BRANDING IRON AT STERLING RANCH FILING NO. 2

COUNTY OF EL PASO, STATE OF COLORADO

STREET IMPROVEMENT PLANS

AUGUST 2019

AGENCIES

OWNER/DEVELOPER:	SR LAND, LLC 20 BOULDER CRESCENT, SUITE 201 COLORADO SPRINGS, CO 80903 JIM MORLEY (719) 471–1742
CIVIL ENGINEER:	M & S CIVIL CONSULTANTS, INC. 20 BOULDER CRESCENT, SUITE 110 COLORADO SPRINGS, CO 80903 VIRGIL A. SANCHEZ P.E. (719) 955–5485
COUNTY ENGINEERING:	EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT 2880 INTERNATIONAL CIRCLE, SUITE 110 COLORADO SPRINGS, CO 80910 JEFF RICE, P.E. (719) 520–6300
TRAFFIC ENGINEERING:	EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS 3275 AKERS DRIVE COLORADO SPRINGS, CO 80922 JENNIFER IRVINE, P.E. (719) 520–6460
WATER RESOURCES:	STERLING RANCH METRO DISTRICT ENGINEERS JDS–HYDRO CONSULTANTS 545 E. PIKES PEAK AVE., SUITE 300 COLORADO SPRINGS, CO 80903 JOHN MCGINN (719) 668–8769
FIRE DISTRICT:	BLACK FOREST FIRE PROTECTION DISTRICT 11445 TEACHOUT ROAD COLORADO SPRINGS, CO 80908 CHIEF BRYAN JACK (719) 495–4300
GAS DEPARTMENT:	COLORADO SPRINGS UTILITIES 7710 DURANT DR. COLORADO SPRINGS, CO 80947 TIM WENDT (719) 668–3556
ELECTRIC DEPARTMENT:	MOUNTAIN VIEW ELECTRIC 11140 E. WOODMEN ROAD FALCON, CO 80831 (719) 495–2283
COMMUNICATIONS:	QWEST COMMUNICATIONS (U.N.C.C. LOCATORS) (800) 922–1987 AT&T (LOCATORS) (719) 635–3674

BENCHMARKS

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
2. THE TOP OF A RED PLASTIC SURVEYORS CAP, ILLEGIBLE, AT THE NORTHWEST BOUNDARY CORNER OF PAWNEE RANCHEROS SUBDIVISION
   NORTHING = 410095.404
   EASTING = 235052.131
   ELEVATION = 7000.40
3. THE TOP OF A RED PLASTIC SURVEYORS CAP, STAMPED "38141", AT THE SOUTHWEST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

ABBREVIATION LEGEND

℄–℄	CENTERLINE INTERSECTION
FL–FL	FLOWLINE INTERSECTION
BT	BEGIN TRANSITION
ET	END TRANSITION
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PCR	POINT OF CURB RETURB
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENT
EL	ELEVATION
VERT	VERTICAL
HORZ	HORIZONTAL
DEFL	DEFLECTION
LT	LEFT
RT	RIGHT
FL	FLOWLINE
FES	FLARE END SECTION
S	SLOPE
HGL	HYDRAULIC GRADE LINE
TBC	TOP BACK OF CURB
GRD	GROUND
TOB	TOP OF BOX
1	LOT NUMBER
(1111)	ADDRESS

SS	SANITARY SEWER
WT	WATER
STRM	STORM SEWER
SI	STREET IMPROVEMENT
BOP	BOTTOM OF PIPE
TOP	TOP OF PIPE
CL	CENTER LINE
MH	MANHOLE
STA	STATION
PUB	PUBLIC
PRI	PRIVATE
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
DIA	DIAMETER
EL	ELEVATION
XING	CROSSING
CLR	CLEARANCE
STA	STATION
LF	LINEAR FEET
EX	EXISTING
PROP	PROPOSED
YR	YEAR
F4	FILING 4
NTS	NOT TO SCALE
SHT	SHEET
P&P	PLAN & PROFILE
MOD.	MODIFIED
NO.	NUMBER
DR.	DRIVE

VICINITY MAP

N.T.S.

SITE MAP

N.T.S.

APPROVALS:

ENGINEER'S STATEMENT:

DETAILED IMPROVEMENT PLANS AND SPECIFICATIONS ENGINEER'S STATEMENT:
THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION. SAID DETAILED PLANS AND SPECIFICATIONS HAVE BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR DETAILED DRAINAGE PLANS AND SPECIFICATIONS, AND SAID DETAILED PLANS AND SPECIFICATIONS ARE IN CONFORMITY WITH THE MASTER PLAN OF THE DRAINAGE BASIN. SAID DETAILED DRAINAGE PLANS AND SPECIFICATIONS MEET THE PURPOSES FOR WHICH THE PARTICULAR DRAINAGE FACILITY(S) IS DESIGNED. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS, OR OMISSIONS ON MY PART IN PREPARATION OF THE DETAILED IMPROVEMENT PLANS AND SPECIFICATIONS.

VIRGIL A SANCHEZ, COLORADO P.E. NO. 37160 — DATE
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

OWNER/DEVELOPER STATEMENT:

THE OWNER WILL COMPLY WITH THE REQUIREMENTS OF THE DRAINAGE REPORT AND PLAN AND THIS SET OF CONSTRUCTION DOCUMENTS.
THE OWNER WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN.

JAMES F. MORLEY — DATE

SR LAND, LLC
20 BOULDER CRESCENT, SUITE 201
COLORADO SPRINGS, CO 80903

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 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, AND ENGINEERING CRITERIA MANUAL AS AMENDED.

JENNIFER IRVINE, P.E. — DATE
COUNTY ENGINEER / ECM ADMINISTRATOR

STERLING RANCH METROPOLITAN DISTRICT:

THESE DOCUMENTS HAVE BEEN REVIEWED AND APPROVED FOR STORM DRAIN AND ASSOCIATED UTILITY SERVICE CONSTRUCTION.

FOR AND ON BEHALF OF THE STERLING RANCH METRO. DISTRICT — DATE

BLACK FOREST FIRE PROTECTION DISTRICT:

ALL FIRE HYDRANTS SHALL BE INSTALLED ACCORDING TO THE BLACK FOREST FIRE PROTECTION DISTRICT SPECIFICATIONS. THE NUMBER OF FIRE HYDRANTS AND HYDRANT LOCATIONS AS SHOWN ON THE WATER INSTALLATION PLAN ARE CORRECT AND ADEQUATE TO SATISFY THE FIRE PROTECTION REQUIREMENTS AS SPECIFIED BY THE BLACK FOREST FIRE PROTECTION DISTRICT.

FOR AND ON BEHALF OF THE BLACK FOREST FIRE PROTECTION DISTRICT — DATE

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SHEET 1 TITLE SHEET
SHEET 2 NOTES & DETAILS
SHEET 3 PLAN & PROFILE – LODGE GRASS WAY / MOSBY WAY
SHEET 4 PLAN & PROFILE – WHITEFISH WAY
SHEET 5 PLAN & PROFILE – YELLOWTAIL WAY
SHEET 6 PLAN & PROFILE – SPRAGUE WAY
SHEET 7 PLAN & PROFILE – MISTY LAKE COURT
SHEET 8 SIGNAGE & STRIPING PLAN

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES
FOR BURIED UTILITY INFORMATION
48 HRS BEFORE YOU DIG
CALL 1–800–922–1987

BRANDING IRON AT STERLING RANCH FILING NO. 2
STREET IMPROVEMENT PLANS
PROJECT NO. 09-012 | DATE: 08/21/2019
DESIGNED BY: JWP | DRAWN BY: JWP | CHECKED BY: GW
SCALE: HORIZONTAL: N/A | VERTICAL: N/A
SHEET 1 OF 8 | SI01

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

REVISIONS: NO. | DATE | BY | DESCRIPTION | APRV'D. BY | DATE

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR LIABILE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

CAUTION

File: O:\09012A\Challenger East\dwg\Const Dwg\Street Plans\SI01.dwg Plotstamp: 8/21/2019 9:45 AM

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 WILL TAKE THE NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES FROM DAMAGE DUE TO THIS OPERATION. ANY DAMAGE TO THE UTILITIES WILL BE REPAIRED AT THE CONTRACTOR'S 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 PER THE SOILS ENGINEER'S RECOMMENDATIONS, AND APPROVED BY EL PASO COUNTY DEVELOPMENT SERVICES ENGINEERING DIVISION.
5. ALL STATIONING IS CENTERLINE OF IMPROVEMENTS UNLESS OTHERWISE INDICATED. ALL ELEVATIONS ARE FLOW LINE UNLESS OTHERWISE INDICATED AS TOP BACK OF CURB (TBC), ASPHALT (ASP), OR TOP OF INLET OR BOX (TOB).
6. ALL DISTURBED PAVEMENT EDGES SHALL BE CUT TO NEAT LINES. REPAIR SHALL CONFORM TO EPC ECM APPENDIX K – 1.2C.
7. ALL INTERSECTION ACCESSES TO BE CONSTRUCTED WITH A 25 FOOT SIGHT VISIBILITY TRIANGLES IS REQUIRED AND THERE SHALL BE NO OBSTRUCTIONS GREATER THAN 18" VERTICAL IN THIS AREA.
8. ALL CULVERTS AND STORM DRAIN PIPES SHALL BE SMOOTH INTERIOR CORRUGATED POLYETHYLENE PIPE (HDPE), 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 OWNER'S GEOTECHNICAL ENGINEER TO SUPPORT MINIMUM 50 YEAR DESIGN LIFE. CULVERTS MUST CONFORM TO EPC ECM SECTION 3.32 – CULVERTS.
9. ASPHALT THICKNESS AND BASE COURSE THICKNESS (COMPACTED) FOR ROADS SHALL BE PER DESIGN REPORT BY OWNER'S GEOTECHNICAL ENGINEER. OWNER'S GEOTECHNICAL ENGINEER TO BE ON SITE AT THE 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.

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 DEVELOPMENT SERVICES.
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 DEVELOPMENT SERVICES (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 PUBLIC SERVICE DEPARTMENT (PSD) PRIOR TO ANY SIGNAGE OR STRIPING WORK WITHIN AN EXISTING EL PASO COUNTY ROADWAY.

PEDESTRIAN RAMP NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CURRENT ENGINEERING CRITERIA MANUAL AND ADA REQUIREMENTS.
2. CONTRACTOR TO NOTIFY ENGINEERING DIVISION INSPECTION STAFF 48 HOURS PRIOR TO CONCRETE PLACEMENT.
3. PEDESTRIAN RAMP CONSTRUCTION SHALL BE A MINIMUM 4,500 PSI CONCRETE, MINIMUM 4" THICK, NON-COLORED, NON-SCORED, COARSE BROOM FINISH.
4. RAMP LOCATION AND LENGTH MAY REQUIRE MODIFICATION TO MAINTAIN THE 12:1 MAXIMUM RUNNING RAMP SLOPE AND 20:1 DETECTABLE WARNING AREA DUE TO STREET INTERSECTION GRADES AND/OR ALIGNMENTS.
5. DETECTABLE WARNING AREA SHALL START A MINIMUM OF 6" BUT NOT MORE THAN 8" FROM THE FLOWLINE OF THE CURB AT ANY POINT.
6. DETECTABLE WARNING AREA SHALL BE PREFABRICATED, REDDISH INTEGRALLY COLORED, TRUNCATED-DOME, PAVERS. THERMOPLASTIC TRUNCATED DOMES WILL NOT BE ACCEPTED.
7. THE DETECTABLE WARNING AREA SHALL BE 24" IN LENGTH AND THE FULL WIDTH OF THE RAMP.
8. RAMP WIDTH REQUIRED IS SAME AS APPROACHING SIDEWALK; 4' MINIMUM.
9. ALL RAMPS WILL BE PERPENDICULAR TO TRAFFIC WITH THE EXCEPTION OF MID-BLOCK OR TERMINAL RAMPS WHICH MAY BE PARALLEL SUBJECT TO APPROVAL.
10. AVOID PLACING DRAINAGE STRUCTURES, TRAFFIC SIGNAL/SIGNAGE, UTILITIES/JUNCTION BOXES, OR OTHER OBSTRUCTIONS WITHIN PROPOSED RAMP AREAS.

GENERAL NOTES

1. WHERE THE 1'-6" FLARED SIDE(S) OF A PERPENDICULAR CURB RAMP IS (ARE) CONTIGUOUS WITH A PEDESTRIAN OR HARD SURFACE AREA, THE MAXIMUM FLARE SLOPE SHALL NOT EXCEED 10:1.
2. PEDESTRIAN WALKWAY AND/OR LOCATION OF EXISTING OR FUTURE PEDESTRIAN RAMPS ON OPPOSITE CORNERS SHALL BE REVIEWED BEFORE CONSTRUCTING NEW RAMPS.
3. AT MARKED PEDESTRIAN CROSSINGS, THE BOTTOM OF THE RAMPS, EXCLUSIVE OF THE FLARE SIDES, SHALL BE TOTALLY CONTAINED WITHIN THE MARKINGS.

PEDESTRIAN INTERSECTION RAMP (SD 2-41)

SCALE: NTS

STANDARD NOTES FOR EL PASO COUNTY CONSTRUCTION PLANS

1. ALL DRAINAGE AND ROADWAY CONSTRUCTION SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD NOTIFICATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, BEFORE BEGINNING CONSTRUCTION. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CALL 811 TO CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC).
3. CONTRACTOR SHALL KEEP A COPY OF THESE APPROVED PLANS, THE GRADING AND EROSION CONTROL PLAN, THE STORMWATER MANAGEMENT PLAN (SWMP), THE SOILS AND GEOTECHNICAL REPORT, AND THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES, INCLUDING THE FOLLOWING:
   a. EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)
   b. CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2
   c. COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
   d. CDOT M & S STANDARDS
4. NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING. ANY MODIFICATIONS NECESSARY TO MEET CRITERIA AFTER-THE-FACT WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
5. IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ACCURATELY SHOW EXISTING CONDITIONS, BOTH ONSITE AND OFFSITE, ON THE CONSTRUCTION PLANS. ANY MODIFICATIONS NECESSARY DUE TO CONFLICTS, OMISSIONS, OR CHANGED CONDITIONS WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
6. CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT (PCD) – INSPECTIONS, PRIOR TO STARTING CONSTRUCTION.
7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND THE REQUIREMENTS OF ALL JURISDICTIONAL AGENCIES AND TO OBTAIN ALL REQUIRED PERMITS, INCLUDING BUT NOT LIMITED TO EL PASO COUNTY EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP), REGIONAL BUILDING FLOODPLAIN DEVELOPMENT PERMIT, U.S. ARMY CORPS OF ENGINEERS-ISSUED 401 AND/OR 404 PERMITS, AND COUNTY AND STATE FUGITIVE DUST PERMITS.
8. CONTRACTOR SHALL NOT DEVIATE FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE DESIGN ENGINEER AND DSD. 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 DSD.
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.

TYPICAL CURB AND GUTTER DETAIL (SD 2-20)

SCALE: NTS

NOTES

1. W – WIDTH SHALL BE 6' FOR LOCAL, 8' FOR COLLECTORS, AND 10' FOR ARTERIAL ROADS.
2. T – SQUARED-OFF RETURN TO BE POURED MONOLITHICALLY, 8" PCC FOR LOCAL ROADS, 9" FOR COLLECTORS WITH 6x6 – 4.4 W.W.F. OR #4 REINFORCING BAR @ 18" EACH WAY.
3. ▨ = 3" MINIMUM ASPHALT DEPTH (2 LIFTS).
4. DESIGN TO SPECIFY ELEVATIONS AT PI AND PCR.

TYPICAL CROSS PAN LAYOUT DETAIL (SD 2-26)

SCALE: NTS

PARALLEL PEDESTRIAN RAMP DETAIL (SD 2-50)

SCALE: NTS

URBAN LOCAL CROSS SECTION

SCALE: NTS

BRANDING IRON AT STERLING RANCH FILING NO. 2

NOTE & DETAIL SHEET

PROJECT NO. 09-012 | DATE: 08/21/2019 | SCALE: HORIZONTAL: N/A VERTICAL: N/A | SHEET 2 OF 8 | SI02

DESIGNED BY: JD | DRAWN BY: JD | CHECKED BY: VAS

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

REVISIONS:

NO.	DATE:	BY:	DESCRIPTION:	APRV'D. BY:	DATE:

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

CAUTION

File: Q:\09012A\Challenger East\dwg\Const Dwg\Street Plans\S02.dwg Plotstamp: 8/21/2019 9:46 AM

SEE SHEET SI05

LODGE GRASS WAY
STA 3+25.56 TO STA 7+40.33

SEE SHEET SI05

SEE SHEET SI05

MOSBY WAY
STA 3+01.60 TO STA 8+31.74

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES

FOR BURIED UTILITY INFORMATION
48 HRS BEFORE YOU DIG
CALL 1–800–922–1987

1" = 50'

0 25 50 100
Scale in Feet

CENTERLINE LINE TABLE		
LINE	LENGTH	DIRECTION
L1	55.40'	S87°35'34"E
L2	276.76'	N68°59'22"E
L3	139.58'	S87°35'34"E
L4	267.08'	N68°59'22"E

CENTERLINE CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C1	300.00'	122.61'	23°25'04"
C2	400.00'	163.49'	23°25'04"

ABBREVIATION LEGEND

℄–℄	CENTERLINE INTERSECTION
FL–FL	FLOWLINE INTERSECTION
BT	BEGIN TRANSITION
ET	END TRANSITION
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PCR	POINT OF CURB RETURB
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENT
EL	ELEVATION
LT	LEFT
RT	RIGHT

STREET ABBREVIATIONS

LGW	LODGE GRASS WAY
YTW	YELLOWTAIL WAY
MW	MOSBY WAY
WFW	WHITEFISH WAY
SW	SPRAGUE WAY
MLC	MISTY LAKE COURT
DB EX	*EXISTING DINES BOULEVARD*
CDS	CUL–DE–SAC
KN	KNUCKLE

LEFT FLOWLINE

RIGHT FLOWLINE

LEFT FLOWLINE

RIGHT FLOWLINE

LODGE GRASS WAY STA 3+25.56 TO STA 7+40.33

MOSBY WAY STA 3+01.60 TO STA 8+31.74

BRANDING IRON AT STERLING RANCH FILING NO. 2

STREET IMPROVEMENT PLANS

PROJECT NO. 09-012 | DATE: 08/21/2019 | SHEET 3 OF 8 | SI03

DESIGNED BY: JWP | DRAWN BY: JWP | CHECKED BY: GW

SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485

CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

FOR AND ON BEHALF OF MVE & CIVIL CONSULTANTS, INC.

REVISIONS:

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FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES

FOR BURIED UTILITY INFORMATION
48 HRS BEFORE YOU DIG
CALL 1-800-922-1987

WHITEFISH WAY
STA 2+86.40 TO STA 9+28.48

CENTERLINE LINE TABLE		
LINE	LENGTH	DIRECTION
L1	41.73'	S87°35'34"E
L2	569.99'	N76°16'56"E

CENTERLINE CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C1	250.00'	70.36'	16°07'30"

ABBREVIATION LEGEND

℄-℄	CENTERLINE INTERSECTION
℉-℉	FLOWLINE INTERSECTION
BT	BEGIN TRANSITION
ET	END TRANSITION
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PCR	POINT OF CURB RETURB
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENT
EL	ELEVATION
LT	LEFT
RT	RIGHT

STREET ABBREVIATIONS

LGW	LODGE GRASS WAY
YTW	YELLOWTAIL WAY
MW	MOSBY WAY
WFW	WHITEFISH WAY
SW	SPRAGUE WAY
MLC	MISTY LAKE COURT
DB EX	*EXISTING DINES BOULEVARD*
CDS	CUL-DE-SAC
KN	KNUCKLE

WHITEFISH WAY STA 2+86.40 TO STA 9+28.48

BRANDING IRON AT STERLING RANCH FILING NO. 2

STREET IMPROVEMENT PLANS

PROJECT NO. 09-012 | DATE: 08/21/2019 | SHEET 4 OF 8 | SI04

DESIGNED BY: JWP | DRAWN BY: JWP | CHECKED BY: GW

SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

REVISIONS:

NO.	DATE:	BY:	DESCRIPTION:	APPV'D. BY:	DATE:

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

CAUTION

File: O:\09012A\Challenger East\dwg\Const Dwg\Street Plans\SI04.dwg Plotstamp: 8/21/2019 3:58 PM

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FOR BURIED UTILITY INFORMATION
48 HRS BEFORE YOU DIG
CALL 1-800-922-1987

YELLOWTAIL WAY
STA 0+52.53 TO STA 7+48.20

1" = 50'

0 25 50 100
Scale in Feet

KEY MAP
SCALE: NTS

CENTERLINE LINE TABLE		
LINE	LENGTH	DIRECTION
L1	91.48'	S21°00'38"E
L2	289.46'	S21°00'38"E
L3	162.35'	S21°00'38"E
L4	58.18'	S13°43'04"E
L5	105.04'	S13°43'04"E
L6	9.94'	S23°50'48"W
L7	5.02'	S65°56'58"W
L8	11.33'	S89°43'27"W
L9	5.02'	N66°30'03"W
L10	5.12'	N54°01'38"W

CENTERLINE CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C1	800.00'	101.82'	7°17'33"
C2	20.00'	18.76'	53°45'12"
C3	45.00'	210.32'	267°47'06"
C4	45.83'	37.16'	46°27'28"
C5	45.83'	37.16'	46°27'28"
C6	44.17'	102.12'	132°28'33"
C7	45.00'	3.00'	3°49'14"
C8	45.00'	31.34'	39°54'05"
C9	45.00'	3.00'	3°49'14"
C10	44.17'	19.23'	24°56'28"
C11	45.00'	58.34'	74°16'47"

ABBREVIATION LEGEND

℄-℄	CENTERLINE INTERSECTION
℻-℻	FLOWLINE INTERSECTION
BT	BEGIN TRANSITION
ET	END TRANSITION
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PCR	POINT OF CURB RETURB
PRC	POINT OF REVERSE CURVE
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EL	ELEVATION
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STREET ABBREVIATIONS

LGW	LODGE GRASS WAY
YTW	YELLOWTAIL WAY
MW	MOSBY WAY
WFW	WHITEFISH WAY
SW	SPRAGUE WAY
MLC	MISTY LAKE COURT
DB EX	*EXISTING DINES BOULEVARD*
CDS	CUL-DE-SAC
KN	KNUCKLE

YELLOWTAIL CDS 1 STA 0+00.00 TO STA 2+76.05

YELLOWTAIL WAY STA 0+52.53 TO STA 7+48.20

YELLOWTAIL CDS 2 STA 0+00.00 TO STA 2+80.98

BRANDING IRON AT STERLING RANCH FILING NO. 2
STREET IMPROVEMENT PLANS

PROJECT NO. 09-012		DATE: 08/21/2019	SI05
DESIGNED BY: JWP	SCALE: HORIZONTAL: 1"=50'	SHEET 5 OF 8	
DRAWN BY: JWP	VERTICAL: 1"=5'		
CHECKED BY: GW			

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF MVE, CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

REVISIONS:

NO.	DATE:	BY:	DESCRIPTION:	APRV'D. BY:	DATE:

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

CAUTION

File: O:\09012A\Challenger East\dwg\Const Dwg\Street Plans\SI05.dwg Plotstamp: 8/21/2019 10:03 AM

SEE SHEET SI07

SPRAGUE WAY
STA 2+71.21 TO STA 6+93.32

CENTERLINE LINE TABLE		
LINE	LENGTH	DIRECTION
L1	180.03'	S87°35'34"E
L2	156.76'	N67°41'20"E
L3	10.13'	S13°16'34"E

CENTERLINE CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C1	400.00'	10.98'	1°34'22"
C2	400.00'	161.59'	23°08'44"
C3	45.83'	37.16'	46°27'28"
C4	44.17'	110.76'	143°40'55"
C5	45.00'	91.29'	116°13'59"
C6	45.00'	36.49'	46°27'28"

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES

FOR BURIED UTILITY INFORMATION
48 HRS BEFORE YOU DIG
CALL 1-800-922-1987

1" = 50'

0 25 50 100
Scale in Feet

KEY MAP
SCALE: NTS

ABBREVIATION LEGEND

℄–℄	CENTERLINE INTERSECTION
FL–FL	FLOWLINE INTERSECTION
BT	BEGIN TRANSITION
ET	END TRANSITION
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
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STREET ABBREVIATIONS

LGW	LODGE GRASS WAY
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MLC	MISTY LAKE COURT
DB EX	*EXISTING DINES BOULEVARD*
CDS	CUL-DE-SAC
KN	KNUCKLE

SPRAGUE WAY STA 2+71.21 TO STA 6+93.32

SPRAGUE WAY CDS STA 0+00.00 TO STA 2+85.83

BRANDING IRON AT STERLING RANCH FILING NO. 2
STREET IMPROVEMENT PLANS

PROJECT NO. 09-012	SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'	DATE: 08/21/2019	SHEET 6 OF 8	SI06
DESIGNED BY: JWP DRAWN BY: JWP CHECKED BY: GW			

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF MVE & CIVIL CONSULTANTS, INC.
VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

REVISIONS:

NO.	DATE:	BY:	DESCRIPTION:	APRV'D. BY:	DATE:

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE OR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.
CAUTION

File: Q:\09012A\Challenger East\dwg\Const Dwg\Street Plans\SI06.dwg Plotstamp: 8/21/2019 4:00 PM

MISTY LAKE COURT STA 0+65.24 TO STA 1+71.75

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48 HRS BEFORE YOU DIG
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1" = 50'

0 25 50 100
Scale in Feet

CENTERLINE LINE TABLE		
LINE	LENGTH	DIRECTION
L1	188.40'	N0°50'04"E
L2	5.11'	S80°19'54"W
L3	6.33'	N83°01'25"W
L4	5.11'	N66°22'43"W

CENTERLINE CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C1	45.83'	37.16'	46°27'28"
C2	44.17'	101.81'	132°04'42"
C3	44.17'	92.34'	119°47'39"
C4	45.83'	37.16'	46°27'28"

ABBREVIATION LEGEND

℄-℄	CENTERLINE INTERSECTION
FL-FL	FLOWLINE INTERSECTION
BT	BEGIN TRANSITION
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SW	SPRAGUE WAY
MLC	MISTY LAKE COURT
DB EX	*EXISTING DINES BOULEVARD*
CDS	CUL-DE-SAC
KN	KNUCKLE

MISTY LAKE COURT CDS STA 0+00.00 TO STA 2+85.04

MISTY LAKE COURT STA 0+65.24 TO STA 1+71.75

BRANDING IRON AT STERLING RANCH FILING NO. 2

STREET IMPROVEMENT PLANS

PROJECT NO. 09-012	SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'	DATE: 08/21/2019	SHEET 7 OF 8
DESIGNED BY: JJWP DRAWN BY: JJWP CHECKED BY: GW			SI07

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF MVE CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

REVISIONS:

NO.	DATE:	BY:	DESCRIPTION:	APRV'D.	BY:	DATE:

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CAUTION

File: Q:\09012A\Challenger East\dwg\Const Dwg\Street Plans\SI07.dwg Plotstamp: 8/21/2019 4:01 PM

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BRANDING IRON AT STERLING RANCH FILING NO. 2

SIGNAGE & STRIPING PLAN

PROJECT NO. 09-012		DATE: 08/21/2019	SI08
DESIGNED BY: JWP	SCALE:		
DRAWN BY: JWP	HORIZONTAL: 1"=50'	SHEET 8 OF 8	
CHECKED BY: GW	VERTICAL: N/A		

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
M&S CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

REVISIONS:

NO.	DATE:	BY:	DESCRIPTION:	APRV'D. BY:	DATE:

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CAUTION

File: Q:\09012A\Challenger East\dwg\Const Dwg\Street Plans\SI08.dwg Plotstamp: 8/21/2019 10:09 AM

BRANDING IRON AT STERLING RANCH FILING NO. 2

COUNTY OF EL PASO, STATE OF COLORADO

STORM SEWER PLANS

MARCH 2019

AGENCIES

OWNER/DEVELOPER: SR LAND, LLC
20 BOULDER CRESCENT, SUITE 201
COLORADO SPRINGS, CO 80903
JIM MORLEY (719) 471-1742

CIVIL ENGINEER: M & S CIVIL CONSULTANTS, INC.
20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
VIRGIL A. SANCHEZ P.E. (719) 955-5485

COUNTY ENGINEERING: EL PASO COUNTY DEVELOPMENT SERVICES
2880 INTERNATIONAL CIRCLE, SUITE 110
COLORADO SPRINGS, CO 80910
JEFF RICE, P.E. (719) 520-6300

TRAFFIC ENGINEERING: EL PASO COUNTY PUBLIC SERVICES & TRANS. DEPT.
3275 AKERS DRIVE
COLORADO SPRINGS, CO 80922
JENNIFER IRVINE, P.E. (719) 520-6460

WATER RESOURCES: STERLING RANCH METRO DISTRICT ENGINEERS
JDS-HYDRO CONSULTANTS
545 E. PIKES PEAK AVE., SUITE 300
COLORADO SPRINGS, CO 80903
JOHN MCGINN (719) 668-8769

FIRE DISTRICT: BLACK FOREST FIRE PROTECTION DISTRICT
11445 TEACHOUT ROAD
COLORADO SPRINGS, CO 80908
CHIEF BRYAN JACK (719) 495-4300

GAS DEPARTMENT: COLORADO SPRINGS UTILITIES
7710 DURANT DR.
COLORADO SPRINGS, CO 80947
TIM WENDT (719) 668-3556

ELECTRIC DEPARTMENT: MOUNTAIN VIEW ELECTRIC
11140 E. WOODMEN ROAD
FALCON, CO 80831
(719) 495-2283

COMMUNICATIONS: QWEST COMMUNICATIONS
(U.N.C.C. LOCATORS) (800) 922-1987
AT&T (LOCATORS) (719) 635-3674

BENCHMARKS

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
2. THE TOP OF A RED PLASTIC SURVEYORS CAP, ILLEGIBLE, AT THE NORTHWEST BOUNDARY CORNER OF PAWNEE RANCHEROS SUBDIVISION
   NORTHING = 410095.404
   EASTING = 235052.131
   ELEVATION = 7000.40
3. THE TOP OF A RED PLASTIC SURVEYORS CAP, STAMPED "38141", AT THE SOUTHWEST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

VICINITY MAP
N.T.S.

SITE MAP
N.T.S.

APPROVALS:

ENGINEER'S STATEMENT:

DETAILED DRAINAGE CONSTRUCTION PLANS AND SPECIFICATIONS ENGINEER'S STATEMENT:
THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION. SAID DETAILED PLANS AND SPECIFICATIONS HAVE BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR DETAILED DRAINAGE PLANS AND SPECIFICATIONS, AND SAID DETAILED PLANS AND SPECIFICATIONS ARE IN CONFORMITY WITH THE MASTER PLAN OF THE DRAINAGE BASIN. SAID DETAILED DRAINAGE PLANS AND SPECIFICATIONS MEET THE PURPOSES FOR WHICH THE PARTICULAR DRAINAGE FACILITY(S) IS DESIGNED. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS, OR OMISSIONS ON MY PART IN PREPARATION OF THE DETAILED IMPROVEMENT PLANS AND SPECIFICATIONS.

VIRGIL A SANCHEZ, COLORADO P.E. NO. 37160 — DATE
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

OWNER/DEVELOPER STATEMENT:

THE OWNER WILL COMPLY WITH THE REQUIREMENTS OF THE DRAINAGE REPORT AND PLAN AND THIS SET OF CONSTRUCTION DOCUMENTS.
THE OWNER WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN.

JAMES F. MORLEY — DATE
SR LAND, LLC

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 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, AND ENGINEERING CRITERIA MANUAL AS AMENDED.

JENNIFER IRVINE, P.E. — DATE
COUNTY ENGINEER / ECM ADMINISTRATOR

STERLING RANCH METROPOLITAN DISTRICT:

THESE DOCUMENTS HAVE BEEN REVIEWED AND APPROVED FOR STORM DRAIN AND ASSOCIATED UTILITY SERVICE CONSTRUCTION.

FOR AND ON BEHALF OF THE STERLING RANCH METRO. DISTRICT — DATE

SHEET INDEX

SHEET 1 TITLE SHEET
SHEET 2 STORM SEWER NOTES & DETAILS
SHEET 3 STORM SEWER NOTES & DETAILS
SHEET 4 PLAN & PROFILE
STERLING RANCH FIL. NO. 1 REVISED STORM PLANS
SHEET 5 ST 16
SHEET 6 ST 16 REVISED
SHEET 7 ST 18
SHEET 8 ST19
SHEET 9 ST 20
SHEET 10 ST 20A

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BRANDING IRON AT STERLING RANCH FILING NO. 2
STORM SEWER PLANS
PROJECT NO. 09-012 | DATE: 03/15/2019
DESIGNED BY: JD | SCALE: HORIZONTAL: N/A
DRAWN BY: JD | VERTICAL: N/A
CHECKED BY: VAS | SHEET 1 OF 4 | ST01

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

REVISIONS:

NO.	DATE:	BY:	DESCRIPTION:	APRV'D. BY:	DATE:

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CAUTION

File: G:\09012A\Challenger East\dwg\Const Dwg\Storm Plans\ST01.dwg PlotStamp: 9/20/2019 1:10 PM

STANDARD CONSTRUCTION NOTES:

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 LOCATION 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 TIME INCLUDING THE FOLLOWING:
   - 3.1 EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)
   - 3.2 CITY OF COLORADO SPRINGS/EL PASO COUNTY ENGINEERING CRITERIA MANUAL VOLUMES 1 AND 2.
   - 3.3 COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARDS SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION.
   - 3.4 CDOT M&S STANDARDS.
4. IT IS THE DESIGN ENGINEERS RESPONSIBILITY TO ACCURACY SHOW EXISTING CONDITION BOTH ONSITE AND OFFSITE ON THE CONSTRUCTION PLANS. ANY MODIFICATION NECESSARY DUE TO CONFLICT OMISSIONS OR CHANGED CONDITIONS WILL BE ENTIRELY THE DEVELOPERS RESPONSIBILITY TO RECTIFY.
5. IT IS THE CONTRACTORS 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 STORM WATER QUALITY CONTROL PERMIT (ESQCP), REGIONAL BUILDING FLOODPLAIN DEVELOPMENT PERMIT, US ARMY CORPS OF ENGINEER ISSUED 401 AND/OR 404 PERMITS AND COUNTY AND STATE FUGITIVE DUST PERMITS.
6. ANY TEMPORARY SIGNAGE AND STRIPING SHALL COMPLY WITH EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS AND MUTCD CRITERIA.
7. CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS INCLUDING WORK WITHIN THE RIGHT-OF-WAY AND SPECIAL TRANSPORT PERMITS.
8. 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 OFFSITE DISTURBANCE GRADING, OR CONSTRUCTION.

STORM SEWER GENERAL NOTES

1. ALL STATIONING IS ALONG STORM SEWER CENTERLINE UNLESS OTHERWISE INDICATED. ALL ELEVATIONS ARE INVERT UNLESS OTHERWISE INDICATED.
2. ALL STORM SEWER BENDS AND WYES SHOWN ON THE PLAN SHALL BE PREFABRICATED.
3. HORIZONTAL AND VERTICAL BENDS ARE INDICATED ON THE PLANS.
4. JOINTS SHALL BE IN ACCORDANCE WITH ASTM C443 "STANDARD SPECIFICATIONS FOR JOINTS FOR CIRCULAR CONCRETE SEWER AND CULVERT PIPE USING RUBBER GASKET." IN NO CASE SHALL THE MAXIMUM JOINT OPENING FOR STRAIGHT ALIGNMENT EXCEED 1 INCH OR ONE AND ONE-HALF INCH ON CURVED ALIGNMENT.
5. INLET DIMENSIONS SHOWN ON PLANS REFER TO DISTANCES FROM INSIDE FACES OF BOX BETWEEN THE WIDTHS AND LENGTHS.
6. MANHOLE WIDTHS AND LENGTHS SHOWN ON PLAN REFER TO THE EXTERIOR WALL DIMENSIONS.
7. ALL STORM SEWER SHALL BE A MINIMUM OF CLASS III REINFORCED CONCRETE PIPE. SPECIFIC SEGMENTS OF STORM SEWER SHALL BE REQUIRED TO BE CONSTRUCTED OF A MINIMUM OF 5000 PSI CONCRETE DUE TO EXCESSIVE VELOCITIES. REFER TO ADDITIONAL NOTES WITHIN CONSTRUCTION PLANS.
8. SINCE ALL PIPE ENTRIES INTO THE BASE ARE VARIABLE, THE DIMENSIONS SHOWN ARE TYPICAL. ACTUAL DIMENSIONS AND QUANTITIES FOR CONCRETE AND REINFORCEMENT SHALL BE AS REQUIRED IN THE WORK.
9. THE MH RING (FRAME) SHALL BE SET IN A BED OF GROUT. THE FRAME SHALL BE SURROUNDED WITH A GROUT IN UNPAVED AREA, OR A CONCRETE COLLAR IN PAVED AREA.
10. PRECAST MANHOLES AND REINFORCEMENT SHALL CONFORM TO ASTM C 478 (AASHTO M 199).
11. CAST IN PLACE MANHOLES SHALL BE CLASS B CONCRETE.
12. STEPS SHALL BE REQUIRED WHEN THE MANHOLE DEPTH EXCEEDS 3'-6" AND SHALL BE IN ACCORDANCE WITH AASHTO M 199.
13. ALL REINFORCING STEEL SHALL HAVE A MINIMUM YIELD STRENGTH OF 60,000 PSI. VERTICAL STEEL SHALL BE PLACED AT ℄ OF WALL. ALL BARS SHALL HAVE A 2" MINIMUM CLEARANCE.
14. FLOW CHANNELS AND INVERTS SHALL BE FORMED BY SHAPING WITH CLASS B CONCRETE OR APPROVED GROUT.
15. STUB-OUTS SHALL EXTEND 4 FT MINIMUM BEYOND OUTSIDE WALL SURFACE OF MANHOLE AND BE SATISFACTORILY PLUGGED.
16. CHECK WITH THE LOCAL GOVERNMENT AUTHORITY FOR ANY ADDITIONAL STORM SEWER SPECIFICATIONS, DETAILS, OR REGULATIONS.
17. THE SLOPE OF THE MANHOLE COVER SHALL MATCH THE ROADWAY PROFILE AND CROSS SLOPE.
18. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF ALL PREFABRICATED STRUCTURES TO THE ENGINEER FOR REVIEW PRIOR TO INSTALLATION.

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES

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48 HRS BEFORE YOU DIG
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STRUCTURAL CONCRETE NOTES:

1. ALL CONSTRUCTION INVOLVING THE PLACEMENT OF STRUCTURAL CONCRETE SHALL BE COMPLETED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, AND AS SUPPLEMENTED BY THE COLORADO DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADWAY AND BRIDGE CONSTRUCTION.
2. STEEL REINFORCING SHALL BE GRADE 60 FOR ALL REINFORCING STEEL GREATER THAN #4. SPLICING, LAP SPLICING SHALL BE MINIMUM IN THE FOLLOWING TABLE UNLESS OTHERWISE SPECIFIED:

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

   ALL REINFORCING SHALL HAVE A 2-INCH MINIMUM COVER UNLESS OTHERWISE SPECIFIED. ALL REINFORCED STEEL TO BE EPOXY COATED.
3. CAST-IN-PLACE CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (fc) OF 4,000 PSI AT 28 DAYS. ALL CONCRETE PLACED AGAINST SOIL SHALL BE TYPE II PORTLAND CEMENT. ALL EXPOSED CORNERS SHALL BE FORMED WITH A 3/4" CHAMFER UNLESS OTHERWISE SPECIFIED.
4. EXPANSION JOINT MATERIAL SHALL MEET AASHTO SPECIFICATION M-213.
5. BACKFILL AGAINST STRUCTURES SHALL NOT COMMENCE UNTIL ALL SUPPORTING DIAPHRAGMS ARE IN PLACE AND CONCRETE HAS OBTAINED ITS FULL SEVEN DAY STRENGTH. BACKFILL SHALL BE PLACED EQUALLY ON EACH SIDE OF RETAINING WALL STRUCTURES AND CUTOFF WALLS UNTIL THE FINAL GRADE IS REACHED.
6. FOOTING EXCAVATIONS SHALL BE EXAMINED BY THE GEOTECHNICAL ENGINEER WITH A 24-HOUR MINIMUM NOTIFICATION FOR SOIL AND/OR CONCRETE TESTING. PLACEMENT OF CONCRETE IN THE ABSENCE OF TESTING SHALL BE COMPLETED AT THE SOLE RISK OF THE CONTRACTOR.
7. PRIOR TO THE PLACEMENT OF CONCRETE IN AREAS WHERE SOIL IS PRESENT, THE SOIL SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 6-INCHES. THE MOISTURE CONTENT SHALL BE ADJUSTED TO WITHIN PLUS OR MINUS 2 PERCENT OF THE OPTIMUM MOISTURE CONTENT AND RECOMPACTED TO AT LEAST 95 PERCENT RELATIVE COMPACTION (AASHTO-T-180).

ABBREVIATIONS
EC -- EPOXY COATED O.F. -- OUTSIDE FACE E.F. -- EACH FACE E.W. -- EACH WAY I.F. -- INSIDE FACE N.F. -- NEAR FACE
T.O.C. -- TOP OF CONCRETE B.O.C. -- BOTTOM OF CONCRETE CONT. -- CONTINUOUS

URBAN LOCAL CROSS SECTION

SCALE: NTS

NOTES

1. TYPE II MANHOLES SHALL BE USED WHEN APPROPRIATE AND TYPICALLY WHEN THE PIPE SIZES ARE 30" OR LESS INSIDE DIAMETER.
2. VIEW AND DETAILS ARE TYPICAL. DESIGN ENGINEER SHALL DETERMINE MANHOLE BASE CONFIGURATION AND DIMENSIONS FOR PARTICULAR PIPE SIZES AND ALIGNMENT.
3. EITHER LADDER OF STEPS SHALL BE INSTALLED WHEN MANHOLE DEPTH EXCEEDS 30", STEPS IN BASE SHALL BE INSTALLED IN "TOE POCKETS" (SEE DETAIL THIS SHEET). LOWEST STEP SHALL BE A MAXIMUM OF 16" ABOVE THE FLOOR.
4. PIPES SHALL BE TRIMMED TO FINAL SHAPE AND SET BEFORE MANHOLE IS POURED.
5. BENCH SHALL BE SLOPED TOWARD CENTER OF MANHOLE BASE (4:1 MAX., ½" PER FOOT. MIN.).
6. FLOOR OF MANHOLE SHALL BE TROWELLED TO A SMOOTH, HARD SURFACE AND SHALL SLOPE TOWARDS THE OUTLET (8:1., ½" PER FT. MIN.) . FLOOR SHALL BE SHAPED AND CHANNELED; SEE DETAILS THIS SHEET.

SCALE: NOT TO SCALE

STORM SEWER MANHOLE DETAIL
TYPE II SD 3-2

NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD AND SUPPLEMENTAL SPECIFICATIONS APPLICABLE TO THE PROJECT.
2. PRECAST RISERS SHALL CONFORM TO ASTM C478.
3. STEPS SHALL BE INSTALLED WHEN MANHOLE DEPTH EXCEEDS 30". STEPS SHALL BE CAST IRON OR EXTRUDED ALUMINUM, 1000 LB CAPACITY, 12" WIDE WITH NON-SKID GROOVES AND DROP FRONT ON SAFETY NOSES, IN ACCORDANCE WITH APPROVED OSHA REQUIREMENTS.

SCALE: NOT TO SCALE

STORM SEWER MANHOLE
RISER AND COVER DETAIL
TYPE SD 3-7

SCALE: NOT TO SCALE

STORM SEWER MANHOLE L
LID DETAILS SD 3-2

BRANDING IRON AT STERLING RANCH FILING NO. 2
STORM SEWER NOTES & DETAILS

PROJECT NO. 09-012	SCALE: HORIZONTAL: N/A VERTICAL: N/A	DATE: 03/15/2019	ST02
DESIGNED BY: JD DRAWN BY: JD CHECKED BY: VAS			SHEET 2 OF 4

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FOR AND ON BEHALF OF MCS CIVIL CONSULTANTS, INC.

REVISIONS:

NO.	DATE:	BY:	DESCRIPTION:	APRV'D. BY:	DATE:

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CAUTION

File: O:\09012A\Challenger East\Dwg\Const Dwg\Storm Plans\ST02.dwg Plotstamp: 9/20/2019 1:11 PM

PLAN VIEW

★ FOR LENGTH (L) 10 FT. OR MORE, PROVIDE MAINTENANCE ACCESS AT BOTH ENDS WITH AN ADDITIONAL MANHOLE RING AND COVER. CUT REINFORCEMENT BAR ACCORDINGLY.

✦ STATION POINT AT MIDPOINT OF INLET ALONG FLOWLINE

★ MEET SHAPE OF NORMAL BARRIER CURB AND GUTTER HERE.

GENERAL NOTES:

SEE SHEET 2.

✱ WHEN A TYPE R INLET IS USED WITH MOUNTABLE CURB AND GUTTER, 5 FT. TRANSITION SHALL BE CONSTRUCTED. TRANSITION SHALL BE PAID FOR AS CURB AND GUTTER.

TRANSITION CURB

▲ - FOR A 1'-0" PAN SLOPE 2" PER FT.

SECTION A-A REGULAR INLET

CURB FACE ASSEMBLY

✦ PLACE ENTIRE ASSEMBLY BEFORE POURING CONCRETE.

SECTION B-B END VIEW

NOTE: MANHOLE RING AND COVER, STATION POINT AND OUTFLOW PIPE SHALL BE LOCATED AT THE SAME END OF THE INLET.

SECTION A-A INLET WITH DROP BOX ~ H>5 FT.

SECTIONS C-C & D-D (DOTTED BARS ARE IN SECTION D-D)

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Last Modification Date: 07/04/12 Initials: LTA	(R-X)		
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CURB INLET TYPE R

Issued By: Project Development Branch July 4, 2012

STANDARD PLAN NO.
M-604-12
Sheet No. 1 of 2

MARK	BAR # (R SIZE	O.C. SPACING	TYPE	ALL INLETS L = 5 FT. NO. REQ'D.	ALL INLETS L = 5 FT. LENGTH	INLETS: H ≤ 5 FT. L = 10 FT. NO. REQ'D.	INLETS: H ≤ 5 FT. L = 10 FT. LENGTH	INLETS: H ≤ 5 FT. L = 15 FT. NO. REQ'D.	INLETS: H ≤ 5 FT. L = 15 FT. LENGTH	INLETS: H > 5 FT. L = 10 FT. NO. REQ'D.	INLETS: H > 5 FT. L = 10 FT. LENGTH	INLETS: H > 5 FT. L = 15 FT. NO. REQ'D.	INLETS: H > 5 FT. L = 15 FT. LENGTH
401	4	11"	II	15	★	21	★	26	★	11	★	11	★
402	4	11"	II	7	★	13	★	18	★	7	★	7	★
403	4	9"	II	★	4'-0"	★	4'-0"	★	4'-0"	★	4'-0"	★	4'-0"
405	4	6"	VI	11	6'-10"	21	6'-10"	31	6'-10"	11	6'-10"	11	6'-10"
406	4	6"	VIII	7	8'-10"	7	13'-10"	7	18'-10"	7	8'-10"	7	8'-10"
407	4	9"	II	★	5'-10"	★	10'-10"	★	15'-10"	★	5'-10"	★	5'-10"
408	4	12"	II	3	6'-10"	3	11'-10"	3	16'-10"	3	11'-10"	3	16'-10"
409	4	8"	II	6	5'-10"	6	10'-10"	6	15'-10"	6	10'-10"	6	15'-10"
410	4	11"	VII							3		3	★
411	4	11"	II							3	5'-2"	3	10'-2"
412	4	11"	II							3	2'-9"	3	2'-9"
413	4	9"	II							7	10'-10"	7	15'-10"
501	5	5½"	IV	11	3'-4"	22	3'-4"	33	3'-4"	22	3'-4"	33	3'-4"
502	5	5½"	III							11	11'-5"	17	11'-5"
503	5	5½"	II	5	3'-6"	16	3'-6"	27	3'-6"	6	3'-6"	6	3'-6"
504	5	5½"	IX									5	8'-4"
601	6	2½"	V	2	8'-10"	2	8'-10"	2	8'-10"	2	8'-10"	4	8'-10"
■BE.5				1	5'-10"	1	10'-10"	1	15'-10"	1	10'-10"	1	15'-10"
				2 BARS, 1 RODS	——	4 BARS, 3 RODS	——	8 BARS, 5 RODS	——	4 BARS, 3 RODS	——	8 BARS, 5 RODS	——
						REGULAR INLETS				DROP BOX INLETS			

★ VARIABLE REFER TO TABLE TWO.

■ INCLUDE #4, 18 IN. BARS (SEE CHANNEL LAYOUT).

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

"H"	LENGTH 401	LENGTH 402	LENGTH 410	NO. REQ'D. REGULAR 403	NO. REQ'D. REGULAR 407	NO. REQ'D. DROP BOX 403	NO. REQ'D. DROP BOX 407	L = 5 FT. CONC. CU. YDS.	L = 5 FT. STEEL LBS.	L = 10 FT. CONC. CU. YDS.	L = 10 FT. STEEL LBS.	L = 15 FT. CONC. CU. YDS.	L = 15 FT. STEEL LBS.
3'-0"	2'-8"	1'-8"		10	7			3.2	285	5.3	497	7.4	706
3'-6"	3'-2"	2'-2"		10	7			3.4	305	5.7	528	7.9	747
4'-0"	3'-8"	2'-8"		12	9			3.7	326	6.0	559	8.4	786
4'-6"	4'-2"	3'-2"		12	9			3.9	334	6.4	571	8.8	803
5'-0"	4'-8"	3'-8"		14	11			4.1	354	6.7	602	9.3	844
5'-6"	5'-2"	4'-2"	3'-5"	16	13	15	6	4.4	375	6.0	607	7.4	850
6'-0"	5'-8"	4'-8"	3'-11"	16	13	16	6	4.6	382	6.2	616	7.8	860
6'-6"	6'-2"	5'-2"	4'-5"	18	15	18	8	4.8	402	6.4	637	7.8	880
7'-0"	6'-8"	5'-8"	4'-11"	20	17	19	10	5.0	423	6.6	654	8.0	897
7'-6"	7'-2"	6'-2"	5'-5"	20	17	20	10	5.3	430	6.9	664	8.3	907
8'-0"	7'-8"	6'-8"	5'-11"	22	19	22	12	5.5	451	7.1	684	8.5	927
8'-6"	8'-2"	7'-2"	6'-5"	24	21	23	14	5.7	471	7.3	702	8.7	944
9'-0"	8'-8"	7'-8"	6'-11"	24	21	24	14	6.0	479	7.6	711	9.0	954
9'-6"	9'-2"	8'-2"	7'-5"	26	23	26	16	6.2	499	7.8	732	9.2	974
10'-0"	9'-8"	8'-8"	7'-11"	28	25	27	18	6.4	520	8.0	749	9.4	992
10'-6"	10'-2"	9'-2"	8'-5"	28	25	28	18	6.7	527	8.3	759	9.7	1001
11'-0"	10'-8"	9'-8"	8'-11"	30	27	30	20	6.9	547	8.5	779	9.9	1022

NOTES: FOR L = 5 FT., L = 10 FT., AND L = 15 FT.
REGULAR INLETS: TOTAL QUANTITIES NEEDED ARE OUTSIDE THE HEAVY BLACK LINE.
DROP BOX INLETS: TOTAL QUANTITIES NEEDED ARE INSIDE THE HEAVY BLACK LINE.
STEEL WEIGHTS DO NOT INCLUDE STRUCTURAL STEEL CHANNEL.

TABLE TWO ~ BARS AND QUANTITIES VARIABLE WITH "H"

PLAN VIEW

ELEVATION VIEW MANHOLE COVER (TYP.)

PLAN VIEW

ELEVATION VIEW MANHOLE RING (TYP.)

WEIGHTS: COVER = 125 LBS.
+ RING = 135 LBS.
TOTAL = 260 LBS.

GENERAL NOTES

1. CONCRETE SHALL BE CLASS B. INLET MAY BE CAST-IN-PLACE OR PRECAST.
2. CONCRETE WALLS SHALL BE FORMED ON BOTH SIDES AND SHALL BE 8 IN. THICK.
3. INLET STEPS SHALL BE IN CONFORMANCE WITH AASHTO M 199.
4. CURB FACE ASSEMBLY SHALL BE GALVANIZED AFTER WELDING.
5. EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED ¾ IN. CURB AND GUTTER CORNERS SHALL BE FINISHED TO MATCH THE EXISTING CURB AND GUTTER BEYOND THE TRANSITION GUTTER.
6. REINFORCING BARS SHALL BE DEFORMED AND SHALL HAVE A 2 IN. MINIMUM CLEARANCE. ALL REINFORCING BARS SHALL BE EPOXY COATED.
7. DIMENSIONS AND WEIGHTS OF TYPICAL MANHOLE RING AND COVER ARE NOMINAL.
8. MATERIAL FOR MANHOLE RINGS AND COVERS SHALL BE GRAY OR DUCTILE CAST IRON IN ACCORDANCE WITH SUBSECTION 712.06.
9. SINCE PIPE ENTRIES INTO THE INLET ARE VARIABLE, THE DIMENSIONS SHOWN ARE TYPICAL. ACTUAL DIMENSIONS AND QUANTITIES FOR CONCRETE AND REINFORCEMENT SHALL BE AS REQUIRED IN THE WORK. QUANTITIES INCLUDE VOLUMES OCCUPIED BY PIPES.
10. STRUCTURAL STEEL SHALL BE GALVANIZED AND SHALL BE IN ACCORDANCE WITH SUBSECTION 712.06.
11. ALL MANHOLE COVERS SHALL BE CAST WITH A "NO DUMPING DRAINS TO STREAM" MESSAGE AND A FISH SYMBOL. THE SURFACE OF THE MANHOLE COVER SHALL HAVE A NON-SLIP PATTERN.

CHANNEL LAYOUT DETAILS

SEE CURB FACE ASSEMBLY ON SHEET 1.

SECTION AT HOLE (TYP.)

BAR BENDING DIAGRAMS ~ (DIMENSIONS ARE OUT-TO-OUT OF BAR)

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CURB INLET TYPE R

Issued By: Project Development Branch July 4, 2012

STANDARD PLAN NO.
M-604-12
Sheet No. 2 of 2

BRANDING IRON AT STERLING RANCH FILING NO. 2

STORM SEWER NOTES & DETAILS

PROJECT NO. 09-012 | DATE: 03/15/2019 | SHEET 3 OF 4 | ST03

DESIGNED BY: JD | DRAWN BY: JD | CHECKED BY: VAS

SCALE: HORIZONTAL: N/A VERTICAL: N/A

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FOR AND ON BEHALF OF MVS CIVIL CONSULTANTS, INC.

REVISIONS:

NO.	DATE:	BY:	DESCRIPTION:	APRV'D.	BY:	DATE:

CAUTION

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STORM 1
STA 1+00.00 TO STA 11+22.36

1" = 50'
0 25 50 100
Scale in Feet

STORM 1 STA 1+00.00 TO STA 11+22.36

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FOR BURIED UTILITY INFORMATION
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BRANDING IRON AT STERLING RANCH FILING NO. 2
STORM SEWER PLANS

PROJECT NO. 09-012		DATE: 03/15/2019	ST04
DESIGNED BY: JD	SCALE: HORIZONTAL: 1"=50'	SHEET 4 OF 4	
DRAWN BY: JD	VERTICAL: 1"=5'		
CHECKED BY: VAS			

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FOR AND ON BEHALF OF MAS CIVIL CONSULTANTS, INC.

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CAUTION

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STORM 6
INLET DETAILS
SCALE: 1"=20'

STORM 6

1" = 50'

0 25 50 100
Scale in Feet

STORM 13 STA 0+97.34 TO 1+94.39

NOTES:
STA 0+99.94 TO STA 1+24.00 (NEXT FULL JOINT) TIE PIPE SEGMENTS TOGETHER W/4-$\frac{3}{8}$" CANOPY TYPE ROD LUG JOINT FASTENERS.

REINFORCED CONCRETE PIPE INSTALLED BETWEEN STA 0+99.94 AND STA 1+66.68 SHALL BE FABRICATED USING A CONCRETE MIX DESIGN THAT RESULTS IN A MIN. 5000 PSI COMPRESSIVE STRENGTH.

NOTE:
STA 1+00.00 TO STA 1+24.00 (NEXT FULL JOINT) TIE PIPE SEGMENTS TOGETHER W/4-$\frac{3}{8}$" CANOPY TYPE ROD LUG JOINT FASTENERS.

STORM 6

STORM 13 STA 0+97.34 TO 1+94.39

STERLING RANCH FILING NO. 1
STORM SEWER PLANS

PROJECT NO. 09-002	FILE: \dwg\Const Dwg\Storm - District\ST16.dwg		
DESIGNED BY: ET	SCALE	DATE: 01/02/2018	ST16
DRAWN BY: ELY	HORIZ: 1"=50'	SHEET 20 OF 28	
CHECKED BY: VAS	VERT: 1"=5'		

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COLORADO Registered 37160 PROFESSIONAL ENGINEER

REVISIONS:					
NO.	DATE:	BY:	DESCRIPTION:	APRV'D. BY:	DATE:

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CAUTION

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STORM 6
INLET DETAILS
SCALE: 1"=20'

STORM 6

1" = 50'

0 25 50 100

Scale in Feet

STORM 13 STA 0+97.34 TO 1+94.39

UPDATED STORM 13

UPSIZE PIPE TO
EITHER 24" OR 30"
(SHOWN AS 24")

NOTES:
STA 0+99.94 TO STA 1+24.00 (NEXT FULL JOINT) TIE PIPE SEGMENTS TOGETHER W/4-$\frac{3}{8}$" CANOPY TYPE ROD LUG JOINT FASTENERS.

REINFORCED CONCRETE PIPE INSTALLED BETWEEN STA 0+99.94 AND STA 1+66.68 SHALL BE FABRICATED USING A CONCRETE MIX DESIGN THAT RESULTS IN A MIN. 5000 PSI COMPRESSIVE STRENGTH.

NOTE:
STA 1+00.00 TO STA 1+24.00 (NEXT FULL JOINT) TIE PIPE SEGMENTS TOGETHER W/4-$\frac{3}{8}$" CANOPY TYPE ROD LUG JOINT FASTENERS.

STORM 6

STORM 13 STA 0+97.34 TO 1+94.39

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STERLING RANCH FILING NO. 1
STORM SEWER PLANS

PROJECT NO. 09-002 | FILE: \dwg\Const Dwg\Storm - District\ST16.dwg | DATE: 01/02/2018
DESIGNED BY: ET | SCALE | SHEET 16 OF 28
DRAWN BY: ELY | HORIZ: 1"=50'
CHECKED BY: VAS | VERT: 1"=5'

ST16

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NO.	DATE:	BY:	DESCRIPTION:	APRV'D.	BY:	DATE:

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CAUTION

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NOTE:
ROAD SLOPE DIRECTION VARIES REFER TO PLAN

MAINTENANCE & ACCESS ROAD ABOVE EURV TYPICAL SECTION

NOT TO SCALE

MAINTENANCE & ACCESS ROAD BELOW EURV TYPICAL SECTION

NOT TO SCALE

12' MAINTENANCE & ACCESS ROAD & PEDESTRIAL TRAIL - TYPICAL SECTION

NOT TO SCALE

12' MAINTENANCE & ACCESS ROAD & PEDESTRIAL TRAIL - SPILLWAY SECTION

NOT TO SCALE

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NOTE:
REFER TO STERLING RANCH FILING NO.1 GRADING AND EROSION PLAN FOR POND EMBANKMENT AND CHANNEL STABILIZATION ADJACENT TO PROPOSED FACILITY.

1" = 20'
0 10 20 40
Scale in Feet

100 YEAR FLOODPLAIN
SAND CREEK CHANNEL
TERMINATE 12' REGIONAL TRAIL/12' MAINTENANCE ACCESS ROAD
TOP OF BERM =7024.0
12' MAINTENANCE ACCESS ROAD & PEDESTRIAN TRAIL
100 YR FLOODPLAIN
7012.00
30" RCP FES W/TOEWALL
8.5' X 20.5' RIPRAP APRON D50=12" 24" THICK SEE SHEET ST22
7012.0 (FIELD VERIFY)
30" RCP STORM SEE SHT 17
BEGIN EMBANKMENT WITH SOIL KEYWAY SEE SHEET ST22
USE UPDATED SPILLWAY DESIGN AND TRAIL ALIGNMENT SEE SHEET ST20A
10' MAINTENANCE ACCESS ROAD SEE DETAIL ABOVE
MODIFIED TYPE D CDOT WATER QUALITY OUTLET STRUCTURE SEE SHEET ST20
POTENTIAL PLAYGROUND/ SPORTS COURT SITE
12' MAINTENANCE ACCESS ROAD, SEE DETAIL ABOVE
7014.97
USE UPDATED BOX DETAIL
INV=7014.54
END LF CHANNEL INV=7014.54
10' MAINTENANCE ACCESS ROAD
7014.0 (FIELD VERIFY)
EMERGENCY SPILLWAY AND RIPRAP RUNDOWN D50 = 18" SOIL RIPRAP SEE DETAIL SHEET ST21
7023.22 7022.6
7021.15 7020.6
EMERGENCY SPILLWAY CREST SEE SHEET ST21
7016.06
24" RCP ~~18" RCP~~ STORM SEE SHEET ST16
24" RCP ~~18" RCP~~ FES
CONCRETE LINED FOREBAY (NORTH) SEE SHEET ST19
7015.08
7015.20
36" RCP STORM SEE SHEET ST15
36" RCP FES
END LF CHANNEL INV=7015.96
7015.68
7015.57
CONC LOW FLOW TRICKLE CHANNEL SEE SHEET ST19
7015.53
7015.95
END LF CHANNEL INV=7016.03
CONCRETE LINED FOREBAY (SOUTH) SEE SHEET ST22
USE UPDATED BOX DETAIL
INV=7016.06
END EMBANKMENT WITH SOIL KEYWAY
30" RCP FES
POND WARNING SIGN (TYP) SEE SHEET ST22
36" RCP ~~30" RCP~~ STORM SEE SHEET ST17
FUTURE TRAIL W/CHANNEL REALIGNMENT (LOCATION TO BE DETERMINED)
BEGIN 12' REGIONAL TRAIL/12' MAINTENANCE ACCESS ROAD
DINES BLVD.
EURV
100YR

FULL SPECTRUM DETENTION POND 8 SITE PLAN

SCALE 1"=20'

TRAIL NOTES:

1. TRAIL SURFACING SHALL BE CURSHED LIMESTON 3/8" MINUS WITH FINES. CASTLE CONCRETE "COLORADO WHITE FINES" OR EQUIVALENT.
2. TRAIL SURFACING SHALL BE COMPACTED WITH A ROLLER
3. LANDSCAPE FABRIC SHALL BE MIRAFI 140N WITH A RUNNING WITH OF 8" MIN.

POND 8 FULL SPECTRUM DETENTION BASIN DATA

WQ WATER SURFACE EL=7017.20
WQ VOLUME=0.48 AC-FT
EURV WATER SURFACE EL=7018.91
EURV VOLUME=1.58 AC-FT
100-YR WATER SURFACE EL=7020.60
SPILLWAY CREST EL=7020.6
TOP OF EMBANKMENT EL=7024.0
100-YR VOLUME=2.99 AC-FT
100-YR INFLOW=112.8
100-YR RELEASE=41.7 CFS

LEGEND

FUT	EXISTING
FUT	FUTURE
PROP	PROPOSED
	PROP MAJ CONT
	PROP MIN CONT
	EXIST MAJ CONT
	EXIST MIN CONT
	PERM. EROSION CONTROL BLANKET
	RIPRAP
	REGIONAL TRAIL/MAINT. ROAD
	STABILZED MAINTENANCE ROAD ABOVE EURV
	STABILIZED MAINT. ROAD BELOW EURV
	CONC LOW FLOW CHANNEL
	EX. FLOW ARROW
	PROP. FLOW ARROW
	CONSTRUCTION LIMITS
	PROPERTY LINE
	PROP STORM SEWER PIPE
	EASEMENT LINE
	WARNING SIGN

STERLING RANCH FILING NO. 1
FULL SPECTRUM DET. POND 8 SITE PLAN

PROJECT NO. 09-002	FILE: \dwg\Const Dwg\Storm - District\ST18.dwg	DATE: 01/02/2018	SHEET 22 OF 28
DESIGNED BY: ET	SCALE		ST18
DRAWN BY: ELY	HORIZ: 1"=20'		
CHECKED BY: VAS	VERT: N/A		

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF MVE & CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

REVISIONS:

NO.	DATE:	BY:	DESCRIPTION:	APRV'D. BY:	DATE:

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CAUTION

File: O:\09002A\Sterling Ranch District\dwg\Const Dwg\Storm - District\ST18.dwg Plotstamp: 2/7/2017 1:42 PM

FULL SPECTRUM DETENTION POND 8
NORTHERN FOREBAY PLAN

NOT TO SCALE

LOW FLOW CHANNEL
TYPICAL SECTION

NOT TO SCALE

SLOPE GRADING BELOW NORTHERN FOREBAY
SECTION C-C

NOT TO SCALE

LOW FLOW CHANNEL AT NORTH FOREBAY
SECTION B-B

NOT TO SCALE

NORTH FOREBAY FRONT WALL W/NOTCH
SECTION A-A

NOT TO SCALE

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES

FOR BURIED UTILITY INFORMATION
48 HRS BEFORE YOU DIG
CALL 1-800-922-1987

STERLING RANCH FILING NO. 1
FULL SPECTRUM DET. POND 8 DETAILS

PROJECT NO. 09-002	FILE: \dwg\Const Dwg\Street & Storm Plans\ST19.dwg	DATE: 01/02/2018	ST19
DESIGNED BY: ET	SCALE		SHEET 23 OF 28
DRAWN BY: ELY	HORIZ: 1"=50'		
CHECKED BY: VAS	VERT: 1"=5'		

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VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

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COLORADO REGISTERED PROFESSIONAL ENGINEER 37160

REVISIONS:			
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APRV'D.	BY:	DATE:

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CAUTION

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SECTION
NOT TO SCALE

GRATE PLAN
NOT TO SCALE

GRATE DETAIL "A"

GRATE DETAIL "B"

SET PLATE ANCHOR DETAILS
(NTS)

EXPANSION JOINT DETAIL
(NTS)

MECHANICAL TUBING, 1/4" MIN. WALL THICKNESS, 1/16" CHAMFER BOTH ENDS. REAM PIPE FOR SLIP FIT 0.03" MAX. CLEARANCE

13/32" DRILL AND CSK. PIPE 1/16" DEEP BOTH SIDES. PROVIDE 3/8" DIA SOFT STEEL ROD SUITABLE FOR FIELD RIVETING, GRIND SMOOTH.

FIXED JOINT DETAIL
(NTS)

1) WELD PLATES MAY BE SUBSTITUTED FOR PIPE EMBEDMENT.
2) CONTRACTOR TO SUBMIT SHOP DRAWINGS TO ENGINEER OF RECORD FOR APPROVAL PRIOR TO FABRICATION.
3) DESIGN CRITERIA SHALL BE IN ACCORDANCE WITH AASHTO STANDARDS.
4) HANDRAIL DESIGN SHALL BE COMPATIBLE WITH THE DESIGN OF THE WINGWALLS AND HEADWALLS.
5) RAILING POSTS SHALL BE SET TO NORMAL TO GRADE. RAILS SHALL RUN PARALLEL TO THE SLOPES OF THEE TOP OF WALLS.
6) ALL RAILS SHALL BE FREE OF ANY SHARP EDGES OR CORNERS.

HANDRAIL ASSEMBLY DETAILS
NOT TO SCALE

SECTION A-A
NOT TO SCALE

REAR WALL
NOT TO SCALE

RESTRICTOR PLATE
NOT TO SCALE

ORIFICE PLATE
NOT TO SCALE

SEE UPDATED ORIFICE PLATE DETAIL ON NEXT PAGE SHEET ST20A

MIDDLE WALL
NOT TO SCALE

SECTION B-B
NOT TO SCALE

NOTE:
ALL GRATES, IMBEDS, AND FASTENERS SHALL BE FABRICATED USING GALVANIZED STEEL, UNLESS OTHERWISE NOTED.

ALL GRATE DIMENSIONS TO BE FIELD VERIFIED PRIOR TO FABRICATION. ALL GRATE MATERIAL SHALL BE GALVANIZED.

TRASH SCREEN DETAIL
NOT TO SCALE

NOTE:
CENTER ORIFICE PLATE AND TRASH SCREEN HORIZONTALLY ACROSS 1'-0" OPENING IN STRUCTURE

SEE UPDATED TRASH SCREEN DETAIL ON NEXT PAGE SHEET ST20A

POND 8 WATER QUALITY OUTLET STRUCTURE
NOT TO SCALE

FRONT/STEM WALL
NOT TO SCALE

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES

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STERLING RANCH FILING NO. 1
FULL SPECTRUM DET. POND 8 DETAILS

PROJECT NO. 09-002	FILE: \dwg\Const Dwg\Storm - District\ST20.dwg	DATE: 01/02/2018	ST20
DESIGNED BY: ET	SCALE		SHEET 24 OF 28
DRAWN BY: ELY	HORIZ: N/A		
CHECKED BY: VAS	VERT: N/A		

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FOR AND ON BEHALF OF MESA CIVIL CONSULTANTS, INC.

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CAUTION

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UPDATED SPILLWAY DETAILS

UPDATED ORIFICE PLATE

NOT TO SCALE

UPDATED TRASH SCREEN DETAIL

NOT TO SCALE

NOTE:
CENTER ORIFICE PLATE AND TRASH SCREEN HORIZONTALLY ACROSS 1'–0" OPENING IN STRUCTURE

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES

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STERLING RANCH FILING NO. 1

UPDATED FULL SPEC. DET. POND 8 DETAILS

PROJECT NO. 09-002 | FILE: \dwg\Const Dwg\Storm - District\ST20A.dwg | DATE: 01/02/2018

DESIGNED BY: ET
DRAWN BY: ELY
CHECKED BY: VAS

SCALE
HORIZ: N/A
VERT: N/A

SHEET 20 OF 28

ST20A

20 BOULDER CRESCENT, SUITE 110
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VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

FOR AND ON BEHALF OF MVS CIVIL CONSULTANTS, INC.

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CAUTION

File: O:\09002A\Sterling Ranch District\dwg\Const Dwg\Storm - District\ST20A.dwg Plotstamp: 9/20/2019 2:59 PM

CONCRETE STEM WALL ELEVATION

NOT TO SCALE

STEM WALL SECTION

NOT TO SCALE

SECTION A-A

NOT TO SCALE

SECTION B-B

NOT TO SCALE

SECTION C-C

NOT TO SCALE

EMERGENCY SPILLWAY PROFILE

HORZ. SCALE: 1"=50'
VERT. SCALE: 1"=5'

EMERGENCY SPILLWAY CROSS SECTION

NOT TO SCALE

FOR LOCATING
& MARKING
GAS,
ELECTRIC,
WATER &
TELEPHONE
LINES

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STERLING RANCH FILING NO. 1

FULL SPECTRUM DET. POND 8 DETAILS

PROJECT NO. 09-002	FILE: \dwg\Const Dwg\Storm - District\ST21.dwg	DATE: 01/02/2018	SHEET 25 OF 28
DESIGNED BY: ET	SCALE		ST21
DRAWN BY: ELY	HORIZ: AS NOTED		
CHECKED BY: VAS	VERT: AS NOTED		

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COLORADO REGISTERED 37160 PROFESSIONAL ENGINEER

REVISIONS:

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CAUTION

File: Q:\09002A\Sterling Ranch District\dwg\Const Dwg\Storm - District\ST21.dwg Plotstamp: 12/5/2016 11:18 AM

NOTE:
IF MUCK IS PRESENT PLACE FOOTER ATOP A MAX. OF 12" OF 1 1-2" TO 3" ROCK ATOP 12" OF 3"-5" ROCK (DEPENDANT UPON FIELD CONDITIONS)

SECTION A-A
NOT TO SCALE

REAR WALL
NOT TO SCALE

POND 8- ENERGY DISSIPATION WALL TYPICAL PLAN
NOT TO SCALE

POND 8 - STORM 8 OUTFALL RIPRAP APRON W/HEADWALL SECTION (TYP.)
NOT TO SCALE

POND 8 - SOUTH FOREBAY PLAN
NOT TO SCALE

FRONT WALL
NOT TO SCALE

POND 8- ENERGY DISSIPATION WALL TYPICAL SECTION
NOT TO SCALE

POND WARNING SIGN
NOT TO SCALE

POND 8 - STORM 8 OUTFALL RIPRAP APRON W/HEADWALL ELEVATION (TYP.)
NOT TO SCALE

GENERAL NOTES

1. ALL EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED ¾ IN.
2. WINGWALL FOOTINGS AND FLOOR OF BOX CULVERT SHALL BE PLACED MONOLITHICALLY.
3. DIMENSIONS "h", "Ba", "RISE", "k", "L", "m" AND ANGLES FOR WINGWALLS SHALL BE AS SHOWN ON THE PLANS.
4. REINFORCING STEEL SHALL BE GRADE 60.
5. THE MINIMUM SPLICE LENGTH FOR COMMON BAR SIZES SHALL BE:

BAR	#4	#5	#6
SPLICE LENGTH	1'-3"	1'-7"	2'-0"

e =	1'-3"	1'-6"	1'-6"	1'-6"	1'-6"	1'-4"	1'-3"	11"	9"	7"	CTRS.
h =	2'	3'	4'	5'	6'	7'	8'	9'	10'	11'	
a =	1'-0"	1'-2"	1'-4"	1'-6"	1'-8"	1'-10"	2'-0"	2'-2"	2'-4"	2'-6"	
b =	1'-8"	2'-0"	2'-4"	2'-8"	3'-0"	3'-4"	3'-8"	4'-0"	4'-4"	4'-8"	
w =	2'-8"	3'-2"	3'-8"	4'-2"	4'-8"	5'-2"	5'-8"	6'-2"	6'-8"	7'-2"	
c & d BARS	#40[1'-6"	#40[1'-6"	#40[1'-6"	#40[1'-6"	#40[1'-6"	#40[1'-4"	#50[1'-3"	#50[1"	#60[9"	#60[7"	CTRS.
CONC.CU.YD./L.F.	0.161	0.210	0.259	0.308	0.358	0.407	0.457	0.506	0.556	0.604	
REINF. LB./L.F.	8.0	9.3	10.7	12.1	14.3	16.4	23.0	28.6	41.8	54.6	

* DOES NOT INCLUDE TOE WALL QUANTITIES

DESIGN TABLE

PLAN

DESIGN EXAMPLE

TYPICAL SECTION

WITH TOE WALL

APRON TOE WALL

WITH CONCRETE APRON
REINFORCEMENT 0.89 LB./SQ. FT.

TYPICAL CULVERT LAYOUT

DETAIL "A"

DESIGN DATA:

UNIT STRESSES: f_s=24,000 PSI
f_c=1,200 PSI
n = 9

EQUIVALENT FLUID PRESSURE = 36 LBS./CU. FT.
MAXIMUM TOE PRESSURE = 1 TON/SQ. FT.

ALL CONSTRUCTION JOINTS SHALL BE THOROUGHLY CLEANED BEFORE CONCRETE IS POURED.

WINGWALL AND APRON CONCRETE SHALL BE:
CONCRETE CLASS B, OR D (BOX CULVERT) FOR CBC's.
CONCRETE CLASS B, OR D (WALL) FOR PIPES.

LIVE LOAD SURCHARGE HAS NOT BEEN CONSIDERED. WALLS WITHIN ⅔ OF THE EDGE OF THE ROADWAY SHOULDER WILL REQUIRE A SPECIAL DESIGN IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.

BOX ELEVATION
m = h, B a OR RISE + (1'-4")
UNLESS OTHERWISE SHOWN ON PLANS

OUTLET STRUCTURE WINGWALL REINFORCING DETAILS
CDOT M-601-20
NOT TO SCALE

* UPON GRUBBING EXISTING SOIL IN EMBANKMENT AREA, ENGINEER SHALL BE CONTACTED TO DETERMINE SOIL QUALITY IF POOR PERMEABILITY IS FOUND ONLY THE TOP 2'X12' PORTION OF THE EMBANKMENT KEY IS REQUIRED FOR CONSTRUCTION

TYPICAL EMBANKMENT WITH SOIL KEYWAY
NOT TO SCALE

& MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES

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STERLING RANCH FILING NO. 1
FULL SPECTRUM DET. POND 8 DETAILS

PROJECT NO. 09-002	FILE: \dwg\Const Dwg\Storm - District\ST22.dwg	DATE: 01/02/2018	ST22
DESIGNED BY: ET	SCALE	SHEET 26 OF 28	
DRAWN BY: ELY	HORIZ: N/A		
CHECKED BY: VAS	VERT: N/A		

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CAUTION

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