ROADWAY AND STORM SEWER CONSTRUCTION PLANS
FALCON MEADOWS AT BENT GRASS FILING NO. 4
FALCON, CO 80831 - EL PASO COUNTY
CHALLENGER COMMUNITIES, LLC

GALLOWAY RESPONSE TO COMMENTS IN BLUE BOXES WITH WHITE TEXT

PROJECT CONTACTS

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SURVEYOR
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1155 KELLY JOHNSON BLVD., SUITE 305
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UTILITY CONTACTS

WATER & WASTEWATER
WOODMEN HILLS METRO DISTRICT
8046 EASTONVILLE ROAD
FALCON, CO 80831
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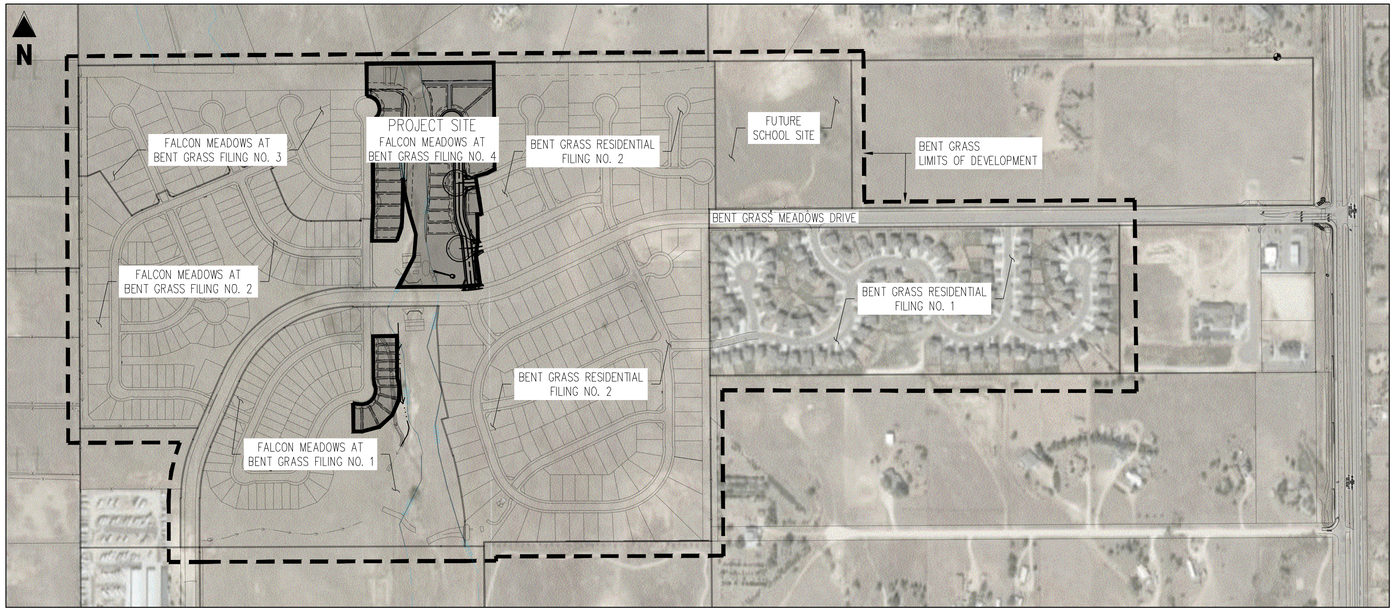
ATTN: CODY RITTER
EMAIL: CODY@WHMD.ORG

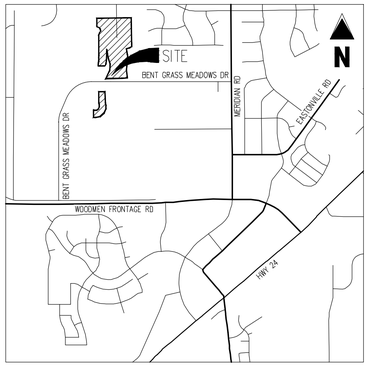
ELECTRIC
MOUNTAIN VIEW ELECRIC
11140 E WOODMEN RD
FALCON, CO 80831
TELE: (719) 495-2283
CATHY HANSEN-LEE
EMAIL: CATHY.H@MVEA.COOP

NATURAL GAS
COLORADO SPRINGS UTILITIES (CSU)
7710 DURANT DRIVE, P.O. BOX 1103, MAIL CODE 2150
COLORADO SPRINGS, CO 80947-2150
TELE: (719) 668-5573
AARON CASSIO
EMAIL: ACASSIO@CSU.ORG

FIRE
FALCON FIRE PROTECTION DISTRICT
7030 OLD MERIDIAN ROAD
PEYTON, CO 80831
TELE: (719) 495-4050
EMAIL: FALCONFIRE@FALCONFIREPD.ORG



SITE MAP
SCALE: 1"=300'



VICINITY MAP
1"=2,000'

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 BELIEF. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARATION OF THESE DETAILED PLANS AND SPECIFICATIONS.

RONALD G. DENNIS, COLORADO P.E. NO. 0051622 — 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 REQUIREMENT SPECIFIED IN THESE DETAILED PLANS AND SPECIFICATIONS.

JIM BEYERS
CHALLENGER HOMES, INC. — DATE

EL PASO COUNTY
COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/ OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY THROUGH THE APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/ OR ACCURACY OF THIS DOCUMENT. FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND ENGINEERING CRITERIA MANUAL AS AMENDED.

IN ACCORDANCE WITH ECM SECTION 1.12, THESE CONSTRUCTION DOCUMENTS WILL BE VALID FOR CONSTRUCTION FOR A PERIOD OF 2 YEARS FROM THE DATE SIGNED BY THE EL PASO COUNTY ENGINEER. IF CONSTRUCTION HAS NOT STARTED WITHIN THOSE 2 YEARS, THE PLANS WILL NEED TO BE RESUBMITTED FOR APPROVAL, INCLUDING PAYMENT OF REVIEW FEES AT THE PLANNING AND COMMUNITY DEVELOPMENT DIRECTORS DISCRETION.

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

SHEET INDEX		
SHEET NUMBER	SHEET TITLE	SHEET DESCRIPTION
1	COVER SHEET	C0.0
2	NOTES AND TYPICAL SECTION	C0.1
3	OVERALL HORIZONTAL CONTROL	C1.0
4	OVERALL SHEET	C2.0
5	LEMON GRASS RD IMPROVEMENT PLAN	C2.1
6	LEMON GRASS RD IMPROVEMENT PLAN	U2.2
7	ROAD IMPROVEMENT PLANS	C2.3
8	STORM DRAIN PLAN & PROFILE	C2.4
9	SIGNAGE PLAN	C3.1
10	INTERSECTION DETAIL	C4.1
11	INTERSECTION DETAIL	C4.2
12	INTERSECTION DETAIL	C4.3

PCD FILING NO.
PUDSP-20-005 (FALCON MEADOWS AT BENT GRASS PRELIMINARY PLAN)
SF-22-023 (FALCON MEADOWS AT BENT GRASS FILING NO. 4)

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°13'46"W AND MONUMENTED AS SHOWN.

BENCHMARK
THE SOUTHWESTERLY CORNER OF LOT 1 WOODMEN HILLS FILING NO. 4, MONUMENTED BY A YELLOW PLASTIC SURVEYOR'S CAP ON A NO. 4 REBAR LS# 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 POTHOLING OR ALTERNATIVE METHOD. REPORT INFORMATION TO THE ENGINEER PRIOR TO CONSTRUCTION.

811 Know what's below. Call before you dig.

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

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CHALLENGER HOMES

CONSTRUCTION DOCUMENTS
FALCON MEADOWS AT BENT GRASS FILING NO. 4
FOR
CHALLENGER COMMUNITIES, LLC

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

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Project No:	CLH000021
Drawn By:	CMWJ
Checked By:	RGD
Date:	07/01/2022

COVER SHEET

C0.0
Sheet 1 of 12

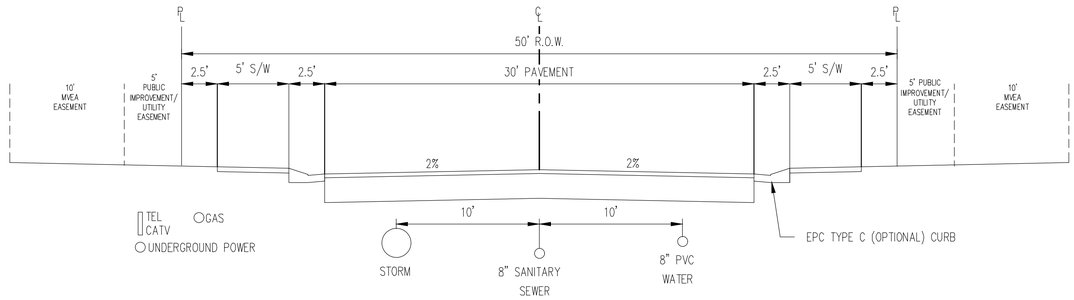
W:\Challenger Homes (HCP) Falcon - CLH000021 - FM at Bent Grass Filing\Falcon Meadows at Bent Grass Filing No. 4\Drawings\Construction Documents\Cover Sheet.dwg, Jose Murray, 7/5/2022

GENERAL CONSTRUCTION NOTES

1. 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.
2. 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.
3. ADDITIONAL EROSION CONTROL STRUCTURES MAY BE REQUIRED AT THE TIME OF CONSTRUCTION.
4. 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.
5. ALL STATIONING IS CENTERLINE UNLESS OTHERWISE INDICATED. ALL ELEVATIONS ARE FLOW LINE UNLESS OTHERWISE INDICATED.
6. ALL DISTURBED PAVEMENT EDGES SHALL BE CUT TO NEAT LINES. REPAIR SHALL CONFORM TO THE EPC ECM APPENDIX K – 1.2C.
7. ALL INTERSECTION ACCESSES TO BE CONSTRUCTED WITH A 25 FOOT SIGHT VISIBILITY TRIANGLES AND THERE SHALL BE NO OBSTRUCTIONS GREATER THAN 18" IN THIS AREA.
8. ALL CULVERT AND STORM PIPES SHALL BE SMOOTH INTERIOR CORRUGATED POLYETHYLENE PIPE (HDPE), 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 3.3.2 – CULVERTS.
9. 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.
10. 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.
11. 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.
12. ALL POTABLE WATER MAINS SHALL BE AWWA C900-DR18 PVC WITH PUSH-ON SINGLE GASKET TYPE JOINTS AND SHALL MEET THE REQUIREMENTS OF ANSI / NSF 61.
13. 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.
14. 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.
15. 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.
16. 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.
17. SANITARY SEWER PIPE AND FITTINGS: PVC 4" – 15" ASTM D.3034, 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)

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 SLIPBASE 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. CROSSWALKS LINES SHALL BE 12"WIDE AND 8'LONG PER CDOT S-627-1.
12. 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.
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.

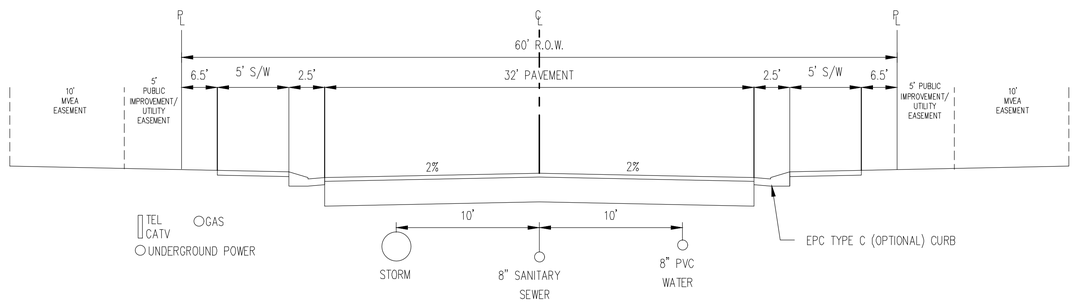


TYPICAL STREET SECTION – URBAN LOCAL ROADWAY
N.T.S.

STANDARD NOTES FOR EPC CONSTRUCTION PLAN

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 (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 DOT AND MUTCD CRITERIA. [IF APPLICABLE, ADDITIONAL SIGNING AND STRIPING NOTES WILL BE PROVIDED.]
14. CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DOT, 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.

STREET NAMES
1. LEMON GRASS RD
2. HENZLEE RD (EXISTING)
3. SILKY ROAD



TYPICAL STREET SECTION – URBAN LOCAL ROADWAY
N.T.S.

STREET NAME
1. WILLMORE DRIVE

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

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CHALLENGER HOMES

CONSTRUCTION DOCUMENTS
FALCON MEADOWS AT BENT GRASS FILING NO. 4
FOR
CHALLENGER COMMUNITIES, LLC

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

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Checked By:	RGD
Date:	07/01/2022

NOTES AND TYPICAL SECTION

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Sheet 2 of 12

N:\Challenger Homes\4400 Falcon - CLH000021 - Fall at Bent Grass\4 ENGINEERING\PLOTS_CDs_Construction Documents\Sheet Set\Notes + Typicals.dwg, Joel Murray, 6/15/2022

LEGEND

- EXISTING PROPERTY LINE (PROPOSED PROJECT BOUNDARY)
- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE (PROPOSED PROJECT BOUNDARY)
- EXISTING RIGHT OF WAY LINE
- PROPOSED RIGHT OF WAY LINE
- EXISTING LOT LINE
- PROPOSED LOT LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- EXISTING ROADWAY CENTER LINE
- PROPOSED ROADWAY CENTER LINE
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE
- W — EXISTING WATER LINE
- W — PROPOSED WATER LINE
- SS — EXISTING SANITARY SEWER LINE
- SS — PROPOSED SANITARY SEWER LINE
- EXISTING DRAINAGE FEATURE OUTLINE
- PROPOSED DRAINAGE FEATURE OUTLINE
- EXISTING SWALE WITH FLOW DIRECTION
- PROPOSED SWALE WITH FLOW DIRECTION
- 100YR — 100-YEAR FEMA FLOODPLAIN
- PROPOSED CONCRETE
- PROPOSED GRAVEL PER ECM TABLE D-7
- PROPOSED RIP RAP
- EXISTING CONCRETE PAVING
- EXISTING GRAVEL PER ECM TABLE D-7
- EXISTING 1" TO 2" CRUSHED ROCK
- EXISTING RIP RAP
- EXISTING GROUTED BOULDERS
- 113 — PROPOSED LOT #
- 15 — EXISTING LOT #

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°13'46"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

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 POTHOLING OR ALTERNATIVE METHOD. REPORT INFORMATION TO THE ENGINEER PRIOR TO CONSTRUCTION.

811 Know what's below. Call before you dig.

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CHALLENGER HOMES

CONSTRUCTION DOCUMENTS
FALCON MEADOWS AT BENT GRASS FILING NO. 4
FOR
CHALLENGER COMMUNITIES, LLC

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

#	Date	Issue / Description	Init.
--			

Project No:	CLH000021
Drawn By:	CMWJ
Checked By:	RGD
Date:	07/01/2022

OVERALL HORIZONTAL CONTROL

C1.0
Sheet 3 of 12

H:\Challenger Homes Inc\CO_Falcon - CLH000021 - FM at Bent Grass\4 ENGINEERING\PLOTS\C1.0 Overall Horizontal Control.dwg - User: Murphy - 6/30/2022

N

0 20 50 100

SCALE: 1"=100'

LEGEND

- EXISTING PROPERTY LINE (PROPOSED PROJECT BOUNDARY)
- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE (PROPOSED PROJECT BOUNDARY)
- EXISTING RIGHT OF WAY LINE
- PROPOSED RIGHT OF WAY LINE
- EXISTING LOT LINE
- PROPOSED LOT LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- EXISTING ROADWAY CENTER LINE
- PROPOSED ROADWAY CENTER LINE
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE
- EXISTING WATER LINE
- PROPOSED WATER LINE
- EXISTING SANITARY SEWER LINE
- PROPOSED SANITARY SEWER LINE
- EXISTING DRAINAGE FEATURE OUTLINE
- PROPOSED DRAINAGE FEATURE OUTLINE
- EXISTING SWALE WITH FLOW DIRECTION
- PROPOSED SWALE WITH FLOW DIRECTION
- 100-YEAR FEMA FLOODPLAIN
- PROPOSED CONCRETE
- PROPOSED GRAVEL PER ECM TABLE D-7
- PROPOSED RIP RAP
- EXISTING CONCRETE PAVING
- EXISTING GRAVEL PER ECM TABLE D-7
- EXISTING 1" TO 2" CRUSHED ROCK
- EXISTING RIP RAP
- EXISTING GROUTED BOULDERS
- PROPOSED LOT # (113)
- EXISTING LOT # (15)
- PROPOSED ADA RAMP
- PROPOSED FIRE HYDRANT
- PROPOSED GATE VALVE
- PROPOSED REDUCER
- PROPOSED WATER BEND/TEE
- PROPOSED SANITARY MANHOLE
- PROPOSED FES
- PROPOSED STORM MANHOLE
- PROPOSED CDOT TYPE R STORM INLET

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°13'46"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

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CONSTRUCTION DOCUMENTS
FALCON MEADOWS AT BENT GRASS FILING NO. 4
FOR
CHALLENGER COMMUNITIES, LLC

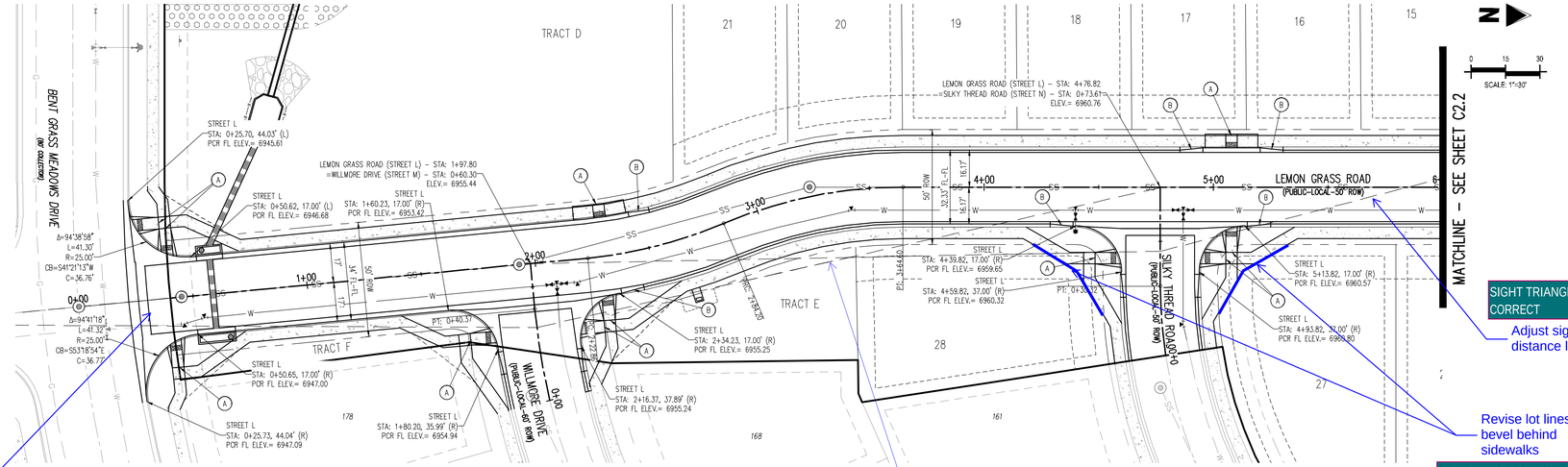
BENT GRASS MEADOWS DRIVE & MERDIAN ROAD
FALCON, CO 80831 - EL PASO COUNTY

#	Date	Issue / Description	Init.

Project No:	CLH000021
Drawn By:	CMWJ
Checked By:	RGD
Date:	07/01/2022

OVERALL SHEET

C2.0
Sheet 4 of 12



LEMON GRASS ROAD (STREET L) – PUBLIC 50' R.O.W.
25 MPH DESIGN SPEED (LOCAL)

Label features to be removed

EXISTING CONDITIONS & DEMOLITION PLAN HAS BEEN ADDED TO THE SET TO SHOW ALL FEATURES BEING REMOVED

PROFILE HAS BEEN UPDATED PER APPROVED SF-22-023 DEVIATION REQUEST

See deviation request comments

Label sight distance lines and easements

REVISED AS REQUESTED

SIGHT TRIANGLE IS CORRECT

Adjust sight distance line?

Revise lot lines to bevel behind sidewalks

REVISED AS REQUESTED - LOT 28 HAS BEEN RELOCATED ACCORDING TO REPLAT

KEY MAP
SCALE: 1"=500'

NOTES

1. ALL STATION CALLOUTS ARE IN RELATION TO THE CENTERLINE OF STORM SEWER MANHOLE RIMS AND INLETS MAY APPEAR OFFSET
2. STORM SEWER INLET FLOW LINE ELEVATION CALLOUTS TO NOT ACCOUNT FOR FLOW LINE DEPRESSION AT STORM SEWER INLET
3. ALL SPOT ELEVATIONS ARE TO FLOW LINE UNLESS OTHERWISE NOTED
4. SEE GRADING PLAN FOR ALL GRADING INFORMATION
5. ALL STORM SEWER SHALL BE CLASS III RCP
6. ALL STORM SEWER MANHOLES SHALL BE TYPE 1 UNLESS OTHERWISE NOTED
7. ALL CROSS PANS SHALL CONFORM TO EL PASO COUNTY DETAIL SD2-26

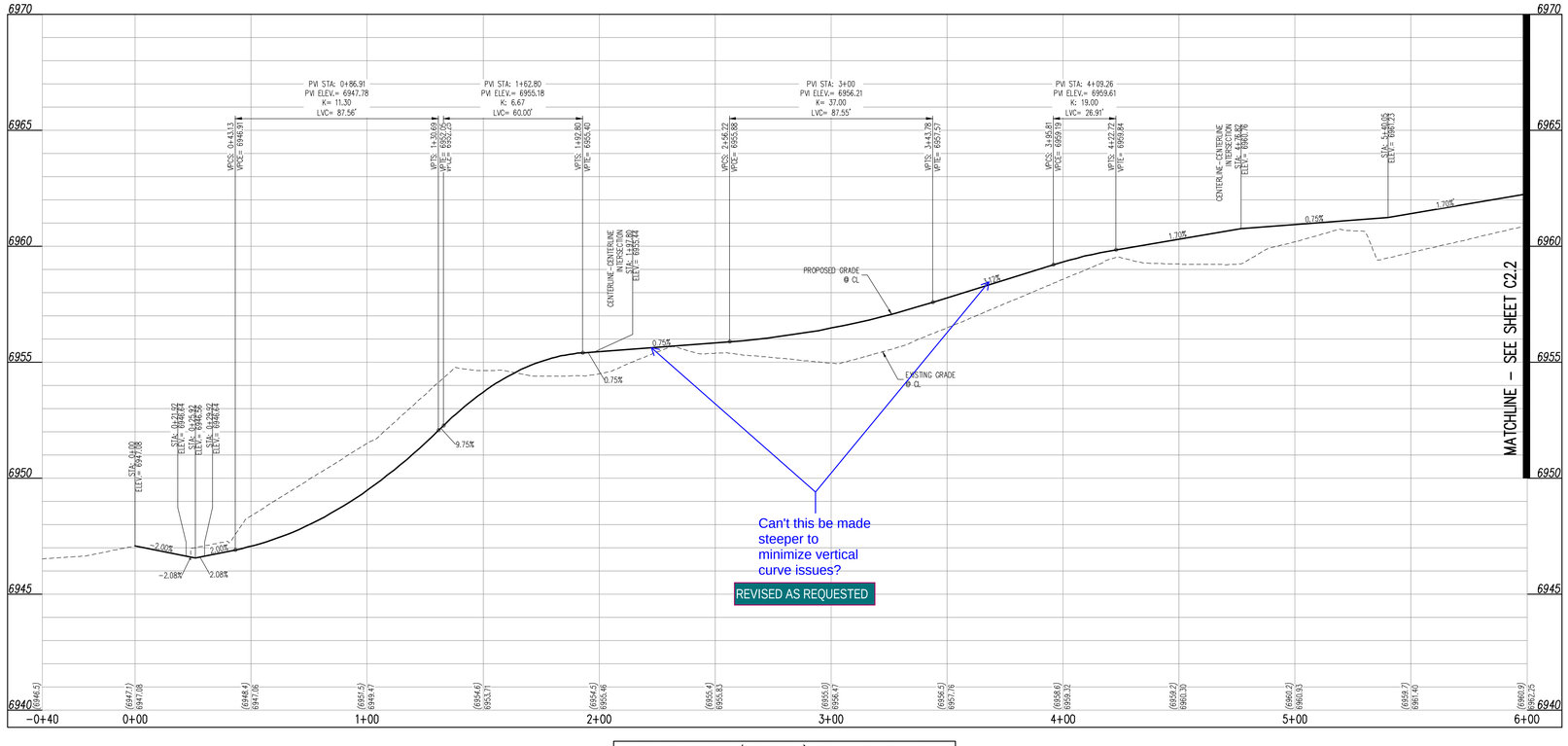
(A) PEDESTRIAN RAMP, SEE DETAILS (EPC SD_2-40 & SD_2-41)

(B) PROPOSED 10' CURB TRANSITION

(C) PROPOSED 5' CURB TRANSITION

LEGEND

- EXISTING PROPERTY LINE (PROPOSED PROJECT BOUNDARY)
- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE (PROPOSED PROJECT BOUNDARY)
- EXISTING RIGHT OF WAY LINE
- PROPOSED RIGHT OF WAY LINE
- EXISTING LOT LINE
- PROPOSED LOT LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- EXISTING ROADWAY CENTER LINE
- PROPOSED ROADWAY CENTER LINE
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE
- EXISTING WATER LINE
- PROPOSED WATER LINE
- EXISTING SANITARY SEWER LINE
- PROPOSED SANITARY SEWER LINE
- EXISTING DRAINAGE FEATURE OUTLINE
- PROPOSED DRAINAGE FEATURE OUTLINE
- EXISTING SWALE WITH FLOW DIRECTION
- PROPOSED SWALE WITH FLOW DIRECTION
- 100-YEAR FEMA FLOODPLAIN
- PROPOSED CONCRETE
- PROPOSED GRAVEL PER ECM TABLE D-7
- PROPOSED RIP RAP
- EXISTING CONCRETE PAVING
- EXISTING GRAVEL PER ECM TABLE D-7
- EXISTING 1" TO 2" CRUSHED ROCK
- EXISTING RIP RAP
- EXISTING GROUTED BOULDERS
- 113 PROPOSED LOT #
- 75 EXISTING LOT #
- PROPOSED ADA RAMP
- PROPOSED FIRE HYDRANT
- PROPOSED GATE VALVE
- PROPOSED REDUCER
- PROPOSED WATER BEND/TEE
- PROPOSED SANITARY MANHOLE
- PROPOSED FES
- PROPOSED STORM MANHOLE
- PROPOSED CDOT TYPE R STORM INLET



Can't this be made steeper to minimize vertical curve issues?

REVISED AS REQUESTED

LEMON GRASS DR. (STREET L) STA: −0+40 – 6+00
SCALE: H: 1"=30' V: 1"=3'

CONTRACTOR MUST COORDINATE WORK WITH WOODMEN HILLS METROPOLITAN DISTRICT PRIOR TO BEGINNING WORK AND IS RESPONSIBLE FOR ALL MATERIALS, LABOR, REPAIRS, ETC. TO COMPLETE WORK AND RESTORE AREA TO SAME STATE PRIOR TO STARTING WORK.

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MAINTAIN MINIMUM 18" VERTICAL AND 10' HORIZONTAL SEPARATION BETWEEN STORM SEWER AND POTABLE WATER OR WASTEWATER. A 12" VERTICAL CLEARANCE MUST BE MAINTAINED BETWEEN IRRIGATION LINES.

SURVEYOR TO OBTAIN AUTOCAD FILE FROM ENGINEER AND VERIFY ALL HORIZONTAL CONTROL DIMENSIONING PRIOR TO CONSTRUCTION STAKING. SURVEYOR MUST VERIFY ALL BENCHMARK, BASIS OF BEARING AND DATUM INFORMATION TO ENSURE IMPROVEMENTS WILL BE AT THE SAME HORIZONTAL AND VERTICAL LOCATIONS SHOWN ON THE DESIGN CONSTRUCTION DRAWINGS. PRIOR TO CONSTRUCTION STAKING ANY DISCREPANCY MUST BE REPORTED TO OWNER AND ENGINEER PRIOR TO CONTINUATION OF ANY FURTHER STAKING OR CONSTRUCTION WORK.

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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 LS# 24954 ELEVATION = 6947.67

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CHALLENGER HOMES

CONSTRUCTION DOCUMENTS
FALCON MEADOWS AT BENT GRASS FILING NO. 4
FOR
CHALLENGER COMMUNITIES, LLC

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

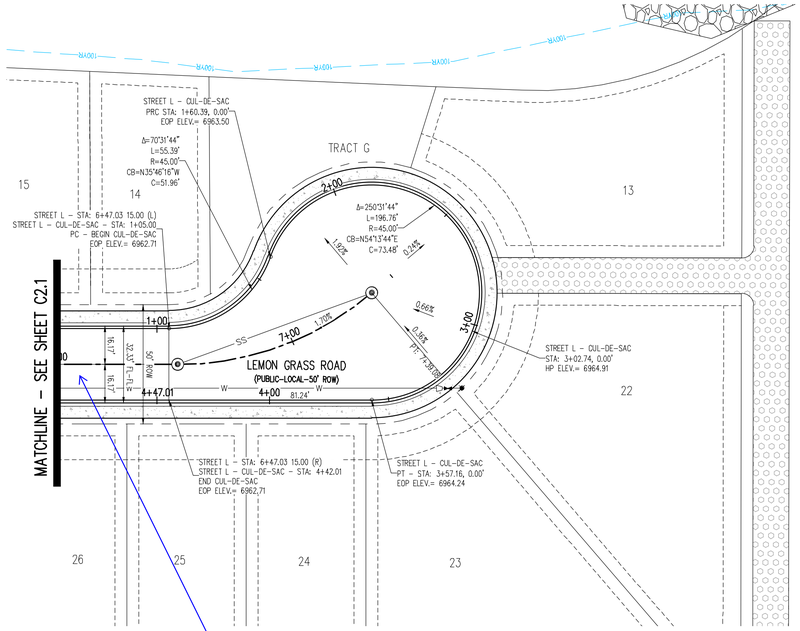
#	Date	Issue / Description	Init.

Project No:	CLH000021
Drawn By:	CMWJ
Checked By:	RGD
Date:	07/01/2022

LEMON GRASS RD
IMPROVEMENT PLAN

C2.1
Sheet 5 of 12

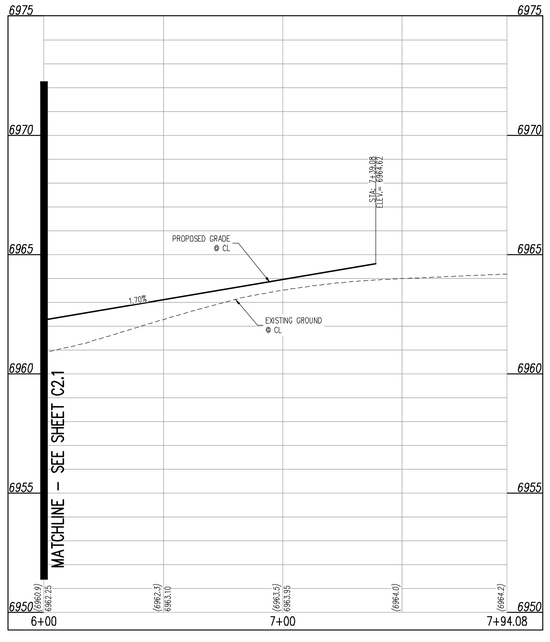
W:\Challenger Homes\CLH000021 - Falcon\...\CLH000021_FM at Bent Grass 4 MDP&PDR\PDR\PDR_C2.1_Lemon Grass Rd 1400 scale - Josh Brooks - 7/5/2022



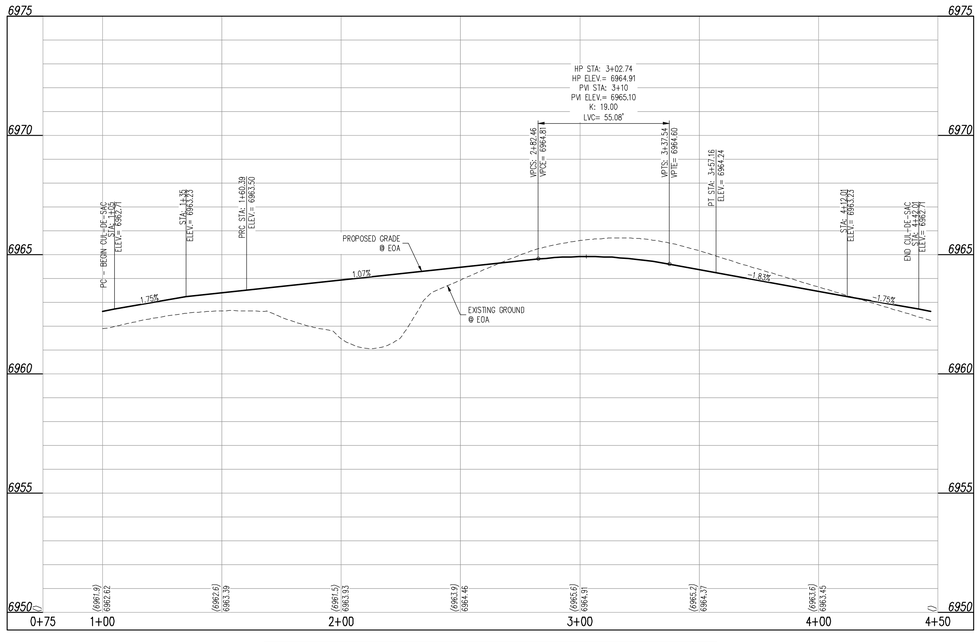
Show sight distance line

REVISED AS REQUESTED

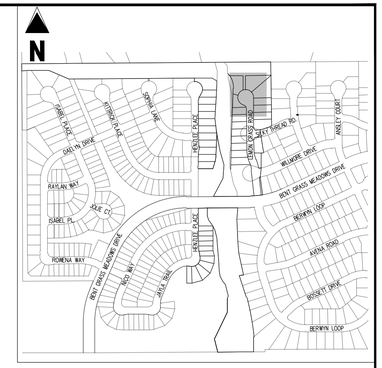
LEMON GRASS ROAD (STREET L) – PUBLIC 50' R.O.W.
25 MPH DESIGN SPEED (LOCAL)



LEMON GRASS DR. (STREET L) STA: 6+00 – 7+94.08
SCALE: H: 1"=30' V: 1"=3'



LEMON GRASS DR. (STREET L – CUL-DE-SAC) STA: 0+75 – 4+50
SCALE: H: 1"=30' V: 1"=3'



KEY MAP
SCALE: 1"=500'

LEGEND

- EXISTING PROPERTY LINE (PROPOSED PROJECT BOUNDARY)
- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE (PROPOSED PROJECT BOUNDARY)
- EXISTING RIGHT OF WAY LINE
- PROPOSED RIGHT OF WAY LINE
- EXISTING LOT LINE
- PROPOSED LOT LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- EXISTING ROADWAY CENTER LINE
- PROPOSED ROADWAY CENTER LINE
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE
- W — EXISTING WATER LINE
- W — PROPOSED WATER LINE
- SS — EXISTING SANITARY SEWER LINE
- SS — PROPOSED SANITARY SEWER LINE
- EXISTING DRAINAGE FEATURE OUTLINE
- PROPOSED DRAINAGE FEATURE OUTLINE
- EXISTING SWALE WITH FLOW DIRECTION
- PROPOSED SWALE WITH FLOW DIRECTION
- 100YR — 100-YEAR FEMA FLOODPLAIN
- PROPOSED CONCRETE
- PROPOSED GRAVEL PER ECM TABLE D-7
- PROPOSED RIP RAP
- EXISTING CONCRETE PAVING
- EXISTING GRAVEL PER ECM TABLE D-7
- EXISTING 1" TO 2" CRUSHED ROCK
- EXISTING RIP RAP
- EXISTING GROUTED BOULDERS
- 113 — PROPOSED LOT #
- 15 — EXISTING LOT #
- PROPOSED ADA RAMP
- PROPOSED FIRE HYDRANT
- PROPOSED GATE VALVE
- PROPOSED REDUCER
- PROPOSED WATER BEND/TEE
- PROPOSED SANITARY MANHOLE
- PROPOSED FES
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NOTES

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7. ALL CROSS PANS SHALL CONFORM TO EL PASO COUNTY DETAIL SD2-26

(A) PEDESTRIAN RAMP, SEE DETAILS (EPC SD_2-40 & SD_2-41)

(B) PROPOSED 10' CURB TRANSITION

(C) PROPOSED 5' CURB TRANSITION

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

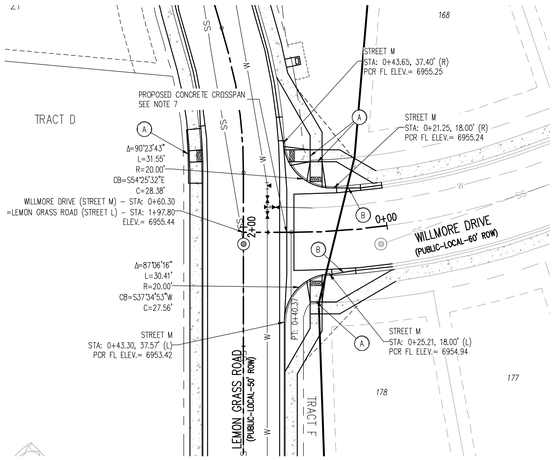
#	Date	Issue / Description	Init.
–			

Project No:	CLH000021
Drawn By:	CMWJ
Checked By:	RGD
Date:	07/01/2022

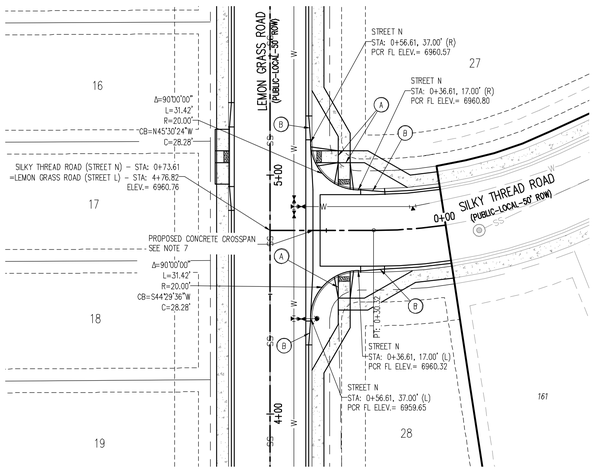
LEMON GRASS RD IMPROVEMENT PLAN

C2.2
Sheet 6 of 12

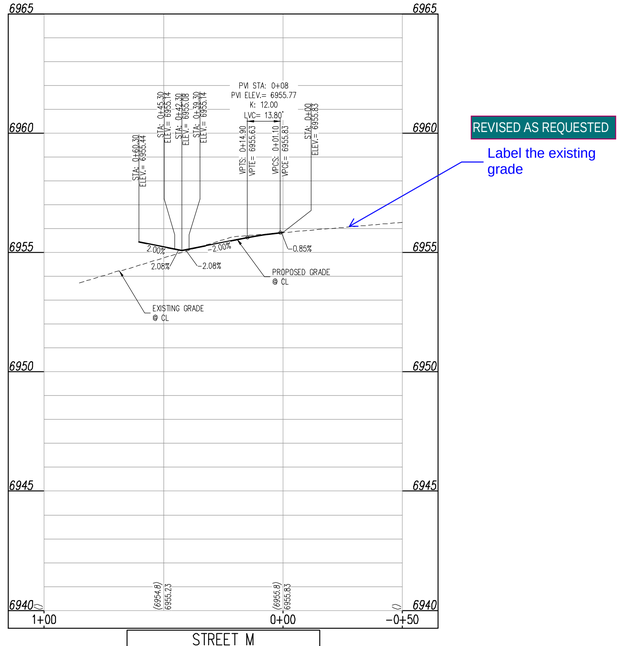
H:\Challenger Homes Inc\CO Falcon - CLH000021 - Fal at Bent Grass\4 ENGINEERING\PLOT\C2.2_Lemon Grass Rd Plan.dwg, Jon Murphy, 7/5/2022



WILLMORE DRIVE (STREET M) – PUBLIC 50' R.O.W.
25 MPH DESIGN SPEED (LOCAL)



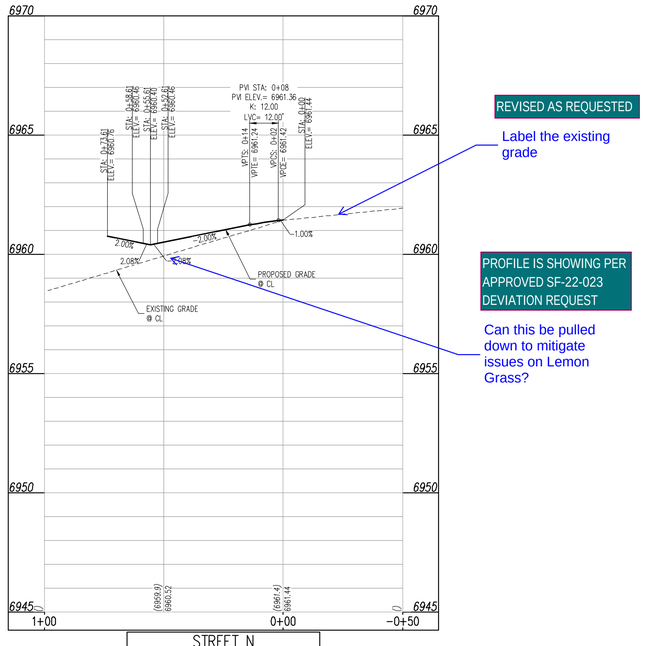
SILKY THREAD ROAD (STREET N) – PUBLIC 50' R.O.W.
25 MPH DESIGN SPEED (LOCAL)



STREET M
STA: −0+50 – 1+00
SCALE: H: 1"=30' V: 1"=3'

REVISED AS REQUESTED

Label the existing grade



STREET N
STA: −0+50 – 1+00
SCALE: H: 1"=30' V: 1"=3'

REVISED AS REQUESTED

Label the existing grade

PROFILE IS SHOWING PER APPROVED SF-22-023 DEVIATION REQUEST

Can this be pulled down to mitigate issues on Lemon Grass?

NOTES

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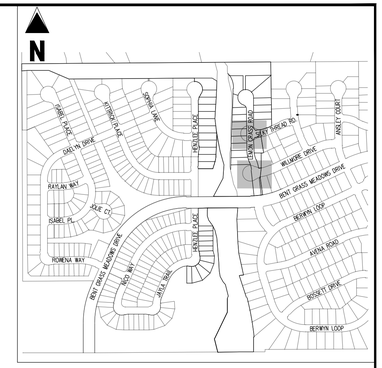
(C) PROPOSED 5' CURB TRANSITION



KEY MAP
SCALE: 1"=500'

LEGEND

- EXISTING PROPERTY LINE (PROPOSED PROJECT BOUNDARY)
- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE (PROPOSED PROJECT BOUNDARY)
- EXISTING RIGHT OF WAY LINE
- PROPOSED RIGHT OF WAY LINE
- EXISTING LOT LINE
- PROPOSED LOT LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- EXISTING ROADWAY CENTER LINE
- PROPOSED ROADWAY CENTER LINE
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE
- W — EXISTING WATER LINE
- W — PROPOSED WATER LINE
- SS — EXISTING SANITARY SEWER LINE
- SS — PROPOSED SANITARY SEWER LINE
- EXISTING DRAINAGE FEATURE OUTLINE
- PROPOSED DRAINAGE FEATURE OUTLINE
- EXISTING SWALE WITH FLOW DIRECTION
- PROPOSED SWALE WITH FLOW DIRECTION
- 100YR — 100-YEAR FEMA FLOODPLAIN
- PROPOSED CONCRETE
- PROPOSED GRAVEL PER ECM TABLE D-7
- PROPOSED RIP RAP
- EXISTING CONCRETE PAVING
- EXISTING GRAVEL PER ECM TABLE D-7
- EXISTING 1" TO 2" CRUSHED ROCK
- EXISTING RIP RAP
- EXISTING GROUTED BOULDERS
- 113 — PROPOSED LOT #
- 75 — EXISTING LOT #
- PROPOSED ADA RAMP
- PROPOSED FIRE HYDRANT
- PROPOSED GATE VALVE
- PROPOSED REDUCER
- PROPOSED WATER BEND/TEE
- PROPOSED SANITARY MANHOLE
- PROPOSED FES
- PROPOSED STORM MANHOLE
- PROPOSED CDOT TYPE R STORM INLET

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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 LS# 24954 ELEVATION = 6947.67

CAUTION – NOTICE TO CONTRACTOR

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CHALLENGER HOMES

CONSTRUCTION DOCUMENTS
FALCON MEADOWS AT BENT GRASS FILING NO. 4
FOR
CHALLENGER COMMUNITIES, LLC

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

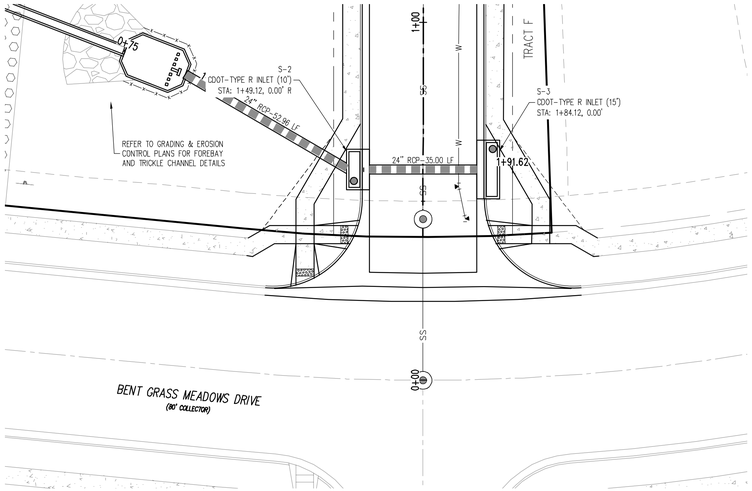
#	Date	Issue / Description	Init.
--			

Project No:	CLH000021
Drawn By:	CMWJ
Checked By:	RGD
Date:	07/01/2022

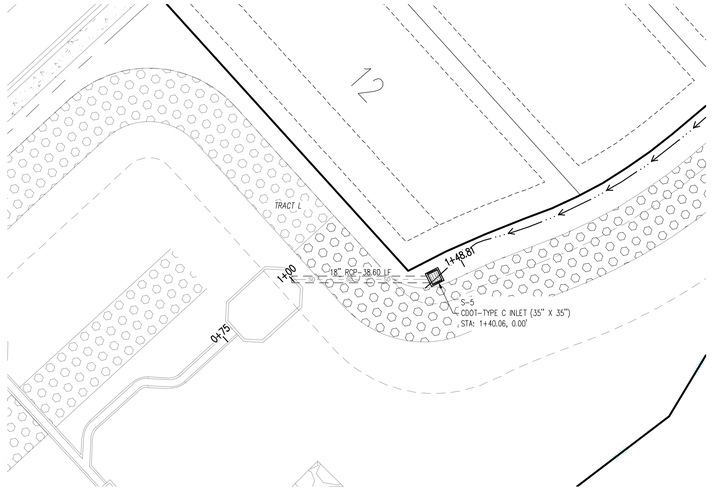
ROAD IMPROVEMENT PLANS

C2.3
Sheet 7 of 12

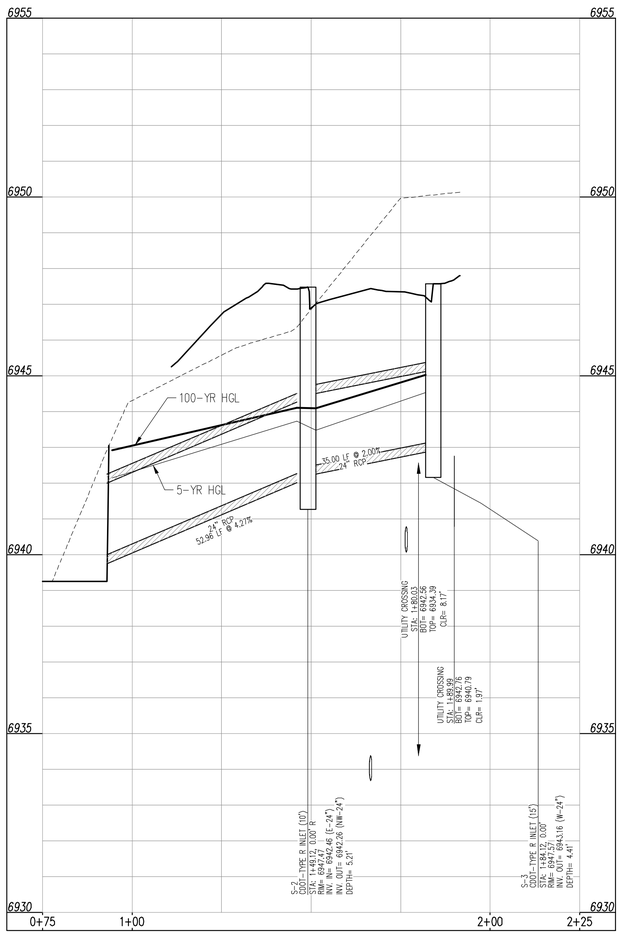
M:\Challenger Homes\CLH000021 Falcon - CLH000021 - Fall at Bent Grass\4 ENGINEERING\PLOTS\C2.3_Road PIP.dwg, 7/8/2022 1:57:49 PM, CMWJ



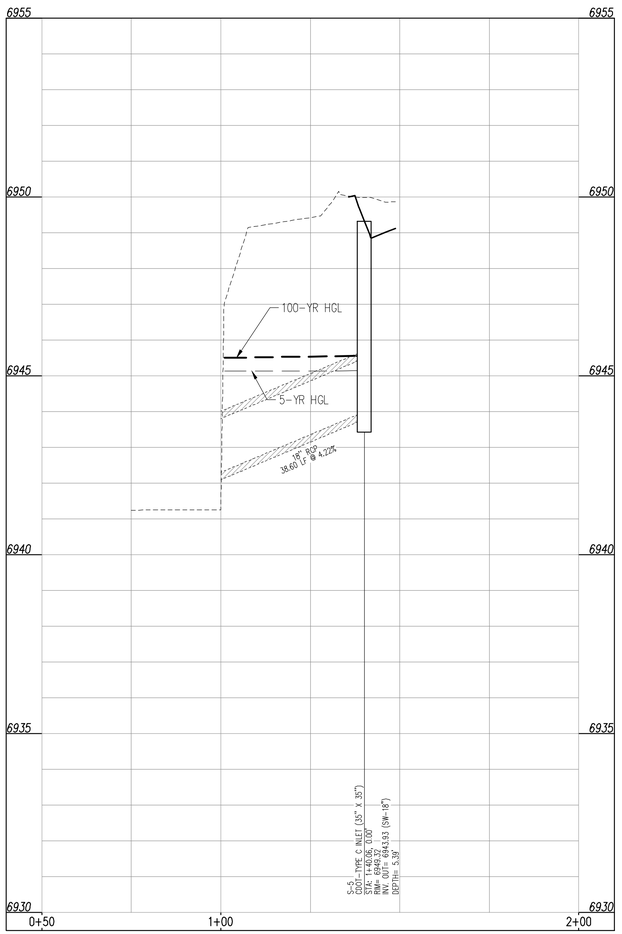
STORM DRAIN LINE A – PLAN



STORM DRAIN LINE B – PLAN



STM-LINE A
STA: 0+75 – 2+25
SCALE: H: 1"=30' V: 1"=3'



STM-LINE B
STA: 0+50 – 2+00
SCALE: H: 1"=30' V: 1"=3'

LEGEND

- EXISTING PROPERTY LINE
- EXISTING PROPERTY LINE TO BE REMOVED
- PROPOSED RIGHT OF WAY LINE
- EXISTING LOT LINE
- PROPOSED LOT LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- EXISTING SUBDIVISION BUFFER
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE
- EXISTING WATER LINE
- PROPOSED WATER LINE
- EXISTING SANITARY SEWER LINE
- PROPOSED SANITARY SEWER LINE
- EXISTING DRAINAGE FEATURE OUTLINE
- PROPOSED DRAINAGE FEATURE OUTLINE
- EXISTING SWALE WITH FLOW DIRECTION
- PROPOSED SWALE WITH FLOW DIRECTION
- 100-YEAR FEMA FLOODPLAIN
- PROPOSED GRAVEL PER ECM TABLE D-7
- PROPOSED RIP RAP
- EXISTING CONCRETE PAVING
- EXISTING GRAVEL PER ECM TABLE D-7
- EXISTING 1" TO 2" CRUSHED ROCK
- EXISTING RIP RAP
- EXISTING GROUTED BOULDERS
- 113 PROPOSED LOT #
- EXISTING LOT # (BENT GRASS FILING NO. 2)
- PROPOSED ADA RAMP
- PROPOSED FIRE HYDRANT
- PROPOSED GATE VALVE
- PROPOSED REDUCER
- PROPOSED WATER BEND/TEE
- PROPOSED SANITARY MANHOLE
- PROPOSED FES
- PROPOSED STORM MANHOLE
- PROPOSED CDOT TYPE R STORM INLET

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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 LS# 24954 ELEVATION = 6947.67

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CHALLENGER HOMES

CONSTRUCTION DOCUMENTS
FALCON MEADOWS AT BENT GRASS FILING NO. 4
FOR
CHALLENGER COMMUNITIES, LLC

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

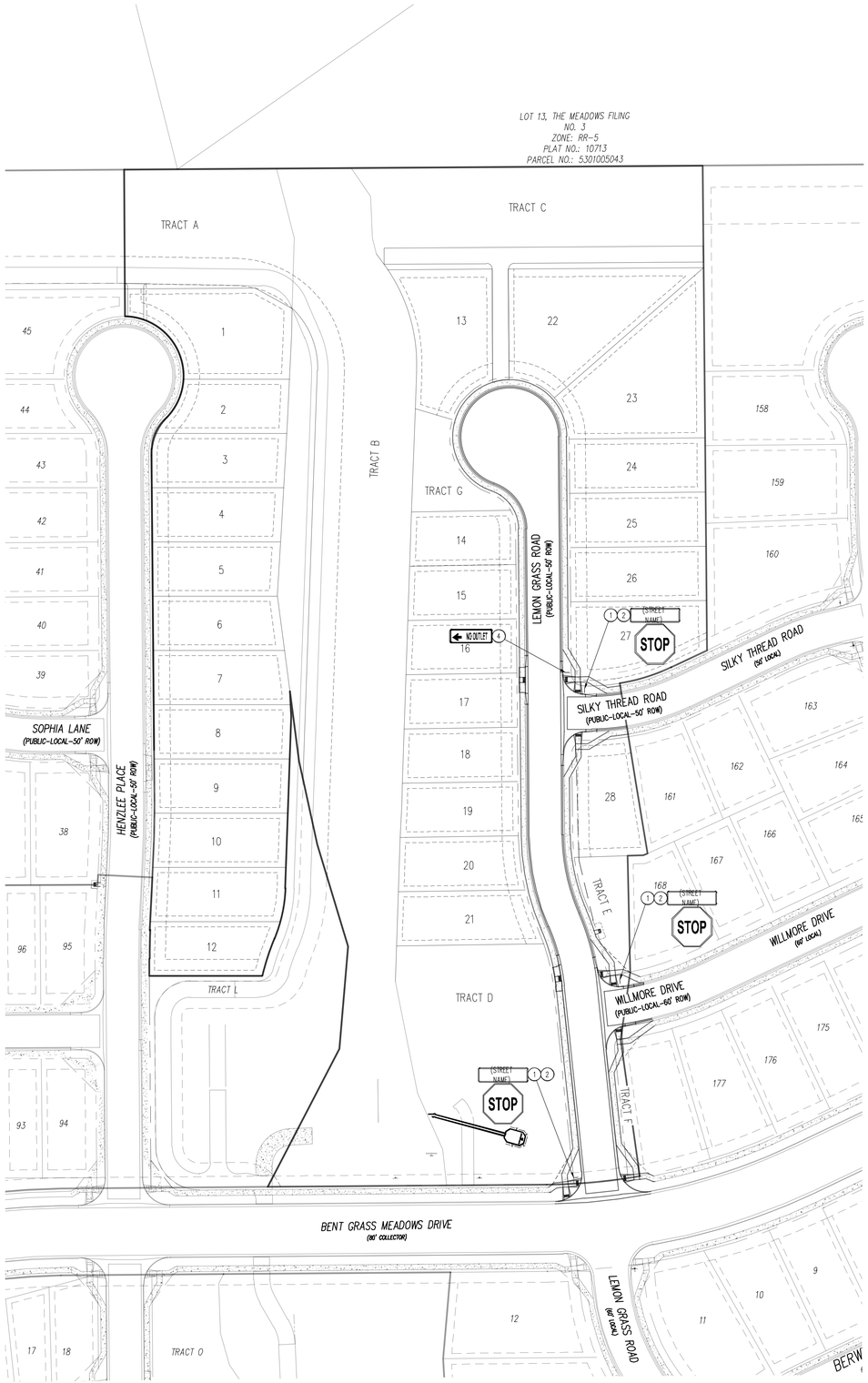
#	Date	Issue / Description	Init.
-			

Project No:	CLH000021
Drawn By:	CMWJ
Checked By:	RGD
Date:	07/01/2022

STORM DRAIN PLAN & PROFILE

C2.4
Sheet 8 of 12

I:\Challenger Homes Inc\CO, Falcon - CLH000021 - Fal at Bent Grass Fil 4\CAD\ACDWG\SHEETS\C2.4_Storm Drain Plan & Profile.dwg, 7/6/2022 7:48:39 AM, cmwj



N

0 10 30 60

SCALE: 1"=60'

LEGEND

- EXISTING PROPERTY LINE (PROJECT BOUNDARY)
- EXISTING PROPERTY LINE
- EXISTING RIGHT OF WAY LINE
- PROPOSED PROPERTY LINE (PROJECT BOUNDARY)
- PROPOSED RIGHT OF WAY LINE
- EXISTING LOT LINE
- PROPOSED LOT LINE
- PROPOSED EASEMENT
- 100YR — 100-YEAR FEMA FLOODPLAIN
- 51 — PROPOSED LOT NUMBER
- *101* — EXISTING LOT #

SCHEDULE

1. PROPOSED STOP SIGN, MUTCD SIGN R1-1
2. PROPOSED STREET NAME SIGN, MUTCD SIGN D3-1
3. PROPOSED TYPE III BARRICADE W/ MUTCD R11-2
4. PROPOSED NO OUTLET SIGN, MUTCD W14-2A

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BENCHMARK

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FALCON MEADOWS AT BENT GRASS FILING NO. 4
FOR
CHALLENGER COMMUNITIES, LLC

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

#	Date	Issue / Description	Init.
-			

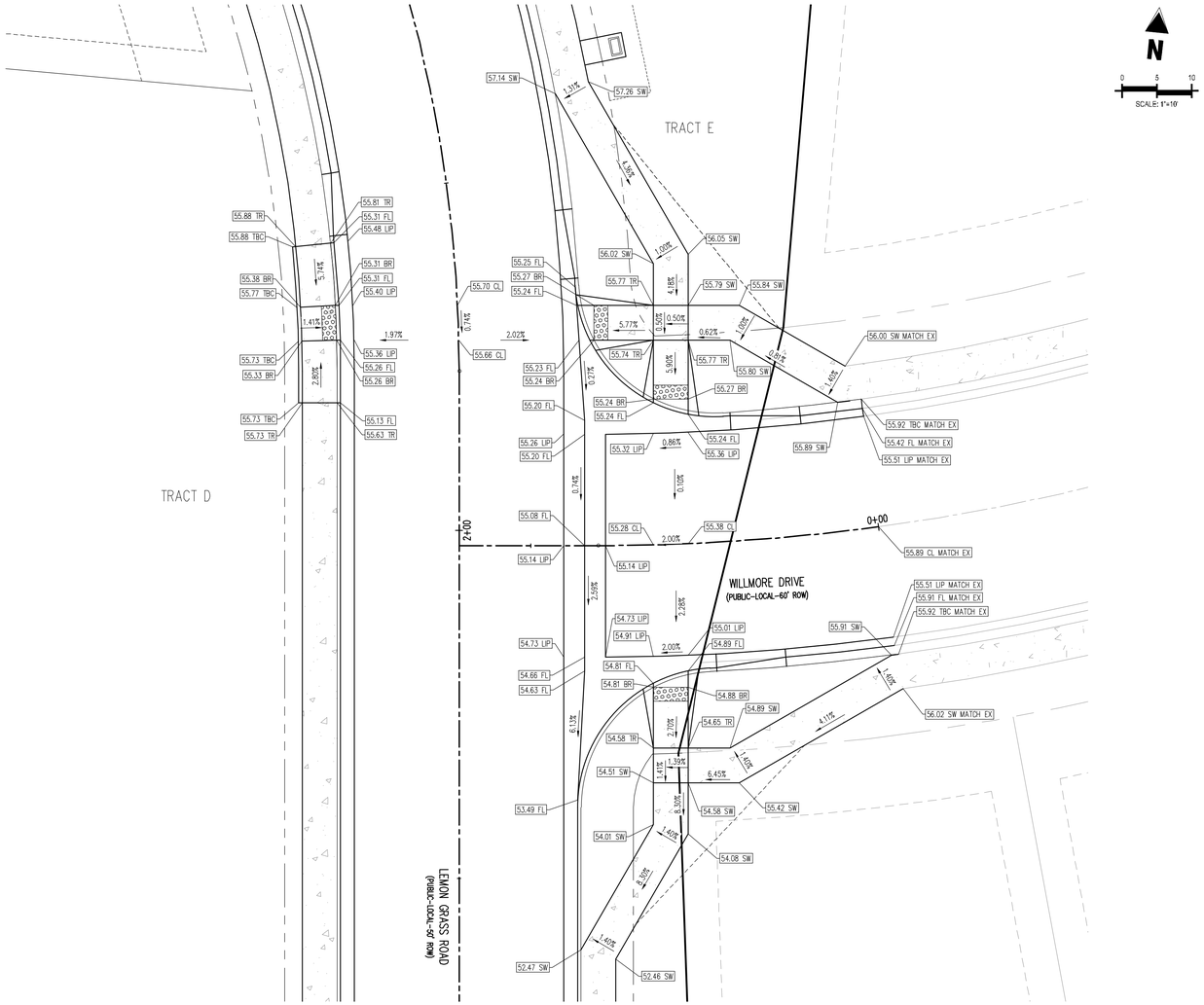
Project No:	CLH000021
Drawn By:	CMWJ
Checked By:	RGD
Date:	07/01/2022

SIGNAGE PLAN

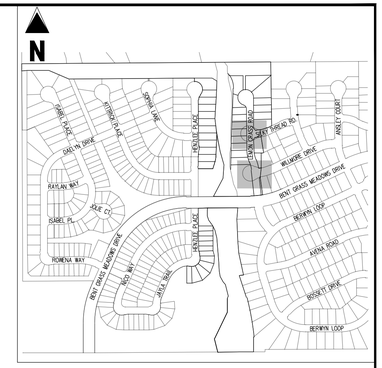
C3.1

Sheet 9 of 12

VC:\Challenger Homes\CLH000021 - FM at Bent Grass\ENGINEERING\PLOT_CSA\Signage\Signage - Joel Murphy - 1908.dwg



LEMON GRASS ROAD & WILLMORE DRIVE DETAIL GRADING



KEY MAP

SCALE: 1"=500'

LEGEND

- EXISTING PROPERTY LINE (PROPOSED PROJECT BOUNDARY)
- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE (PROPOSED PROJECT BOUNDARY)
- EXISTING RIGHT OF WAY LINE
- PROPOSED RIGHT OF WAY LINE
- EXISTING LOT LINE
- PROPOSED LOT LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- EXISTING ROADWAY CENTER LINE
- PROPOSED ROADWAY CENTER LINE
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE
- W — EXISTING WATER LINE
- W — PROPOSED WATER LINE
- SS — EXISTING SANITARY SEWER LINE
- SS — PROPOSED SANITARY SEWER LINE
- EXISTING DRAINAGE FEATURE OUTLINE
- PROPOSED DRAINAGE FEATURE OUTLINE
- EXISTING SWALE WITH FLOW DIRECTION
- PROPOSED SWALE WITH FLOW DIRECTION
- 100YR — 100-YEAR FEMA FLOODPLAIN
- PROPOSED CONCRETE
- PROPOSED CDOT CLASS 6 GRAVEL
- PROPOSED RIP RAP
- EXISTING CONCRETE PAVING
- EXISTING CDOT CLASS 6 GRAVEL
- EXISTING 1" TO 2" CRUSHED ROCK
- EXISTING RIP RAP
- EXISTING GROUTED BOULDERS
- 113 — PROPOSED LOT #
- 15 — EXISTING LOT #

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BENCHMARK

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FALCON MEADOWS AT BENT GRASS FILING NO. 4
FOR
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BENT GRASS MEADOWS DRIVE & MERDIAN ROAD
FALCON, CO 80831 - EL PASO COUNTY

#	Date	Issue / Description	Init.
--			

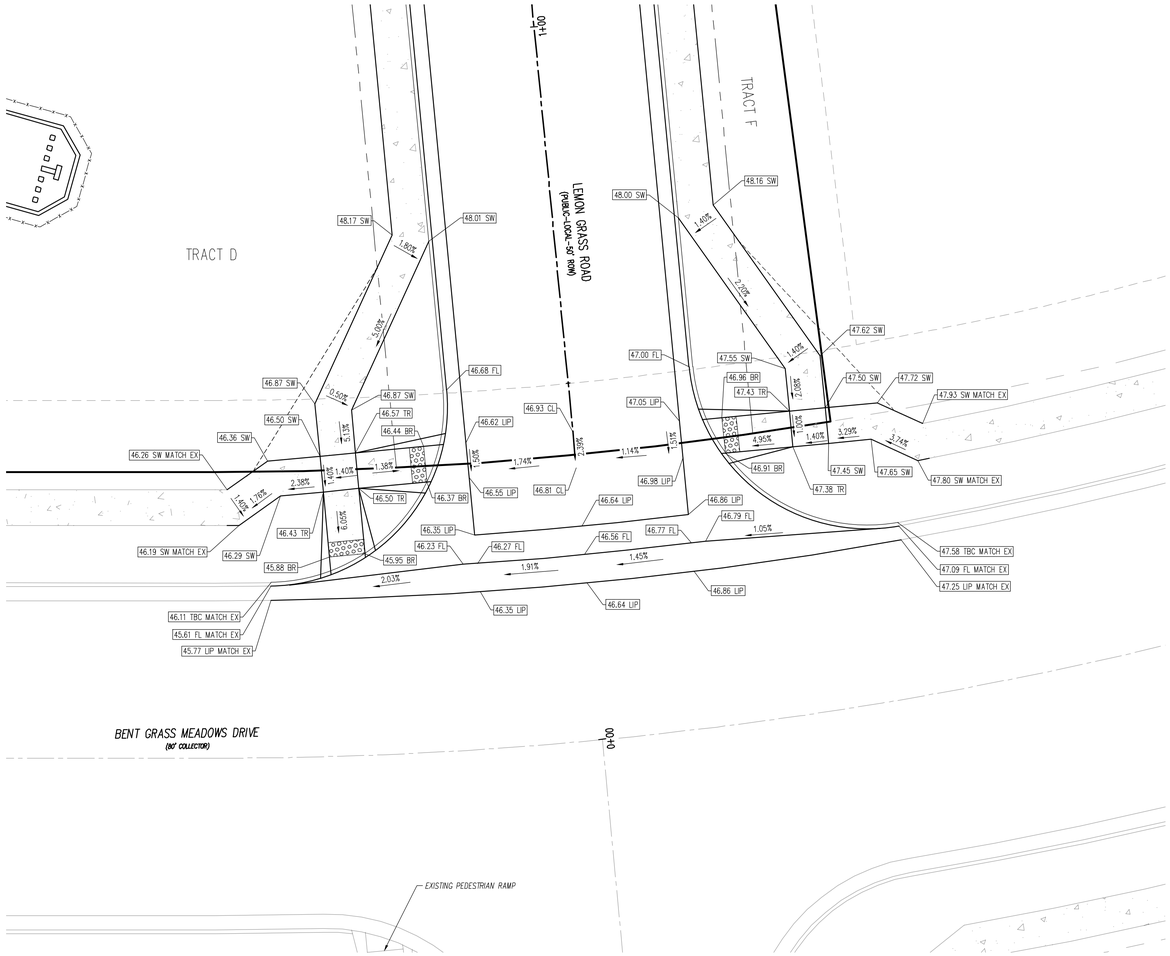
Project No:	CLH000021
Drawn By:	CMWJ
Checked By:	RCD
Date:	07/01/2022

INTERSECTION DETAIL

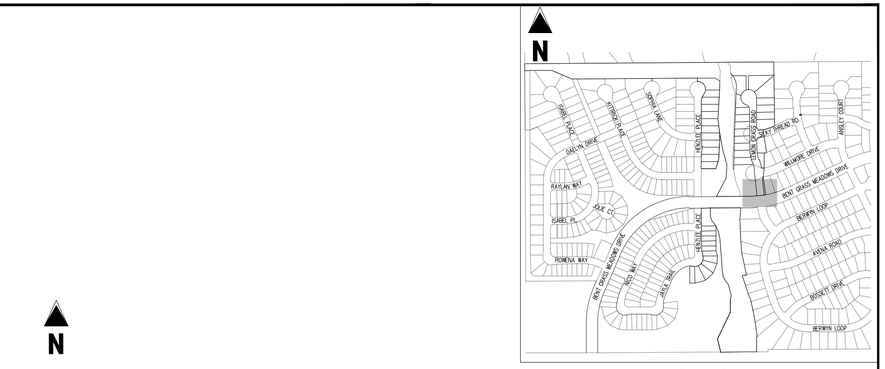
C4.1

Sheet 10 of 12

W:\Challenger Homes\CH Falcon - CLH000021 - Falcon Bent Grass Filing 4\ENGINEERING\PLOTS\C4.1_Intersection.dwg, Josh Murphy, 7/5/2022



LEMON GRASS ROAD & BENT GRASS MEADOWS DRIVE DETAIL GRADING



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SCALE: 1"=500'

LEGEND

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- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE (PROPOSED PROJECT BOUNDARY)
- EXISTING RIGHT OF WAY LINE
- PROPOSED RIGHT OF WAY LINE
- EXISTING LOT LINE
- PROPOSED LOT LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- EXISTING ROADWAY CENTER LINE
- PROPOSED ROADWAY CENTER LINE
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE
- W — EXISTING WATER LINE
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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 POTHOLING OR ALTERNATIVE METHOD. REPORT INFORMATION TO THE ENGINEER PRIOR TO CONSTRUCTION.

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CHALLENGER HOMES

CONSTRUCTION DOCUMENTS
FALCON MEADOWS AT BENT GRASS FILING NO. 4
FOR
CHALLENGER COMMUNITIES, LLC

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

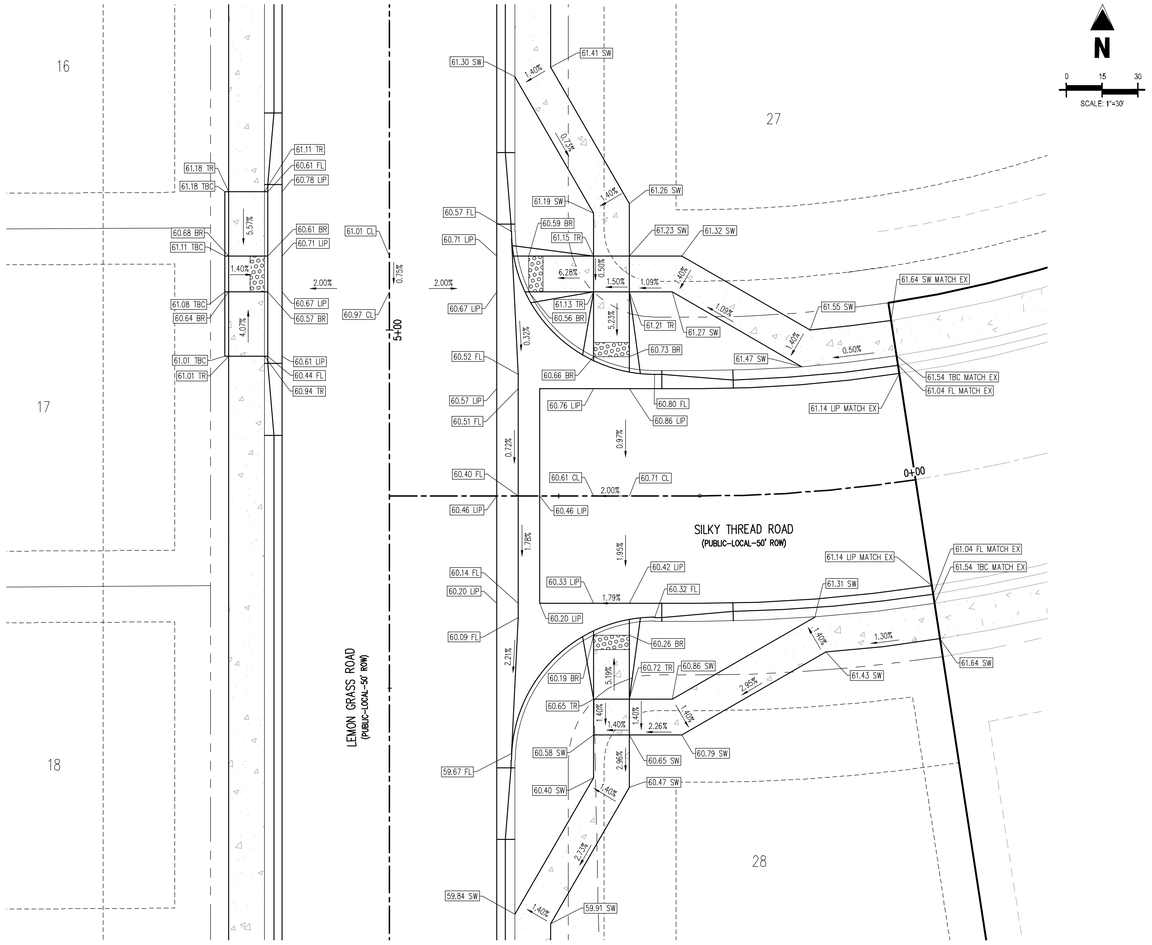
#	Date	Issue / Description	Init.
-			

Project No:	CLH000921
Drawn By:	CMWJ
Checked By:	RGD
Date:	07/01/2022

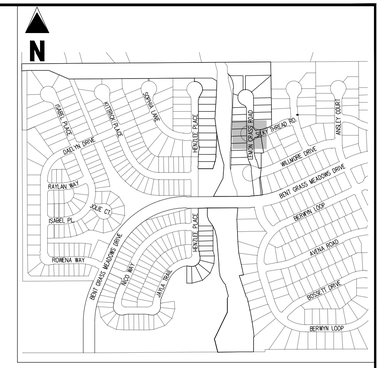
INTERSECTION DETAIL

C4.2
Sheet 11 of 12

W:\Challenger Homes\ENGD Folder - CLH000921 - FM at Bent Grass\ENGDRWG\ENGDPLOT_CLH_Intersections.dwg, Josh Mallory, 6/30/2022



LEMON GRASS ROAD & SILKY DRIVE DETAIL GRADING



KEY MAP
SCALE: 1"=500'

LEGEND

- EXISTING PROPERTY LINE (PROPOSED PROJECT BOUNDARY)
- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE (PROPOSED PROJECT BOUNDARY)
- EXISTING RIGHT OF WAY LINE
- PROPOSED RIGHT OF WAY LINE
- EXISTING LOT LINE
- PROPOSED LOT LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- EXISTING ROADWAY CENTER LINE
- PROPOSED ROADWAY CENTER LINE
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE
- W — EXISTING WATER LINE
- W — PROPOSED WATER LINE
- SS — EXISTING SANITARY SEWER LINE
- SS — PROPOSED SANITARY SEWER LINE
- EXISTING DRAINAGE FEATURE OUTLINE
- PROPOSED DRAINAGE FEATURE OUTLINE
- EXISTING SWALE WITH FLOW DIRECTION
- PROPOSED SWALE WITH FLOW DIRECTION
- 100YR — 100-YEAR FEMA FLOODPLAIN
- PROPOSED CONCRETE
- PROPOSED CDOT CLASS 6 GRAVEL
- PROPOSED RIP RAP
- EXISTING CONCRETE PAVING
- EXISTING CDOT CLASS 6 GRAVEL
- EXISTING 1" TO 2" CRUSHED ROCK
- EXISTING RIP RAP
- EXISTING GROUTED BOULDERS
- 113 — PROPOSED LOT #
- 15 — EXISTING LOT #

CONTRACTOR MUST COORDINATE WORK WITH WOODMEN HILLS METROPOLITAN DISTRICT PRIOR TO BEGINNING WORK AND IS RESPONSIBLE FOR ALL MATERIALS, LABOR, REPAIRS, ETC. TO COMPLETE WORK AND RESTORE AREA TO SAME STATE PRIOR TO STARTING WORK.

LENGTHS OF STORM SEWER ARE THE HORIZONTAL DISTANCES FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE UNLESS OTHERWISE NOTED. THEREFORE LENGTHS SHOWN ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT AND STRUCTURE WIDTHS.

MAINTAIN MINIMUM 18" VERTICAL AND 10' HORIZONTAL SEPARATION BETWEEN STORM SEWER AND POTABLE WATER OR WASTEWATER. A 12" VERTICAL CLEARANCE MUST BE MAINTAINED BETWEEN IRRIGATION LINES.

SURVEYOR TO OBTAIN AUTOCAD FILE FROM ENGINEER AND VERIFY ALL HORIZONTAL CONTROL DIMENSIONING PRIOR TO CONSTRUCTION STAKING. SURVEYOR MUST VERIFY ALL BENCHMARK, BASIS OF BEARING AND DATUM INFORMATION TO ENSURE IMPROVEMENTS WILL BE AT THE SAME HORIZONTAL AND VERTICAL LOCATIONS SHOWN ON THE DESIGN CONSTRUCTION DRAWINGS. PRIOR TO CONSTRUCTION STAKING ANY DISCREPANCY MUST BE REPORTED TO OWNER AND ENGINEER PRIOR TO CONTINUATION OF ANY FURTHER STAKING OR CONSTRUCTION WORK.

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°13'46"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

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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 POTHOLING OR ALTERNATIVE METHOD. REPORT INFORMATION TO THE ENGINEER PRIOR TO CONSTRUCTION.

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CHALLENGER HOMES

CONSTRUCTION DOCUMENTS
FALCON MEADOWS AT BENT GRASS FILING NO. 4
FOR
CHALLENGER COMMUNITIES, LLC

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

#	Date	Issue / Description	Init.
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Project No:	CLH000021
Drawn By:	CMWJ
Checked By:	RGD
Date:	07/01/2022

INTERSECTION DETAIL

C4.3
Sheet 12 of 12

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WATER AND WASTEWATER CONSTRUCTION PLANS
FALCON MEADOWS AT BENT GRASS FILING NO. 4
FALCON, CO 80831 - EL PASO COUNTY
CHALLENGER COMMUNITIES, LLC

PROJECT CONTACTS

OWNER/DEVELOPER
CHALLENGER COMMUNITIES, LLC
13570 NORTHGATE ESTATES DR.
COLORADO SPRINGS, CO 80921
TELE: (719) 598-5190
ATTN: JIM BYERS
EMAIL: JIM@CHALLENGERHOMES.COM

APPLICANT
NES, INC.
619 NORTH CASCADE AVENUE, SUITE 200
COLORADO SPRINGS, CO 80903
TELE: (719) 471-0073
ATTN: BROOKS SWENSON
EMAIL: BSWENSONRADO.COM

CIVIL ENGINEER
GALLOWAY & CO., INC.
1155 KELLY JOHNSON BLVD., SUITE 305
COLORADO SPRINGS, CO 80920
TELE: (719) 900-7220
ATTN: GRANT DENNIS, P.E.
EMAIL: GRANTDENNIS@GALLOWAYUS.COM

GEOTECHNICAL ENGINEER
ROCKY MOUNTAIN GROUP
2910 AUSTIN BLUFFS PKWY
COLORADO SPRINGS, CO 80918
TELE: (719) 394-3072
ATTN: TONY MUNGER, P.E.
EMAIL: TMUNGER@RMG-ENGINEERS.COM

TRAFFIC ENGINEER
LSC TRANSPORTATION CONSULTANTS, INC.
545 EAST PIKES PEAK AVENUE, SUITE 210
COLORADO SPRINGS, CO 80903
TELE: (719) 633-2868
ATTN: JEFFREY C. HODSON, P.E.
EMAIL: JEFF@LSCTRANS.COM

SURVEYOR
GALLOWAY & CO., INC.
1155 KELLY JOHNSON BLVD., SUITE 305
COLORADO SPRINGS, CO 80920
TELE: (719) 337-1262
ATTN: BRIAN DENNIS
EMAIL: BRIANDENNIS@GALLOWAYUS.COM

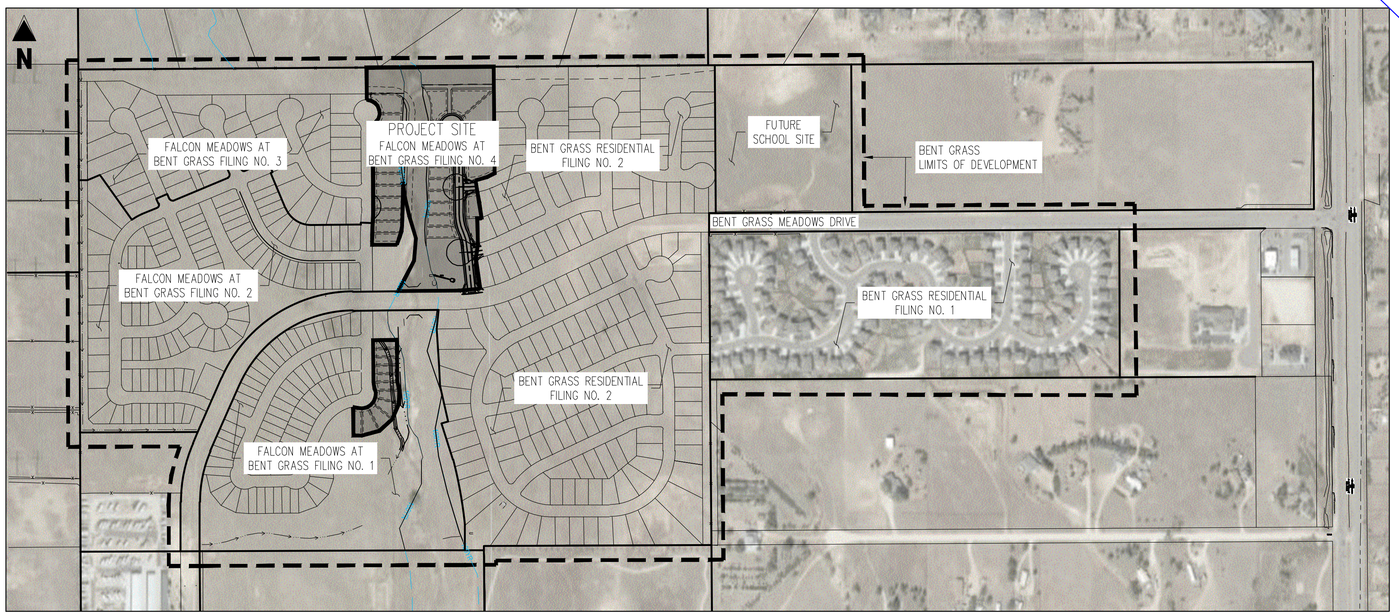
UTILITY CONTACTS

WATER & WASTEWATER
WOODMEN HILLS METRO DISTRICT
8046 EASTONVILLE ROAD
FALCON, CO 80831
TELE: (719) 495-2500
ATTN: CODY RITTER
EMAIL: CODY@WHMD.ORG

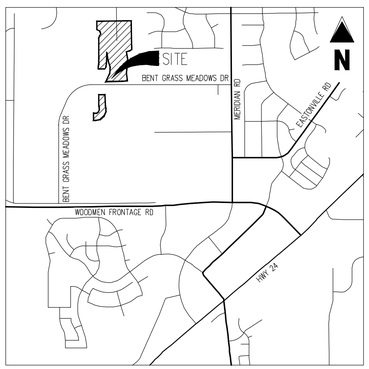
ELECTRIC
MOUNTAIN VIEW ELECRIC
11140 E WOODMEN RD
FALCON, CO 80831
TELE: (719) 495-2283
CATHY HANSEN-LEE
EMAIL: CATHY.H@MVEA.COOP

NATURAL GAS
COLORADO SPRINGS UTILITIES (CSU)
7710 DURANT DRIVE, P.O. BOX 1103, MAIL CODE 2150
COLORADO SPRINGS, CO 80947-2150
TELE: (719) 668-5573
AARON CASSIO
EMAIL: ACASSIO@CSU.ORG

FIRE
FALCON FIRE PROTECTION DISTRICT
7030 OLD MERIDIAN ROAD
PEYTON, CO 80831
TELE: (719) 495-4050
EMAIL: FALCONFIRE@FALCONFIREPD.ORG



SITE MAP
SCALE: 1"=300'



VICINITY MAP
1"=2,000'

SHEET INDEX

SHEET NUMBER	SHEET TITLE	SHEET DESCRIPTION
1	UTILITY COVER SHEET	U0.0
2	UTILITY NOTES AND TYPICAL SECTION	U0.1
3	OVERALL SHEET	U0.2
4	OVERALL HORIZONTAL CONTROL	U0.3
5	WATER PLAN	U1.1
6	WASTEWATER PLAN & PROFILE	U2.1
7	WASTEWATER PLAN & PROFILE	U2.2
8	WATER DETAILS SHEET 1	U3.1
9	WATER DETAILS SHEET 2	U3.2
10	WATER DETAILS SHEET 3	U3.3
11	WASTEWATER DETAILS SHEET 1	U3.4
12	WASTEWATER DETAILS SHEET 2	U3.5

WILL INCLUDE ONCE APPROVED

Include signed sheet

WATER AND SEWER MAIN EXTENSIONS:

ANY CHANGES OR ALTERATIONS AFFECTING THE GRADE, ALIGNMENT, ELEVATION AND/OR DEPTH OF COVER OF ANY WATER OR SEWER MAINS OR OTHER APPURTENANCE SHOWN ON THIS DRAWING SHALL BE THE RESPONSIBILITY OF THE OWNER/DEVELOPER. THE OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR ALL OPERATIONAL DAMAGES AND DEFECTS IN INSTALLATION AND MATERIAL FOR MAINS AND SERVICES FROM THE DATE OF APPROVAL UNTIL FINAL ACCEPTANCE IS ISSUED.

SIGNED _____ DATE _____
OWNER/DEVELOPER

PRINT NAME _____

DBA _____

ADDRESS _____

FIRE AUTHORITY APPROVAL:

THE NUMBER OF FIRE HYDRANTS AND HYDRANT LOCATIONS SHOWN ON THIS WATER INSTALLATION PLAN ARE CORRECT AND ADEQUATE TO SATISFY THE FIRE PROTECTION REQUIREMENTS AS SPECIFIED BY THE FIRE DISTRICT SERVING THE PROPERTY NOTED ON THE PLANS.

FIRE PROTECTION DISTRICT _____

SIGNED _____ DATE _____
FIRE PROTECTION DISTRICT

DISTRICT APPROVALS:

THE WOODMEN HILLS METROPOLITAN DISTRICT RECOGNIZES THE DESIGN ENGINEER AS HAVING RESPONSIBILITY FOR THE DESIGN AND HAS LIMITED ITS SCOPE OF REVIEW ACCORDINGLY.

WOODMEN HILLS METROPOLITAN DISTRICT
WATER DESIGN APPROVAL

DATE: _____ BY: _____

PROJECT NO. _____

IN CASE OF ERRORS OR OMISSIONS WITH THE WATER DESIGN AS SHOWN ON THIS DOCUMENT THE STANDARDS AS DEFINED IN THE 'RULES AND REGULATIONS FOR INSTALLATION OF WATER MAINS AND SERVICES' SHALL RULE.

APPROVAL EXPIRES 180 DAYS FROM DESIGN APPROVAL.

THE WOODMEN HILLS METROPOLITAN DISTRICT RECOGNIZES THE DESIGN ENGINEER AS HAVING RESPONSIBILITY FOR THE DESIGN AND HAS LIMITED ITS SCOPE OF REVIEW ACCORDINGLY.

WOODMEN HILLS METROPOLITAN DISTRICT
WASTEWATER DESIGN APPROVAL:

DATE: _____ BY: _____

PROJECT NO. _____

IN CASE OF ERRORS OR OMISSIONS WITH THE WATER DESIGN AS SHOWN ON THIS DOCUMENT THE STANDARDS AS DEFINED IN THE 'RULES AND REGULATIONS FOR INSTALLATION OF WASTEWATER MAINS AND SERVICES' SHALL RULE.

APPROVAL EXPIRES 180 DAYS FROM DESIGN APPROVAL.

ENGINEERS STATEMENT:

THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION. SAID DETAILS AND SPECIFICATIONS HAVE BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE STATE OF COLORADO.

_____ _____
RONALD G. DENNIS, COLORADO P.E. NO. 0051622 DATE

BASIS OF BEARINGS

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BENCHMARK

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FALCON, CO 80831 - EL PASO COUNTY

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Project No:	CLH000021
Drawn By:	CMWJ
Checked By:	RGD
Date:	07/01/2022

UTILITY COVER SHEET

U0.0
Sheet 1 of 12

W:\Challenger Homes-Falcon\Falcon Meadows - CLH000021 - FM at Bent Grass\Engineering\Drawings\Construction Documents\Utility Cover Sheet.dwg, Jared Murphy, 6/24/2022

GENERAL NOTES:

1. ALL UTILITY CONSTRUCTION TO BE CONDUCTED IN CONFORMANCE WITH THE CURRENT WOODMEN HILLS METROPOLITAN DISTRICT (WHMD, THE DISTRICT) SPECIFICATIONS.

2. ALL PLANS ON THE JOB SITE SHALL BE SIGNED BY THE DISTRICT AND THE DISTRICT'S ENGINEER. ANY REVISION TO THE PLANS SHALL BE SO NOTED WITH THE OLD DRAWING MARKED NOT VALID.

3. ALL STATIONING IS CENTER LINE UNLESS OTHERWISE NOTED. ALL ELEVATIONS ARE CENTER LINE UNLESS OTHERWISE NOTED.

4. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION BY THE DISTRICT. THE DISTRICT RESERVES THE RIGHT TO ACCEPT OR REJECT ANY SUCH MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO ITS STANDARDS AND SPECIFICATIONS.

5. ALL WATER AND SEWER SERVICE LOCATIONS SHALL BE CLEARLY MARKED ON EITHER THE CURB HEAD OR THE FACE OF THE CURB, WITH AN "S" FOR SEWER AND A "W" FOR WATER.

6. DUCTILE IRON PIPES, INCLUDING FITTINGS, VALVES AND FIRE HYDRANTS, SHALL BE WRAPPED WITH POLYETHYLENE TUBING, DOUBLE BONDED AT EACH JOINT AND ELECTRICALLY ISOLATED. BONDING AND ANODE CONNECTIONS SHALL BE THOROUGHLY COATED WITH BITUMINOUS COATINGS.

7. ALL DUCTILE IRON PIPE LESS THAN 12 INCHES AND FITTINGS SHALL HAVE CATHODIC PROTECTION USING TWO NO. 6 WIRES WITH 17 LB. MAGNESIUM ANODES EVERY 400 FEET AND 9 LB. MAGNESIUM ANODES AT EACH FITTING. ALL DUCTILE IRON PIPE 12 INCHES AND GREATER AND FITTINGS SHALL HAVE CATHODIC PROTECTION USING TWO NO. 6 WIRES WITH 17 LB. MAGNESIUM ANODES EVERY 300 FEET AND 9 LB. MAGNESIUM ANODES AT EACH FITTING.

8. ALL PIPE MATERIAL, BACKFILL AND INSTALLATION SHALL CONFORM TO THE APPLICABLE SPECIFICATIONS OF THE CITY OF COLORADO SPRINGS, COLORADO DEPARTMENT OF TRANSPORTATION, EL PASO COUNTY DEPARTMENT OF TRANSPORTATION, COLORADO SPRINGS UTILITIES AND THE GEOTECHNICAL ENGINEER.

9. COMPACTION TESTS SHALL BE 95% STANDARD PROCTOR AS DETERMINED BY ASTM D698, UNLESS OTHERWISE APPROVED BY THE DISTRICT OR HIGHER STANDARD AS IMPOSED BY ANOTHER AGENCIES HAVING RIGHT-OF-WAY JURISDICTION. THIS SHALL INCLUDE ALL VALVES, FIRE HYDRANT RUNS, WATER & SEWER SERVICE LINES AND MANHOLES. ALL REPORTS SHALL BE SUBMITTED TO THE DISTRICT FOR REVIEW AND APPROVAL.

10. THE LOCATION OF ALL EXISTING UTILITIES SHOWN ON THE DRAWINGS ARE APPROXIMATE ONLY. THE LOCATION OF ALL UTILITIES SHALL BE FIELD VERIFIED PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES. THE DISTRICT SHALL BE NOTIFIED OF ANY DEVIATIONS TO THE LINE AND/OR GRADE AS DEPICTED ON THE PLANS. CONTRACTOR SHALL SUBMIT TO THE DISTRICT AND THE ENGINEER OF RECORD A REPORT OF THE FIELD VERIFIED INFORMATION PRIOR TO THE START OF CONSTRUCTION.

11. ALL BENDS SHALL BE FIELD STAKED PRIOR TO THE START OF CONSTRUCTION.

12. BENDS, DEFLECTION & CUT PIPE LENGTHS SHALL BE USED TO HOLD HORIZONTAL ALIGNMENT OF SEWER AND WATER LINES TO NO MORE THAN 0.5' FROM THE DESIGNED ALIGNMENT. CONSTRUCTION STAKES TO BE AT 25' INTERVALS ALONG CURVES TO ASSURE LOCATION OF PIPE LINE CONSTRUCTION.

13. AT ALL LOCATIONS WHERE CAP AND STUB IS NOTED ON DRAWINGS, PROVIDE A PLUG AT THE END OF THE PIPE JOINT NEAREST THE SPECIFIED STATION. PROVIDE A REVERSE ANCHOR AT ALL WATER LINE PLUGS.

14. ALL UNUSED SALVAGED WATER UTILITY MATERIAL SHALL BE RETURNED TO THE METROPOLITAN DISTRICT AS REQUESTED.

15. AT THE CONTRACTOR'S EXPENSE, ALL UTILITY MAINS SHALL BE SUPPORTED AND PROTECTED SUCH THAT THEY SHALL FUNCTION CONTINUOUSLY DURING CONSTRUCTION OPERATIONS. SHOULD A UTILITY MAIN FAIL AS A RESULT OF THE CONTRACTOR'S OPERATION, IT SHALL BE REPLACED IMMEDIATELY BY THE CONTRACTOR OR BY THE DISTRICT AT FULL COST OF LABOR AND MATERIALS TO THE CONTRACTOR/DEVELOPER.

16. PUMPING OR BYPASS OPERATIONS SHALL BE REVIEWED AND APPROVED BY BOTH THE DISTRICT AND THE DISTRICT ENGINEER PRIOR TO EXECUTION.

17. THE CONTRACTOR SHALL REPLACE OR REPAIR DAMAGE TO ALL SURFACE IMPROVEMENTS, INCLUDING BUT NOT LIMITED TO FENCES, LANDSCAPING, CURB AND GUTTER AND/OR ASPHALT THAT MAY BE CAUSED DURING CONSTRUCTION.

18. ALL CONTRACTORS WORKING ON OR NEAR A WATER OR SEWER FACILITY (TO INCLUDE SERVICE LINES) SHALL HAVE LIABILITY INSURANCE NAMING THE DISTRICT AS AN ADDITIONAL INSURED AND SHALL PROVIDE A CURRENT COPY OF WORKERS COMPENSATION INSURANCE ON FILE WITH THE DISTRICT. NO WORK CAN PROCEED WITHOUT CURRENT CERTIFICATES ON FILE AT THE DISTRICTS' OFFICE.

19. THE CONTRACTOR SHALL NOTIFY THE DISTRICT AND ALL AFFECTED UTILITY COMPANIES ADJACENT TO THE PROPOSED UTILITY CONSTRUCTION A MINIMUM OF 48 HOURS AND A MAXIMUM OF 96 HOURS PRIOR TO THE START OF CONSTRUCTION. A WEEKLY CONSTRUCTION MEETING SHALL BE REQUIRED WITH THE CONTRACTOR, DISTRICT ENGINEER AND ALL OTHER PARTIES AS DEEMED NECESSARY BY THE DISTRICT.

20. COMMENCEMENT OF CONSTRUCTION OF WATER/SEWER SYSTEMS WITHIN METROPOLITAN DISTRICT:
A) PRIOR TO THE START OF CONSTRUCTION, A PRE-CONSTRUCTION MEETING IS REQUIRED A MINIMUM OF 48 HOURS IN ADVANCE OF COMMENCEMENT OF WORK. A REPRESENTATIVE OF THE OWNER OR DEVELOPER, A REPRESENTATIVE OF THE CONTRACTOR AND DESIGN ENGINEER ARE REQUIRED TO ATTEND. CONTACT THE DISTRICT TO SCHEDULE THE PRE-CONSTRUCTION MEETING. NO PRE-CONSTRUCTION MEETING CAN BE SCHEDULED PRIOR TO FOUR (4) SIGNED/APPROVED PLAN SETS ARE RECEIVED BY THE DISTRICT.
B) THE CONTRACTOR IS REQUIRED TO NOTIFY THE DISTRICT A MINIMUM OF 48 HOURS AND A MAXIMUM OF 2 WEEKS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL ALSO NOTIFY AFFECTED UTILITY COMPANIES AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION ADJACENT TO THE KNOWN UTILITY LINES.

21. TESTING OF FACILITIES:
A) THE CONTRACTOR SHALL NOTIFY THE DISTRICT A MINIMUM OF 48 HOURS AND A MAXIMUM OF 96 HOURS PRIOR TO THE START OF ANY TESTING.
B) ALL SECTIONS OF WATER LINE ARE TO MEET THE FOLLOWING PRESSURE TESTING REQUIREMENTS
- TEST 100 % OF ALL LINES
- MUST PASS PRESSURE TEST TO 200 PSI FOR TWO HOURS (UNLESS OTHERWISE APPROVED ON THE PLANS).

C) ALL SANITARY SEWER FACILITIES ARE TO MEET THE FOLLOWING TESTING REQUIREMENTS
- ALL LINES SHALL BE JET CLEANED PRIOR TO VACUUM OR PRESSURE TESTING
- ALL MANHOLES SHALL BE VACUUM TESTED WITH DISTRICT STAFF PRESENT PRIOR TO CCTV INSPECTION.
- SEWER MAINS TO BE PRESSURE TEST PRIOR TO CCTV INSPECTION
- ALL LINES SHALL BE CCTV INSPECTED AND VIDEO SHALL TO BE SUBMITTED TO THE DISTRICT FOR REVIEW AND APPROVAL.

22. PRELIMINARY ACCEPTANCE SHALL BE DEFINED AS THE POINT IN TIME THAT THE DISTRICT ACCEPTS THE FACILITY FOR USE. ALL SURFACE IMPROVEMENTS AND RESTORATION SHALL BE COMPLETED WITHIN 30 DAYS OF COMMENCEMENT. SHOULD THE CONTRACTOR FAIL TO COMPLETE ALL SURFACE IMPROVEMENTS AND RESTORATION WITHIN 30 DAYS OF COMMENCEMENT OF SERVICE, THE DISTRICT, AT THEIR DISCRETION, MAY ELECT TO COMPLETE THE IMPROVEMENTS AT THE CONTRACTORS COST.

23. FINAL ACCEPTANCE BY THE DISTRICT OF ANY LINE OR SYSTEM SHALL NOT OCCUR UNTIL COMPLETION OF FINAL ASPHALT LAYERS AND/OR FINAL COMPLETION AND/OR RESTORATION OF ALL SURFACE IMPROVEMENTS. THE WARRANTY PERIOD FOR ALL FACILITIES PRIOR TO FINAL ACCEPTANCE SHALL BE 24 MONTHS COMMENCING AFTER PRELIMINARY ACCEPTANCE.

24. ACCEPTANCE:
A) THE DISTRICT MAY GIVE PRELIMINARY ACCEPTANCE ONCE ALL OF THE TESTS ON ALL THE LINES HAVE BEEN COMPLETED AND A WALK-THRU HAS OCCURRED.
B) A SECOND ACCEPTANCE MAY OCCUR ONCE FIRST LIFT OF ASPHALT GOES DOWN AND A SECOND WALK-THRU OF THE SYSTEM OCCURS. IF ALL FACILITIES ARE CLEAN AND ACCESSIBLE, A FINAL ACCEPTANCE MAY OCCUR (THE DISTRICT MAY REQUIRE CLEANING AND RE-VIDEO OF THE SYSTEM, DEPENDING ON THE SEVERITY OF THE CONTAMINATION).

25. ALL WATER AND SEWER MAINS, INCLUDING SERVICE LINES, SHALL HAVE "AS-BUILT" DRAWINGS PREPARED AND APPROVED PRIOR TO PRELIMINARY ACCEPTANCE BY THE DISTRICT.

26. ALL COMMERCIAL/BUSINESS DEVELOPMENTS SHALL HAVE AN EIGHT INCH (MIN.) WATER MAIN LOOPED THROUGH THE PROPOSED PROPERTY WITH GATE VALVES LOCATED WHERE THE MAIN ENTERS THE PROPERTY LINE. AN EIGHT INCH SEWER MAIN SHALL BE INSTALLED FOR SERVICE TO COMMERCIAL/BUSINESS DEVELOPMENTS, AND A MANHOLE SHALL BE LOCATED WHERE THE MAIN ENTERS THE PROPERTY. THE END OF THE MAINS SHALL BE MARKED WITH THE APPROPRIATE COLORED CARSONITE MARKER ALONG WITH TRACER WIRE.

27. AFTER REVIEW AND APPROVAL OF PLANS FOR THE EXTENSION OF LINES, FACILITIES AND/OR SERVICES, CONSTRUCTION MUST BE COMMENCED WITHIN 18 MONTHS FOR RESIDENTIAL SUBDIVISIONS AND 12 MONTHS FOR ANY COMMERCIAL INSTALLATIONS.

28. INSPECTION FEES: CALL THE DISTRICT (719-495-2500) FOR FEE SCHEDULE.

WATER SYSTEM INSTALLATION NOTES

29. ALL WATER AND FORCE MAIN PIPE SHALL BE AWWA C900 PVC, OR EQUAL, PRESSURE CLASS 200. ALL WATER AND FORCE MAIN FITTINGS SHALL HAVE MECHANICAL RESTRAINTS AND THRUST BLOCKS. ALL WATER AND FORCE MAIN PIPE SHALL HAVE A MINIMUM COVER DEPTH OF FIVE AND ONE-HALF (5.5) FEET.

30. ALL WATER VALVES ASSOCIATED WITH THE POTABLE WATER SYSTEM SHALL BE OPEN CLOCKWISE. ALL VALVES INSTALLED IN LANDSCAPED AREAS AND/OR NOT WITHIN PAVED STREETS SHALL BE MARKED WITH CARSONITE MARKERS. ALL VALVES ASSOCIATED WITH THE RAW WATER SYSTEM SHALL BE OPEN COUNTERCLOCKWISE AND MARKED WITH CARSONITE MARKERS AS APPLICABLE.

31. THE DEVELOPER OR HIS ENGINEER SHALL LOCATE ALL FIRE HYDRANTS AND SERVICE STUB OUTS FOR FUTURE DEVELOPMENT. ANY REQUIRED REALIGNMENT, (HORIZONTAL OR VERTICAL), SHALL BE AT THE EXPENSE OF THE DEVELOPER. FIRE HYDRANT LOCATION SHALL BE REVIEWED AND APPROVED BY THE APPLICABLE FIRE AUTHORITY.

32. FIRE HYDRANTS SHALL BE OPEN RIGHT WITH 7/8"1X 7/8" SQUARE TAPERED ALONG WITH SERVICE CAPS. LUBRICATION TYPE: (GREASE). ACCEPTABLE BRAND IS KENNEDY.

33. ALL MAIN LINES (PVC & DUCTILE IRON) SHALL BE INSTALLED WITH COATED #12 TRACER WIRE WITH TEST STATIONS AT INTERVALS NO GREATER THAN 500 FT (VALVE BOXES CAN BE USED AT INTERSECTIONS AND SERVICE STUBS).

34. CONTRACTOR SHALL MAKE CONNECTIONS TO EXISTING WATER LINE WITHOUT SHUTDOWN, OR ELSE NOTIFY THE DISTRICT OF ANY SERVICE SHUTDOWNS NECESSARY TO CONNECT TO EXISTING LINES.

35. IRRIGATION SERVICES SHALL HAVE A STOP AND WASTE CURB STOP VALVE INSTALLED ALONG WITH TRACER WIRE EXTENDING BACK TO THE MAIN LINE.

36. COMMENCEMENT OF USE OF WATER LINES AND/OR SYSTEMS:
A) NO WATER FACILITY SHALL BE PLACED IN SERVICE UNTIL AFTER THE COMPLETION OF ALL PRESSURE TESTING, FLUSHING, BAC-T TESTING, COMPACTION TESTING, AND AS-BUILT DRAWINGS ARE SUBMITTED AND APPROVED BY THE DISTRICT.
B) NO WATER FACILITY SHALL BE PLACED IN SERVICE UNTIL ALL SERVICE LINES ARE COMPLETED AND THE FIRST LIFT OF ASPHALT IS COMPLETED OVER THE LINE. IN THE CASE WHERE NO ASPHALT IS TO BE PLACED OVER THE LINE, SURFACE IMPROVEMENTS SHALL BE COMPLETED PRIOR TO USE OF THE FACILITY.
C) ALL EASEMENTS (PLATTED OR DEEDED) ARE DEDICATED, EXECUTED BY THE DISTRICT, AND RECORDED.

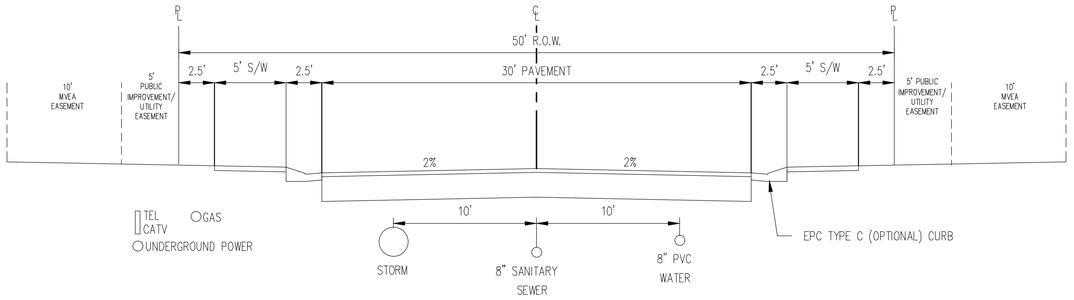
WASTEWATER SYSTEM INSTALLATION NOTES

37. SANITARY SEWER LENGTHS ARE MH CENTER-MH CENTER. ALL SANITARY SEWER PIPES SHALL BE SDR 35 PVC OR EQUAL. SEWER LINES MAY NOT EXCEED 7% GRADE FOR ANY SIZE WITHOUT PRIOR APPROVAL OF THE DISTRICT. ALL NEWLY CONSTRUCTED RESIDENTIAL SANITARY SEWER TAPS SHALL USE PRE-MANUFACTURED IN-LINE PVC PUSH-ON WYES. TAPPING SADDLES MAY ONLY BE USED FOR TAPPING PRE-EXISTING MAINS.

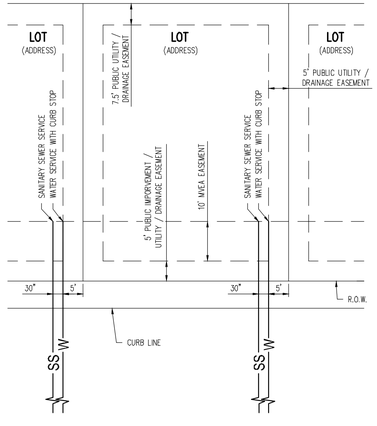
38. ALL SANITARY SEWER MANHOLES SHALL BE WRAPPED WITH RU116 – RUBR-NEX JOINT WRAP OR EQUIVALENT AND COATED.

39. COMMENCEMENT OF USE OF SEWER LINES AND/OR SYSTEMS:
A) NO SANITARY SEWER FACILITY SHALL BE PLACED IN SERVICE UNTIL THE COMPLETION OF ALL JET CLEANING, PRESSURE TESTING, VACUUM TESTING, CCTV INSPECTION, COMPACTION TESTING, AND AS-BUILT DRAWINGS ARE SUBMITTED AND APPROVED BY THE DISTRICT.
B) NO SANITARY SEWER FACILITY SHALL BE PLACED IN SERVICE UNTIL ALL SERVICE LINES ARE COMPLETED AND THE FIRST LIFT OF ASPHALT IS COMPLETED OVER THE LINE. IN THE CASE WHERE NO ASPHALT IS TO BE PLACED OVER THE LINE, ANY REQUIRED SURFACE IMPROVEMENTS SHALL BE COMPLETED PRIOR TO USE OF THE FACILITY.
C) ALL NECESSARY EASEMENTS (PLATTED OR DEEDED) ARE DEDICATED, EXECUTED BY THE DISTRICT, AND RECORDED.
D) DOWNSTREAM PLUG CAN BE REMOVED ONCE FIRST LIFT OF ASPHALT IS DOWN AND THE ABOVE REQUIREMENTS ARE MET.

THE ABOVE GUIDELINES ARE SUBJECT TO CHANGE AT ANY TIME.



TYPICAL STREET SECTION – URBAN LOCAL ROADWAY
N.T.S.



DETAIL: UTILITY SERVICE LOCATIONS
N.T.S.

UTILITY NOTES

1. CONTRACTOR TO OBTAIN WORK IN THE ROW PERMIT FROM EL PASO COUNTY PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO POTHOLE AND VERIFY EXISTENCE OF OTHER UTILITIES WITHIN ANY PUBLIC RIGHT OF WAYS.
3. CONTRACTOR TO MAINTAIN 5.5' MINIMUM COVER OVER ALL WATER MAINS CONSTRUCTED.
4. ALL VALVES SHOWN FOR SCHEMATIC PURPOSES ONLY. NO VALVES SHALL BE INSTALLED IN CURB AND GUTTER OR CROSS PANS.
5. STANDARD WATER SERVICE LOCATIONS TO BE 5' FROM THE DOWNSTREAM PROPERTY LINE AND EXTENDED 15' TO THE UTILITY EASEMENT.
6. STANDARD WASTEWATER SERVICES TO BE IN A COMMON TRENCH WITH STANDARD WATER SERVICES. SHALL BE LOCATED A MINIMUM OF 30" FROM CENTER OF PIPE. SEE WOODMEN HILLS METRO DISTRICT STANDARD SPECIFICATIONS DETAIL W-13.
7. STANDARD SERVICES SHALL BE MARKED WITH 2"X4" POST AT TERMINATION POINT FOR LOCATION DURING CONNECTION TO RESIDENCE. POSTS SHALL BE SPRAY-PAINTED BLUE FOR WATER AND GREEN FOR SEWER.
8. CURB STOPS ARE NOT TO BE INSTALLED IN CONCRETE CURB, CROSS PANS , SIDEWALKS, OR DRIVEWAYS.
9. SEE PLANS FOR THE LOCATION OF STANDARD SERVICES ON CORNER LOTS.

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CHALLENGER HOMES

CONSTRUCTION DOCUMENTS
FALCON MEADOWS AT BENT GRASS FILING NO. 4
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:	CLH000021
Drawn By:	CMWJ
Checked By:	RGD
Date:	07/01/2022

UTILITY NOTES AND TYPICAL SECTION

U0.1
Sheet 2 of 12

M:\Challenger Homes\CLH000021 - Falcon Estates\4 ENGINEERING\PLANS\01_GRADING_Construction Drawings_Josh Murphy - 7-07-2022

N

0 20 50 100

SCALE: 1"=100'

LEGEND

- EXISTING PROPERTY LINE (PROPOSED PROJECT BOUNDARY)
- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE (PROPOSED PROJECT BOUNDARY)
- EXISTING RIGHT OF WAY LINE
- PROPOSED RIGHT OF WAY LINE
- EXISTING LOT LINE
- PROPOSED LOT LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- EXISTING ROADWAY CENTER LINE
- PROPOSED ROADWAY CENTER LINE
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE
- EXISTING WATER LINE
- PROPOSED WATER LINE
- EXISTING SANITARY SEWER LINE
- PROPOSED SANITARY SEWER LINE
- EXISTING DRAINAGE FEATURE OUTLINE
- PROPOSED DRAINAGE FEATURE OUTLINE
- EXISTING SWALE WITH FLOW DIRECTION
- PROPOSED SWALE WITH FLOW DIRECTION
- 100-YEAR FEMA FLOODPLAIN
- PROPOSED CONCRETE
- PROPOSED GRAVEL PER ECM TABLE D-7
- PROPOSED RIP RAP
- EXISTING CONCRETE PAVING
- EXISTING GRAVEL PER ECM TABLE D-7
- EXISTING 1" TO 2" CRUSHED ROCK
- EXISTING RIP RAP
- EXISTING GROUTED BOULDERS
- 113 PROPOSED LOT #
- 15 EXISTING LOT #
- PROPOSED ADA RAMP
- PROPOSED FIRE HYDRANT
- PROPOSED GATE VALVE
- PROPOSED REDUCER
- PROPOSED WATER BEND/TEE
- PROPOSED SANITARY MANHOLE
- PROPOSED FES
- PROPOSED STORM MANHOLE
- PROPOSED CDOT TYPE R STORM INLET

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°13'46"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

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
FALCON MEADOWS AT BENT GRASS FILING NO. 4
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:	CLH000021
Drawn By:	CMWJ
Checked By:	RGD
Date:	07/01/2022

OVERALL SHEET

U0.2

Sheet 3 of 12

M:\Challenger Homes\CLH000021 Falcon - CLH000021 - Fil 4 at Bent Grass\ENGINEERING\CIVIL\CAD\Overall Sheet Key Josh Murphy - 7/7/2022

N

0 10 30 60

SCALE: 1"=60'

LEGEND

- EXISTING PROPERTY LINE (PROPOSED PROJECT BOUNDARY)
- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE (PROPOSED PROJECT BOUNDARY)
- EXISTING RIGHT OF WAY LINE
- PROPOSED RIGHT OF WAY LINE
- EXISTING LOT LINE
- PROPOSED LOT LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- EXISTING ROADWAY CENTER LINE
- PROPOSED ROADWAY CENTER LINE
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE
- EXISTING WATER LINE
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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 LS# 24954 ELEVATION = 6947.67

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CHALLENGER HOMES

CONSTRUCTION DOCUMENTS
FALCON MEADOWS AT BENT GRASS FILING NO. 4
FOR
CHALLENGER COMMUNITIES, LLC

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

#	Date	Issue / Description	Init.

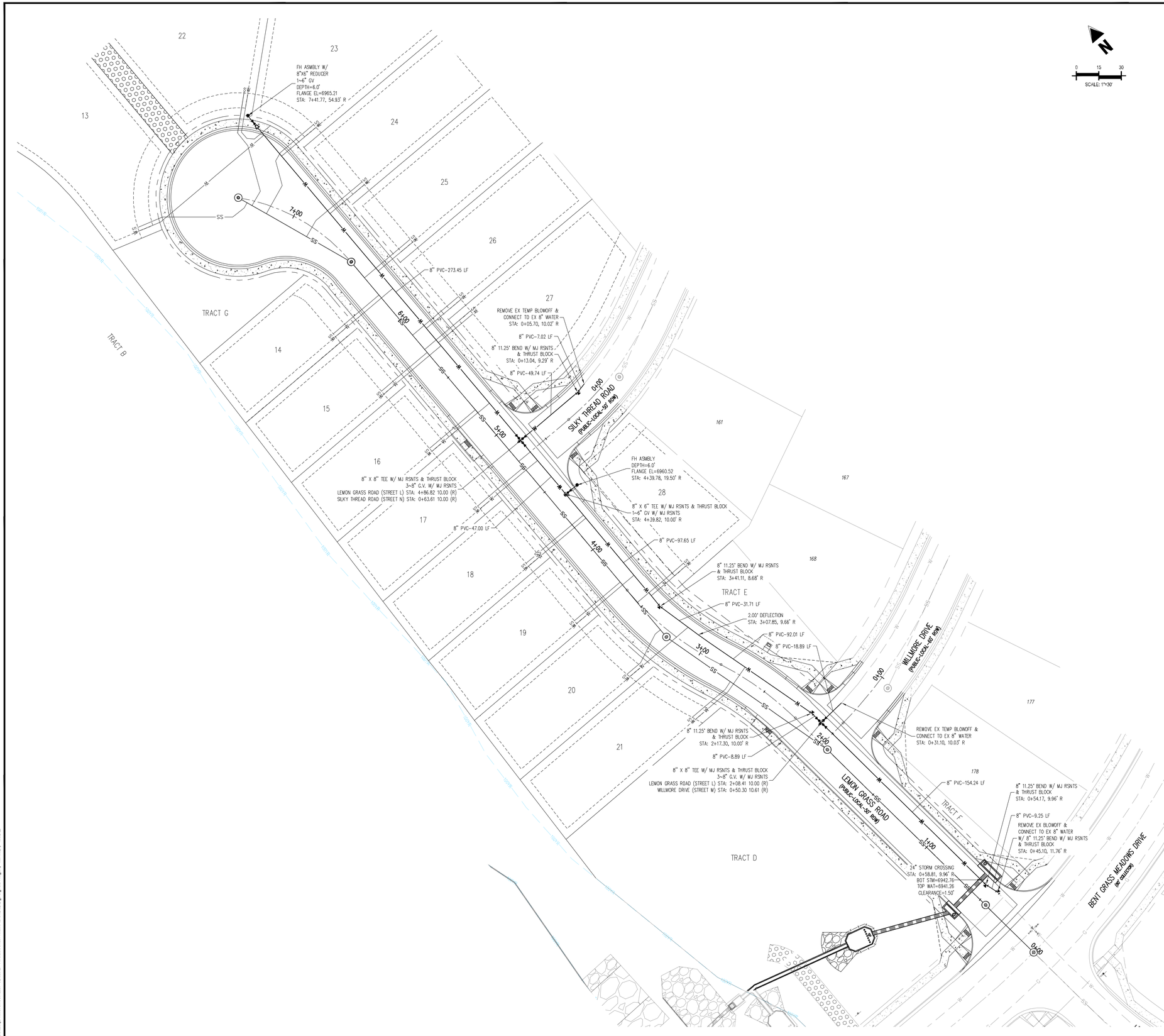
Project No:	CLH000921
Drawn By:	CMWJ
Checked By:	RGD
Date:	07/01/2022

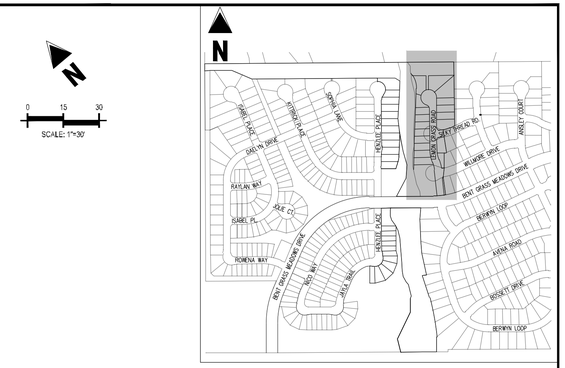
OVERALL HORIZONTAL CONTROL

U0.3

Sheet 4 of 12

H:\Challenger Homes Inc\CO_Falcon - 0000000_-_FA at Bent Grass\04 DESIGN\CIVIL\Cad\Overall Control.dwg, 7/6/2022 7:49:47 AM, CMWJ





KEY MAP
SCALE: 1"=500'

LEGEND

- EXISTING PROPERTY LINE (PROPOSED PROJECT BOUNDARY)
- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE (PROPOSED PROJECT BOUNDARY)
- EXISTING RIGHT OF WAY LINE
- PROPOSED RIGHT OF WAY LINE
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- PROPOSED LOT LINE
- EXISTING EASEMENT
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- PROPOSED DRAINAGE FEATURE OUTLINE
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- 100-YEAR FEMA FLOODPLAIN
- PROPOSED CONCRETE
- PROPOSED GRAVEL PER ECM TABLE D-7
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- PROPOSED GATE VALVE
- PROPOSED REDUCER
- PROPOSED WATER BEND/TEE
- PROPOSED SANITARY MANHOLE
- PROPOSED FES
- PROPOSED STORM MANHOLE
- PROPOSED CDOT TYPE R STORM INLET

NOTES

1. ALL WATER MAINS SHALL BE NO CLOSER THAN FIVE FEET (5') TO EDGE OF CONCRETE CUR AND/OR GUTTER.
2. WATER MAINS SHALL BE DESIGNED FOR A MINIMUM OF FIVE FEET SIX INCHES (5'-6") AND A MAXIMUM OF SIX FEET SIX INCHES (6'-6") OF COVER, EXCEPT WHERE ANOTHER UTILITY CAUSES A CONFLICT, IN WHICH CASE THE WATER MAIN SHALL BE LOWERED AS NECESSARY.
3. A VALVE SHALL ALWAYS BE PROVIDED WHERE A MAIN WILL BE EXTENDED IN THE FUTURE TO FACILITATE CONNECTING TO THE EXISTING MAIN WITHOUT DISRUPTING SERVICE. THERE SHALL BE A TWENTY FOOT (20') STUB PAST THE VALVE TO FACILITATE EASE OF CONNECTION.
4. CONTRACTOR TO READ AND BECOME FAMILIAR WITH THE WOODMEN HILLS METROPOLITAN DISTRICT WATER AND WASTEWATER SYSTEM STANDARD SPECIFICATIONS CRITERIA MANUAL AND DETAILS PRIOR TO BEGINNING CONSTRUCTION.

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°13'46"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

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CHALLENGER HOMES

CONSTRUCTION DOCUMENTS
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FOR
CHALLENGER COMMUNTIES, LLC

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

#	Date	Issue / Description	Init.
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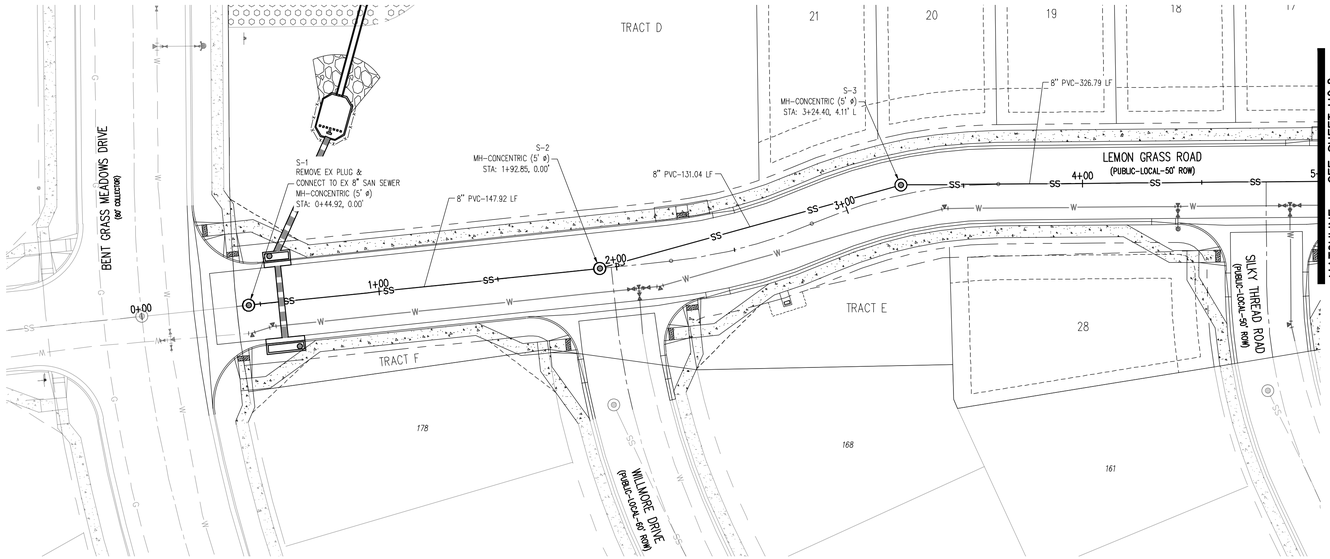
Project No:	CLH000021
Drawn By:	CMWJ
Checked By:	RGD
Date:	07/01/2022

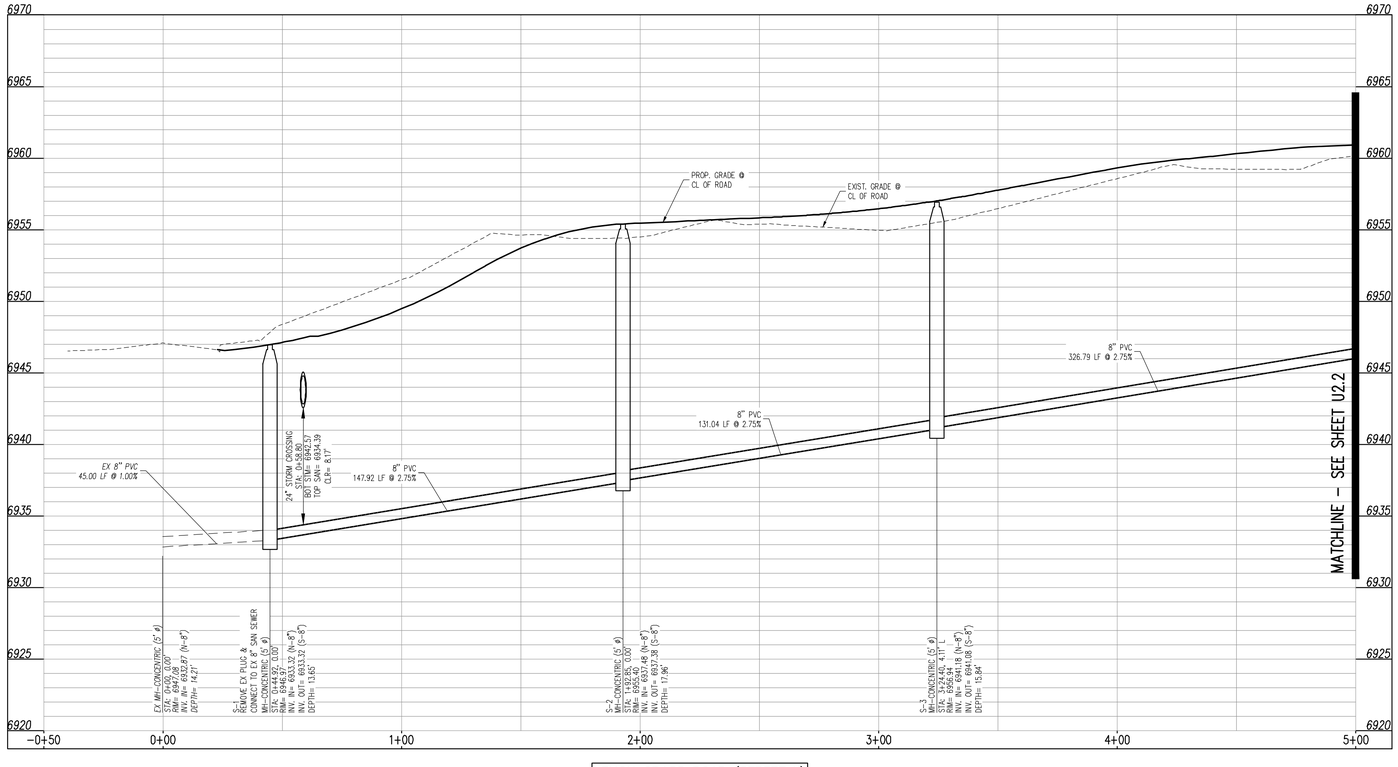
WATER PLAN

U1.1
Sheet 5 of 12

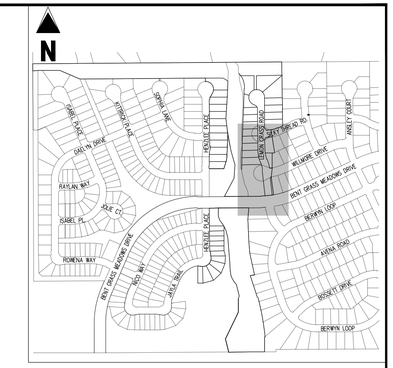
M:\Challenger Homes\CH000021 Falcon - CLH000021 - Fil at Bent Grass\4 ENGINEERING\PLOTS_XTs_Water Plan_Dwg - Josh Murphy - 10/7/2022



PLAN: 8-INCH SANITARY SEWER (LEMON GRASS ROAD)
STA:1+00.00 – 5+00.00



LEMON GRASS ROAD (STREET L)
STA: −0+50 – 5+00
SCALE: H: 1"=30' V: 1"=5'



KEY MAP
SCALE: 1"=500'

LEGEND

- EXISTING PROPERTY LINE (PROPOSED PROJECT BOUNDARY)
- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE (PROPOSED PROJECT BOUNDARY)
- EXISTING RIGHT OF WAY LINE
- PROPOSED RIGHT OF WAY LINE
- EXISTING LOT LINE
- PROPOSED LOT LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- EXISTING ROADWAY CENTER LINE
- PROPOSED ROADWAY CENTER LINE
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE
- EXISTING WATER LINE
- PROPOSED WATER LINE
- EXISTING SANITARY SEWER LINE
- PROPOSED SANITARY SEWER LINE
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- EXISTING SWALE WITH FLOW DIRECTION
- PROPOSED SWALE WITH FLOW DIRECTION
- 100-YEAR FEMA FLOODPLAIN
- PROPOSED CONCRETE
- PROPOSED GRAVEL PER ECM TABLE D-7
- PROPOSED RIP RAP
- EXISTING CONCRETE PAVING
- EXISTING GRAVEL PER ECM TABLE D-7
- EXISTING 1" TO 2" CRUSHED ROCK
- EXISTING RIP RAP
- EXISTING GROUTED BOULDERS
- 113 PROPOSED LOT #
- 75 EXISTING LOT #
- PROPOSED ADA RAMP
- PROPOSED FIRE HYDRANT
- PROPOSED GATE VALVE
- PROPOSED REDUCER
- PROPOSED WATER BEND/TEE
- PROPOSED SANITARY MANHOLE
- PROPOSED FES
- PROPOSED STORM MANHOLE
- PROPOSED CDOT TYPE R STORM INLET

NOTES

1. ALL STATION CALLOUTS ARE TO THE CENTERLINE OF ROADWAY, THEREFORE MANHOLE RIMS MAY APPEAR TO NOT MEET FINISH GRADE
2. CONTRACTOR TO READ AND BECOME FAMILIAR WITH THE WOODMEN HILLS METROPOLITAN DISTRICT WATER AND WASTEWATER SYSTEM STANDARD SPECIFICATIONS CRITERIA MANUAL AND DETAILS PRIOR TO BEGINNING CONSTRUCTION.

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°13'46"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

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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 POTHOLING OR ALTERNATIVE METHOD. REPORT INFORMATION TO THE ENGINEER PRIOR TO CONSTRUCTION.

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CHALLENGER HOMES

CONSTRUCTION DOCUMENTS
FALCON MEADOWS AT BENT GRASS FILING NO. 4
FOR
CHALLENGER COMMUNITIES, LLC

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

#	Date	Issue / Description	Init.
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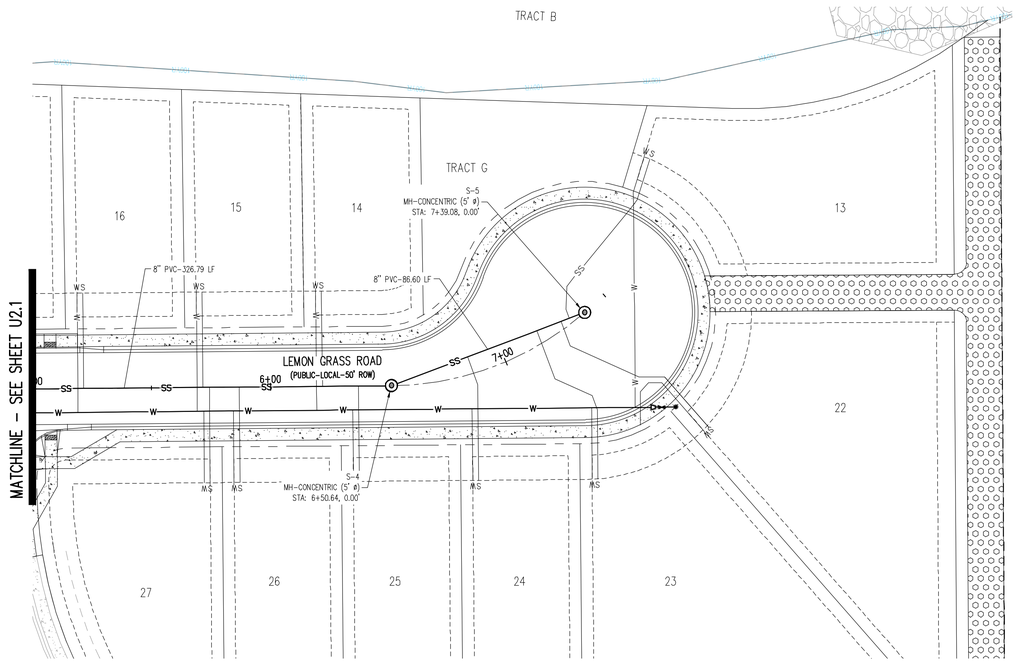
Project No:	CLH000021
Drawn By:	CMWJ
Checked By:	RGD
Date:	07/01/2022

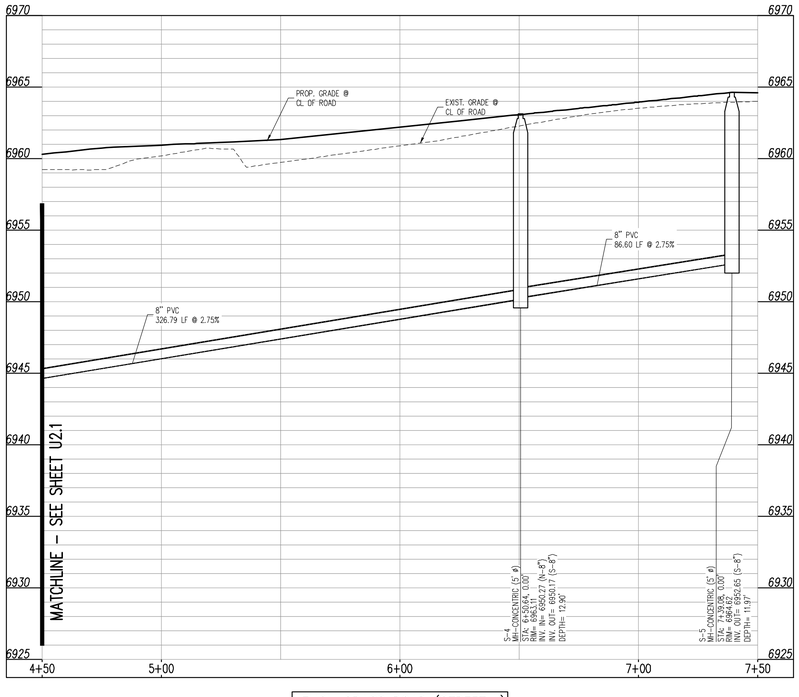
WASTEWATER PLAN & PROFILE

U2.1
Sheet 6 of 12

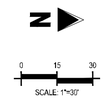
W:\Challenger Homes\21000\21000021 - Fnl Plat Dsn-Eng\EXHIBITS\CIVIL\U2.1 Wastewater P&P.dwg, Josh Murphy, 7/5/2022

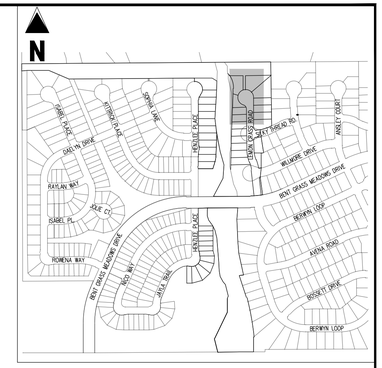


PLAN: 8-INCH SANITARY SEWER (LEMON GRASS ROAD)
STA: 4+50.00 - 7+50.00



LEMON GRASS ROAD (STREET L)
STA: 4+50 - 7+50
SCALE: H: 1"=30' V: 1"=5'





KEY MAP
SCALE: 1"=500'

LEGEND

- EXISTING PROPERTY LINE (PROPOSED PROJECT BOUNDARY)
- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE (PROPOSED PROJECT BOUNDARY)
- EXISTING RIGHT OF WAY LINE
- PROPOSED RIGHT OF WAY LINE
- EXISTING LOT LINE
- PROPOSED LOT LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- EXISTING ROADWAY CENTER LINE
- PROPOSED ROADWAY CENTER LINE
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE
- W — EXISTING WATER LINE
- W — PROPOSED WATER LINE
- SS — EXISTING SANITARY SEWER LINE
- SS — PROPOSED SANITARY SEWER LINE
- EXISTING DRAINAGE FEATURE OUTLINE
- PROPOSED DRAINAGE FEATURE OUTLINE
- EXISTING SWALE WITH FLOW DIRECTION
- PROPOSED SWALE WITH FLOW DIRECTION
- 100YR — 100-YEAR FEMA FLOODPLAIN
- PROPOSED CONCRETE
- PROPOSED GRAVEL PER ECM TABLE D-7
- PROPOSED RIP RAP
- EXISTING CONCRETE PAVING
- EXISTING GRAVEL PER ECM TABLE D-7
- EXISTING 1" TO 2" CRUSHED ROCK
- EXISTING RIP RAP
- EXISTING GROUTED BOULDERS
- 113 — PROPOSED LOT #
- EXISTING LOT #
- PROPOSED ADA RAMP
- PROPOSED FIRE HYDRANT
- PROPOSED GATE VALVE
- PROPOSED REDUCER
- PROPOSED WATER BEND/TEE
- PROPOSED SANITARY MANHOLE
- PROPOSED FES
- PROPOSED STORM MANHOLE
- PROPOSED CDOT TYPE R STORM INLET

NOTES

1. ALL STATION CALLOUTS ARE TO THE CENTERLINE OF ROADWAY, THEREFORE MANHOLE RIMS MAY APPEAR TO NOT MEET FINISH GRADE
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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 LS# 24954 ELEVATION = 6947.67

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FALCON MEADOWS AT BENT GRASS FILING NO. 4
FOR
CHALLENGER COMMUNITIES, LLC

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

#	Date	Issue / Description	Init.
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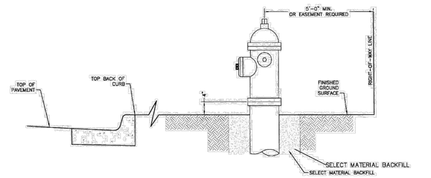
Project No:	CLH000021
Drawn By:	CMWJ
Checked By:	RGD
Date:	07/01/2022

WASTEWATER PLAN & PROFILE

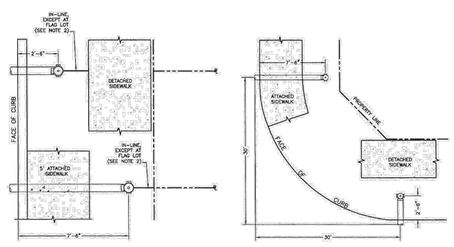
U2.2
Sheet 7 of 12

W:\Challenger Homes\CLH000021 Falcon - CLH000021 - Fall at Bent Grass\PLANS\CIVIL\U2_U2.2 Wastewater P&P.dwg, Josh Murphy, 7/5/2022



GENERAL NOTES:

1. HYDRANT NOZZLE SHALL BE POSITIONED AT RIGHT ANGLES TO THE CURB. IF NO CURB OR SIDEWALK EXISTS, NOZZLE SHALL BE PLACED AT RIGHT ANGLES TO STREET OR ALLEY.
2. HYDRANTS INSTALLED AT FLAG LOT LINES SHALL BE OFFSET 3' FROM THE LOT LINE (AWAY FROM STEM).
3. HYDRANTS WILL BE PLACED A MINIMUM OF 5.0 FT. FROM ANY UTILITY OR DRAINAGE STRUCTURE.
4. EASEMENTS MUST BE PROVIDED FOR ANY PUBLIC HYDRANT WHICH IS CLOSER THAN 5.0 FT. TO THE RIGHT-OF-WAY LINE.
5. ANY HYDRANTS BEING INSTALLED WITH CONDITIONS OTHER THAN THOSE MENTIONED AND/OR DETAILED BELOW WILL BE REQUIRE SIGNED APPROVAL FROM THE DISTRICT AND THE FIRE DEPARTMENT.

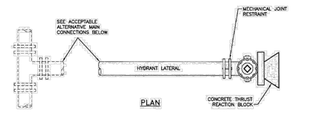


LOT LINE LOCATIONS

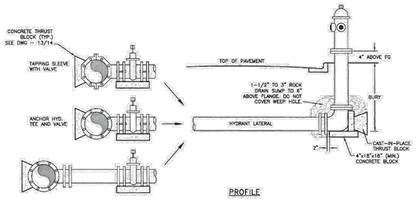
CORNER LOCATIONS

FIRE HYDRANT LOCATIONS

Drawn: GDM	Revised:	WOODMEN HILLS METROPOLITAN DISTRICT WATER & WASTEWATER SYSTEM STANDARD SPECIFICATIONS	W-1
Date: JAN 2011	Revised:		
Scale: N.T.S.	Revised:		



PLAN

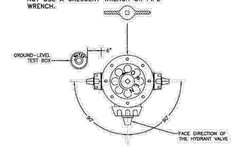


PROFILE

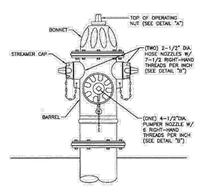
FIRE HYDRANT INSTALLATION

Drawn: GDM	Revised:	WOODMEN HILLS METROPOLITAN DISTRICT WATER & WASTEWATER SYSTEM STANDARD SPECIFICATIONS	W-2
Date: JAN 2011	Revised:		
Scale: N.T.S.	Revised:		

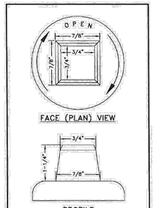
TAPERED SQUARE NUT, USE ONLY DEFINITE PURPOSE HYDRANT WRENCH THAT EXACTLY FITS THE NUT. DO NOT USE A GENERIC HYDRANT WRENCH WITH ADJUSTABLE CORNER BOLT. DO NOT USE A CRESCENT WRENCH OR PIPE WRENCH.



TOP (PLAN) VIEW

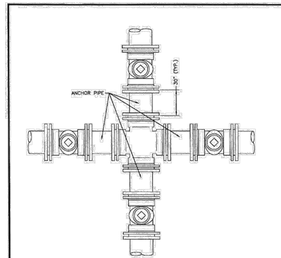


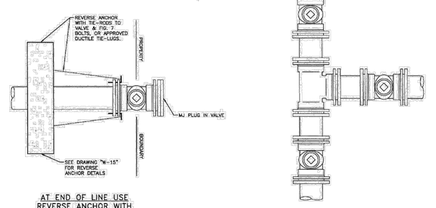
FACE VIEW



FIRE HYDRANT SPECIFICATIONS

Drawn: GDM	Revised:	WOODMEN HILLS METROPOLITAN DISTRICT WATER & WASTEWATER SYSTEM STANDARD SPECIFICATIONS	W-3
Date: JAN 2011	Revised:		
Scale: N.T.S.	Revised:		



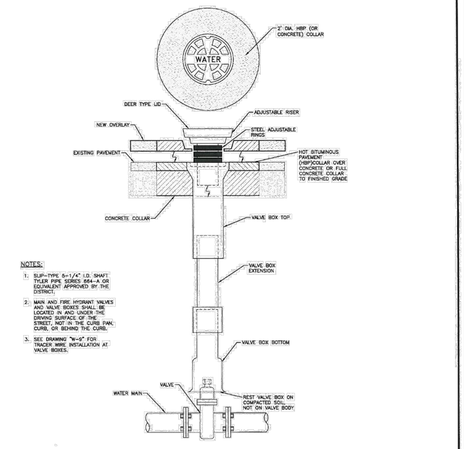


GENERAL NOTES:

1. ON ANY VALVE INSTALLATION NEAR A FITTING, THE VALVE SHALL BE ANCHORED BY RODS, REVERSE ANCHOR, AND MECHANICAL JOINT RESTRAINTS. 3/4" ALL-THREAD RODS SHALL BE USED WITH (4) 7/8 BOLTS OR APPROVED DUCTILE TIE-LUGS FOR DEAD-END VALVES AND/OR PLUGS. ALL METALLIC COMPONENTS SHALL BE WRAPPED IN POLYETHYLENE TUBING.
2. ANCHOR PIPE OR FOSTER COUPLINGS MAY BE SUBSTITUTED FOR SPACER PIPE AND RODS.
3. THE CONCRETE REVERSE ANCHORS USED SHALL BE SIZED AS INDICATED ON DRAWING "W-15".
4. SEE DRAWINGS "W-24" AND "W-25" FOR APPLICATION OF MECHANICAL JOINT RESTRAINTS.
5. SEE DRAWING "W-5" FOR VALVE BOX INSTALLATION.

VALVE INSTALLATION & LOCATION

Drawn: GDM	Revised:	WOODMEN HILLS METROPOLITAN DISTRICT WATER & WASTEWATER SYSTEM STANDARD SPECIFICATIONS	W-4
Date: JAN 2011	Revised:		
Scale: N.T.S.	Revised:		

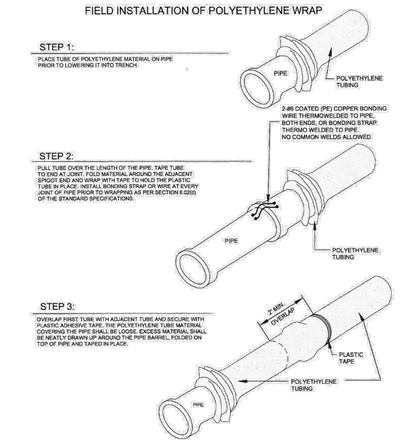


NOTES:

1. SLIP-TYPE 5-1/4" I.D. SHAFT TYLER PIPE SERIES 664-A OR EQUIVALENT APPROVED BY THE DISTRICT.
2. MAIN AND FIRE HYDRANT VALVES AND VALVE BOXES SHALL BE LOCATED IN AND UNDER THE DRIVING SURFACE OF THE STREET, NOT IN THE CURB PAN, CURB, OR BEHIND THE CURB.
3. SEE DRAWING "W-6" FOR TRACER WIRE INSTALLATION AT VALVE BOXES.

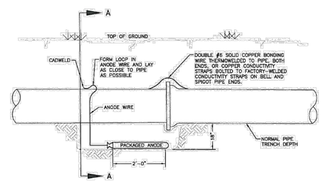
VALVE BOX INSTALLATION

Drawn: GDM	Revised:	WOODMEN HILLS METROPOLITAN DISTRICT WATER & WASTEWATER SYSTEM STANDARD SPECIFICATIONS	W-5
Date: JAN 2011	Revised:		
Scale: N.T.S.	Revised:		

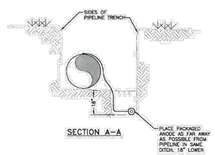


POLYETHYLENE WRAP

Drawn: GDM	Revised:	WOODMEN HILLS METROPOLITAN DISTRICT WATER & WASTEWATER SYSTEM STANDARD SPECIFICATIONS	W-6
Date: JAN 2011	Revised:		
Scale: N.T.S.	Revised:		



ELEVATION



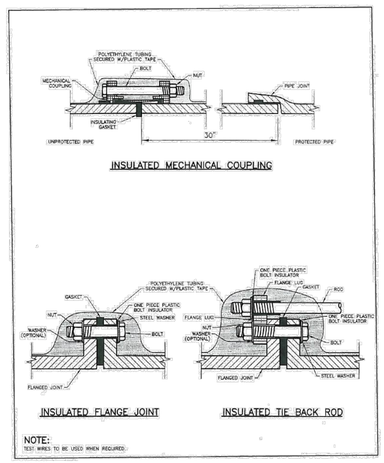
SECTION A–A

NOTES:

1. CADWELD CONNECTION TO BE PRIMED AND COATED CAREFULLY. PACKAGED ANODE SHOULD BE COVERED WITH FINE SOIL CONTAINING NO ROCKS OR DIRT CLUMPS, TAMPED.
2. WHEN ANODES ARE REQUIRED WITH METAL FITTINGS AND APPURTENANCES TOGETHER WITH PVC PIPE INSTALLATION, THE ANODES SHALL BE PLACED AND ATTACHED TO THE METAL IN SAME MANNER AS SHOWN ON THIS DRAWING. MJB. ANODES CAN BE USED ON METAL FITTINGS 12" AND LESS IN DIAMETER AND 17LB. ANODES FOR METAL FITTINGS GREATER THAN 12" DIAMETER WHEN USING PVC PIPE.
3. PACKAGED ANODE TO BE WETTED AND COVERED WITH SOIL PRIOR TO BACKFILLING.

BONDING JOINT & ANODE INSTALLATION

Drawn: GDM	Revised:	WOODMEN HILLS METROPOLITAN DISTRICT WATER & WASTEWATER SYSTEM STANDARD SPECIFICATIONS	W-7
Date: JAN 2011	Revised:		
Scale: N.T.S.	Revised:		



NOTE:
TEST WIRES TO BE USED WHEN REQUIRED.

INSULATOR INSTALLATION

Drawn: GDM	Revised:	WOODMEN HILLS METROPOLITAN DISTRICT WATER & WASTEWATER SYSTEM STANDARD SPECIFICATIONS	W-8
Date: JAN 2011	Revised:		
Scale: N.T.S.	Revised:		

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CHALLENGER HOMES

CONSTRUCTION DOCUMENTS
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FOR
CHALLENGER COMMUNITIES, LLC

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

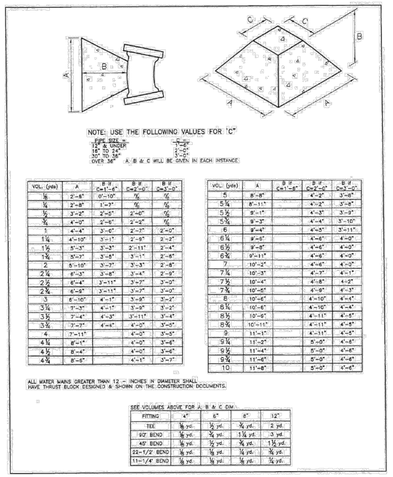
#	Date	Issue / Description	Init.

Project No:	CLH000021
Drawn By:	CMWJ
Checked By:	RGD
Date:	07/01/2022

WATER DETAILS SHEET 1

U3.1
Sheet 8 of 12

HC:\Galloway Homes (HCC) Projects\CLH000021 - Falcon Meadows\CAD\ENGINEERING\W_UTILITIES\Plot by Jeff Murphy - 10/7/2022



VOL. (cy)	A	B @ 1'-6" C=1'-6"	B @ 2'-0" C=2'-0"	B @ 2'-6" C=2'-6"
⅛	2'-6"	0'-10"	⅞	½
¼	2'-8"	1'-1"	⅞	⅞
⅜	3'-2"	2'-3"	2'-6"	⅞
½	4'-0"	2'-5"	2'-6"	½
¾	4'-4"	3'-0"	2'-7"	2'-0"
1	4'-4"	3'-0"	2'-7"	2'-0"
1¼	4'-10"	3'-1"	2'-8"	2'-2"
1½	5'-3"	3'-3"	2'-11"	2'-4"
1⅞	5'-3"	3'-3"	3'-1"	2'-6"
2	5'-10"	3'-3"	3'-3"	2'-8"
2¼	6'-3"	3'-6"	3'-4"	2'-9"
2½	6'-4"	3'-11"	3'-3"	3'-0"
2¾	6'-4"	3'-11"	3'-3"	3'-0"
3	6'-10"	4'-1"	3'-5"	3'-2"
3¼	7'-2"	4'-1"	3'-4"	3'-3"
3½	7'-4"	4'-3"	3'-11"	3'-4"
3⅞	7'-7"	4'-4"	4'-0"	3'-5"
4	7'-11"		4'-0"	3'-5"
4⅛	8'-1"		4'-0"	3'-6"
4½	8'-4"		4'-0"	3'-6"
4¾	8'-6"		4'-1"	3'-7"

VOL. (cy)	A	B @ 3'-0" C=3'-0"	B @ 3'-6" C=3'-6"	B @ 4'-0" C=4'-0"
5	8'-8"		4'-2"	3'-8"
5⅛	8'-11"		4'-2"	3'-8"
5⅜	9'-1"		4'-3"	3'-9"
5⅝	9'-3"		4'-4"	3'-10"
6	9'-4"		4'-3"	3'-11"
6¼	9'-6"		4'-6"	4'-0"
6½	9'-8"		4'-6"	4'-0"
6¾	9'-11"		4'-6"	4'-0"
7	10'-2"		4'-6"	4'-0"
7¼	10'-3"		4'-7"	4'-1"
7½	10'-4"		4'-8"	4'-3"
7¾	10'-6"		4'-8"	4'-3"
8	10'-6"		4'-10"	4'-4"
8¼	10'-8"		4'-10"	4'-4"
8½	10'-8"		4'-11"	4'-5"
8¾	10'-11"		4'-11"	4'-5"
9	11'-1"		4'-11"	4'-5"
9¼	11'-2"		5'-0"	4'-6"
9½	11'-4"		5'-0"	4'-6"
9¾	11'-4"		5'-0"	4'-6"
10	11'-8"		5'-0"	4'-6"

ALL WATER MAINS GREATER THAN 12 – INCHES IN DIAMETER SHALL HAVE THRUST BLOCK DESIGNED & SHOWN ON THE CONSTRUCTION DOCUMENTS.

SEE VOLUMES ABOVE FOR "A" & "B" & "C" DIM.

FITTING	4"	6"	8"	12"
TEE	⅛ yd.	½ yd.	¾ yd.	2 yd.
90° BEND	⅛ yd.	½ yd.	1 ¼ yd.	3 yd.
45° BEND	⅛ yd.	½ yd.	¾ yd.	1 ½ yd.
22-1/2 BEND	⅛ yd.	⅛ yd.	¼ yd.	¾ yd.
11-1/4 BEND	⅛ yd.	⅛ yd.	⅛ yd.	¾ yd.

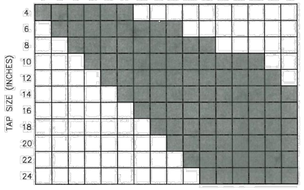
THRUST BLOCK DATA

CONCRETE THRUST BLOCKS

WATER MAIN AND TAP SIZE COMBINATIONS WHICH REQUIRE A CONCRETE THRUST REACTION BLOCK BEHIND THE MAIN AT THE TAPPING SLEEVE OR SADDLE.

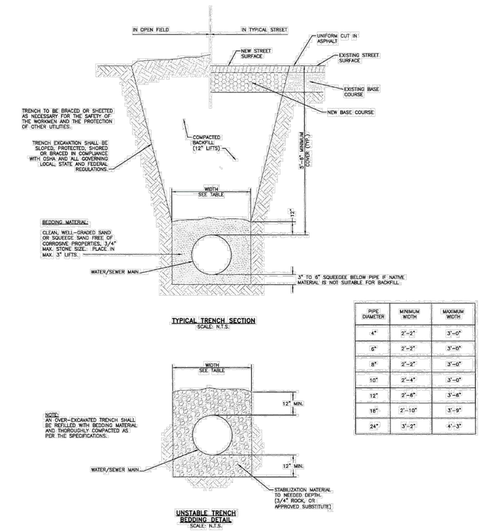
ALL WATER MAINS

INDICATES CONCRETE THRUST BLOCK REQUIRED



ANY THRUST REACTION BLOCK REQUIREMENTS FOR WATER MAIN AND TAP SIZE COMBINATIONS OTHER THAN THOSE SHOWN ABOVE WILL REQUIRE SPECIAL DESIGN APPROVAL BY THE DISTRICT.

THRUST BLOCKS REQUIRED FOR TAPS



TYPICAL TRENCH SECTION
SCALE: N.T.S.

PIPE DIAMETER	MINIMUM WIDTH	MAXIMUM WIDTH
4"	3'-2"	3'-0"
6"	3'-2"	3'-0"
8"	3'-2"	3'-0"
10"	3'-4"	3'-0"
12"	3'-6"	3'-6"
16"	3'-10"	3'-9"
24"	3'-2"	4'-3"

UNSTABLE TRENCH BEDDING DETAIL
SCALE: N.T.S.

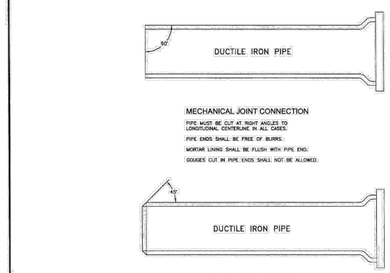
TYPICAL TRENCH CROSS–SECTION

MAXIMUM DEFLECTION PER SLIP JOINT OF D.I.P.

PIPE DIAMETER I.D. (IN)	PIPE DIAMETER O.D. (IN)	PIPE DIAMETER O.D. (FT)	MFRS. DEFL.	DESIGN DEFLECTION (80% MAX.) MAX. DEFL. DIST. (1)	(2)	APPROX. RADIUS FOR DEFLECTING CURVES WITHOUT BENDS 20'L	18'L
4"	4.80"	.400'	5°00'00"	4°00'00"	16"	15"	286'	258'
6"	6.90"	.575'	5°00'00"	4°00'00"	16"	15"	286'	258'
8"	9.05"	.754'	5°00'00"	4°00'00"	16"	15"	286'	258'
10"	11.10"	.925'	5°00'00"	4°00'00"	16"	15"	286'	258'
12"	13.20"	1.100'	5°00'00"	4°00'00"	16"	15"	286'	258'
14"	15.30"	1.275'	3°00'00"	2°24'00"	10"	9"	477'	430'
16"	17.40"	1.450'	3°00'00"	2°24'00"	10"	9"	477'	430'
18"	19.50"	1.625'	3°00'00"	2°24'00"	10"	9"	477'	430'
20"	21.60"	1.800'	3°00'00"	2°24'00"	10"	9"	477'	430'
24"	25.80"	2.150'	3°00'00"	2°24'00"	10"	9"	477'	430'
30"	32.00"	2.666'	2°30'00"	2°00'00"	8"	7"	573'	516'
36"	38.30"	3.192'	2°00'00"	1°36'00"	6"	6"	716'	645'
42"	44.50"	3.708'	2°00'00"	1°36'00"	6"	6"	716'	645'

(1) 20'L = NORMAL 20–FOOT JOINT LAYING LENGTH
(2) = NORMAL 18–FOOT JOINT LAYING LENGTH

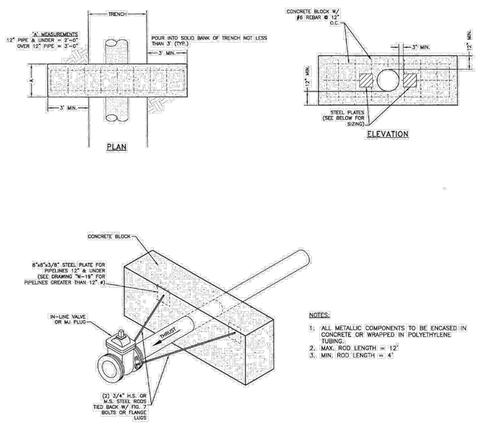
MAXIMUM PIPELINE DEFLECTION DATA



GENERAL NOTES:

1. ALL PIPE CUTTING EQUIPMENT AND PIPE CUTS MUST BE APPROVED BY THE WATER AND SANITATION DISTRICT INSPECTOR.
2. ALL PIPE ENDS TO BE USED IN INSTALLATION SHALL BE DRESSED SMOOTH TO THE SATISFACTION OF THE INSPECTOR PRIOR TO INSTALLATION.
3. AT THE REQUEST OF THE CONTRACTOR MAKING THE INSTALLATION, THE DISTRICT WILL MAKE PIPE CUTS FOR THE CONTRACTOR. A CHARGE OF $10 PER CUT IS PAID AND 24–HOUR NOTICE IS GIVEN. (THIS CURRENT FEE IS SUBJECT TO CHANGE.)
4. ALL CIP DELIVERED TO JOB SITE MUST BE NEW MATERIAL.

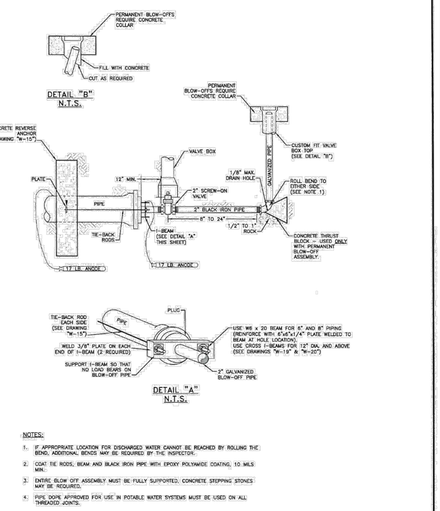
PIPE CUTTING



NOTES:

1. ALL METALLIC COMPONENTS TO BE ENCASED IN CONCRETE OR WRAPPED IN POLYETHYLENE TUBING.
2. MAX. ROD LENGTH = 12'
3. MIN. ROD LENGTH = 4'

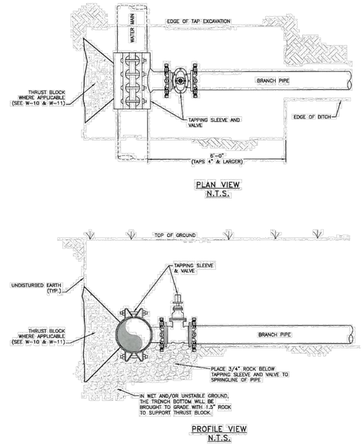
REVERSE ANCHOR DETAIL



NOTES:

1. IF APPROPRIATE LOCATION FOR DISCHARGED WATER CANNOT BE REACHED BY ROLLING THE BEND, ADDITIONAL BENDS MAY BE REQUIRED BY THE INSPECTOR.
2. COAT TIE RODS, BEAM AND BLACK IRON PIPE WITH EPOXY POLYWIDE COATING, 10 MILS MIN.
3. ENTIRE BLOW OFF ASSEMBLY MUST BE FULLY SUPPORTED; CONCRETE STEPPING STONES MAY BE REQUIRED.
4. PIPE DOPE APPROVED FOR USE IN POTABLE WATER SYSTEMS MUST BE USED ON ALL THREADED JOINTS.

TEMP & PERMANENT BLOW–OFF ASSEMBLIES FOR 6" & 8" MAINS



PIPE TAPPING DETAIL

Galloway
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CHALLENGER HOMES

CONSTRUCTION DOCUMENTS
FALCON MEADOWS AT BENT GRASS FILING NO. 4
FOR
CHALLENGER COMMUNITIES, LLC

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

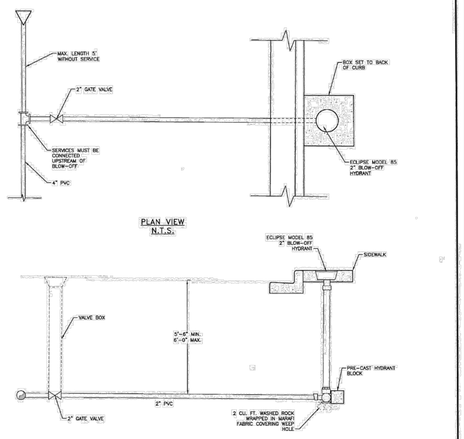
#	Date	Issue / Description	Init.

Project No:	CLH000021
Drawn By:	CMWJ
Checked By:	RGD
Date:	07/01/2022

WATER DETAILS SHEET 2

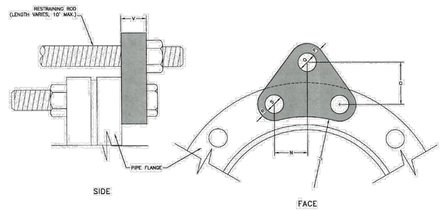
U3.2
Sheet 9 of 12

HC:\Galloway Homes (HC)\1 Falcon - CLH000021 - Fall at Bent Grass II\CAD\SHEETS\W10_U3.2 Water Details.dwg, Josh Murphy, 10/7/2022



CUL-DE-SAC BLOW-OFF DETAIL

Drawn: GDM	Revised:	WOODMEN HILLS METROPOLITAN DISTRICT	WATER & WASTEWATER SYSTEM STANDARD SPECIFICATIONS	W-22
Date: JAN 2011	Revised:			
Scale: N.T.S.	Revised:			

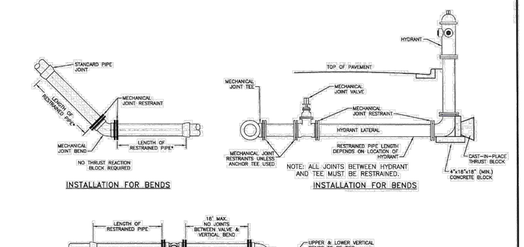


PIPE DIA. (IN.)	PRESS. CLASS (PSI)	"N" (IN.)	"O" (IN.)	H.S. ROD "P" (IN.)	H.S. ROD "Q" (IN.)	H.S. ROD DIA. (IN)	M.S. ROD "P" (IN.)	M.S. ROD "Q" (IN.)	M.S. ROD DIA. (IN)	"R" (IN.)	"S" (IN.)	"U" (IN.)	"V" (IN.)	NO. REQ'D (EA)
6	150	1-15/16	2-1/4	1	7/8	3/4	1	7/8	3/4	7/8	7/8	3-3/4	3/4	2
	300	1-3/8	2-3/4	1	1	7/8	1	1	7/8	7/8	7/8	4-7/16	1	
8	150	2-1/4	2-3/4	1	7/8	3/4	1	7/8	3/4	1	7/8	4-7/8	3/4	2
	300	1-11/16	2-7/8	1	1	7/8	1	1	7/8	1	1	5-1/2	1	
12	150	2-3/16	2-3/4	1-1/4	1-1/8	1	1-1/4	1-1/8	1	1-1/8	1	7-1/4	7/8	2
	300	1-3/4	2-3/4	1-3/8	1-1/4	1-1/2	1-3/8	1-1/4	1-1/4	1-1/4	1-1/8	7-5/8	1-1/4	
16	150	2-1/16	2-3/4	1-1/2	1-3/8	1-1/4	1-1/2	1-3/8	1-1/4	1-1/4	1-1/8	9-3/8	1-1/8	3
	300	1-3/4	4-1/4	1-1/2	1-1/2	1-3/8	1-1/2	1-1/2	1-3/8	1-1/2	1-3/8	9-7/8	1-1/2	
18	150	2-1/4	2-1/2		1-1/8	1		1-1/8	1		1-1/8	10	1-1/8	4
	300	1-7/8	3-3/4	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	1-3/8	10-3/16	2	4
20	150	2-5/8	1-15/16		1-1/8	1		1-1/8	1		1-1/4	11-1/8	1-1/4	4
	300	2	3-1/16	1-3/8	1-9/16	1-1/2	1-3/8	1-9/16	1-1/2	1-3/8	1-3/8	10-1/2	2-1/2	4
24	150	2-5/16	2-5/8		1-1/8	1		1-1/8	1		1-3/8	13-1/4	1-1/4	6
	300	2-5/16	3-1/8	1-1/2	1-9/16	1-1/2	1-1/2	1-9/16	1-1/2	1-1/2	1-5/8	12-1/2	2-1/4	6

NOTES:
1. M.S. MEANS MILD STEEL ROD, ASTM STANDARD DESIGNATION A-36. NUTS SHALL BE ASTM STANDARD DESIGNATION A-307
2. H.S. MEANS HIGH STRENGTH STEEL ROD, ASTM STANDARD DESIGNATION A-193 GRADE B-7. NUTS SHALL BE ASTM STANDARD DESIGNATION A-193 GRADE 2-H.

FLANGE – LUG DETAIL

Drawn: GDM	Revised:	WOODMEN HILLS METROPOLITAN DISTRICT	WATER & WASTEWATER SYSTEM STANDARD SPECIFICATIONS	W-23
Date: JAN 2011	Revised:			
Scale: N.T.S.	Revised:			



NOTES:
1. MECHANICAL JOINTS SHALL BE APPROVED ACCORDING TO MATERIAL SPECIFICATION FOR DIP AND PVC PIPE.
2. LENGTH OF PIPE REQUIRING JOINT RESTRAINT SHALL BE DETERMINED FROM CHART ON DRAWING W-25.
3. RESTRAINED JOINT PVC PIPE SHALL NOT BE USED FOR LOWERINGS.

APPLICATIONS FOR MECHANICAL JOINT RESTRAINTS

Drawn: GDM	Revised:	WOODMEN HILLS METROPOLITAN DISTRICT	WATER & WASTEWATER SYSTEM STANDARD SPECIFICATIONS	W-24
Date: JAN 2011	Revised:			
Scale: N.T.S.	Revised:			

RESTRAINED M.J. PIPE LENGTH (FT)

6-INCH DUCTILE IRON AND PVC

TYPE OF FITTING	STATIC PRESSURE (PSI) <100	100-150	150-200
90° BEND, TEE, VALVE OR PLUG	12	18	24
45° BEND	5	8	10
22-1/2° BEND	2	4	5
11-1/4° BEND	1	2	2

8-INCH DUCTILE IRON AND PVC

TYPE OF FITTING	STATIC PRESSURE (PSI) <100	100-150	150-200
90° BEND, TEE, VALVE OR PLUG	16	24	32
45° BEND	7	10	13
22-1/2° BEND	3	5	6
11-1/4° BEND	2	2	3

12-INCH DUCTILE IRON AND PVC

TYPE OF FITTING	STATIC PRESSURE (PSI) <100	100-150	150-200
90° BEND, TEE, VALVE OR PLUG	23	34	45
45° BEND	9	14	19
22-1/2° BEND	5	7	9
11-1/4° BEND	2	3	4

16-INCH DUCTILE IRON AND PVC

TYPE OF FITTING	STATIC PRESSURE (PSI) <100	100-150	150-200
90° BEND, TEE, VALVE OR PLUG	29	43	58
45° BEND	12	18	24
22-1/2° BEND	6	9	12
11-1/4° BEND	3	4	6

18-INCH DUCTILE IRON AND PVC

TYPE OF FITTING	STATIC PRESSURE (PSI) <100	100-150	150-200
90° BEND, TEE, VALVE OR PLUG	32	48	64
45° BEND	14	20	27
22-1/2° BEND	7	10	13
11-1/4° BEND	3	5	7

20-INCH DUCTILE IRON AND PVC

TYPE OF FITTING	STATIC PRESSURE (PSI) <100	100-150	150-200
90° BEND, TEE, VALVE OR PLUG	35	52	70
45° BEND	15	22	29
22-1/2° BEND	7	10	14
11-1/4° BEND	3	5	7

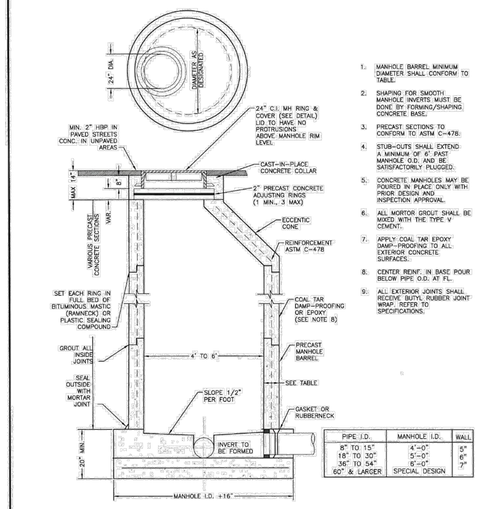
24-INCH DUCTILE IRON AND PVC

TYPE OF FITTING	STATIC PRESSURE (PSI) <100	100-150	150-200
90° BEND, TEE, VALVE OR PLUG	41	61	81
45° BEND	17	25	34
22-1/2° BEND	8	12	16
11-1/4° BEND	4	6	8

NOTES:
1. PRESSURES GREATER THAN 200 PSI REQUIRE SPECIAL DESIGN APPROVED BY THE DISTRICT.
2. LENGTH IS BASED ON MINIMUM 5'-0" OF GROUND COVER AND SOIL COMPACTED ACCORDING TO SECTION 5.15 OF THESE SPECIFICATIONS.
3. APPROVED METHODS OF RESTRAINED PIPE BEYOND INITIAL FITTING SHALL BE:
   A. FOR DUCTILE IRON PIPE, 1100 SERIES MEGALUG BY EBAA IRON OR EQUAL ON MECHANICAL JOINT PIPE OR DOUBLE 1100 SERIES MEGALUG BY EBAA IRON OR EQUAL ON PUSH ON JOINT PIPE;
   B. FOR PVC PIPE, SERIES 1500 OR SERIES 2800 RESTRAINTS BY EBAA IRON OR EQUAL.

RESTRAINED MJ PIPE LENGTH DATA

Drawn: GDM	Revised:	WOODMEN HILLS METROPOLITAN DISTRICT	WATER & WASTEWATER SYSTEM STANDARD SPECIFICATIONS	W-25
Date: JAN 2011	Revised:			
Scale: N.T.S.	Revised:			

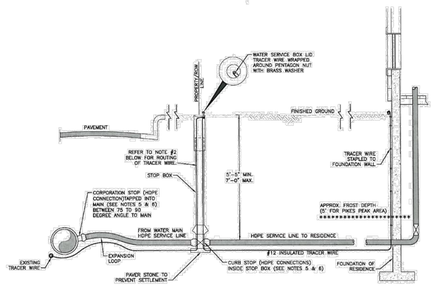


1. MANHOLE BARREL MINIMUM DIAMETER SHALL CONFORM TO TABLE.
2. SHAPING FOR SMOOTH MANHOLE INVERTS MUST BE DONE BY FORMING/SHAPING CONCRETE BASE.
3. PRECAST SECTIONS TO CONFORM TO ASTM C-478.
4. STUB-OUTS SHALL EXTEND A MINIMUM OF 6" PAST MANHOLE O.D. AND BE SATISFACTORILY PLUGGED.
5. CONCRETE MANHOLES MAY BE POURED IN PLACE ONLY WITH PRIOR DESIGN AND INSPECTION APPROVAL.
6. ALL MORTAR GROUT SHALL BE MIXED WITH THE TYPE V CEMENT.
7. APPLY COAL TAR EPOXY DAMP-PROOFING TO ALL EXTERIOR CONCRETE SURFACES.
8. CENTER REINF. IN BASE POUR BELOW PIPE O.D. AT FL.
9. ALL EXTERIOR JOINTS SHALL RECEIVE BUTYL RUBBER JOINT WRAP. REFER TO SPECIFICATIONS.

PIPE I.D.	MANHOLE I.D.	WALL
8" TO 15"	4'-0"	5"
18" TO 30"	5'-0"	6"
36" TO 54"	6'-0"	7"
60" & LARGER	SPECIAL DESIGN	

PRECAST MANHOLE

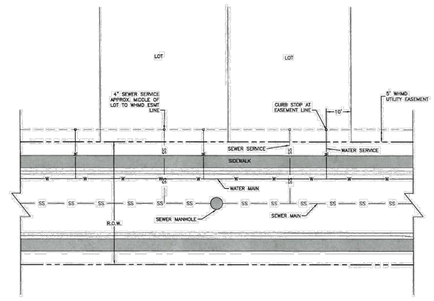
Drawn: GDM	Revised:	WOODMEN HILLS METROPOLITAN DISTRICT	WATER & WASTEWATER SYSTEM STANDARD SPECIFICATIONS	WW-3
Date: JAN 2011	Revised:			
Scale: N.T.S.	Revised:			



WATER SERVICE LINE NOTES:
1. NO. 12 INSULATED TRACER WIRE SHALL BE PLACED ALONG SERVICE LINE AND SHALL BE A CONTINUOUS (WITHOUT SPLICES) LENGTH.
2. WHEN A NEW PLASTIC SERVICE IS CONNECTED TO A PVC MAIN, THE SERVICE LINE TRACER WIRE SHALL BE CONNECTED TO THE MAIN'S TRACER WIRE WITH A SPLIT-BOLT CONNECTOR. THE TRACER WIRE IS THEN TAPED ALONG THE SERVICE LINE IN AT LEAST 3 LOCATIONS NOT TO EXCEED 10'. ALL CURB STOP BOXES SHALL HAVE A 1-1/2" DIAMETER SCHD 40 PVC PIPE TELESCOPED INSIDE WITH A BELL END TO FIT OVER THE TOP OF THE CURB STOP VALVE. TRACER WIRE SHALL BE EXTENDED UP THE INSIDE OF CURB STOP BOX BUT OUTSIDE THE 1-1/2" SCHD 40 PVC PIPE. TRACER WIRE SHALL BE WRAPPED AROUND CURB STOP BOLT UNDER A BRASS WASHER. THE WIRE WIRE WILL THEN BE ROUTED BACK DOWN INSIDE THE CURB BOX AND OUTSIDE THE SCHD 40 PVC, AND TAPED AGAIN TO THE SERVICE LINE UNTIL IT REACHES THE POINT WHERE THE SERVICE LINE ENTERS THE BUILDING. AT THIS POINT, THE TRACER WIRE WILL BE STAPLED TO THE FOUNDATION WALL, THEN TURNED BACK TO FORM A ONE INCH LONG HOOK AND WRAPPED WITH 4" FILLER TAPE AND THEN 3/4" ELECTRICAL TAPE FOR PROTECTION AT THE SURFACE.
3. TO ASSIST IN PE PIPE LOCATING, A 9LB. ANODE SHOULD BE CONNECTED TO THE END OF THE TRACER WIRE AND THE WATER MAIN TRACER WIRE EVERY 1000 FEET ALONG THE LENGTH OF THE WATER MAIN. THE NEW ANODE WILL BE ATTACHED TO THE WATER SERVICE/WATER MAIN TRACER WIRE WITH A SPLIT-BOLT CONNECTOR. THE CONNECTOR IS TO BE WRAPPED FIRST WITH A 4" FILLER TAPE AND THEN 3/4" ELECTRICAL TAPE FOR PROTECTION AGAINST CORROSION.
4. THE APPROPRIATE CLEARANCES BETWEEN ANODES AND STEEL PIPES OR OTHER STRUCTURES MUST BE MAINTAINED PER WATER LINE EXTENSION & SERVICE STANDARDS.
5. BRASS FITTINGS, CORP, STOP AND CURB STOP SHALL BE WRAPPED WITH WAX TAP FOR PROTECTION PER THE WATER LINE EXTENSION & SERVICE STANDARDS.
6. STIFFENERS SHALL BE INSTALLED WITHIN THE HDPE SERVICE LINE AT THE CONNECTION POINTS OF THE FITTINGS.

TYPICAL INSTALLATION FOR SERVICE LINE & STOP BOX

Drawn: GDM	Revised:	WOODMEN HILLS METROPOLITAN DISTRICT	WATER & WASTEWATER SYSTEM STANDARD SPECIFICATIONS	W-33
Date: JAN 2011	Revised:			
Scale: N.T.S.	Revised:			



NOTES:
1. WATER SERVICE TO BE 10' FROM "DOWNSTREAM" PROPERTY LINE AND EXTENDED TO WHMD UTILITY EASEMENT LINE.
2. SEWER SERVICE TO BE PLACED APPROXIMATELY IN THE MIDDLE OF THE LOT AND EXTENDED TO WHMD UTILITY EASEMENT LINE.
3. SERVICES SHALL BE MARKED WITH 2"x4" POST AT TERMINATION POINT FOR LOCATION DURING CONNECTION TO RESIDENCE. POSTS SHALL BE SPRAY-PAINTED BLUE FOR WATER AND GREEN FOR SEWER.

UTILITY SERVICE LOCATIONS

Drawn: GDM	Revised:	WOODMEN HILLS METROPOLITAN DISTRICT	WATER & WASTEWATER SYSTEM STANDARD SPECIFICATIONS	W-39
Date: JAN 2011	Revised:			
Scale: N.T.S.	Revised:			

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CHALLENGER HOMES

CONSTRUCTION DOCUMENTS
FALCON MEADOWS AT BENT GRASS FILING NO. 4
FOR
CHALLENGER COMMUNITIES, LLC

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

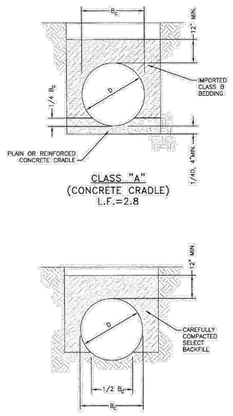
#	Date	Issue / Description	Init.

Project No:	CLH000021
Drawn By:	CMWJ
Checked By:	RGD
Date:	07/01/2022

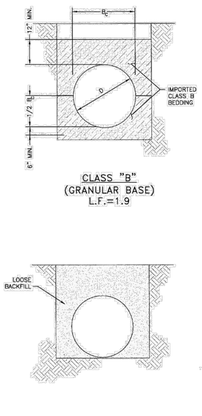
WATER DETAILS SHEET 3

U3.3
Sheet 10 of 12

HC:\Galloway Homes (HC)\1 Falcon - CLH000021 - Fall at Bent Grass\4 ACTIVE\PLOTS\PLOTS_LDC\1 Cindy Bunyi - Josh Murphy - 1SF.DWG

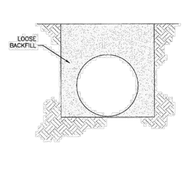


CLASS "A"
(CONCRETE CRADLE)
L.F.=2.8



CLASS "B"
(GRANULAR BASE)
L.F.=1.9

CLASS "C"
(SHAPED BOTTOM)
L.F.=1.5



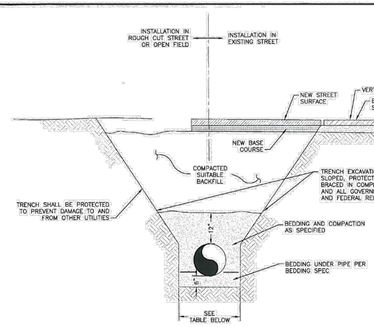
CLASS "D"
(FLAT BOTTOM)
L.F.=1.1

NOTES:

1. FOR ROCK OR OTHER INCOMPRESSIBLE MATERIALS, THE TRENCH SHALL BE OVEREXCAVATED A MINIMUM OF 6" AND REFILLED WITH GRANULAR BEDDING MATERIAL AS DEFINED BY CLASS "B" BEDDING.
2. L.F. = LOADFACTOR
3. CLASS "D" BEDDING WILL NOT BE ACCEPTABLE UNDER ANY CONDITION.
4. MINIMUM DENSITY FOR CAREFULLY COMPACTED SELECT BACKFILL SHALL BE 95% OF STD. PROCTOR DENSITY OR AS SPECIFIED FOR THE TRENCH BACKFILL WHICHEVER IS GREATER.

PIPE BEDDING

Drawn: GDM Date: JAN 2011 Scale: N.T.S.	Revised: Revised: Revised:	WOODMEN HILLS METROPOLITAN DISTRICT — WATER & WASTEWATER SYSTEM STANDARD SPECIFICATIONS	WW-1



BOTTOM OF TRENCH WIDTH		
PIPE DIAMETER	MINIMUM WIDTH	MAXIMUM WIDTH
4"	1'-5"	3'-9"
6"	1'-7"	3'-11"
8"	1'-9"	4'-1"
12"	2'-1"	4'-5"
15"	2'-6"	4'-9"
18"	2'-10"	5'-2"
24"	3'-2"	5'-6"

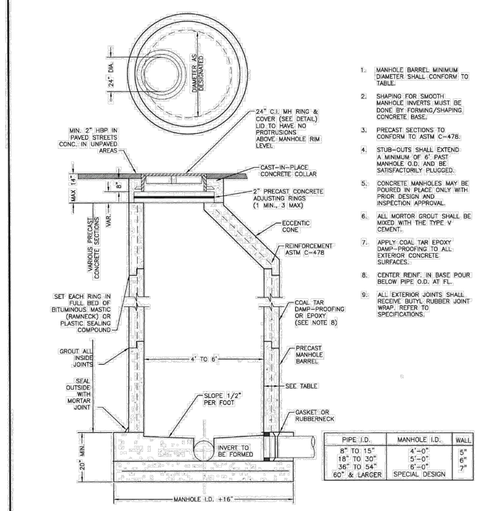
ALL PIPE EMBEDMENT SHALL BE IMPORTED CLASS B BEDDING UNLESS OTHERWISE DIRECTED.

AN OVER EXCAVATED TRENCH SHALL BE REFILLED AND THOROUGHLY COMPACTED UNDER THE DIRECTION OF THE DISTRICT.

UNDER NO CIRCUMSTANCES WILL PIPE BE LAID IN A PROPOSED FILL AREA PRIOR TO IT BEING COMPLETELY FILLED. THE FILL WILL BE PLACED FIRST TO PROPOSED GRADE AND COMPACTED AS REQUIRED. A TRENCH THEN WILL BE EXCAVATED AND THE PIPE INSTALLED IN THE USUAL MANNER.

TYPICAL TRENCH CROSS SECTION

Drawn: GDM Date: JAN 2011 Scale: N.T.S.	Revised: Revised: Revised:	WOODMEN HILLS METROPOLITAN DISTRICT — WATER & WASTEWATER SYSTEM STANDARD SPECIFICATIONS	WW-2

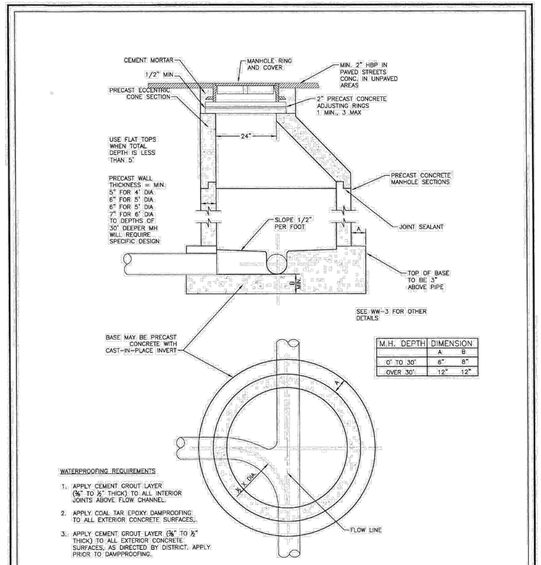


1. MANHOLE BARREL MINIMUM DIAMETER SHALL CONFORM TO TABLE.
2. SHAPING FOR SMOOTH MANHOLE INVERTS MUST BE DONE BY FORMING/SHAPING CONCRETE BASE.
3. PRECAST SECTIONS TO CONFORM TO ASTM C-478.
4. STUB-OUTS SHALL EXTEND A MINIMUM OF 6' PAST MANHOLE O.D. AND BE SATISFACTORILY PLUGGED.
5. CONCRETE MANHOLES MAY BE POURED IN PLACE ONLY WITH PRIOR DESIGN AND INSPECTION APPROVAL.
6. ALL MORTOR GROUT SHALL BE MIXED WITH THE TYPE V CEMENT.
7. APPLY COAL TAR EPOXY DAMP-PROOFING TO ALL EXTERIOR CONCRETE SURFACES.
8. CENTER REINF. IN BASE POUR BELOW PIPE O.D. AT FL.
9. ALL EXTERIOR JOINTS SHALL RECEIVE BUTYL RUBBER JOINT WRAP. REFER TO SPECIFICATIONS.

PIPE I.D.	MANHOLE I.D.	WALL
8" TO 15"	4'-0"	5"
18" TO 30"	5'-0"	6"
36" TO 54"	6'-0"	7"
60" & LARGER	SPECIAL DESIGN	

PRECAST MANHOLE

Drawn: GDM Date: JAN 2011 Scale: N.T.S.	Revised: Revised: Revised:	WOODMEN HILLS METROPOLITAN DISTRICT — WATER & WASTEWATER SYSTEM STANDARD SPECIFICATIONS	WW-3



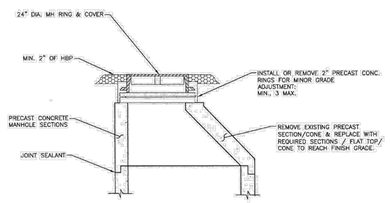
M.H. DEPTH	DIMENSION	
	A	B
0' TO 30'	6"	8"
OVER 30'	12"	12"

WATERPROOFING REQUIREMENTS

1. APPLY CEMENT GROUT LAYER (⅜" TO ½" THICK) TO ALL INTERIOR JOINTS ABOVE FLOW CHANNEL.
2. APPLY COAL TAR EPOXY DAMPROOFING TO ALL EXTERIOR CONCRETE SURFACES.
3. APPLY CEMENT GROUT LAYER (⅜" TO ½" THICK) TO ALL EXTERIOR CONCRETE SURFACES, AS DIRECTED BY DISTRICT. APPLY PRIOR TO DAMPROOFING.

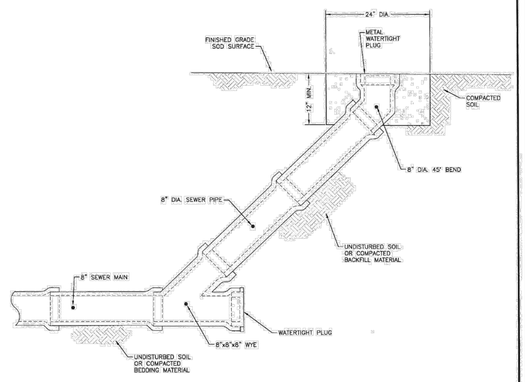
SANITARY SEWER MANHOLE

Drawn: GDM Date: JAN 2011 Scale: N.T.S.	Revised: Revised: Revised:	WOODMEN HILLS METROPOLITAN DISTRICT — WATER & WASTEWATER SYSTEM STANDARD SPECIFICATIONS	WW-4



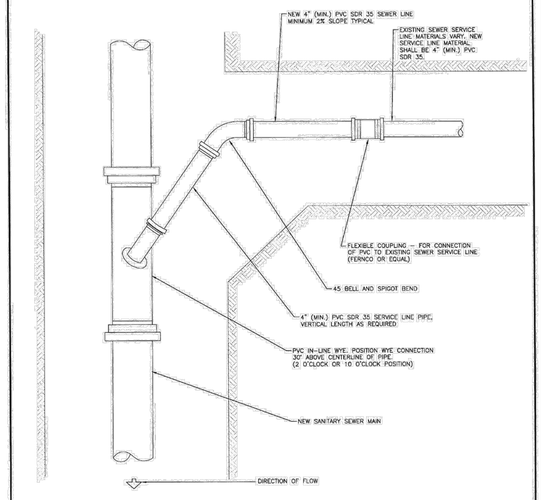
MANHOLE RING AND COVER ADJUSTMENT

Drawn: GDM Date: JAN 2011 Scale: N.T.S.	Revised: Revised: Revised:	WOODMEN HILLS METROPOLITAN DISTRICT — WATER & WASTEWATER SYSTEM STANDARD SPECIFICATIONS	WW-5



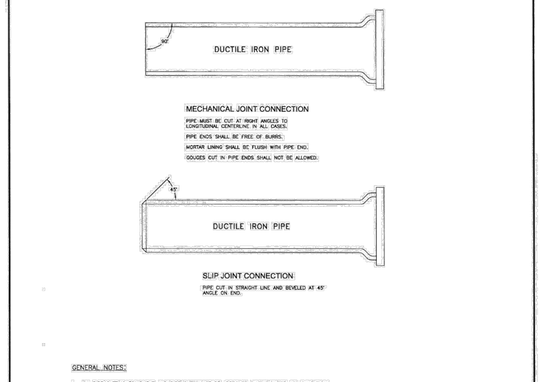
SANITARY SEWER MAIN CLEAN-OUT

Drawn: GDM Date: JAN 2011 Scale: N.T.S.	Revised: Revised: Revised:	WOODMEN HILLS METROPOLITAN DISTRICT — WATER & WASTEWATER SYSTEM STANDARD SPECIFICATIONS	WW-6



SANITARY SEWER SERVICE CONNECTION

Drawn: GDM Date: JAN 2011 Scale: N.T.S.	Revised: Revised: Revised:	WOODMEN HILLS METROPOLITAN DISTRICT — WATER & WASTEWATER SYSTEM STANDARD SPECIFICATIONS	WW-7



GENERAL NOTES:

1. ALL PIPE CUTTING EQUIPMENT AND PIPE CUTS MUST BE APPROVED BY THE WATER AND SANITATION DISTRICT INSPECTOR.
2. ALL PIPE ENDS TO BE USED IN INSTALLATION SHALL BE DRESSED SMOOTH TO THE SATISFACTION OF THE INSPECTOR PRIOR TO INSTALLATION.
3. AT THE REQUEST OF THE CONTRACTOR MAKING THE INSTALLATION, THE DISTRICT WILL MAKE PIPE CUTS, PROVIDING THE CURRENT FEE PER CUT IS PAID AND 24-HOUR NOTICE IS GIVEN. (THE CURRENT FEE IS SUBJECT TO CHANGE.)
4. ALL DIP DELIVERED TO JOB SITE MUST BE NEW MATERIAL.

PIPE CUTTING

Drawn: GDM Date: JAN 2011 Scale: N.T.S.	Revised: Revised: Revised:	WOODMEN HILLS METROPOLITAN DISTRICT — WATER & WASTEWATER SYSTEM STANDARD SPECIFICATIONS	WW-11

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CHALLENGER HOMES

CONSTRUCTION DOCUMENTS
FALCON MEADOWS AT BENT GRASS FILING NO. 4
FOR
CHALLENGER COMMUNITIES, LLC

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

#	Date	Issue / Description	Init.

Project No:	CLH000021
Drawn By:	CMWJ
Checked By:	RGD
Date:	07/01/2022

WASTEWATER DETAILS
SHEET 1

U3.4
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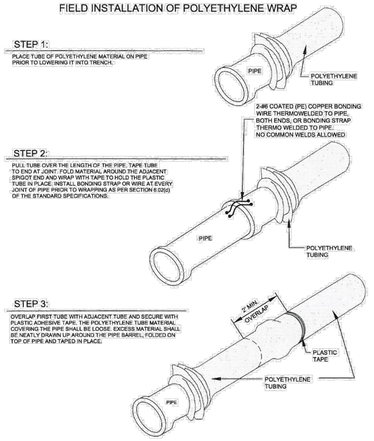
FIELD INSTALLATION OF POLYETHYLENE WRAP



POLYETHYLENE PIPE WRAP

Drawn: GDM Date: JAN 2011 Scale: N.T.S.	Revised: Revised: Revised:	WOODMEN HILLS METROPOLITAN DISTRICT — WATER & WASTEWATER SYSTEM STANDARD SPECIFICATIONS	WW–12

MAXIMUM DEFLECTION
PER SLIP JOINT OF D.I.P.

PIPE DIAMETER I.D. (IN)	O.D. (IN)	O.D. (F1)	MFRS. DEFL.	DESIGN DEFLECTION (80% MAX.)	MAX. DEFL. DIST. (1)	MAX. DEFL. DIST. (2)	APPROX. RADIUS FOR DEFLECTING CURVES WITHOUT BENDS 20'L	18'L
4"	4.80"	.400"	5°00'00"	4°00'00"	16"	15"	286'	258'
6"	6.90"	.575"	5°00'00"	4°00'00"	16"	15"	286'	258'
8"	9.05"	.754"	5°00'00"	4°00'00"	16"	15"	286'	258'
10"	11.10"	.923"	5°00'00"	4°00'00"	16"	15"	286'	258'
12"	13.20"	1.100"	5°00'00"	4°00'00"	16"	15"	286'	258'
14"	15.30"	1.275"	3°00'00"	2°24'00"	10"	9"	477'	430'
16"	17.40"	1.450"	3°00'00"	2°24'00"	10"	9"	477'	430'
18"	19.50"	1.625"	3°00'00"	2°24'00"	10"	9"	477'	430'
20"	21.60"	1.800"	3°00'00"	2°24'00"	10"	9"	477'	430'
24"	25.80"	2.150"	3°00'00"	2°24'00"	10"	9"	477'	430'
30"	32.00"	2.666"	2°30'00"	2°00'00"	8"	7"	573'	516'
36"	38.30"	3.192"	2°00'00"	1°36'00"	6"	6"	716'	645'
42"	44.50"	3.708"	2°00'00"	1°36'00"	6"	6"	716'	645'

(1) 20'L = NORMAL 20-FOOT JOINT LAYING LENGTH
(2) = NORMAL 18-FOOT JOINT LAYING LENGTH

MAXIMUM PIPELINE DEFLECTION DATA

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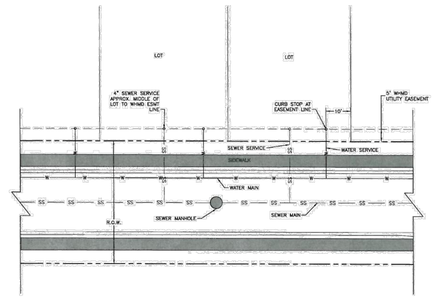

NOTES:

1. WATER SERVICE TO BE 10' FROM "DOWNSTREAM" PROPERTY LINE AND EXTENDED TO WHMD UTILITY EASEMENT LINE.
2. SEWER SERVICE TO BE PLACED APPROXIMATELY IN THE MIDDLE OF THE LOT AND EXTENDED TO WHMD UTILITY EASEMENT LINE.
3. SERVICES SHALL BE MARKED WITH 2"x4" POST AT TERMINATION POINT FOR LOCATION DURING CONNECTION TO RESIDENCE. POSTS SHALL BE SPRAY-PAINTED BLUE FOR WATER AND GREEN FOR SEWER.

UTILITY SERVICE LOCATIONS

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WASTEWATER DETAILS
SHEET 2

U3.5
Sheet 12 of 12

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