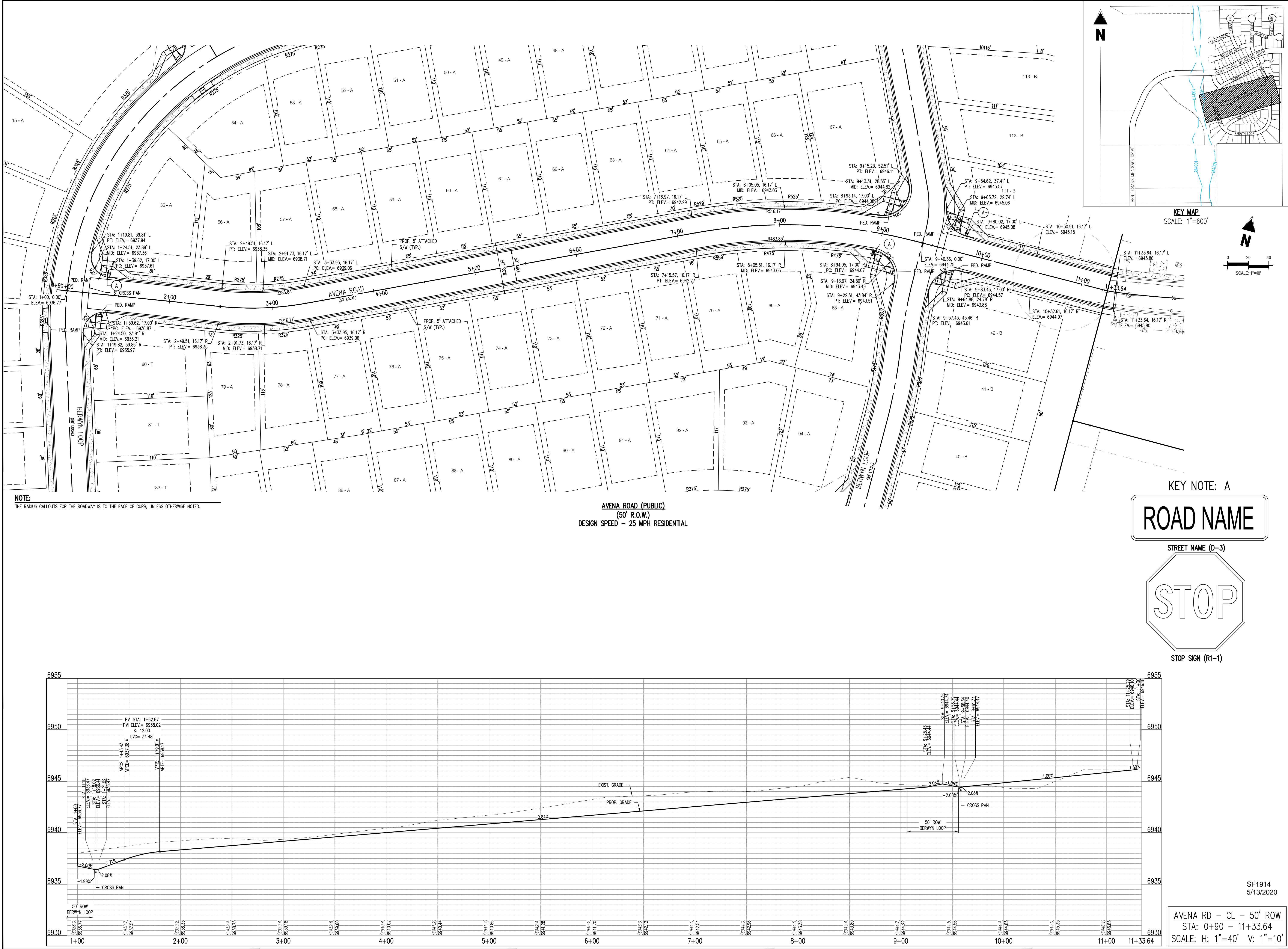
**CAUTION - NOTICE TO CONTRACTOR**  
1. ALL UTILITY LOCATIONS SHOWN ARE BASED ON MAPS PROVIDED BY THE APPROPRIATE UTILITY COMPANY AND FIELD SURFACE EVIDENCE AT THE TIME OF SURVEY AND IS TO BE CONSIDERED AN APPROXIMATE LOCATION ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE FIELD LOCATION OF ALL UTILITIES, PUBLIC OR PRIVATE, WHETHER SHOWN ON THE PLANS OR NOT, PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.

2. WHERE A PROPOSED UTILITY CROSSES AN EXISTING UTILITY, IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF SUCH EXISTING UTILITY, EITHER THROUGH POT-HOLING OR ALTERNATIVE METHOD. REPORT INFORMATION TO THE ENGINEER PRIOR TO CONSTRUCTION.



SF1914  
5/13/2020





# Galloway

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Colorado Springs, CO 80920  
719.900.7220  
gallowayus.com

PROFESSIONAL ENGINEER  
04/20/2020

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CHALLENGER  
HOMES

CONSTRUCTION DOCUMENTS  
BENT GRASS RESIDENTIAL FILING NO. 2  
FOR  
CHALLENGER COMMUNITIES, LLC  
BENT GRASS MEADOWS DRIVE & MERIDIAN ROAD  
FALCON, CO 80831 - EL PASO COUNTY

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SF1914  
5/13/2020

AVENA ROAD STREET  
IMPROVEMENT PLAN

C2.01  
Sheet 6 of 38







SIGNING AND STRIPING NOTES

1. ALL SIGNS AND PAVEMENT MARKINGS SHALL BE IN COMPLIANCE WITH THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
2. REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL BE ACCOMPLISHED BY A METHOD THAT DOES NOT MATERIALLY DAMAGE THE PAVEMENT. THE PAVEMENT MARKINGS SHALL BE REMOVED TO THE EXTENT THAT THEY WILL NOT BE VISIBLE UNDER DAY OR NIGHT CONDITIONS. AT NO TIME WILL IT BE ACCEPTABLE TO PAINT OVER EXISTING PAVEMENT MARKINGS.
3. ANY DEVIATION FROM THE STRIPING AND SIGNING PLAN SHALL BE APPROVED BY EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT.
4. ALL SIGNS SHOWN ON THE SIGNING AND STRIPING PLAN SHALL BE NEW SIGNS. EXISTING SIGNS MAY REMAIN OR BE REUSED IF THEY MEET CURRENT EL PASO COUNTY AND MUTCD STANDARDS.
5. STREET NAME AND REGULATORY STOP SIGNS SHALL BE ON THE SAME POST AT INTERSECTIONS.
6. ALL REMOVED SIGNS SHALL BE DISPOSED OF IN A PROPER MANNER BY THE CONTRACTOR.
7. ALL STREET NAME SIGNS SHALL HAVE "D" SERIES LETTERS, WITH LOCAL ROADWAY SIGNS BEING 4" UPPER-LOWER CASE LETTERING ON 8" BLANK AND NON-LOCAL ROADWAY SIGNS BEING 6" LETTERING, UPPER-LOWER CASE ON 12" BLANK, WITH A WHITE BORDER THAT IS NOT RECESSED. MULTI-LANE ROADWAYS WITH SPEED LIMITS OF 40 MPH OR HIGHER SHALL HAVE 8" UPPER-LOWER CASE LETTERING ON 18" BLANK WITH A WHITE BORDER THAT IS NOT RECESSED. THE WIDTH OF THE NON-RECESSED WHITE BORDERS SHALL MATCH PAGE 255 OF THE 2012 MUTCD "STANDARD HIGHWAY SIGNS".
8. ALL TRAFFIC SIGNS SHALL HAVE A MINIMUM HIGH INTENSITY PRISMATIC GRADE SHEETING.
9. ALL LOCAL RESIDENTIAL STREET SIGNS SHALL BE MOUNTED ON A 1.75" X 1.75" SQUARE TUBE SIGN POST AND STUB POST BASE. FOR OTHER APPLICATIONS, REFER TO THE CDOT STANDARD S-614-8 REGARDING USE OF THE P2 TUBULAR STEEL POST SUBBASE DESIGN.
10. ALL SIGNS SHALL BE SINGLE SHEET ALUMINUM WITH 0.100 MINIMUM THICKNESS.
11. ALL LIMIT LINES/STOP LINES, CROSSWALK LINES, PAVEMENT LEGENDS, AND ARROWS SHALL BE A MINIMUM 125 MIL THICKNESS PREFORMED THERMOPLASTIC PAVEMENT MARKINGS WITH TAPERED LEADING EDGES PER CDOT STANDARD S-627-1. WORD AND SYMBOL MARKINGS SHALL BE THE NARROW TYPE. STOP BARS SHALL BE 24" IN WIDTH. CROSSWALK LINES SHALL BE 12" WIDE AND 8' LONG PER CDOT S-627-1.
12. ALL LONGITUDINAL LINES SHALL BE A MINIMUM 15 MIL THICKNESS EPOXY PAINT. ALL NON-LOCAL RESIDENTIAL ROADWAYS SHALL INCLUDE BOTH RIGHT AND LEFT EDGE LINE STRIPING AND ANY ADDITIONAL STRIPING AS REQUIRED BY CDOT S-627-1.
13. THE CONTRACTOR SHALL NOTIFY EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT (719) 520-6819 PRIOR TO AND UPON COMPLETION OF SIGNING AND STRIPING.
14. THE CONTRACTOR SHALL OBTAIN A WORK IN THE RIGHT OF WAY PERMIT FROM THE EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS (DPW) PRIOR TO ANY SIGNAGE OR STRIPING WORK WITHIN AN EXISTING EL PASO COUNTY ROADWAY.

NOTE:  
THE RADIUS CALLOUTS FOR THE ROADWAY IS TO THE FACE OF CURB, UNLESS OTHERWISE NOTED.

- NOTE TO CONTRACTOR
1. ALL 4", 8" SOLID OR SKIP PAVEMENT MARKING SHALL BE EPOXY.
  2. SIGNS AND POLES SHALL BE PER CDOT STANDARDS S-614-2, S-614-3, AND S-614-8, LATEST REVISION.
  3. ALL SIGNAGE INSTALLATION SHALL BE IN COMPLIANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

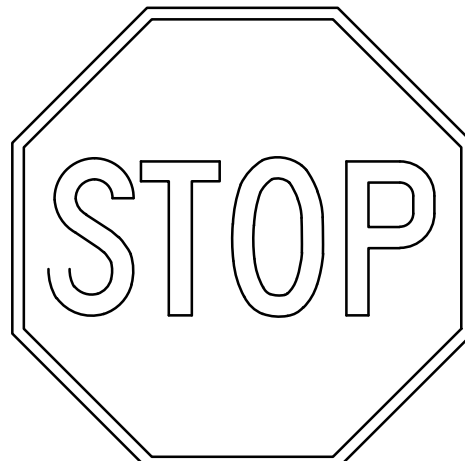
STRIPING LEGEND		
STRIPE	PAVEMENT MARKINGS	MARKING DESCRIPTION
1	CENTER LANE STRIPING	4" WHITE, 10' - 30' SKIP
2	LANE LINE	6" WHITE

BENT GRASS MEADOWS DRIVE (PUBLIC)  
(80' R.O.W.)  
DESIGN SPEED - 40 MPH COLLECTOR

KEY NOTE: A

ROAD NAME

STREET NAME (D-3)

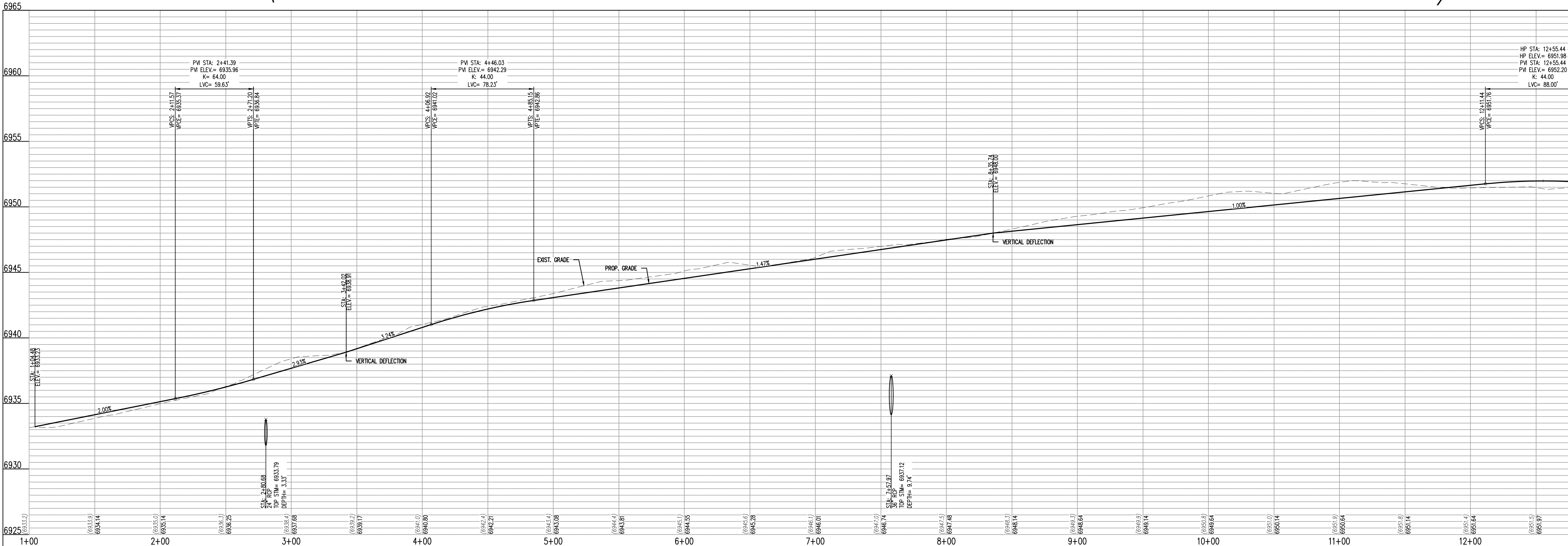


STOP SIGN (R1-1)

KEY NOTE: B



SPEED LIMIT SIGN (R2-1)



BENT GRASS MEADOWS DR - CL - 80' ROW  
STA: 1+00 - 13+00  
SCALE: H: 1"=40 V: 1"=10"

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5/13/2020

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CHALLENGER  
HOMES

CONSTRUCTION DOCUMENTS  
BENT GRASS RESIDENTIAL FILING NO. 2  
FOR

CHALLENGER COMMUNITIES, LLC

BENT GRASS MEADOWS DRIVE & MERIDIAN ROAD  
FALCON, CO 80831 - EL PASO COUNTY

#	Date	Issue / Description	Init.
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Project No: CLH000014.20  
Drawn By: JDP  
Checked By: RGD  
Date: 4/17/2020

BENT GRASS MEADOWS  
DRIVE STREET  
IMPROVEMENT PLAN

C2.03

Sheet 8 of 38

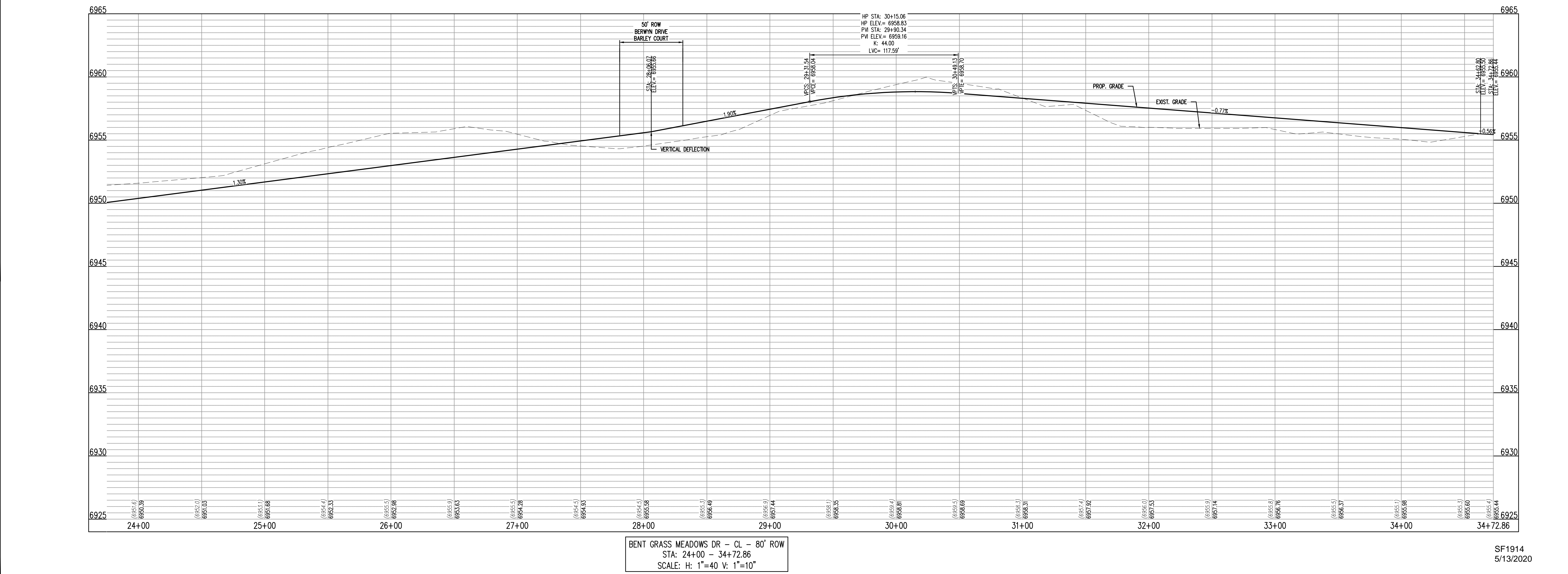
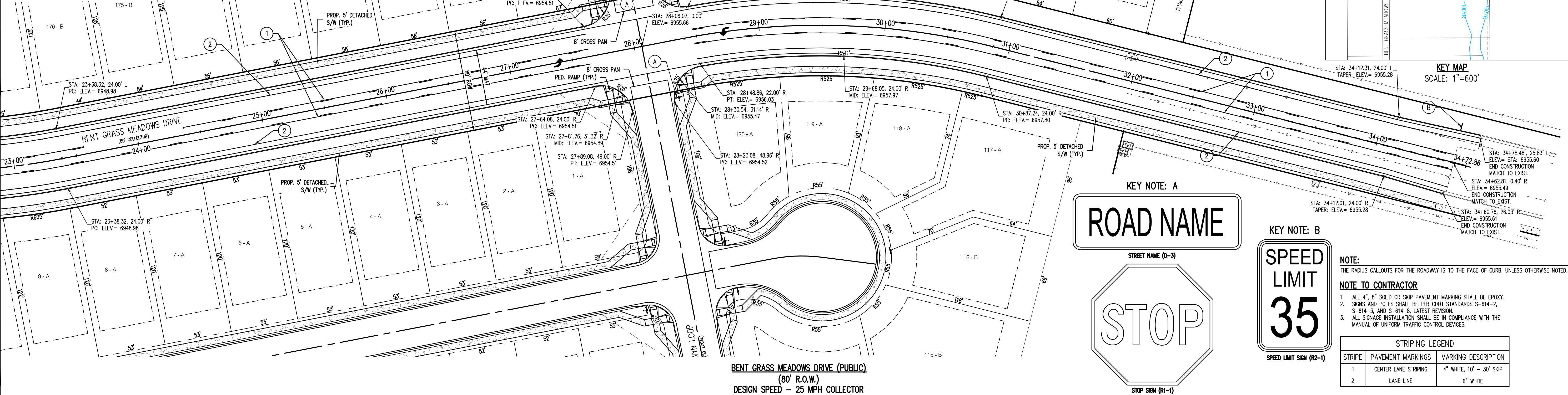






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CHALLENGER  
HOMES

CONSTRUCTION DOCUMENTS  
BENT GRASS RESIDENTIAL FILING NO. 2  
FOR  
CHALLENGER COMMUNITIES, LLC  
BENT GRASS MEADOWS DRIVE & MERIDIAN ROAD  
FALCON, CO 80831 - EL PASO COUNTY

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Project No: CLH000014.20  
Drawn By: JDP  
Checked By: RGD  
Date: 4/17/2020

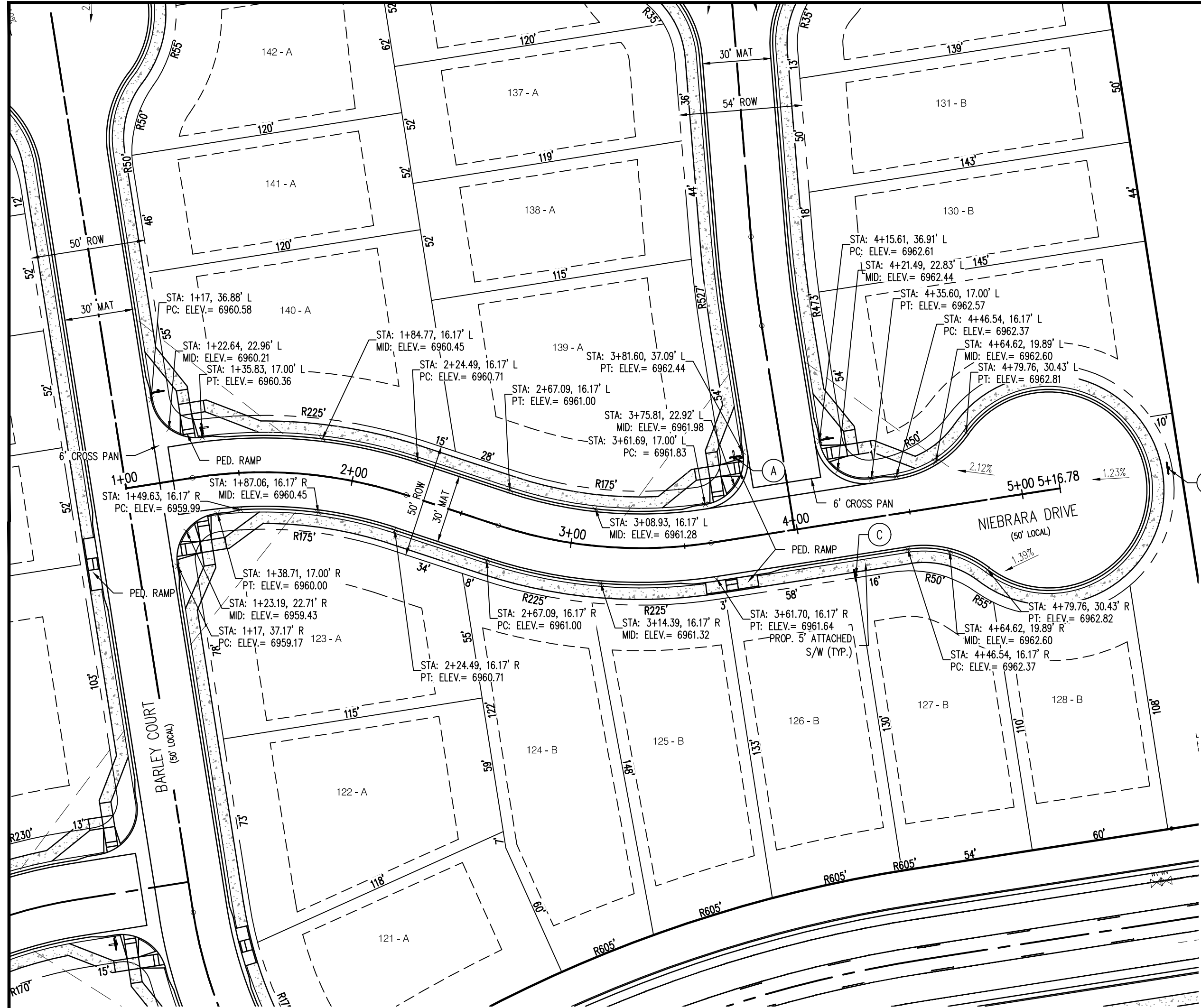
BENT GRASS MEADOWS  
DRIVE STREET  
IMPROVEMENT PLAN

C2.05  
Sheet 10 of 38

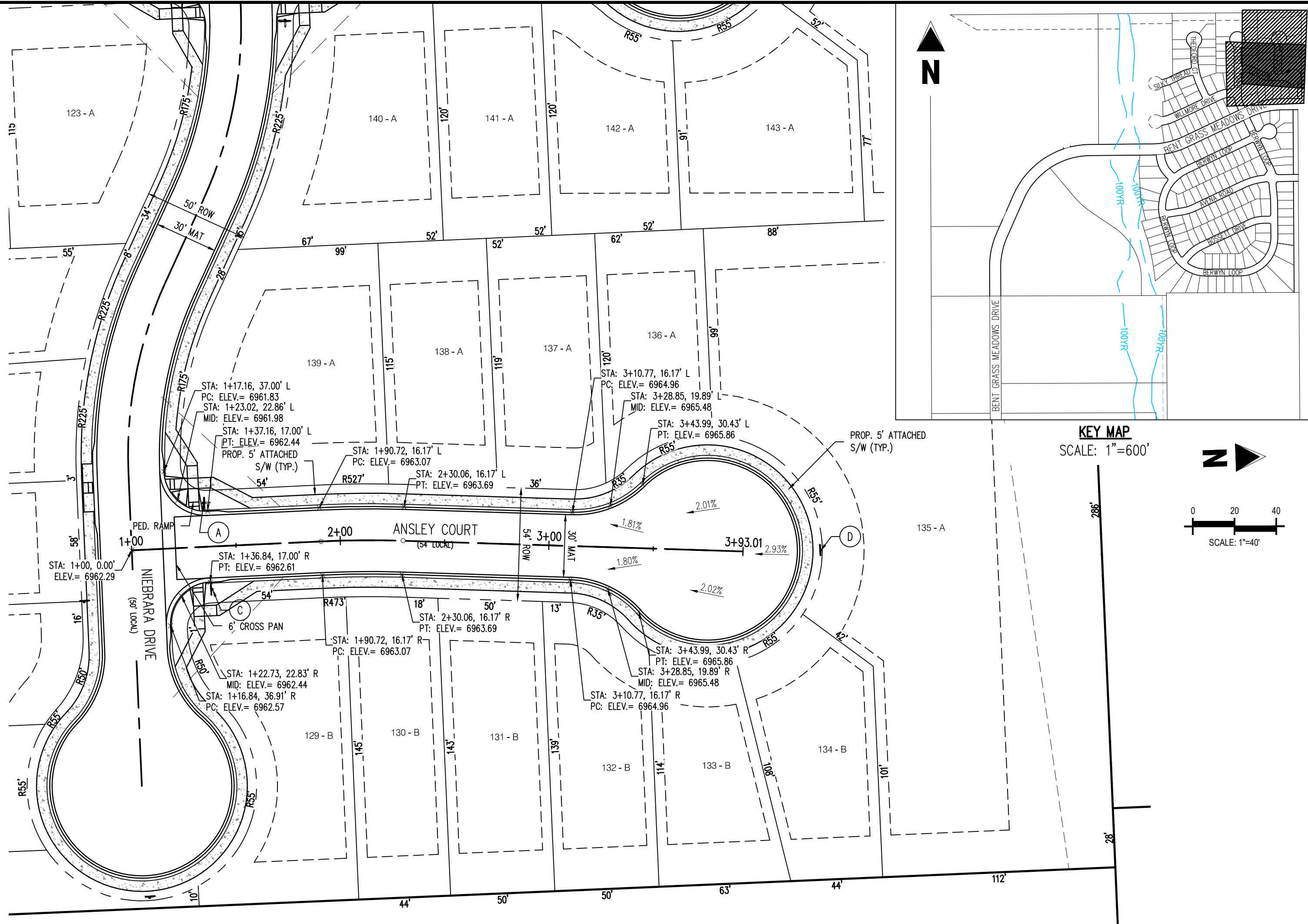




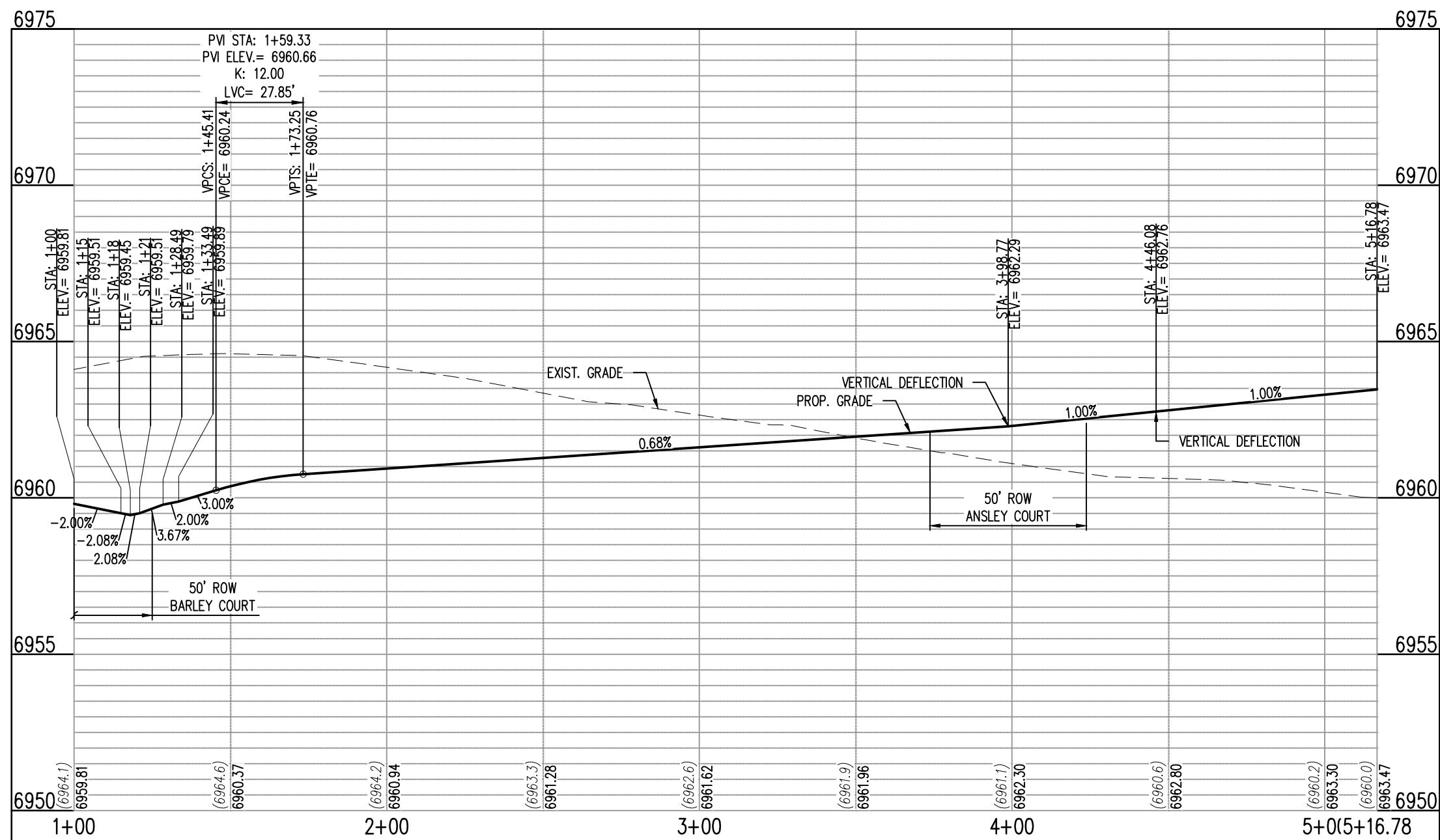




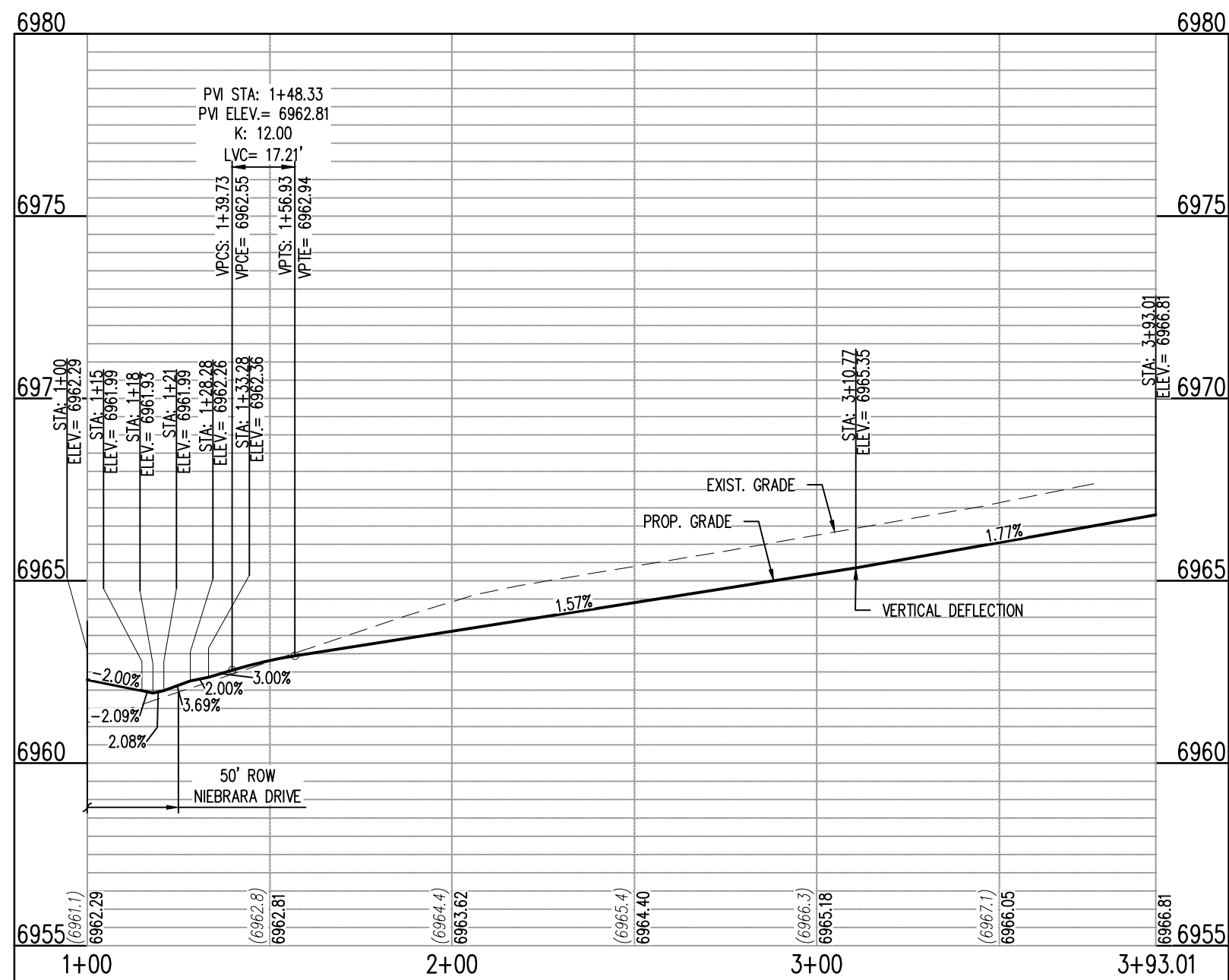
NIEBRARA DRIVE (PUBLIC)  
(50' R.O.W.)  
DESIGN SPEED - 25 MPH RESIDENTIAL



ANSLEY COURT (PUBLIC)  
(54' R.O.W.)  
DESIGN SPEED - 25 MPH RESIDENTIAL



NIEBRARA - CL - 50' ROW  
STA: 1+00 - 5+16.78  
SCALE: H: 1"=40' V: 1"=10'



ANSLEY CT - CL - 50' ROW  
STA: 1+00 - 3+93.01  
SCALE: H: 1"=40' V: 1"=10'

KEY NOTE: A  
ROAD NAME

STREET NAME (D-3)  
STOP

BLACK STRIPE  
YELLOW SIGN  
BLACK LETTERING  
NO OUTLET

NO OUTLET SIGN (W14-2)  
KEY NOTE: B

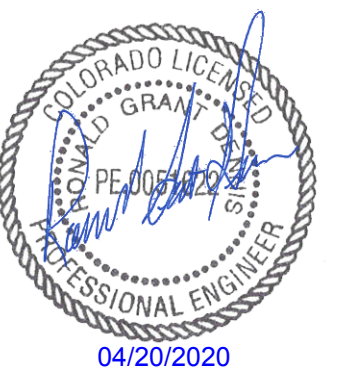
BLACK STRIPE  
YELLOW SIGN  
BLACK LETTERING  
DEAD END

DEAD END SIGN (W14-1)  
KEY NOTE: C

RED SIGN  
RED REFLECTORS (TYP.)  
TYPE 4 OBJECT MARKER  
KEY NOTE: D

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CHALLENGER  
HOMES

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FALCON, CO 80831 - EL PASO COUNTY

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Project No: CLH000014.20  
Drawn By: JDP  
Checked By: RGD  
Date: 4/17/2020  
NIEBRARA DRIVE &  
ANSLEY COURT STREET  
IMPROVEMENT PLAN

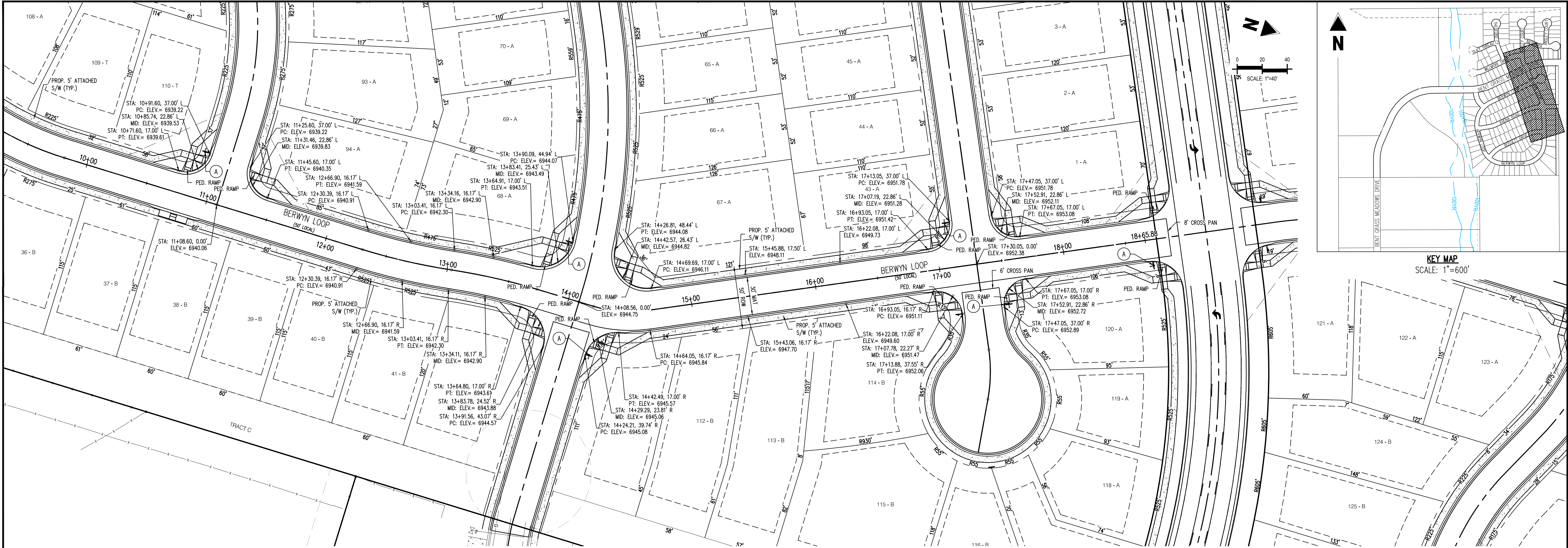
C2.07

Sheet 12 of 38

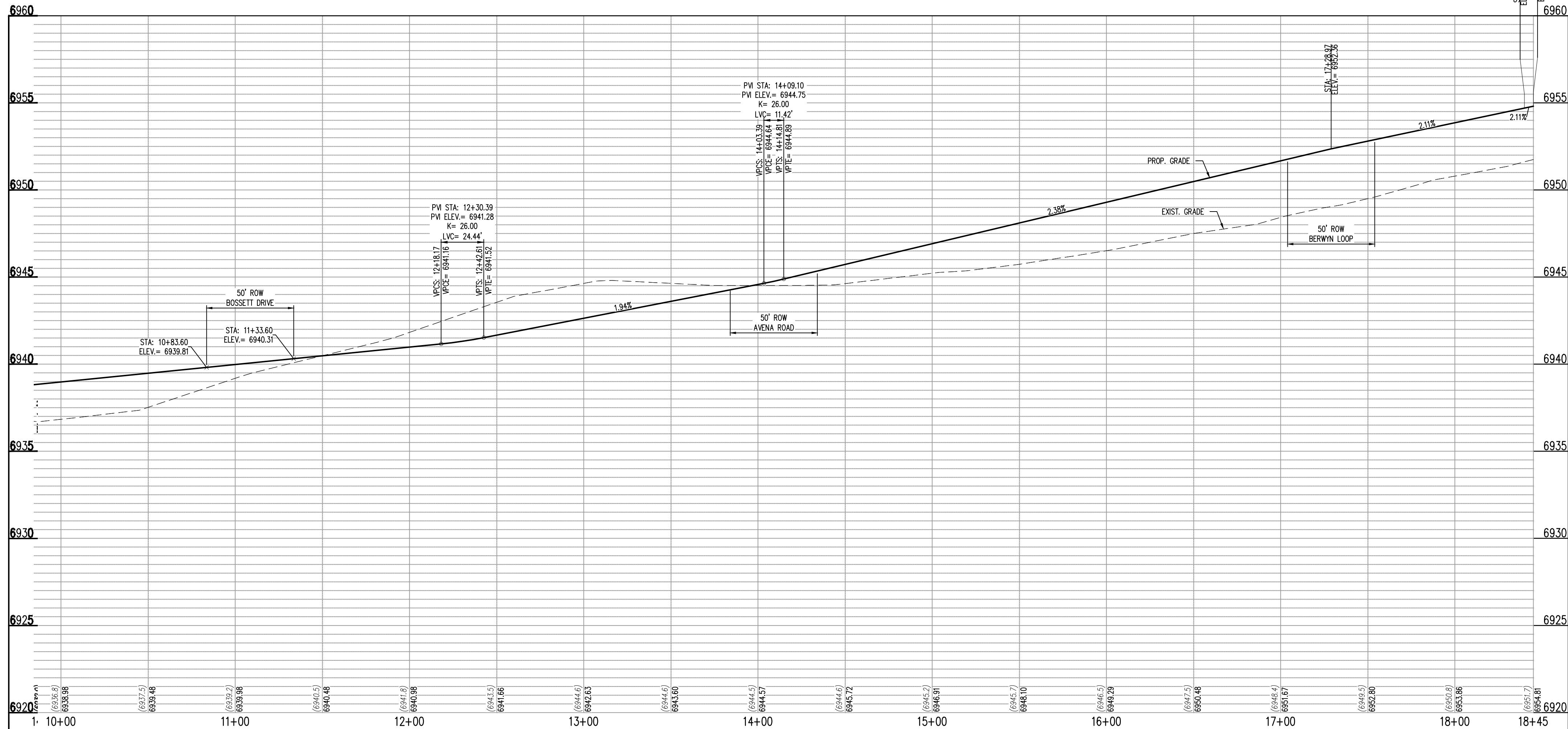








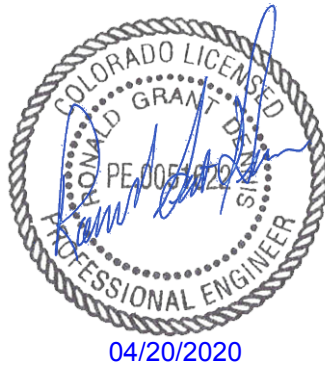
BERWYN LOOP (EAST) (PUBLIC)  
(50' R.O.W.)  
DESIGN SPEED - 25 MPH RESIDENTIAL



BERWYN LOOP (EAST) - CL - 50' ROW  
STA: 10+00 - 18+45  
SCALE: H: 1"=40 V: 1"=10"

Galloway

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CHALLENGER  
HOMES

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Project No: CLH000014.20  
Drawn By: JDP  
Checked By: RGD  
Date: 4/17/2020

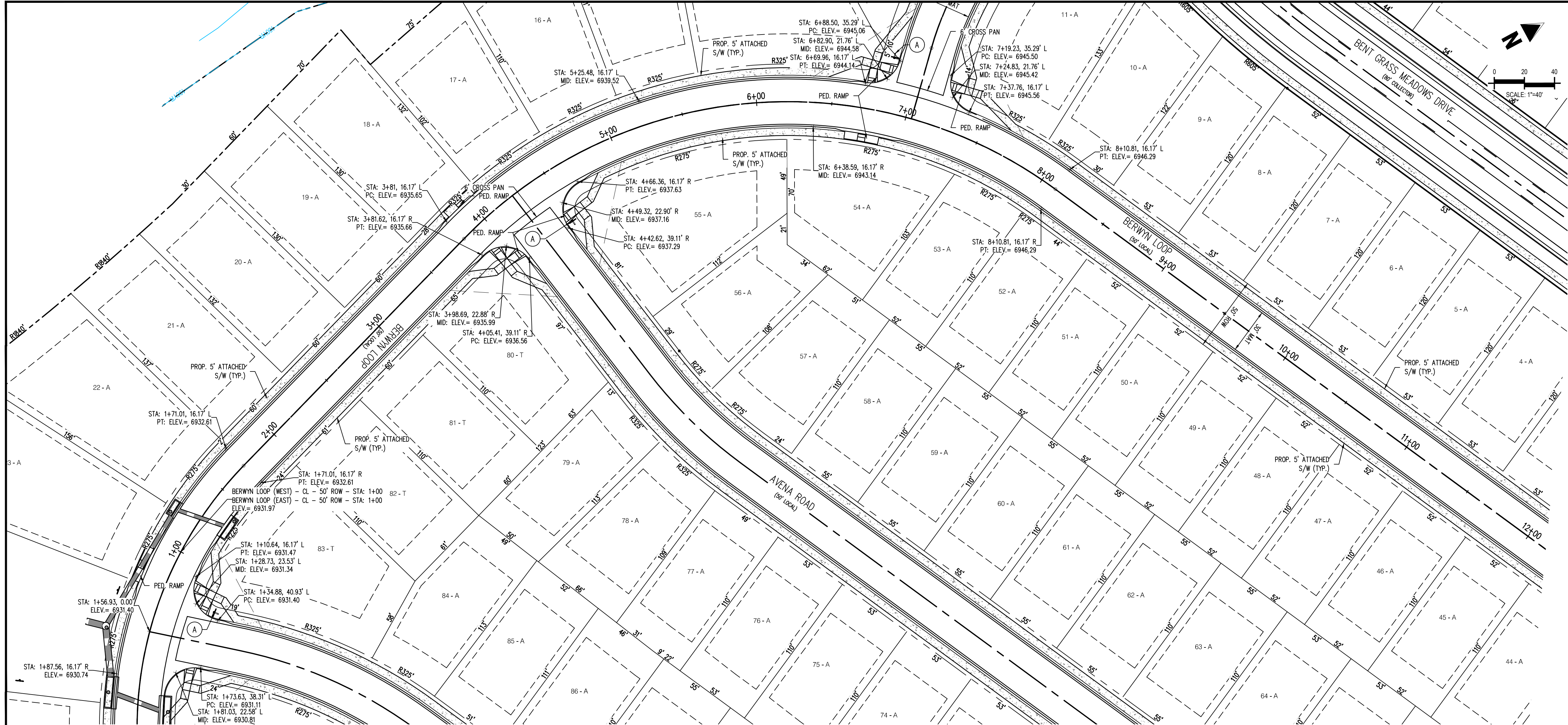
BERWYN LOOP (EAST)  
STREET IMPROVEMENT  
PLAN

C2.09

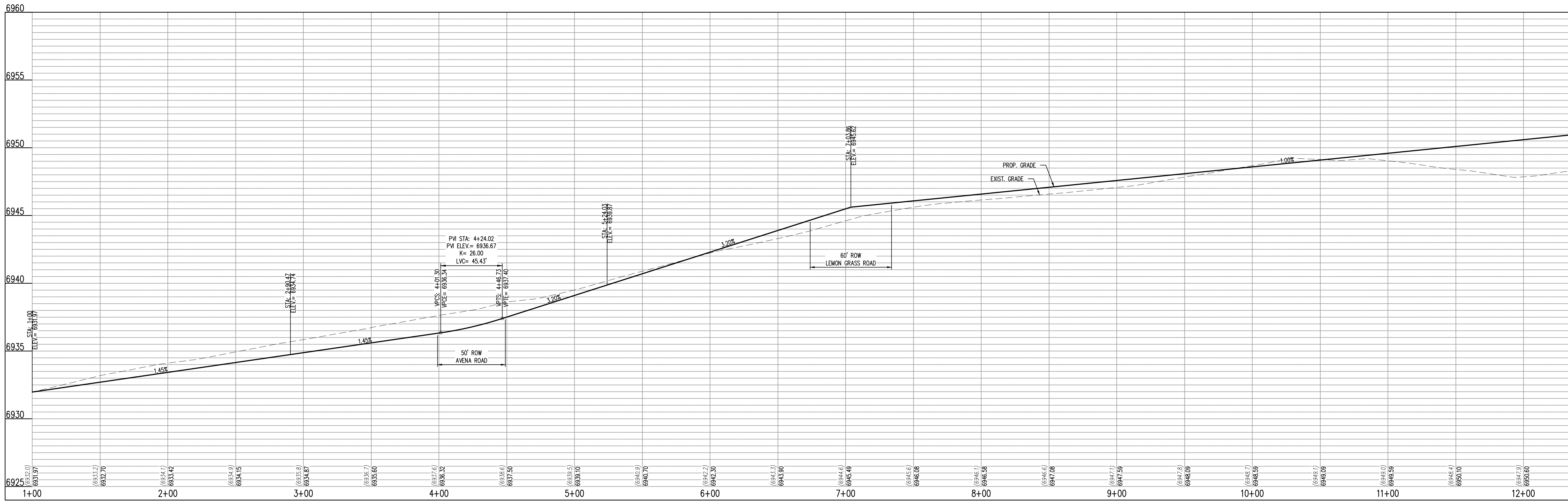
Sheet 14 of 38

SF1914  
5/13/2020

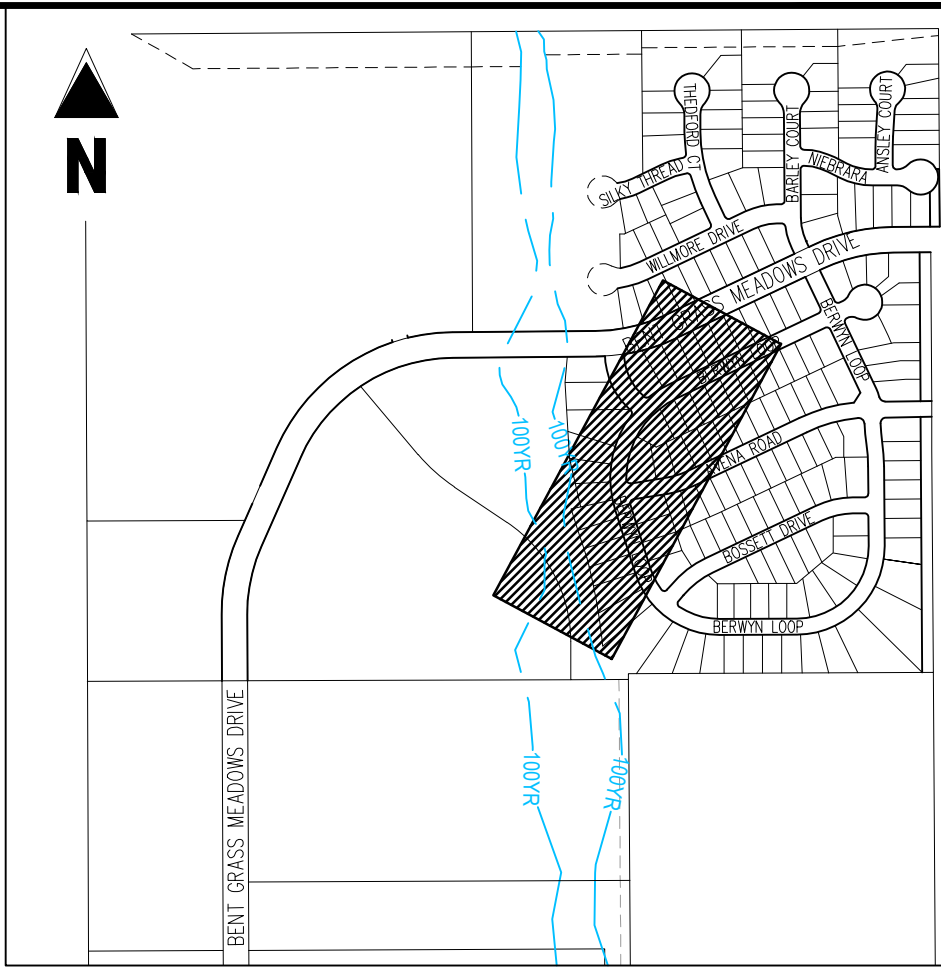




BERWYN LOOP (WEST) (PUBLIC)  
(50' R.O.W.)  
DESIGN SPEED - 25 MPH RESIDENTIAL



BERWYN LOOP (WEST) - CL - 50' ROW  
STA: 10+00 - 18+45  
SCALE: H: 1"=40' V: 1"=10'



KEY MAP  
SCALE: 1"=600'

KEY NOTE: A

ROAD NAME

STREET NAME (D-3)

STOP

STOP SIGN (R1-1)

Galloway

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Colorado Springs, CO 80920  
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gallowayus.com



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CHALLENGER  
HOMES

CONSTRUCTION DOCUMENTS  
BENT GRASS RESIDENTIAL FILING NO. 2  
FOR

CHALLENGER COMMUNITIES, LLC

BENT GRASS MEADOWS DRIVE & MERIDIAN ROAD  
FALCON, CO 80831 - EL PASO COUNTY

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Project No: CLH000014.20  
Drawn By: JDP  
Checked By: RGD  
Date: 4/17/2020

BERWYN LOOP (WEST)  
STREET IMPROVEMENT  
PLAN

SF1914  
5/13/2020

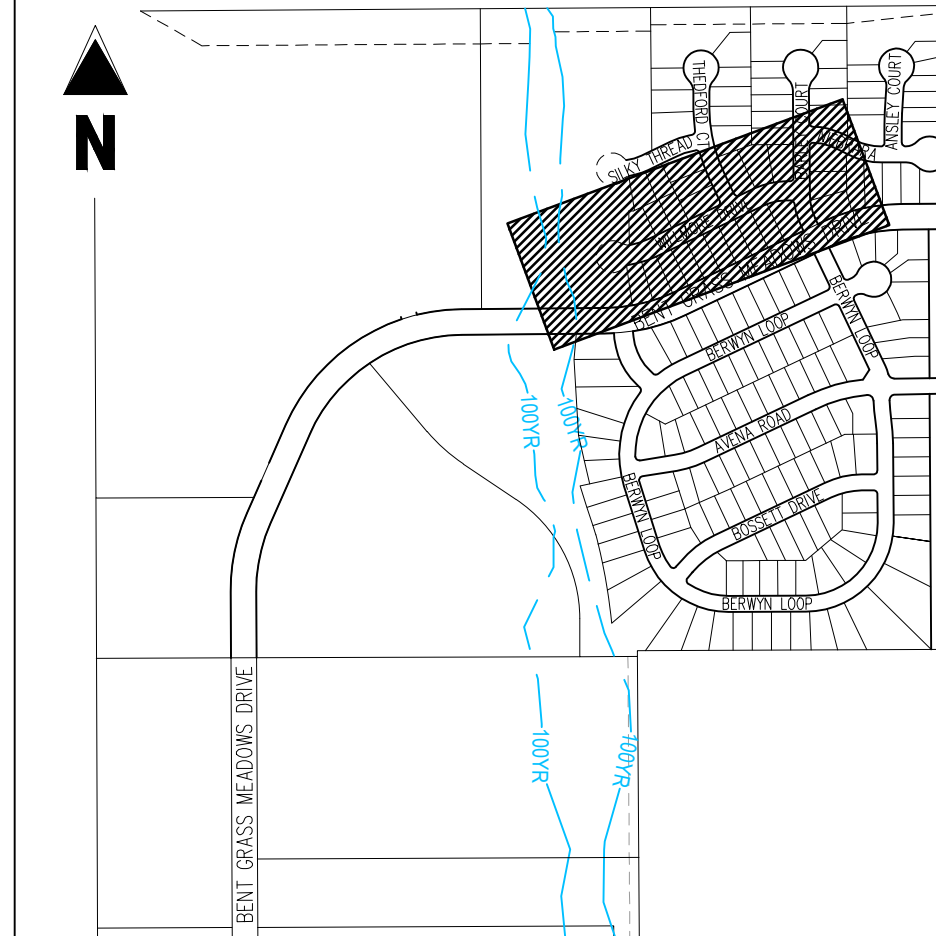
C2.10

Sheet 15 of 38









**KEY MAP**  
SCALE: 1"=600'

**KEY NOTE: A**

ROAD NAME

**STREET**

# STOP

### STOP SIGN (R1-1)

Diagram of a diamond-shaped sign with the text "NO OUTLET". The sign has a yellow background and a black border. Labels point to the "BLACK STRIPE", "YELLOW SIGN", "BLACK", and "NO OUTLET" text.

NO OUTLET SIGN (W14-2)

KEY NOTE: B

A diamond-shaped road sign with a yellow background and a black border. The words "DEAD" and "END" are written in black, bold, sans-serif capital letters, stacked vertically in the center of the sign.

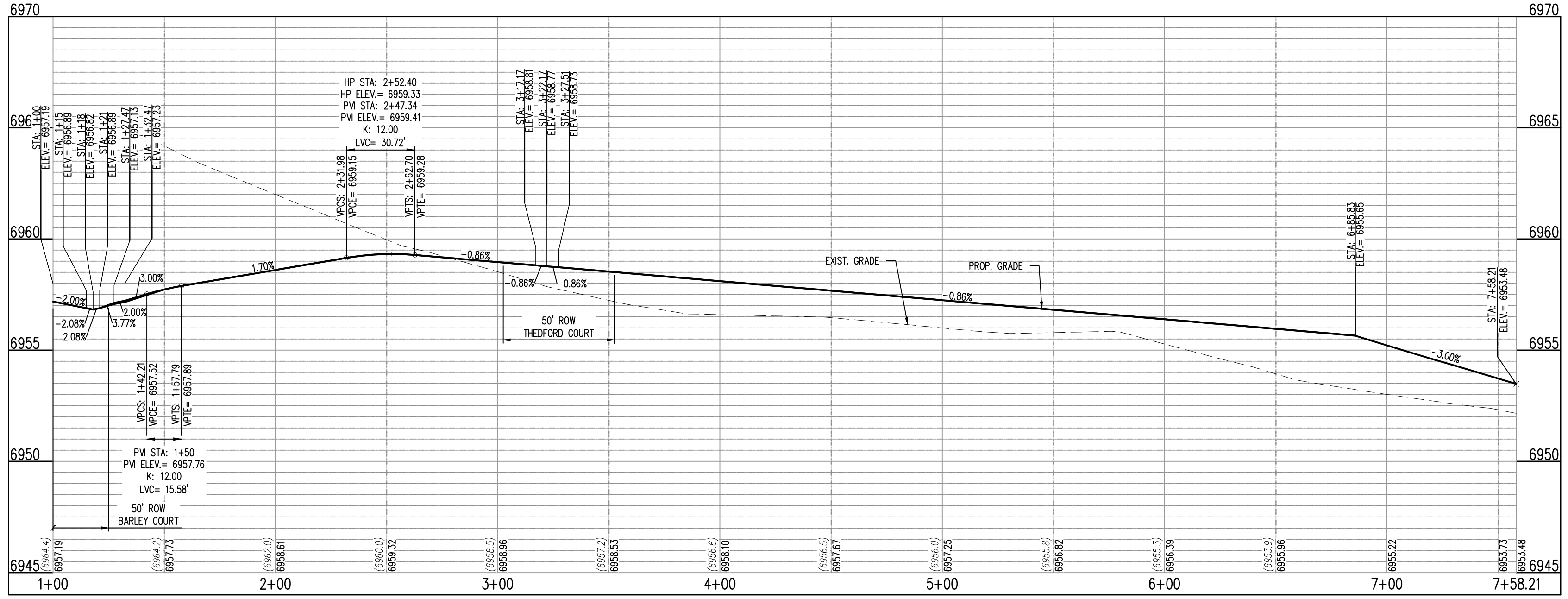
DEAD END SIGN (W14-1)

KEY NOTE: C

Diagram of a diamond-shaped tile with eight circular holes. A label "RED (TYP.)" points to one of the holes.

**TYPE 4 OBJECT MARKER**

KEY NOTE: D



WILLMORE DR EAST - CL - 60' ROW  
STA: 1+00 - 7+58.21  
SCALE: H: 1"=40' V: 1"=10'

SF1914  
5/13/2020

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# CHALLENGER HOMES

CONSTRUCTION DOCUMENTS  
BENT GRASS RESIDENTIAL FILING NO. 2

FOR  
CHALLENGER COMMUNITIES, LLC

BENT GRASS MEADOWS DRIVE & MERIDIAN ROAD  
FALCON, CO 80831 - EL PASO COUNTY

[illegible]

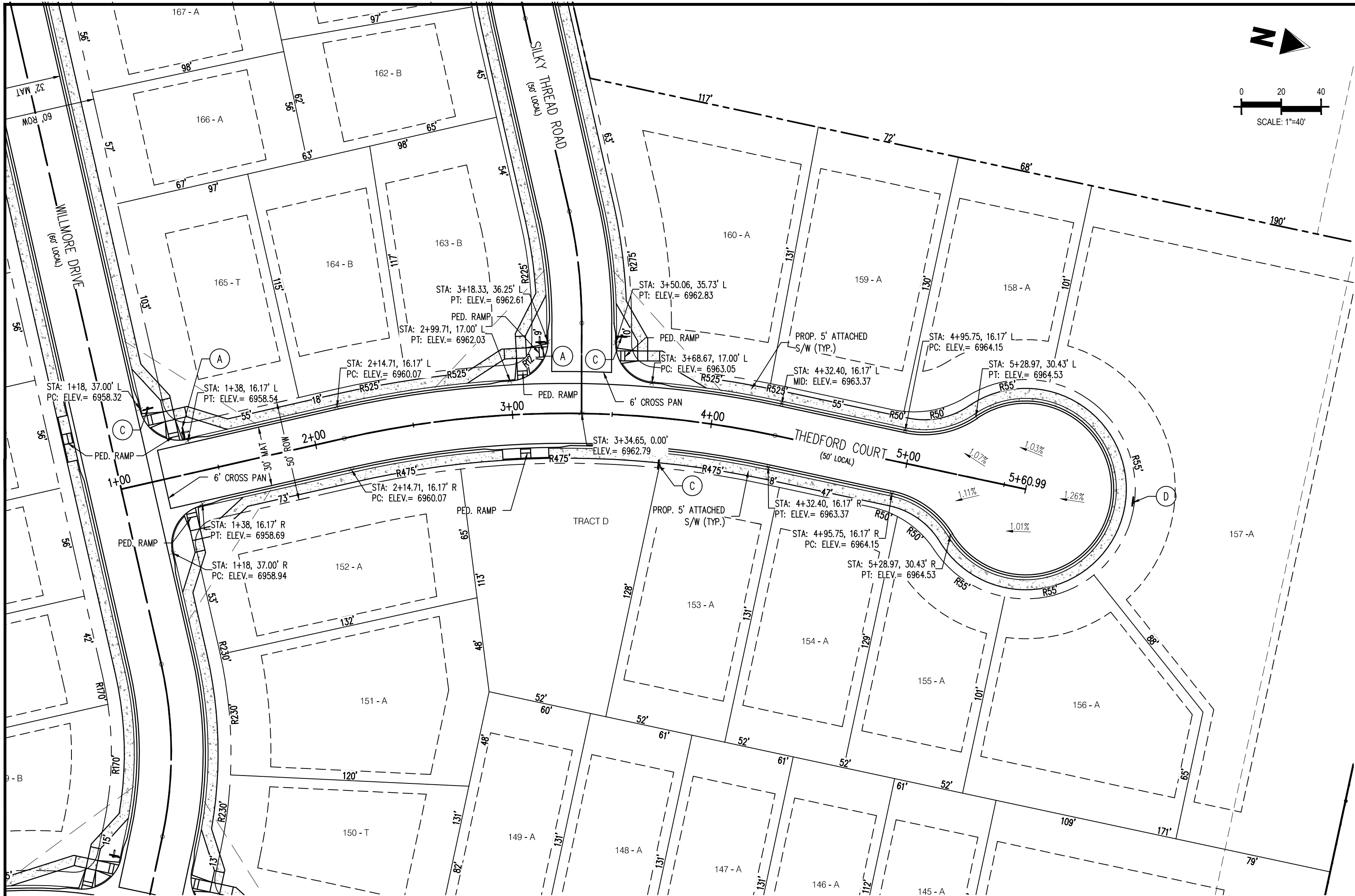
Project No:	CLH000014.20
Drawn By:	JDP
Checked By:	RGD
Date:	4/17/2020

WILLMORE DRIVE STREET  
IMPROVEMENT PLAN

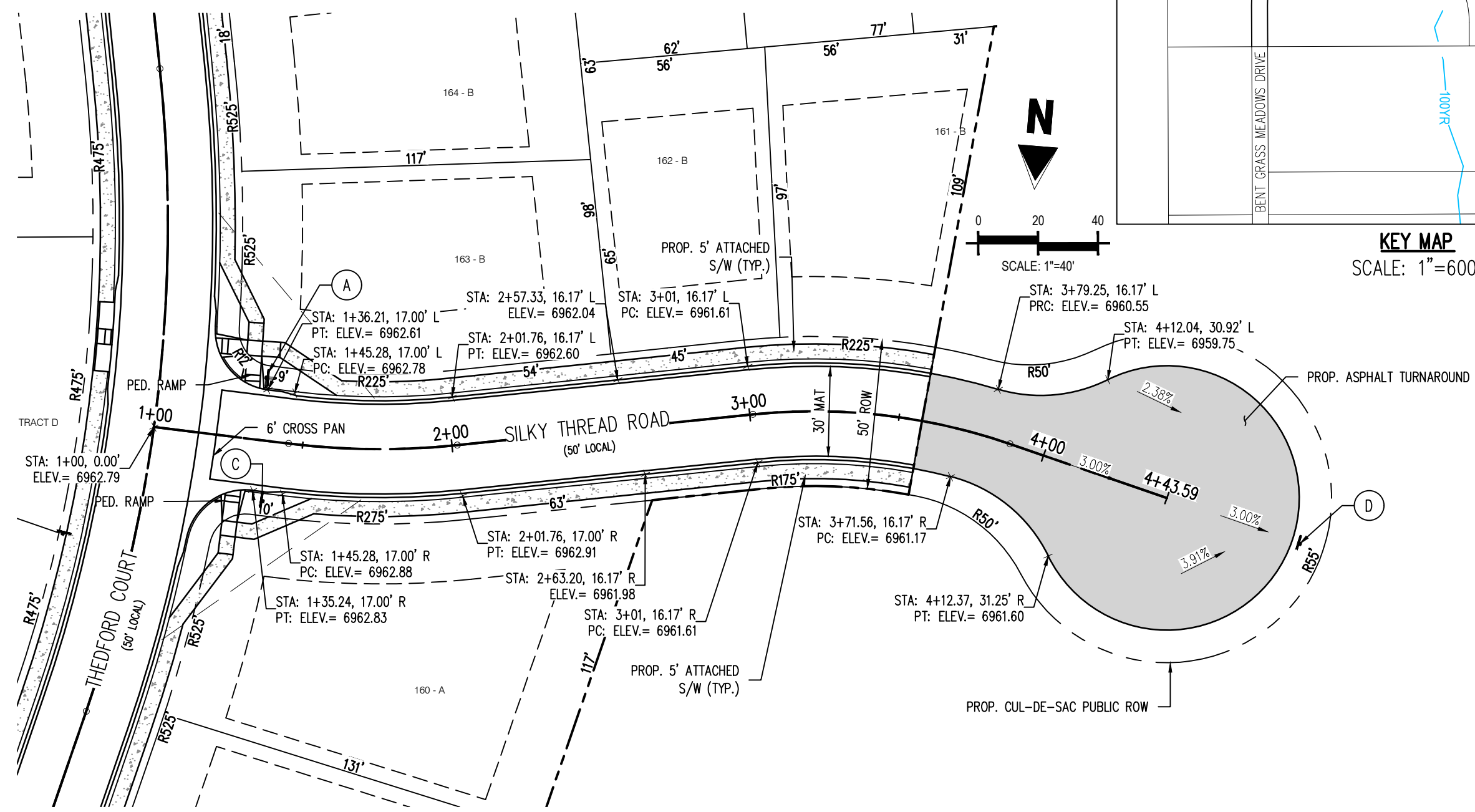
## C2.12

Sheet 17 of 3

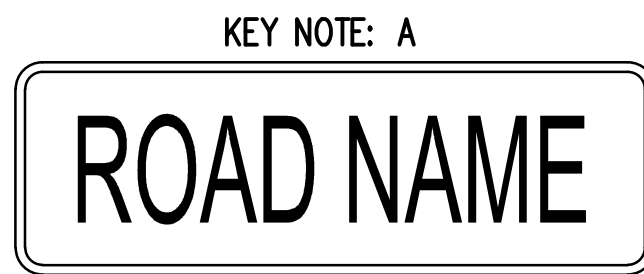




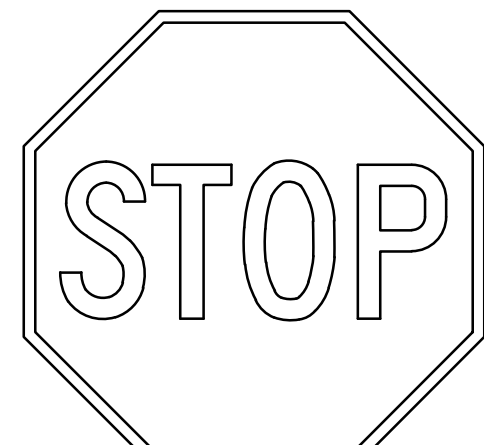
THEDFORD COURT (PUBLIC)  
(50' R.O.W.)  
DESIGN SPEED - 25 MPH RESIDENTIAL



SILKY THREAD ROAD (PUBLIC)  
(50' R.O.W.)  
DESIGN SPEED - 25 MPH RESIDENTIAL



KEY NOTE: A

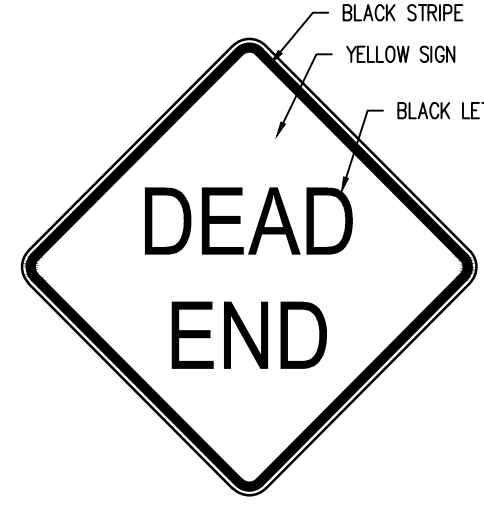


STOP SIGN (R1-1)



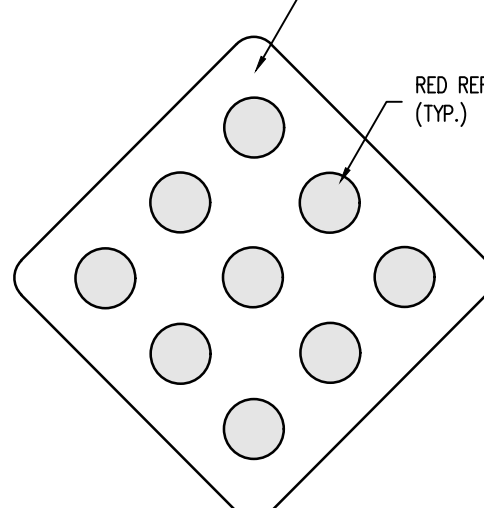
NO OUTLET SIGN (W14-2)

KEY NOTE: B



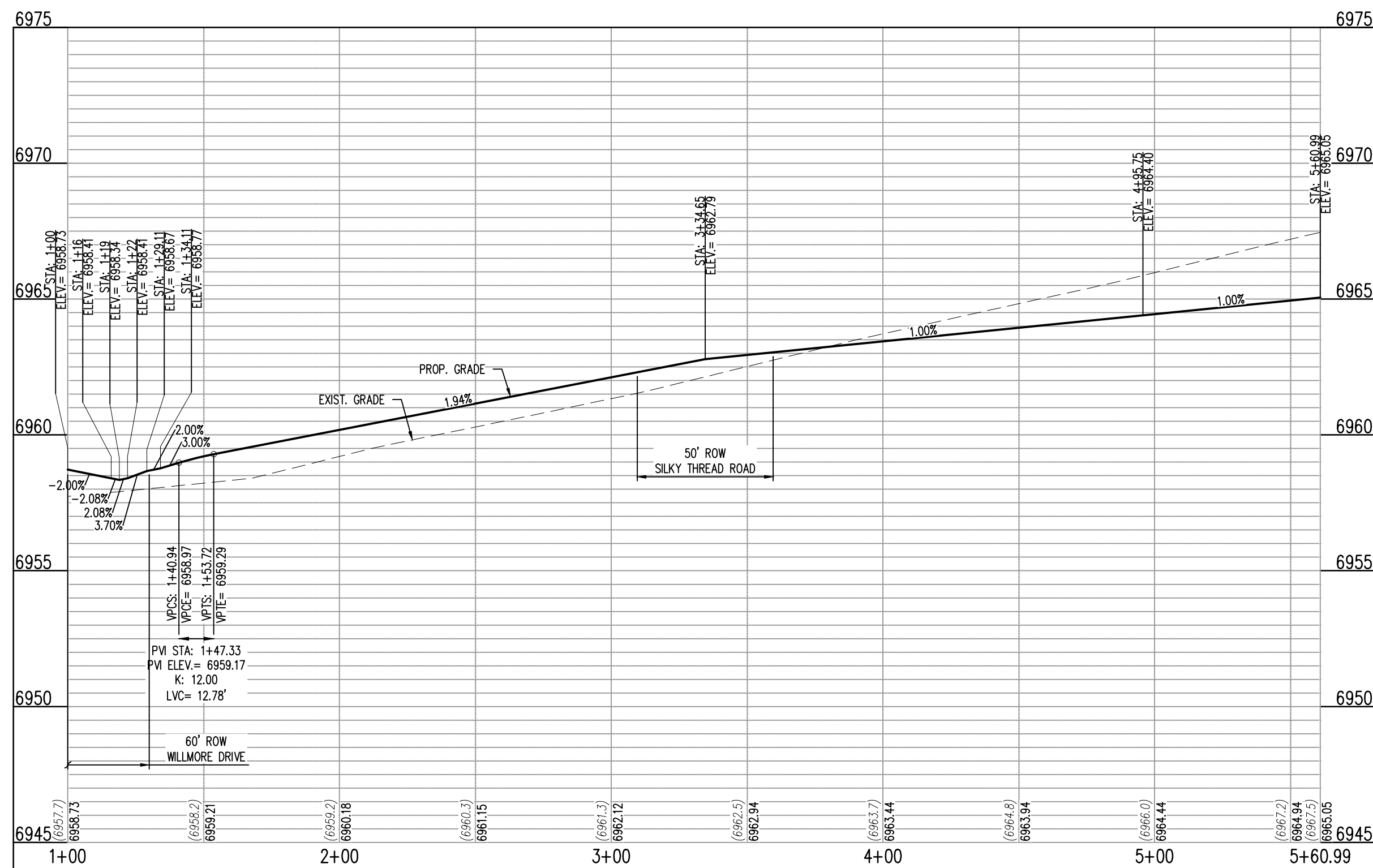
DEAD END SIGN (W14-1)

KEY NOTE: C

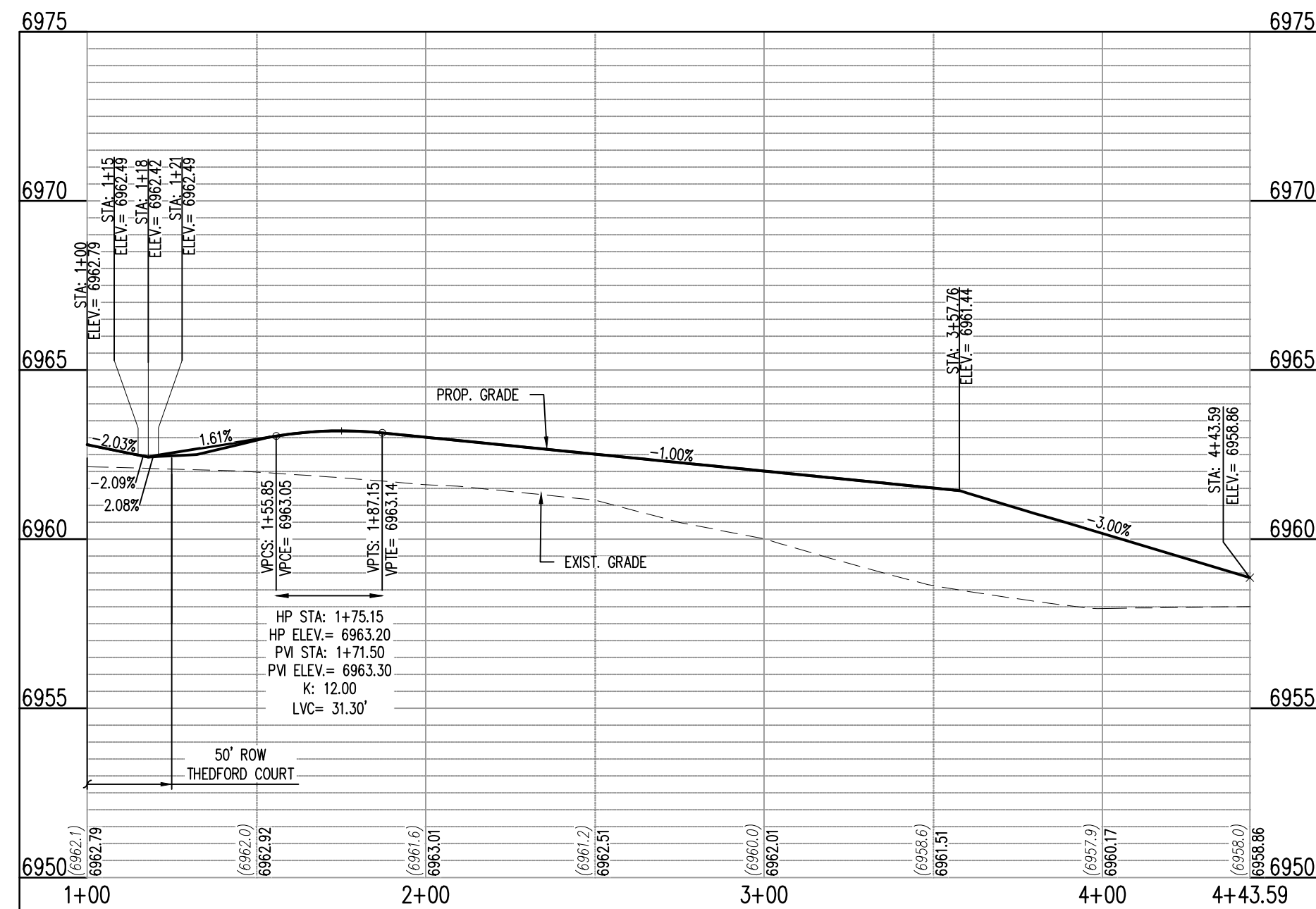


TYPE 4 OBJECT MARKER

KEY NOTE: D



THEDFORD CT - CL - 50' ROW  
STA: 1+00 - 5+60.99  
SCALE: H: 1"=40' V: 1"=10'



SILKY THRED RD EAST - CL - 50' ROW  
STA: 1+00 - 4+43.59  
SCALE: H: 1"=40' V: 1"=10'

#	Date	Issue / Description	Init.

Project No:	CLH000014.20
Drawn By:	JDP
Checked By:	RGD
Date:	4/17/2020

THEDFORD COURT & SILKY  
THREAD ROAD STREET  
IMPROVEMENT PLAN





1987 EXISTING MINOR CONTOUR

6930 EXISTING MAJOR CONTOUR

6941 PROPOSED MINOR CONTOUR

6940 PROPOSED MAJOR CONTOUR

EXISTING PROPERTY BOUNDARY

PROPOSED PROPERTY BOUNDARY

PROPOSED ROW

PROPOSED LOT LINE

PROPOSED MOUNTABLE CURB

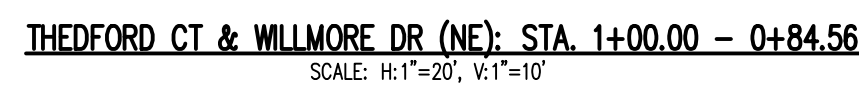
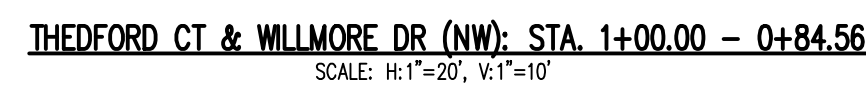
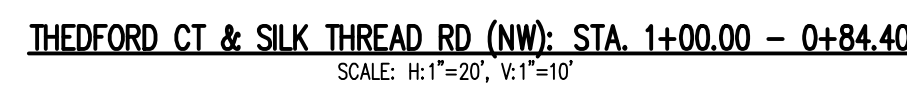
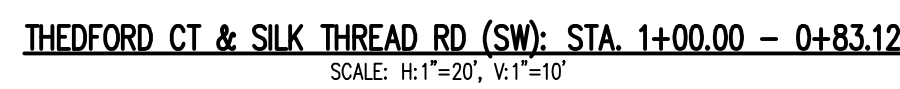
PROPOSED VERTICAL CURB

PROPOSED SIDEWALK

PROPOSED GUTTER FLOW DIRECTION

ASPHALT ROADWAY SURFACE RUNOFF DIRECTION

PROPOSED SPOT ELEVATION



BENT GRASS RESIDENTIAL FILING NO. 2. LOCATED IN THE NORTHWEST QUARTER AND SOUTHWEST QUARTER OF SECTION 1 T13S R65W OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF EL PASO, STATE OF COLORADO

ALL BEARINGS ARE GRID BEARINGS OF THE COLORADO STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, NORTH AMERICAN DATUM 1983. THE BEARING OF THE LINE BETWEEN THE SOUTHWEST CORNER OF SECTION 1, T13S, R65W AND THE WEST QUARTER CORNER SECTION 1, T13S, R65W IS N00°13'46"W AND MONUMENTED AS SHOWN:

THE SOUTHWESTERLY CORNER OF LOT 1 WOODMEN HILLS FILING NO. 4, MONUMENTED BY A YELLOW PLASTIC SURVEYORS CAP ON A NO. 4 REBAR L<sub>S</sub># 24954 ELEVATION = 6947.67

1. ALL UTILITY LOCATIONS SHOWN ARE BASED ON MAPS PROVIDED BY THE APPROPRIATE UTILITY COMPANY AND FIELD SURFACE EVIDENCE AT THE TIME OF SURVEY AND IS TO BE CONSIDERED AN APPROXIMATE LOCATION ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE FIELD LOCATION OF ALL UTILITIES, PUBLIC OR PRIVATE, WHETHER SHOWN ON THE PLANS OR NOT, PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.

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# CHALLENGER HOMES

CONSTRUCTION DOCUMENTS  
BENT GRASS RESIDENTIAL FILING NO. 2  
FOR  
CHALLENGER COMMUNITIES, LLC  
BENT GRASS MEADOWS DRIVE & MERIDIAN ROAD  
FALCON, CO 80831 - EL PASO COUNTY

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Project No:	CLH000014.20
Drawn By:	JDP
Checked By:	RGD
Date:	4/17/2020

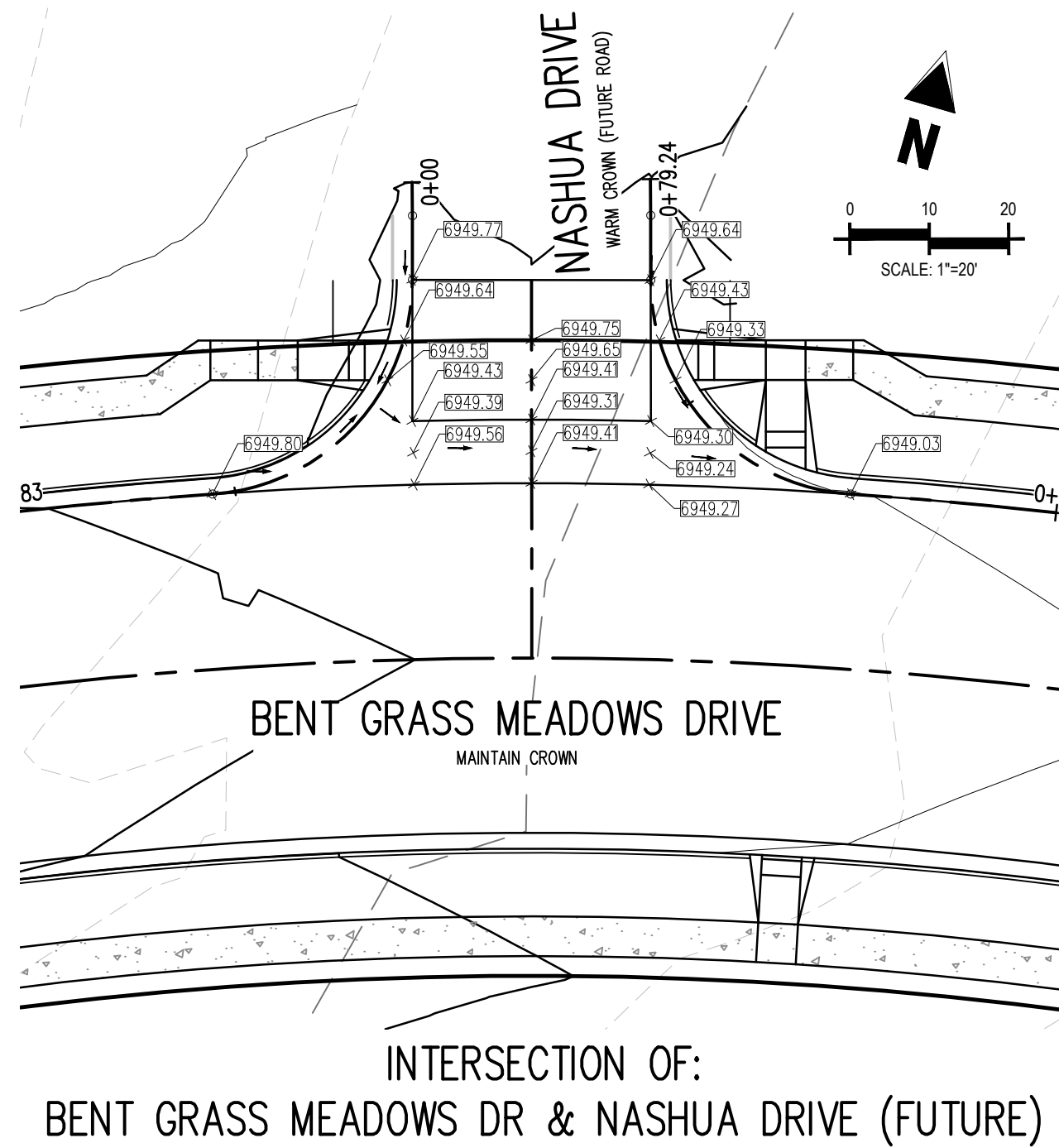
## CROSS PAN & CURB RETURN PROFILES

SF1914  
5/13/2020

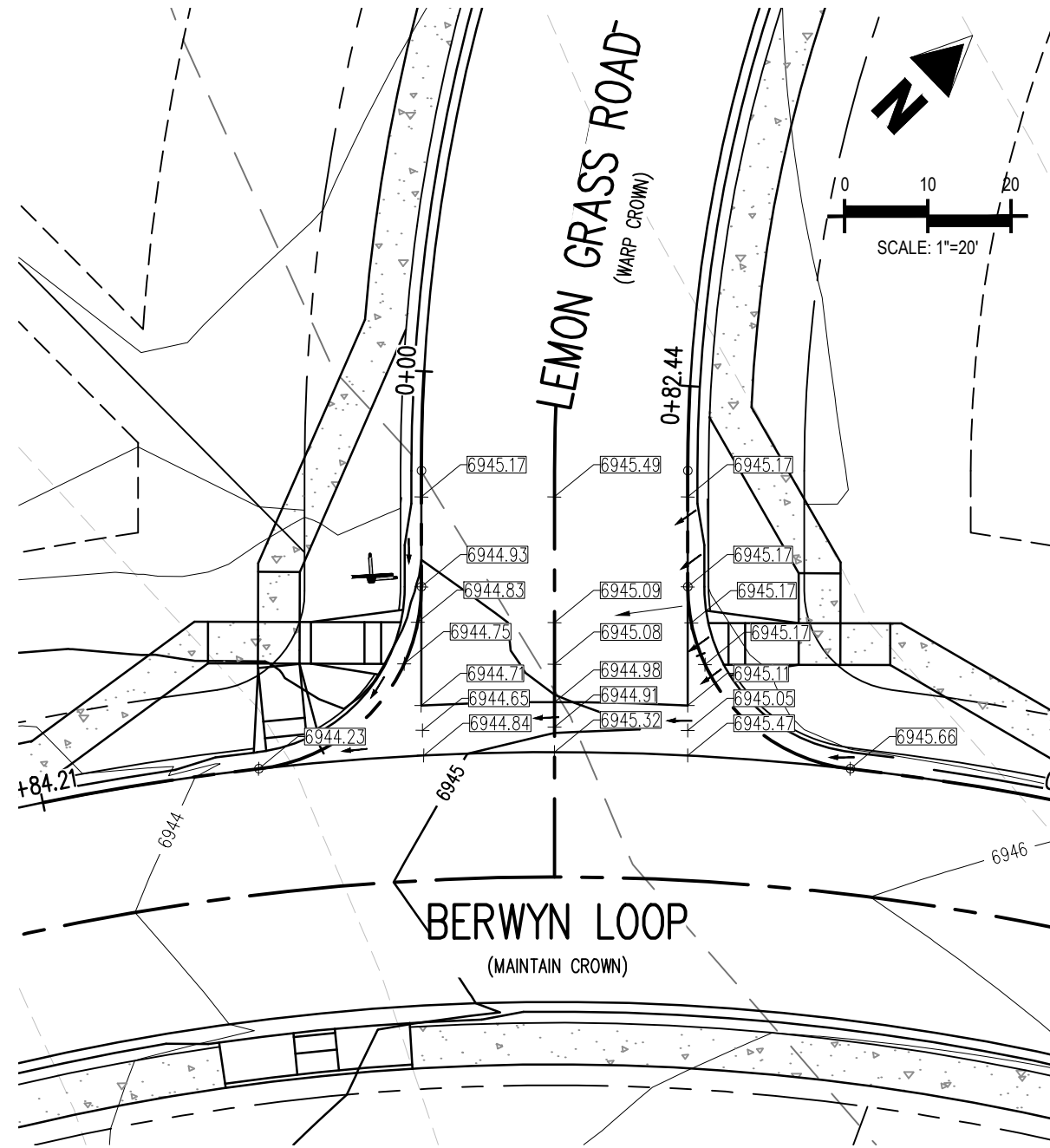
## C3.01

Sheet 19 of 38

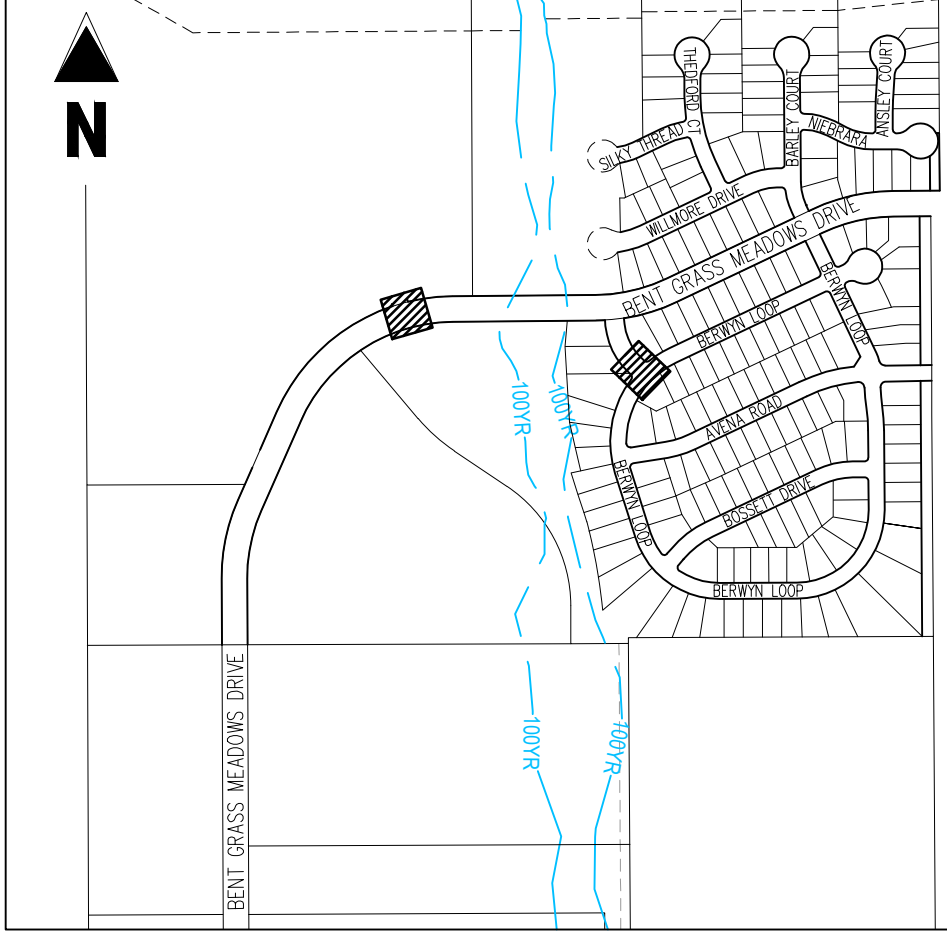




INTERSECTION OF:  
BENT GRASS MEADOWS DR & NASHUA DRIVE (FUTURE)

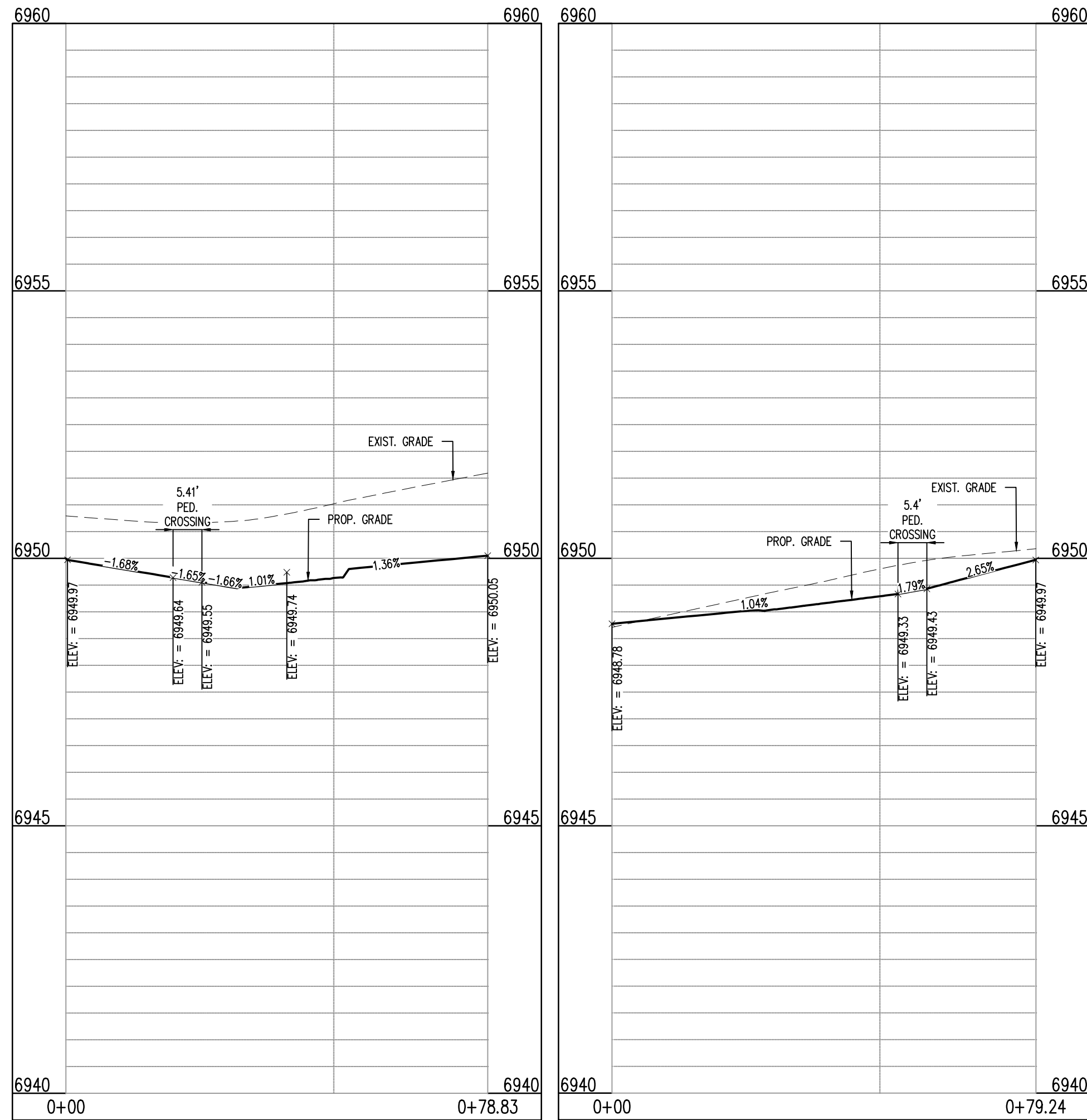


INTERSECTION OF:  
BERWYN LOOP & LEMON GRASS ROAD

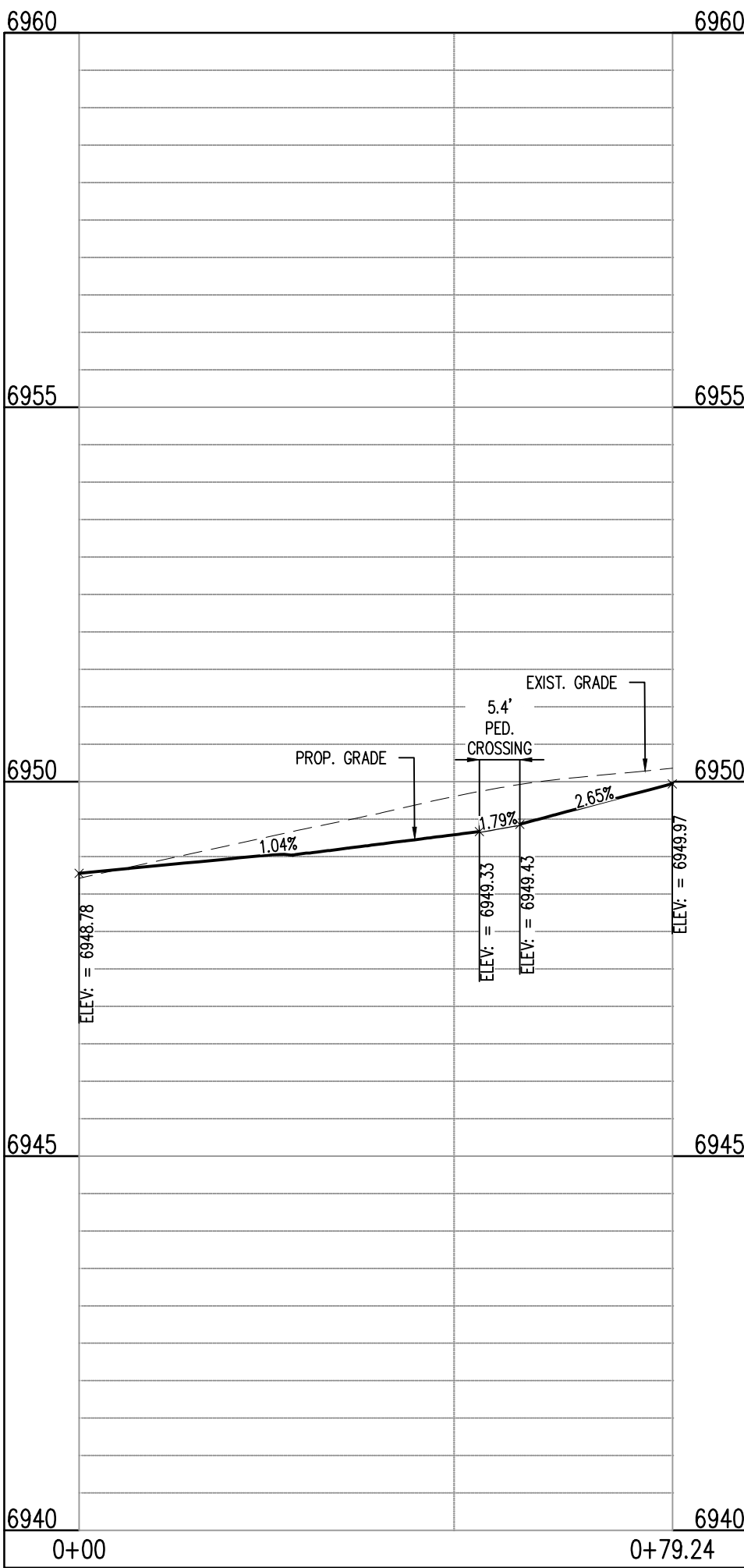


KEY MAP  
SCALE: 1"=600'

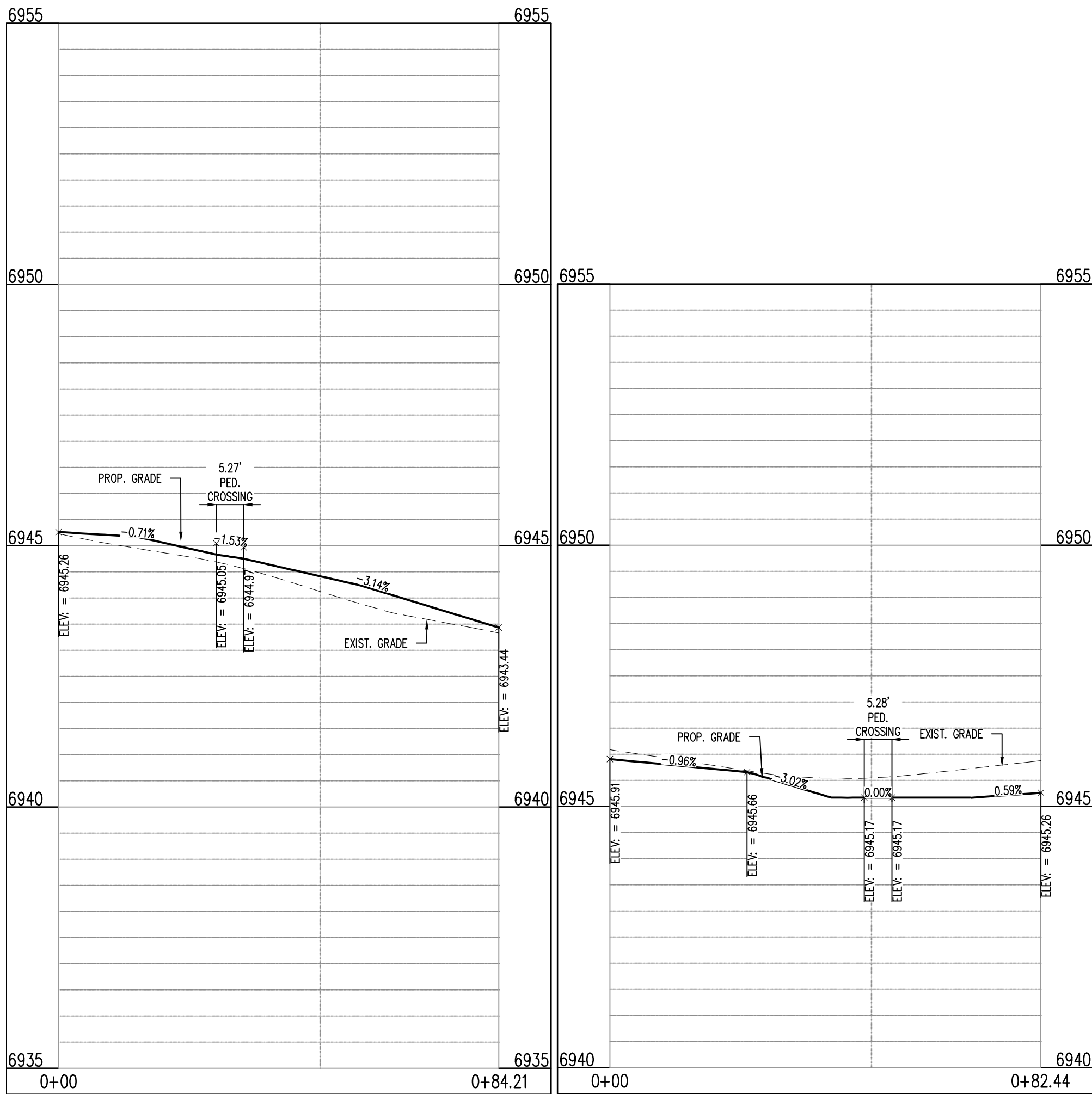
- LEGEND**
- EXISTING MINOR CONTOUR
  - EXISTING MAJOR CONTOUR
  - PROPOSED MINOR CONTOUR
  - PROPOSED MAJOR CONTOUR
  - EXISTING PROPERTY BOUNDARY
  - PROPOSED PROPERTY BOUNDARY
  - PROPOSED ROW
  - PROPOSED LOT LINE
  - PROPOSED MOUNTABLE CURB
  - PROPOSED VERTICAL CURB
  - PROPOSED SIDEWALK
  - PROPOSED GUTTER FLOW DIRECTION
  - ASPHALT ROADWAY SURFACE RUNOFF DIRECTION
  - PROPOSED SPOT ELEVATION



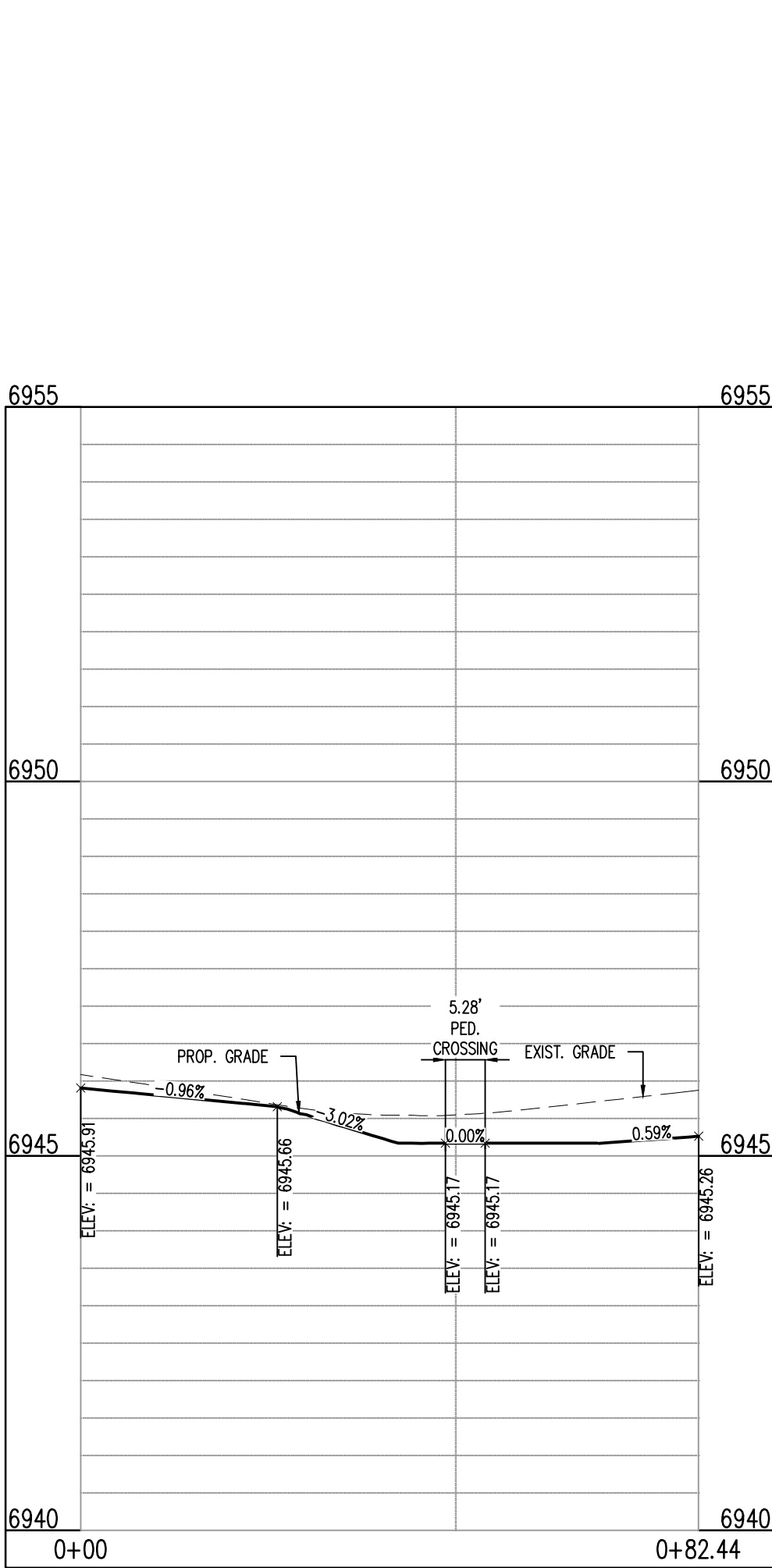
BENT GRASS MEADOWS DR & NASHUA DR (NW): STA. 1+00.00 - 0+78.83  
SCALE: H:1"=20', V:1"=10'



BENT GRASS MEADOWS DR & NASHUA DR (NE): STA. 1+00.00 - 0+79.24  
SCALE: H:1"=20', V:1"=10'



BERWYN LOOP & LEMON GRASS RD (SW): STA. 1+00.00 - 0+84.21  
SCALE: H:1"=20', V:1"=10'



BERWYN LOOP & LEMON GRASS RD (NW): STA. 1+00.00 - 0+82.44  
SCALE: H:1"=20', V:1"=10'

**LEGAL DESCRIPTION**

BENT GRASS RESIDENTIAL FILING NO. 2, LOCATED IN THE NORTHWEST QUARTER AND SOUTHWEST QUARTER OF SECTION 1, T13S, R65W OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF EL PASO, STATE OF COLORADO

**BASIS OF BEARINGS**

ALL BEARINGS ARE GRID BEARINGS OF THE COLORADO STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, NORTH AMERICAN DATUM 1983. THE BEARING OF THE LINE BETWEEN THE SOUTHWEST CORNER OF SECTION 1, T13S, R65W AND THE WEST QUARTER CORNER SECTION 1, T13S, R65W IS N00°15'46"W AND MONUMENTED AS SHOWN.

**BENCHMARK**

THE SOUTHWESTERLY CORNER OF LOT 1 WOODMEN HILLS FILING NO. 4, MONUMENTED BY A YELLOW PLASTIC SURVEYORS CAP ON A NO. 4 REBAR LS# 24954 ELEVATION = 6947.67

**CAUTION - NOTICE TO CONTRACTOR**

- ALL UTILITY LOCATIONS SHOWN ARE BASED ON MAPS PROVIDED BY THE APPROPRIATE UTILITY COMPANY AND FIELD SURFACE EVIDENCE AT THE TIME OF SURVEY AND IS TO BE CONSIDERED AN APPROXIMATE LOCATION ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF ALL UTILITIES, PUBLIC OR PRIVATE, WHETHER SHOWN ON THE PLANS OR NOT, PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.

- WHERE A PROPOSED UTILITY CROSSES AN EXISTING UTILITY, IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF SUCH EXISTING UTILITY, EITHER THROUGH POT-HOLING OR ALTERNATIVE METHOD. REPORT INFORMATION TO THE ENGINEER PRIOR TO CONSTRUCTION.



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04/20/2020

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**CHALLENGER  
HOMES**

CONSTRUCTION DOCUMENTS  
BENT GRASS RESIDENTIAL FILING NO. 2  
FOR  
CHALLENGER COMMUNITIES, LLC

BENT GRASS MEADOWS DRIVE & MERIDIAN ROAD  
FALCON, CO 80831 - EL PASO COUNTY

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Project No: CLH000014.20  
Drawn By: JDP  
Checked By: RGD  
Date: 4/17/2020

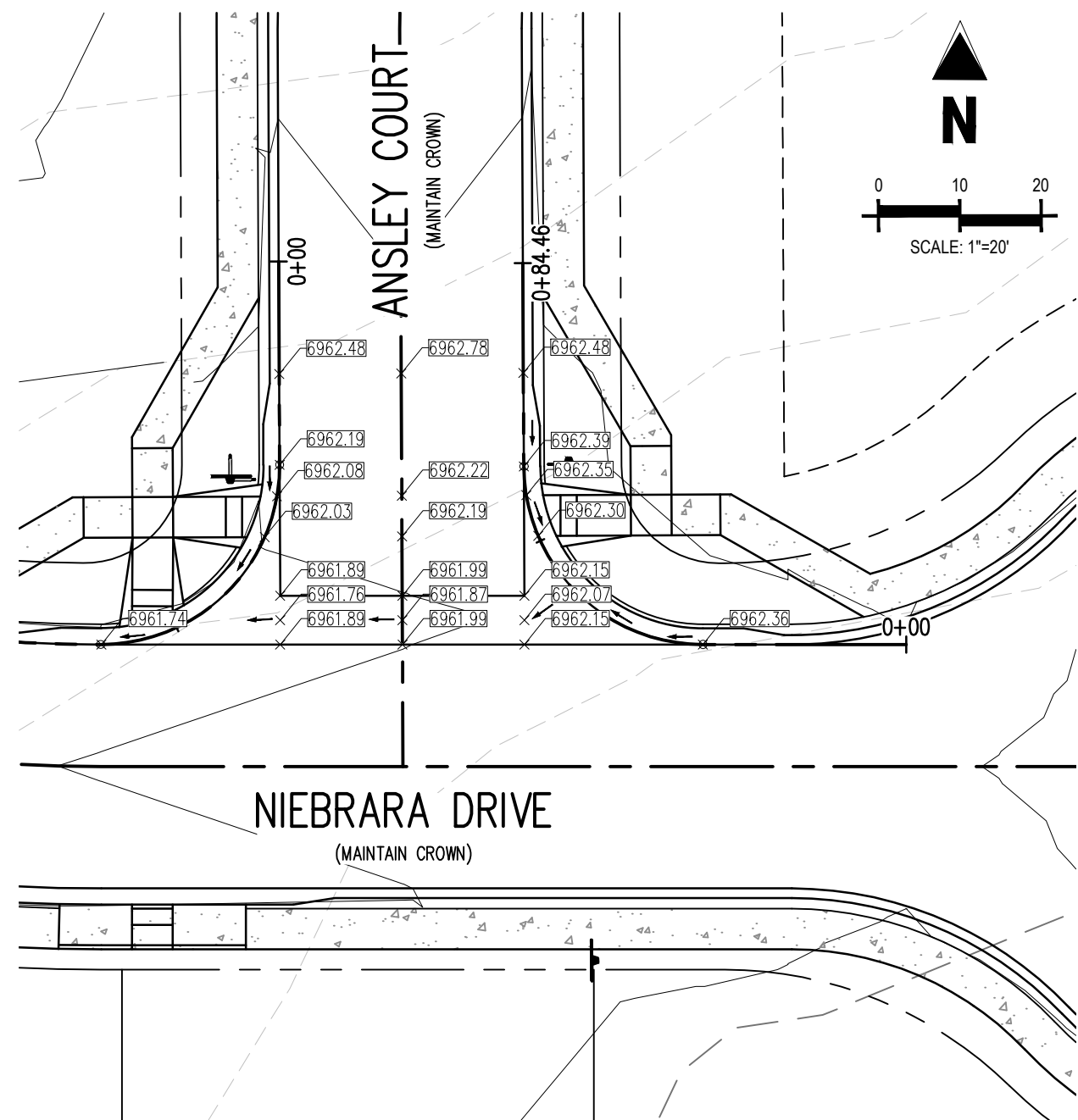
CROSS PAN & CURB  
RETURN PROFILES

SF1914  
5/13/2020

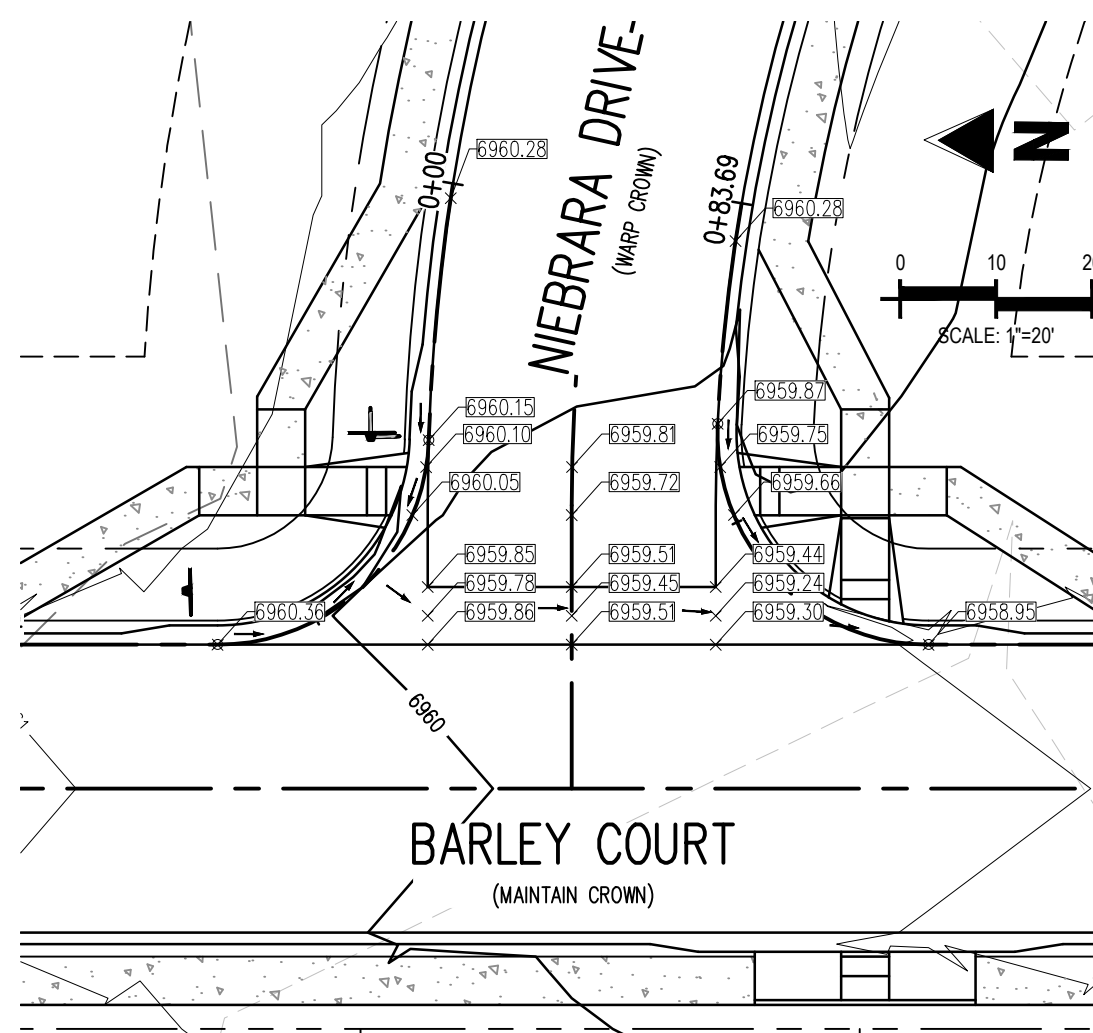
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Sheet 20 of 38

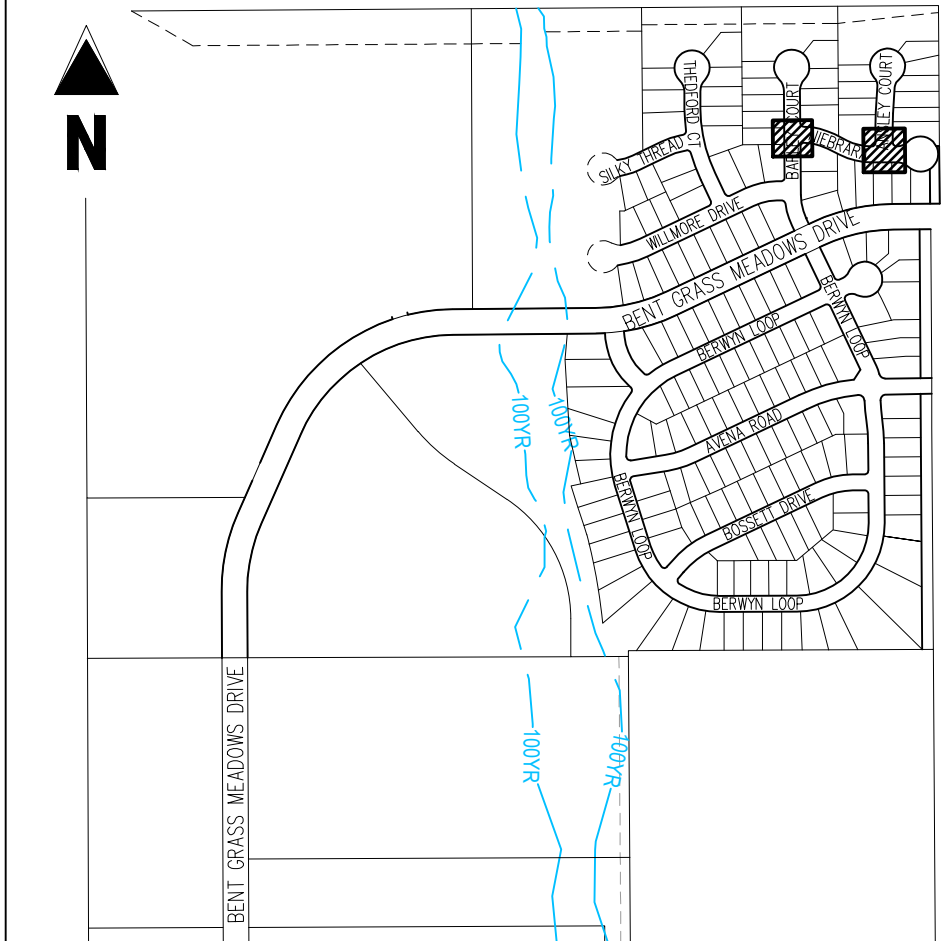




INTERSECTION OF:  
ANSLEY COURT & NIEBRARA DRIVE

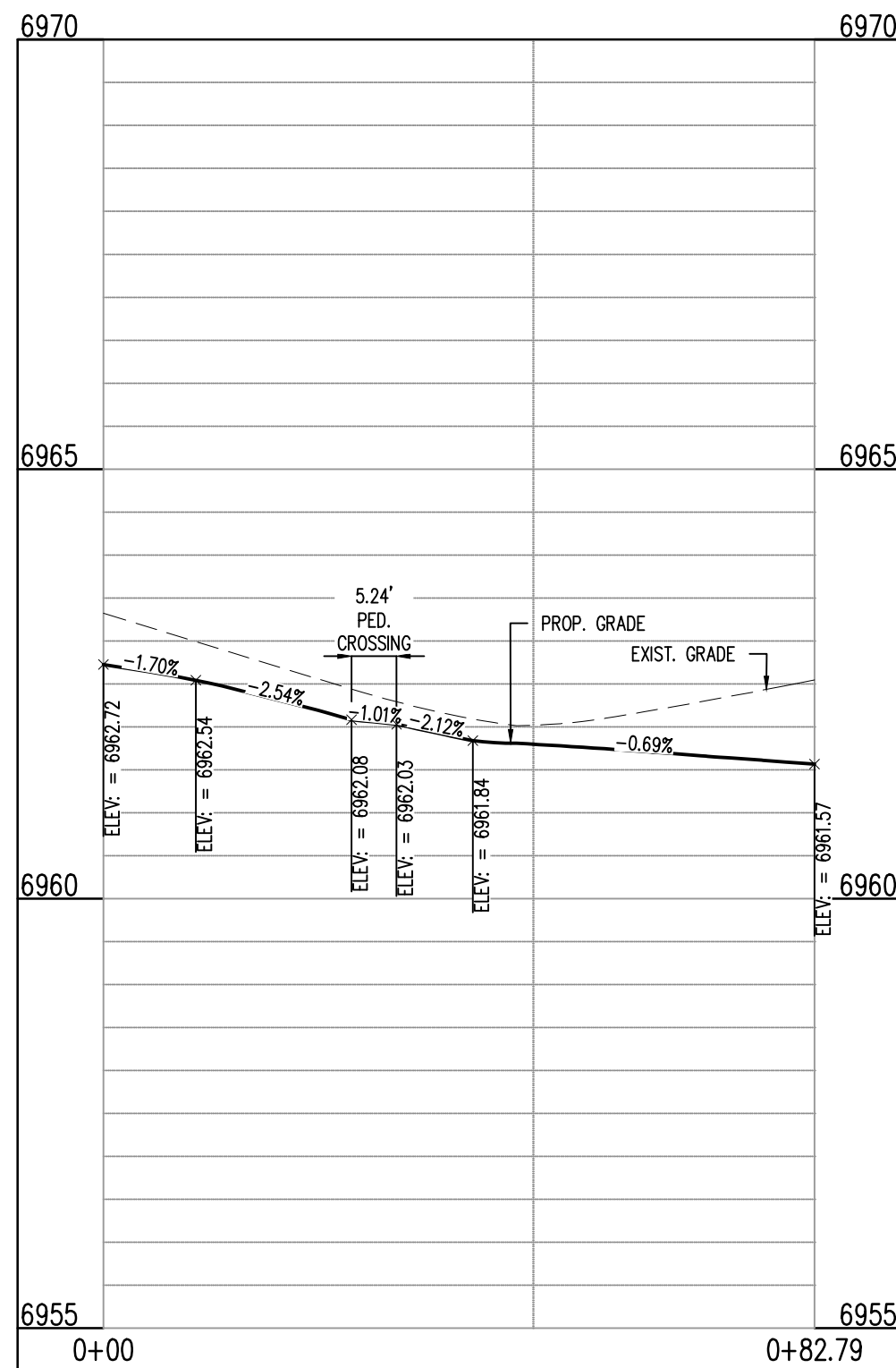


INTERSECTION OF:  
BARLEY COURT & NIEBRARA DRIVE

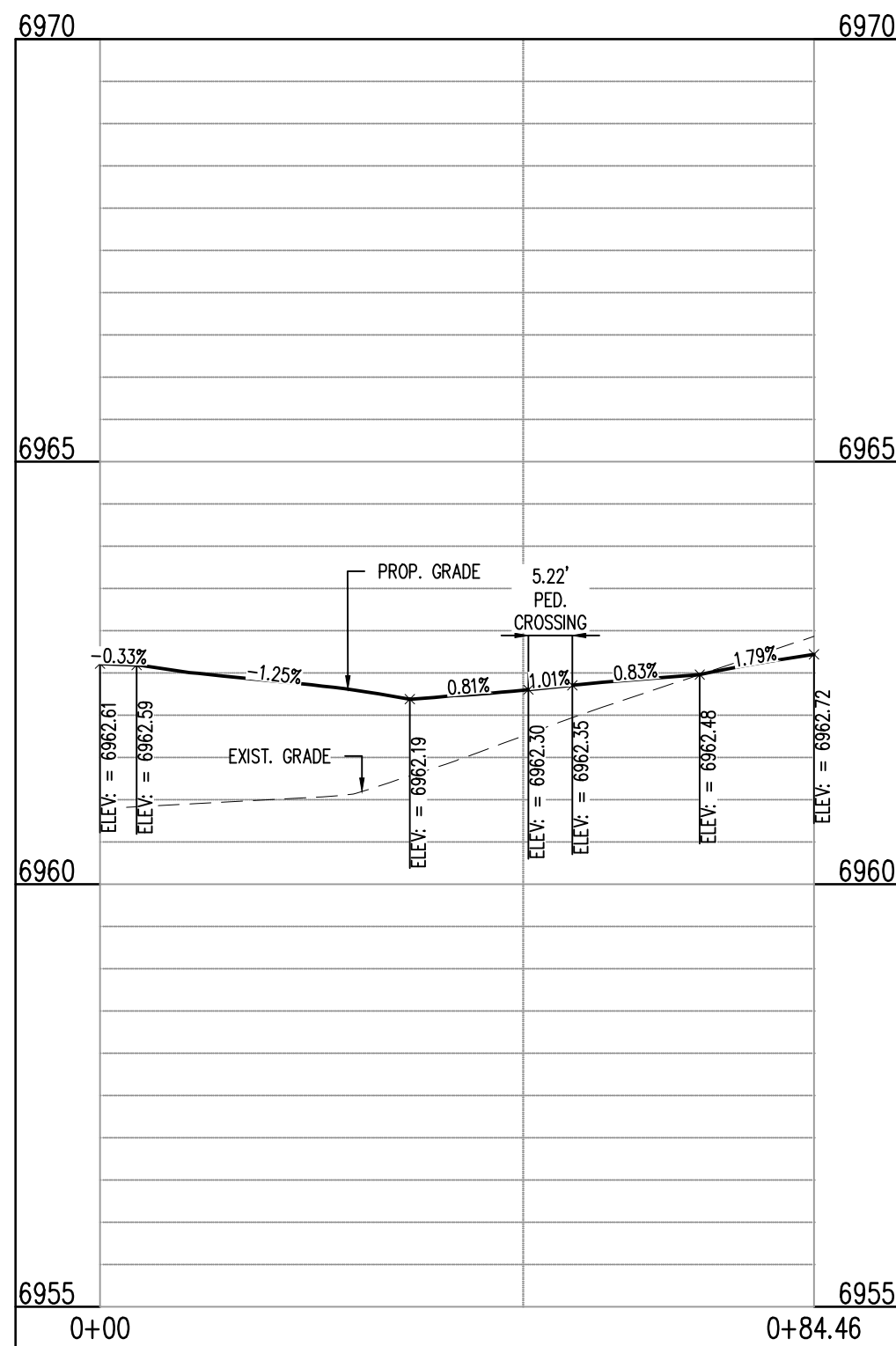


KEY MAP  
SCALE: 1"=600'

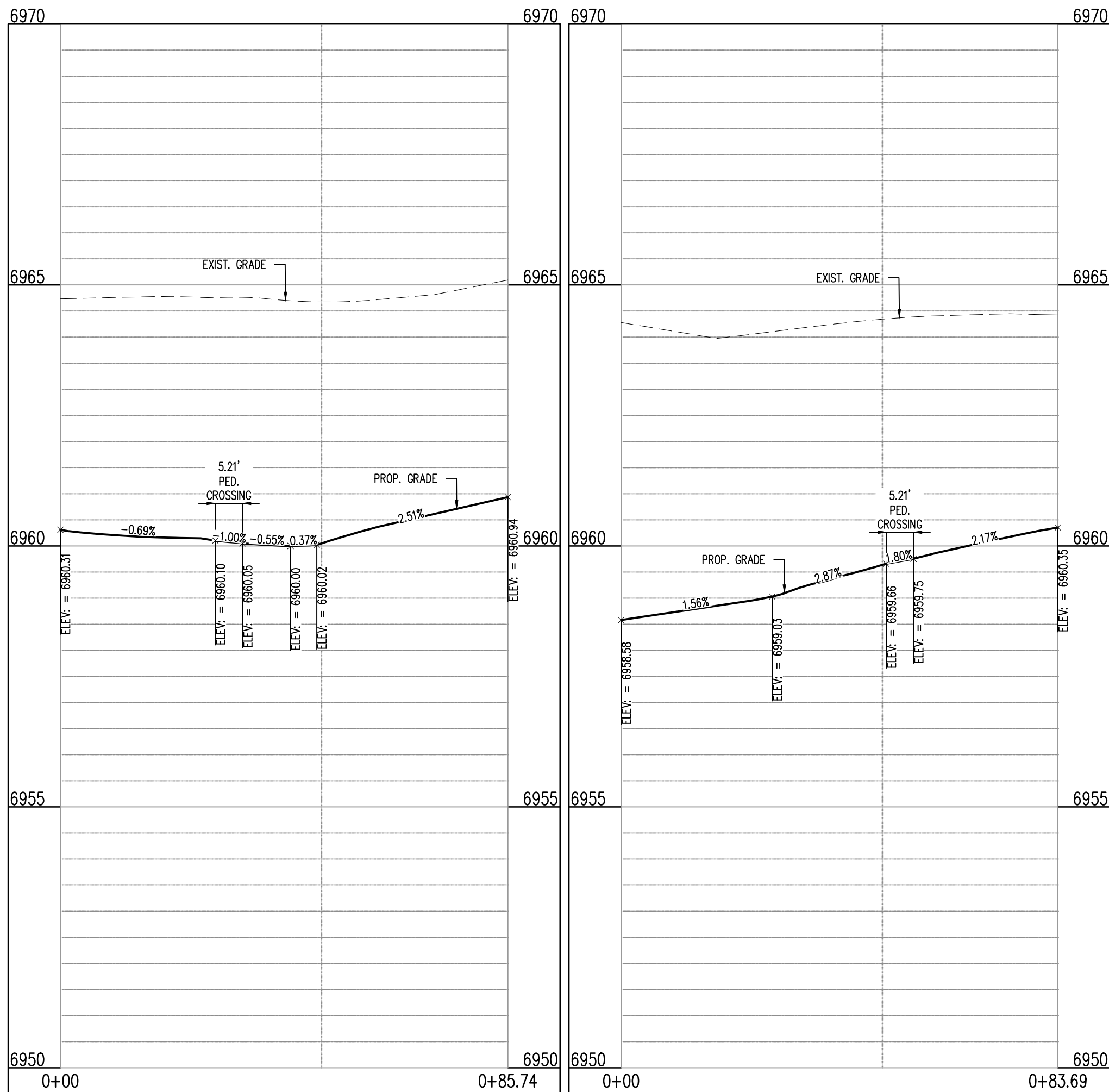
- LEGEND**
- 69.31' --- EXISTING MINOR CONTOUR
  - 69.30' --- EXISTING MAJOR CONTOUR
  - 69.41' --- PROPOSED MINOR CONTOUR
  - 69.40' --- PROPOSED MAJOR CONTOUR
  - EXISTING PROPERTY BOUNDARY
  - PROPOSED PROPERTY BOUNDARY
  - PROPOSED ROW
  - PROPOSED LOT LINE
  - PROPOSED MOUNTABLE CURB
  - PROPOSED VERTICAL CURB
  - PROPOSED SIDEWALK
  - PROPOSED GUTTER FLOW DIRECTION
  - ASPHALT ROADWAY SURFACE RUNOFF DIRECTION
  - PROPOSED SPOT ELEVATION



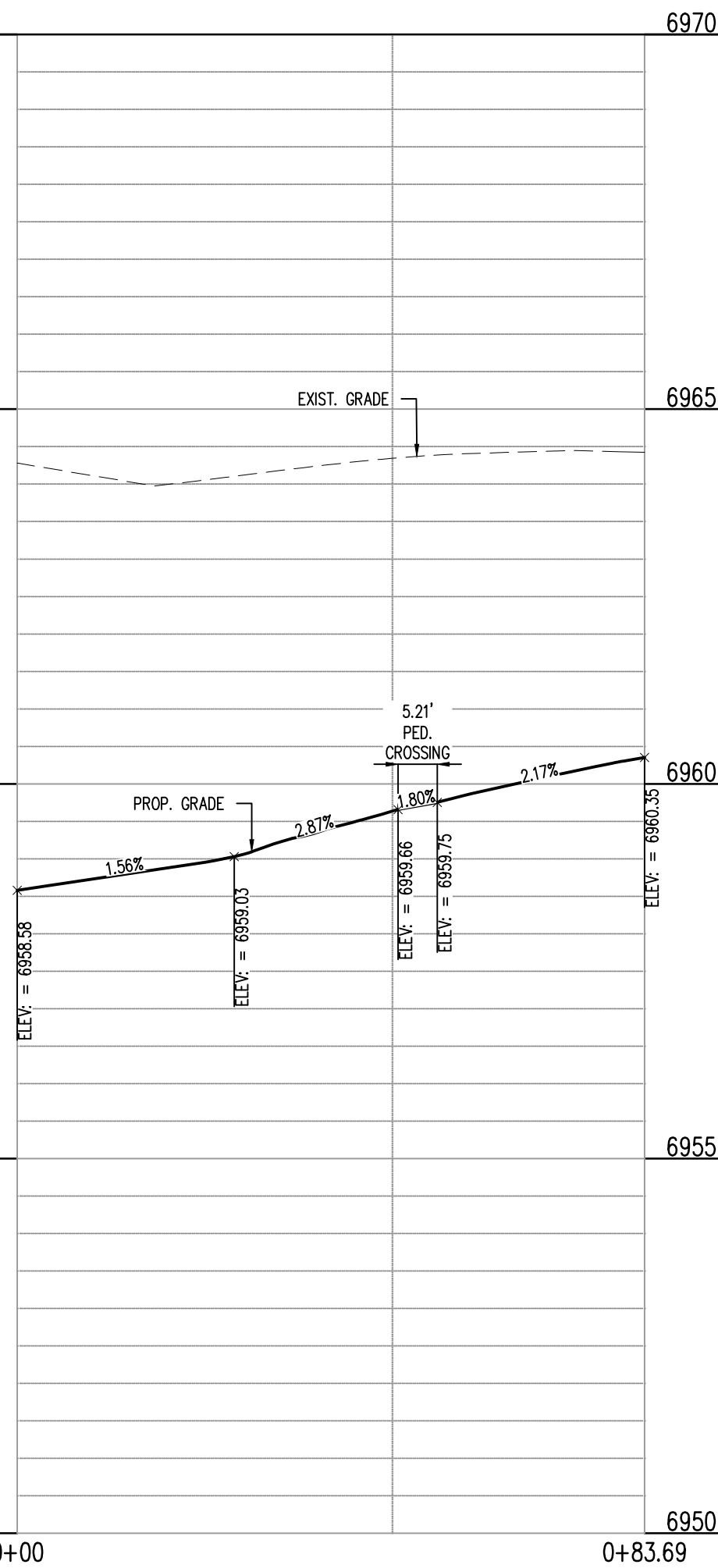
ANSLEY CT & NIEBRARA DR (NW): STA. 1+00.00 - 0+82.79  
SCALE: H:1"=20', V:1"=10'



ANSLEY CT & NIEBRARA DR (NE): STA. 1+00.00 - 0+84.46  
SCALE: H:1"=20', V:1"=10'



BARLEY CT & NIEBRARA DR (NE): STA. 1+00.00 - 0+85.74  
SCALE: H:1"=20', V:1"=10'



BARLEY CT & NIEBRARA DR (SE): STA. 1+00.00 - 0+83.69  
SCALE: H:1"=20', V:1"=10'

**LEGAL DESCRIPTION**

BENT GRASS RESIDENTIAL FILING NO. 2, LOCATED IN THE NORTHWEST QUARTER AND SOUTHWEST QUARTER OF SECTION 1, T13S, R65W OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF EL PASO, STATE OF COLORADO

**BASIS OF BEARINGS**

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**BENCHMARK**

THE SOUTHWESTERLY CORNER OF LOT 1 WOODMEN HILLS FILING NO. 4, MONUMENTED BY A YELLOW PLASTIC SURVEYORS CAP ON A NO. 4 REBAR L#24954 ELEVATION = 6947.67

**CAUTION - NOTICE TO CONTRACTOR**

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**CHALLENGER  
HOMES**

CONSTRUCTION DOCUMENTS  
BENT GRASS RESIDENTIAL FILING NO. 2  
FOR  
CHALLENGER COMMUNITIES, LLC

BENT GRASS MEADOWS DRIVE & MERIDIAN ROAD  
FALCON, CO 80831 - EL PASO COUNTY

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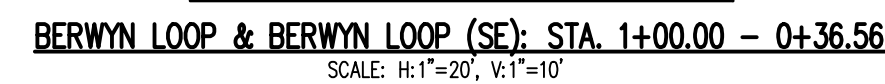
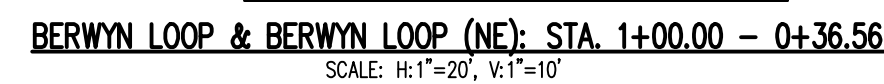
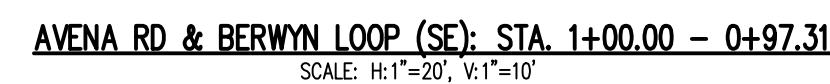
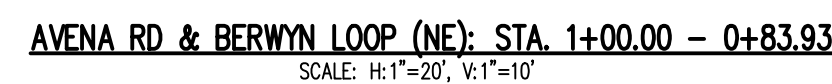
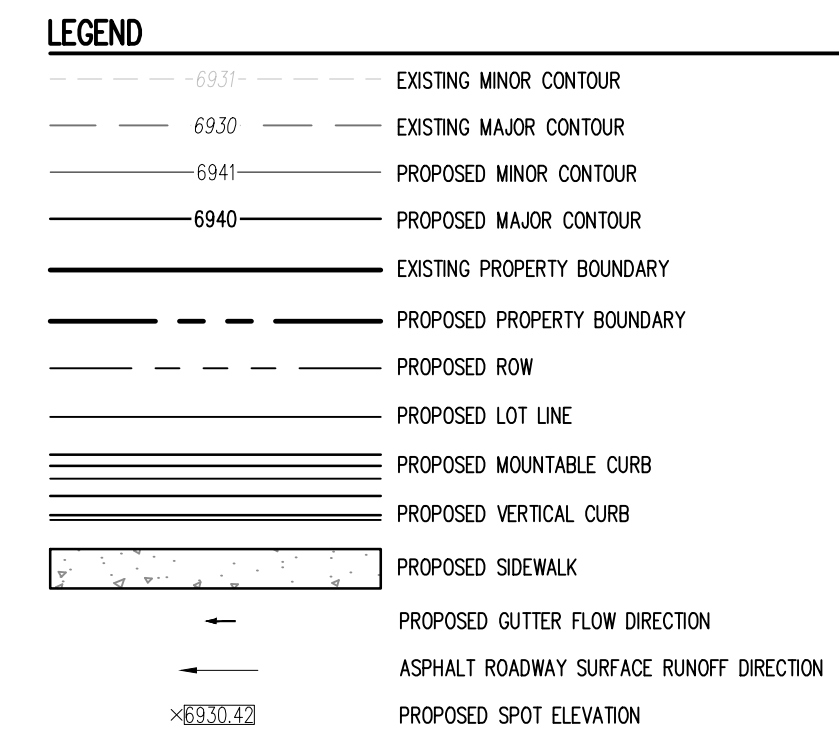
Project No: CLH000014.20  
Drawn By: JDP  
Checked By: RGD  
Date: 4/17/2020

CROSS PAN & CURB  
RETURN PROFILES  
SF1914  
5/13/2020

**C3.03**

Sheet 21 of 38





BENT GRASS RESIDENTIAL FILING NO. 2. LOCATED IN THE NORTHWEST QUARTER AND SOUTHWEST QUARTER OF SECTION 1 T13S R65W OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF EL PASO, STATE OF COLORADO

ALL BEARINGS ARE GRID BEARINGS OF THE COLORADO STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, NORTH AMERICAN DATUM 1983. THE BEARING OF THE LINE BETWEEN THE SOUTHWEST CORNER OF SECTION 1, T13S, R65W AND THE WEST QUARTER CORNER SECTION 1, T13S, R65W IS  $N00^{\circ}13'34''W$  AND MONUMENTED AS SHOWN:

THE SOUTHWESTERLY CORNER OF LOT 1 WOODMEN HILLS FILING NO. 4, MONUMENTED BY A YELLOW PLASTIC SURVEYORS CAP ON A NO. 4 REBAR L# 24954 ELEVATION = 6947.67

1. ALL UTILITY LOCATIONS SHOWN ARE BASED ON MAPS PROVIDED BY THE APPROPRIATE UTILITY COMPANY AND FIELD SURFACE EVIDENCE AT THE TIME OF SURVEY AND IS TO BE CONSIDERED AN APPROXIMATE LOCATION ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE FIELD LOCATION OF ALL UTILITIES, PUBLIC OR PRIVATE, WHETHER SHOWN ON THE PLANS OR NOT, PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.

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# CHALLENGER HOMES

BENT GRASS MEADOWS DRIVE & MERIDIAN ROAD  
FALCON, CO 80831 - EL PASO COUNTY

Project No:	CLH000014.20
Drawn By:	JDP
Checked By:	RGD
Date:	4/17/2020

## CROSS PAN & CURB RETURN PROFILES

SF1914  
5/13/2020

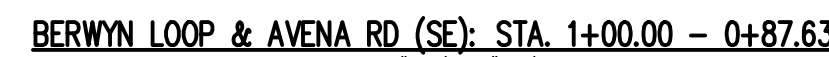
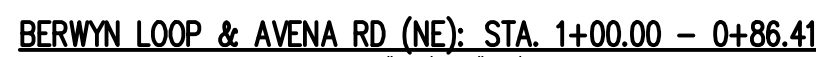
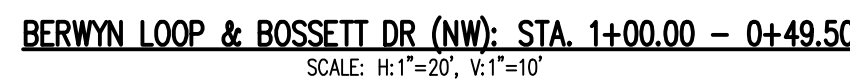
## C3.04

Sheet 22 of 38





	6937	EXISTING MINOR CONTOUR
	6930	EXISTING MAJOR CONTOUR
	6941	PROPOSED MINOR CONTOUR
	6940	PROPOSED MAJOR CONTOUR
		EXISTING PROPERTY BOUNDARY
		PROPOSED PROPERTY BOUNDARY
		PROPOSED ROW
		PROPOSED LOT LINE
		PROPOSED MOUNTABLE CURB
		PROPOSED VERTICAL CURB
		PROPOSED SIDEWALK
		PROPOSED GUTTER FLOW DIRECTION
		ASPHALT ROADWAY SURFACE RUNOFF DIRECTION
		PROPOSED SPOT ELEVATION



BENT GRASS RESIDENTIAL FILING NO. 2, LOCATED IN THE NORTHWEST QUARTER AND SOUTHWEST QUARTER OF SECTION 1 T13S R65W OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF EL PASO, STATE OF COLORADO

ALL BEARINGS ARE GRID BEARINGS OF THE COLORADO STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, NORTH AMERICAN DATUM 1983. THE BEARING OF THE LINE BETWEEN THE SOUTHWEST CORNER OF SECTION 1, T13S, R65W AND THE WEST QUARTER CORNER SECTION 1, T13S, R65W IS N00°13'46"W AND MONUMENTED AS SHOWN:

THE SOUTHWESTERLY CORNER OF LOT 1 WOODMEN HILLS FILING NO. 4, MONUMENTED BY A  
YELLOW PLASTIC SURVEYORS CAP ON A NO. 4 REBAR L# 24954 ELEVATION = 6947.67

1. ALL UTILITY LOCATIONS SHOWN ARE BASED ON MAPS PROVIDED BY THE APPROPRIATE UTILITY COMPANY AND FIELD SURFACE EVIDENCE AT THE TIME OF SURVEY AND IS TO BE CONSIDERED AN APPROXIMATE LOCATION ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE FIELD LOCATION OF ALL UTILITIES, PUBLIC OR PRIVATE, WHETHER SHOWN ON THE PLANS OR NOT, PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.

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# CHALLENGER HOMES

CHALLENGER COMMUNITIES, LLC

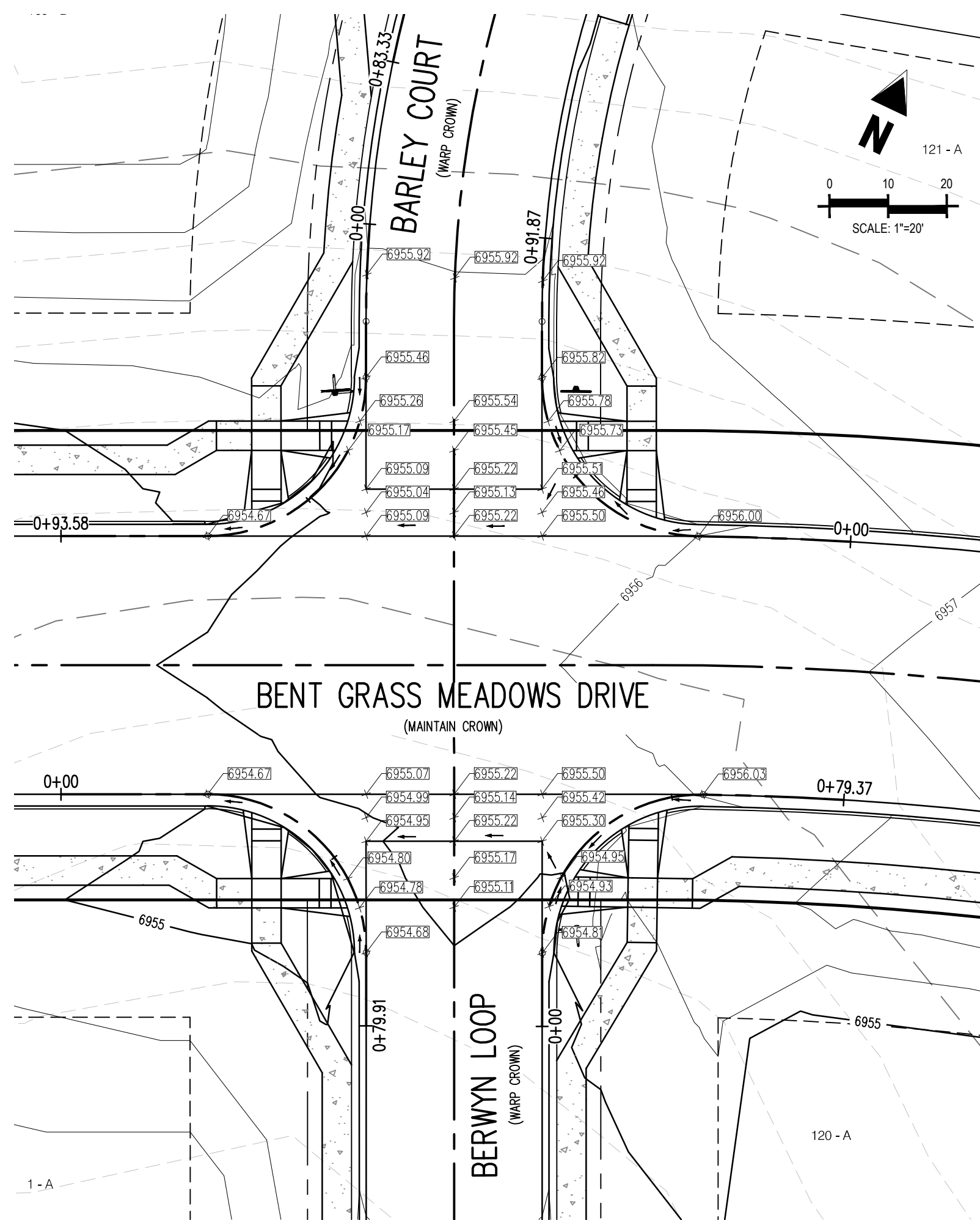
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FALCON, CO 80831 - EL PASO COUNTY

Project No:	CLH000014.20
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Date:	4/17/2020

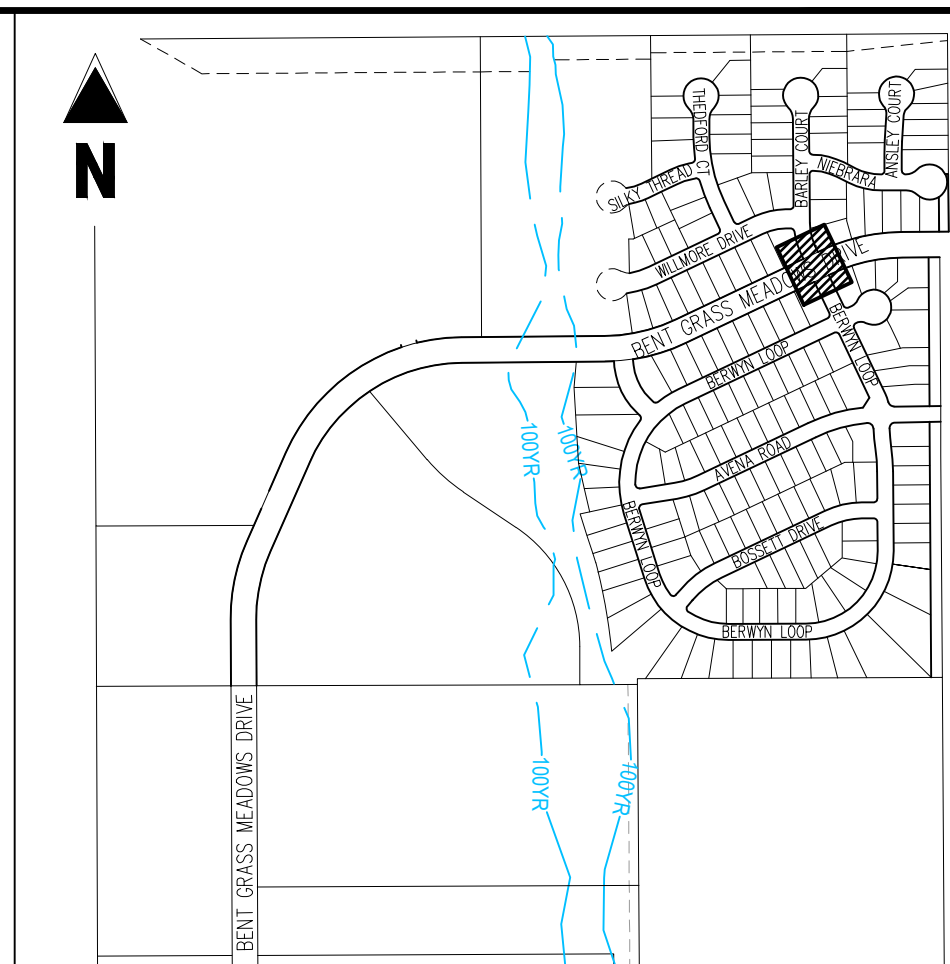
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5/13/2020

Sheet 23 of 38

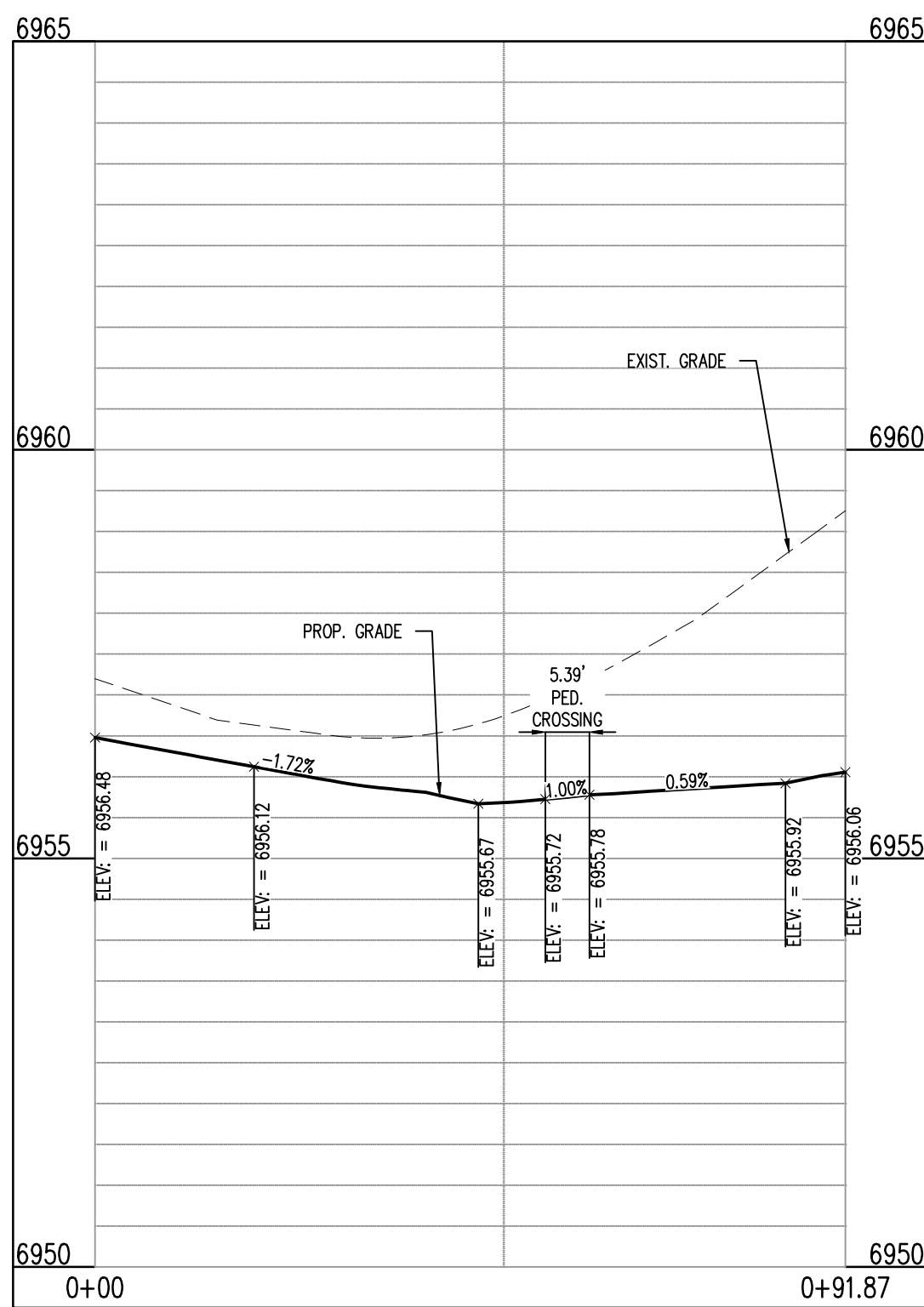




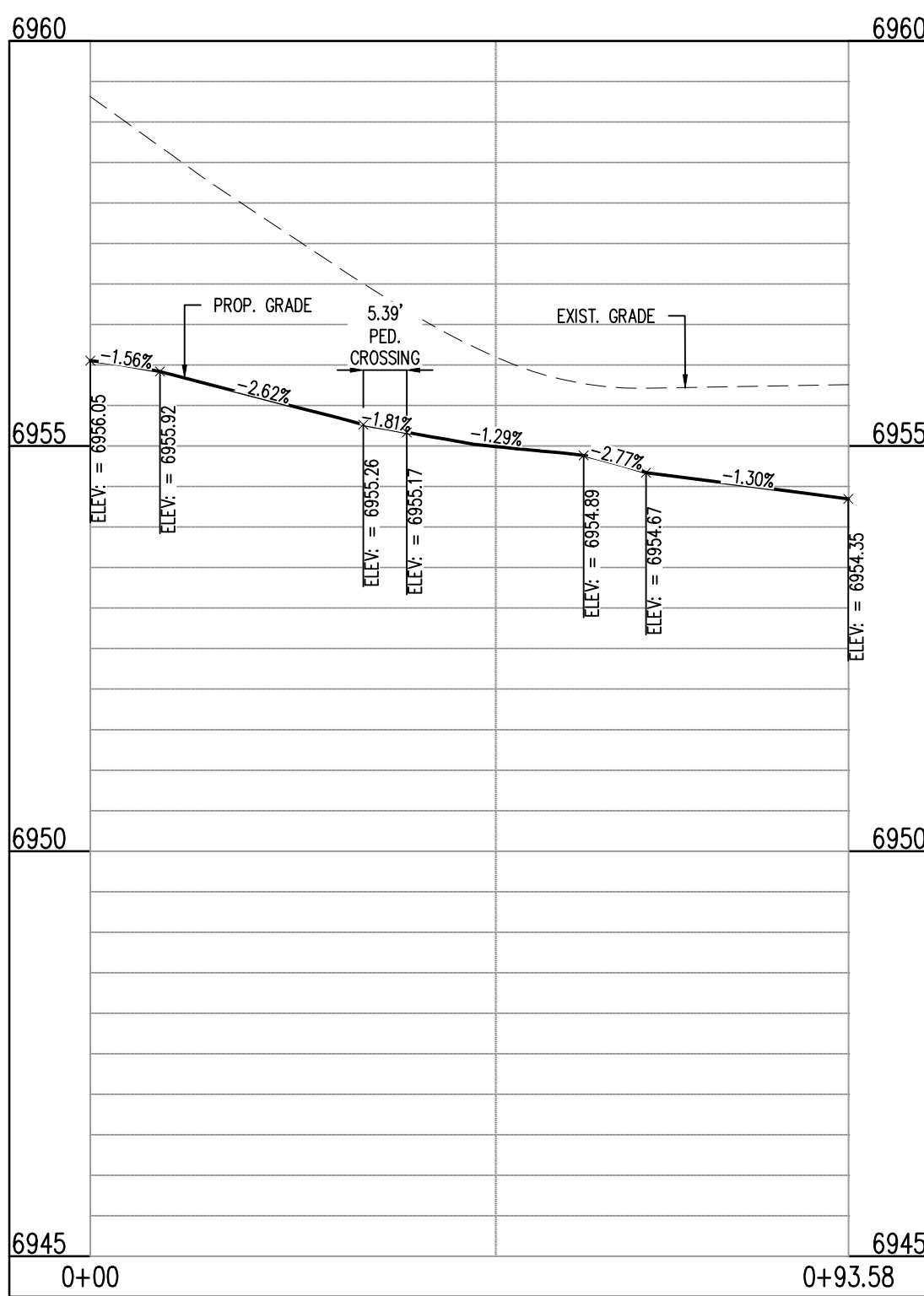
INTERSECTION OF:  
BENT GRASS MEADOWS DRIVE, BARLEY COURT & BERWYN LOOP



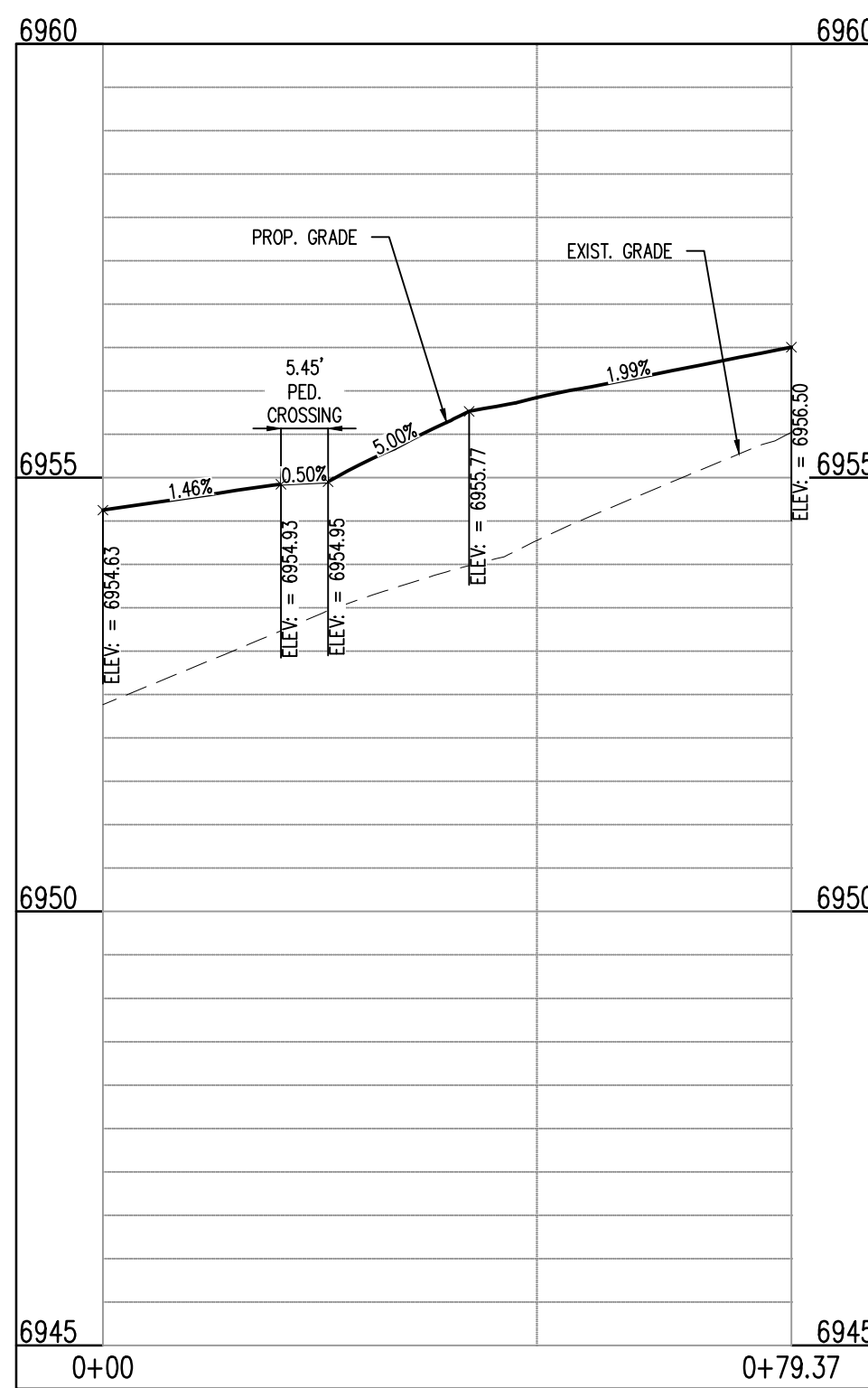
- LEGEND**
- EXISTING MINOR CONTOUR
  - EXISTING MAJOR CONTOUR
  - PROPOSED MINOR CONTOUR
  - PROPOSED MAJOR CONTOUR
  - EXISTING PROPERTY BOUNDARY
  - PROPOSED PROPERTY BOUNDARY
  - PROPOSED ROW
  - PROPOSED LOT LINE
  - PROPOSED MOUNTABLE CURB
  - PROPOSED VERTICAL CURB
  - PROPOSED SIDEWALK
  - PROPOSED GUTTER FLOW DIRECTION
  - ASPHALT ROADWAY SURFACE RUNOFF DIRECTION
  - PROPOSED SPOT ELEVATION



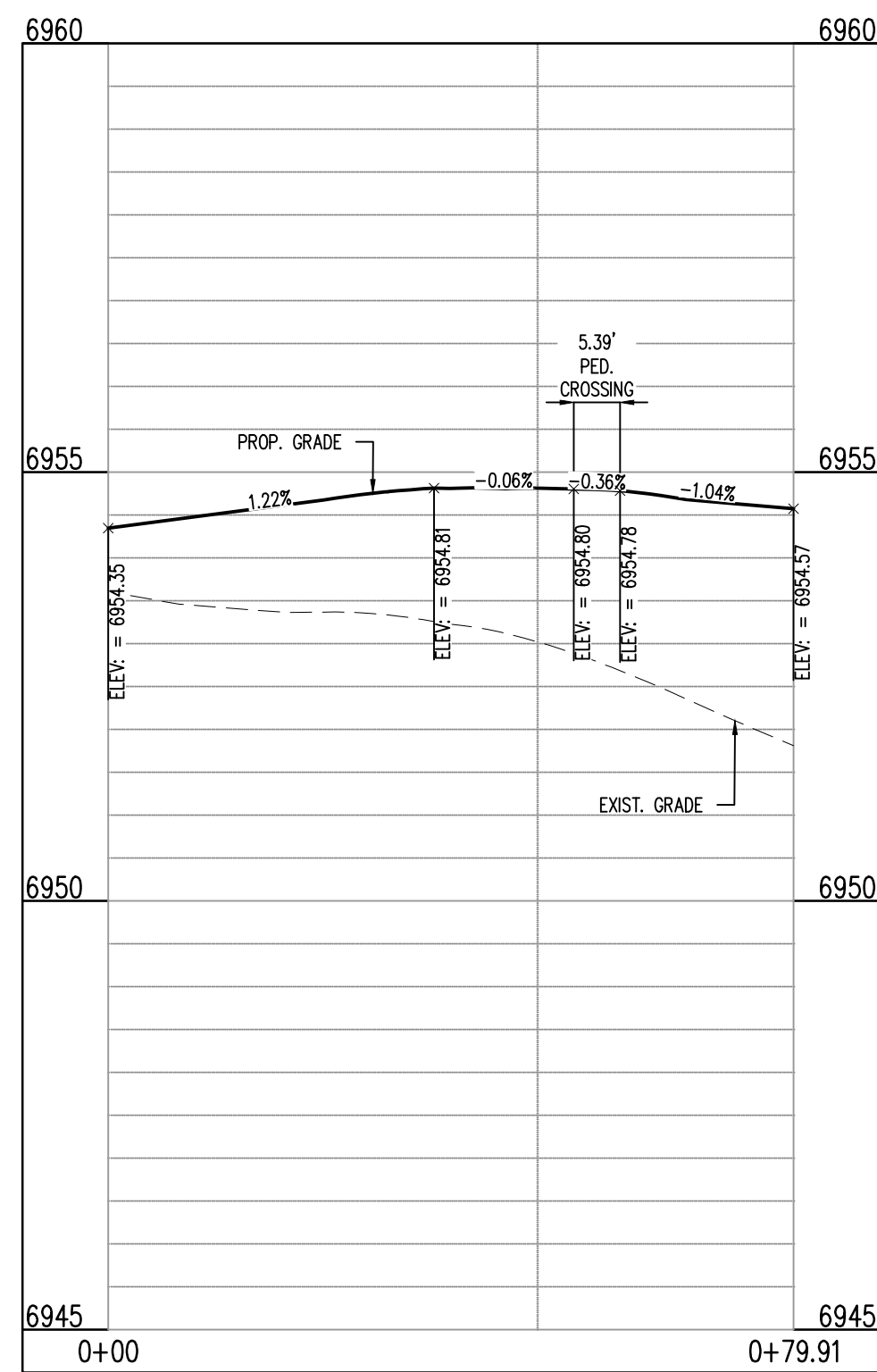
BENT GRASS MEADOWS DR & BARLEY CT (NE): STA. 1+00.00 - 0+91.87  
SCALE: H:1"=20', V:1"=10'



BENT GRASS MEADOWS DR & BARLEY CT (NW): STA. 1+00.00 - 0+93.58  
SCALE: H:1"=20', V:1"=10'



BENT GRASS MEADOWS DR & BERWYN LOOP (SE): STA. 1+00.00 - 0+79.37  
SCALE: H:1"=20', V:1"=10'



BENT GRASS MEADOWS DR & BERWYN LOOP (SW): STA. 1+00.00 - 0+79.91  
SCALE: H:1"=20', V:1"=10'

#### LEGAL DESCRIPTION

BENT GRASS RESIDENTIAL FILING NO. 2, LOCATED IN THE NORTHWEST QUARTER AND SOUTHWEST QUARTER OF SECTION 1, T13S, R65W AND THE WEST QUARTER CORNER SECTION 1, T13S, R65W IS NORTH 46° 46' 46" W AND MONUMENTED AS SHOWN.

#### BASIS OF BEARINGS

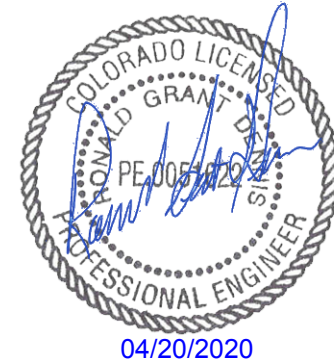
ALL BEARINGS ARE GRID BEARINGS OF THE COLORADO STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, NORTH AMERICAN DATUM 1983. THE BEARING OF THE LINE BETWEEN THE SOUTHWEST CORNER OF SECTION 1, T13S, R65W AND THE WEST QUARTER CORNER SECTION 1, T13S, R65W IS NORTH 46° 46' 46" W AND MONUMENTED AS SHOWN.

#### BENCHMARK

THE SOUTHWESTERLY CORNER OF LOT 1 WOODMEN HILLS FILING NO. 4, MONUMENTED BY A YELLOW PLASTIC SURVEYORS CAP ON A NO. 4 REBAR L# 24954 ELEVATION = 6947.67

#### CAUTION - NOTICE TO CONTRACTOR

- ALL UTILITY LOCATIONS SHOWN ARE BASED ON MAPS PROVIDED BY THE APPROPRIATE UTILITY COMPANY AND FIELD SURFACE EVIDENCE AT THE TIME OF SURVEY AND IS TO BE CONSIDERED AN APPROXIMATE LOCATION ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE FIELD LOCATION OF ALL UTILITIES, PUBLIC OR PRIVATE, WHETHER SHOWN ON THE PLANS OR NOT, PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.
- WHERE A PROPOSED UTILITY CROSSES AN EXISTING UTILITY, IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF SUCH EXISTING UTILITY, EITHER THROUGH POT-HOLING OR ALTERNATIVE METHOD. REPORT INFORMATION TO THE ENGINEER PRIOR TO CONSTRUCTION.



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**CHALLENGER  
HOMES**

CONSTRUCTION DOCUMENTS  
BENT GRASS RESIDENTIAL FILING NO. 2  
FOR  
CHALLENGER COMMUNITIES, LLC  
BENT GRASS MEADOWS DRIVE & MERIDIAN ROAD  
FALCON, CO 80831 - EL PASO COUNTY

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Project No: CLH000014.20  
Drawn By: JDP  
Checked By: RGD  
Date: 4/17/2020

CROSS PAN & CURB  
RETURN PROFILES

SF1914  
5/13/2020

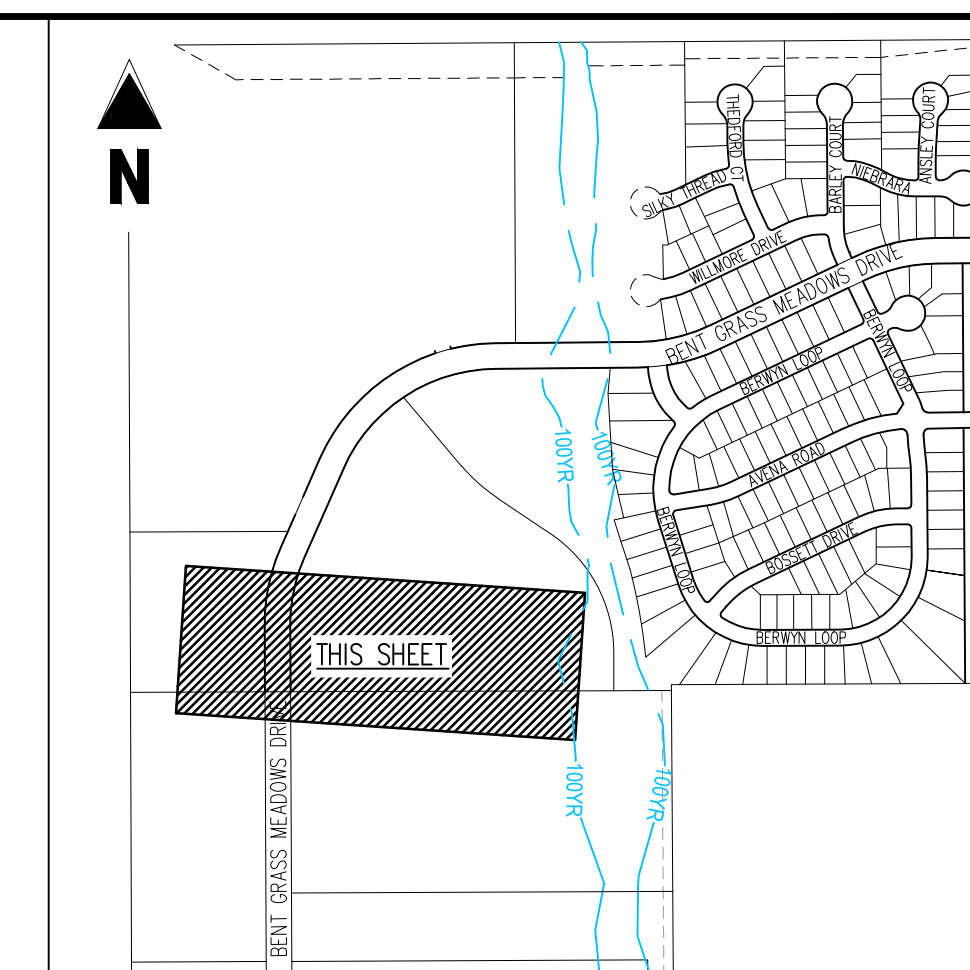
**C3.06**

Sheet 24 of 38






















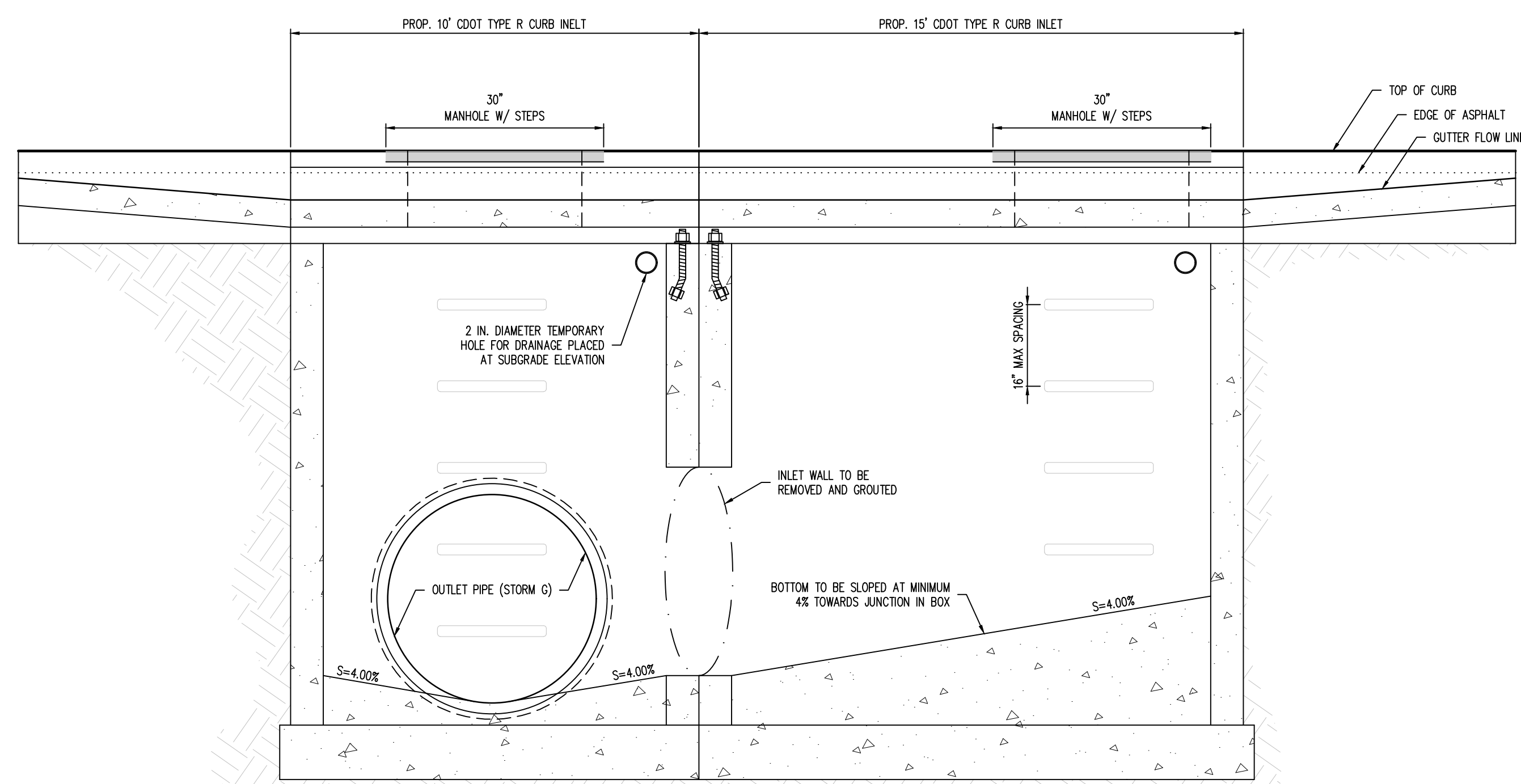


**KEY MAP**  
SCALE: 1"=600'

### LEGEND

	EXISTING MINOR CONTOUR
	EXISTING MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	PROPOSED MAJOR CONTOUR
	EXISTING PROPERTY BOUNDARY
	PROPOSED PROPERTY BOUNDARY
	100 - YR FLOODPLAIN LINE
	TOE OF SLOPE
	TOP OF BANK
	EXISTING STORM SEWER
	PROPOSED STORM SEWER
	GROUTED BOULDERS
	GRAVEL (COT CLASS 6)
	RIPRAP
	ASPHALT PAVING

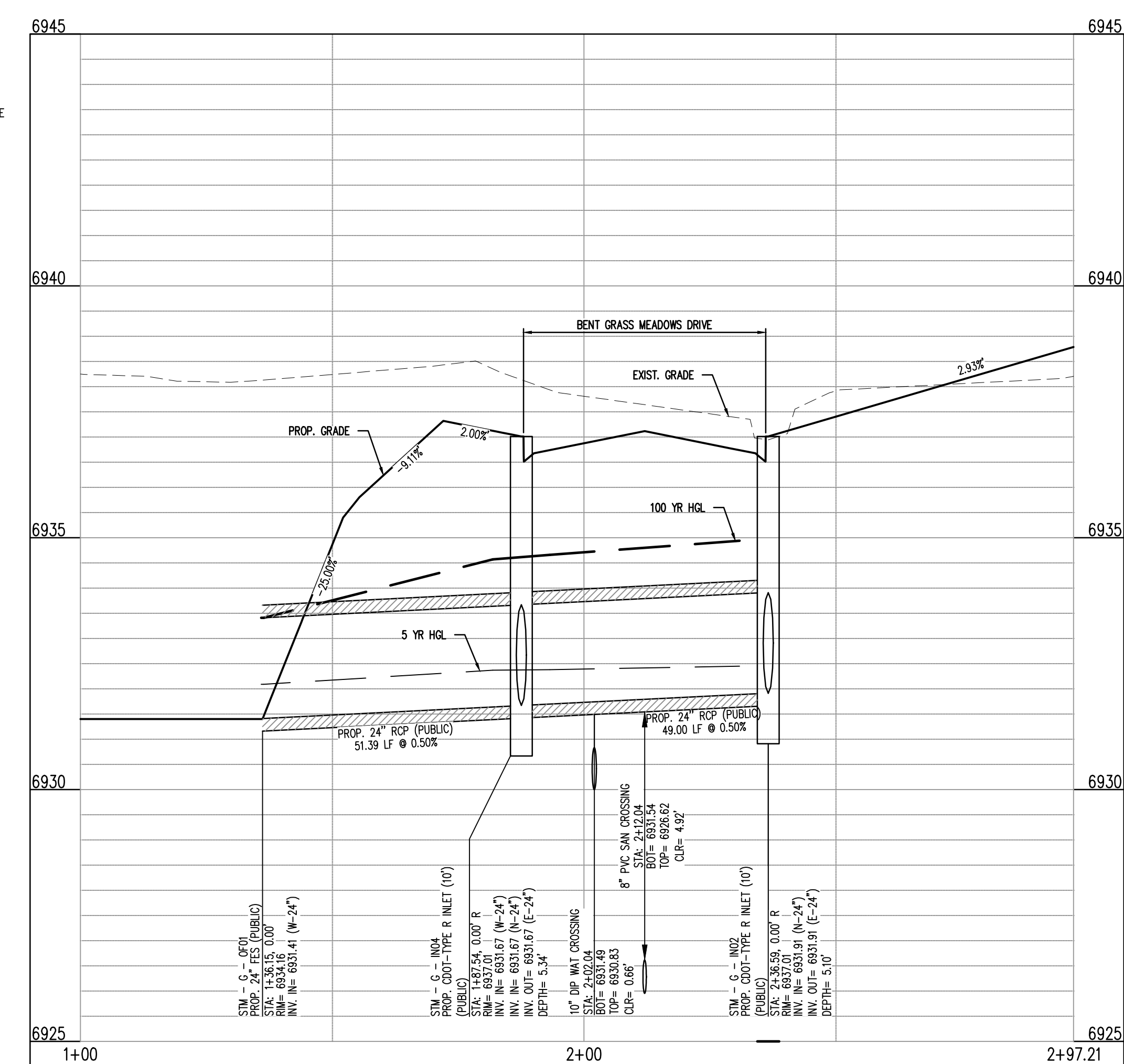
**NOTE**  
UNLESS OTHERWISE NOTED, ALL RIPRAP SHOWN IS TO BE TYPE I-18" DEPTH.



**NOTE:**

1. DETAIL FOR PURPOSES OF INLET ATTACHMENT ONLY. REFER TO CDOT STANDARD PLAN NO. M-604-12 FOR CONSTRUCTION DETAILS.

**ATTACHMENT DETAIL – CDOT TYPE R CURB INLETS**  
NOT TO SCALE



ALIGN - STM - G  
STA: 1+00 - 2+97.21  
SCALE: H: 1"=20' V: 1"=10'



04/20/2020

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# CHALLENGER HOMES

CONSTRUCTION DOCUMENTS  
BENT GRASS RESIDENTIAL FILING NO. 2  
FOR  
CHALLENGER COMMUNITIES, LLC  
BENT GRASS MEADOWS DRIVE & MERIDIAN ROAD  
FALCON, CO 80831 - EL PASO COUNTY

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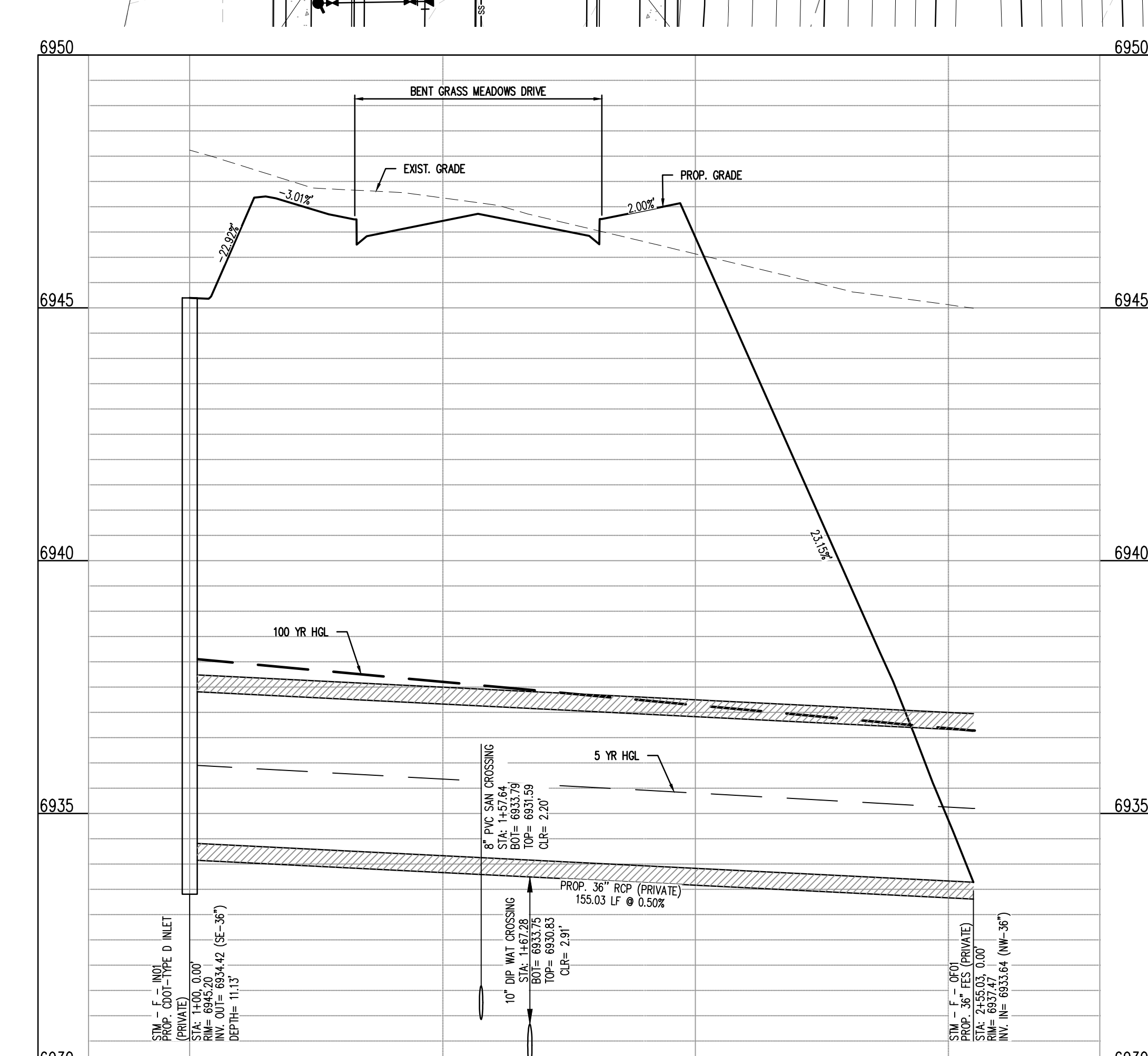
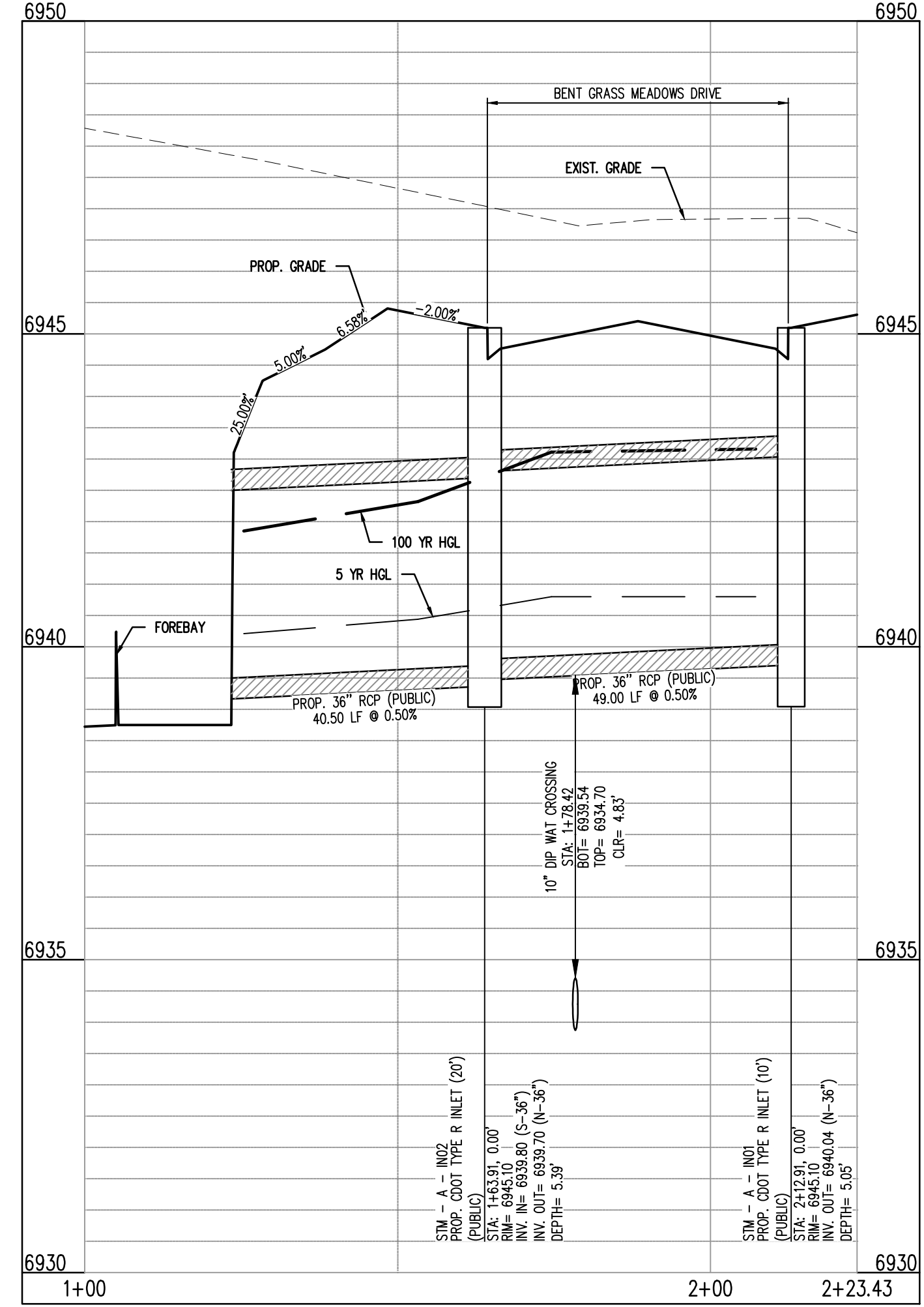
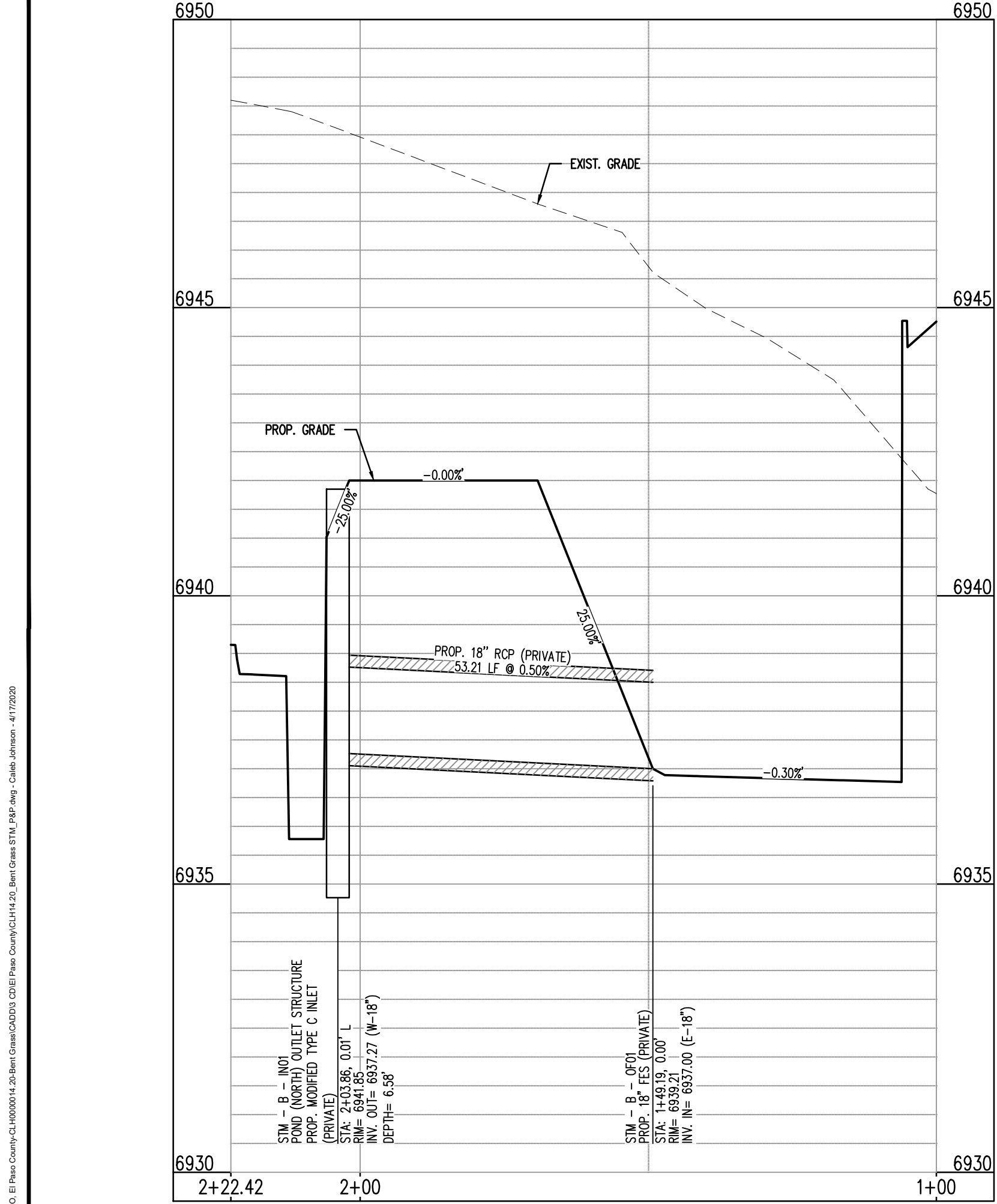
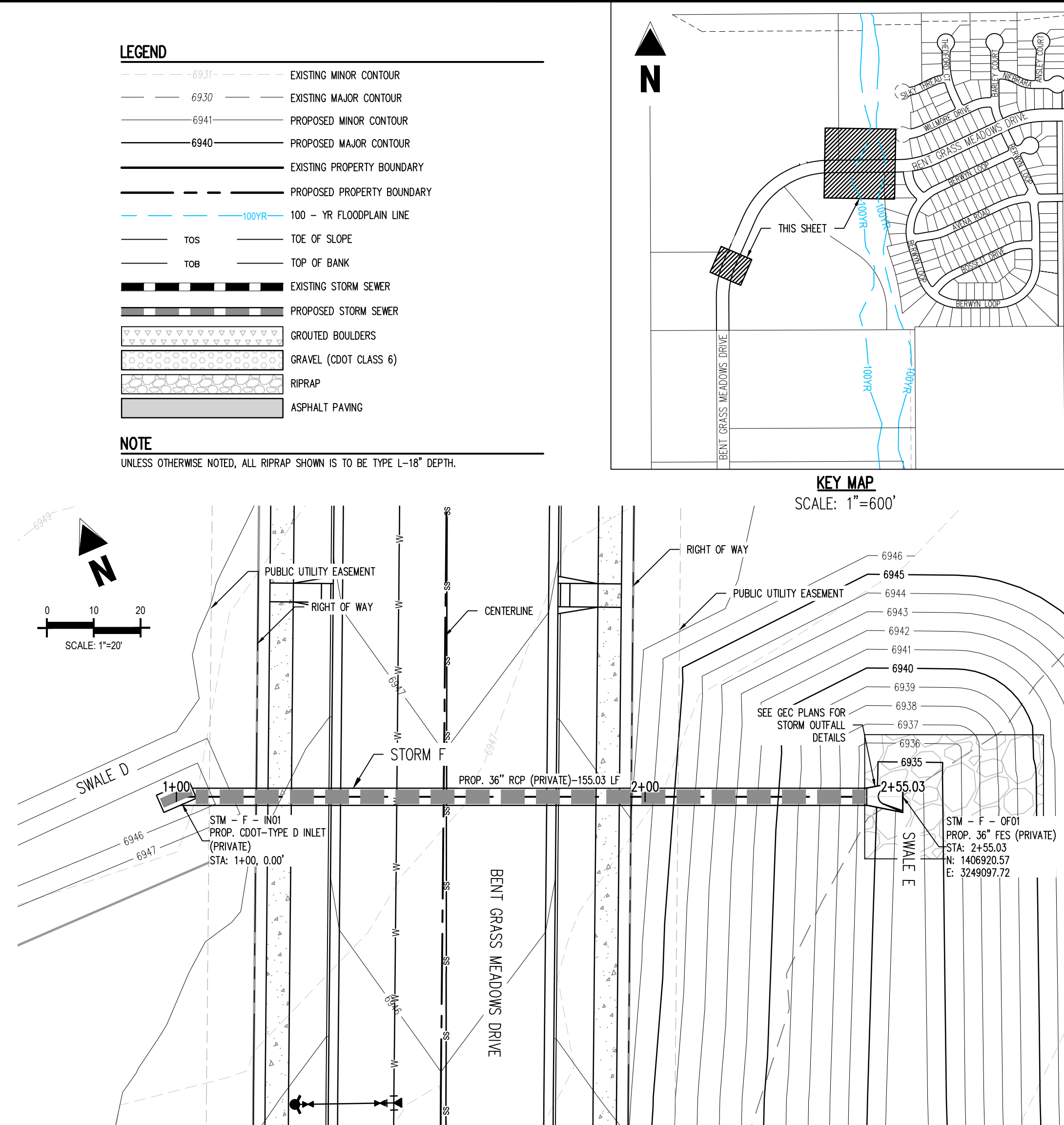
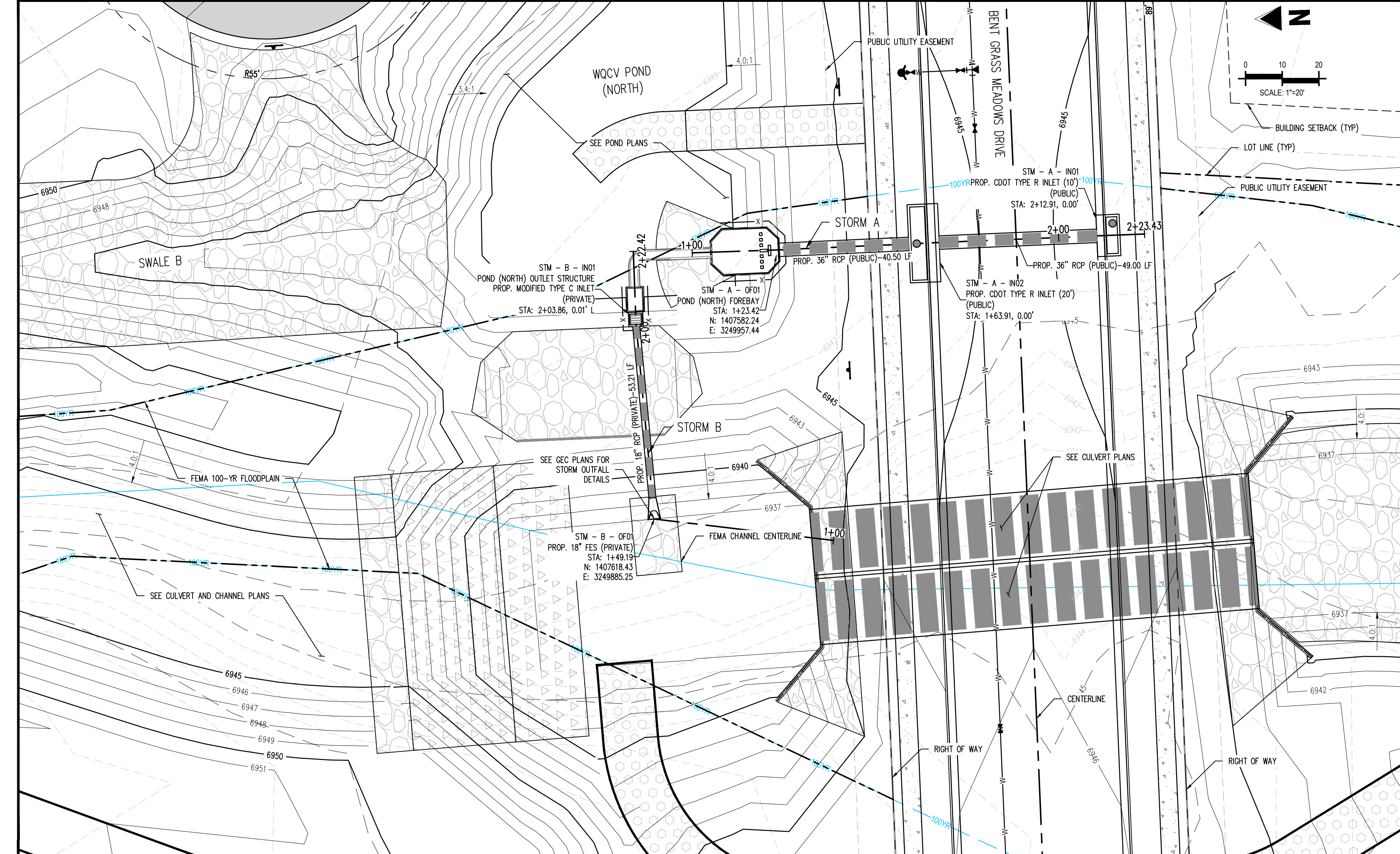
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Drawn By:	JDP
Checked By:	RGD
Date:	4/17/2020

BENT GRASS MEADOWS  
DRIVE STORM PLAN &  
PROFILE

SF1914  
5/13/2020

C4.01





ALIGN - STM - B  
STA: 1+00 = 2+22.42 (SCALE: H: 1"=20, V: 1"= 10')

ALIGN - STM - A  
STA: 1+00 = 2+23.43 (SCALE: H: 1"=20, V: 1"= 10')

ALIGN - STM - F  
STA: 0+80 = 2+80.00 (SCALE: H: 1"=20, V: 1"= 10')

- LEGEND**
- EXISTING MINOR CONTOUR
  - EXISTING MAJOR CONTOUR
  - PROPOSED MINOR CONTOUR
  - PROPOSED MAJOR CONTOUR
  - EXISTING PROPERTY BOUNDARY
  - PROPOSED PROPERTY BOUNDARY
  - 100 - YR FLOODPLAIN LINE
  - TOE OF SLOPE
  - TOE OF BANK
  - EXISTING STORM SEWER
  - PROPOSED STORM SEWER
  - GROUTED BOULDERS
  - GRAVEL (CDOT CLASS 6)
  - RIPRAP
  - ASPHALT PAVING

**NOTE**  
UNLESS OTHERWISE NOTED, ALL RIPRAP SHOWN IS TO BE TYPE L-18" DEPTH.

**KEY MAP**  
SCALE: 1"=600'

**Galloway**

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**CHALLENGER HOMES**

CONSTRUCTION DOCUMENTS  
BENT GRASS RESIDENTIAL FILING NO. 2  
FOR  
CHALLENGER COMMUNITIES, LLC  
BENT GRASS MEADOWS DRIVE & MERIDIAN ROAD  
FALCON, CO 80831 - EL PASO COUNTY

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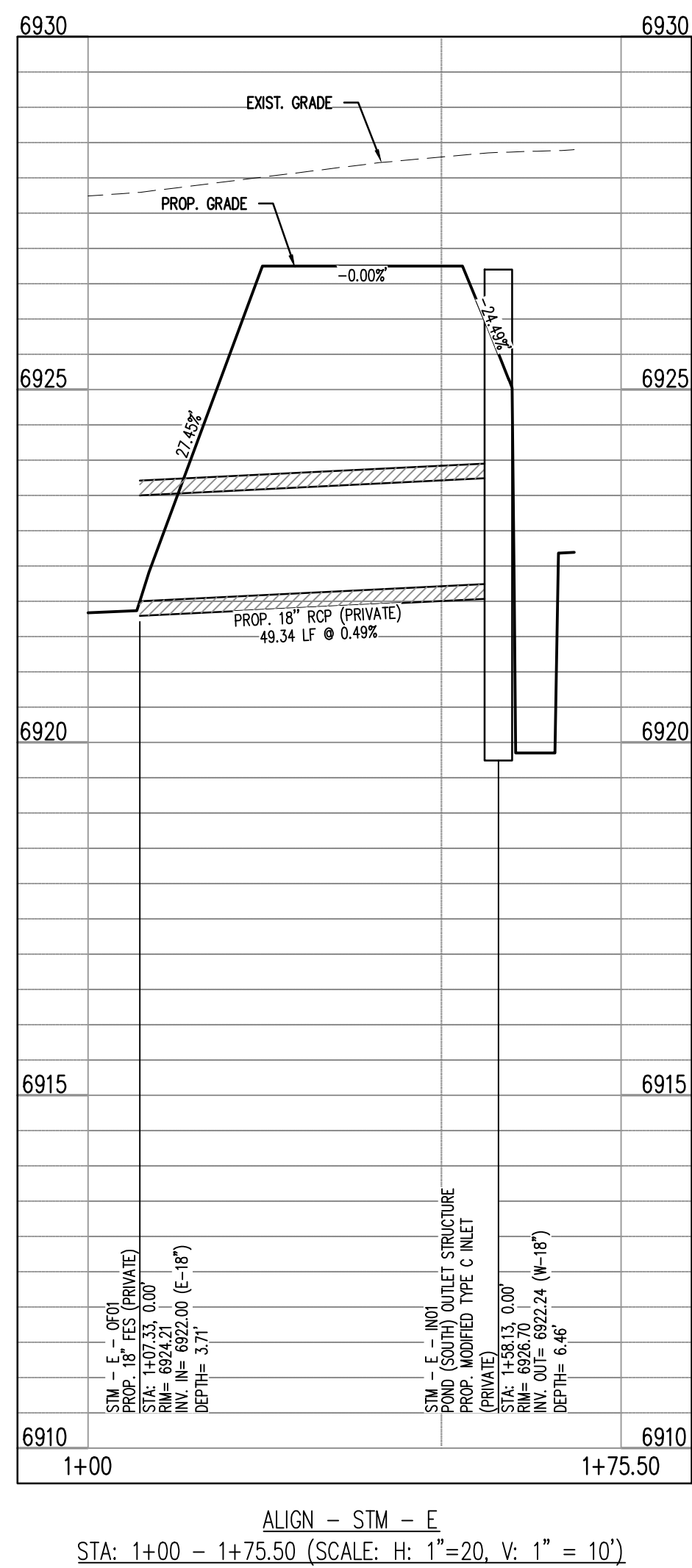
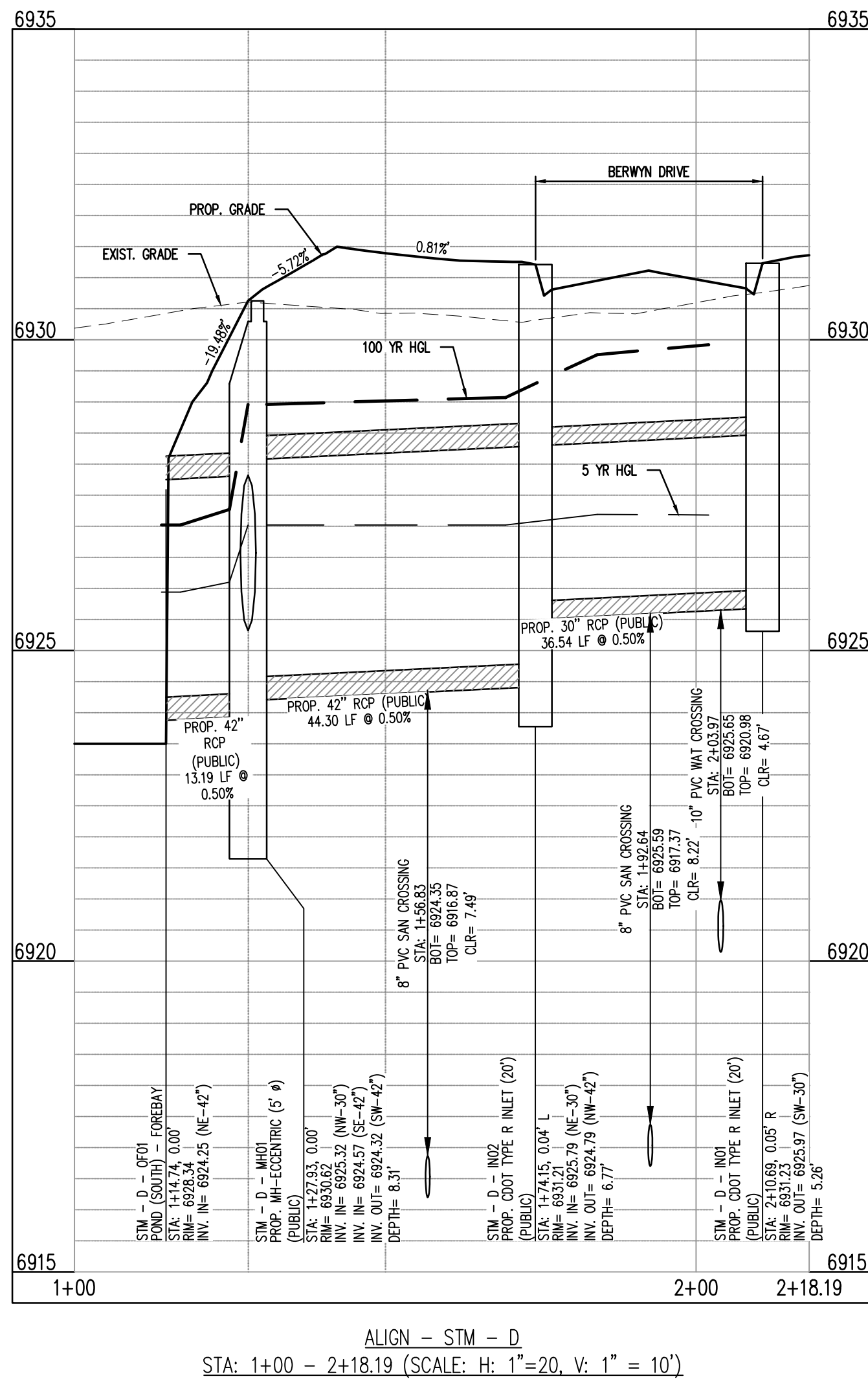
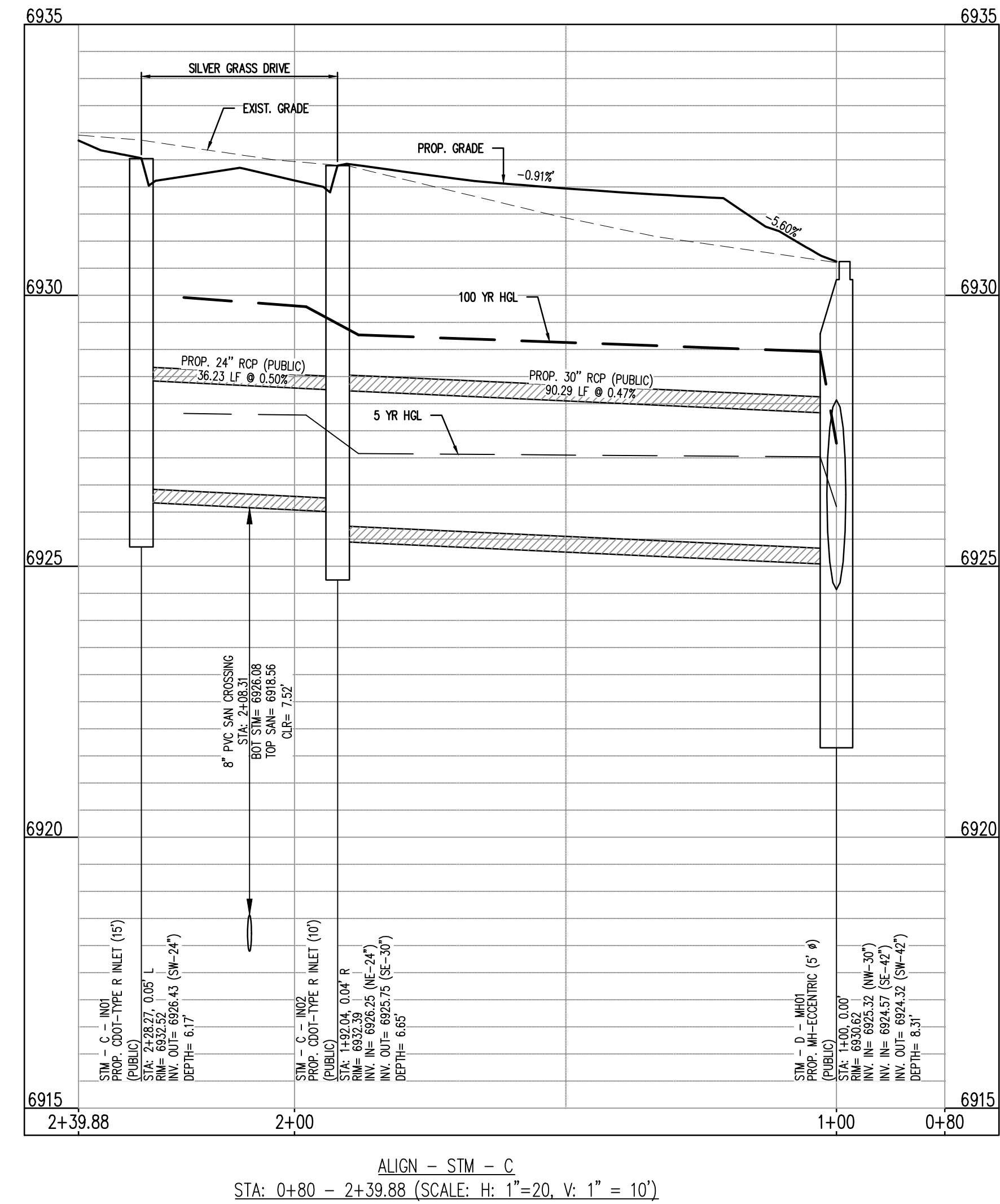
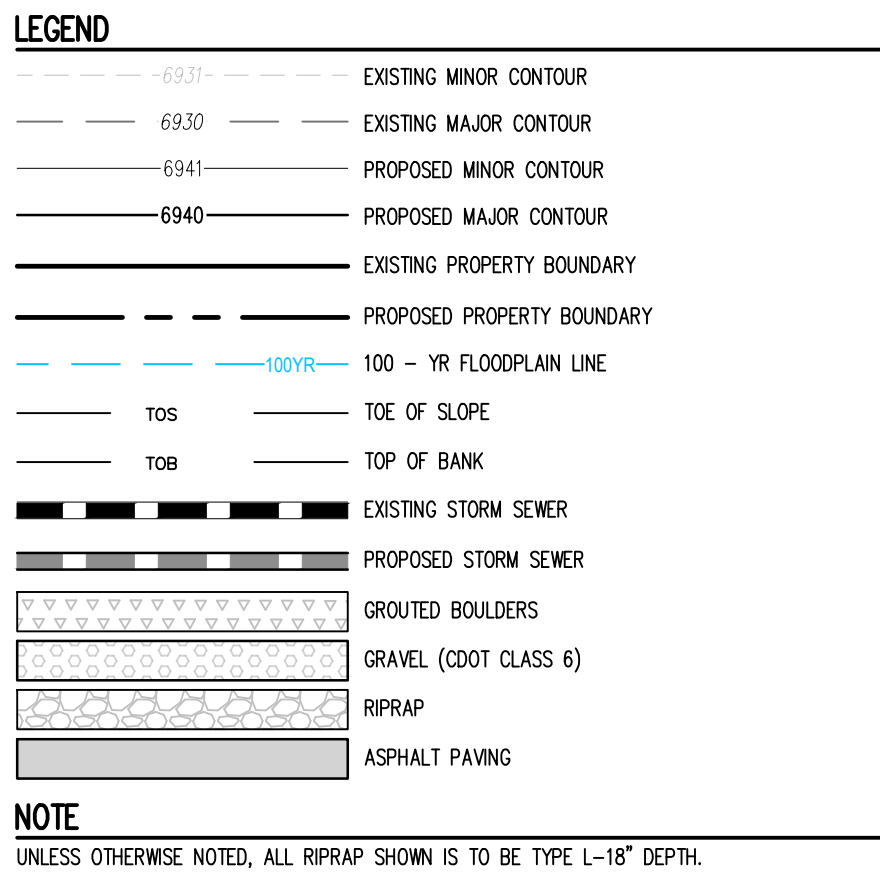
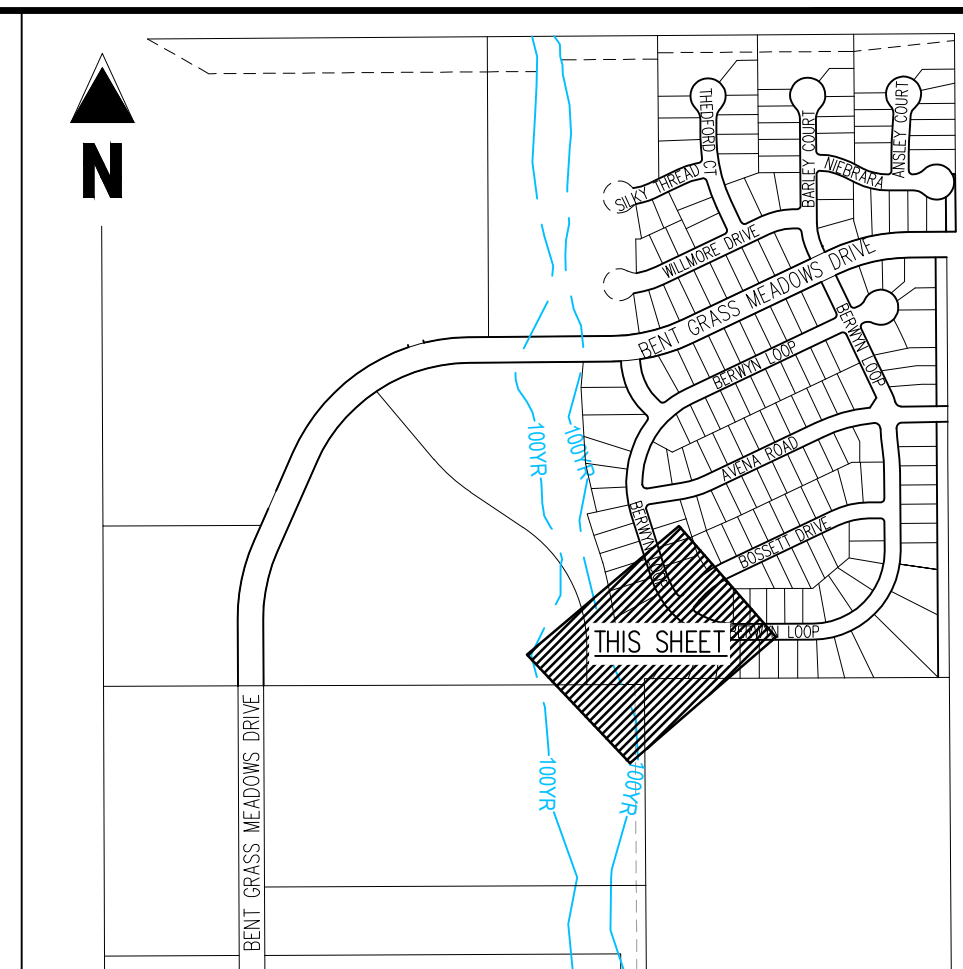
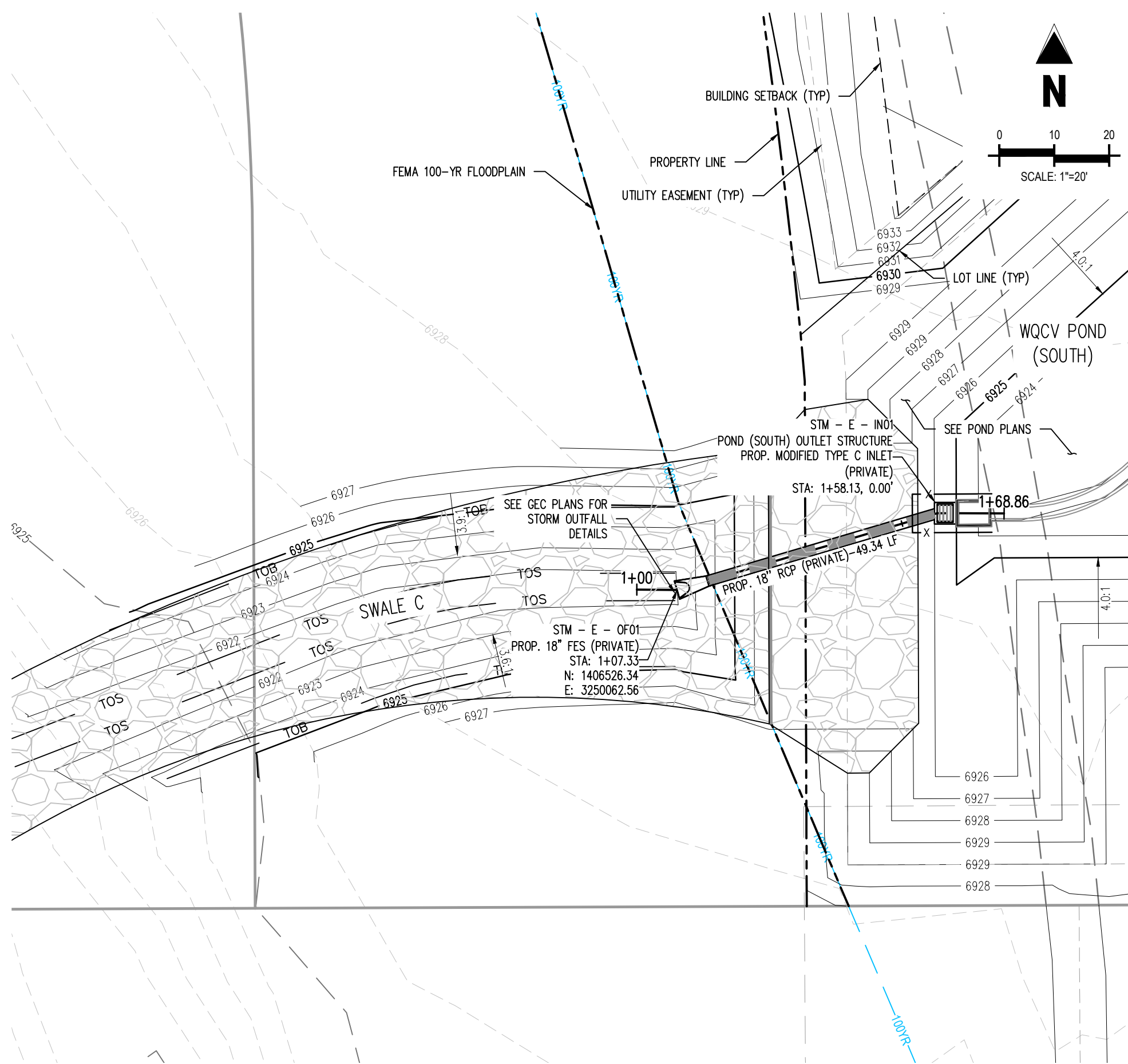
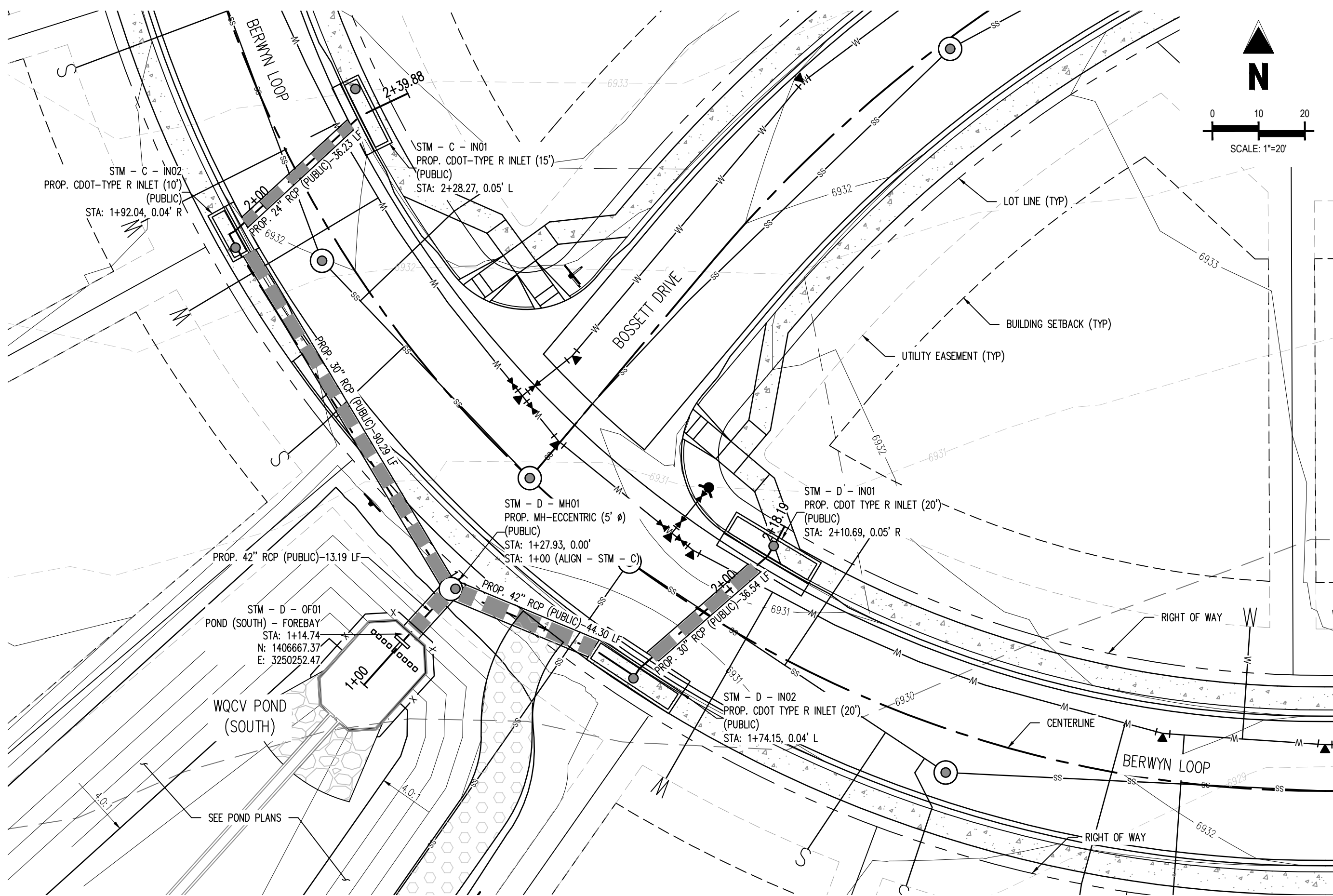
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Drawn By: JDP  
Checked By: RGD  
Date: 4/17/2020

BENT GRASS MEADOWS  
DRIVE STORM PLAN &  
PROFILE

SF1914  
5/13/2020



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**CHALLENGER HOMES**

CONSTRUCTION DOCUMENTS  
BENT GRASS RESIDENTIAL FILING NO. 2  
FOR  
CHALLENGER COMMUNITIES, LLC  
BENT GRASS MEADOWS DRIVE & MERIDIAN ROAD  
FALCON, CO 80831 - EL PASO COUNTY

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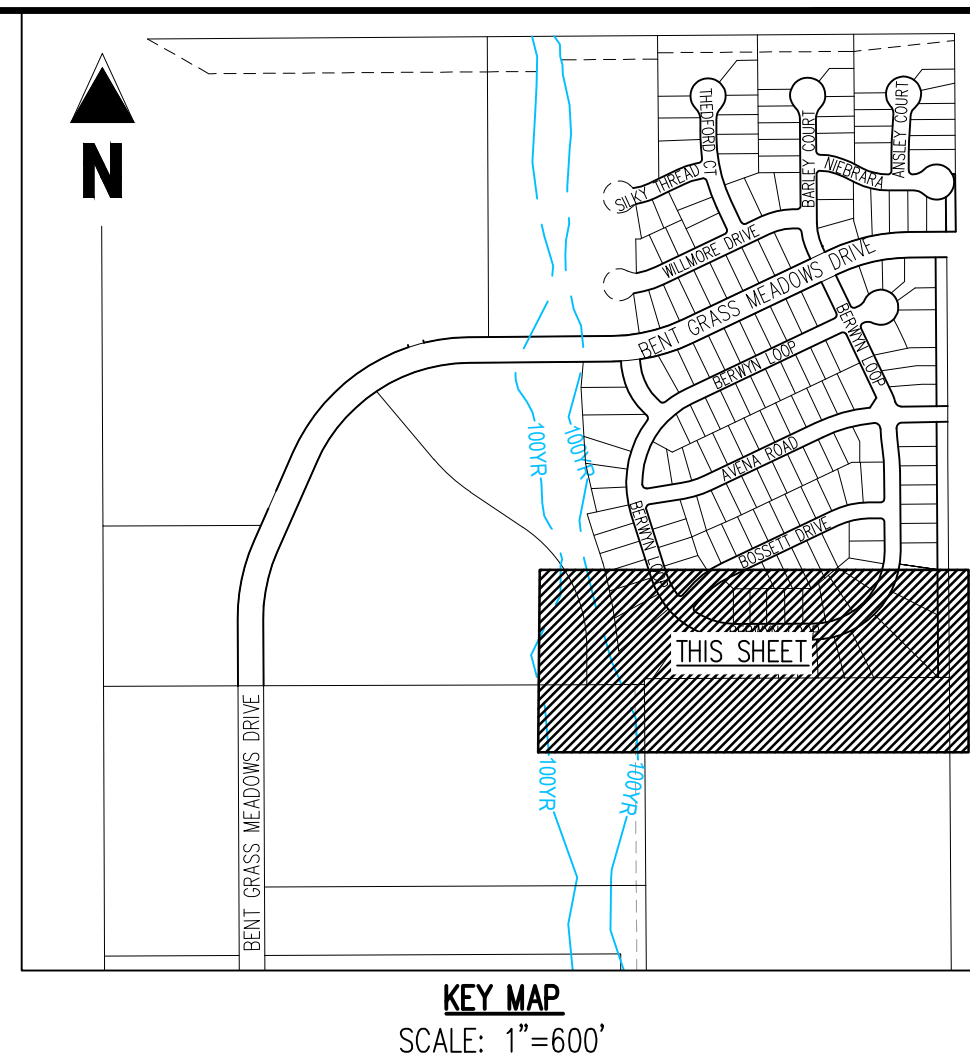
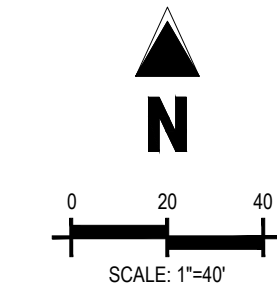
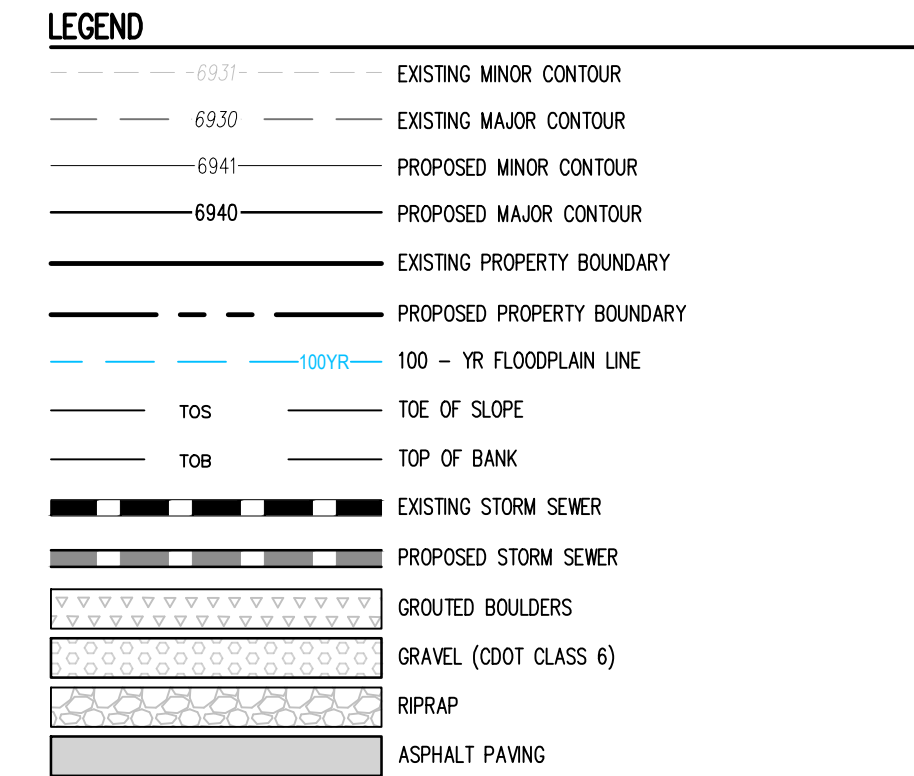
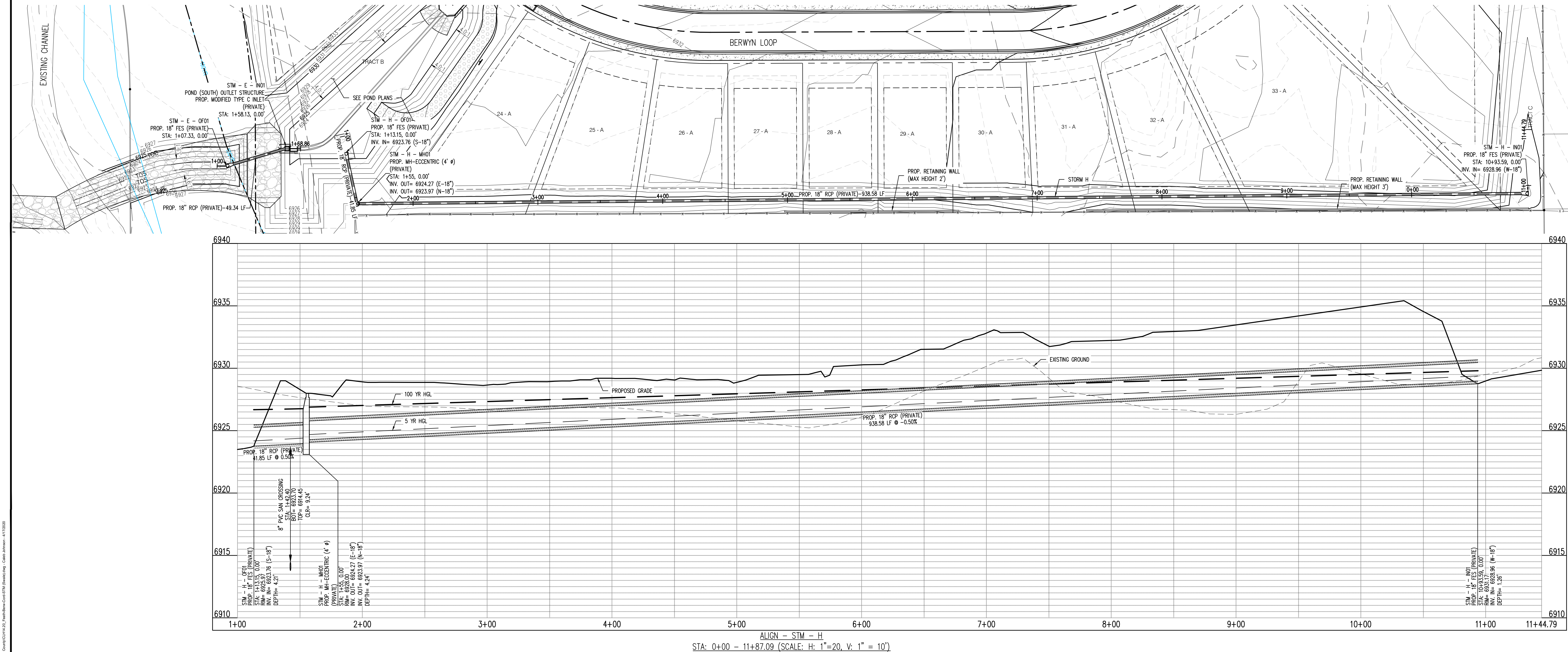
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Drawn By: JDP  
Checked By: RGD  
Date: 4/17/2020

BERWYN LOOP STORM  
PLAN & PROFILE

SF1914  
5/13/2020



C:\Users\jgallows\OneDrive\Documents\Projects\Bent Grass Meadows Drive\Bent Grass Meadows Drive.dwg, 4/17/2020



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**CHALLENGER HOMES**

CONSTRUCTION DOCUMENTS  
BENT GRASS RESIDENTIAL FILING NO. 2  
FOR  
CHALLENGER COMMUNITIES, LLC  
BENT GRASS MEADOWS DRIVE & MERIDIAN ROAD  
FALCON, CO 80831 - EL PASO COUNTY

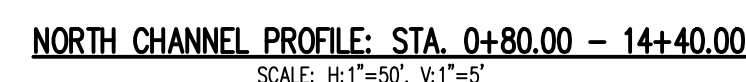
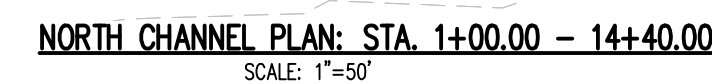
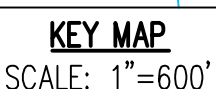
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20			

Project No: CLH000014.20  
Drawn By: JDP  
Checked By: RGD  
Date: 4/17/2020

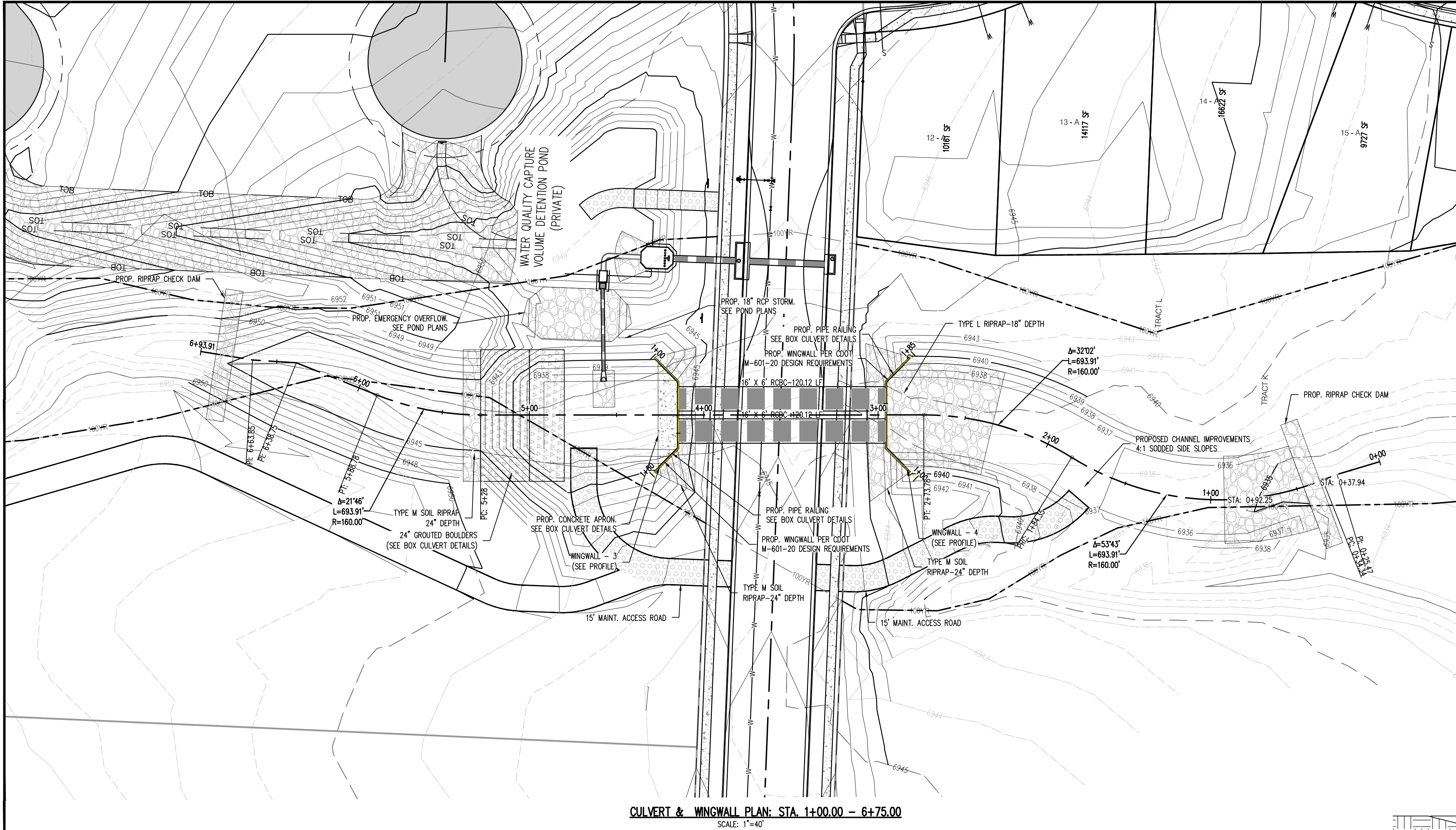
**STORM H - PLAN & PROFILE**

SF1914  
5/13/2020

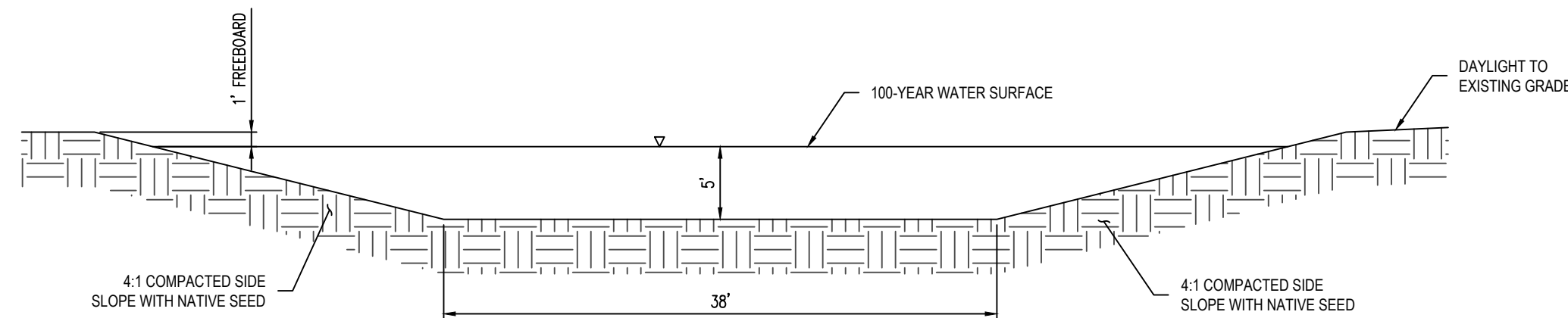




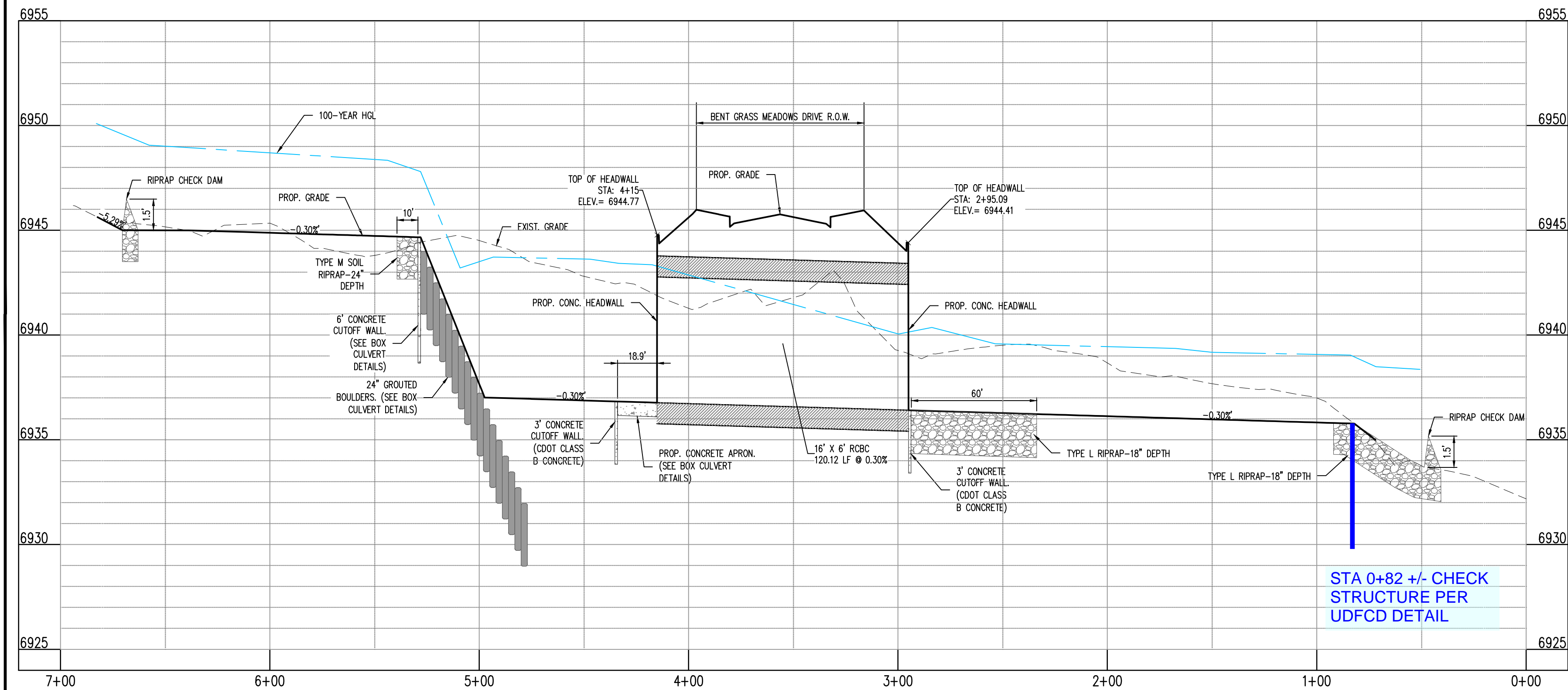




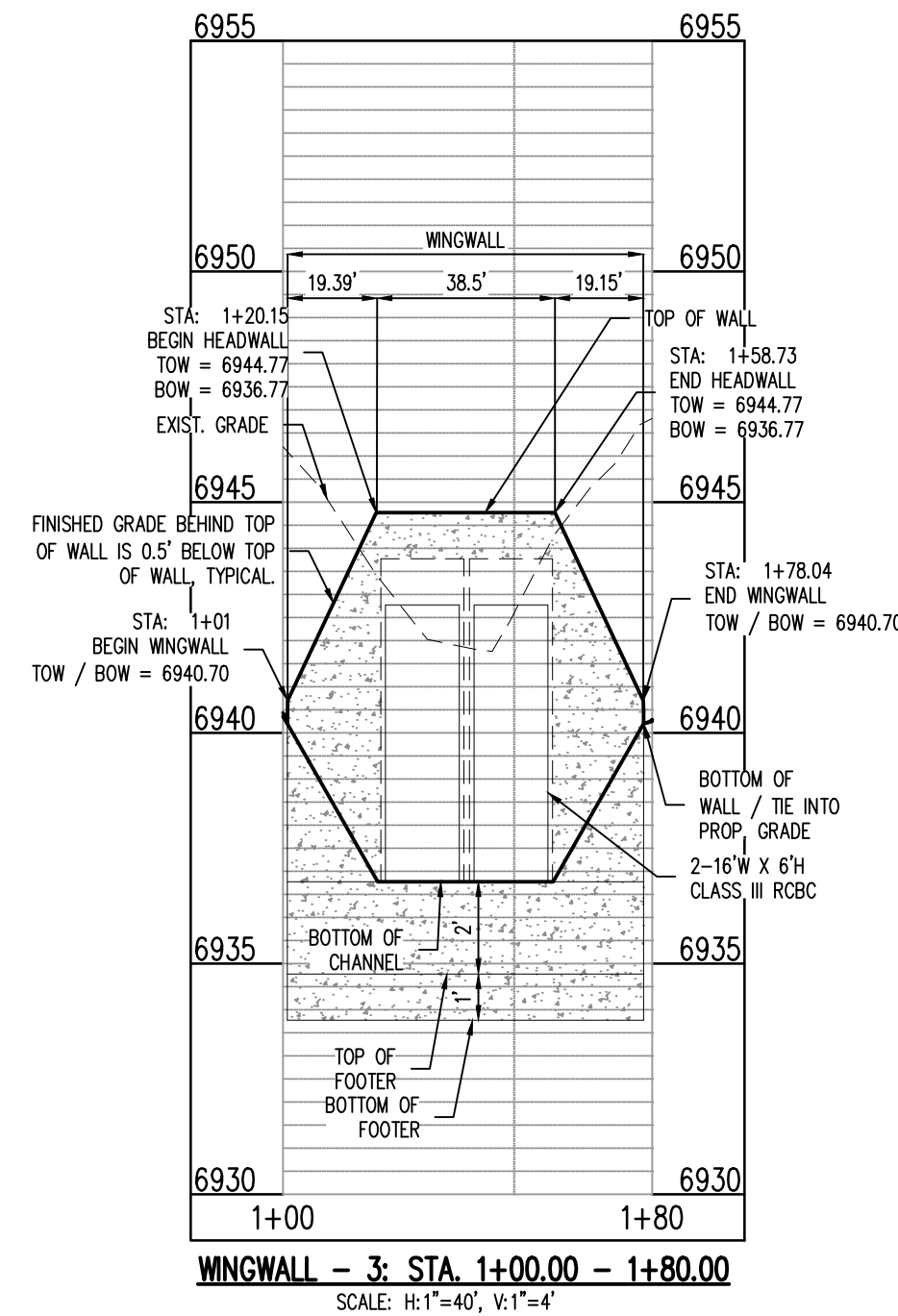
CULVERT & WINGWALL PLAN: STA. 1+00.00 - 6+75.00  
SCALE: 1"=40'



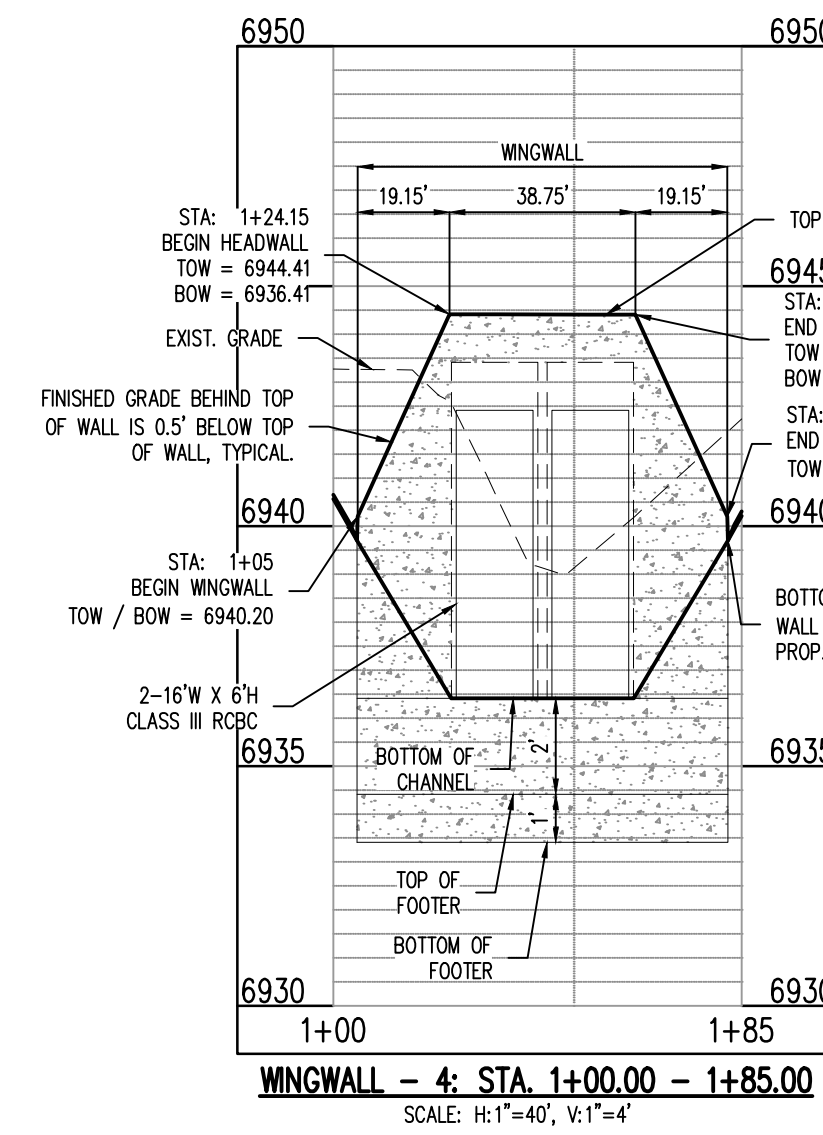
CULVERT CHANNEL TYPICAL SECTION  
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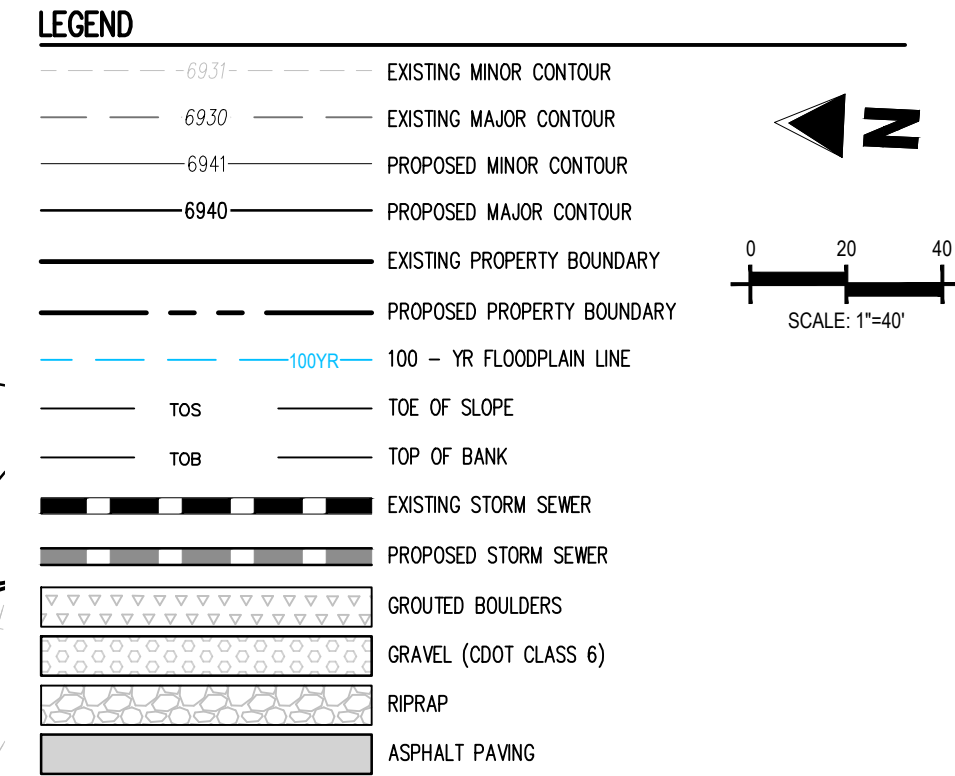
CULVERT & WINGWALL PROFILE: STA. 0+00.00 - 7+00.00  
SCALE: H:1"=40', V:1"=4'



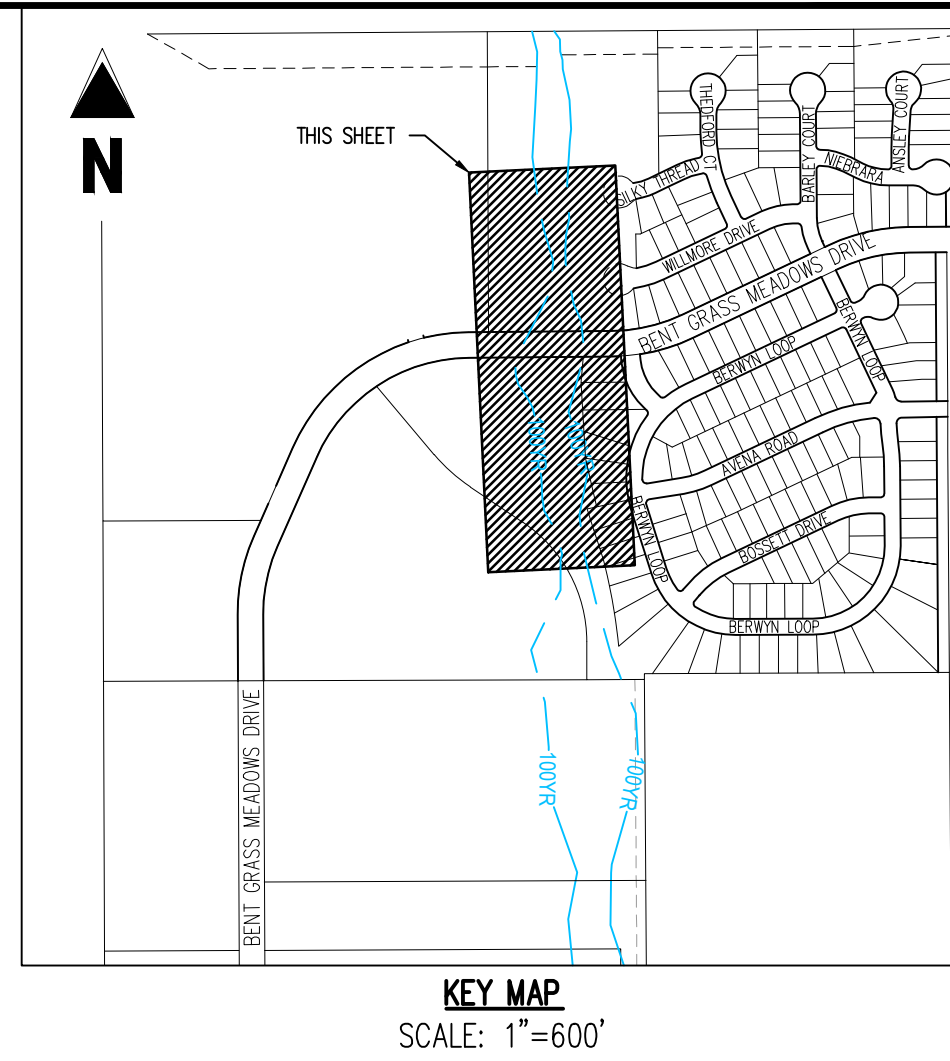
WINGWALL - 3: STA. 1+00.00 - 1+80.00  
SCALE: H:1"=40', V:1"=4'



WINGWALL - 4: STA. 1+00.00 - 1+85.00  
SCALE: H:1"=40', V:1"=4'



NOTE  
UNLESS OTHERWISE NOTED, ALL RIPRAP SHOWN IS TO BE TYPE L-18" DEPTH.



KEY MAP  
SCALE: 1"=600'

**Galloway**

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**CHALLENGER**  
HOMES

CONSTRUCTION DOCUMENTS  
BENT GRASS RESIDENTIAL FILING NO. 2  
FOR  
CHALLENGER COMMUNITIES, LLC  
BENT GRASS MEADOWS DRIVE & MERIDIAN ROAD  
FALCON, CO 80831 - EL PASO COUNTY

#	Date	Issue / Description	Init.
1			
2			
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4			
5			
6			
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8			
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10			

Project No: CLH000014.20  
Drawn By: JDP  
Checked By: RGD  
Date: 4/17/2020

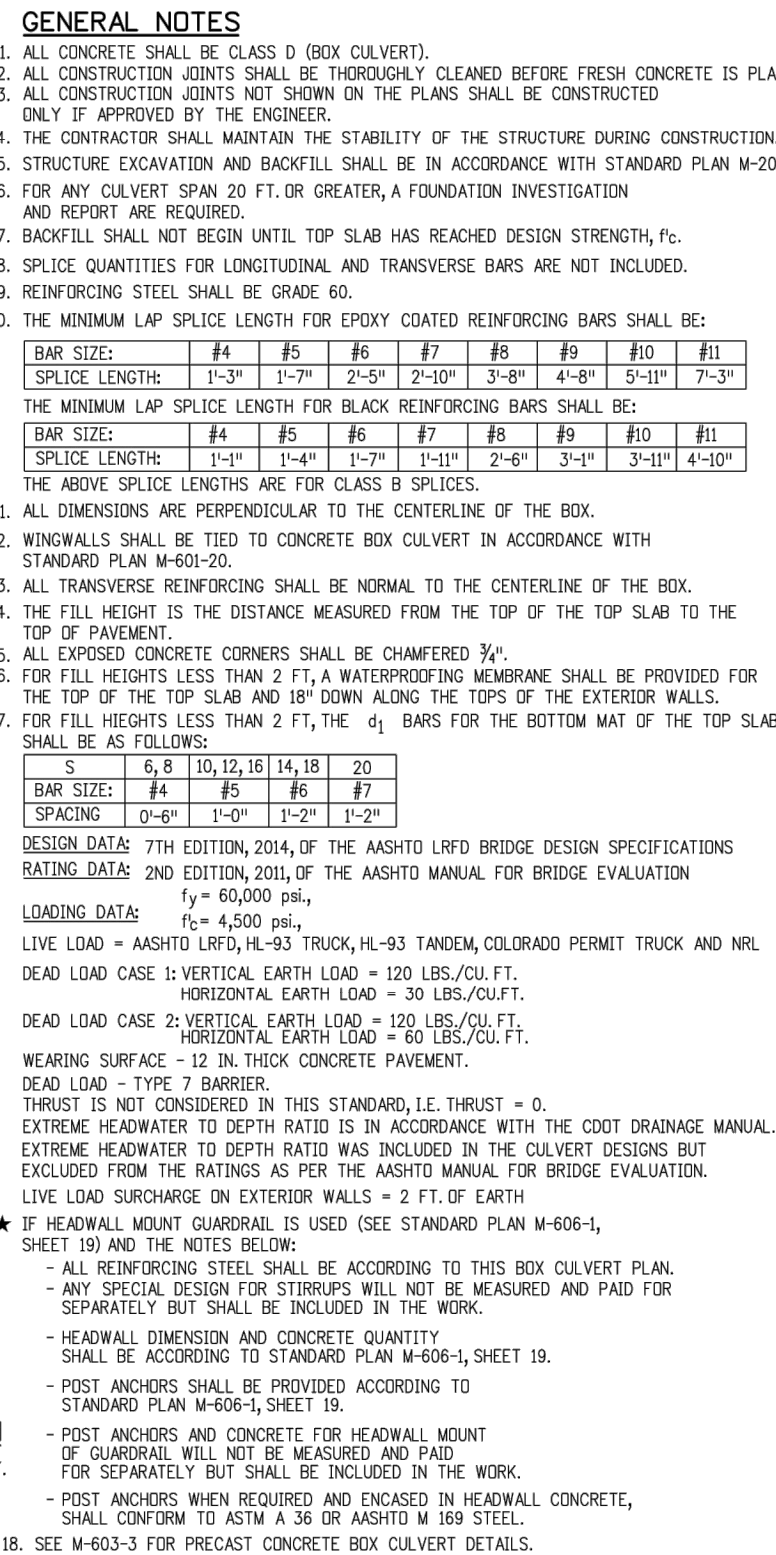
CULVERT & WINGWALL  
PLAN & PROFILE

SF1914  
5/13/2020

**C4.06**

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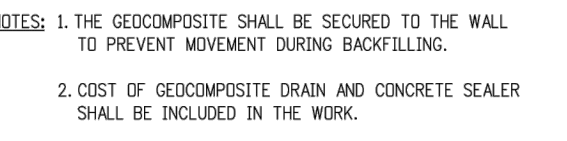
HEADWALL AND TOWEALL QUANTITIES									
HEADWALL		90° TO 75°		74° TO 60°		59° TO 45°			
BENT ANGLE	REBAR QTY.	2 STIRRUPS	REBAR QTY.	2 STIRRUPS	REBAR QTY.	2 STIRRUPS	REBAR QTY.		
°	(#)	#	(#)	#	(#)	#	(#)	#	(#)
180	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
175	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
170	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
165	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
160	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
155	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
150	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
145	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
140	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
135	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
130	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
125	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
120	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
115	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
110	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
105	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
100	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
95	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
90	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
85	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
80	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
75	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
70	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
65	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
60	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
55	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
50	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
45	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
40	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
35	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
30	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
25	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
20	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
15	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
10	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
5	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
0	2.78	1.94	2.78	1.94	2.78	1.94	2.78	1.94	2.78
CONCRETE QUANTITY = 0.086 CY/LF									

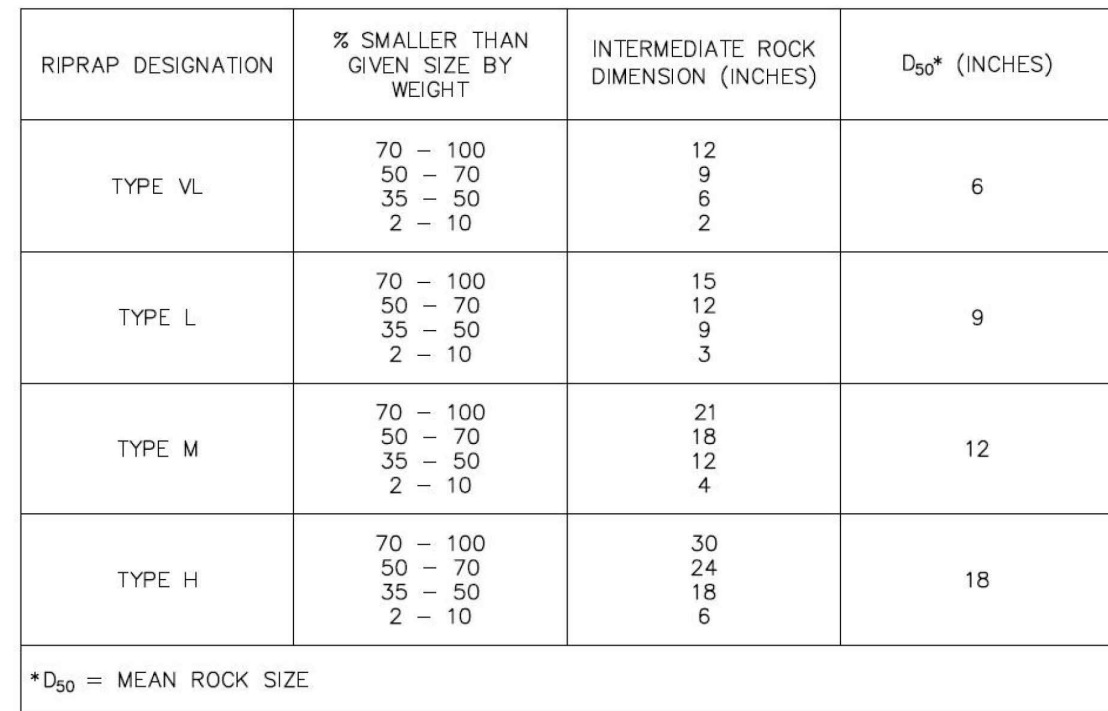
### NOTES

- SIX INCH SPACING AT EACH END OF THE SPAN FOR A DISTANCE OF 1/4 OF THE SPAN

<b>Computer File Information</b> Creation Date: 07/04/12    Initials: HHB Last Modification Date: 09/04/18    Initials: (R-X) Full Path: <a href="http://www.cdot.gov/business/designsupport">www.cdot.gov/business/designsupport</a> Drawing File Name: 601020202.dgn    (R-X) CAD Ver: MicroStation V8    Scale: Not to Scale    Units: English    (R-X)		<b>Sheet Revisions</b> Date:                      Comments 09/04/18    LRD Design    (R-X)		Colorado Department of Transportation  2829 West Howard Place CDOT HQ, 3rd Floor Denver, CO 80204 Phone: 303-757-9021    FAX: 303-757-9868 Division of Project Support    HHB		<b>WINGWALLS FOR PIPE OR BOX CULVERTS</b> Issued By: Project Development Branch July 4, 2012		<b>STANDARD PLAN NO.</b> M-601-20 Sheet No. 2 of 2	
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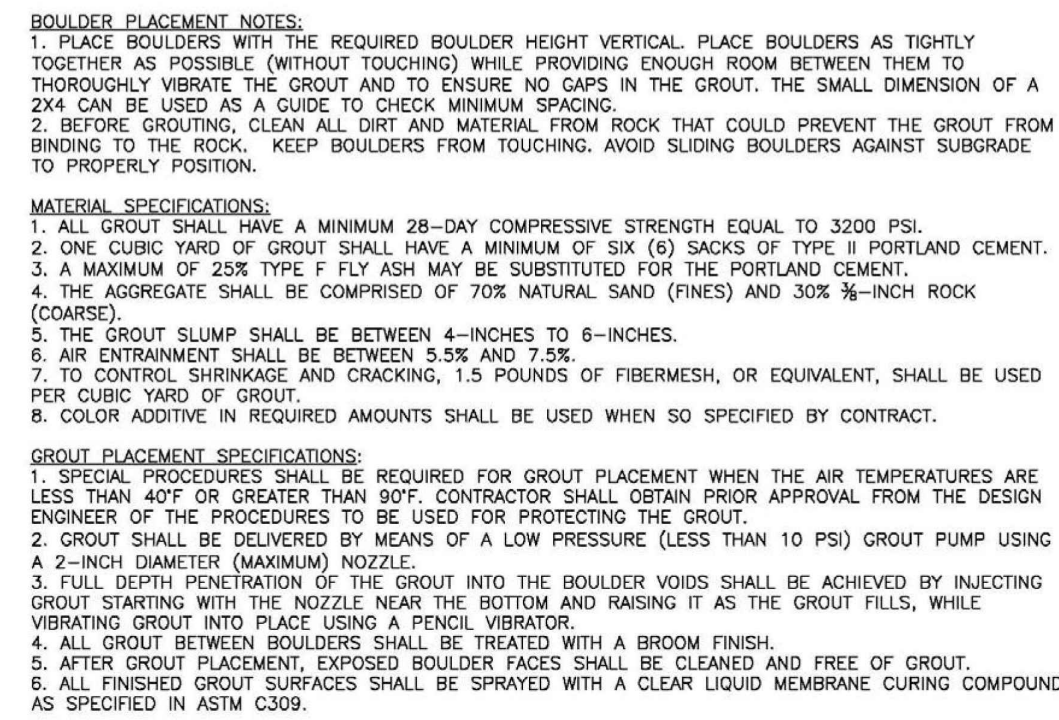






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8-76
Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 1
January 2016



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November 2016
Urban Drainage and Flood Control District  
Urban Storm Drainage Criteria Manual Volume 2
9-31

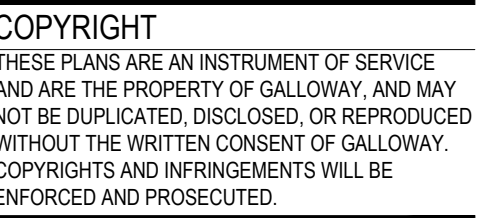


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September 2017	Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 2	9-21
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# CHALLENGER HOMES

CONSTRUCTION DOCUMENTS  
BENT GRASS RESIDENTIAL FILING NO. 2  
FOR  
CHALLENGER COMMUNITIES, LLC  
BENT GRASS MEADOWS DRIVE & MERIDIAN ROAD  
FALCON, CO 80831 - EL PASO COUNTY

[illegible]

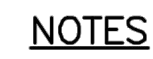
Project No:	CLH000014.20
Drawn By:	JDP
Checked By:	RGD
Date:	4/17/2020

## BOX CULVERT DETAILS

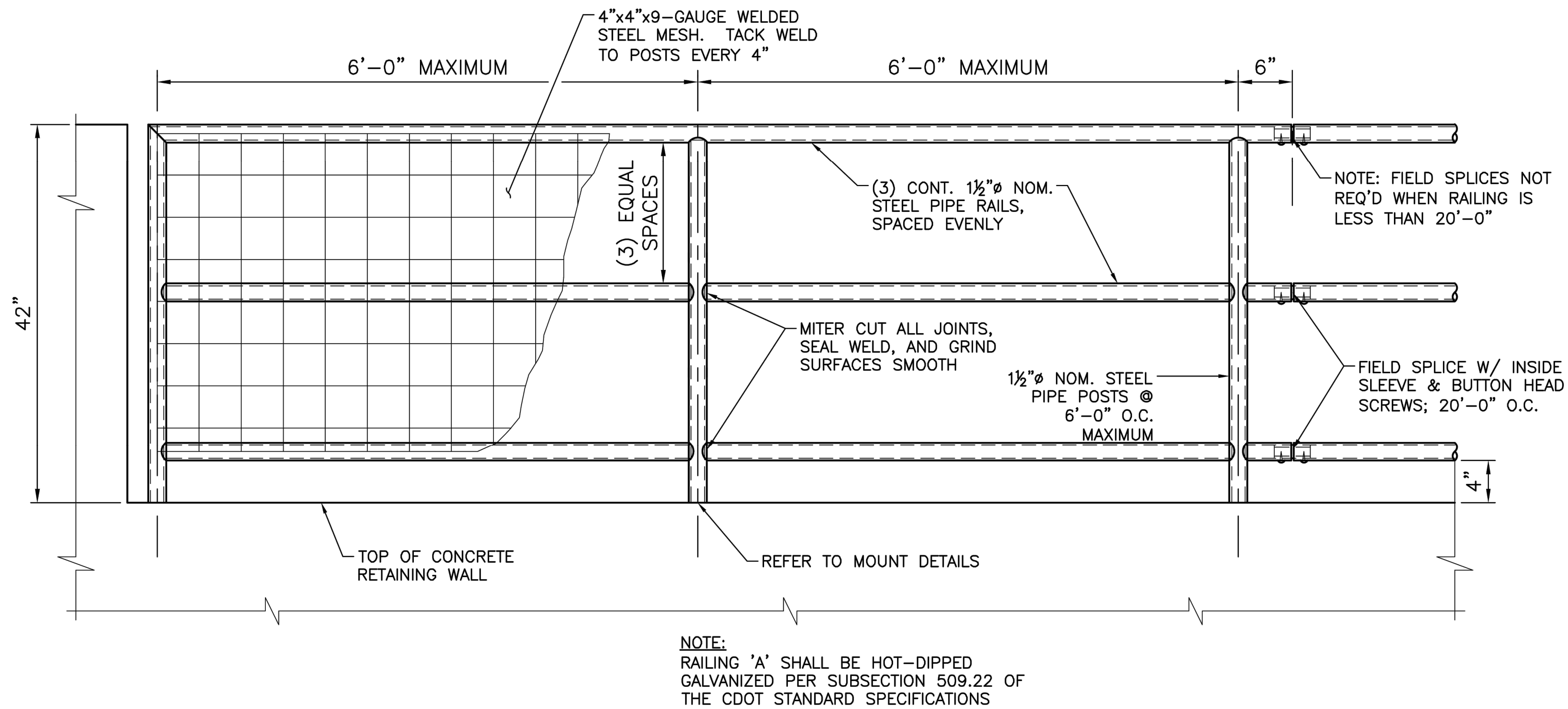
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/13/2020

## C4.09

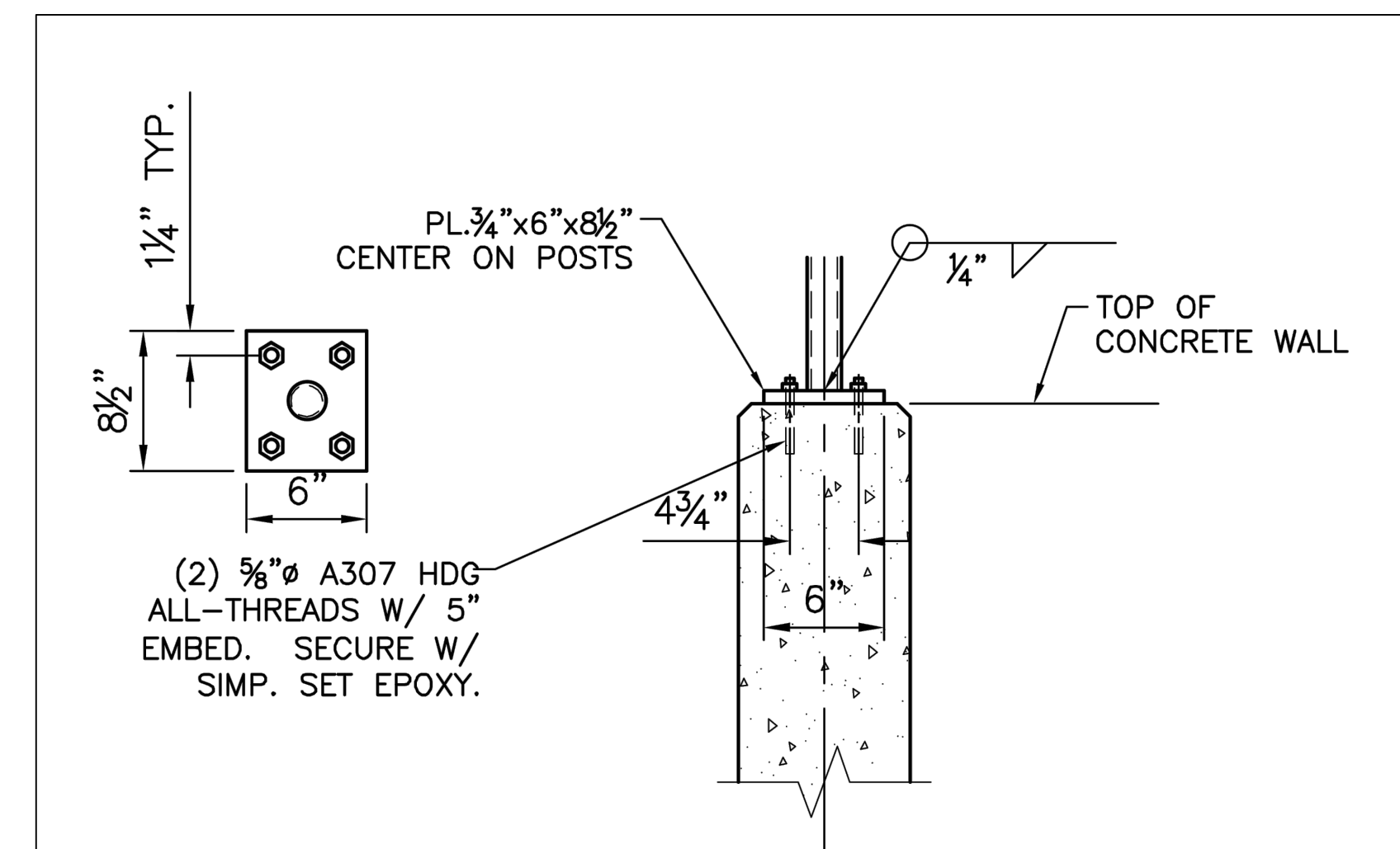
Sheet 34 of 38



1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF THE CDOT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION.
2. STEEL PIPE TO BE ASTM A53 GRADE B; WITH  $F_y = 35$  KSI.
3. STEEL PLATES, CHANNELS & ANGLES TO BE ASTM A36; WITH  $F_y = 36$  KSI.
4. ALL WELDING TO CONFORM TO CURRENT AWS D1.1 REQUIREMENTS.
5. COMPLETE ASSEMBLY OR SUB-ASSEMBLIES, BRACKETS, RAILING AND MISCELLANEOUS STEEL PIECES SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
6. STRUCTURAL BOLTS, NUTS & WASHERS SHALL BE HOT-DIP GALVANIZED.
7. EXPANSION ANCHORS TO BE HILTI KWIK-BOLT II OR APPROVED EQUAL. INSTALL EXPANSION ANCHORS PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
8. EXPANSION ANCHOR BOLTS, NUTS & WASHERS SHALL BE STAINLESS STEEL.
9. REFER TO OTHER DETAILS FOR CONCRETE REINFORCING REQUIREMENTS.
10. COORDINATE REBAR PLACEMENT IN CONCRETE TO MISS ANCHOR BOLTS & INSERTS.
11. GALVANIZED AREAS THAT ARE DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED WITH A APPROVED COLD-GALVANIZING COMPOUND.
12. EPOXY SET ANCHORS SHALL UTILIZE HILTI HIT HY 150 CONSTRUCTION ADHESIVE AND HAS GALVANIZED OR STAINLESS STEEL THREADED RODS.
13. FIELD SPLICES SHALL BE MADE UTILIZING GALVANIZED STEEL PIPE SLEEVE INSERTS AND HOT-DIP GALVANIZED STEEL BOLTS, NUTS, AND WASHERS.
14. CROSS REFERENCE ASSOCIATED STANDARD DETAILS AS NECESSARY FOR STEEL FABRICATIONS.

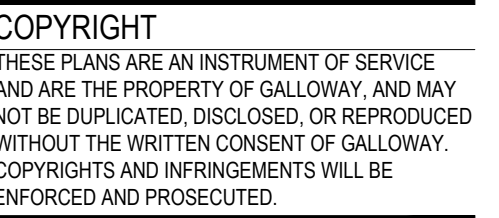


**PIPE RAILING DETAIL**  
SCALE: NOT TO SCALE



**PIPE RAIL MOUNT DETAIL**  
SCALE: NOT TO SCALE





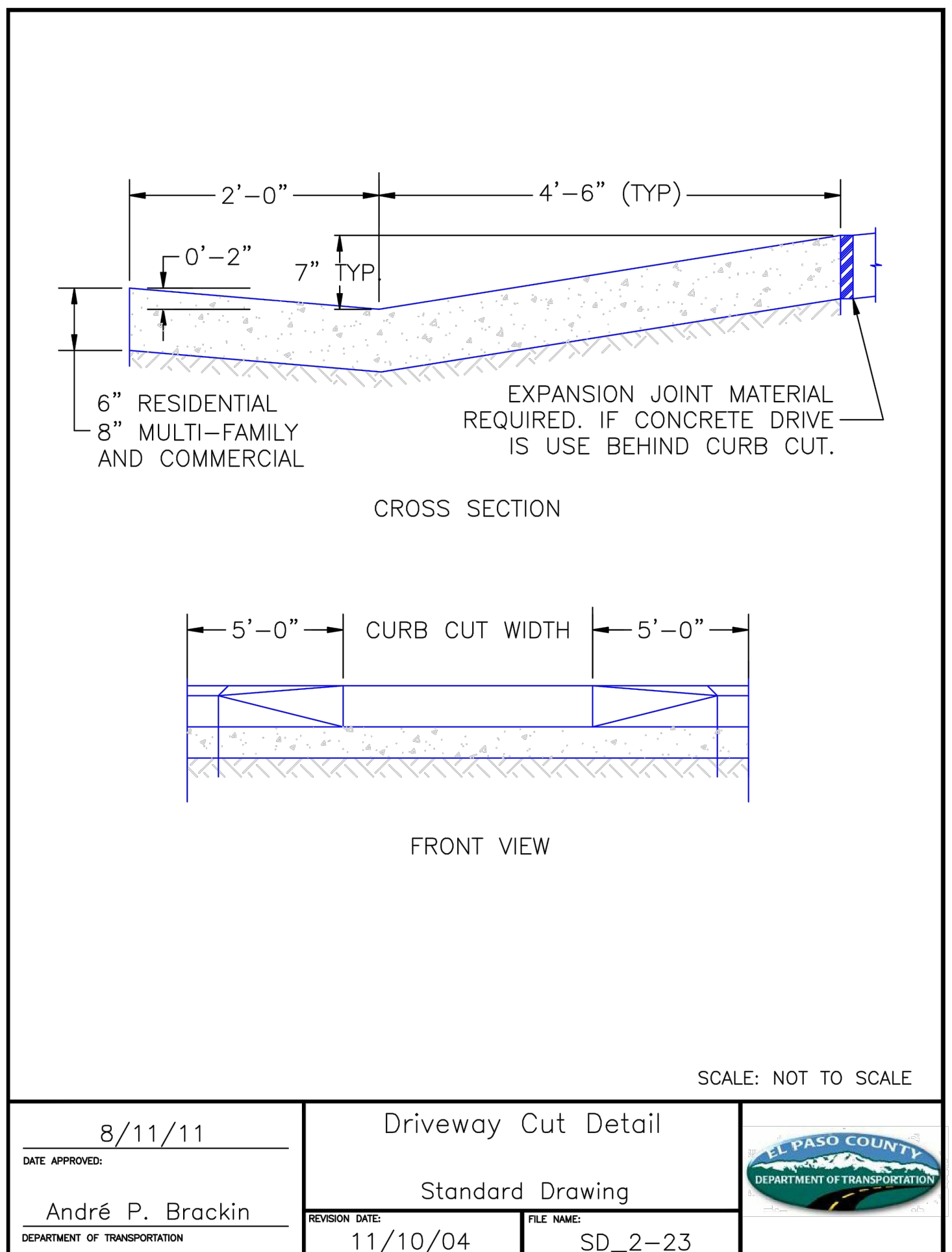
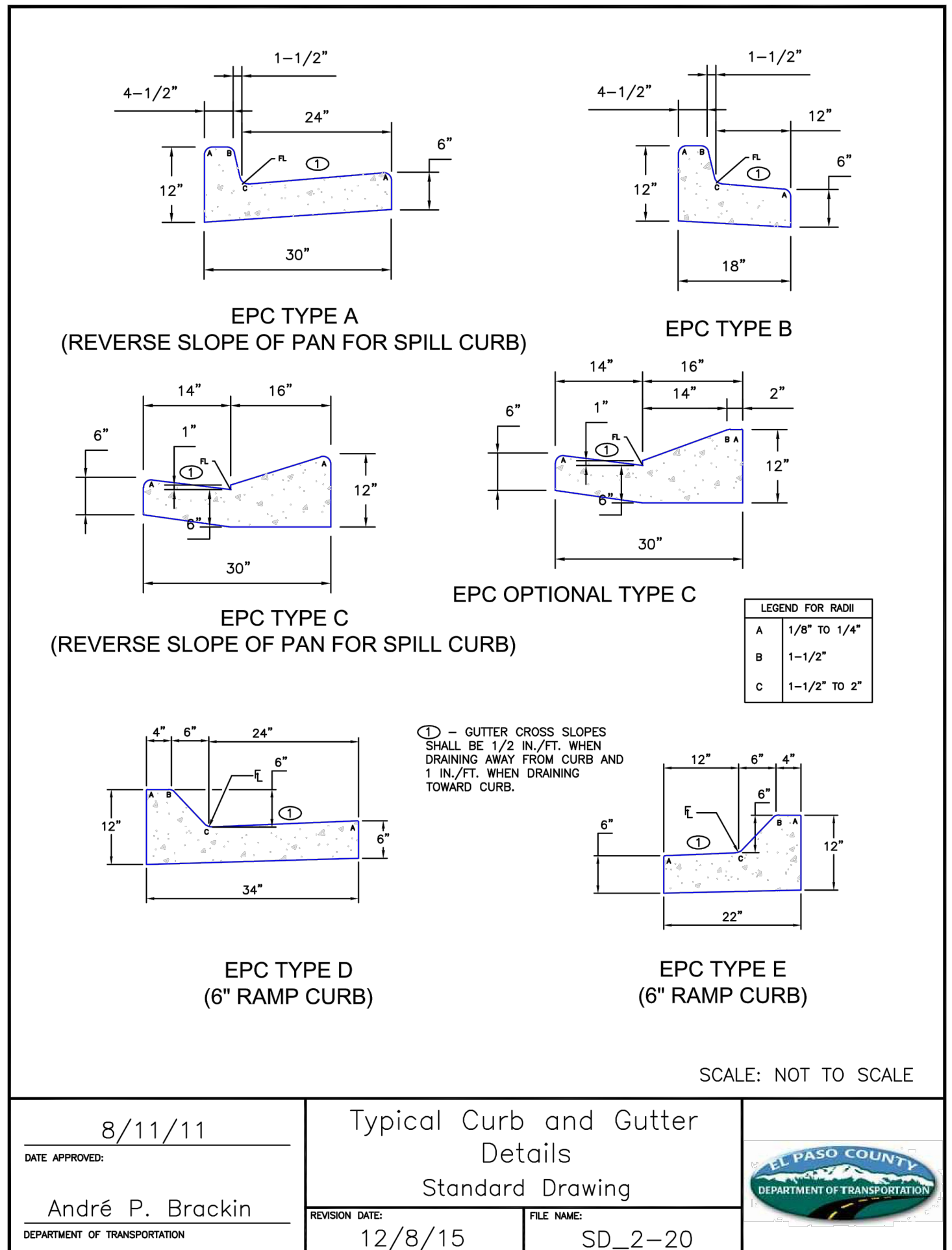
CONSTRUCTION DOCUMENTS  
BENT GRASS RESIDENTIAL FILING NO. 2  
FOR  
CHALLENGER COMMUNITIES, LLC  
BENT GRASS MEADOWS DRIVE & MERIDIAN ROAD  
FALCON, CO 80831 - EL PASO COUNTY

Project No:	CLH000014.20
Drawn By:	JDP
Checked By:	RGD
Date:	4/17/2020

C5.01

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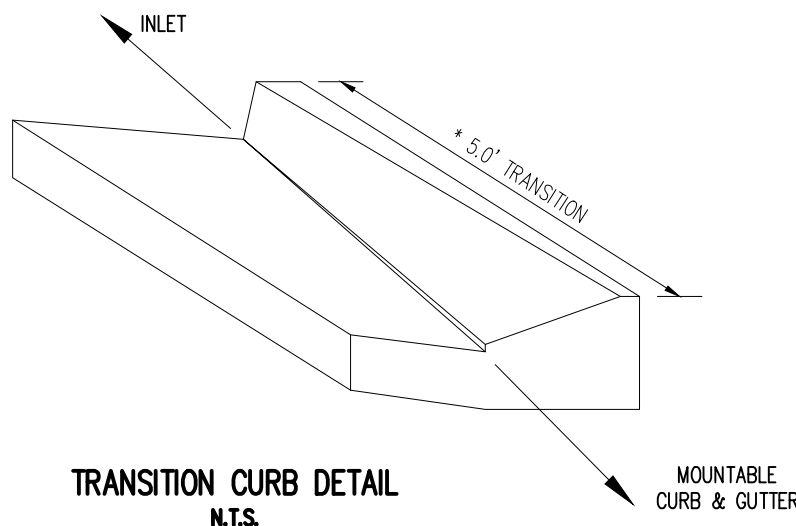


NOTE:

1. ALL INTERNAL SIGNS SHALL BE 4" FONT LETTER SIZE

NOTE TO CONTRACTOR:

1. SIGNS AND POLES SHALL BE PER CDOT STANDARDS S-614-2, S-614-3 AND S-614-8, LATEST REVISION  
2. ALL SIGNAGE INSTALLATION IS TO BE IN COMPLIANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.



NOTE:

- \*WHEN A TYPE R INLET IS USED WITH MOUNTABLE CURB AND GUTTER, 5.0' TRANSITION SHALL BE REQUIRED. TRANSITION SHALL BE PAID FOR AS CURB AND GUTTER.

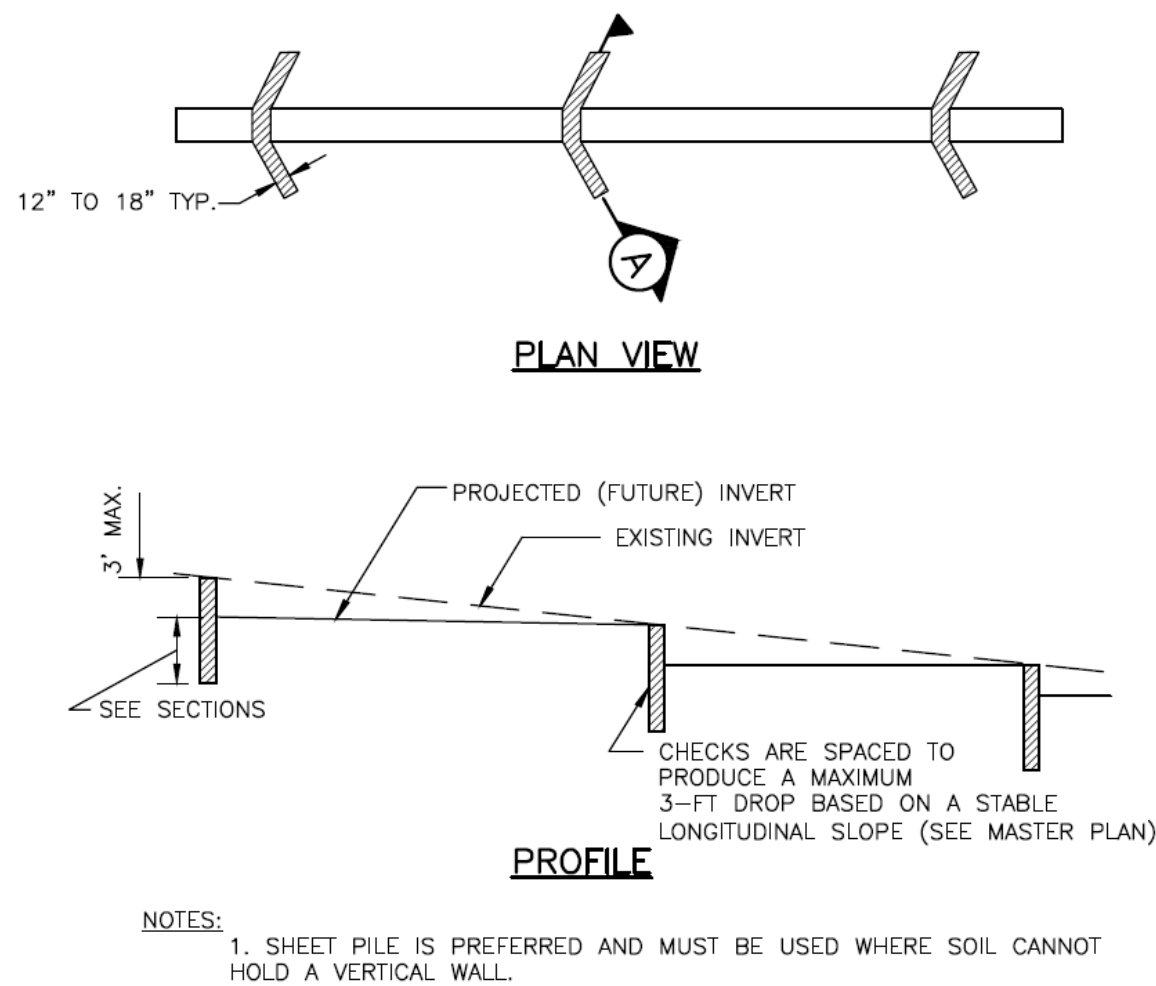
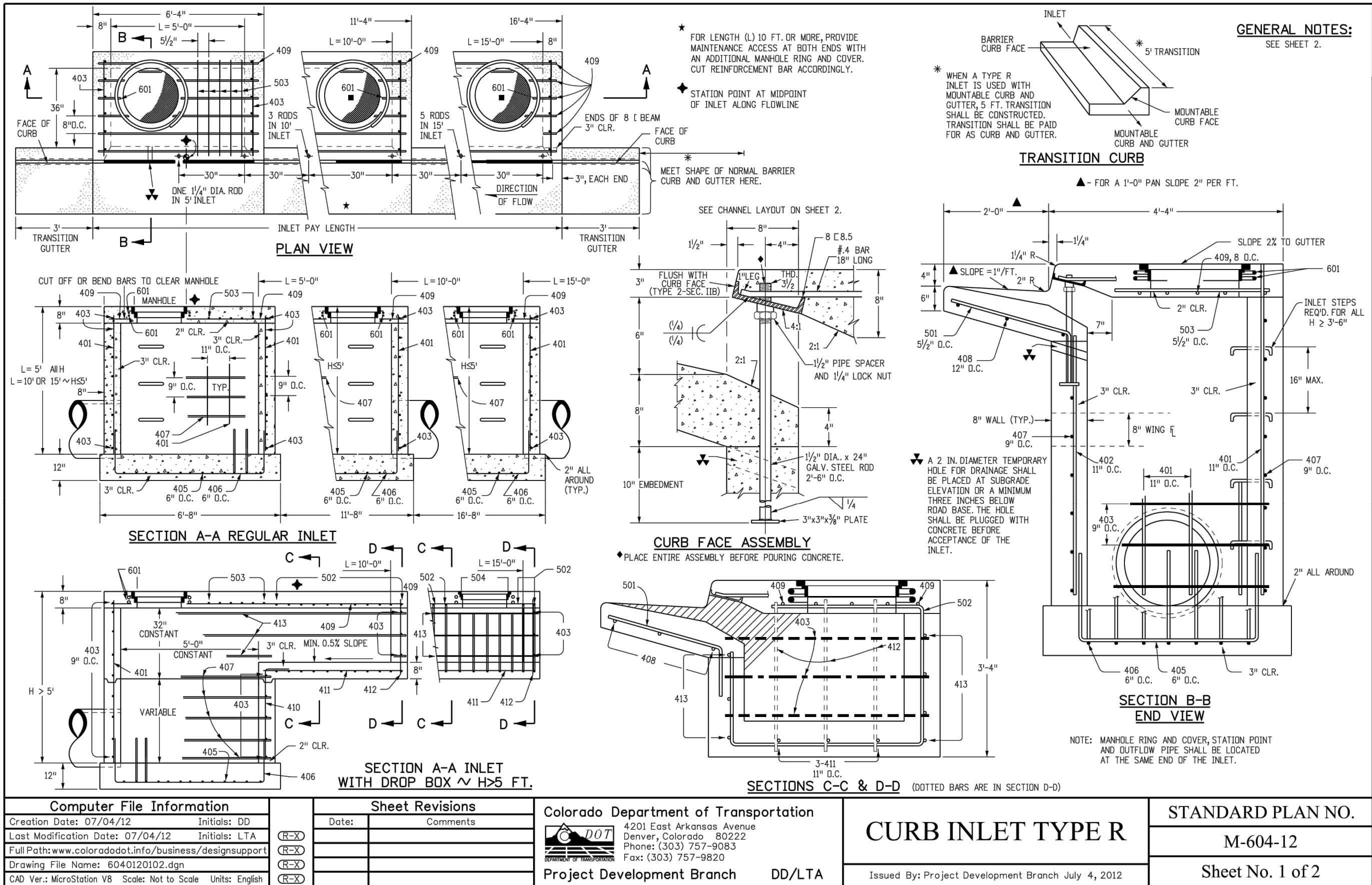
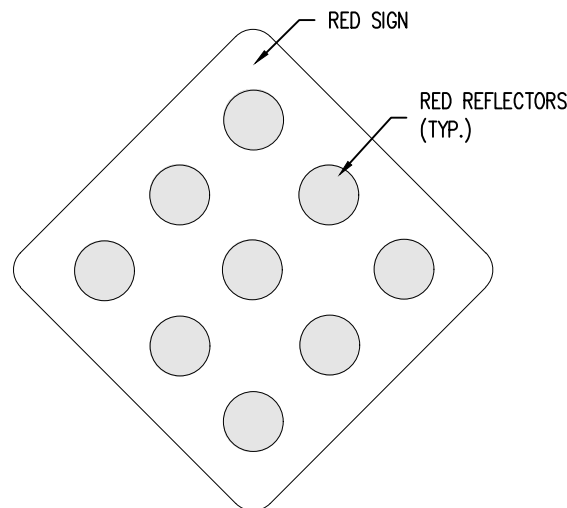
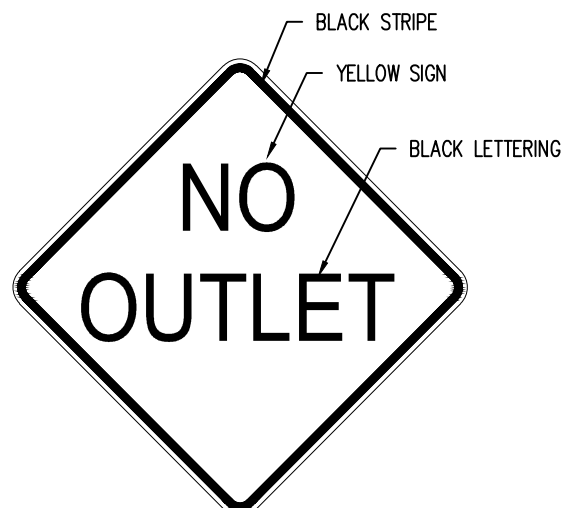
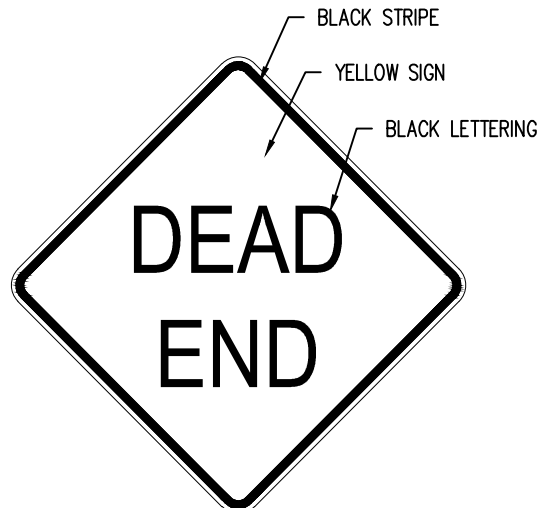
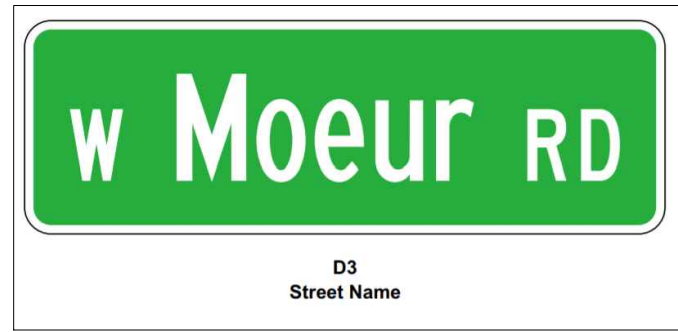
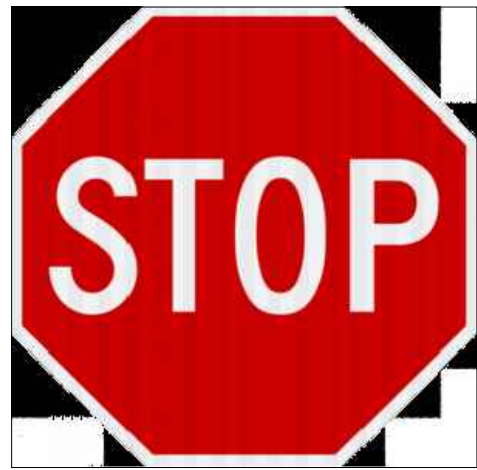
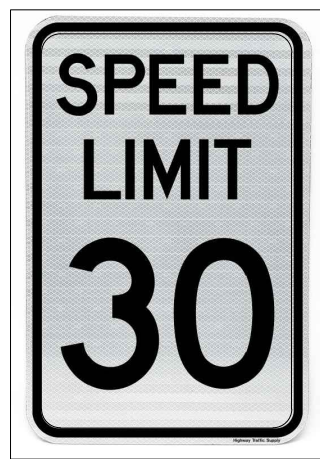


Figure 9-26. Check structure details (Part 1 of 3)

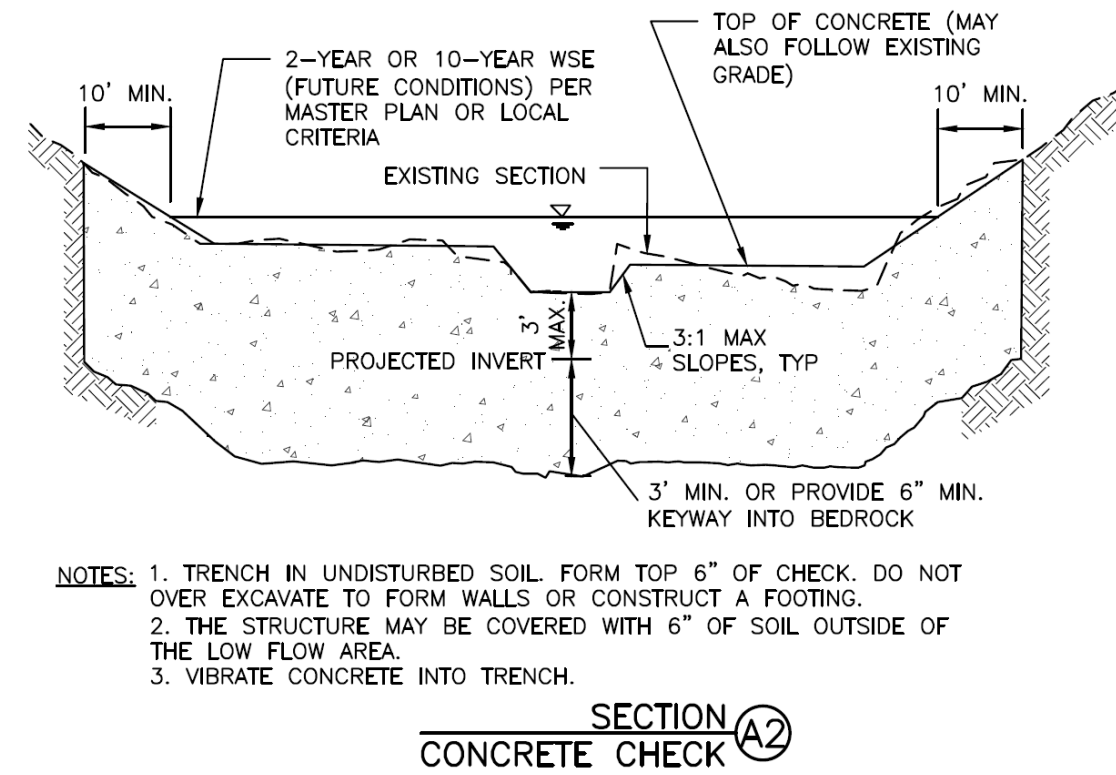


Figure 9-27. Check structure details (Part 2 of 3)

Check structures per UDFCD (MHFD) detail added to appendix per engineer's request May 6, 2020.

#	Date	Issue / Description	Init.
1			
2			
3			
4			
5			
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9			
10			
11			
12			

Project No:	CLH000014.20
Drawn By:	JDP
Checked By:	RGD
Date:	4/17/2020

SITE DETAILS



#	Date	Issue / Description	Init.
1			
2			
3			
4			
5			
6			
7			
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Project No:	CLH000014.20
Drawn By:	JDP
Checked By:	RGD
Date:	4/17/2020

SITE DETAILS

SF1914  
5/13/2020

**C5.04**

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MARK	BAR #	OR SIZE	D.C. SPACING	TYPE	ALL INLETS				INLETS: H ≤ 5 FT.				INLETS: H > 5 FT.			
					L = 5 FT.	L = 10 FT.	L = 15 FT.	L = 20 FT.	L = 5 FT.	L = 10 FT.	L = 15 FT.	L = 20 FT.	L = 5 FT.	L = 10 FT.	L = 15 FT.	L = 20 FT.
401	4	1"	11"	II	15	*	21	*	26	*	11	*	11	*		
402	4	1"	11"	II	7	*	13	*	18	*	7	*	7	*		
403	4	9"	11"	II	*	4-0"	*	4-0"	*	4-0"	*	4-0"	*	4-0"		
405	4	6"	VII	II	11	6-10"	21	6-10"	31	6-10"	11	6-10"	11	6-10"		
406	4	6"	VIII	II	7	8-10"	7	13-10"	7	18-10"	7	8-10"	7	8-10"		
407	8	9"	II	II	*	10-10"	*	15-10"	*	15-10"	*	5-10"	*	5-10"		
408	4	12"	II	II	3	6-10"	3	10-10"	3	10-10"	3	10-10"	3	10-10"		
409	4	8"	II	II	6	5-10"	6	10-10"	6	15-10"	6	15-10"	6	15-10"		
410	4	11"	VII	II												
411	4	11"	II	II												
412	4	11"	II	II												
413	4	8"	II	II												
501	5	5/8"	IV	II	11	3-4"	22	3-4"	33	3-4"	22	3-4"	33	3-4"		
502	5	5/8"	III	II	5	3-6"	16	3-6"	27	3-6"	6	3-6"	6	3-6"		
503	5	5/8"	II	II												
504	5	5/8"	IX	II												
601	6	2 1/2"	V	II												
REG. 6																
REG. 6.1																

**GENERAL NOTES**

- CONCRETE SHALL BE CLASS B INLET MAY BE CAST-IN-PLACE OR PRECAST.
- CONCRETE WALLS SHALL BE FORMED ON BOTH SIDES AND SHALL BE 8 IN. THICK.
- INLET STEPS SHALL BE IN CONFORMANCE WITH AASHTO M 199.
- CURB FACE ASSEMBLY SHALL BE GALVANIZED AFTER WELDING.
- EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 1/4 IN. CURB AND GUTTER CORNERS SHALL BE FINISHED TO MATCH THE EXISTING CURB AND GUTTER BEYOND THE TRANSITION GUTTER.
- REINFORCING BARS SHALL BE DEFORMED AND SHALL HAVE A 2 IN. MINIMUM CLEARANCE. ALL REINFORCING BARS SHALL BE EPOXY COATED.
- DIMENSIONS AND WEIGHTS OF TYPICAL MANHOLE RING AND COVER ARE NOMINAL.
- MATERIAL FOR MANHOLE RINGS AND COVERS SHALL BE GRAY OR DUCTILE CAST IRON IN ACCORDANCE WITH SUBSECTION 712.06.
- SINCE PIPE ENTRIES INTO THE INLET ARE VARIABLE, THE DIMENSIONS SHOWN ARE TYPICAL. ACTUAL DIMENSIONS AND QUANTITIES FOR CONCRETE AND REINFORCEMENT SHALL BE AS REQUIRED IN THE WORK. QUANTITIES INCLUDE VOLUMES OCCUPIED BY PIPES.
- STRUCTURAL STEEL SHALL BE GALVANIZED AND SHALL BE IN ACCORDANCE WITH SUBSECTION 712.06.
- ALL MANHOLE COVERS SHALL BE CAST WITH A "NO DUMPING DRAINS TO STREAM" MESSAGE AND A FISH SYMBOL. THE SURFACE OF THE MANHOLE COVER SHALL HAVE A NON-SLIP PATTERN.

**TABLE ONE ~ BAR LIST FOR CURB INLETS, TYPE "R"**

H" IN	LENGTH	NO. REQ'D.		L = 5 FT.	L = 10 FT.	L = 15 FT.
		REGULAR	DROP BOX			
3'-0"	2'-8"	1'-8"	10	7	3.2	285
3'-6"	3'-2"	2'-2"	10	7	3.4	305
4'-0"	3'-6"	2'-6"	12	9	3.7	326
4'-6"	4'-2"	3'-2"	12	9	3.9	334
4'-8"	4'-8"	3'-8"	14	11	4.1	354
5'-0"	5'-2"	4'-2"	16	13	4.4	375
5'-6"	5'-8"	4'-8"	16	13	4.6	385
6'-0"	6'-2"	5'-2"	18	15	4.8	402
7'-0"	6'-8"	5'-8"	20	17	5.0	423
7'-6"	7'-2"	6'-2"	20	17	5.3	430
8'-0"	7'-8"	6'-8"	22	19	5.5	451
8'-6"	8'-2"	7'-2"	24	21	5.7	471
9'-0"	8'-8"	7'-8"	24	21	6.0	479
9'-6"	9'-2"	8'-2"	26	23	6.2	499
10'-0"	9'-8"	8'-8"	28	25	6.4	520
10'-6"	10'-2"	9'-2"	28	25	6.7	527
11'-0"	10'-8"	9'-8"	30	27	6.9	547

**TABLE TWO ~ BARS AND QUANTITIES VARIABLE WITH "H" IN**

Computer File Information	Sheet Revisions		Colorado Department of Transportation	STANDARD PLAN NO.
	Date	Comments		
Creation Date: 07/04/12 Last Modification Date: 07/04/12 Full Path: www.coloradodot.info/business/designsupport Drawing File Name: M06040200202.dgn CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English			4201 East Arkansas Avenue Denver, Colorado 80222 Phone: (303) 757-9083 Fax: (303) 757-9820 Project Development Branch DD/LTA	M-604-12 Sheet No. 2 of 2

**GENERAL NOTES**

- SINCE ALL PIPE ENTRIES INTO THE BASE ARE VARIABLE, THE DIMENSIONS SHOWN ARE TYPICAL. ACTUAL DIMENSIONS AND QUANTITIES FOR CONCRETE AND REINFORCEMENT SHALL BE AS REQUIRED IN THE WORK.
- THE PRECAST FLAT TOP MAY BE USED ON THE MANHOLE "H" HEIGHT IS AT LEAST 8 FT.
- THE MANHOLE RING FRAME SHALL BE SET IN A BED OF GROUT. THE FRAME SHALL BE SURROUNDED WITH A CEMENT GROUT IN UNPAVED AREA OR A CONCRETE COLLAR IN PAVED AREA. SEE DETAILS ON SHEETS 2 AND 3.
- DESIGN OF BOX BASE IS BASED ON STRAIGHT RUNS OF PIPE OR CHANGE IN DIRECTION OF LESS THAN 45°. SPECIAL DESIGN IS REQUIRED FOR 45° OR GREATER.
- PRECAST MANHOLES AND REINFORCEMENT SHALL CONFORM TO AASHTO M 199 (ASTM C 478).
- CAST-IN-PLACE MANHOLES SHALL BE CLASS B CONCRETE.
- STEPS SHALL BE REQUIRED WHEN THE MANHOLE DEPTH EXCEEDS 5 FT. 6 IN. AND SHALL CONFORM TO AASHTO M 199.
- ALL REINFORCING STEEL SHALL BE GRADE 60 AND EPOXY COATED. VERTICAL STEEL SHALL BE PLACED AT CENTERLINE OF WALL. ALL BARS SHALL HAVE A 2 IN. MINIMUM CLEARANCE.
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- FLOW CHANNELS AND INVERTS SHALL BE FORMED BY SHAPING WITH CLASS B CONCRETE OR APPROVED GROUT.
- STUB-OUTS SHALL EXTEND 2 FT. MINIMUM BEYOND OUTSIDE WALL SURFACE OF MANHOLE AND BE SATISFACTORILY PLUGGED.
- THE SLOPE OF THE MANHOLE COVER SHALL MATCH THE ROADWAY PROFILE AND CROSS SLOPE.
- WHEN FINAL GRADE IS PAVEMENT SURFACE, RECESS MANHOLE RING AND COVER 1/4 MIN. TO 1/2" MAX.

**QUANTITIES FOR CONCRETE MANHOLE BOX BASE**

MARK	SIZE	TYPE	Wt. W/T.	BARS	I.D.										FORMULAS	
					54"	60"	66"	72"	84"	96"	401	402	501	502		
401	4	I	0.668		18	18	18	18	18	18	18	18	18	18	401	BAR LENGTH = 32" + 2W + I.D.
402	4	III	0.668		5	5	5	5	5	5	5	5	5	5	402	BAR LENGTH = I.D. + 2W
501	5	I	1.043		17	17	17	17	17	17	17	17	17	17	501	BAR LENGTH = 24" + I.D. + 2W
502	5	I	1.043		17	17	17	17	17	17	17	17	17	17	502	NUMBER BARS REQ'D. = 3 + (24+I.D.+2W)/H
503	5	II	1.043		17	17	17	17	17	17	17	17	17	17	503	NUMBER BARS REQ'D. = 4 + (24+I.D.+2W)/H
504	5	I	1.043		17	17	17	17	17	17	17	17	17	17	504	NUMBER BARS REQ'D. = 2 (2W+I.D.-4)/H
1101	11	I	5.313		4	4	4	4	4	4	4	4	4	4	1101	BAR LENGTH = 22" + I.D. + 2W
1102	11	I	5.313		4	4	4	4	4	4	4	4	4	4	1102	BAR LENGTH = 22" + I.D. + 2W
1103	11	I	5.313		4	4	4	4	4	4	4	4	4	4	1103	BAR LENGTH = 22" + I.D. + 2W
REINFORCING STEEL TOTAL					955.8	1037.5	1127.2	1204.0	1380.2	1601.6						
CONCRETE - CUBIC YARDS - TOTAL					6.0	6.6	7.3	8.0	9.5	11.1						

**MANHOLES**

STANDARD PLAN NO. M-604-20

Sheet No. 1 of 3

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