Boondocks

Lot 4A, Crown Point Filing #1

LOCATED IN A PORTION OF THE SW 1/4 OF SECTION 3,
T6S, R66W, 6TH P.M., COUNTY OF DOUGLAS, STATE OF COLORADO.

CONSTRUCTION PLAN SET

LEGAL DESCRIPTION:

Lot 4, Crown Point F#1, 14th Amendment–Reception # 2007081477 of the records of Arapahoe County, Colorado.
Containg 847,936 square feet, 14.875 acres, More or Less.

PROPOSED LEGAL DESCRIPTION:

The following descriptions are a part of lot 4; Crown Point F # 1, 14th Amendment Rec # 2007081477, Arapahoe County, Colorado and describes two parcels (A&B) which are to be included in a replat of the said lot 4;

Parcel A
Beginning at the northeast corner of said lot 4;
Thence southerly along the east line of lot 4, which is coincident with west ROW line of E 470, S11°07'44"W, 191.10 feet;
Thence leaving said coincident east line with west ROW line of E470; N70°01'13W; 586.59 feet;
Thence S00°00'00"E, 384.86 feet to a platted corner on said lot 4; said platted corner being the northeast corner of lot 2, Crown Point F #1, 14th Amendment, Reception # 20070081477; Arapahoe County, Colorado;
Thence along a common lot line of lot 24, lot 4, said Crown Point F#1, 14th amendment; N90°00'00"W, 238.60 ft to a common corner of lot 3, Crown Point F#1, 14th amendment, reception #2007081477, and lot 4;
Thence along a common property line of said lots 3 and 4 N00°06'31"W, 634.97 feet to a point on the south ROW line of Cottonwood Dr, Rec. # 00073633, Arapahoe County, Colorado;
Thence along said south ROW line on a curve to the right having a chord of S74°15'58"E 526.95 ft and a radius of 2,702.00 ft with a central angle of 11°11'30" with an arc length of 527.79 ft. to a point of Tangent;
Thence continuing along said south ROW line S68°40'13"E, 90.33 feet.;
Thence continuing along the said south ROW line S70°34'46"E, 240.13 ft. to the POINT OF BEGINNING.

Area of Parcel A 5.969 acres.

Parcel B
Beginning at the northeast corner of said lot 4;
Thence along the east line of lot 4 which is coincident of the west ROW of E 470; S4°07'44"W, 191.10 feet to the TRUE POINT OF BEGINNING;
Thence along the common lot line of lot 4 and west ROW of E 470 along the following 5 courses and distances;

1) Thence S11°07'44"W,118.21 feet
2) Thence S14°52'44"W, 95.13 feet to a point of curve;
3) Thence on a curve to the right having a radius of 1,075.92'; a central angle of 22°03'52", an arc length of 414.33 ft and a chord of S25°54'40"W, 411.78 ft to a point of tangent.
4) Thence S36°56'36"W, 228.17Ft to a point of curve to the right;
4) Thence on a curve to the right having a radius of 549.41 ft, a central angle of 25°49'10", an arc length of 247.58 ft and a chord of S49°51'11"W; 245.49 ft to the furthest south property corner of said lot 4;
Thence leaving said E 470 ROW line and continuing north along the common lot line of lot 3, Crown Point F#1, 14th Amendment N00°00'00"E, 732.63 ft to the northeast corner of said lot 3, thence continuing N00°00'00"E, 384.46 ft;
Thence S70°13'01"E, 586.59 ft to the TRUE POINT OF BEGINNING of Parcel B

Parcel B contains 8.906 acres.

TOWN OF PARKER CONTACTS:

Tom Williams, P.E. – Engineering & Stormwater Manager:	(303) 840–9546	
Michael Waugh – Engineering Inspections Supervisor:	(303) 805–3231 (Direct)	(303) 434–9260 (Cell)
Alex Mestdagh, P.E. – Sr. Development Review Engineer:	(303) 805–3204 (Direct)	(303) 434–9306 (Cell)
Jacob James, P.E. – Stormwater Project Engineer	(303) 805–3166 (Direct)	(303) 242–4920 (Cell)
Adam Nelson – Environmental Program Manager:	(303) 805–3226 (Direct)	(303) 434–6590 (Cell)
Alvin Lamle – Stormwater Technician:	(303) 805–3239 (Direct)	(303) 434–3778 (Cell)
Kurt Patrick ?Engineering Technician:	(303) 805–3209 (Direct)	(303) 961–1057 (Cell)

UTILITY CONTACTS:

Intermountain REA
Mr. Jim Potter
5496 North US Highway 85
Sedalia, CO 80135
(303) 688–3100

Comcast Cable
Mr. Butch Buster
6850 South Tucson Way
Englewood, CO 80112
(303) 603–5628

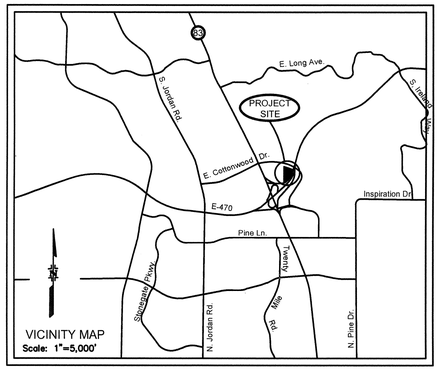
CenturyLink
Mr. William Benson
9750 East Costilla Avenue
Englewood, CO 80112
(720) 578–5142

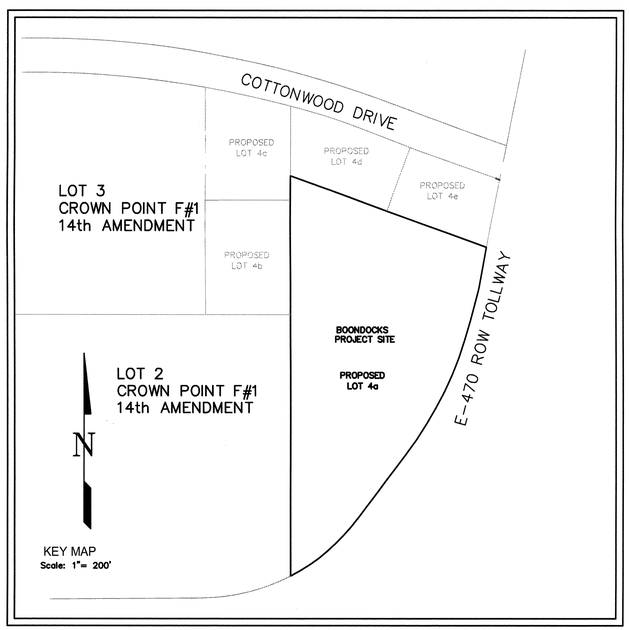
Xcel Energy
1123 West 3rd Avenue
Denver, CO 80223
Builder's Call Line
(800) 628–2121

Cottonwood Water & Sanitation District
Mr. Patrick F. Mulhern/Laurie Tatlock
2 Inverness Drive East, Suite 200
Englewood, CO 80112
(303) 649–9509

BENCHMARK:

A BRASS DISK SET IN CONCRETE FLUSH WITH THE GROUND AND MARKED WITH A DOUGLAS COUNTY FIBERGLASS WITNESS POST, 125 FEET NORTH OF THE CENTERLINE OF A DRIVEWAY, 84 FEET SOUTH OF A DOUBLE 36 IN. CULVERT, 25 FEET WEST OF THE EDGE OF PARKER ROAD, AND 25 FEET EAST OF THE WEST RIGHT OF WAY FENCE.
ELEVATION = 5734.24





LEGEND

×5805.17 GND	EXISTING ELEVATION
×5805.56	PROPOSED ELEVATION
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
9' 10' 19'	PROPOSED 6" VERTICAL CURB & GUTTER AND PARKING LOT STRIPING
	PROPOSED LIGHTING FIXTURE
	PROPOSED FENCE
D	PROPOSED STORM SEWER W/ MANHOLE & INLET
D	EXISTING STORM SEWER W/ MANHOLE
	EXISTING FIRE HYDRANT
	PROPOSED FIRE HYDRANT
M	EXISTING WATER LINE W/VALVE & TEE
W	PROPOSED WATER LINE W/VALVE & TEE
S	EXISTING SANITARY SEWER W/MANHOLE
	PROPOSED SANITARY SEWER W/MANHOLE
	PROPOSED SIGN
	EXISTING EASEMENT
	PROPOSED EASEMENT
	PROPOSED CONCRETE PAN

SHEET INDEX:

CIVIL ENGINEERING PLANS

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LAND USE SUMMARY TABLE:

TOTAL BUILDING AREA:	62,678.0	SF	15.9% OF TOTAL SITE
TOTAL PARKING AREA:	126,496.0	SF	32.1% OF TOTAL SITE
PARKING LOT LANDSCAPING:	12,674.0	SF	10.0% OF TOTAL PARKING AREA
DRIVE AISLES:	83,111.0	SF	6.6% OF TOTAL PARKING AREA
SITE LANDSCAPED AREA:	105,038.0	SF	26.7% OF TOTAL SITE
OUTDOOR RECREATIONAL AREA:	99,482.0	SF	25.3% OF TOTAL SITE
TOTAL SITE	393,695.6	SF	100% OF TOTAL SITE

The Town of Parker review constitutes general compliance with the Town's Standards and approved variances, subject to these plans being stamped, signed, and dated by the professional engineer of record. Review by the Town does not constitute approval of the plan design or accuracy and correctness of engineering calculations. Errors in the design or calculations remain the responsibility of the registered professional engineer whose stamp and signature are affixed to this document.

This review does not constitute approval of any private on?site improvements which may be shown. Construction cannot commence until all required drainage/traffic report(s), final development plan(s), special review(s), grading permit, and/or other permits are complete, approved and on file with the Town of Parker.

Town of Parker, Public Works Director	Date 9.23.15
Town of Parker, Public Works Manager –Stormwater	Date 9.23.15
Town of Parker, Public Works Manager –Transportation	Date 09/22/2015

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

REVISION	DATE
COMMENTS	05/26/2015
COMMENTS–2	07/17/2015
Final Plans	08/18/2015

MM&D ENGINEERING SERVICES, INC.
William E. Miller, PE 13389
ENGINEERING
CONSTRUCTION MANAGEMENT
9125 N. Clydesdale Road PH (303) 908–0062
Castle Rock, Colorado 80108 FAX (303) 708–8399

Boondocks
Parker, Colorado
Cover Sheet
Construction Plans

COLORADO REGISTERED WILLIAM E. MILLER 13889 PROFESSIONAL ENGINEER
8/21/15

submitted 05/10/2015
DATE 09/16/2014
DES/DFT/CHK WEM/km
PROJ. NO. 13–343
SHEET 1 OF 27

CONSTRUCTION NOTES

1. All materials and construction shall be in conformance with the latest edition of the Colorado Department of Transportation Standard Specifications for Road and Bridge Construction, the latest edition of the Town of Parker Roadway Design and Construction Criteria Manual, and the Town of Parker Storm Drainage and Environmental Criteria Manual.
2. All materials and workmanship shall be subject to inspection by the Town of Parker Public Works Department. The Town reserves the right to accept or reject any such materials and workmanship that does not conform to its standards and specifications.
3. A preconstruction meeting shall be scheduled a minimum of 48 hours and a maximum of 96 hours prior to the start of construction. A preconstruction meeting will not be scheduled until the grading permit and all other necessary permits have been obtained.
4. A Development Review Engineer shall be contacted a minimum of 24 hours prior to a necessary inspection. If a Development Review Engineer is not available after proper notice of construction activity has been provided, the permittee may commence work in the Development Review Engineer's absence. However, Town of Parker reserves the right to reject the improvement if subsequent testing reveals an improper installation.
5. Location of existing utilities shall be verified by the contractor prior to actual construction. For information contact: Denver Inter-Utility Group, 303-534-6700 or 1-800-922-1987. The contractor shall field verify size and horizontal and vertical locations of existing facilities prior to construction, and notify the engineer of any discrepancies.
6. The contractor shall have one (1) signed copy of the plans, approved by the Town of Parker Public Works Director, and one (1) copy of the Roadway Design and Construction Criteria at the job site at all times.
7. All proposed street cuts to existing pavements for utilities, storm sewer or for other purposes are listed and referenced below:
WATER AND SANITARY SEWER - SHEET 3
STORM SEWER - SHEETS 3, 14-16
8. A plan for traffic control during construction shall be submitted to the Town of Parker for acceptance with the Right-of-Way Permit Use application. A permit will not be issued without an approved traffic control plan for use during construction.
9. All trenches shall be adequately supported and the safety of workers provided for as required by the most recent Occupational Safety and Health Administration (OSHA) "Safety and Health Regulations for Construction."
10. Compaction of all trenches must be attained and compaction test results submitted to the Development Review Engineer in preliminary form prior to paving and in final form prior to probationary acceptance.
11. The contractor is responsible for implementing and maintaining erosion and sediment control measures at all times during construction. The plan may be modified as field conditions warrant with approval from the Town of Parker Public Works Department.
12. The contractor shall provide, erect and maintain proper traffic control devices until the site is open to traffic. The contractor shall submit a traffic control plan to the Town of Parker Public Works Department for approval prior to construction.
13. Plans are approved for period of 1 (one) year from the date shown on the Town of Parker signature block. Plans shall be resubmitted to the Town for approval after 1 year. The cost of the plan re-review and re-acceptance will be charged back to the developer including all time and expenses of the Town of Parker Public Works Department.
14. Repair of any damage to existing improvements or landscaping is the responsibility of the contractor.
15. All damaged existing curb, gutter, and sidewalk shall be repaired prior to acceptance of completed improvements.
16. All construction activities must comply with the State of Colorado permitting process for "Stormwater Discharges Associated with Construction Activity." For information, please contact Colorado Department of Heath, Water Quality Control Division, WQCD-PE-B2, 4300 Cherry Drive South, Denver, Colorado 80222-1530. Attention: Permits and Enforcement Section. Phone (303) 692-3500.
17. If dewatering is required, a state construction dewatering discharge permit is required for discharges to a storm sewer, channel, irrigation ditch, any street that is tributary to the aforementioned facilities, or any water of the United States.
18. All references to books, pages, maps, and reception number are public documents on file with the County Clerk and Recorder's Office.

ROADWAY NOTES

1. Paving shall not commence until a soils report and pavement design is approved by the Engineering Division and subgrade compaction tests are submitted to and approved by the Development Review Engineer.
2. Standard Town of Parker Handicap Ramps are to be constructed at all curb returns and at all "T" intersections.
3. All stationing is based on centerline of roadways unless otherwise noted.
4. All elevations are on USGS DATUM with date. Range point or monument shall be shown on the construction plans.
5. Except where otherwise provided for in these plans and specifications, the Colorado Department of Highways Standard Specifications for Road and Bridge Construction, the Colorado Department of Highways M and S Standards, and the Town of Parker Roadway Design and Construction Criteria Manual, latest edition, shall apply.

STORM DRAINAGE INFRASTRUCTURE NOTES

1. All storm drainage improvements are subject to compliance with the Colorado Department of Transportation (CDOT) current edition of the Standard Specifications for Road and Bridge Construction, M & S Standards, and all standard special provisions currently used by CDOT, with the modifications set forth in the Town of Parker's Storm Drainage and Environmental Criteria Manual (SDECM), as amended.
2. The contractor shall comply with the "Colorado Water Quality Control Act" (Title 25, Article 8 CRS), the "Protection of Fishing Streams" Title 33, Article 5, CRS), the "Clean Water Act" (33 USC 1344), Cherry Creek Reservoir Control Regulation No. 72" (5 CCR 1002-72), the regulation promulgated, certification or permits issues, and the requirements presented in the SDECM Revision to Section 107 and the Construction BMP Plan. In the event of conflicts between these requirements and water quality control laws, rules, or regulations of other Federal, or State agencies, the more restrictive laws, rules, or regulations shall apply.
3. Inspections: Construction shall not begin until a grading permit has been issued for the project. The contractor shall notify the Town of Parker Engineering Department (Public Works) to schedule inspections a minimum of 48 hours prior the construction of all drainage infrastructure (storm sewers, inlets, manholes, energy dissipaters, riprap, grouted boulders, detention pond outlet structures, forebays, trickle channels, etc). Failure to notify the engineering department for inspections may result in nonacceptance of the infrastructure by the Town. Urban Drainage and Flood Control District must also be notified in a similar manner for all maintenance eligible drainage infrastructures (consult with Stormwater Engineering Division).
4. Structural backfill (CDOT Class 1) shall be compacted to conform to CDOT Standard Specification 203.03. Structural backfill (CDOT Class 2) shall conform to CDOT Standard Specification 203.07. At the contractor's option, Structural Backfill (Squeegee) meeting the gradation requirements contained in Revision of Section 206 of the CDOT Standard Specifications as presented in the SDECM, may be substituted for Structure backfill (Class 1) or Class 2) for backfilling of culvert pipes, storm sewer pipes, manholes and inlet structures; however, the top 2 feet below subgrade elevation shall be the required embankment material.
5. All excavations shall meet OSHA requirements.
6. Testing: Probationary acceptance of storm drainage improvements will be contingent upon satisfactory testing results. In all cases where tests indicate compaction less than that required by Town specifications, additional compaction and tests will be required until the specifications are met. Frequency of testing will be as follows:
•1 test for subgrade and 1 test for backfill at every above ground appurtenance (manholes, inlets, etc)
•1 test every 200 LF of mainline trench every 1 foot of backfill lift and within 1 foot from all structures.
7. Allowable storm sewer conduit material within the Town of Parker shall be limited to Reinforced Concrete Pipe (RCP) conforming to CDOT Standard Specification 706.02.
8. All RCP joints shall be manufactured in accordance with ASTM C443. Rubber gaskets shall be used on all pipe joints conforming to ASTM C443. All RCP sections shall be joined in such a manner that the ends are fully entered and the inner surfaces are reasonable flush. Average joint gap that exceeds ½ inch shall be filled with an approved flexible plastic sealant.
9. Joint restraints and toe-walls, conforming to CDOT M&S Standard Plan No. M-601-11 shall be used on all RCP flared end section outfalls.
10. Epoxy coated rebar shall be used as reinforcing steel on all storm inlets. Reference CDOT M&S Standard Plan No. M-604-10, 11, 12, and 13.
11. CDOT Class D concrete shall be used for all concrete drainage structures.
12. Pre-cast inlets and manhole bases shall not be used within the Town of Parker Right-of-way, with the exception of CDOT Type C and D inlets.
13. Two- (2) manhole access points are required on all Type "R" curb inlets greater than or equal to ten (10) feet in length as presented in CDOT M&S Standard Plan No. M-604-12.
14. All grouting (boulders, riprap) shall be in accordance with the Revision of Section 506 of the CDOT Standard Specifications as presented in the SDECM.
15. All boulders and riprap shall be selected and placed in accordance with the Revision of Section 506 of the CDOT Standard Specifications as presented in the SDECM.
16. Contractor shall refer to the Town of Parker's Construction Best Management Practices details and notes for all requirements relating to re-vegetation, sediment and erosion control requirements for construction activities.

SIGNAGE AND STRIPING NOTES

1. All traffic control devices shall conform to the most recent version of the federal Manual on Uniform Traffic Control Devices (MUTCD), Colorado Supplemental MUTCD, and the Town of Parker Roadway Design and Construction Criteria Manual. Further specifications and illustrations are located in the Colorado Department of Transportation (CDOT) M and S Standards.
2. A field inspection of location and installation of all signs and markings shall be performed by the Town of Parker.
3. The contractor installing signs shall be responsible for the locating and protecting of all underground utilities.
4. Type III (lighted) barricades shall be set at the ends of roadways separating finished (and/or accepted) and unfinished construction areas and shall be maintained by the contractor/developer. A "Road Closed Ahead" and "To Be Extended" warning signs shall be installed appropriately in advance of the Type III barricades.
5. Special care shall be taken in sign locations to ensure an unobstructed view of each sign.
6. Where stop sign control is appropriate, 36 inch stop signs shall be used for approaches to any roadway that is classified as a collector or greater.
7. A 7 foot minimum post length shall be maintained from the bottom of the sign panel to the ground. This requirement for vertical clearance is for all signs.
8. Delineation of roadways shall be as specified in the Colorado Department of Transportation M and S Standards.
9. Raised median island noses shall have R4-7 signs at each end and a 4"x12" high intensity yellow sign blank located midway between the R4-7 sign and finished grade on each post.
10. Signage and striping has been determined by information available at the time of review. Prior to the initiation of any warranty period, the Town of Parker reserves the right to require modifications to existing, or installation of, additional signage and/or pavement marking if it is determined that conditions warrant such modification according to the MUTCD or the CDOT M and S Standards. All signage and striping shall fall under the requirements of the two year warranty period for new construction. Additionally, all pavement markings shall not lift or peel during the first year after installation.
11. Diamond grade material shall be used on all stop signs and overhead signs. All other roadside traffic control devices shall use high intensity grade sheeting. No fluorescent yellow green sheeting shall be used unless specifically approved by the Town of Parker.
12. All street name signs shall be high intensity, extruded, green and white blades. Arterial and collector street name signs shall be 9 inch blades and have mixed case lettering. Local street name signs shall be 6 inches blades with mixed case lettering.
13. All layouts for internally illuminated street name signs shall be submitted to the Town for review and approval prior to fabrication.
14. All removed signs shall be returned to the Town of Parker.
15. Crosswalks: Shall be constructed using preformed thermo-plastic or an approved equal.
Shall be Longitudinal 2 feet by 10 feet (Continental) type or other approved by the Town of Parker.
Shall line up with handicap ramps.
Shall be centered within lanes and placed on lane and curb lines so as to avoid vehicle wheel paths.
16. All pavement marking material (including words and symbols) shall be as follows:
For Concrete Surface:
Long line markings (channelization lines, skips, etc.) shall be epoxy paint.
Other paint may be used for temporary application only when approved by the Town of Parker.
Words, symbols, and crosswalks/stop bars shall be methyl-mythacralate, preformed thermoplastic (90 mil), preformed plastic (90 mil), inlayed tape (STAMARK), or as specified.
(Sand or water blast curing compound prior to installation of markings.)
For Asphalt Surface:
Long line markings (channelization lines, skips, etc.) shall be epoxy paint.
Other paint may be used for temporary application only when approved by the Town of Parker.
Words, symbols, and crosswalks/stop bars shall be hot applied thermoplastic (90 mil), preformed plastic (90 mil), inlayed tape (STAMARK), Methyl-Mythacralate, or as specified.
17. Inspection and approval of striping and crosswalk layout to be done by Town of Parker Development Review Engineer (call 303-840-9546) prior to application of final striping.

GENERAL NOTES:

1) MM&D ENGINEERING SERVICES, INC. SHALL BE NOTIFIED WITHIN 24HRS. OF DISCOVERY OF ANY DEVIATION TO THE PLANS.

2) THE CONTRACTOR SHALL FURNISH THE ENGINEER "AS CONSTRUCTED" LOCATIONS OF FACILITIES INSTALLED. THIS IN TURN SHALL BE USED WITH ADDITIONAL INFORMATION FROM THE ENGINEER TO CREATE "AS CONSTRUCTED" DRAWINGS TO BE SUBMITTED TO THE TOWN OF PARKER.

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

REVISION	DATE
COMMENTS	05/26/2015
COMMENTS-2	07/17/2015
Final Plans	08/18/2015

MM&D ENGINEERING SERVICES, INC.
William E. Miller, PE 13389
ENGINEERING
CONSTRUCTION MANAGEMENT
9125 N. Clydesdale Road PH (303) 908-0062
Castle Rock, Colorado 80108 FAX (303) 708-8399

Boondocks
Parker, Colorado
Notes
Construction Plans

COLORADO REGISTERED WILLIAM E. MILLER 13389 PROFESSIONAL ENGINEER 8-24-15

submittal 09/16/2015
DATE 09/16/2014
DES/DFT/CHK WEM/km
PROJ. NO. 13-343
SHEET 2 OF 27

The Town of Parker review constitutes general compliance with the Town's Standards and approved variances, subject to these plans being stamped, signed, and dated by the professional engineer of record. Review by the Town does not constitute approval of the plan design or accuracy and correctness of engineering calculations. Errors in the design or calculations remain the responsibility of the registered professional engineer whose stamp and signature are affixed to this document.

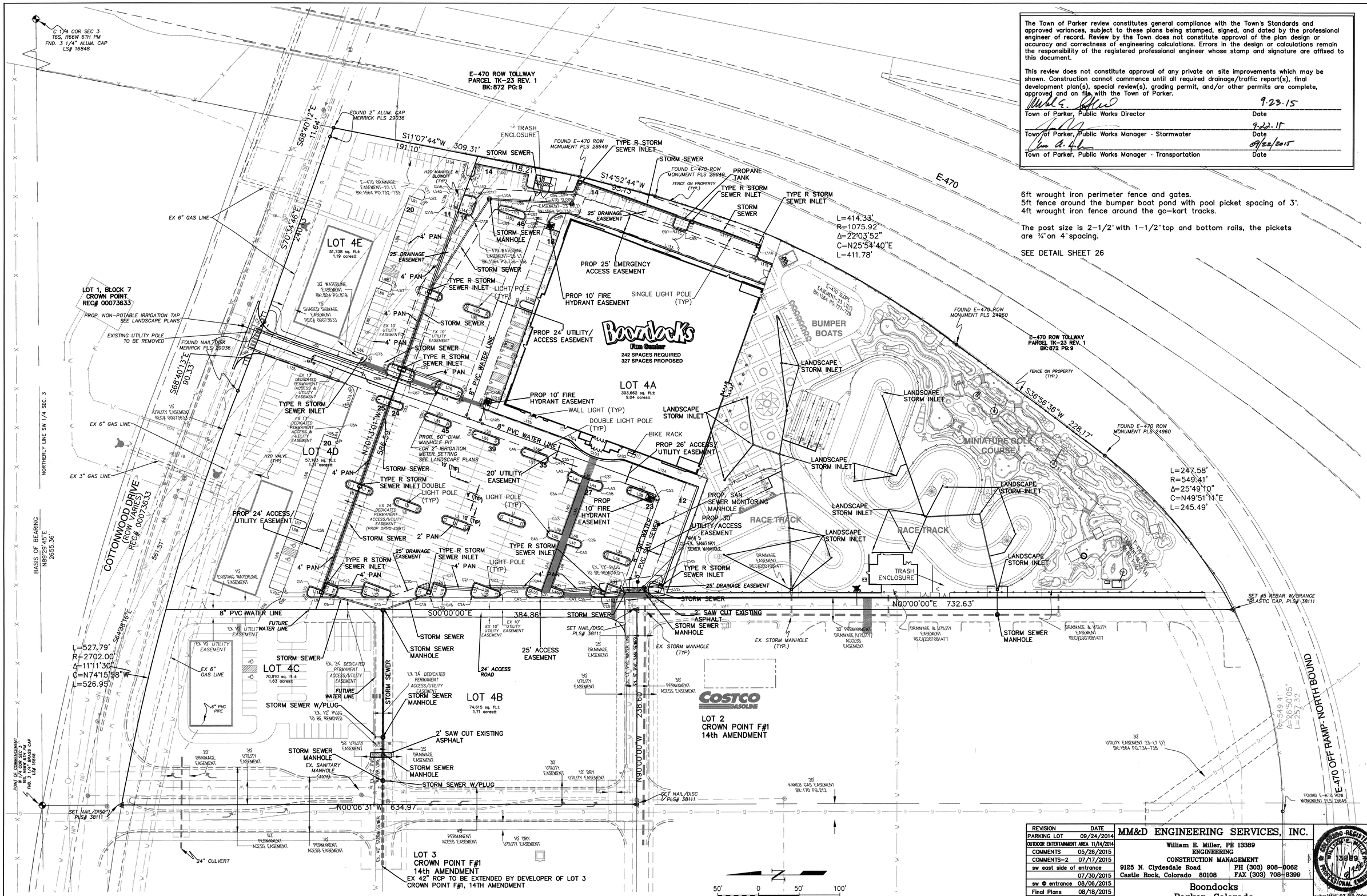
This review does not constitute approval of any private on site improvements which may be shown. Construction cannot commence until all required drainage/traffic report(s), final development plan(s), special review(s), grading permit, and/or other permits are complete, approved and on file with the Town of Parker.

Town of Parker, Public Works Director	Date 9.23.15
Town of Parker, Public Works Manager - Stormwater	Date 9-22-15
Town of Parker, Public Works Manager - Transportation	Date 09/22/2015

6ft wrought iron perimeter fence and gates.
5ft fence around the bumper boat pond with pool picket spacing of 3".
4ft wrought iron fence around the go-kart tracks.

The post size is 2-1/2" with 1-1/2" top and bottom rails, the pickets are ¾" on 4" spacing.

SEE DETAIL SHEET 26



REVISION	DATE
PARKING LOT	09/24/2014
OUTDOOR ENTERTAINMENT AREA	11/14/2014
COMMENTS	05/26/2015
COMMENTS-2	07/17/2015
sw east side of entrance	07/30/2015
sw @ entrance	08/06/2015
Final Plans	08/18/2015

MM&D ENGINEERING SERVICES, INC.

William E. Miller, PE 13389
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9125 N. Clydesdale Road PH (303) 908-0062
Castle Rock, Colorado 80108 FAX (303) 708-8399

Boondocks
Parker, Colorado

Site Plan
Construction Plans

COLORADO REGISTERED WILLIAM E. MILLER 13389 PROFESSIONAL ENGINEER

submittal	03/10/2015
DATE	09/16/2014
DES/DFT/CHK	WEM/km
PROJ. NO.	13-343
SHEET	3 OF 27

Flowline Curve Table

Curve Table			
Curve #	Length	Radius	Delta
C1	14.137	4.500	180.0000
C2	14.137	4.500	180.0000
C3	14.137	4.500	180.0000
C4	14.137	4.500	180.0000
C5	14.137	4.500	180.0000
C6	14.137	4.500	180.0000
C7	14.137	4.500	180.0000
C8	14.137	4.500	180.0000
C9	6.128	5.000	070.2170
C10	9.580	5.000	109.7830
C11	4.712	3.000	090.0000
C12	4.712	3.000	090.0000
C13	3.927	2.500	090.0000
C14	4.712	3.000	090.0000
C15	6.128	5.000	070.2170
C16	9.580	5.000	109.7830
C17	4.712	3.000	090.0000
C18	6.128	5.000	070.2170
C19	9.580	5.000	109.7830
C20	4.712	3.000	090.0000

Curve Table			
Curve #	Length	Radius	Delta
C21	3.927	2.500	090.0000
C22	4.712	3.000	090.0000
C23	6.128	5.000	070.2170
C24	9.580	5.000	109.7830
C25	9.580	5.000	109.7830
C26	4.712	3.000	090.0000
C27	4.712	3.000	090.0000
C28	6.128	5.000	070.2170
C29	14.137	4.500	180.0000
C30	14.137	4.500	180.0000
C31	14.137	4.500	180.0000
C32	14.137	4.500	180.0000
C33	7.069	4.500	090.0000
C34	7.069	4.500	090.0000
C35	7.838	4.500	099.7938
C36	33.814	104.543	018.4233
C37	7.838	4.500	099.7938
C38	7.069	4.500	090.0000
C39	7.069	4.500	090.0000
C40	7.069	4.500	090.0000

Curve Table			
Curve #	Length	Radius	Delta
C41	4.712	3.000	090.0000
C42	6.128	5.000	070.2170
C43	9.580	5.000	109.7830
C44	4.712	3.000	090.0000
C45	7.069	4.500	090.0000
C46	14.137	4.500	180.0000
C47	14.137	4.500	180.0000
C48	14.137	4.500	180.0000
C49	14.137	4.500	180.0000
C50	14.137	4.500	180.0000
C51	14.137	4.500	180.0000
C52	14.137	4.500	180.0000
C53	14.137	4.500	180.0000
C54	7.854	5.000	090.0000
C55	3.927	2.500	090.0000
C56	14.137	4.500	180.0000
C57	3.927	2.500	090.0000
C58	4.231	5.000	048.4852
C59	38.039	43.000	050.8855
C60	46.539	30.000	088.8827

Curve Table			
Curve #	Length	Radius	Delta
C61	15.705	10.000	090.0000
C62	7.854	5.000	090.0000
C63	7.069	4.500	090.0000
C64	7.069	4.500	090.0000
C65	7.069	4.500	090.0000
C66	7.069	4.500	090.0000
C67	7.069	4.500	090.0000
C68	7.069	4.500	090.0000
C69	7.069	4.500	090.0000
C70	7.069	4.500	090.0000
C71	47.255	30.000	090.2507
C72	16.360	10.898	086.0282
C73	3.927	2.500	090.0000
C74	4.712	3.000	090.0000
C75	4.712	3.000	090.0000
C76	3.927	2.500	090.0000
C77	10.308	6.000	098.4116
C78	14.137	4.500	180.0000
C79	14.137	4.500	180.0000
C80	14.137	4.500	180.0000

Curve Table			
Curve #	Length	Radius	Delta
C81	14.137	4.500	180.0000
C82	1.762	12.000	008.4116
C83	10.210	6.500	090.0000
C84	3.927	2.500	090.0000
C85	5.498	3.500	090.0000
C86	4.984	3.500	081.5884
C91	3.927	2.500	090.0000
C92	3.927	2.500	090.0000
C93	7.069	4.500	090.0000
C94	10.901	30.000	020.8184
C95	15.374	51.000	017.2716
C96	6.129	4.500	078.0413
C97	7.069	4.500	090.0000
C98	7.069	4.500	090.0000
C99	7.069	4.500	090.0000
C100	8.689	9.984	049.8157
C101	7.069	4.500	090.0000
C102	7.201	15.000	027.5271
C103	61.977	84.500	055.0541
C104	7.201	15.000	027.5271

Curve Table			
Curve #	Length	Radius	Delta
C105	7.069	4.500	090.0000
C106	7.069	4.500	090.0000
C107	14.136	4.500	179.9810
C108	7.231	4.500	092.5793
C109	35.762	22.364	091.8212
C115	3.927	2.500	090.0000
C116	4.272	3.000	081.5884
C117	7.729	4.500	098.4116
C118	7.069	4.500	090.0000

Flowline Line Table

Line Table		
Line #	Length	Direction
L1	25.000	N19° 46' 58.78"E
L2	25.000	S19° 46' 58.78"W
L3	25.000	N19° 46' 58.78"E
L4	25.000	S19° 46' 58.78"W
L5	25.000	N19° 46' 58.78"E
L6	25.000	S19° 46' 58.78"W
L7	25.000	N19° 46' 58.78"E
L8	25.000	S19° 46' 58.78"W
L9	25.505	S00° 00' 00.00"E
L10	4.390	N70° 13' 01.21"W
L11	14.000	N19° 46' 58.78"E
L12	10.000	N70° 13' 01.21"W
L13	14.000	N19° 46' 58.78"E
L14	5.758	S70° 13' 01.21"E
L15	10.230	N70° 13' 01.21"W
L16	28.500	N19° 46' 58.78"E
L17	1.098	S70° 13' 01.21"E
L18	25.505	S00° 00' 00.00"E
L19	5.437	S70° 13' 01.21"E
L20	25.505	S00° 00' 00.00"E

Line Table		
Line #	Length	Direction
L21	4.570	N70° 13' 01.21"W
L22	14.000	N19° 46' 58.78"E
L23	10.000	N70° 13' 01.21"W
L24	14.000	N19° 46' 58.78"E
L25	9.950	N70° 13' 01.21"W
L26	28.500	N19° 46' 58.78"E
L27	0.417	S70° 13' 01.21"E
L28	25.505	S00° 00' 00.00"E
L29	2.882	N70° 13' 01.21"W
L31	14.000	N19° 46' 58.78"E
L32	10.000	N70° 13' 01.21"W
L33	14.000	N19° 46' 58.78"E
L34	4.249	S70° 13' 01.21"E
L35	25.000	N19° 46' 58.78"E
L36	25.000	S19° 46' 58.78"W
L37	25.000	N19° 46' 58.78"E
L38	25.000	S19° 46' 58.78"W
L39	12.500	N19° 46' 58.78"E
L40	65.000	N70° 13' 01.21"W
L41	12.500	S19° 46' 58.78"W

Line Table		
Line #	Length	Direction
L42	1.414	N70° 13' 01.21"W
L43	1.414	S70° 13' 01.21"E
L44	12.500	S19° 46' 58.78"W
L45	65.000	S70° 13' 01.21"E
L46	12.500	N19° 46' 58.78"E
L47	12.500	S19° 46' 58.78"W
L48	56.000	S70° 13' 01.21"E
L49	14.000	N19° 46' 58.78"E
L50	0.801	S70° 13' 01.21"E
L51	36.132	S00° 00' 00.00"E
L52	4.030	N70° 13' 01.21"W
L53	14.000	N19° 46' 58.78"E
L54	65.000	N70° 13' 01.21"W
L55	12.500	S19° 46' 58.78"W
L56	25.000	N19° 46' 58.78"E
L57	25.000	S19° 46' 58.78"W
L58	25.000	N19° 46' 58.78"E
L59	25.000	S19° 46' 58.78"W
L60	25.000	N19° 46' 58.78"E
L61	25.000	S19° 46' 58.78"W

Line Table		
Line #	Length	Direction
L62	25.000	N19° 46' 58.78"E
L63	25.000	S19° 46' 58.78"W
L64	5.000	S70° 13' 01.21"E
L65	15.500	S19° 46' 58.78"E
L66	108.000	S70° 13' 01.21"E
L67	13.500	N19° 46' 58.78"E
L68	13.500	S19° 46' 58.78"W
L69	81.000	S70° 13' 01.21"E
L70	15.500	N19° 46' 58.78"E
L71	4.184	S70° 13' 01.21"E
L73	13.000	S70° 13' 01.21"E
L74	25.000	S19° 46' 58.78"W
L75	5.000	N70° 13' 01.21"W
L76	25.000	N19° 46' 58.78"E
L77	5.000	S70° 13' 01.21"E
L78	25.000	S19° 46' 58.78"W
L79	5.000	N70° 13' 01.21"W
L80	25.000	N19° 46' 58.78"E
L81	5.000	S70° 13' 01.21"E
L82	106.289	N19° 46' 58.78"E

Line Table		
Line #	Length	Direction
L83	9.500	N70° 13' 01.21"W
L84	15.500	S19° 46' 58.78"W
L85	82.000	N70° 13' 01.23"W
L86	15.000	N19° 46' 58.78"E
L87	3.000	N70° 13' 01.28"W
L88	15.000	S19° 46' 58.78"W
L89	109.999	N70° 13' 01.21"W
L91	15.500	N19° 46' 58.78"E
L92	3.119	N70° 13' 01.53"W
L93	25.000	N19° 46' 58.78"E
L94	25.000	S19° 46' 58.78"W
L95	25.000	N19° 46' 58.78"E
L96	25.000	S19° 46' 58.78"W
L101	12.959	N19° 46' 58.78"E
L102	0.059	S70° 13' 01.21"E
L103	28.500	S19° 46' 58.78"W
L104	0.444	N70° 13' 01.21"W
L105	10.410	N41° 22' 15.92"E
L106	13.499	S78° 37' 44.35"E
L107	5.000	N41° 22' 15.88"E

Line Table		
Line #	Length	Direction
L108	13.499	N78° 37' 44.35"W
L109	65.000	N41° 22' 15.35"E
L110	11.500	S78° 37' 44.11"E
L111	25.566	N41° 22' 15.78"E
L112	12.705	N70° 13' 01.22"W
L113	128.000	N19° 46' 58.78"E
L114	11.500	S70° 13' 01.21"E
L115	9.000	N19° 46' 58.78"E
L116	11.500	N70° 13' 01.21"W
L117	92.000	N19° 46' 58.78"E
L118	11.500	S70° 13' 01.21"E
L119	16.249	N19° 46' 58.78"E
L120	13.416	S00° 00' 00.00"E
L121	1.421	N70° 13' 01.21"W
L122	11.500	N19° 46' 58.78"E
L123	129.000	N70° 13' 01.21"W
L124	99.238	S19° 46' 58.78"W
L125	108.738	S19° 46' 58.78"W
L126	5.000	N70° 13' 01.21"W
L127	13.500	N19° 46' 58.78"E

Line Table		
Line #	Length	Direction
L128	119.000	N70° 13' 01.21"W
L129	13.000	S19° 46' 58.78"W
L130	12.000	N19° 46' 58.78"E
L131	92.000	N70° 13' 01.28"W
L132	12.484	S19° 46' 58.78"W
L133	251.749	N19° 46' 58.78"E
L134	43.834	N41° 22' 15.78"E
L135	109.255	N19° 46' 58.78"E
L137	25.505	S00° 00' 00.00"E
L138	15.000	S19° 57' 24.85"W
L139	13.503	N70° 09' 35.45"W
L140	0.554	N70° 09' 35.45"W
L141	15.216	N41° 25' 42.73"E
L142	11.856	N41° 25' 42.37"E
L143	14.533	S70° 09' 35.45"E
L144	12.500	S19° 57' 24.85"W

REVISION	DATE
PARKING LOT	09/24/2014
OUTDOOR ENTERTAINMENT AREA	11/14/2014
COMMENTS	05/26/2015
COMMENTS-2	07/17/2015
Final Plans	08/18/2015

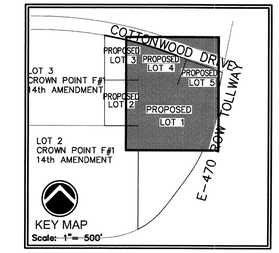
MM&D ENGINEERING SERVICES, INC.

William E. Miller, PE 13389
ENGINEERING
CONSTRUCTION MANAGEMENT
9125 N. Clydesdale Road PH (303) 908-0062
Castle Rock, Colorado 80108 FAX (303) 708-8399

Boondocks
Parker, Colorado
Horizontal Control Table
Construction Plans

COLORADO REGISTERED WILLIAM E. MILLER 13389 PROFESSIONAL ENGINEER 8/12/15

submittal 03/10/2015
DATE 09/16/2014
DES/DFT/CHK WEM/km
PROJ. NO. 13-343
SHEET 4 OF 27



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Town of Parker, Public Works Director	Date 9.23.15
Town of Parker, Public Works Manager - Stormwater	Date 9-22-15
Town of Parker, Public Works Manager - Transportation	Date 09/23/2015

NOTES:
LOT 4B TO LOT 4E, AS SHOWN ON THIS PLAN, ARE FOR REPRESENTATIONAL PURPOSES ONLY.
EACH LOT SHALL SUBMIT A SEPARATE SITE PLAN FOR THE TOWN OF PARKER'S APPROVAL.

CONTOURS REFLECT PROPOSED SUB-GRADE ELEVATIONS BASED ON AN ASSUMED 4" ASPHALT OVER 8" BASE.

N

40' 0 40' 80'
HORIZONTAL SCALE: 1"=40'

AREA OF DISTURBANCE: 741,500 SF

DIRT QUANTITIES (CU YD):

CUT	FILL	NET
19,161	26,983	7,822

REVISION	DATE
PARKING LOT	09/24/2014
COMMENTS	05/26/2015
COMMENTS-2	07/17/2015
ENTRANCE GR	08/07/2015
Final Plans	08/18/2015

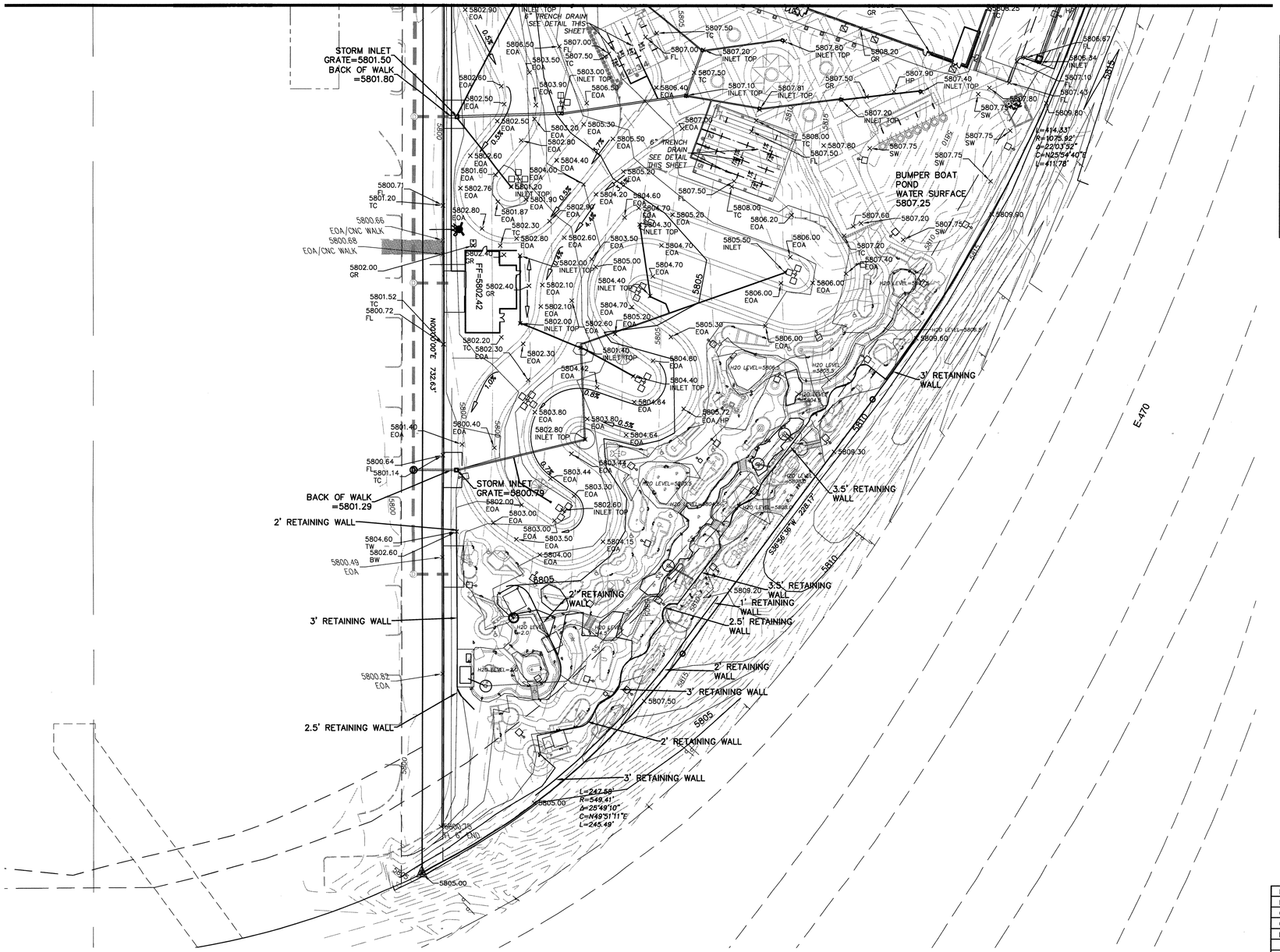
MM&D ENGINEERING SERVICES, INC.
William E. Miller, PE 13389
ENGINEERING
CONSTRUCTION MANAGEMENT
9125 N. Clydesdale Road PH (303) 908-0062
Castle Rock, Colorado 80108 FAX (303) 708-8399

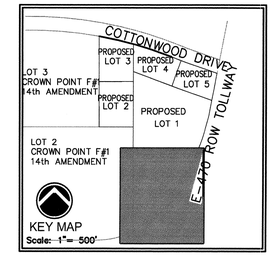
Boondocks
Parker, Colorado
Grading Plan
Construction Plans

COLORADO REGISTERED PROFESSIONAL ENGINEER WILLIAM E. MILLER 13389

submittal 03/16/2015
DATE 09/16/2014
DES/DFT/CHK WEM/km
PROJ. NO. 13-343
SHEET 5 OF 27

Matchline See Sheet 5





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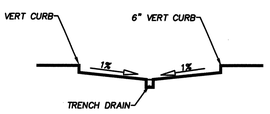
Town of Parker, Public Works Director	Date 9-23-15
Town of Parker, Public Works Manager - Stormwater	Date 9-22-15
Town of Parker, Public Works Manager - Transportation	Date 09/22/2015



TRENCH DRAIN DETAIL

SCALE: 1"=5'

N

40' 0 40' 80'

HORIZONTAL SCALE: 1"=40'

AREA OF DISTURBANCE: 741,500 SF

DIRT QUANTITIES (CU YD):

CUT	FILL	NET
19,161	26,983	7,822

REVISION	DATE
PARKING LOT	09/24/2014
COMMENTS	05/26/2015
COMMENTS-2	07/17/2015
Final Plans	08/18/2015

MM&D ENGINEERING SERVICES, INC.

William E. Miller, PE 13389
ENGINEERING
CONSTRUCTION MANAGEMENT
9125 N. Clydesdale Road PH (303) 908-0062
Castle Rock, Colorado 80108 FAX (303) 708-8399

Boondocks
Parker, Colorado
Grading Plan
Construction Plans

COLORADO REGISTERED PROFESSIONAL ENGINEER WILLIAM E. MILLER 13389

submittal	03/10/2015
DATE	09/16/2014
DES/DFT/CHK	WEM/km
PROJ. NO.	13-343
SHEET	6 OF 27

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Town of Parker, Public Works Director	Date 9.23.15
Town of Parker, Public Works Manager - Stormwater	Date 9-22-15
Town of Parker, Public Works Manager - Transportation	Date 09/22/2015

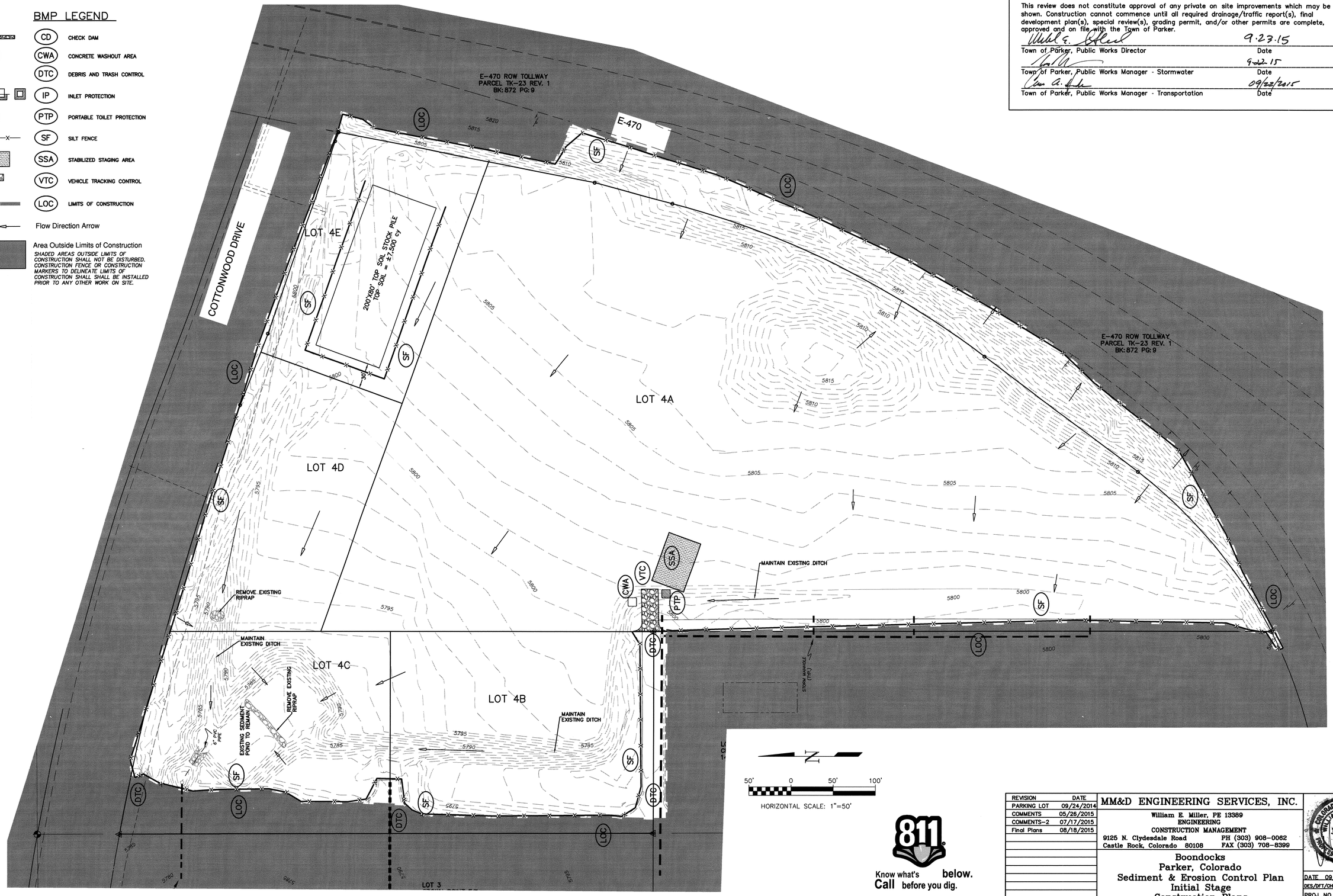
BMP LEGEND

CD	CHECK DAM
CWA	CONCRETE WASHOUT AREA
DTC	DEBRIS AND TRASH CONTROL
IP	INLET PROTECTION
PTP	PORTABLE TOILET PROTECTION
SF	SILT FENCE
SSA	STABILIZED STAGING AREA
VTC	VEHICLE TRACKING CONTROL
LOC	LIMITS OF CONSTRUCTION

Flow Direction Arrow

Area Outside Limits of Construction

SHADED AREAS OUTSIDE LIMITS OF CONSTRUCTION SHALL NOT BE DISTURBED. CONSTRUCTION FENCE OR CONSTRUCTION MARKERS TO DELINEATE LIMITS OF CONSTRUCTION SHALL SHALL BE INSTALLED PRIOR TO ANY OTHER WORK ON SITE.



Know what's below. Call before you dig.

REVISION	DATE
PARKING LOT	09/24/2014
COMMENTS	05/26/2015
COMMENTS-2	07/17/2015
Final Plans	08/18/2015

MM&D ENGINEERING SERVICES, INC.

William E. Miller, PE 13369
ENGINEERING
CONSTRUCTION MANAGEMENT
9125 N. Clydesdale Road PH (303) 908-0062
Castle Rock, Colorado 80108 FAX (303) 708-8399

Boondocks
Parker, Colorado
Sediment & Erosion Control Plan
Initial Stage
Construction Plans

COLORADO REGISTERED WILLIAM E. MILLER 13369 PROFESSIONAL ENGINEER

DATE 09/16/2014
DES/DFT/CHK WEM/km
PROJ. NO. 13-343
SHEET 7 OF 27

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Town of Parker, Public Works Director	Date 9.23.15
Town of Parker, Public Works Manager - Stormwater	Date 9-22-15
Town of Parker, Public Works Manager - Transportation	Date 09/22/2015

BMP LEGEND

CD	CHECK DAM
CWA	CONCRETE WASHOUT AREA
DD	DIVERSION DITCH
DTC	DEBRIS AND TRASH CONTROL
IP	INLET PROTECTION
MWP	MASONRY WORK PROTECTION
PTP	PORTABLE TOILET PROTECTION
RS	ROCK SOCK
SF	SILT FENCE
SR	SURFACE ROUGHENING
SSA	STABILIZED STAGING AREA
VTC	VEHICLE TRACKING CONTROL
LOC	LIMITS OF CONSTRUCTION

Flow Direction Arrow

Area Outside Limits of Construction

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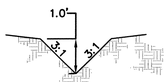
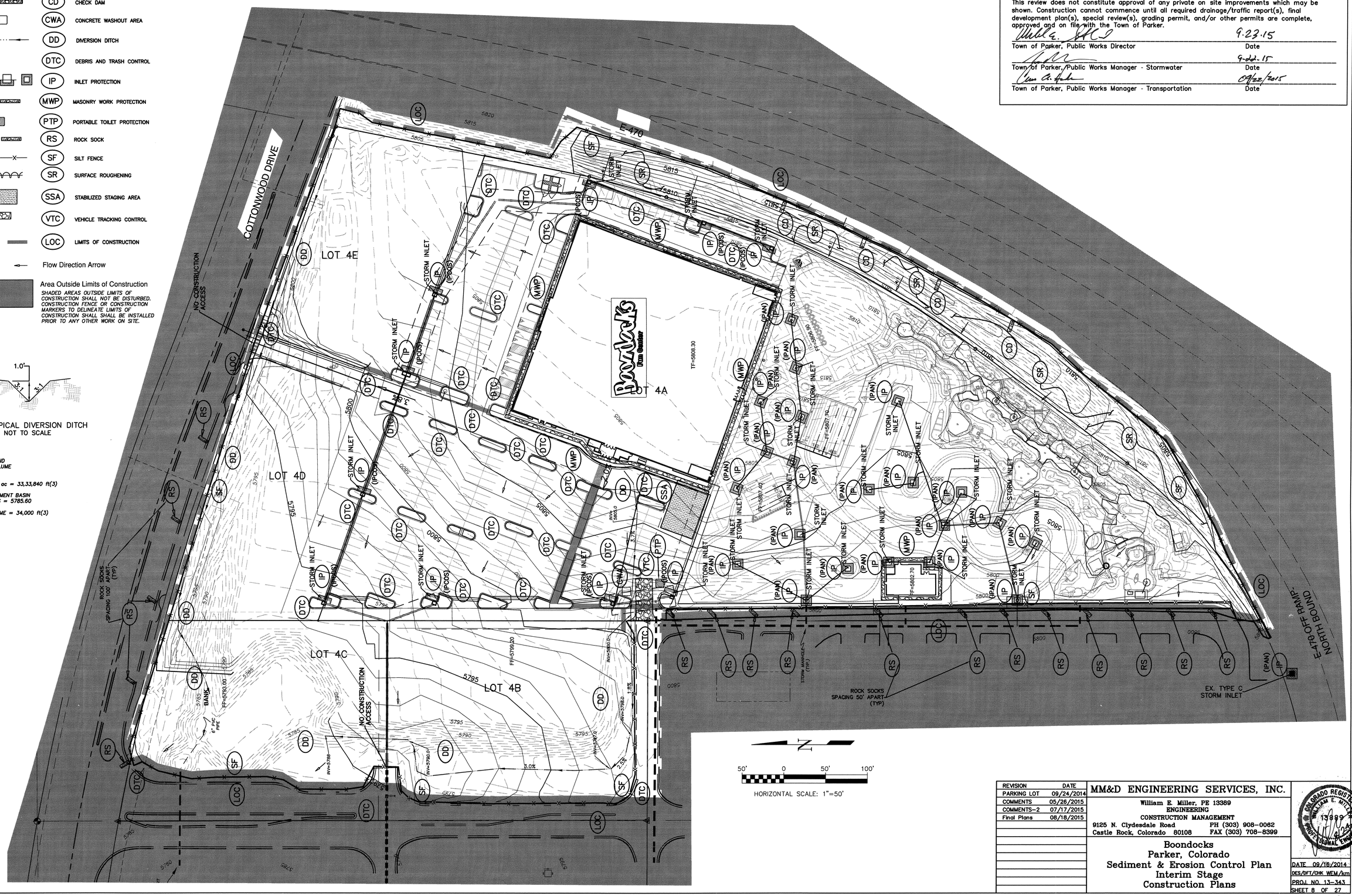


TYPICAL DIVERSION DITCH
NOT TO SCALE

SEDIMENT POND
REQUIRED VOLUME
9.4 AC.
UDFCD SB
3600cf x 9.4 ac = 33,33,840 ft(3)

EXISTING SEDIMENT BASIN
ELEVATION WS = 5785.60

ACTUAL VOLUME = 34,000 ft(3)



50' 0 50' 100'

HORIZONTAL SCALE: 1"=50'

REVISION	DATE
PARKING LOT	09/24/2014
COMMENTS	05/26/2015
COMMENTS-2	07/17/2015
Final Plans	08/18/2015

MM&D ENGINEERING SERVICES, INC.

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Castle Rock, Colorado 80108 FAX (303) 708-8399

Boondocks
Parker, Colorado
Sediment & Erosion Control Plan
Interim Stage
Construction Plans

COLORADO REGISTERED WILLIAM E. MILLER 13389 PROFESSIONAL ENGINEER 9/23/14

DATE	09/16/2014
DES/DFT/CHK	WEM/km
PROJ. NO.	13-343
SHEET	8 OF 27

BMP LEGEND

CD	CHECK DAM
CWA	CONCRETE WASHOUT AREA
DD	DIVERSION DITCH
IP	INLET PROTECTION
SMC	SEEDING, MULCHING AND CRIMPING
RS	ROCK SOCK
RSS	ROCK SOCK IN SWALE
SF	SILT FENCE
SCL	SEDIMENT CONTROL LOG
SSA	STABILIZED STAGING AREA
TI	TEMPORARY IRRIGATION
VTC	VEHICLE TRACKING CONTROL
LOC	LIMITS OF CONSTRUCTION

Flow Direction Arrow

Area Outside Limits of Construction

SHADED AREAS OUTSIDE LIMITS OF CONSTRUCTION SHALL NOT BE DISTURBED. CONSTRUCTION FENCE OR CONSTRUCTION MARKERS TO DELINEATE LIMITS OF CONSTRUCTION SHALL SHALL BE INSTALLED PRIOR TO ANY OTHER WORK ON SITE

TEMPORARY IRRIGATION (TI)

To allow for a proper and timely establishment of native grasses, temporary irrigation is required over all areas where permanent native seeding is proposed. This includes, but is not limited to: detention ponds, drainageways, park and trail areas, general open space, etc. In addition to the landscape plans, please show the temporary irrigation symbol (TI) on the CSMP Plan over all areas where permanent native seeding is proposed.

As a reminder, when working within Parker Water and Sanitation District's (PWSD) jurisdiction, the following is required:

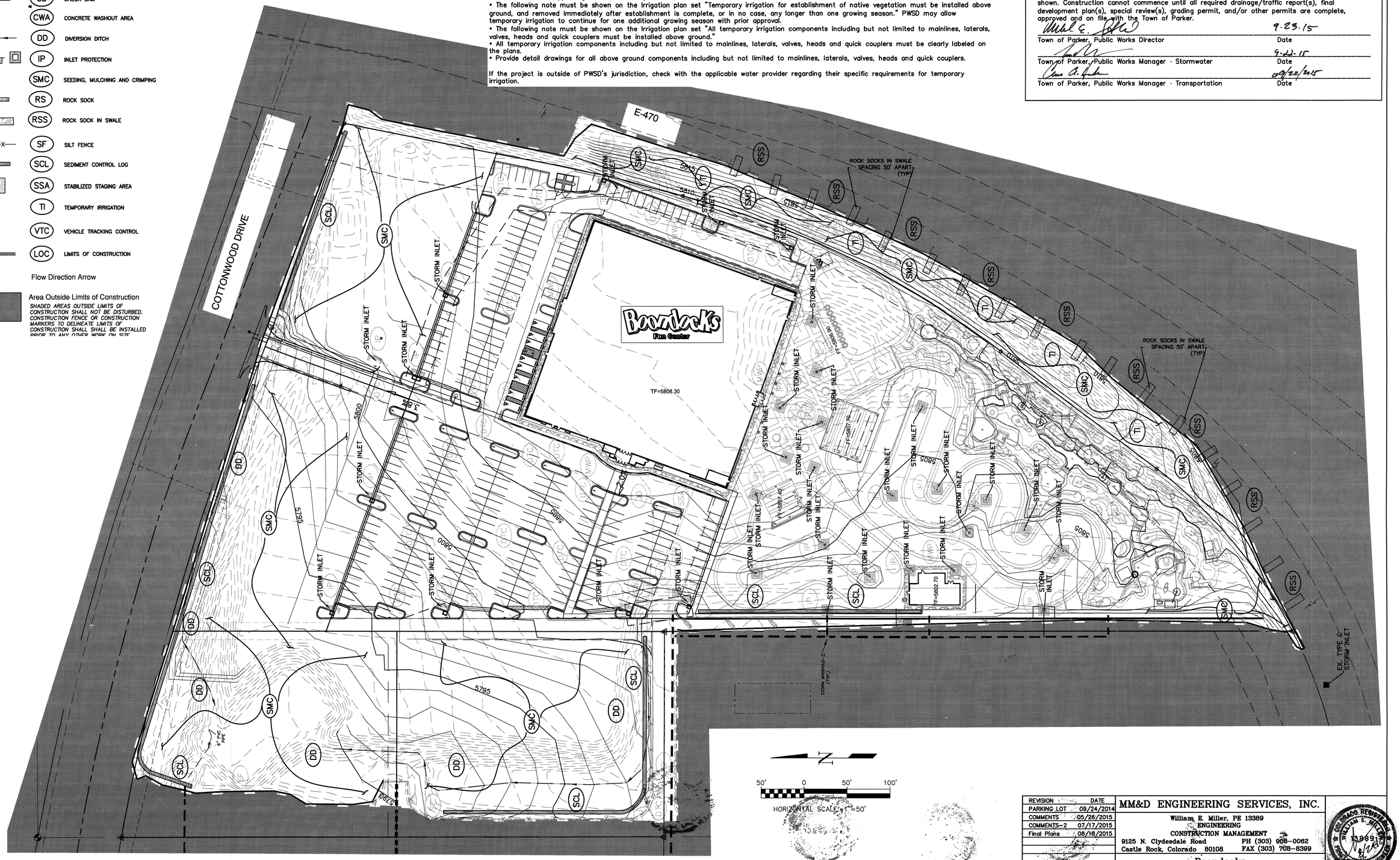
- Temporary irrigation for native seed must be supplied by a fire hydrant hook-up. Use of proposed/existing landscape irrigation taps is not allowed. Please indicate on the irrigation plans fire hydrants that are to be used for the temporary irrigation mainline and provide a detail for the connection. This detail should show the hydrant, PRV, PWSD water meter, a 2" backflow assembly, a 2" x 2" cam lock for fire department quick disconnect and a support system for all components
- The following note must be shown on the irrigation plan set "Temporary irrigation for establishment of native vegetation must be installed above ground, and removed immediately after establishment is complete, or in no case, any longer than one growing season." PWSD may allow temporary irrigation to continue for one additional growing season with prior approval.
- The following note must be shown on the Irrigation plan set "All temporary irrigation components including but not limited to mainlines, laterals, valves, heads and quick couplers must be installed above ground."
- All temporary irrigation components including but not limited to mainlines, laterals, valves, heads and quick couplers must be clearly labeled on the plans.
- Provide detail drawings for all above ground components including but not limited to mainlines, laterals, valves, heads and quick couplers.

If the project is outside of PWSD's jurisdiction, check with the applicable water provider regarding their specific requirements for temporary irrigation.

The Town of Parker review constitutes general compliance with the Town's Standards and approved variances, subject to these plans being stamped, signed, and dated by the professional engineer of record. Review by the Town does not constitute approval of the plan design or accuracy and correctness of engineering calculations. Errors in the design or calculations remain the responsibility of the registered professional engineer whose stamp and signature are affixed to this document.

This review does not constitute approval of any private on site improvements which may be shown. Construction cannot commence until all required drainage/traffic report(s), final development plan(s), special review(s), grading permit, and/or other permits are complete, approved and on file with the Town of Parker.

Town of Parker, Public Works Director	Date 9.23.15
Town of Parker, Public Works Manager - Stormwater	Date 9-22-15
Town of Parker, Public Works Manager - Transportation	Date 09/22/2015



REVISION	DATE
PARKING LOT	09/24/2014
COMMENTS	05/26/2015
COMMENTS-2	07/17/2015
Final Plans	08/18/2015

MM&D ENGINEERING SERVICES, INC.

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Boondocks
Parker, Colorado
Sediment & Erosion Control Plan
Final Stage
Construction Plans

COLORADO REGISTERED WILLIAM E. MILLER 13389 PROFESSIONAL ENGINEER

DATE 09/16/2014
DES/DFT/CHK WEM/km
PROJ. NO. 13-343
SHEET 9 OF 27

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.

1. GRADING, DRILLING, CLEARING, EXCAVATING, BACK-FILLING, SOIL STRIPPING, SOIL IMPORTING EXPORTING OR ANY OTHER FORM OF SOIL DISTURBANCE SHALL NOT COMMENCE UNTIL A TOWN OF PARKER GRADING/EXCAVATION PERMIT HAS BEEN ISSUED.
2. THE TOWN OF PARKER GRADING/EXCAVATION PERMIT IS VALID FOR A PERIOD OF 2 YEARS FROM THE DATE OF ISSUANCE. ANY LAPSE IN PERMIT COVERAGE MAY RESULT IN THE ISSUANCE OF A STOP WORK ORDER AND/OR FINES.
3. ALL EROSION AND SEDIMENT CONTROL BMPS SHALL BE INSTALLED ACCORDING TO THE CBMP PLAN INSTALLATION NOTES AND DETAILS AND/OR PERMITTED VARIANCES. ALL MATERIALS, WORKMANSHIP AND INSTALLATION METHODS ARE SUBJECT TO INSPECTION BY THE TOWN'S INSPECTOR. THE TOWN OF PARKER RESERVES THE RIGHT TO ACCEPT OR REJECT ANY SUCH MATERIALS, WORKMANSHIP AND/OR INSTALLATION METHODS THAT DO NOT CONFORM TO THE CBMP PLAN AND/OR PERMITTED VARIANCES.
4. THE EROSION CONTROL SUPERVISOR SHALL REVISE OR MODIFY THE EROSION AND SEDIMENT CONTROL MEASURES IF IT BECOMES APPARENT THAT THE ORIGINAL PLAN IS INADEQUATE, OR AS A RESULT OF DEFICIENCIES IDENTIFIED DURING INSPECTIONS PERFORMED BY THE TOWN'S INSPECTOR.
5. THE INSTALLATION OF ADDITIONAL EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPS) MAY BE REQUIRED OF THE EROSION CONTROL SUPERVISOR, PROPERTY OWNER, SITE DEVELOPER, CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS AT ANY TIME THROUGHOUT THE DURATION OF THE PROJECT CONSTRUCTION AND/OR SUBSEQUENT REVEGETATION PERIOD.
6. THE EROSION CONTROL SUPERVISOR SHALL BE RESPONSIBLE FOR ENSURING THAT THE SITE REMAINS IN COMPLIANCE WITH THE NOTICE OF NUISANCE REPORTS (a.k.a, CONSTRUCTION SITE RUNOFF CONTROL INSPECTION REPORTS), APPROVED CBMP PLAN(S) AND THE TOWN OF PARKER STORM DRAINAGE AND ENVIRONMENTAL CRITERIA MANUAL.
7. THE EROSION CONTROL SUPERVISOR SHALL BE READILY AVAILABLE TO DISCUSS AND CORRECT ANY PROBLEMS THAT MAY ARISE RELATING TO GRADING, EROSION AND SEDIMENT CONTROL.
8. IF IT IS ANTICIPATED THAT ALL OR A PORTION OF THE PROJECT WILL OCCUR DURING SEASONS SUSCEPTIBLE TO SNOWFALL, THE USE OF CERTAIN EROSION AND SEDIMENT CONTROL BMPS ADJACENT TO PUBLIC ROADWAYS MAY NEED TO BE RECONSIDERED DUE TO THE NATURE OF SNOW REMOVAL OPERATIONS. AN APPROVED ALTERNATIVE MAY BE NECESSARY TO MINIMIZE DAMAGE FROM THESE OPERATIONS. THE TOWN OF PARKER ASSUMES NO RESPONSIBILITY FOR DAMAGE TO ANY BMPS AS A RESULT OF SNOW PLOWING AND SNOW REMOVAL.
9. AREAS OF LAND DISTURBANCE EQUAL TO 40 ACRES OR GREATER SHALL NOT BE EXPOSED FOR MORE THAN 30 CONSECUTIVE DAYS WITHOUT TEMPORARY OR PERMANENT STABILIZATION.
10. AUTHORIZED EXEMPTIONS MAY BE ALLOWED TO THE 40-ACRE LIMIT FOR REMOVAL AND STORAGE OF CUT MATERIAL WHERE (A) GEOTECHNICAL LIMITATIONS RESTRICT THE USE OF TEMPORARY OR PERMANENT STABILIZATION OF THE STORED MATERIAL (E.G., SWELLING SOILS, ROCK) AND (B) WHEN THE OWNER CAN DEMONSTRATE THAT THE 40-ACRE LIMIT IS PHYSICALLY AND/OR FINANCIALLY IMPRACTICABLE. FOR SITES GRANTED THIS EXEMPTION, A PHASING AND EARTHWORK QUANTITIES PLAN SHALL BE SUBMITTED TO THE PUBLIC WORKS DEPARTMENT AND APPROVED PRIOR TO THE COMMENCEMENT OF LAND DISTURBANCE ACTIVITIES. SUBMITTAL REQUIREMENTS INCLUDE:
    - (I) PHASING PLAN SHOWING CUT AND FILL VOLUMES AND LOCATIONS FOR EACH PHASE AND PROJECT TOTALS.
    - (II) EARTHWORK QUANTITY PLAN SHOWING CUT AND FILL VOLUMES AND LOCATIONS FOR EACH PHASE AND PROJECT TOTALS.
    - (III) BMP PLAN SHOWING SPECIFIC EROSION AND SEDIMENT CONTROLS FOR EACH PHASE.

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | GEN NOTES 1 OF 4 | Oct. 2013

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.

11. ANY EROSION AND SEDIMENT CONTROL BMPS THAT ARE DAMAGED OR IN NEED OF MAINTENANCE OR REPLACEMENT SHALL BE CORRECTED AS SOON AS POSSIBLE, IMMEDIATELY IN MOST CASES.
12. ALL DEFICIENCIES LISTED ON THE NOTICE OF NUISANCE FORM SHALL BE COMPLETED AS SOON AS POSSIBLE, IMMEDIATELY IN MOST CASES. ALL REQUIRED ACTIONS MUST BE IN THE CORRECTED FORM DURING THE FOLLOW-UP INSPECTION.
13. THE EROSION CONTROL SUPERVISOR IS RESPONSIBLE FOR ENSURING THAT ALL STREETS, CURBS, GUTTERS, SIDEWALKS, DRIVEWAYS, PARKING LOTS, ALLEYS, TRICKLE CHANNELS, AND/OR OTHER IMPERVIOUS SURFACES IMPACTED BY CONSTRUCTION ACTIVITIES ARE THOROUGHLY CLEANED THROUGHOUT THE DAY IF THEY BECOME SOILED. THESE AREAS MUST ALSO BE THOROUGHLY CLEAN BEFORE THE END OF THE WORK DAY.
14. BULK STORAGE STRUCTURES FOR PETROLEUM PRODUCTS AND OTHER CHEMICALS SHALL HAVE ADEQUATE PROTECTION SO AS TO CONTAIN ALL SPILLS AND PREVENT ANY SPILLED MATERIAL FROM ENTERING STATE WATERS.
15. ALL TRASH RECEPTACLES ON SITE SHALL BE FREE OF HOLES, CRACKS, GAPS, AND/OR OTHER PERMEABLE AREAS THAT MAY ALLOW FOR THE DISCHARGE OF POLLUTANTS.
16. ALL TRASH RECEPTACLES ON SITE SHALL BE EMPTIED AT A FREQUENCY AS TO ENSURE THAT THE TRASH REMAINS CONFINED TO THE RECEPTACLE.
17. ALL LOOSE TRASH AND LITTER ASSOCIATED WITH THE PROJECT MUST BE REMOVED AND PROPERLY DISCARDED ON A DAILY BASIS.
18. ALL PORTABLE TOILETS SHALL BE STAKED DOWN AT ALL TIMES USING U-SHAPED REBAR STAKES. THE PORTABLE TOILETS SHALL ALSO BE PLACED A MINIMUM DISTANCE OF 10 FEET FROM ALL IMPERVIOUS SURFACES, INCLUDING, BUT NOT LIMITED TO STREETS CURBS, GUTTERS, SIDEWALKS AND PARKING LOTS.
19. THE EROSION CONTROL SUPERVISOR SHALL MAINTAIN STRICT ADHERENCE TO THE LIMITS OF CONSTRUCTION AND PROPERTY LIMITS FOR ALL MATERIALS, VEHICLES AND EQUIPMENT. FAILURE TO ABIDE BY THIS REQUIREMENT MAY RESULT IN THE ISSUANCE OF A STOP WORK ORDER.
20. ALL CONSTRUCTION TRAFFIC MUST ENTER AND EXIT THE SITE THROUGH THE APPROVED ACCESS POINT(S). A VEHICLE TRACKING CONTROL PAD IS REQUIRED AT ALL APPROVED ACCESS POINTS TO THE SITE. EXCEPTIONS MAY BE CONSIDERED FOR CONSTRUCTION ACTIVITY OCCURRING IMMEDIATELY ADJACENT TO PAVED AREAS AND WHERE ALTERNATIVE BMP'S ARE IMPLEMENTED. SUCH ACTIVITY MAY INCLUDE, BUT NOT BE LIMITED TO RESIDENTIAL CONSTRUCTION, UTILITY CONSTRUCTION, ETC.
21. NO PERMANENT SLOPES GREATER THAN 3:1 ARE ALLOWED.
22. ALL PERMANENT SLOPES STEEPER THAN 4:1 (HORIZONTAL TO VERTICAL) SHALL REQUIRE EROSION CONTROL BLANKET(S). TEMPORARY SLOPES IN TEMPORARY SEDIMENT BASINS THAT ARE STEEPER THAN 4:1 MAY REQUIRE EROSION CONTROL BLANKETS.
23. THE EROSION CONTROL SUPERVISOR SHALL BE RESPONSIBLE FOR CORRECTING ANY ADVERSE IMPACTS THAT OCCUR TO NEIGHBORING PROPERTIES. THE EROSION CONTROL SUPERVISOR MUST OBTAIN PERMISSION FROM LAND OWNERS PRIOR TO ENTERING SUCH PROPERTY.
24. A WATER SOURCE SHALL BE AVAILABLE ONSITE DURING CONSTRUCTION ACTIVITIES, AND UTILIZED TO MINIMIZE FUGITIVE DUST. ALTERNATIVE BMPS MAY BE REQUIRED IF INITIAL ATTEMPTS TO SUPPRESS DUST ARE UNSUCCESSFUL.

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | GEN NOTES 2 OF 4 | Oct. 2013

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.

25. ALL CHEMICAL OR HAZARDOUS MATERIAL SPILLS, INCLUDING CONCRETE WASHOUT WATER, WHICH MAY ENTER WATERS OF THE STATE OF COLORADO, WHICH INCLUDES BUT ARE NOT LIMITED TO, SURFACE WATER, GROUND WATER, DRY GULLIES OR STORM SEWERS LEADING TO SURFACE WATER, SHALL BE IMMEDIATELY REPORTED TO THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT (CDPHE) PER 25-8-601, AND THE TOWN OF PARKER. RELEASES OF PETROLEUM PRODUCTS AND CERTAIN HAZARDOUS SUBSTANCES LISTED UNDER THE FEDERAL CLEAN WATER ACT (40 CFR PART 116) MUST BE REPORTED TO THE NATIONAL RESPONSE CENTER AND THE CDPHE. SPILLS THAT POSE AN IMMEDIATE SAFETY HAZARD SHALL BE REPORTED TO 911.
26. THE CLEANING OF CONCRETE TRUCKS AND EQUIPMENT IS RESTRICTED TO THE APPROVED CONCRETE WASHOUT LOCATION ON THE JOB SITE. CONCRETE WASH WATER SHALL NOT BE DISCHARGED TO STATE WATERS OR STORM SEWER SYSTEMS.
27. VEHICLE AND EQUIPMENT DEGREASING IS PROHIBITED ON THE JOB SITE.
28. ALL DEWATERING ON SITE SHALL BE COORDINATED WITH THE TOWN'S INSPECTOR. A STATE PERMIT MAY BE REQUIRED FOR DEWATERING. THE EROSION CONTROL SUPERVISOR IS RESPONSIBLE FOR OBTAINING AND ADHERING TO ALL APPLICABLE PERMITS.
29. HYDRAULIC SEEDING AND/OR HYDRAULIC MULCHING ARE ONLY ALLOWED IN AREAS UNDER TEMPORARY OR PERMANENT IRRIGATION OR FOR THE PURPOSE OF TEMPORARY SOIL STABILIZATION.
30. APPLICABLE CONSTRUCTION BMPS SHALL REMAIN IN PLACE AND PROPERLY MAINTAINED UNTIL ALL LANDSCAPING HAS BEEN INSTALLED AND THE DESIRABLE VEGETATION HAS REACHED A POINT IN WHICH EROSION AND SEDIMENTATION IS NO LONGER A CONCERN AS DETERMINED BY THE TOWN'S INSPECTOR.
31. GRADING SECURITY RELEASE REQUIREMENTS:
    1) DEVELOPABLE PROPERTY: IN ORDER FOR THE GRADING SECURITY TO BE RELEASED, THE SITE MUST MEET ITEMS A-H OR ITEM I (BELOW).
        - A. ALL SOIL-DISTURBING ACTIVITIES ASSOCIATED WITH THE GRADING PERMIT HAVE PERMANENTLY CEASED.
        - B. UNIFORM PERENNIAL VEGETATION COVER HAS BEEN ESTABLISHED WITH AN INDIVIDUAL PLANT DENSITY OF AT LEAST SEVENTY PERCENT (70%) OF PRE-DISTURBANCE LEVELS.
        - C. ALL CBMPS HAVE BEEN PROPERLY REMOVED FROM THE SITE.
        - D. IF ANY EROSION IS PRESENT, IT IS INSIGNIFICANT AND IS NOT LEAVING THE SITE AND/OR LEADING INTO ANY ON-SITE DRAINAGE INFRASTRUCTURE THAT MAY CONVEY SURFACE WATER OFF SITE.
        - E. WEEDS REPRESENT NO MORE THAN FIFTY PERCENT (50%) OF THE TOTAL VEGETATION ON THE SITE.
        - F. NO WEEDS ARE PRESENT FROM LIST A OF THE COLORADO NOXIOUS WEED LIST, AS AMENDED.
        - G. THE SITE IS PREDOMINANTLY FREE OF WEEDS FROM LIST B OF THE COLORADO NOXIOUS WEED LIST, AS AMENDED.
        - H. WEEDS ARE EVENLY DISTRIBUTED THROUGHOUT THE SITE WITH NO LARGE CONCENTRATIONS PRESENT.
        - I. A NEW GRADING PERMIT AND REPLACEMENT SECURITY HAS BEEN SUBMITTED AND APPROVED FOR THE APPLICABLE SITE OR SIGNMENT AS PROVIDED BY SECTION 11.10.150 OF THE TOWN OF PARKER. THE PROPERTY OWNER'S OBLIGATION, AT THE TIME OF CLOSING ON THE SALE OF A SITE THAT IS SUBJECT TO A GRADING PERMIT, TO ENSURE THAT THE NEW SITE OWNER HAS PROVIDED THE TOWN WITH A REPLACEMENT SECURITY.

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | GEN NOTES 3 OF 4 | Oct. 2013

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.

2) NONDEVELOPABLE PROPERTY: IN ORDER FOR THE GRADING SECURITY TO BE RELEASED, THE SITE MUST MEET ITEMS A-H AND J, OR ITEMS I AND J (BELOW).
    - A. ALL SOIL-DISTURBING ACTIVITIES ASSOCIATED WITH THE GRADING PERMIT HAVE PERMANENTLY CEASED.
    - B. ALL CBMPS HAVE BEEN PROPERLY REMOVED FROM THE SITE.
    - C. EROSION IS NEGLIGIBLE, IF EVEN PRESENT.
    - D. THE VEGETATION REPRESENTS A PERENNIAL STAND OF A DENSE, UNIFORM SURFACE OF GRASS WITH NO AREA GREATER THAN ONE (1) SQUARE FOOT THAT IS BARREN OF DESIRABLE VEGETATION. INFREQUENT, WIDELY SCATTERED AREAS WHERE NATIVE VEGETATION HAS NOT YET TAKEN HOLD MAY QUALIFY FOR ACCEPTANCE AT THE DISCRETION OF THE TOWN.
    - E. WEEDS REPRESENT NO MORE THAN TEN PERCENT (10%) OF THE TOTAL VEGETATION ON SITE.
    - F. NO WEEDS ARE PRESENT FROM LIST A OF THE COLORADO NOXIOUS WEED LIST, AS AMENDED.
    - G. THE SITE IS PREDOMINANTLY FREE OF WEEDS FROM LIST B OF THE COLORADO NOXIOUS WEED LIST, AS AMENDED.
    - H. WEEDS ARE EVENLY DISTRIBUTED THROUGHOUT THE SITE WITH NO LARGE CONCENTRATIONS PRESENT.
    - I. A NEW GRADING PERMIT AND REPLACEMENT SECURITY HAS BEEN SUBMITTED AND APPROVED FOR THE APPLICABLE SITE OR THE GRADING PERMIT HAS BEEN ASSIGNED AS PROVIDED BY SECTION 11.10.150 OF THE TOWN OF PARKER MUNICIPAL CODE. IT IS THE PROPERTY OWNER'S OBLIGATION, AT THE TIME OF CLOSING ON THE SALE OF A SITE THAT IS SUBJECT TO A GRADING PERMIT, TO ENSURE THAT THE NEW PROPERTY OWNER HAS PROVIDED THE TOWN WITH A REPLACEMENT SECURITY.
    - J. ALL KNOWN DRAINAGE ISSUES ASSOCIATED WITH THE PROJECT HAVE BEEN MITIGATED AND A SUFFICIENT AMOUNT OF TIME HAS PASSED TO ENSURE THAT SUCH ISSUES HAVE BEEN CORRECTED. THIS REQUIREMENT DOES NOT INCLUDE THOSE DRAINAGE ISSUES ORIGINATING ON RESIDENTIAL LOTS.

(D) NOXIOUS WEEDS MUST BE CONTROLLED AS PROVIDED UNDER STATE LAW AND SECTION 6.01.260 OF THE TOWN OF PARKER MUNICIPAL CODE. FAILURE TO CONTROL NOXIOUS WEEDS ON THE SITE MAY CONSTITUTE A NUISANCE, SUBJECT TO THE PENALTIES CONTAINED IN THE CODE.

DEFINITIONS:

DEVELOPABLE PROPERTY MEANS ANY LAND THAT HAS BEEN GRADED AND IS PART OF A PLATTED LOT OR PLATTED TRACT OF RECORD, THAT WAS PLATTED FOR FUTURE DEVELOPMENT, INCLUDING RESIDENTIAL HOME CONSTRUCTION OR PUBLIC IMPROVEMENTS.

NONDEVELOPABLE PROPERTY MEANS LAND THAT HAS BEEN GRADED AND WILL NOT BE FURTHER DISTURBED AS PART OF ANY FUTURE DEVELOPMENT. EXAMPLES INCLUDE, BUT ARE NOT LIMITED TO: PARKS, OPEN SPACE, HOMEOWNER ASSOCIATION OR BUSINESS ASSOCIATION PLATTED TRACTS, DETENTION PONDS AND DRAINAGEWAYS.

32. FAILURE TO COMPLY WITH ANY OF THE REQUIREMENTS DESCRIBED IN THIS SECTION MAY RESULT IN THE ISSUANCE OF: A NOTICE OF INTENT TO ISSUE A STOP WORK ORDER, A STOP WORK ORDER AND/OR THE REMEDIES/PENALTIES DESCRIBED IN CHAPTER 11.10 OF THE TOWN OF PARKER MUNICIPAL CODE.
33. ANY PERSON CONVICTED OF VIOLATING ANY PROVISION OF THE TOWN OF PARKER, GRADING & EARTH MOVEMENT SECTION OF THE MUNICIPAL CODE SHALL BE GUILTY OF A MISDEMEANOR AND, UPON CONVICTION, BE PUNISHED BY A FINE OF NOT MORE THAN FOUR HUNDRED NINETY NINE DOLLARS ($499.00) FOR EACH SEPARATE OFFENSE. EACH DAY A VIOLATION CONTINUES SHALL CONSTITUTE A SEPARATE OFFENSE. THE TOWN ALSO MAY SEEK IN MUNICIPAL COURT AN INJUNCTION, ABATEMENT, RESTITUTION OR ANY OTHER REMEDY TO PREVENT, ENJOIN, ABATE OR REMOVE THE VIOLATION. A PERSON CONVICTED OF VIOLATING CHAPTER 11.10 OF THE TOWN OF PARKER MUNICIPAL CODE SHALL BE LIABLE FOR THE ACTUAL COST OF REHABILITATING THE PROPERTY. THE COSTS MAY BE RECOVERED AS RESTITUTION IN MUNICIPAL COURT PROCEEDINGS OR IN A SEPARATE CIVIL ACTION.
34. THE TOWN OF PARKER RESERVES THE RIGHT TO ALLOW MODIFICATIONS AND SUBSTITUTIONS TO THE CBMP NOTES AND DETAILS WHEN SUCH MODIFICATIONS AND SUBSTITUTIONS OFFER THE SAME LEVEL OF PROTECTION AS THE STANDARD REQUIREMENTS BASED UPON THE SPECIFIC SITUATION, AS DETERMINED BY TOWN STAFF. DUE TO THE INSIGNIFICANCE AND REGULARITY OF SUCH MODIFICATIONS AND SUBSTITUTIONS, THE APPROVAL OF SUCH VARIATIONS MAY NOT BE DOCUMENTED BY TOWN STAFF.

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | GEN NOTES 4 OF 4 | Oct. 2013

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.

- CD — CHECK DAM
- CF — CONSTRUCTION FENCE
- CP — CULVERT PROTECTION
- CWA — CONCRETE WASHOUT AREA
- D — DEWATERING
- DD — DIVERSION DITCH
- DP — DETENTION POND PROTECTION
- DTC — DEBRIS TRASH CONTROL
- ECB — EROSION CONTROL BLANKET
- IPAN — INLET PROTECTION FOR AREA INLETS NOT IN PAVEMENT
- IPAP — INLET PROTECTION FOR AREA INLETS IN PAVEMENT
- IPCOG — INLET PROTECTION, CURB ON-GRADE, TYPE R INLET
- IPCOS — INLET PROTECTION, CURB ON SUMP, TYPE R INLET

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | LEGEND 1 OF 3 | Oct. 2013

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.

- LP — LOT PROTECTION
- MWP — MASONRY WORK PROTECTION
- PTP — PORTABLE TOILET PROTECTION
- RCSC — ROUGH CUT STREET CONTROL
- RS — ROCK SOCK
- RSS — ROCK SOCK IN SWALE
- SB — STRAW BALE
- SCL — SEDIMENT CONTROL LOGS
- SF — SILT FENCE
- SMC — SEEDING, MULCHING AND CRIMPING
- SR — SURFACE ROUGHING
- SSA — STABILIZED STAGING AREA
- STP — SIDEWALK TRANSITION PROTECTION

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | LEGEND 2 OF 3 | Oct. 2013

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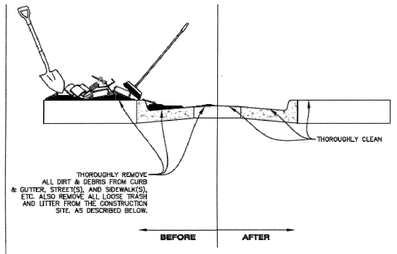
- TI — TEMPORARY IRRIGATION
- TSB — TEMPORARY SEDIMENT BASIN
- VTC — VEHICLE TRACKING CONTROL

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | LEGEND 3 OF 3 | Oct. 2013



NOTE:

1. THE EROSION CONTROL SUPERVISOR IS RESPONSIBLE FOR ENSURING THAT ALL STREETS, CURBS, GUTTERS, SIDEWALKS, DRIVEWAYS, PARKING LOTS, ALLEYS, TRICKLE CHANNELS, AND/OR OTHER IMPERVIOUS SURFACES IMPACTED BY CONSTRUCTION ACTIVITIES ARE THOROUGHLY CLEANED THROUGHOUT THE DAY IF THEY BECOME SOILED. THESE AREAS MUST ALSO BE THOROUGHLY CLEAN BEFORE THE END OF THE WORK DAY. FURTHERMORE, ALL LOOSE TRASH AND LITTER ASSOCIATED WITH THE PROJECT MUST BE REMOVED AND PROPERLY DISCARDED ON A DAILY BASIS.

DTC — **DEBRIS AND TRASH CONTROL**

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | DTC 1 OF 2 | Oct. 2013

1. A COMBINATION OF SURFACE SCRAPING AND SWEEPING MAY BE NECESSARY TO PROPERLY CLEAN THESE AREAS.
2. ALL CHEMICAL SPILLS AND/OR STAINS ON THE SITE SHALL BE CLEANED TO THE MAXIMUM EXTENT PRACTICABLE. IN SOME CASES IT MAY BE NECESSARY TO USE PRESSURIZED WATER AND A VAC-TRUCK.
3. ON-SITE PERSONNEL, DELIVERY DRIVERS, ETC., SHOULD BE EDUCATED ON THE NEED FOR CONTINUAL DEBRIS AND TRASH CONTROL.

REVISION	DATE
PARKING LOT	09/24/2014
COMMENTS	05/26/2015
COMMENTS-2	07/17/2015
Final Plans	08/18/2015

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Boondocks
Parker, Colorado
Sediment & Erosion Control Plan
Notes & Details
Construction Plans

COLORADO REGISTERED WILLIAM E. MILLER 13389 PROFESSIONAL ENGINEER

DATE 09/16/2014
DES/DFT/CHK WEM/km
PROJ. NO. 13-343
SHEET 10 OF 27

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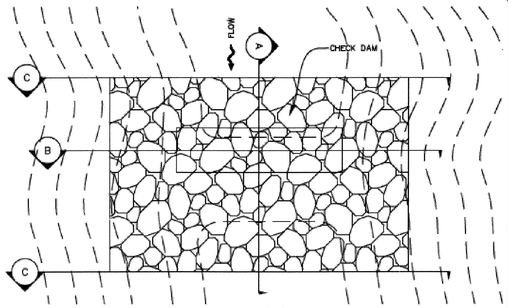
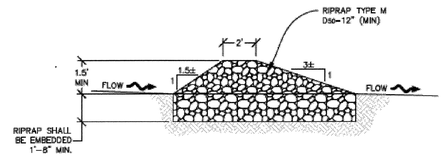


PLAN VIEW



SECTION A

CD **CHECK DAM**

Town of Parker COLORADO | **CBMP** CONSTRUCTION BEST MANAGEMENT PRACTICES | CD 1 OF 3 Oct. 2013

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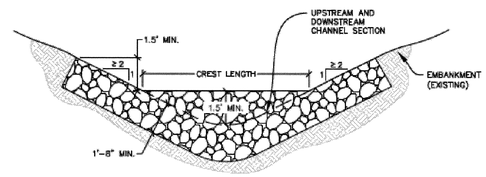
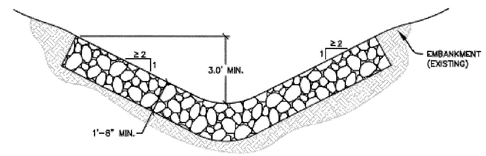


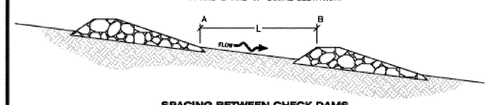
SECTION B



SECTION C

NOTE: SECTION C IS LOCATED IMMEDIATELY UPSTREAM AND DOWNSTREAM OF THE CHECK DAM, THEREFORE NO ROCK IS SHOWN WITHIN THE CHANNEL FLOW AREA.

L = THE DISTANCE SUCH THAT POINT A AND B ARE OF EQUAL ELEVATION.



SPACING BETWEEN CHECK DAMS

CD **CHECK DAM**

Town of Parker COLORADO | **CBMP** CONSTRUCTION BEST MANAGEMENT PRACTICES | CD 2 OF 3 Oct. 2013

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.

CHECK DAM INSTALLATION NOTES

1. SEE PLAN VIEW FOR LOCATION(S) OF CHECK DAMS.
2. CHECK DAMS SHOWN ON CBMP PLAN SHALL BE INSTALLED WHEN DIRECTED BY THE TOWN'S INSPECTOR.
3. RIPRAP UTILIZED FOR CHECK DAMS SHALL HAVE A D50 MEDIAN STONE SIZE OF 12".
4. RIPRAP PAD SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 1'-8".
5. THE MAXIMUM SPACING BETWEEN CHECK DAMS SHOULD BE SUCH THAT THE BOTTOM OF THE UPSTREAM DAM IS AT THE SAME ELEVATION AS THE TOP OF THE DOWNSTREAM DAM AS SHOWN IN THE DETAIL.

CHECK DAM INSPECTION AND MAINTENANCE NOTES

1. THE EROSION CONTROL SUPERVISOR SHALL REGULARLY INSPECT THE CHECK DAMS.
2. ACCUMULATED SEDIMENT SHALL BE REMOVED ONCE SEDIMENT HAS REACHED A DEPTH EQUAL TO 1/2 THE HEIGHT OF THE CREST OR AS OTHERWISE DIRECTED BY THE TOWN'S INSPECTOR.
3. CHECK DAMS SHALL REMAIN IN PLACE AND PROPERLY MAINTAINED UNTIL VEGETATIVE COVER HAS REACHED A CONSISTENT DENSITY OF AT LEAST 70% OF FULL VEGETATIVE COVER AND EROSION AND SEDIMENTATION IS NO LONGER A POSSIBILITY AS DETERMINED BY THE TOWN'S INSPECTOR OR AS OTHERWISE DIRECTED BY THE TOWN'S INSPECTOR.
4. WHEN CHECK DAMS ARE REMOVED, THE TOWN'S INSPECTOR MAY REQUIRE EXCAVATIONS TO BE FILLED WITH SUITABLE COMPACTED TOPSOIL AND ANY DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE CHECK DAMS BE ROUGHENED, SEEDED, MULCHED, AND CRIMPED PER THE TOWN'S SPECIFICATIONS (SEE DETAIL SMC).
5. IN SOME INSTANCES, CHECK DAMS MAY REMAIN IN PLACE PERMANENTLY.

Town of Parker COLORADO | **CBMP** CONSTRUCTION BEST MANAGEMENT PRACTICES | CD 3 OF 3 Oct. 2013

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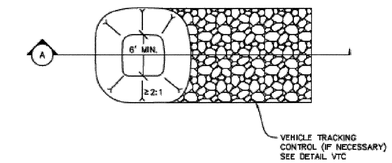
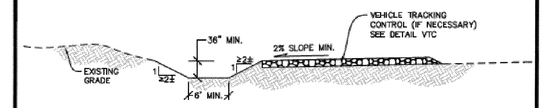
NOTE:
A VTC PAD IS NOT NECESSARY IF THERE IS ANOTHER VTC PAD IN BETWEEN THE CWA AND ROADWAY, PARKING LOT, DRIVE AISLES, ETC.



PLAN VIEW



SECTION A

CWA **CONCRETE WASHOUT AREA**

Town of Parker COLORADO | **CBMP** CONSTRUCTION BEST MANAGEMENT PRACTICES | CWA 1 OF 2 Oct. 2013

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.

CONCRETE WASHOUT AREA INSTALLATION NOTES

1. CONCRETE WASHOUT AREAS SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
2. A VEHICLE TRACKING CONTROL PAD IS REQUIRED AT THE ACCESS POINT TO ALL CONCRETE WASHOUT AREAS WHEN NO OTHER VTC PAD EXISTS IN BETWEEN THE CWA AND THE ROADWAY.
3. IF GROUNDWATER IS ENCOUNTERED WHEN DIGGING THE PIT, A NEW LOCATION SHOULD BE SELECTED. IF NO OTHER LOCATION CAN BE FOUND, A ONE-PIECE IMPERVIOUS LINER SHALL BE REQUIRED ALONG THE BOTTOM AND SIDES OF THE SUBSURFACE PIT.

CONCRETE WASHOUT AREA INSPECTION AND MAINTENANCE NOTES

1. THE EROSION CONTROL SUPERVISOR SHALL REGULARLY INSPECT THE CONCRETE WASHOUT AREA.
2. CONCRETE WASHOUT MATERIALS SHALL BE REMOVED BEFORE ITS CAPACITY HAS BEEN REACHED.
3. CONCRETE WASHOUT AREAS SHALL BE ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE AND ASSOCIATED WASH WATER.
4. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE AS NECESSARY TO ENSURE ADEQUATE CAPACITY.
5. CONCRETE WASHOUT AREAS SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
6. WHEN CONCRETE WASHOUT AREAS ARE REMOVED, THE TOWN'S INSPECTOR MAY REQUIRE EXCAVATIONS TO BE FILLED WITH SUITABLE COMPACTED BACKFILL AND TOPSOIL, ANY DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE CONCRETE WASHOUT AREAS SHALL BE ROUGHENED, SEEDED, MULCHED, AND CRIMPED PER THE TOWN'S SPECIFICATIONS (SEE DETAIL SMC).

Town of Parker COLORADO | **CBMP** CONSTRUCTION BEST MANAGEMENT PRACTICES | CWA 2 OF 2 Oct. 2013

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.

AREA INLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR LOCATION(S) OF AREA INLET PROTECTION.
2. THE AREA INLET PROTECTION SHOWN ON CBMP PLANS SHALL BE INSTALLED ON EXISTING INLETS PRIOR TO ANY LAND DISTURBING ACTIVITIES OR IMMEDIATELY AFTER THE INSTALLATION OF NEW INLETS. AN INTERIM STYLE OF INLET PROTECTION MAY BE ALLOWED UNTIL THE INSTALLATION OF THE GUTTER AND/OR PAVEMENT.

AREA INLET PROTECTION INSPECTION AND MAINTENANCE NOTES

1. THE EROSION CONTROL SUPERVISOR SHALL REGULARLY INSPECT THE AREA INLET PROTECTION.
2. AREA INLET PROTECTION SHALL REMAIN IN PLACE AND PROPERLY MAINTAINED UNTIL VEGETATIVE COVER HAS REACHED A CONSISTENT DENSITY OF AT LEAST 70% OF FULL VEGETATIVE COVER AND EROSION AND SEDIMENTATION IS NO LONGER A POSSIBILITY AS DETERMINED BY THE TOWN'S INSPECTOR OR AS OTHERWISE DIRECTED BY THE TOWN'S INSPECTOR.
3. WHEN THE AREA INLET PROTECTION IS REMOVED, ANY DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE AREA INLET PROTECTION MAY NEED TO BE ROUGHENED, SEEDED, MULCHED, AND CRIMPED PER THE TOWN'S SPECIFICATIONS (SEE DETAIL SMC).
4. ACCUMULATED SEDIMENT SHALL BE REMOVED AS SOON AS POSSIBLE, IMMEDIATELY IN MOST CASES.

Town of Parker COLORADO | **CBMP** CONSTRUCTION BEST MANAGEMENT PRACTICES | IPA 1 OF 1 Oct. 2013

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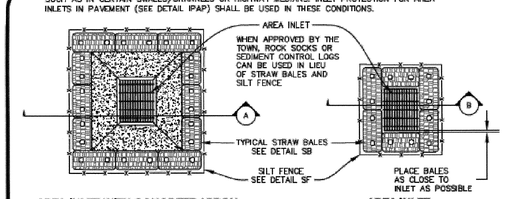
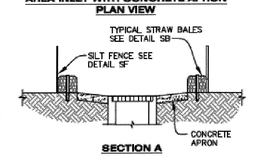
THIS METHOD OF INLET PROTECTION SHALL NOT BE USED ON INLETS RECEIVING SIGNIFICANT FLOWS, SUCH AS IN CERTAIN SWALES/CHANNELS OR HIGHWAY MEDIANS. INLET PROTECTION FOR AREA INLETS IN PAVEMENT (SEE DETAIL IPAP) SHALL BE USED IN THESE CONDITIONS.

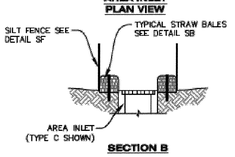


AREA INLET WITH CONCRETE APRON PLAN VIEW

AREA INLET PLAN VIEW



SECTION A



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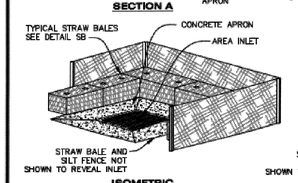
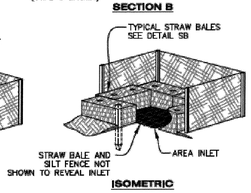


ISOMETRIC



ISOMETRIC

IPAN **INLET PROTECTION FOR AREA INLETS NOT IN PAVEMENT**

Town of Parker COLORADO | **CBMP** CONSTRUCTION BEST MANAGEMENT PRACTICES | IPAN 1 OF 1 Oct. 2013

REVISION	DATE
PARKING LOT	09/24/2014
COMMENTS	05/26/2015
COMMENTS-2	07/17/2015
Final Plans	08/18/2015

MM&D ENGINEERING SERVICES, INC.
William E. Miller, PE 13389
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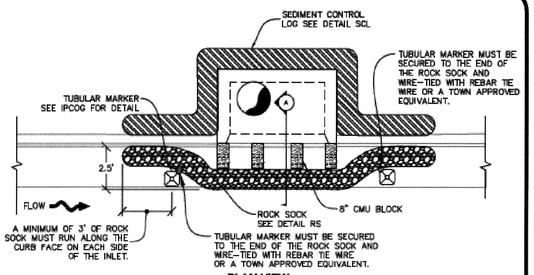
CONSTRUCTION MANAGEMENT
9125 N. Clydesdale Road PH (303) 908-0062
Castle Rock, Colorado 80108 FAX (303) 708-8399

Boondocks
Parker, Colorado
Sediment & Erosion Control Plan
Notes & Details
Construction Plans

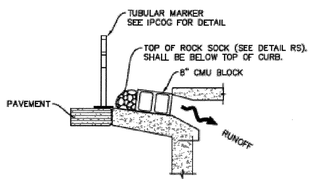
COLORADO REGISTERED PROFESSIONAL ENGINEER WILLIAM E. MILLER 13389 6/24/14

DATE 09/16/2014
DES/DFT/CHK WEM/km
PROJ. NO. 13-343
SHEET 11 OF 27

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.



PLAN VIEW



SECTION A

IPCOS **INLET PROTECTION, CURB ON SUMP, TYPE R INLET**

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | IPCOS 1 OF 2 Oct. 2013

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CURB INLET PROTECTION INSTALLATION NOTES

1. SEE CBMP PLAN FOR LOCATION(S) OF CURB INLET PROTECTION.
2. CRUSHED ROCK SHALL BE 2.0"–3.0" IN SIZE WITH A FRACTURED FACE (ALL SIDES).
3. ROCK SOCK SHALL BE ONE CONTINUOUS PIECE OR SHALL BE CONSTRUCTED USING WIRE WRAPPED JOINTS (SEE DETAIL RS).
4. ROCK SOCK SHALL BE CONSTRUCTED USING CHICKEN WIRE OR OTHER APPROVED MATERIAL SIZED TO KEEP ROCK FROM SPILLING OUT.
5. ROCK SOCK SHALL EXTEND 3.0' ALONG THE CURB BEYOND LOCATIONS WHERE IT RETURNS TO CONTACT CURB FACE.
6. TUBULAR TRAFFIC MARKERS SHALL BE A MINIMUM OF 36" IN HEIGHT WITH REFLECTIVE BANDS AND OCTAGON SHAPED BASES.
7. THE CURB INLET PROTECTION SHOWN ON CBMP PLAN SHALL BE INSTALLED ON EXISTING INLETS PRIOR TO ANY LAND DISTURBING ACTIVITIES OR IMMEDIATELY AFTER THE INSTALLATION OF THE FIRST LIFT OF ASPHALT ON ROADWAYS DRAINING TO THE CURB INLET. CMU BLOCKS OR THE ROCK SOCK SHALL BE USED AS INTERIM PROTECTION UNTIL THE FIRST LIFT OF ASPHALT IS INSTALLED.

CURB INLET PROTECTION INSPECTION AND MAINTENANCE NOTES

1. THE EROSION CONTROL SUPERVISOR SHALL REGULARLY INSPECT THE CURB INLET PROTECTION.
2. ACCUMULATED SEDIMENT SHALL BE REMOVED AS SOON AS POSSIBLE, IMMEDIATELY IN MOST CASES.
3. ROCK SOCKS SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED OR DAMAGED.
4. CURB INLET PROTECTION SHALL REMAIN IN PLACE AND PROPERLY MAINTAINED UNTIL VEGETATIVE COVER HAS REACHED A CONSISTENT DENSITY OF AT LEAST 70% OF FULL VEGETATIVE COVER AND EROSION AND SEDIMENTATION IS NO LONGER A POSSIBILITY AS DETERMINED BY THE TOWN'S INSPECTOR OR AS OTHERWISE DIRECTED BY THE TOWN'S INSPECTOR.

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | IPCOS 2 OF 2 Oct. 2013

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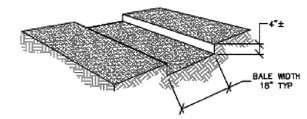
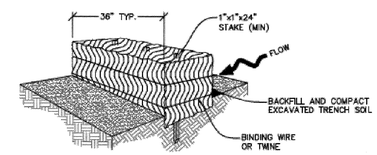
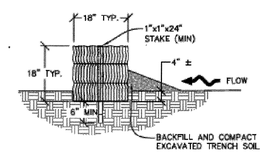


TRENCH EXCAVATION



STRAW BALE INSTALLATION



SECTION

SB **STRAW BALE**

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | SB 1 OF 2 Oct. 2013

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.

STRAW BALE INSTALLATION NOTES

1. SEE CBMP PLAN FOR LOCATION(S) OF STRAW BALES.
2. TYPICAL STRAW BALES SHALL BE APPROXIMATELY 36"X18"X18".
3. TWO (2) WOODEN STAKES SHALL BE USED TO HOLD EACH BALE IN PLACE. WOODEN STAKES SHALL BE A MINIMUM OF 1"X1"X24".
4. WOODEN STAKES SHALL BE PLACED APPROXIMATELY 6" INTO THE GROUND.
5. STRAW BALES SHALL BE SPACED AND POSITIONED ACCORDING TO DETAILS.

STRAW BALE INSPECTION AND MAINTENANCE NOTES

1. THE EROSION CONTROL SUPERVISOR SHALL REGULARLY INSPECT THE STRAW BALES.
2. ACCUMULATED SEDIMENT SHALL BE REMOVED ONCE THE SEDIMENT HAS REACHED A DEPTH EQUAL TO 1/2 THE HEIGHT OF THE STRAW BALE.
3. STRAW BALES MAY NEED TO BE REPLACED IF THEY BECOME HEAVILY SOILED, ROTTEN, OR OTHERWISE DAMAGED.
4. STRAW BALES SHALL REMAIN IN PLACE AND PROPERLY MAINTAINED UNTIL VEGETATIVE COVER HAS REACHED A CONSISTENT DENSITY OF AT LEAST 70% OF FULL VEGETATIVE COVER AND EROSION AND SEDIMENTATION IS NO LONGER A POSSIBILITY AS DETERMINED BY THE TOWN'S INSPECTOR OR AS OTHERWISE DIRECTED BY THE TOWN INSPECTOR.
5. WHEN THE STRAW BALES ARE REMOVED, ANY DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE STRAW BALES MAY NEED TO BE ROUGHENED, SEEDED, MULCHED, AND CRIMPED PER THE TOWN'S SPECIFICATIONS (SEE DETAIL SMC).

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | SB 2 OF 2 Oct. 2013

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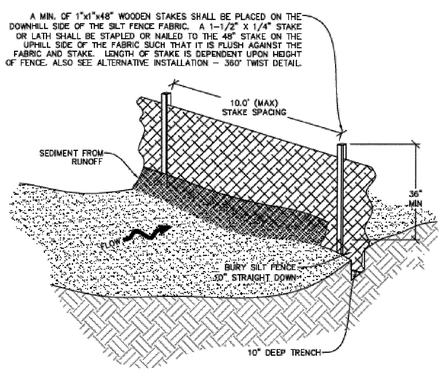

—x—x— SF **SILT FENCE**

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | SF 1 OF 4 Oct. 2013

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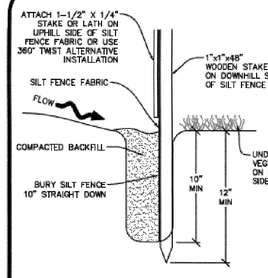
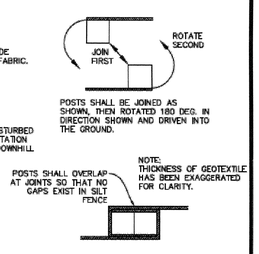
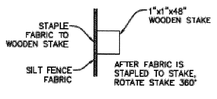


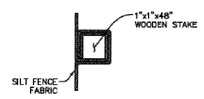
INSTALLATION DETAIL



JOINT SECTIONS



STEP 1



STEP 2

ALTERNATIVE INSTALLATION - 360° TWIST

—x—x— SF **SILT FENCE**

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | SF 2 OF 4 Oct. 2013

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.

SILT FENCE INSTALLATION NOTES

1. SEE CBMP PLAN FOR LOCATION(S) OF SILT FENCE.
2. ALL SILT FENCE SHALL BE INSTALLED IN GOOD CONDITION AND FREE OF ANY DEFECTS INCLUDING RIPS, HOLES AND OBVIOUS WEAR.
3. A UNIFORM 10" DEEP ANCHOR TRENCH SHALL BE EXCAVATED USING A TRENCHER.
4. A 10" DEEP ANCHOR SLIT SHALL BE FORMED IF USING A STATIC SLICING METHOD.
5. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF THE ANCHOR TRENCH.
6. ANCHOR TRENCH SHALL BE GENERALLY FREE OF ROCKS OR OTHER DEBRIS PRIOR TO THE PLACEMENT OF THE SILT FENCE.
7. THE ANCHOR TRENCH SHALL BE THOROUGHLY BACKFILLED WITH SOIL THAT IS GENERALLY FREE OF ROCKS AND DEBRIS.
8. ALL EXCAVATED MATERIAL SHALL BE PLACED ON THE UP-GRADIENT SIDE OF THE SILT FENCE.
9. STAKES SHALL BE POSITIONED ON THE DOWNHILL SIDE OF THE SILT FENCE FABRIC AND PLACED ON 10.0' CENTERS OR LESS. STAKES SHALL BE EMBEDDED A MINIMUM OF 12" INTO THE GROUND. A WOODEN LATH SHALL BE ATTACHED TO THE OPPOSING (UPHILL) SIDE OF THE STAKE FOR ADDED STRENGTH AND SUPPORT. THE LATH SHALL HAVE THE FOLLOWING DIMENSIONS: 1"x¼"x24".
10. SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE STAKES. THERE SHOULD NOT BE SIGNIFICANT SAGGING ALONG ANY PORTION OF THE SILT FENCE AFTER IT HAS BEEN ANCHORED TO THE STAKES.
11. SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES AND LATHS USING STAPLES OR NAILS OF AN APPROXIMATE LENGTH. ENOUGH STAPLES AND NAILS SHOULD BE PLACED ALONG THE LATH TO ENSURE PROPER ATTACHMENT.
12. SILT FENCE FABRIC SHALL MEET THE FOLLOWING MANDATORY REQUIREMENTS:

PROPERTIES	TEST METHOD	MANDATORY REQUIREMENTS
GRAB TENSILE STRENGTH	ASTM D 4632	≥ 124 LBS
MULLEN BURST STRENGTH	ASTM D 3786	≥ 300 PSI
PUNCTURE STRENGTH	ASTM D 4833	≥ 60 LBS
TRAPEZOID TEAR STRENGTH	ASTM D 4533	> 65 LBS
UV RESISTANCE	ASTM D 4355	≥ 80% AT 500 HOURS OF UV EXPOSURE
FLOW RATE	ASTM D 4491	≥ 10 GAL/MIN/FT2

13. AN ORIGINAL PRODUCT SPECIFICATION SHEET FROM THE SILT FENCE MANUFACTURER SHALL BE MADE AVAILABLE AT THE REQUEST OF THE TOWN'S INSPECTOR. THE PRODUCT SPECIFICATION SHEET SHALL PROVIDE THE RESULTS FOR THE TEST METHODS ABOVE.
14. SILT FENCE JOINTS SHALL BE CONNECTED ACCORDING TO THE ATTACHED DRAWING.
15. SILT FENCE THAT IS INSTALLED BEHIND CURBS AND SIDEWALKS MUST BE DONE SO THAT NO MORE THAN A 2" GAP EXISTS BETWEEN CONCRETE AND THE SILT FENCE. EROSION CONTROL BLANKETING (ECB) BETWEEN THE GAP MAY BE REQUIRED IN INSTANCES WHERE THIS DOES NOT OCCUR.

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | SF 3 OF 4 Oct. 2013

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.

SILT FENCE INSPECTION AND MAINTENANCE NOTES

1. THE EROSION CONTROL SUPERVISOR SHALL REGULARLY INSPECT THE SILT FENCE.
2. ACCUMULATED SEDIMENT SHALL BE REMOVED REGULARLY.
3. SILT FENCE SHALL REMAIN IN PLACE AND PROPERLY MAINTAINED UNTIL VEGETATIVE COVER HAS REACHED A CONSISTENT DENSITY OF AT LEAST 70% OF FULL VEGETATIVE COVER AND EROSION AND SEDIMENTATION IS NO LONGER A POSSIBILITY AS DETERMINED BY THE TOWN'S INSPECTOR OR AS OTHERWISE DIRECTED BY THE TOWN'S INSPECTOR.
4. SILT FENCE SHALL BE REPLACED WHEN THERE ARE ANY SIGNS OF WEAR AND/OR DAMAGE.
5. WHEN THE SILT FENCE IS REMOVED, ANY DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE SILT FENCE MAY NEED TO BE ROUGHENED, SEEDED, MULCHED, AND CRIMPED PER THE TOWN'S SPECIFICATIONS (SEE DETAIL SMC).

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | SF 4 OF 4 Oct. 2013

REVISION	DATE
PARKING LOT	09/24/2014
COMMENTS	05/26/2015
COMMENTS-2	07/17/2015
Final Plans	08/18/2015

MM&D ENGINEERING SERVICES, INC.
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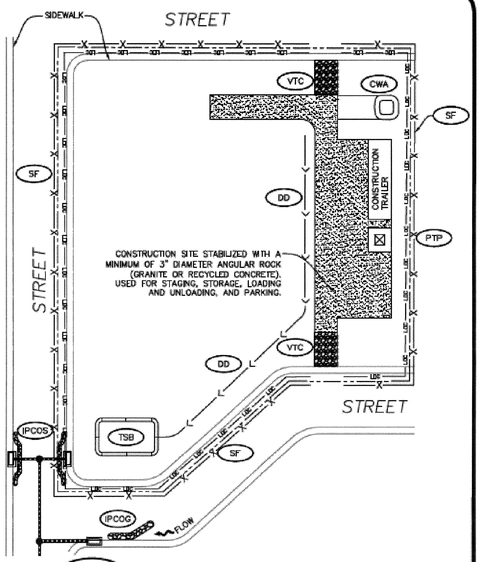
Boondocks
Parker, Colorado
Sediment & Erosion Control Plan
Notes & Details
Construction Plans

COLORADO REGISTERED WILLIAM E. MILLER 15899 PROFESSIONAL ENGINEER 9/24/14

DATE 09/16/2014
DES/DFT/CHK WEM/km
PROJ. NO. 13-343
SHEET 12 OF 27

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.



SSA **STABILIZED STAGING AREA**

Town of Parker COLORADO | **CBMP** CONSTRUCTION BEST MANAGEMENT PRACTICES | SSA 1 OF 2 Oct. 2013

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.

STABILIZED STAGING AREA INSTALLATION NOTES

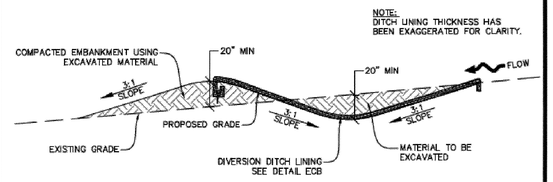
1. SEE CBMP PLAN FOR LOCATION OF STAGING AREA. CONTRACTOR MAY MODIFY LOCATION AND SIZE OF STABILIZED STAGING AREA WITH TOWN APPROVAL.
2. STABILIZED STAGING AREA SHALL BE LARGE ENOUGH TO FULLY CONTAIN PARKING, STORAGE, AND LOADING OPERATIONS.
3. THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM OF 3" DIAMETER OF ANGULAR ROCK (GRANITE OR RECYCLED CONCRETE).
4. SSA FOR SMALLER SITES MAY NOT BE PRACTICAL. IN THESE AND SIMILAR SITUATIONS, VARIANCES MAY BE PERMITTED BY THE TOWN.

STABILIZED STAGING AREA INSPECTION AND MAINTENANCE NOTES

1. THE EROSION CONTROL SUPERVISOR SHALL REGULARLY INSPECT THE STAGING AREA.
2. STABILIZED STAGING AREA SHALL BE ENLARGED AS NECESSARY TO CONTAIN PARKING, STORAGE, LOADING, AND UNLOADING.

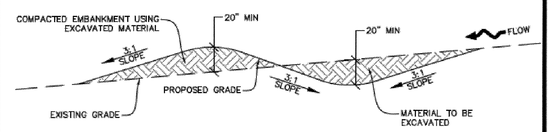
Town of Parker COLORADO | **CBMP** CONSTRUCTION BEST MANAGEMENT PRACTICES | SSA 2 OF 2 Oct. 2013

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.



DIVISION DITCH GEOMETRY AND REQUIRED LINING MATERIAL SHALL BE OBTAINED FROM ASSOCIATED CBMP PLANS VIA THE DESIGN ENGINEER. IF THIS INFORMATION IS NOT PROVIDED ON THE CBMP PLANS, THE CONTRACTOR SHALL NOTIFY THE TOWN PRIOR TO CONSTRUCTION

DIVERSION DITCH SECTION LINED CHANNEL



DIVERSION DITCH SECTION UNLINED CHANNEL

DD **DIVERSION DITCH**

Town of Parker COLORADO | **CBMP** CONSTRUCTION BEST MANAGEMENT PRACTICES | DD 1 OF 2 Oct. 2013

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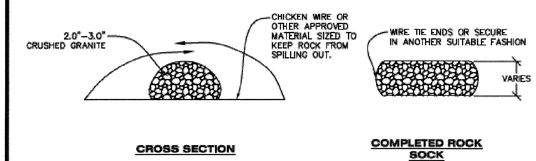
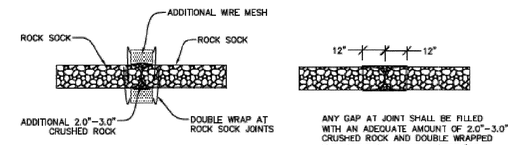


CROSS SECTION **COMPLETED ROCK SOCK**



ANY GAP AT JOINT SHALL BE FILLED WITH AN ADEQUATE AMOUNT OF 2.0"-3.0" CRUSHED ROCK AND DOUBLE WRAPPED WITH ADDITIONAL CHICKEN WIRE (OR APPROVED EQUAL) SECURED TO ENDS OF ROCK REINFORCED SOCK.

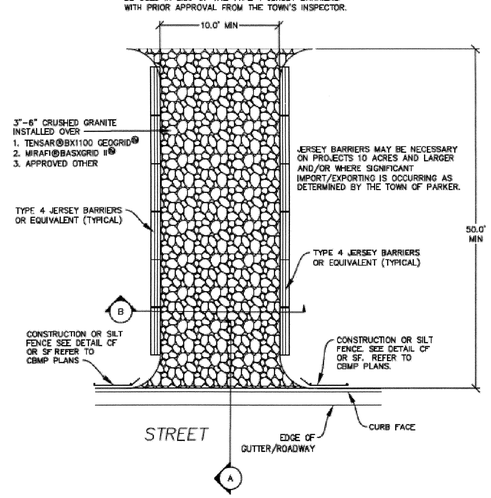
JOINT PLAN VIEW **JOINT ELEVATION**

RS **ROCK SOCK**

Town of Parker COLORADO | **CBMP** CONSTRUCTION BEST MANAGEMENT PRACTICES | RS 1 OF 2 Oct. 2013

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.

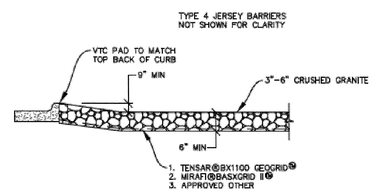
ON SITES LESS THAN 10 ACRES AND WHERE SIGNIFICANT SOIL IMPORTING/EXPORTING IS NOT OCCURRING, CONSTRUCTION FENCE (CF) OR SILT FENCE (SF) MAY BE USED IN LIEU OF THE TYPE 4 JERSEY BARRIERS WITH PRIOR APPROVAL FROM THE TOWN'S INSPECTOR.



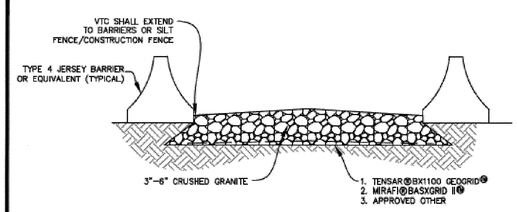
VTC **VEHICLE TRACKING CONTROL**

Town of Parker COLORADO | **CBMP** CONSTRUCTION BEST MANAGEMENT PRACTICES | VTC 1 OF 3 Oct. 2013

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.



SECTION A



SECTION B

VTC **VEHICLE TRACKING CONTROL**

Town of Parker COLORADO | **CBMP** CONSTRUCTION BEST MANAGEMENT PRACTICES | VTC 2 OF 3 Oct. 2013

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VEHICLE TRACKING CONTROL PAD INSTALLATION NOTES

1. SEE CBMP PLAN FOR LOCATION(S) OF VEHICLE TRACKING CONTROL PAD(S).
2. ALL CONSTRUCTION TRAFFIC MUST ENTER AND EXIT THE SITE THROUGH THE APPROVED ACCESS POINT(S). A VEHICLE TRACKING CONTROL PAD IS REQUIRED AT ALL APPROVED ACCESS POINTS TO THE SITE. EXCEPTIONS MAY BE CONSIDERED FOR CONSTRUCTION ACTIVITY OCCURRING IMMEDIATELY ADJACENT TO PAVED AREAS AND WHERE ALTERNATIVE BMP'S ARE IMPLEMENTED. SUCH ACTIVITY MAY INCLUDE, BUT NOT BE LIMITED TO RESIDENTIAL CONSTRUCTION, UTILITY CONSTRUCTION, ETC.
3. THE VEHICLE TRACKING CONTROL PAD(S) INDICATED ON CBMP PLAN SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
4. VEHICLE TRACKING CONTROL PADS SHALL BE A MINIMUM OF 50-FEET LONG AND 10-FEET WIDE, UNLESS A VARIANCE HAS BEEN GRANTED BY THE TOWN'S INSPECTOR.
5. A BIAXIAL GEO-GRID SHALL BE PLACED UNDER THE VEHICLE TRACKING CONTROL PAD PRIOR TO THE PLACEMENT OF ROCK. THE AREA SHALL BE FREE FROM ANY VOIDS, ROCKS AND DEBRIS. THE BIAXIAL GEO-GRID SHALL BE TENSAR BX1100, MIRAFI BASXGRID II, OR AN APPROVED EQUAL. GEO-GRID SHALL BE PLACED, AND APPROPRIATELY OVERLAPPED IF NECESSARY, TO COVER THE ENTIRE LENGTH AND WIDTH OF THE VEHICLE TRACKING CONTROL PAD.
6. CRUSHED ROCK SHALL BE A MINIMUM OF 3-6" GRANITE WITH A FRACTURED FACE (ALL SIDES).

VEHICLE TRACKING CONTROL PAD INSTALLATION AND MAINTENANCE NOTES

1. THE EROSION CONTROL SUPERVISOR SHALL REGULARLY INSPECT THE VEHICLE TRACKING CONTROL PAD.
2. WHEN THE VEHICLE TRACKING CONTROL PAD IS REMOVED, ANY DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE VEHICLE TRACKING CONTROL PAD SHALL BE ROUGHENED, SEEDED, MULCHED, AND CRIMPED PER THE TOWN'S SPECIFICATIONS (SEE DETAIL SMC).
3. THE VEHICLE TRACKING CONTROL PAD SHALL BE MAINTAINED SUCH THAT THE ROCK REMAINS RELATIVELY LOOSE AND ACCUMULATED MUD AND OTHER DEBRIS IS REGULARLY REMOVED.

Town of Parker COLORADO | **CBMP** CONSTRUCTION BEST MANAGEMENT PRACTICES | VTC 3 OF 3 Oct. 2013

REVISION	DATE
PARKING LOT	09/24/2014
COMMENTS	05/26/2015
COMMENTS-2	07/17/2015
Final Plans	08/18/2015

MM&D ENGINEERING SERVICES, INC.
William E. Miller, PE 13389
ENGINEERING
CONSTRUCTION MANAGEMENT
9125 N. Clydesdale Road PH (303) 908-0062
Castle Rock, Colorado 80108 FAX (303) 708-8399

Boondocks
Parker, Colorado
Sediment & Erosion Control Plan
Notes & Details
Construction Plans

COLORADO REGISTERED WILLIAM E. MILLER 13389 PROFESSIONAL ENGINEER

DATE 09/16/2014
DES/DFT/CHK WEM/km
PROJ. NO. 13-343
SHEET 13 OF 27

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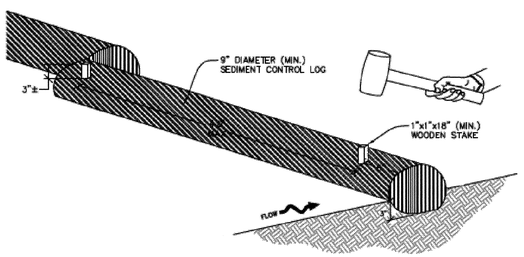

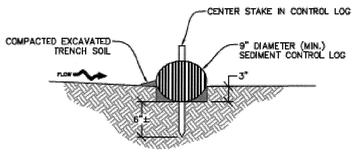

SECTION A

SCL **SEDIMENT CONTROL LOG**

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | SCL 1 OF 3 Oct. 2013

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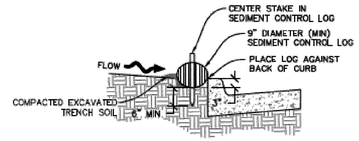
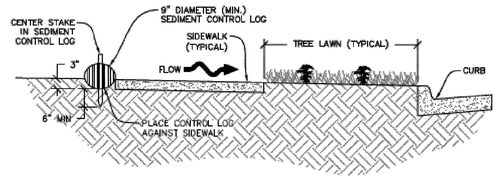
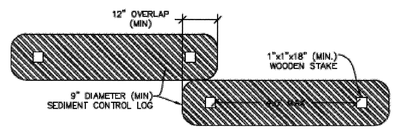


SEDIMENT CONTROL LOG AT BACK OF CURB



SEDIMENT CONTROL LOG AT SIDEWALK WITH TREE LAWN



SEDIMENT CONTROL LOG JOINTS

SCL **SEDIMENT CONTROL LOG**

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | SCL 2 OF 3 Oct. 2013

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SEDIMENT CONTROL LOG INSTALLATION NOTES

1. SEE CBMP PLAN FOR LOCATION(S) OF SEDIMENT CONTROL LOGS.
2. ALL SEDIMENT CONTROL LOGS SHALL BE INSTALLED FREE OF DEFECTS INCLUDING RIPS, HOLES AND OBVIOUS WEAR.
3. SEDIMENT CONTROL LOGS SHALL BE INSTALLED IMMEDIATELY ADJACENT TO AN IMPERVIOUS SURFACE SUCH AS A CURB HEAD, SIDEWALK, INLET LID, ETC. NO GAPS SHALL EXIST BETWEEN THE SEDIMENT CONTROL LOG AND THE IMPERVIOUS SURFACE.
4. A UNIFORM 3" DEEP ANCHOR TRENCH (APPROX.) IN THE SHAPE OF A HALF-SPHERE SHALL BE EXCAVATED USING A TRENCHER, SPADE-SHAPED SHOVEL, OR PICK. THE ANCHOR TRENCH SHALL BE SIZED TO ALLOW FOR THE SEDIMENT CONTROL LOG TO SEAT TIGHTLY AGAINST THE ANCHOR TRENCH.
5. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF THE ANCHOR TRENCH AND PROPERLY COMPACTED.
6. ANCHOR TRENCH SHALL BE RELATIVELY FREE OF ROCKS OR OTHER DEBRIS PRIOR TO THE PLACEMENT.
7. All SEDIMENT CONTROL LOGS SHALL BE PLACED 3" (APPROX.) BELOW THE GROUND AND PULLED TIGHT ON BOTH ENDS TO REMOVE ANY CURVES OR SNAGS.
8. THE UPHILL SIDE OF THE SEDIMENT CONTROL LOG SHALL BE BACKFILLED WITH SOIL THAT IS RELATIVELY FREE OF ROCKS AND DEBRIS. THE SOIL SHALL BE TIGHTLY COMPACTED AGAINST THE GROUND AND SEDIMENT CONTROL LOG USING A SHOVEL, OR SIMILAR DEVICE.
9. SEDIMENT CONTROL LOG STAKES SHALL BE MADE OF WOOD AND SECURELY ANCHOR THE SCL IN PLACE.
10. STAKES SHALL BE PLACED ON 4.0' CENTERS AND EMBEDDED APPROXIMATELY 6" INTO THE GROUND. STAKES THAT ARE BROKEN PRIOR TO OR DURING INSTALLATION SHALL BE REPLACED.
11. SEDIMENT CONTROL LOGS SHALL OVERLAP A MINIMUM OF 12". THE OVERLAPPING SHALL OCCUR ON THE UP-GRADIENT SIDE OF THE LOGS.
12. SEDIMENT CONTROL LOGS SHALL BE STAKED WITHIN 6" FROM EACH END.
13. SEDIMENT CONTROL LOGS THAT ARE INSTALLED BEHIND CURBS AND SIDEWALKS MUST BE DONE SO THAT NO MORE THAN A 2" GAP EXISTS BETWEEN THE CONCRETE AND THE LOG. EROSION CONTROL BLANKETING (ECB) BETWEEN THE GAP MAY BE REQUIRED IN INSTANCES WHERE THIS DOES NOT OCCUR.

SEDIMENT CONTROL LOG INSPECTION AND MAINTENANCE NOTES

1. THE EROSION CONTROL SUPERVISOR SHALL REGULARLY INSPECT THE SEDIMENT CONTROL LOGS.
2. ACCUMULATED SEDIMENT SHALL BE REMOVED ONCE THE SEDIMENT HAS REACHED A DEPTH EQUAL TO 1/2 THE HEIGHT OF EXPOSED LOG.
3. SEDIMENT CONTROL LOGS SHALL REMAIN IN PLACE AND PROPERLY MAINTAINED UNTIL VEGETATIVE COVER HAS REACHED A CONSISTENT DENSITY OF AT LEAST 70% OF FULL VEGETATIVE COVER AND EROSION AND SEDIMENTATION IS NO LONGER A POSSIBILITY AS DETERMINED BY THE TOWN'S INSPECTOR OR AS OTHERWISE DIRECTED BY THE TOWN'S INSPECTOR.
4. SEDIMENT CONTROL LOGS SHALL BE REPLACED WHEN THERE ARE ANY SIGNS OF WEAR OR DAMAGE THAT WOULD PREVENT THE SCL FROM FUNCTIONING AS DESIGNED.
5. WHEN THE SEDIMENT CONTROL LOGS ARE REMOVED, ANY DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE SEDIMENT CONTROL LOGS MAY NEED TO BE ROUGHENED, SEEDED, MULCHED, AND CRIMPED PER THE TOWN'S SPECIFICATIONS (SEE DETAIL SMC).

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | SCL 3 OF 3 Oct. 2013

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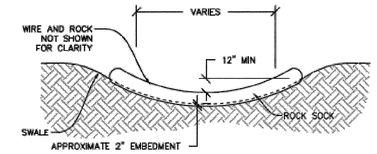
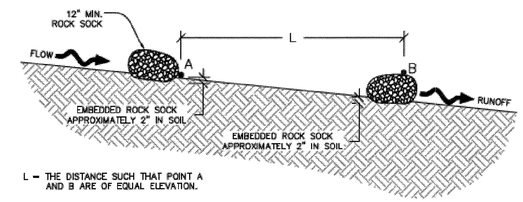


SWALE ELEVATION



L = THE DISTANCE SUCH THAT POINT A AND B ARE OF EQUAL ELEVATION.

SWALE SPACING

RSS **ROCK SOCK IN SWALE**

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | RSS 1 OF 1 Oct. 2013

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.

SEEDING AND MULCHING SHALL BE PERFORMED ACCORDING TO THE ACCOMPANYING DETAIL(S) AND TEXT. NO EXCEPTIONS SHALL BE MADE

1. SEE PLAN VIEW FOR:
   - LOCATION(S) OF SEEDING AND MULCHING
   - TYPE OF SEED MIX
2. SEED MIXES MAY CONFORM TO THE TABLE PROVIDED WITH THE SMC NOTES OR ALTERNATIVES MAY BE ALLOWED WITH PRIOR PERMISSION BY THE TOWN'S INSPECTOR.
3. SEEDING MAY BE PERFORMED YEAR ROUND ASSUMING THE SOIL IS NOT FROZEN. SEEDING DURING TIMES OF EXTREME TEMPERATURES SHOULD BE AVOIDED IF POSSIBLE.
4. AT THE BEGINNING OF THE LAND DISTURBANCE ACTIVITIES, IT IS HIGHLY RECOMMENDED THAT AN APPROPRIATE AMOUNT OF NATIVE TOPSOIL BE STRIPPED FROM THE SITE AND STOCKPILED. ALL AREAS, PRIOR TO PERMANENT SEEDING AND MULCHING, WILL LIKELY NEED TO BE COVERED WITH AN APPROPRIATE LAYER OF TOPSOIL. THIS REQUIREMENT APPLIES TO ALL AREAS WHERE NATIVE SEEDING IS SPECIFIED ON THE CBMP PLAN AND/OR LANDSCAPING PLANS.
5. IT IS STRONGLY RECOMMENDED THAT SAMPLES FROM THE STRIPPED TOPSOIL BE PROPERLY COLLECTED AND TESTED BY A QUALIFIED LABORATORY TO ENSURE ADEQUATE NUTRIENT CONTENT PRIOR TO SEEDING AND MULCHING. IF IT IS DISCOVERED THAT THE TOPSOIL IS VOID OF THE NUTRIENTS NECESSARY TO SUCCESSFULLY ESTABLISH THE REQUIRED VEGETATION, THEN THE APPROPRIATE AMENDMENTS SHALL BE ADDED.
6. ALL AREAS TO BE SEEDED AND MULCHED SHALL BE SURFACE ROUGHENED ACCORDING TO THE SURFACE ROUGHENING DETAILS AND NOTES. SURFACE ROUGHENING SHALL OCCUR AFTER PLACEMENT OF THE TOPSOIL.
7. WHEN INSTALLED WITH A DRILL SEEDER, SEED SHALL BE PLACED AT A DEPTH OF ¼ – ½ INCH. ROW SPACING SHALL BE NO MORE THAN 6-INCHES.
8. ALL AREAS INCAPABLE OF BEING DRILL SEEDED SHALL BE SURFACE ROUGHENED ACCORDING TO THE SURFACE ROUGHENING NOTES OR EFFECTIVELY ROUGHENED USING A HARROW OR OTHER SUCH IMPLEMENT. ALL AREAS SHALL BE UNIFORMLY HAND BROADCASTED WITH THE PROPER SEED MIX APPLIED AT TWO TIMES THE DRILL SEEDED RATE. BROADCASTED AREAS SHALL THEN BE RE-HARROWED OR RE-RAKED USING A HARD-TIPPED RAKE TO ENSURE THAT SEEDS ARE BURIED TO AN APPROXIMATE DEPTH OF ¼ – ½ INCH.
9. AFTER SEEDING HAS BEEN COMPLETED, MULCH SHALL BE UNIFORMLY APPLIED AT A RATE OF 2 TONS/ACRE (4,000 LBS/ACRE). MULCH SHALL BE MECHANICALLY CRIMPED TO A DEPTH OF 2 INCHES USING A CRIMPER. MULCH SHALL BE HAND CRIMPED AND COVERED WITH A TACKIFIER IN AREAS WHERE MECHANICAL CRIMPING IS NOT POSSIBLE. WHEN SOILS PERMIT, ALL MULCH SHALL BE CRIMPED SUCH THAT THE INDIVIDUAL PIECES OF STRAW OR HAY FORM EXAGGERATED V-SHAPES PROTRUDING OUT OF THE GROUND SEVERAL INCHES.
10. IN CERTAIN INSTANCES, IT MAY BE NECESSARY TO APPLY A TACKIFIER IN ORDER TO HELP WITH STRAW DISPLACEMENT. TACKIFIER SHALL BE APPLIED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS.

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | SMC 1 OF 3 Oct. 2013

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SEEDING AND MULCHING MAINTENANCE NOTES

1. THE EROSION CONTROL SUPERVISOR SHALL REGULARLY INSPECT THE SEEDING AND MULCHING.
2. ANY SEEDED AND MULCHED AREAS THAT BECOME DAMAGED SHALL BE REPAIRED WITHIN THE TIME FRAME SPECIFIED BY THE TOWN'S INSPECTOR.

WEED MANAGEMENT

1. ALL HERBICIDES SHALL BE APPLIED BY COMMERCIAL PESTICIDE APPLICATORS LICENSED BY THE COLORADO DEPARTMENT OF AGRICULTURE AS QUALIFIED APPLICATORS. THE CONTRACTOR SHALL FURNISH DOCUMENTATION OF SUCH LICENSING PRIOR TO HERBICIDE APPLICATION.
2. HERBICIDE APPLICATION METHOD SHALL BE SUCH THAT PLANT GROWTH OUTSIDE THE DESIGNATED TREATMENT AREAS WILL NOT BE DAMAGED. ALL DAMAGE CAUSED BY IMPROPER HERBICIDE APPLICATION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
3. HERBICIDES SHALL BE APPLIED DURING THE APPROPRIATE SEASONS, WHEN TARGET PLANTS ARE ACTIVELY GROWING.
4. AFTER THE GRASS SEED IS ESTABLISHED, APPROPRIATE HERBICIDES SHALL BE APPLIED TO CONTROL THE REMAINING WEEDS TO ENSURE A TIMELY RETURN OF THE FINANCIAL SECURITY. PROPER TIMING OF HERBICIDE APPLICATIONS ARE NECESSARY TO ACHIEVE THE SUPPRESSION OF WEED SEED PRODUCTION AND DEPLETION OF WEED ROOT MASS. ULTIMATELY, THE HERBICIDES USED SHALL BE BASED UPON THE TARGET WEEDS.
5. HERBICIDE TREATMENTS SHALL CONTINUE AT AN APPROPRIATE RATE UNTIL IT IS EVIDENT THAT WEED GROWTH PRESENCE AND GROWTH IS MINIMAL AND MAY BE CONTROLLED THROUGH MOWING AND/OR ANNUAL HERBICIDE TREATMENT.

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | SMC 2 OF 3 Oct. 2013

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TOWN OF PARKER, SEED MIX 1
20% CANADA WILDRYE
15% CRESTED WHEATGRASS
15% SLENDER WHEATGRASS
10% ANNUAL RYEGRASS
10% SHEEP FESCUE
10% BIG BLUESTEM
10% SIDEOATS GRAMA
5% CANADA BLUEGRASS
5% BLUE GRAMA

SEEDING RATE:
DRILLED: 25 LBS/ACRE
BROADCAST: 50 LBS/ACRE

TOWN OF PARKER, SEED MIX 2
22% SLENDER WHEATGRASS
18% SODAR STREAMBANK WHEATGRASS
13% ARIZONA FESCUE
13% BLUE GRAMA
12% BUFFALOGRASS
12% BARLEY OR OATS
5% SPIKE MUHLY
5% INDIAN RICEGRASS

SEEDING RATE:
DRILLED: 25 LBS/ACRE
BROADCAST: 50 LBS/ACRE

TOWN OF PARKER, SEED MIX 3 (LOW-GROWTH MIX)
25% EPHRAIM CRESTED WHEATGRASS
23% SHEEP FESCUE
18% PERENNIAL RYEGRASS
13% CANADA BLUEGRASS
12% BARLEY OR OATS
9% BLUE FESCUE

SEEDING RATE:
DRILLED: 25 LBS/ACRE
BROADCAST: 50 LBS/ACRE

SEED MIX 4:
OTHER SEED MIXES APPROVED BY THE TOWN OF PARKER

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | SMC 3 OF 3 Oct. 2013

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Boondocks
Parker, Colorado
Sediment & Erosion Control Plan
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COLORADO REGISTERED WILLIAM E. MILLER 13389 PROFESSIONAL ENGINEER 9/24/14

DATE 09/16/2014
DES/DFT/CHK WEM/km
PROJ. NO. 13-343
SHEET 14 OF 27

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2. SEED MIXES MAY CONFORM TO THE TABLE PROVIDED WITH THE SMC NOTES OR ALTERNATIVES MAY BE ALLOWED WITH PRIOR PERMISSION BY THE TOWN'S INSPECTOR.
3. SEEDING MAY BE PERFORMED YEAR ROUND ASSUMING THE SOIL IS NOT FROZEN. SEEDING DURING TIMES OF EXTREME TEMPERATURES SHOULD BE AVOIDED IF POSSIBLE.
4. AT THE BEGINNING OF THE LAND DISTURBANCE ACTIVITIES, IT IS HIGHLY RECOMMENDED THAT AN APPROPRIATE AMOUNT OF NATIVE TOPSOIL BE STRIPPED FROM THE SITE AND STOCKPILED. ALL AREAS, PRIOR TO PERMANENT SEEDING AND MULCHING, WILL LIKELY NEED TO BE COVERED WITH AN APPROPRIATE LAYER OF TOPSOIL. THIS REQUIREMENT APPLIES TO ALL AREAS WHERE NATIVE SEEDING IS SPECIFIED ON THE CBMP PLAN AND/OR LANDSCAPING PLANS.
5. IT IS STRONGLY RECOMMENDED THAT SAMPLES FROM THE STRIPPED TOPSOIL BE PROPERLY COLLECTED AND TESTED BY A QUALIFIED LABORATORY TO ENSURE ADEQUATE NUTRIENT CONTENT PRIOR TO SEEDING AND MULCHING. IF IT IS DISCOVERED THAT THE TOPSOIL IS VOID OF THE NUTRIENTS NECESSARY TO SUCCESSFULLY ESTABLISH THE REQUIRED VEGETATION, THEN THE APPROPRIATE AMENDMENTS SHALL BE ADDED.
6. ALL AREAS TO BE SEEDED AND MULCHED SHALL BE SURFACE ROUGHENED ACCORDING TO THE SURFACE ROUGHENING DETAILS AND NOTES. SURFACE ROUGHENING SHALL OCCUR AFTER PLACEMENT OF THE TOPSOIL.
7. WHEN INSTALLED WITH A DRILL SEEDER, SEED SHALL BE PLACED AT A DEPTH OF ¼ – ½ INCH. ROW SPACING SHALL BE NO MORE THAN 6–INCHES.
8. ALL AREAS INCAPABLE OF BEING DRILL SEEDED SHALL BE SURFACE ROUGHENED ACCORDING TO THE SURFACE ROUGHENING NOTES OR EFFECTIVELY ROUGHENED USING A HARROW OR OTHER SUCH IMPLEMENT. ALL AREAS SHALL BE UNIFORMLY HAND BROADCASTED WITH THE PROPER SEED MIX APPLIED AT TWO TIMES THE DRILL SEEDED RATE. BROADCASTED AREAS SHALL THEN BE RE–HARROWED OR RE–RAKED USING A HARD–TIPPED RAKE TO ENSURE THAT SEEDS ARE BURIED TO AN APPROXIMATE DEPTH OF ¼ – ½ INCH.
9. AFTER SEEDING HAS BEEN COMPLETED, MULCH SHALL BE UNIFORMLY APPLIED AT A RATE OF 2 TONS/ACRE (4,000 LBS/ACRE). MULCH SHALL BE MECHANICALLY CRIMPED TO A DEPTH OF 2 INCHES USING A CRIMPER. MULCH SHALL BE HAND CRIMPED AND COVERED WITH A TACKIFIER IN AREAS WHERE MECHANICAL CRIMPING IS NOT POSSIBLE. WHEN SOILS PERMIT, ALL MULCH SHALL BE CRIMPED SUCH THAT THE INDIVIDUAL PIECES OF STRAW OR HAY FORM EXAGGERATED V–SHAPES PROTRUDING OUT OF THE GROUND SEVERAL INCHES.
10. IN CERTAIN INSTANCES, IT MAY BE NECESSARY TO APPLY A TACKIFIER IN ORDER TO HELP WITH STRAW DISPLACEMENT. TACKIFIER SHALL BE APPLIED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS.

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | SMC 1 OF 3 Oct. 2013

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.

SEEDING AND MULCHING MAINTENANCE NOTES

1. THE EROSION CONTROL SUPERVISOR SHALL REGULARLY INSPECT THE SEEDING AND MULCHING.
2. ANY SEEDED AND MULCHED AREAS THAT BECOME DAMAGED SHALL BE REPAIRED WITHIN THE TIME FRAME SPECIFIED BY THE TOWN'S INSPECTOR.

WEED MANAGEMENT

1. ALL HERBICIDES SHALL BE APPLIED BY COMMERCIAL PESTICIDE APPLICATORS LICENSED BY THE COLORADO DEPARTMENT OF AGRICULTURE AS QUALIFIED APPLICATORS. THE CONTRACTOR SHALL FURNISH DOCUMENTATION OF SUCH LICENSING PRIOR TO HERBICIDE APPLICATION.
2. HERBICIDE APPLICATION METHOD SHALL BE SUCH THAT PLANT GROWTH OUTSIDE THE DESIGNATED TREATMENT AREAS WILL NOT BE DAMAGED. ALL DAMAGE CAUSED BY IMPROPER HERBICIDE APPLICATION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
3. HERBICIDES SHALL BE APPLIED DURING THE APPROPRIATE SEASONS, WHEN TARGET PLANTS ARE ACTIVELY GROWING.
4. AFTER THE GRASS SEED IS ESTABLISHED, APPROPRIATE HERBICIDES SHALL BE APPLIED TO CONTROL THE REMAINING WEEDS TO ENSURE A TIMELY RETURN OF THE FINANCIAL SECURITY. PROPER TIMING OF HERBICIDE APPLICATIONS ARE NECESSARY TO ACHIEVE THE SUPPRESSION OF WEED SEED PRODUCTION AND DEPLETION OF WEED ROOT MASS. ULTIMATELY, THE HERBICIDES USED SHALL BE BASED UPON THE TARGET WEEDS.
5. HERBICIDE TREATMENTS SHALL CONTINUE AT AN APPROPRIATE RATE UNTIL IT IS EVIDENT THAT WEED GROWTH PRESENCE AND GROWTH IS MINIMAL AND MAY BE CONTROLLED THROUGH MOWING AND/OR ANNUAL HERBICIDE TREATMENT.

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | SMC 2 OF 3 Oct. 2013

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TOWN OF PARKER, SEED MIX 1
20% CANADA WILDRYE
15% CRESTED WHEATGRASS
15% SLENDER WHEATGRASS
10% ANNUAL RYEGRASS
10% SHEEP FESCUE
10% BIG BLUESTEM
10% SIDEOATS GRAMA
5% CANADA BLUEGRASS
5% BLUE GRAMA

SEEDING RATE:
DRILLED: 25 LBS/ACRE
BROADCAST: 50 LBS/ACRE

TOWN OF PARKER, SEED MIX 2
22% SLENDER WHEATGRASS
18% SODAR STREAMBANK WHEATGRASS
13% ARIZONA FESCUE
13% BLUE GRAMA
12% BUFFALOGRASS
12% BARLEY OR OATS
5% SPIKE MUHLY
5% INDIAN RICEGRASS

SEEDING RATE:
DRILLED: 25 LBS/ACRE
BROADCAST: 50 LBS/ACRE

TOWN OF PARKER, SEED MIX 3 (LOW-GROWTH MIX)
25% EPHRAIM CRESTED WHEATGRASS
23% SHEEP FESCUE
18% PERENNIAL RYEGRASS
13% CANADA BLUEGRASS
12% BARLEY OR OATS
9% BLUE FESCUE

SEEDING RATE:
DRILLED: 25 LBS/ACRE
BROADCAST: 50 LBS/ACRE

SEED MIX 4:
OTHER SEED MIXES APPROVED BY THE TOWN OF PARKER

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | SMC 3 OF 3 Oct. 2013

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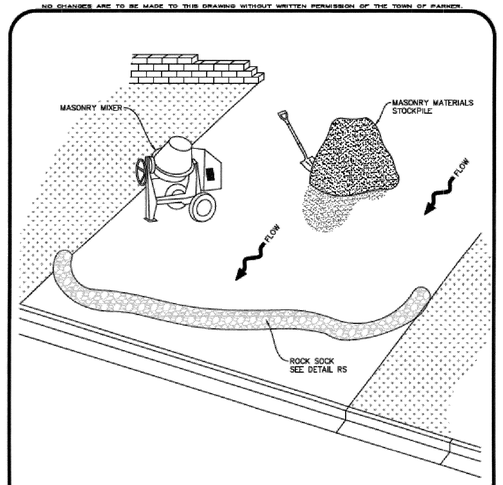

MWP **MASONRY WORK PROTECTION**

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | MWP 1 OF 2 Oct. 2013

MASONRY WORK PROTECTION INSTALLATION NOTES

1. MASONRY WORK PROTECTION MAY NEED TO BE INSTALLED WHEN MASONRY WORK AND MIXING IS OCCURRING.
2. A ROCK SOCK SHALL BE INSTALLED IN A CRESCENT SHAPE ON THE DOWNHILL SIDE OF THE MASONRY WORK AND MIXER.
3. CRUSHED ROCK SHALL BE 2.0"–3.0" IN SIZE WITH A FRACTURED FACE (ALL SIDES).
4. ROCK SOCK SHALL BE ONE CONTINUOUS PIECE OR SHALL BE CONSTRUCTED USING WIRE WRAPPED JOINTS (SEE DETAIL RS).
5. ROCK SOCK SHALL BE CONSTRUCTED USING CHICKEN WIRE OR OTHER APPROVED MATERIAL, SIZED TO KEEP ROCK FROM SPILLING OUT.

MASONRY WORK PROTECTION INSPECTION AND MAINTENANCE NOTES

1. THE EROSION CONTROL SUPERVISOR SHALL REGULARLY INSPECT THE MASONRY WORK PROTECTION.
2. ALL CONCRETE WASTE SHALL BE REGULARLY CLEANED AND PLACED IN THE CONCRETE WASH OUT AREA.
3. ROCK SOCKS SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED OR DAMAGED.

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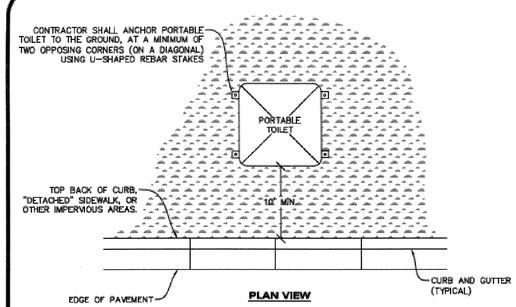
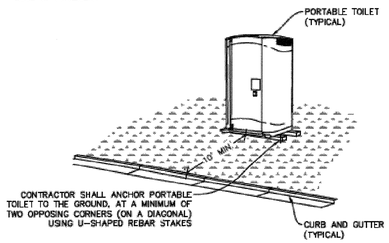


PLAN VIEW



ISOMETRIC

PTP **PORTABLE TOILET PROTECTION**

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | PTP 1 OF 2 Oct. 2013

SURFACE ROUGHENING INSTALLATION NOTES

1. SEE CBMP PLAN FOR LOCATION(S) OF SURFACE ROUGHENING.
2. ANY DISTURBED LAND THAT REMAINS INACTIVE FOR MORE THAN 14 CONSECUTIVE DAYS MUST RECEIVE SURFACE ROUGHENING. DETERMINATION OF JOB SITE INACTIVITY IS AT THE DISCRETION OF THE TOWN'S INSPECTOR.
3. SURFACE ROUGHENING SHALL BE PERFORMED PERPENDICULAR TO THE SLOPE.
4. SOIL SHALL BE ROUGHENED A MINIMUM OF 6–INCHES DEEP USING RIGID SHANKS.
5. A FARMING DISC SHALL NOT BE USED FOR SURFACE ROUGHENING.
6. FOR STEEP SLOPES (3:1 OR STEEPER), IT IS ACCEPTABLE TO "TRACK" THE SLOPES, ACCORDING TO THE CBMP DETAILS.

SURFACE ROUGHENING INSPECTION AND MAINTENANCE NOTES

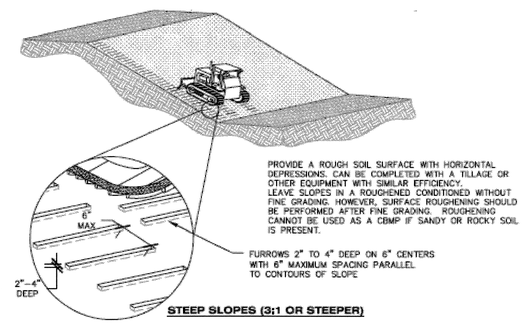
1. THE EROSION CONTROL SUPERVISOR SHALL INSPECT THE SURFACE ROUGHENING AT THE FOLLOWING INTERVALS:
   - IMMEDIATELY FOLLOWING INITIAL INSTALLATION.
   - EVERY 7 DAYS DURING ACTIVE CONSTRUCTION.
   - IMMEDIATELY FOLLOWING ANY STORM EVENT.

PORTABLE TOILET PROTECTION INSTALLATION NOTES

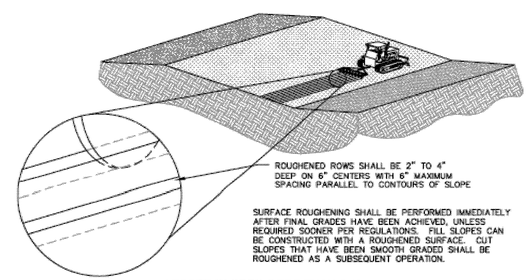
1. PORTABLE TOILETS SHALL BE PLACED A MINIMUM OF 10.0' BEHIND ALL CURBS, SIDEWALKS, AND OTHER IMPERVIOUS AREAS.
2. ALL PORTABLE TOILETS MUST BE GROUPED TOGETHER.
3. PORTABLE TOILETS SHALL BE SECURELY ANCHORED TO THE GROUND USING U–SHAPED REBAR STAKES.
4. U–SHAPED REBAR STAKES SHALL BE POSITIONED ON AT LEAST 2 OPPOSING (DIGITAL) CORNERS.

PORTABLE TOILET PROTECTION INSPECTION AND MAINTENANCE NOTES

2. THE EROSION CONTROL SUPERVISOR SHALL REGULARLY INSPECT THE PORTABLE TOILET PROTECTION.
3. PORTABLE TOILETS SHALL BE SERVICED AT THE NECESSARY INTERVALS TO ELIMINATE THE POSSIBILITY OF OVERFLOW.
4. WHEN THE PORTABLE TOILETS ARE REMOVED, ANY DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE TOILETS MAY NEED TO BE LANDSCAPED OR ROUGHENED, SEEDED, MULCHED, AND CRIMPED PER THE TOWN'S SPECIFICATIONS (SEE DETAIL SMC).
5. PORTABLE TOILETS THAT ARE NOT CONSISTENTLY MAINTAINED IN ACCORDANCE WITH THESE REQUIREMENTS MAY NEED TO BE CLUSTERED TOGETHER, IN ONE CENTRALIZED LOCATION IN ORDER TO INCREASE COMPLIANCE AND REDUCE THE CHANCE OF A SPILL.



STEEP SLOPES (3:1 OR STEEPER)



LESSER SLOPES (LESS THAN 3:1)

SR **SURFACE ROUGHENING**

Town of Parker COLORADO | CBMP | CONSTRUCTION BEST MANAGEMENT PRACTICES | SR JUNE 2005

REVISION	DATE
PARKING LOT	09/24/2014
COMMENTS	05/26/2015
COMMENTS–2	07/17/2015
Final Plans	08/18/2015

MM&D ENGINEERING SERVICES, INC.
William E. Miller, PE 13389
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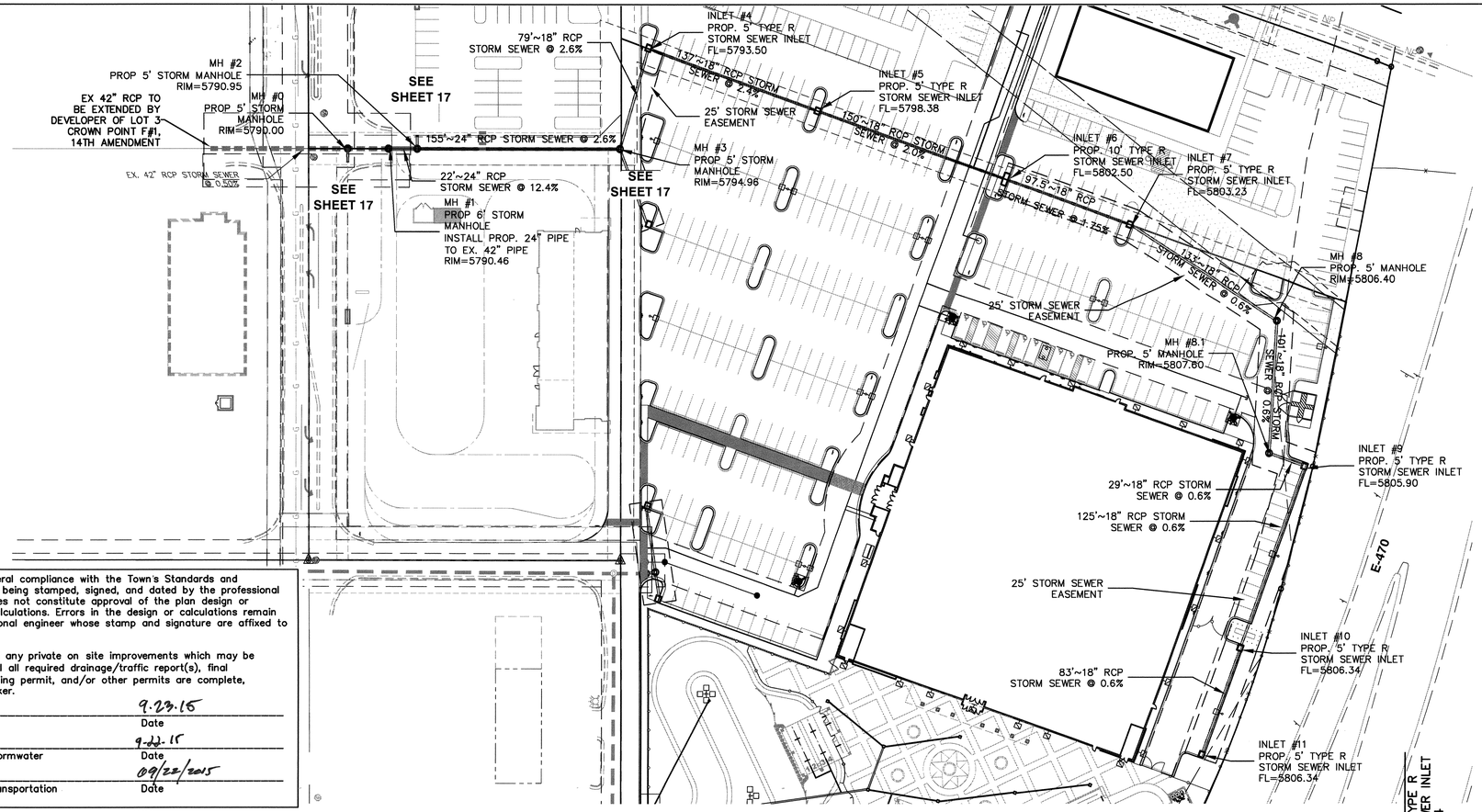
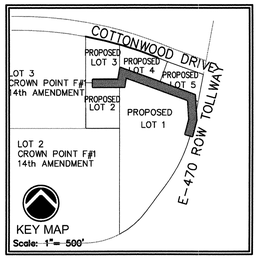
CONSTRUCTION MANAGEMENT
9125 N. Clydesdale Road PH (303) 908–0062
Castle Rock, Colorado 80108 FAX (303) 708–8399

Boondocks
Parker, Colorado
Sediment & Erosion Control Plan
Notes & Details
Construction Plans

COLORADO REGISTERED WILLIAM E. MILLER 13389 PROFESSIONAL ENGINEER

DATE 09/16/2014
DES/DFT/CHK WEM/km
PROJ. NO. 13–343
SHEET 15 OF 27





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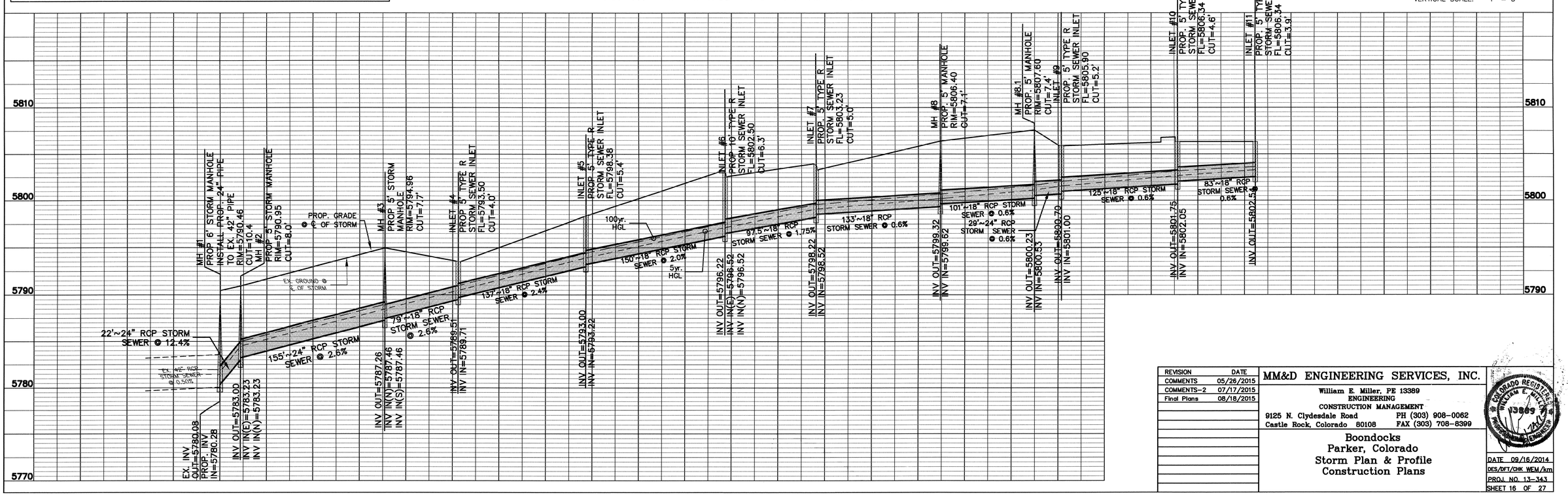
Town of Parker, Public Works Director	Date 9.23.15
Town of Parker, Public Works Manager - Stormwater	Date 9.22.15
Town of Parker, Public Works Manager - Transportation	Date 09/22/2015

Know what's **Call** before you dig.

N

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



REVISION	DATE
COMMENTS	05/26/2015
COMMENTS-2	07/17/2015
Final Plans	08/18/2015

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Boondocks
Parker, Colorado
Storm Plan & Profile
Construction Plans

COLORADO REGISTERED PROFESSIONAL ENGINEER WILLIAM E. MILLER 13389

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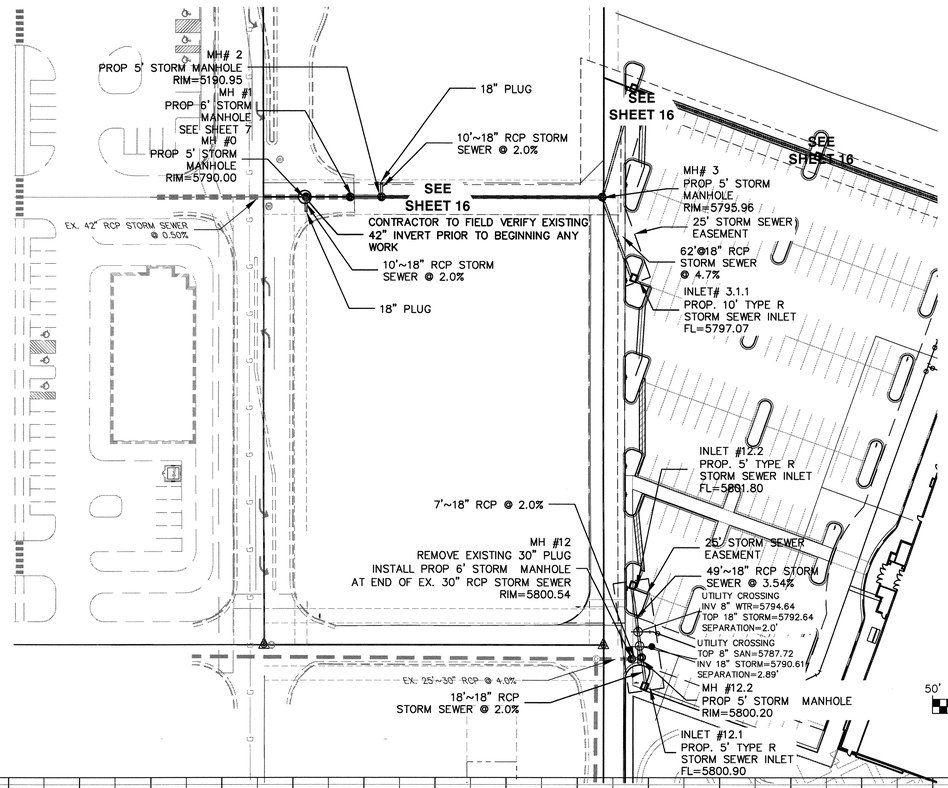
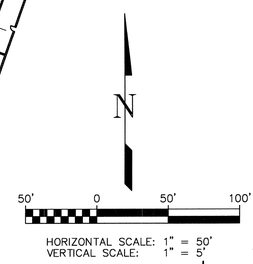
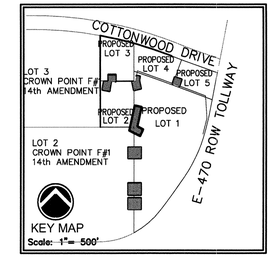
SHEET 16 OF 27







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Town of Parker, Public Works Manager - Transportation	Date 09/22/2015

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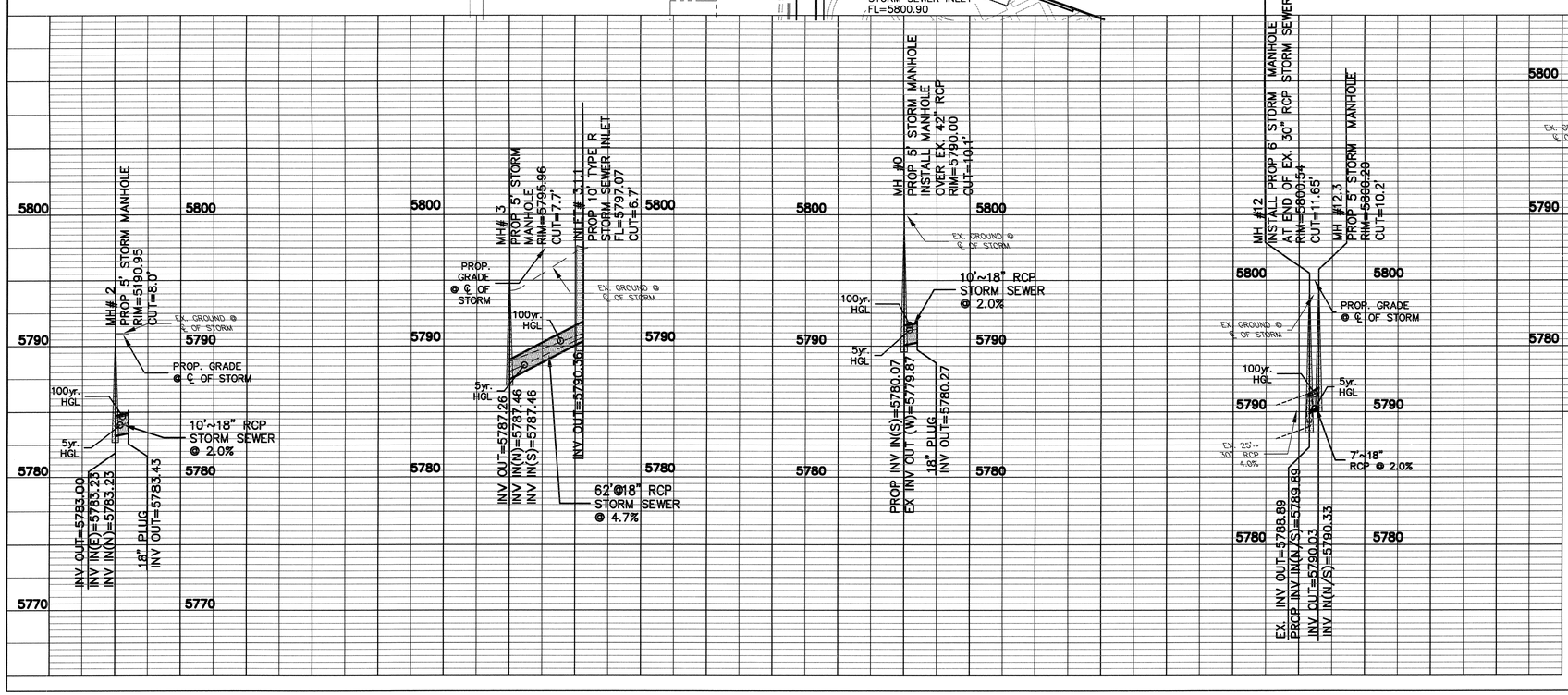

NOTE:
CONTRACTOR TO FIELD VERIFY EXISTING STORM SEWER ELEVATIONS

REVISION	DATE
COMMENTS	05/26/2015
COMMENTS-2	07/07/2015
Final Plans	08/18/2015

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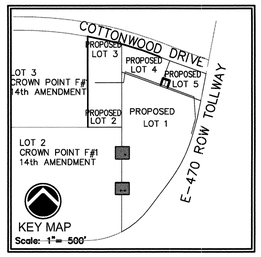

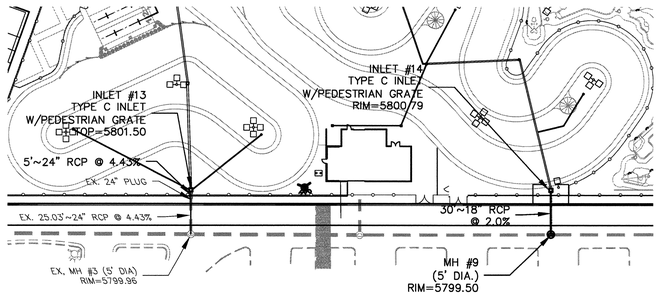

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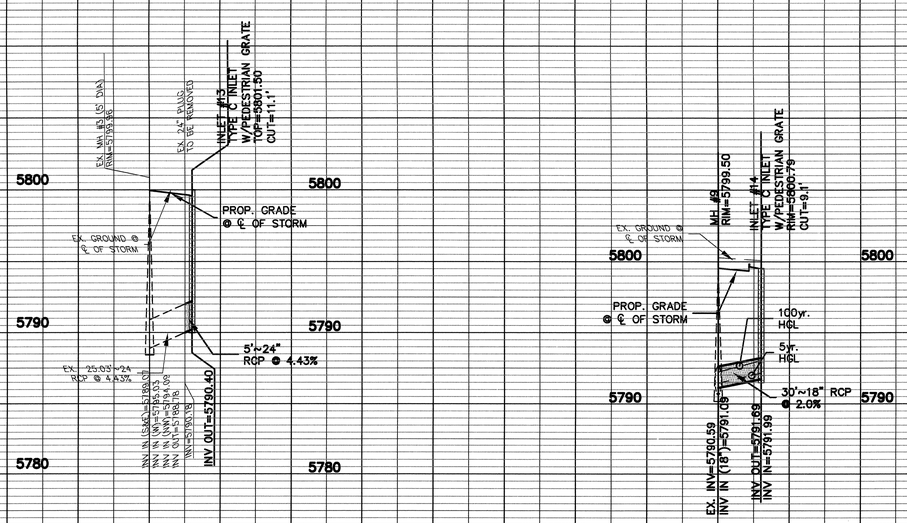

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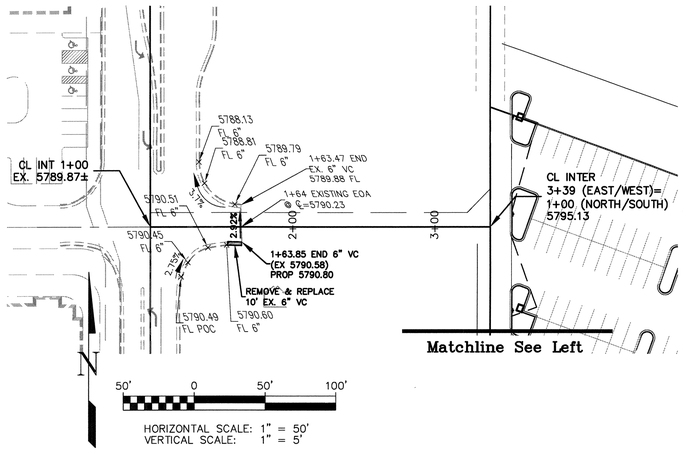

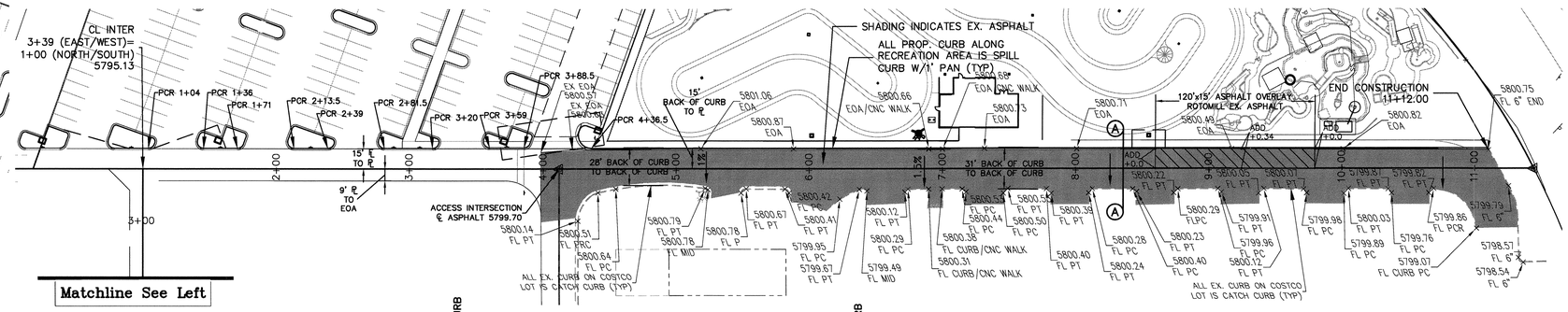

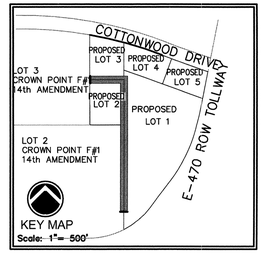

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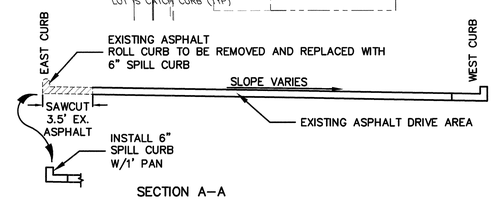

SECTION A–A

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

INDICATES EXISTING ASPHALT DRIVE AREA

INDICATES AREA TO BE ROTOMILLED (DEPTH +0.34')

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

N

50' 0 50' 100'

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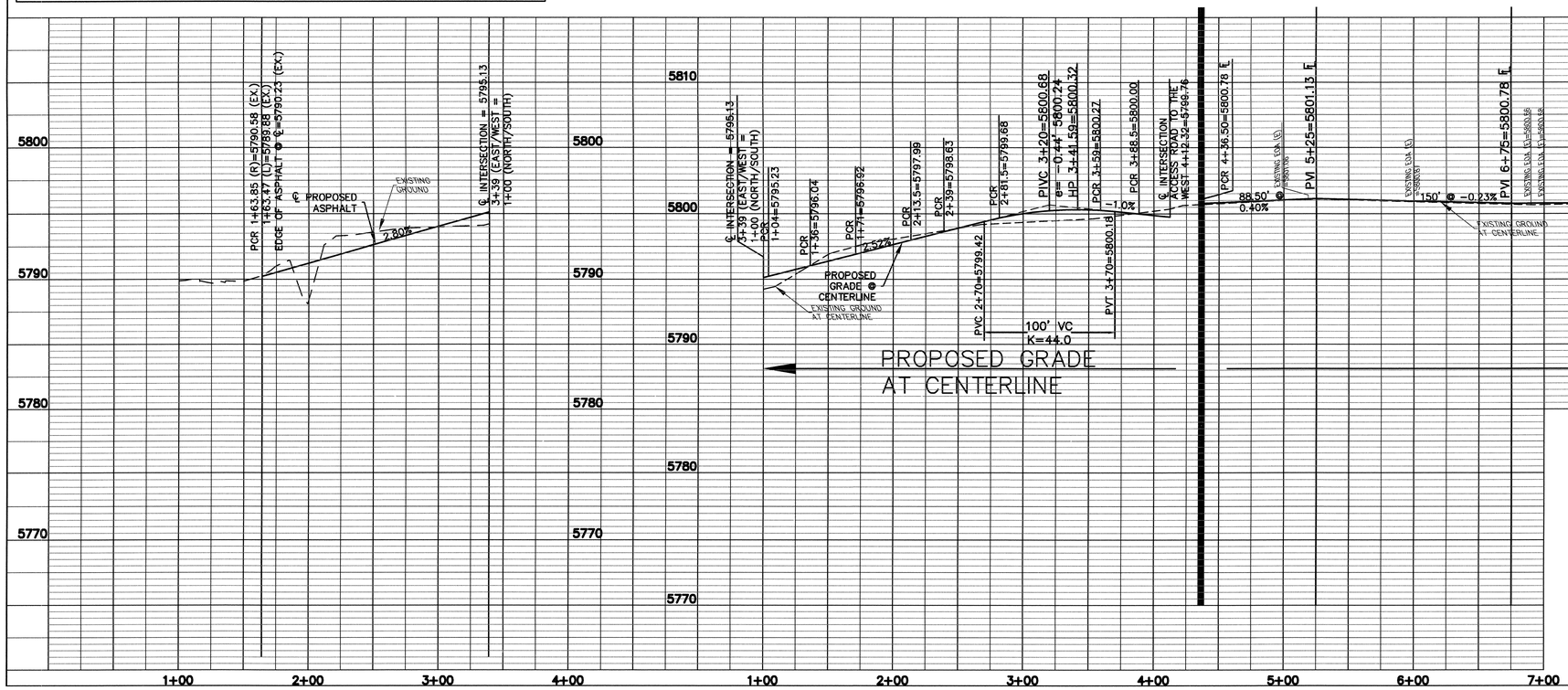
VERTICAL SCALE: 1" = 5'



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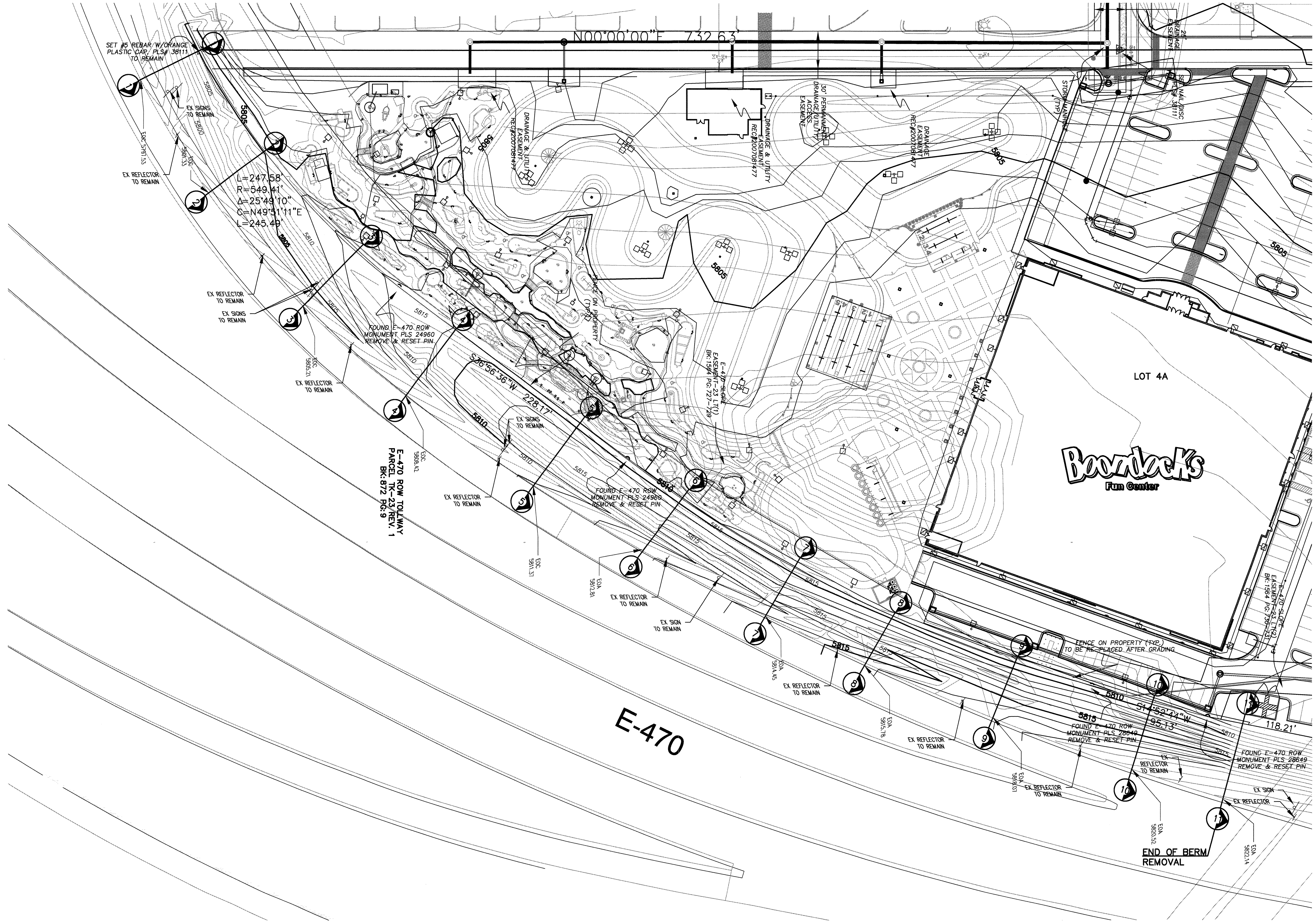
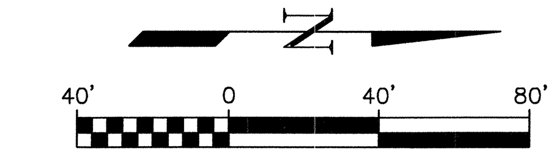
Castle Rock, Colorado 80108 FAX (303) 708-8399

Boondocks
Parker, Colorado
Access Road Plan & Profile
Construction Plans

COLORADO REGISTERED PROFESSIONAL ENGINEER WILLIAM E. MILLER 13389

DATE 09/16/2014
DES/DFT/CHK WEM/km
PROJ. NO. 13-343
SHEET 19 OF 27





REVISION	DATE
COMMENTS	05/26/2015
COMMENTS-2	07/17/2015
Final Plans	08/18/2015

MM&D ENGINEERING SERVICES, INC.

William E. Miller, PE 13389
ENGINEERING
CONSTRUCTION MANAGEMENT
9125 N. Clydesdale Road PH (303) 908-0062
Castle Rock, Colorado 80108 FAX (303) 708-8399

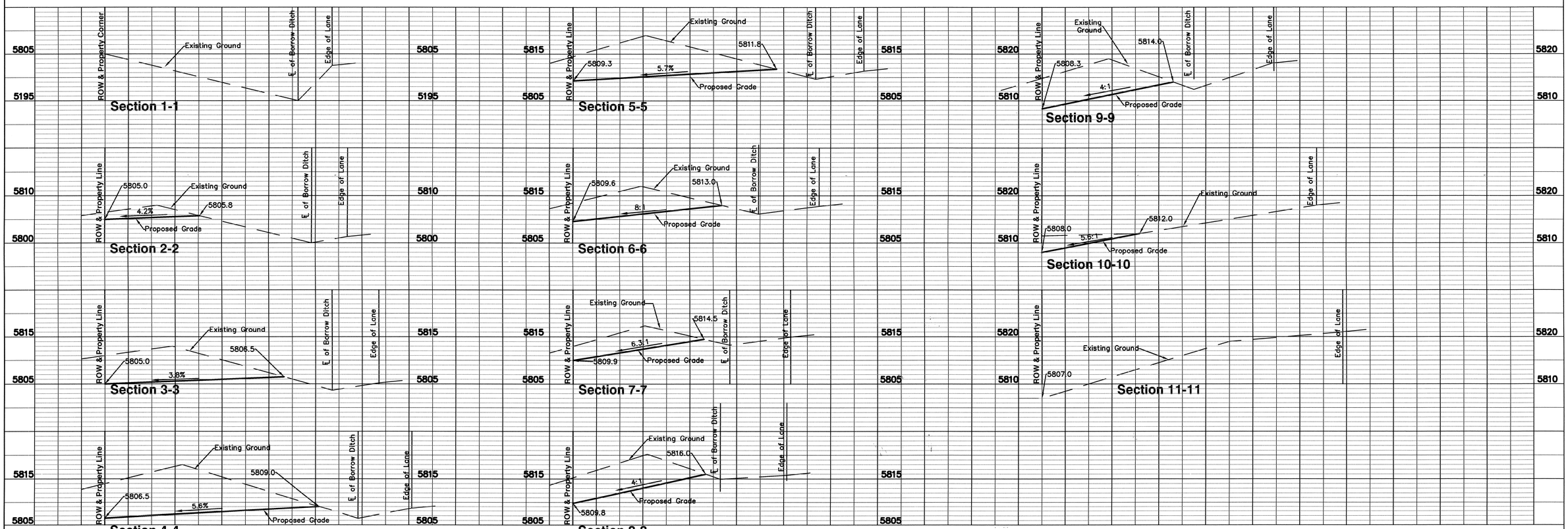
Boondocks
Parker, Colorado

Cross Sections at E-470
Plan View
Construction Plans

COLORADO REGISTERED WILLIAM E. MILLER 13389 PROFESSIONAL ENGINEER

DATE 09/16/2014
DES/DFT/CHK WEM/km
PROJ. NO. 13-343
SHEET 20 OF 27

Know what's below.
Call before you dig.



10' 0 10' 20'

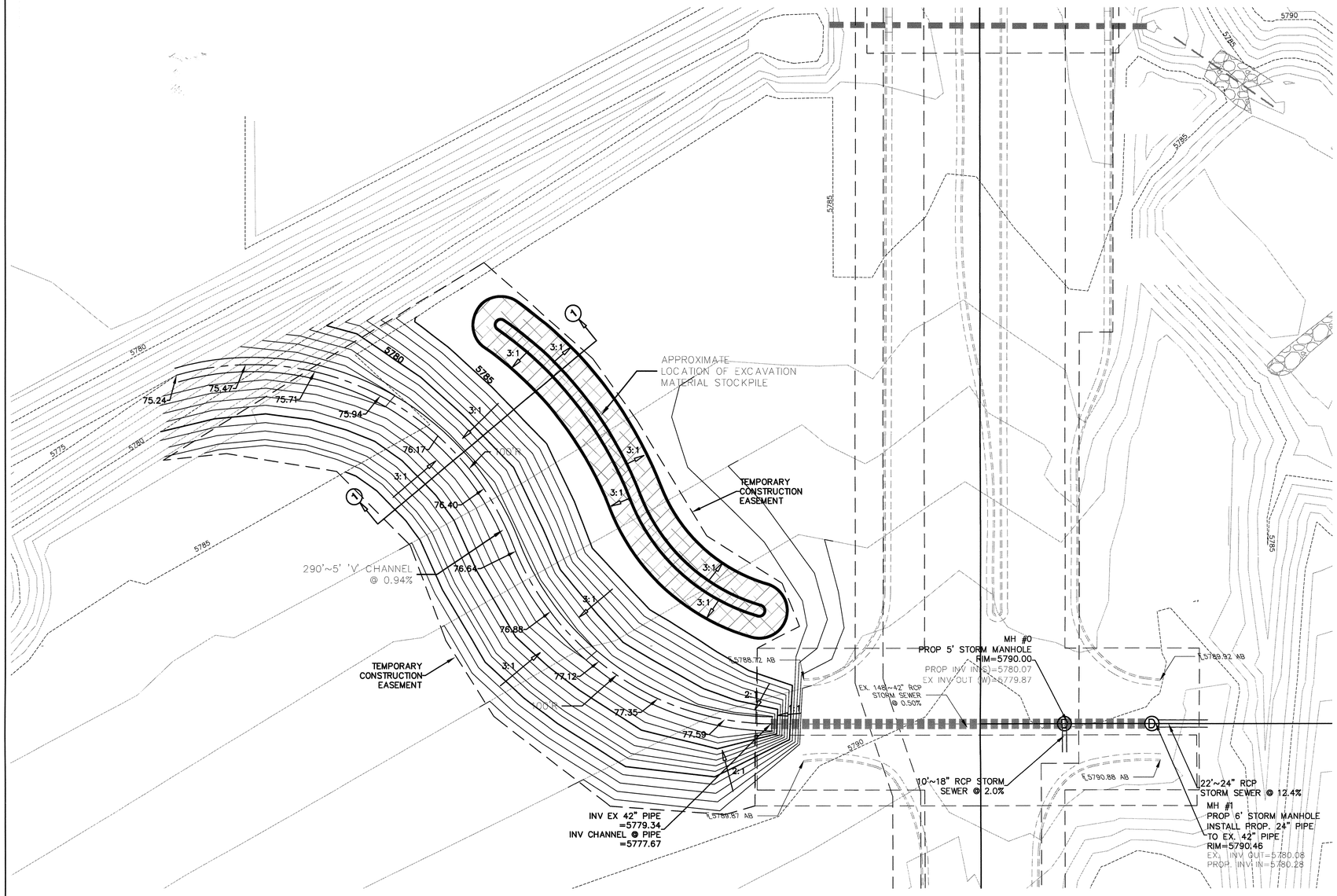
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 10'

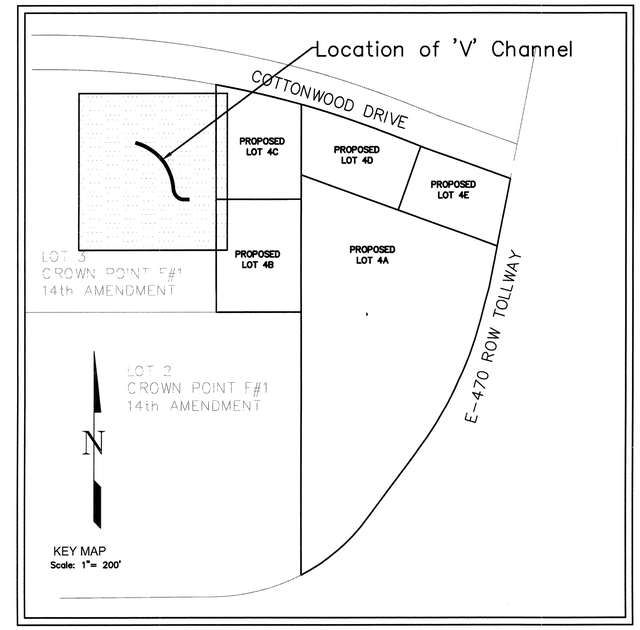
REVISION	DATE
COMMENTS	05/26/2015
COMMENTS-2	07/17/2015
Final Plans	08/18/2015

MM&D ENGINEERING SERVICES, INC.
William E. Miller, PE 13389
ENGINEERING
CONSTRUCTION MANAGEMENT
8125 N. Clydesdale Road PH (303) 908-0062
Castle Rock, Colorado 80108 FAX (303) 708-8398

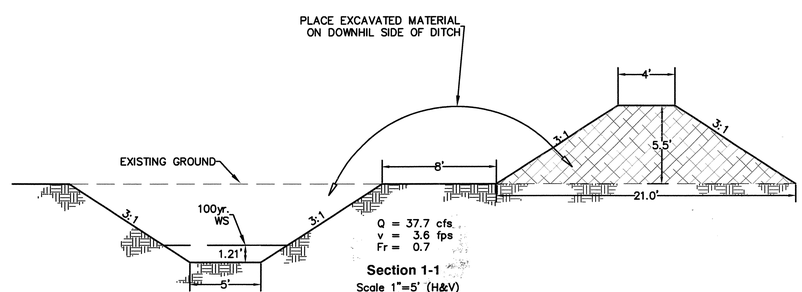
Boondocks
Parker, Colorado
Cross Sections at E-470
Profile View
Construction Plans

DATE 09/16/2014
DES/DFT/CHK WEM/km
PROJ. NO. 13-343
SHEET 21 OF 27





EXISTING PIPE INFORMATION FROM 14TH AMENDMENT, CROWN POINT FILING NO. 1, CONSTRUCTION DOCUMENT ASBUILTS, SHEET 15.



Section 1-1
Scale 1"=5' (H&V)

REVISION	DATE
COMMENTS	05/26/2015
COMMENTS-2	07/17/2015
Final Plans	08/18/2015

MM&D ENGINEERING SERVICES, INC.
William E. Miller, PE 13389
ENGINEERING
CONSTRUCTION MANAGEMENT
9125 N. Clydesdale Road PH (303) 908-0062
Castle Rock, Colorado 80108 FAX (303) 708-8399

Boondocks
Parker, Colorado

Off-site 5' Channel Design
Construction Plans

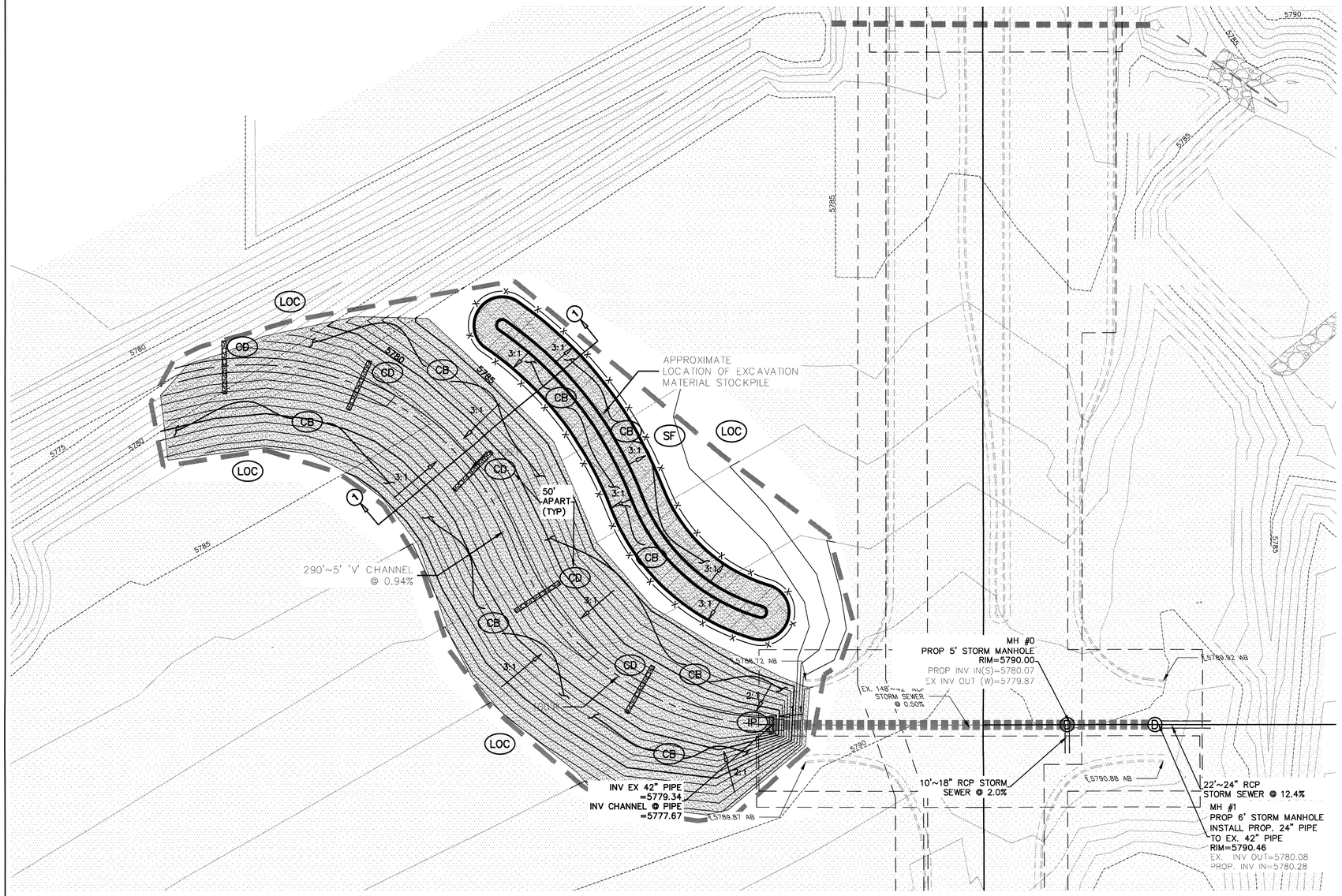
COLORADO REGISTERED PROFESSIONAL ENGINEER WILLIAM E. MILLER # 13389 8/18/15

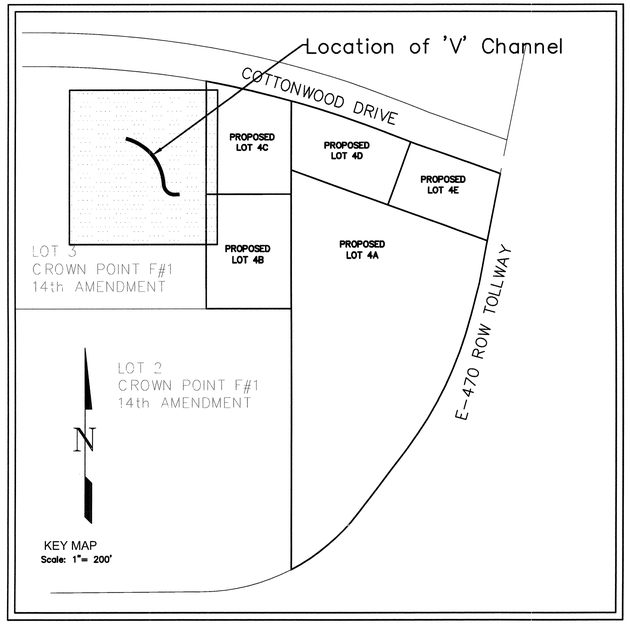
DATE 12/29/2014
DES/DFT/CHK WEM/km
PROJ. NO. 13-343
SHEET 22 OF 27

The Town of Parker review constitutes general compliance with the Town's Standards and approved variances, subject to these plans being stamped, signed, and dated by the professional engineer of record. Review by the Town does not constitute approval of the plan design or accuracy and correctness of engineering calculations. Errors in the design or calculations remain the responsibility of the registered professional engineer whose stamp and signature are affixed to this document.

This review does not constitute approval of any private on site improvements which may be shown. Construction cannot commence until all required drainage/traffic report(s), final development plan(s), special review(s), grading permit, and/or other permits are complete, approved and on file with the Town of Parker.

Town of Parker, Public Works Director	Date 9.23.15
Town of Parker, Public Works Manager - Stormwater	Date 9.22.15
Town of Parker, Public Works Manager - Transportation	Date 09/22/2015



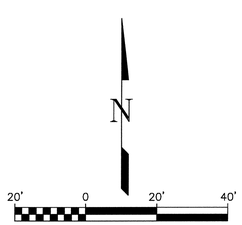


EXISTING PIPE INFORMATION FROM 14TH AMENDMENT, CROWN POINT FILING NO. 1, CONSTRUCTION DOCUMENT ASBUILTS, SHEET 15.

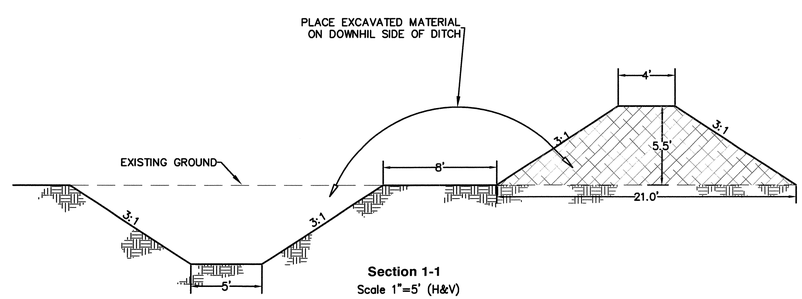
BMP LEGEND

- CD — CHECK DAM
- CB — COMPOST BLANKET (TO BE INSTALLED AFTER ALL OTHER BMP'S HAVE BEEN ESTABLISHED)
- IP — INLET PROTECTION
- SF — SILT FENCE
- LOC — LIMITS OF CONSTRUCTION
- Flow Direction Arrow
- Area Outside Limits of Construction

SHADED AREAS OUTSIDE LIMITS OF CONSTRUCTION SHALL NOT BE DISTURBED. CONSTRUCTION FENCE OR CONSTRUCTION MARKERS TO DELINEATE LIMITS OF CONSTRUCTION SHALL SHALL BE INSTALLED PRIOR TO ANY OTHER WORK ON SITE.



HORIZONTAL SCALE: 1"=20'



Section 1-1
Scale 1"=5' (H&V)

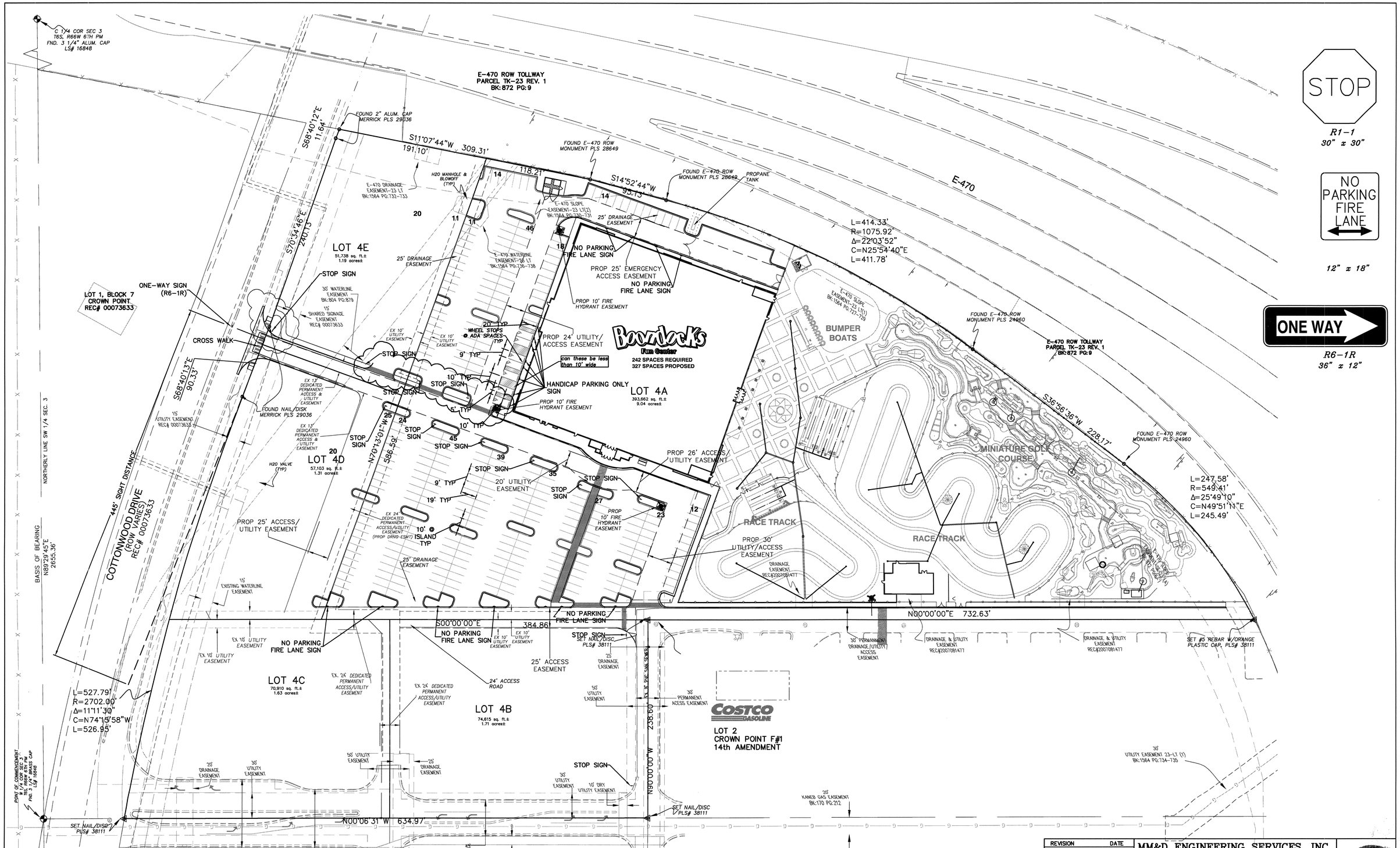
REVISION	DATE
COMMENTS	05/26/2015
COMMENTS-2	07/17/2015
Final Plans	08/18/2015

MM&D ENGINEERING SERVICES, INC.
William E. Miller, PE 13389
ENGINEERING
CONSTRUCTION MANAGEMENT
9125 N. Clydesdale Road PH (303) 908-0062
Castle Rock, Colorado 80108 FAX (303) 708-8399

Boondocks
Parker, Colorado

GESC Plan~Offsite
Construction Plans

DATE 12/29/2014
DES/DFT/CHK WEM/km
PROJ. NO. 13-343
SHEET 23 OF 27



STOP

R1-1
30" x 30"

NO PARKING FIRE LANE

12" x 18"

ONE WAY

R6-1R
36" x 12"

REVISION	DATE
PARKING LOT	09/24/2014
OUTDOOR ENTERTAINMENT AREA	11/14/2014
COMMENTS	05/26/2015
COMMENTS-2	07/07/2015
ONE WAY SIGN	08/06/2015
sw @ entrance	
Final Plans	08/18/2015

MM&D ENGINEERING SERVICES, INC.

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ENGINEERING
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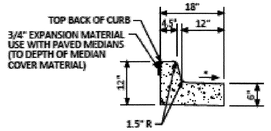
Castle Rock, Colorado 80108 FAX (303) 708-8399

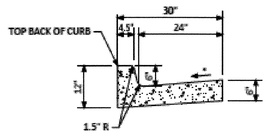
Boondocks
Parker, Colorado

Signing & Striping Plan
Construction Plans

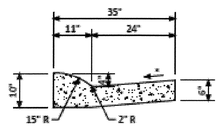
submittal 09/16/2015
DATE 09/16/2014
DES/DFT/CHK WEM/km
PROJ. NO. 13-343
SHEET 24 OF 27



MEDIAN CURB AND GUTTER SECTION
(CDOT CURB AND GUTTER TYPE 2 (SECTION I-B))



VERTICAL CURB AND GUTTER SECTION
(CDOT CURB AND GUTTER TYPE 2 (SECTION II-B))

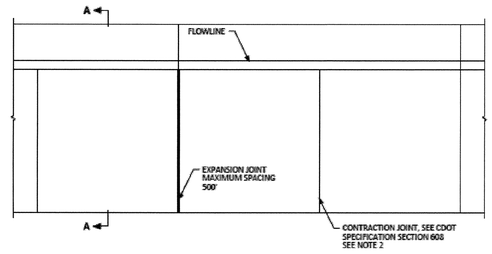


MOUNTABLE CURB AND GUTTER SECTION

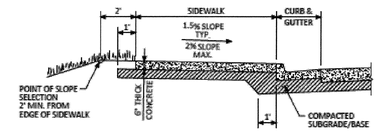
* GUTTER CROSS SLOPE SHALL BE 1/2 IN./FT. WHEN DRAINING AWAY FROM CURB AND 1 IN./FT. WHEN DRAINING TOWARD CURB. DIRECTION OF SLOPE SHALL MATCH STREET CROSS SLOPE.

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.

Town of Parker Colorado	CURB, GUTTER, AND SIDEWALK SECTIONS STANDARD DETAIL	DATE AUGUST 2014	DETAIL 3 1 OF 1



JOINT SPACING



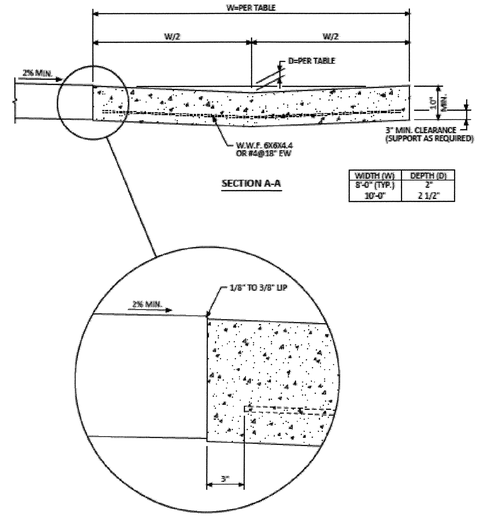
SECTION A-A

GENERAL NOTES

1. CONTRACTION JOINTS ON CONCRETE TRAILS SHALL BE SAWCUT.
2. FOR MONOLITHIC CURB AND GUTTER, A TOOLED JOINT SHALL BE PLACED AT THE BACK OF CURB. TRANSVERSE SIDEWALK JOINTS SHALL MATCH CURB AND GUTTER JOINTS.

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.

Town of Parker Colorado	ATTACHED SIDEWALK STANDARD DETAIL	DATE AUGUST 2014	DETAIL 4 2 OF 2



SECTION A-A

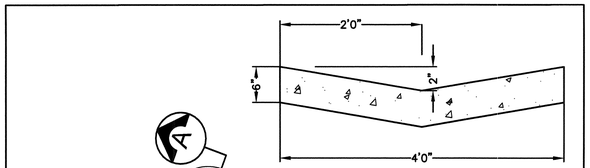
WIDTH (W)	DEPTH (D)
8'-0" (TYP.)	2"
30'-0"	2 1/2"

GENERAL NOTES

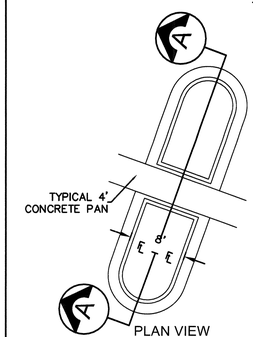
1. CONTRACTION JOINTS SHALL BE PROVIDED AT 10' MAXIMUM SPACING.

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.

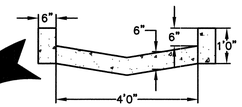
Town of Parker Colorado	CROSS PAN LAYOUT STANDARD DETAIL	DATE AUGUST 2014	DETAIL 19 1 OF 1



TYPICAL CONCRETE PAN IN PARKING LOT DETAIL
SCALE: 1" = 1' HORZ.
1" = ½' VERT.



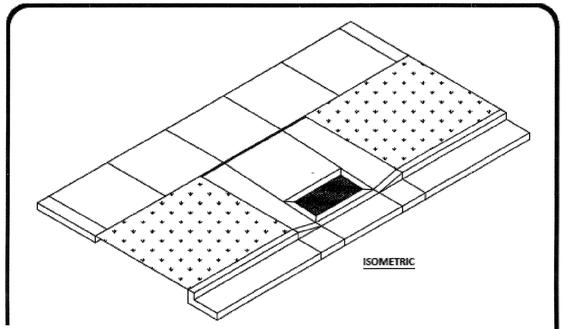
PLAN VIEW
SCALE: 1" = 10'



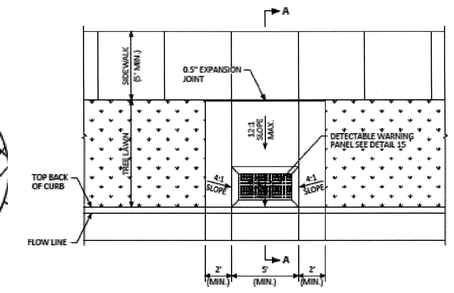
4' PAN THRU MEDIAN DETAIL
SCALE: 1" = 2'

SECTION A-A
PROFILE VIEW
SCALE: 1" = 10'

TYPICAL CONCRETE PAN IN PARKING LOT MEDIAN DETAIL



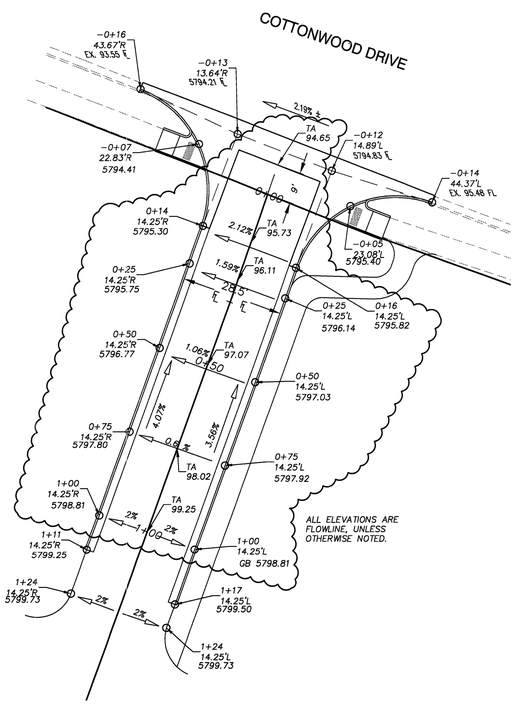
ISOMETRIC



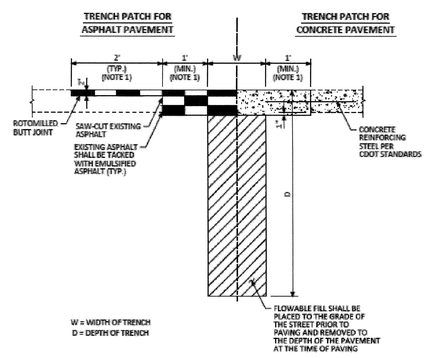
MIDBLOCK CURB RAMP

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.

Town of Parker Colorado	MIDBLOCK CURB RAMP LAYOUT STANDARD DETAIL	DATE AUGUST 2014	DETAIL 17 1 OF 2



GRADING DETAIL
AT ENTRANCE
(Design per Town Std Dtl 32)
SCALE: 1" = 20'



GENERAL NOTES

1. SEE SECTION 9 OF THE ROADWAY CRITERIA MANUAL FOR LIMITS OF PATCHING.

ASPHALT PAVEMENT NOTES

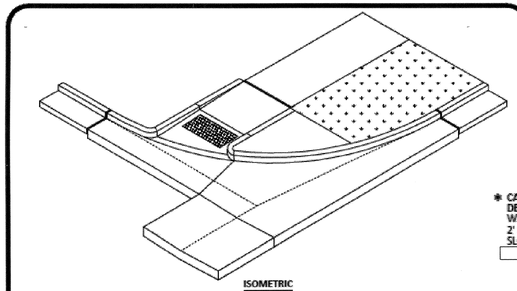
1. HOT MIX ASPHALT PATCH TO BE 6" THICK OR EXISTING PAVEMENT THICKNESS +1" (WHICHEVER IS GREATEST).
2. THE MINIMUM LIFT THICKNESS SHALL BE AT LEAST THREE TIMES (PREFERABLY FOUR TIMES) THE NOMINAL AGGREGATE SIZE. MAXIMUM LIFT THICKNESS SHALL BE FIVE TIMES THE NOMINAL AGGREGATE SIZE.
3. THE TOP LIFT OF ALL HMA PAVEMENT SECTIONS SHALL BE 2" THICK AND GRADING SX.

CONCRETE PAVEMENT NOTES

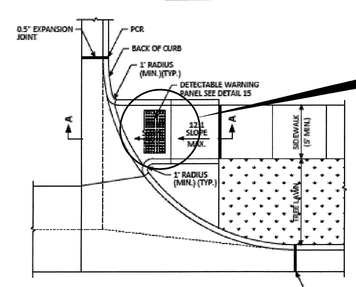
1. CONCRETE PAVEMENT THICKNESS SHALL BE 1 INCH GREATER THAN EXISTING CONCRETE PAVEMENT.
2. CONCRETE SHALL BE CDOT CLASS P.

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.

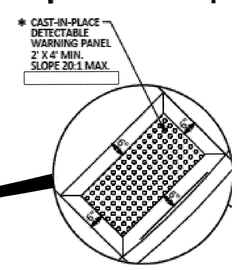
Town of Parker Colorado	MINIMUM STREET PATCH DETERMINATION STANDARD DETAIL	DATE AUGUST 2014	DETAIL 26 1 OF 1



ISOMETRIC



DIRECTIONAL CURB RAMP WITHIN RADIUS
(DETACHED SIDEWALK)



NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.

Town of Parker Colorado	DIRECTIONAL CURB RAMP WITHIN RADIUS LAYOUT STANDARD DETAIL	DATE AUGUST 2014	DETAIL 18 2 OF 2

REVISION	DATE
COMMENTS	05/26/2015
COMMENTS-2	07/17/2015
ENTRANCE GR	08/07/2015
Final Plans	08/18/2015

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Castle Rock, Colorado 80108 FAX (303) 708-8399

Boondocks
Parker, Colorado
Detail Sheet
Construction Plans

submittal 08/18/2015
DATE 09/16/2014
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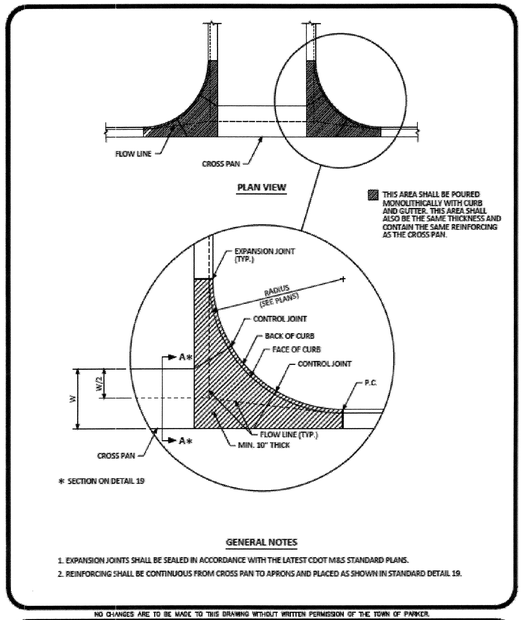
PROJ. NO. 13-343
SHEET 25 OF 27

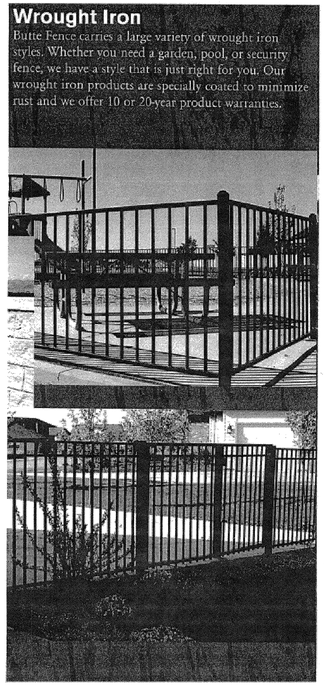


GENERAL NOTES

1. EXPANSION JOINTS SHALL BE SEALED IN ACCORDANCE WITH THE LATEST CDOT M&S STANDARD PLANS.
2. REINFORCING SHALL BE CONTINUOUS FROM CROSS PAN TO APRONS AND PLACED AS SHOWN IN STANDARD DETAIL 19.

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.

Town of Parker COLORADO	INTERSECTION CROSS PAN LAYOUT STANDARD DETAIL	DATE AUGUST 2014	DETAIL 20 1 OF 1



6ft wrought iron perimeter fence and gates.
5ft fence around the bumper boat pond with pool picket spacing of 3".
4ft wrought iron fence around the go-kart tracks.

The post size is 2-1/2" with 1-1/2" top and bottom rails, the pickets are ¾" on 4" spacing.

REVISION	DATE
COMMENTS	05/26/2015
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Final Plans	08/18/2015

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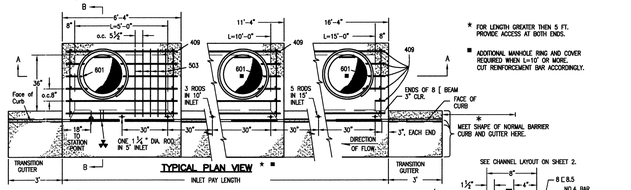
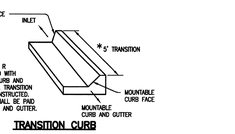
Castle Rock, Colorado 80108 FAX (303) 708-8399

Boondocks
Parker, Colorado
Detail Sheet
Construction Plans

COLORADO REGISTERED WILLIAM E. MILLER 13389 PROFESSIONAL ENGINEER 8/24

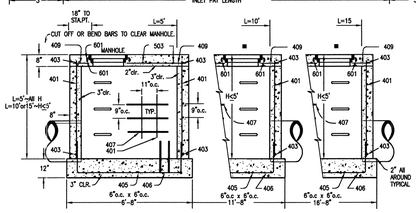
submittal 03/10/2015
DATE 09/16/2014
DES/DFT/CHK WEM/km
PROJ. NO. 13-343
SHEET 26 OF 27

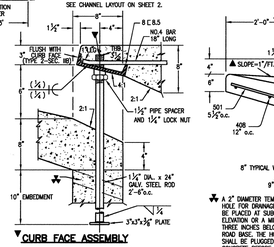


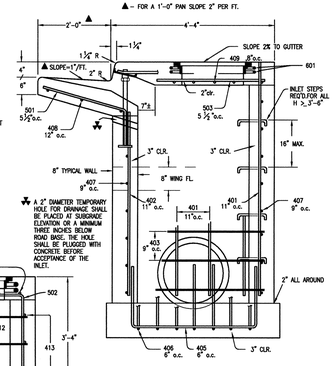


* WHEN A TYPE R INLET IS USED WITH MOUNTABLE CURB AND GUTTER, 5 FT. TRANSITION SHALL BE CONSTRUCTED. TRANSITION SHALL BE PAID FOR AS CURB AND GUTTER.

TRANSITION CURB

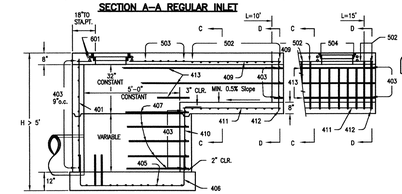


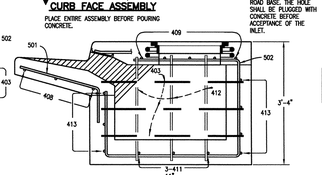




SECTION B–B
TYPICAL END VIEW

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





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

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

MARK	DIA IN.	O.C. SPACING	TYPE	ALL INLETS L= — 5' NO.REQ'D.	ALL INLETS L= — 5' LENGTH	INLETS. H ≤ 5' 10' NO.REQ'D.	10' LENGTH	15' NO.REQ'D.	15' LENGTH	INLETS. H > 5' 10' NO.REQ'D.	10' LENGTH	15' NO.REQ'D.	15' LENGTH
401		11"	II	15	*	21	*	26	*	11	*	11	*
402		11"	II	7	*	13	*	18	*	7	*	7	*
403		9 "	II	*	4'-10"	*	4'-0"	*	4'-0"	*	4'-0"	*	4'-10"
405		6 "	VI	11	6'-10"	21	6'-10"	31	6'-10"	11	6'-10"	11	6'-10
406		6 "	VIII	7	8'-10"	7	13'-10"	7	18'-10"	7	8'-10"	7	8'-10"
407	1/2"	9 "	II	*	5'-10"	*	10'-10	*	15'-10"	*	5'-10"	*	5'-10"
408		12"	II	3	6'-10"	3	11'-0"	3	16'-0"	3	11'-0	3	16'-0"
409		8 "	II	6	5'-10"	6	10'-10"	6	15'-10"	6	10'-10"	6	15'-10"
410		11"	VII							3	*	3	*
411		11"	II							3	5'-2"	3	10'-2"
412		11"	II							3	2'-9"	3	2'-9"
413		9 "	II							7	10'-10"	7	15'-10"
501		5½"	IV	11	3'-4"	22	3'-4"	33	3'-4"	22	3'-4"	33	3'-4"
502	5/8"	5½"	III							11	11'-5"	17	11'-5"
503		5½"	II	5	3'-6"	16	3'-6"	27	3'-6"	6	3'-6"	6	3'-6"
504		5½"	IX									5	8'-4"
601	3/4"	2½"	V	2	8'-10"	2	8'-10"	2	8'-10"	2	8'-10"	4	8'-10"
#8[8.5				1	5'-10"	1	10'-10"	1	15'-10"	1	10'-10"	1	15'-10"
				2BARS,1RODS	—	4BARS,3RODS	—	8BARS,5RODS	—	4BARS,3RODS	—	8BARS,5RODS	—

* VARIABLE. REFER TO TABLE TWO.
# INCLUDE 18" NO. 4 BARS (SEE CHANNEL LAYOUT DETAIL).
† SEE CURB FACE ASSEMBLY ON SHEET 1 AND CHANNEL LAYOUT DETAILS ON THIS SHEET.

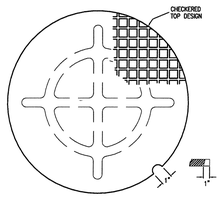
REGULAR INLETS — DROP BOX INLETS

TABLE TWO ~ BARS AND QUANTITIES VARIABLE WITH "H"

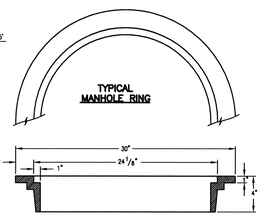
'H'	LENGTH 401	LENGTH 402	LENGTH 410	NO. REQ'D. REGULAR 403	NO. REQ'D. REGULAR 407	NO. REQ'D. DROP BOX 403	NO. REQ'D. DROP BOX 407	L=5' CU.YD.CONC.	L=5' LB.STEEL	L=10' CU.YD.CONC.	L=10' LB.STEEL	L=15' CU.YD.CONC.	L=15' LB.STEEL
3'-0"	2'-8"	1'-8"		10	7			3.2	285	5.3	497	7.4	706
3'-6"	3'-2"	2'-2"		10	7			3.4	305	5.7	528	7.9	747
4'-0"	3'-8"	2'-6"		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	7.6	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

NOTE: FOR L=5', L=10' AND L=15' REGULAR INLETS: TOTAL QUANTITIES NEEDED ARE OUTSIDE OF THE HEAVY BLACK LINE. DROP BOX INLETS: TOTAL QUANTITIES NEEDED ARE INSIDE OF THE HEAVY BLACK LINE

STEEL WEIGHTS DO NOT INCLUDE STRUCTURAL STEEL.



TYPICAL MANHOLE COVER

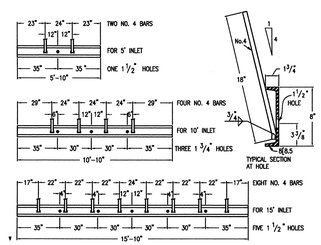


TYPICAL MANHOLE RING

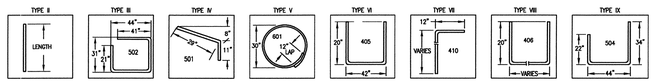
WEIGHTS: COVER = 125 LBS.
RING = 135 LBS.
TOTAL = 260LBS.

GENERAL NOTES

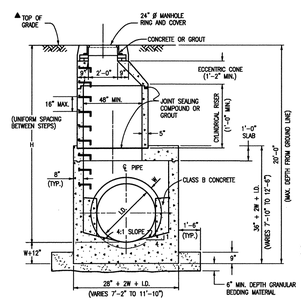
1. ALL CONCRETE SHALL BE CLASS B.
2. CONCRETE WALLS SHALL BE FORMED ON BOTH SIDES AND SHALL BE 8 IN. THICK.
3. INLET STEPS SHALL BE IN ACCORDANCE WITH AASHTO M 199.
4. CURB FACE ASSEMBLY SHALL BE GALVANIZED AFTER WELDING.
5. EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 3/4 IN. CURB AND GUTTER CORNERS 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 CONFORMING TO 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 CONFORM TO THE REQUIREMENTS OF 712.06.



CHANNEL LAYOUT DETAILS



BAR BENDING DIAGRAMS ~ (Dimensions are Out-to-Out of bar)

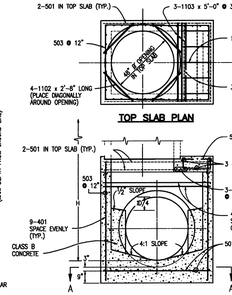


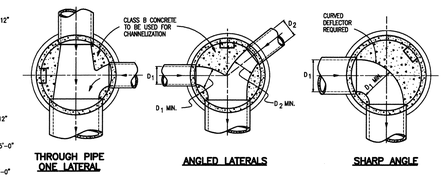
SECTION
MANHOLE BOX BASE

QUANTITIES FOR CONCRETE MANHOLE BOX BASE

MARK	SIZE	TYPE	WT. #/FT.	BARS	I.D. 54"	I.D. 60"	I.D. 66"	I.D. 72"	I.D. 84"	I.D. 96"	FORMULAS
401	4	I	0.668	(NO. REQ'D.) LENGTH WEIGHT #	18 8'-1" 97.2	18 8'-8" 104.2	18 9'-3" 111.2	18 9'-10" 118.2	18 11'-0" 132.3	18 12'-2" 146.3	401 BAR LENGTH = 32"+2W+I.D.
402	4	III	0.668	(NO. REQ'D.) LENGTH WEIGHT #	5 5'-5" 18.1	5 6'-0" 20.0	5 6'-7" 22.0	5 7'-2" 23.9	5 8'-4" 27.8	5 9'-8" 31.7	402 BAR LENGTH = I.D. + 2W
501	5	I	1.043	(NO. REQ'D.) LENGTH WEIGHT #	17 7'-5" 131.5	17 8'-0" 141.8	17 8'-7" 152.2	17 9'-2" 162.5	17 10'-4" 183.2	17 11'-6" 203.9	501 BAR LENGTH = 24" + I.D. + 2W
502	5	I	1.043	(NO. REQ'D.) LENGTH WEIGHT #	22 10'-0" 114.7	23 10'-5" 119.9	25 10'-7" 130.4	26 10'-0" 135.6	29 9'-0" 151.2	32 8'-0" 166.9	502 NUMBER BARS REQ'D. = $3 + \left(\frac{24+I.D.+2W}{6} + 1\right)$
503	5	II	1.043	(NO. REQ'D.) LENGTH WEIGHT #	12 12'-10" 214.2	16 13'-5" 223.9	18 14'-0" 252.8	20 14'-7" 273.5	22 15'-9" 328.5	24 16'-11" 423.5	503 NUMBER BARS REQ'D. = $2\left(\frac{13+I.D.+2W}{6} + 1\right)$ BAR LENGTH = 4'-9"+2(16+W+I.D./2)
504	5	I	1.043	(NO. REQ'D.) LENGTH WEIGHT #	12 8'-8" 101.2	14 9'-3" 126.6	14 9'-10" 135.1	16 10'-7" 164.1	18 11'-0" 206.5	20 12'-2" 253.8	504 NUMBER BARS REQ'D. = $2\left(\frac{2W+I.D.}{6} + 1\right)$ BAR LENGTH = 32"+2W+I.D.
1101	11	I	5.313	(NO. REQ'D.) LENGTH WEIGHT #	4 7'-2" 152.3	4 7'-9" 164.7	4 8'-4" 177.1	4 9'-1" 189.5	4 10'-1" 214.3	4 11'-3" 239.1	1101 BAR LENGTH = 21" + I.D. + 2W
1102	11	I	5.313	(NO. REQ'D.) LENGTH WEIGHT #	4 2'-8" 56.7	4 2'-8" 56.7	4 2'-8" 56.7	4 2'-8" 56.7	4 2'-8" 56.7	4 2'-8" 56.7	BENDING TYPE I STRAIGHT
1103	11	I	5.313	(NO. REQ'D.) LENGTH WEIGHT #	3 5'-0" 79.7	3 5'-0" 79.7	3 5'-0" 79.7	3 5'-0" 79.7	3 5'-0" 79.7	3 5'-0" 79.7	TYPE II 4'-9" 6"+W+I.D./2
REINFORCING STEEL TOTAL #					965.6	1,037.5	1,127.2	1,204.0	1,360.2	1,601.6	TYPE III 12" 12" 1½" I.D.+2W-38"
CONCRETE – CUBIC YARDS – TOTAL					6.0	6.6	7.3	8.0	9.5	11.1	

NOTE: QUANTITIES ARE BASED ON SAME SIZE PIPE ENTRANCE TO AND EXIT FROM, BASE AND A 4 FT. MANHOLE ENTRANCE INTO TOP SLAB OF BASE.

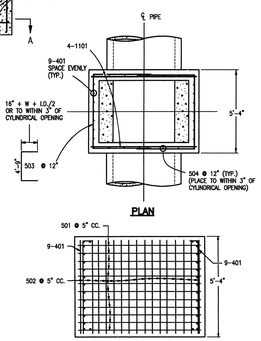


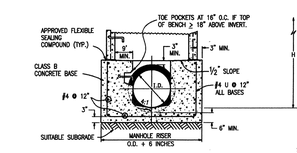


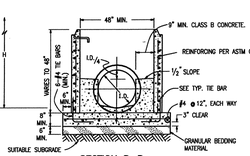
TYPICAL CHANNELIZATION DETAILS

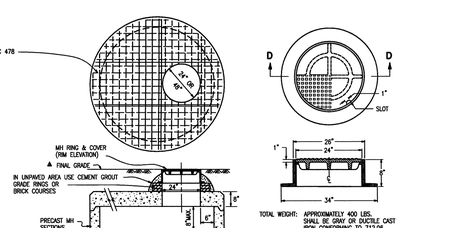
GENERAL NOTES

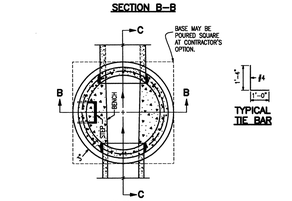
1. SINCE ALL PIPE ENTRIES INTO THE BASE ARE VARIABLE, THE DIMENSIONS SHOWN ARE TYPICAL. ACTUAL DIMENSIONS AND QUANTITIES FOR CONCRETE AND REINFORCEMENT SHALL BE AS REQUIRED IN THE WORK.
2. THE PRECAST FLAT TOP MAY BE USED ON ANY MANHOLE. THE ECCENTRIC CONE MAY BE USED WHEN THE MANHOLE "H" HEIGHT IS AT LEAST 8 FT.
3. THE MH RING (FRAME) SHALL BE SET IN A BED OF GROUT. THE FRAME SHALL BE SURROUNDED WITH A CEMENT GROUT IN UNPAVED AREA, OR A CONCRETE COLLAR IN PAVED AREA. SEE DETAILS ON SHEETS 2 AND 3.
4. DESIGN OF BOX BASE IS BASED ON STRAIGHT RUNS OF CONDUIT OR CHANGE IN DIRECTION OF LESS THAN 45°. SPECIAL DESIGN IS REQUIRED FOR 45° OR GREATER.
5. PRECAST MANHOLES AND REINFORCEMENT SHALL CONFORM TO ASTM C 478 (AASHTO M 199).
6. CAST–IN–PLACE MANHOLES SHALL BE CLASS B CONCRETE.
7. STEPS SHALL BE REQUIRED WHEN THE MANHOLE DEPTH EXCEEDS 3 FT.–6 IN. AND SHALL BE IN ACCORDANCE WITH AASHTO M 199.
8. 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 IN.MINIMUM CLEARANCE.
9. ALL PIPE ENTRIES INTO THE BASE OF MANHOLE SHALL BE CONNECTED BY OPEN CHANNELIZATION ADJUSTED FOR PIPE SIZE, SHAPE, SLOPE, AND DIRECTION OF FLOW. DETAILS SHOWN ARE TYPICAL FOR INSTALLATIONS WITH ALL INVERTS OF SAME RELATIVE ELEVATION. FOR EXCESSIVE ELEVATION DIFFERENCE BETWEEN INVERTS, SPECIAL BASE/CHANNEL DETAILS WILL BE SHOWN ON THE PLANS.
10. FLOW CHANNELS AND INVERTS SHALL BE FORMED BY SHAPING WITH CLASS B CONCRETE OR APPROVED GROUT.
11. STUB–OUTS SHALL EXTEND 2 FT. MINIMUM BEYOND OUTSIDE WALL SURFACE OF MANHOLE AND BE SATISFACTORILY PLUGGED.
12. CHECK WITH THE LOCAL GOVERNMENT AUTHORITY FOR ANY ADDITIONAL SANITARY SEWER SPECIFICATIONS, DETAILS, OR REGULATIONS.
13. THE SLOPE OF THE MANHOLE COVER SHALL MATCH THE ROADWAY PROFILE AND CROSS SLOPE.

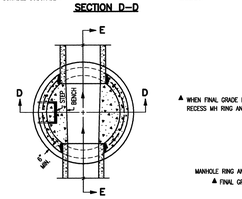


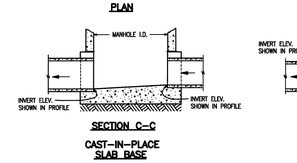


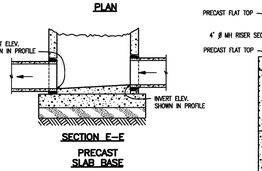


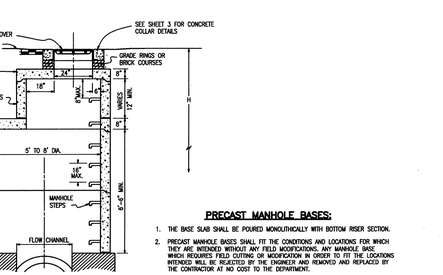












PRECAST MANHOLE BASES:

1. THE BASE SLAB SHALL BE POURED MONOLITHICALLY WITH BOTTOM RISER SECTION.
2. PRECAST MANHOLE BASES SHALL FIT THE CONDITIONS AND LOCATIONS FOR WHICH THEY ARE INTENDED WITHOUT ANY FIELD MODIFICATIONS. ANY MANHOLE BASE WHICH REQUIRES FIELD CUTTING OR MODIFICATION IN ORDER TO FIT THE LOCATIONS INTENDED WILL BE REJECTED BY THE ENGINEER AND REMOVED AND REPLACED BY THE CONTRACTOR AT NO COST TO THE DEPARTMENT.
3. PRECAST MANHOLE BASES SHALL BE BEDDED ON AN APPROVED GRANULAR BEDDING MATERIAL AS SHOWN ABOVE.

LEGEND

SUITABLE SUBGRADE
GRANULAR BEDDING MATERIAL
CONCRETE

Know what's below.
Call before you dig.

REVISION	DATE
COMMENTS	05/26/2015
COMMENTS–2	07/17/2015
Final Plans	08/18/2015

MM&D ENGINEERING SERVICES, INC.
William E. Miller, PE 13389
ENGINEERING
CONSTRUCTION MANAGEMENT
9125 N. Clydesdale Road PH (303) 908–0062
Castle Rock, Colorado 80108 FAX (303) 708–8399

Boondocks
Parker, Colorado
Detail Sheet
Construction Plans

submittal 03/10/2015
DATE 09/16/2014
DES/DFT/CHK WEM/km
PROJ. NO. 13–343
SHEET 27 OF 27

Boondocks

Lot 4A, Crown Point Filing #1

LOCATED IN A PORTION OF THE SW 1/4 OF SECTION 3,
T6S, R66W, 6TH P.M., COUNTY OF DOUGLAS, STATE OF COLORADO.

Utility Plan

LEGAL DESCRIPTION:

Lot 4, Crown Point F#1, 14th Amendment–Reception # 2007081477 of the records of Arapahoe County, Colorado.
Containg 847,936 square feet, 14.875 acres, More or Less.

PROPOSED LEGAL DESCRIPTION:

The following descriptions are a part of lot 4; Crown Point F # 1, 14th Amendment Rec # 2007081477, Arapahoe County, Colorado and describes two parcels (A&B) which are to be included in a replat of the said lot 4;

Parcel A
Beginning at the northeast corner of said lot 4;
Thence southerly along the east line of lot 4, which is coincident with west ROW line of E 470, S11°07'44"W, 191.10 feet;
Thence leaving said coincident east line with west ROW line of E470; N70°01'13W; 586.59 feet;
Thence S00°00'00"E, 384.86 feet to a platted corner on said lot 4; said platted corner being the northeast corner of lot 2, Crown Point F #1, 14th Amendment, Reception # 20070081477; Arapahoe County, Colorado;
Thence along a common lot line of lot 24, lot 4, said Crown Point F#1, 14th amendment; N90°00'00"W, 238.60 ft to a common corner of lot 3, Crown Point F#1, 14th amendment, reception #2007081477, and lot 4;
Thence along a common property line of said lots 3 and 4 N00°06'31"W, 634.97 feet to a point on the south ROW line of Cottonwood Dr, Rec. # 00073633, Arapahoe County, Colorado;
Thence along said south ROW line on a curve to the right having a chord of S74°15'58"E 526.95 ft and a radius of 2,702.00 ft with a central angle of 11°11'30" with an arc length of 527.79 ft. to a point of Tangent;
Thence continuing along said south ROW line S68°40'13"E, 90.33 feet.;
Thence continuing along the said south ROW line S70°34'46"E, 240.13 ft. to the POINT OF BEGINNING.

Area of Parcel A 5.969 acres.

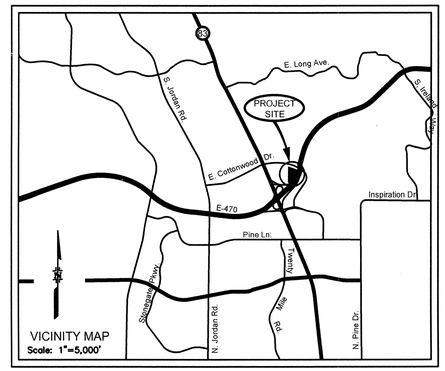
Parcel B
Beginning at the northeast corner of said lot 4;
Thence along the east line of lot 4 which is coincident of the west ROW of E 470; S4°07'44"W, 191.10 feet to the TRUE POINT OF BEGINNING;
Thence along the common lot line of lot 4 and west ROW of E 470 along the following 5 courses and distances;

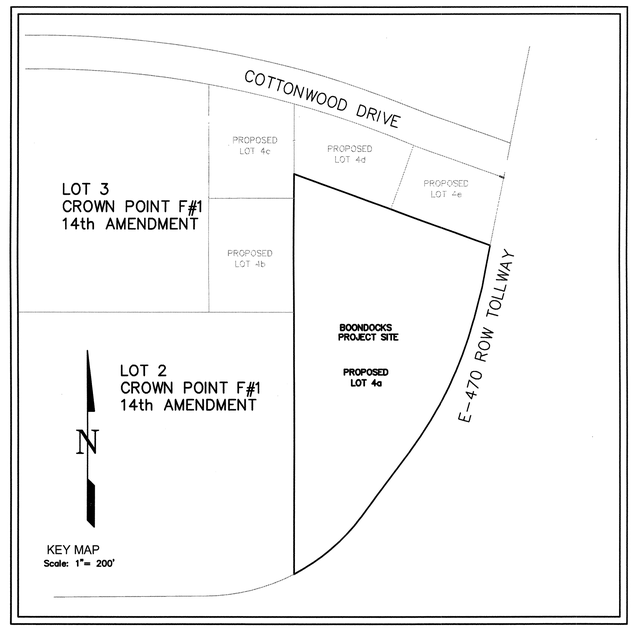
1) Thence S11°07'44"W,118.21 feet
2) Thence S14°52'44"W, 95.13 feet to a point of curve;
3) Thence on a curve to the right having a radius of 1,075.92'; a central angle of 22°03'52", an arc length of 414.33 ft and a chord of S25°54'40"W, 411.78 ft to a point of tangent.
4) Thence S36°56'36"W, 228.17Ft to a point of curve to the right;
4) Thence on a curve to the right having a radius of 549.41 ft, a central angle of 25°49'10", an arc length of 247.58 ft and a chord of S49°51'11"W; 245.49 ft to the furthest south property corner of said lot 4;
Thence leaving said E 470 ROW line and continuing north along the common lot line of lot 3, Crown Point F#1, 14th Amendment N00°00'00"E, 732.63 ft to the northeast corner of said lot 3, thence continuing N00°00'00"E, 384.46 ft;
Thence S70°13'01"E, 586.59 ft to the TRUE POINT OF BEGINNING of Parcel B

Parcel B contains 8.906 acres.

BENCHMARK:

A BRASS DISK SET IN CONCRETE FLUSH WITH THE GROUND AND MARKED WITH A DOUGLAS COUNTY FIBERGLASS WITNESS POST, 125 FEET NORTH OF THE CENTERLINE OF A DRIVEWAY, 84 FEET SOUTH OF A DOUBLE 36 IN. CULVERT, 25 FEET WEST OF THE EDGE OF PARKER ROAD, AND 25 FEET EAST OF THE WEST RIGHT OF WAY FENCE.
ELEVATION = 5734.24





SHEET INDEX:

CIVIL ENGINEERING PLANS

SHEET	1	COVER SHEET
SHEET	2	NOTES
SHEET	3	OVERALL UTILITY PLAN
SHEET	4	SANITARY SEWER PLAN & PROFILE
SHEETS	5–6	SANITARY SEWER DETAILS
SHEETS	7–8	WATER DETAILS

COTTONWOOD WATER AND SANITATION DISTRICT SIGNATURE

THE DISTRICT ENGINEER AND MANAGER MUST BE NOTIFIED AT LEAST 48 HOURS PRIOR TO START OF CONSTRUCTION. CALL KENNEDY/JENKS CONSULTANTS AT 720–744–2215. THE DISTRICT ENGINEER AND SUPPORTING STAFF WILL OBSERVE THE WORK FOR COMPLIANCE WITH THE DISTRICT SPECIFICATIONS. THE DEVELOPER/OWNER WILL BE CHARGED FOR CONSTRUCTION OBSERVATION AND BE BILLED BY THE DISTRICT. PAYMENT MUST BE RECEIVED IN FULL PRIOR TO FINAL ACCEPTANCE OF THE NEW LINES. CONSTRUCTION OBSERVATION ASSISTS IN QUALITY CONTROL IN ACHIEVING CONFORMANCE WITH THE DISTRICT SPECIFICATIONS, BUT DOES NOT GUARANTEE THE CONTRACTOR'S PERFORMANCE. SUCH CONSTRUCTION OBSERVATION SHALL IN O WAY RELIVE THE CONTRACTOR OF HIS OBLIGATION TO CONSTRUCT FACILITIES IN ACCORDANCE WITH REGULATIONS. WORK NOT PERFORMED IN ACCORDANCE WITH THE DISTRICT'S SPECIFICATIONS WILL NOT BE ACCEPTED.

DISTRICT MANAGER — DATE 8-31-15

DISTRICT ENGINEER — DATE 8-26-15

FIRE FLOW REQUIREMENTS ARE _____ GPM.
THIS BUILDING REQUIRES 3 FIRE HYDRANTS TO MEET FIRE FLOW REQUIREMENT.

CODE USED FOR ANALYSIS: 2006 IFC
OCCUPANCY GROUP:
CONSTRUCTION TYPE:
FIRE AREA:
THIS BUILDING IS FULLY SPRINKLERED.

ALL FIRE HYDRANTS SH[illegible] ACCORDING TO DISTRICT STANDARD. THE NUMBER AND [illegible] UTILITY PLAN ARE CORRECT AS

_____

_____

_____

Cottonwood Water & Sanitation District
Mr. Patrick F. Mulhern/Laurie Tatlock
2 Inverness Drive East, Suite 200
Englewood, CO 80112
(303) 649-9509

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

REVISION	DATE
COMMENTS	05/26/2015
COMMENTS–2	07/07/2015
Final Plans	08/18/2015

MM&D ENGINEERING SERVICES, INC.
William E. Miller, PE 13389
ENGINEERING
CONSTRUCTION MANAGEMENT
9125 N. Clydesdale Road PH (303) 908–0062
Castle Rock, Colorado 80108 FAX (303) 708–8399

Boondocks
Parker, Colorado
Cover Sheet
Utility Plan

COLORADO REGISTERED PROFESSIONAL ENGINEER 13389

submittal: 03/10/2015
DATE 09/16/2014
DES/DFT/CHK WEM/km
PROJ. NO. 13–343
SHEET 1 OF 8

COTTONWOOD WATER AND SANITATION DISTRICT GENERAL NOTES

1. ALL MAINS, SYSTEM PLANS AND CONSTRUCTION SHALL CONFORM TO THE COTTONWOOD WATER AND SANITATION DISTRICT (THE DISTRICT) SPECIFICATIONS AND SHALL BE SUBJECT TO CONSTRUCTION OBSERVATION BY DISTRICT PERSONNEL OR REPRESENTATIVES. ALL MATERIAL AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH DISTRICT SPECIFICATIONS AND STANDARDS.

2. THE OWNER, HIS/HER ENGINEER, OR CONTRACTOR SHALL SCHEDULE A PRECONSTRUCTION MEETING WITH THE DISTRICT MANAGER AND DISTRICT ENGINEER AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION. PLANS WITH THE DISTRICT REVIEW STAMP WILL BE DISTRIBUTED PRIOR TO OR AT THE PRECONSTRUCTION MEETING. NO CONSTRUCTION WILL BE PERMITTED UNTIL FORMAL RECORDING OF EASEMENTS IS COMPLETE. NO CONSTRUCTION WILL BE PERMITTED PRIOR TO THE PRECONSTRUCTION MEETING.

3. ALL WATER MAINS INSTALLED SHALL CONFORM TO DENVER WATER MATERIAL SPECIFICATIONS.

DUCTILE IRON PIPE	MS-1 AWWA C151 CLASS 50 WITH POLYWRAP
POLYVINYL CHLORIDE (PVC)	MS-2 AWWA C900-07 DR18 PC 235

4. THE APPROVAL OF THE CONSTRUCTION PLANS SIGNIFIES ONLY THAT THE PLANS MEET THE MINIMUM REQUIREMENTS OF THE DISTRICT'S STANDARDS AND SPECIFICATIONS BASED ON THE INFORMATION PROVIDED BY THE DESIGN ENGINEER, OWNER-DEVELOPER, AND CONTRACTOR. APPROVAL IS NOT A REPRESENTATION OR WARRANTY THAT THE SYSTEM AND ASSOCIATED COMPONENTS WILL PERFORM ANY CERTAIN FUNCTIONS.

5. THE DISTRICT, ITS REPRESENTATIVE, AND/OR THE DISTRICT ENGINEER, IS NOT A GUARANTOR OF THE CONSTRUCTION CONTRACTORS' OBLIGATIONS AND PERFORMANCE OF CONTRACT.

6. OBSERVATION OF WORK IN PROGRESS AND ON-SITE VISITS ARE NOT TO BE CONSTRUED AS A GUARANTEE BY THE DISTRICT OR DISTRICT ENGINEER OF THE CONTRACTOR'S CONTRACTUAL COMMITMENT.

7. THE DISTRICT AND/OR DISTRICT ENGINEER IS NOT RESPONSIBLE FOR SAFETY IN, ON, OR ABOUT THE PROJECT SITE, NOR FOR COMPLIANCE BY THE APPROPRIATE PARTY OF ANY REGULATIONS RELATING THERETO.

8. THE DISTRICT AND/OR DISTRICT ENGINEER, EXERCISES NO CONTROL OF THE SAFETY OR ADEQUACY OF ANY EQUIPMENT, BUILDING COMPONENTS, SCAFFOLDING, FORMS, OR ANY OTHER WORK AIDS USED IN OR ABOUT THE PROJECT, OR IN THE SUPERINTENDING OF THE SAME.

9. THE CONTRACTOR AGREES THAT HE/SHE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY, AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER, THE DESIGN ENGINEER, OR THE COUNTY.

10. THE CONTRACTOR IS RESPONSIBLE FOR:
   A. NOTIFYING ALL CUSTOMERS POSSIBLY AFFECTED BY OUTAGE OF WATER OR SEWER SERVICE DURING CONSTRUCTION PRIOR TO SHUTTING OFF SAID SERVICE.
   B. OBTAINING, AT THE CONTRACTOR'S EXPENSE, ALL APPLICABLE LICENSES, PERMITS, BONDS, ETC. REQUIRED FOR MAIN INSTALLATION/SYSTEM MODIFICATIONS.
   C. CONTACTING THE DISTRICT FOR A PRE-CONSTRUCTION MEETING AT 303-985-3636. CONSTRUCTION CANNOT START FOR AT LEAST 48 HOURS AFTER THE MEETING HAS BEEN HELD.
   D. NOTIFYING THE DISTRICT 48 HOURS IN ADVANCE OF ANY NEEDS TO SHUT DOWN ANY PORTION OF THE EXISTING WATER AND/OR SANITARY SEWER SYSTEM.
   E. NOTIFYING THE DISTRICT 48 HOURS IN ADVANCE FOR CONSTRUCTION OBSERVATIONS.
   F. IN CASE OF AN EMERGENCY AFTER WORKING HOURS CALL THE DISTRICT OFFICE AT (303) 426-3167 FOR RECORDED INSTRUCTIONS.

11. UNDERGROUND UTILITIES IN THE AREA OF CONSTRUCTION HAVE BEEN LOCATED FROM FIELD INVESTIGATION AND THE BEST AVAILABLE UTILITY RECORDS AND ARE APPROXIMATE ONLY. THE DISTRICT ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITY LOCATIONS. THE CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITY LINES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL COORDINATE HIS/HER ACTIVITIES WITH THE AFFECTED UTILITY COMPANIES AND SHALL NOTIFY THE UTILITY NOTIFICATION CENTER, PHONE NO. 1-800-922-1987, 48 HOURS PRIOR TO STARTING CONSTRUCTION.

12. CONTRACTOR SHALL PERFORM POTHOLING ON EXISTING UTILITIES PRIOR TO THE CONSTRUCTION OF THE WATER AND/OR SANITARY SEWER LINES. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE INSTALLATION COST OF THE PIPELINE.

13. THE CONTRACTOR SHALL HAVE IN HIS/HER POSSESSION AT ALL TIMES ONE (1) SIGNED COPY OF THE PROJECT PLANS SIGNED BY THE DISTRICT.

14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ANY EXISTING SIGNS, STRUCTURES, FENCES, ETC ENCOUNTERED ON THE JOB AND RESTORING THEM TO THEIR ORIGINAL CONDITION.

15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ANY GROUNDWATER ENCOUNTERED DURING THE CONSTRUCTION OF ANY PORTION OF THIS PROJECT. GROUNDWATER SHALL BE PUMPED, PIPED, REMOVED AND DISPOSED OF IN A MANNER WHICH DOES NOT CAUSE FLOODING OF EXISTING STREETS NOR EROSION ON ABUTTING PROPERTIES IN ORDER TO CONSTRUCT THE IMPROVEMENTS SHOWN ON THESE PLANS. USE OF THE DISTRICTS SEWER SYSTEM FOR THE DISPOSAL OF GROUND WATER IS PROHIBITED WITHOUT WRITTEN CONSENT FROM THE DISTRICT. NO CONCRETE SHALL BE PLACED WHERE GROUNDWATER IS VISIBLE OR UNTIL THE GROUNDWATER TABLE HAS BEEN LOWERED BELOW THE PROPOSED IMPROVEMENTS. ANY UNSTABLE AREAS, AS A RESULT OF GROUNDWATER, ENCOUNTERED DURING THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS SHALL BE STABILIZED AS AGREED UPON BY THE DISTRICT AND THE DESIGN ENGINEER AT THE TIME OF THE OCCURRENCE.

16. IT SHALL BE THE DESIGN ENGINEER'S RESPONSIBILITY TO RESOLVE CONSTRUCTION PROBLEMS WITH THE DISTRICT DUE TO CHANGED CONDITIONS ENCOUNTERED DURING THE PROGRESS OF ANY PORTION OF THE PROPOSED WORK. IF, IN THE OPINION OF THE DISTRICT, PROPOSED ALTERATIONS TO THE SIGNED CONSTRUCTION PLANS INVOLVES SIGNIFICANT CHANGES TO THE CHARACTER OF THE WORK, OR TO FUTURE CONTIGUOUS PUBLIC OR PRIVATE IMPROVEMENTS, THE DESIGN ENGINEER SHALL BE RESPONSIBLE FOR SUBMITTING REVISED PLANS TO THE DISTRICT FOR REVIEW PRIOR TO ANY FURTHER CONSTRUCTION RELATED TO THAT PORTION OF THE WORK.

17. THE OWNER IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH PLAN REVIEW AND CONSTRUCTION OBSERVATION.

18. MAINTAIN MINIMUM OF 10 FEET SEPARATION BETWEEN WATER AND SANITARY SEWER MAINS AND SERVICES IN ACCORDANCE WITH COLORADO STATE DEPARTMENT OF HEALTH AND ENVIROMENT STANDARDS.

19. THE CONTRACTOR WILL BE REQUIRED TO PROVIDE A TRAFFIC CONTROL PLAN TO DOUGLAS COUNTY AND TO CDOT PRIOR TO ISSUANCE OF A STREET CUT PERMIT.

20. SHOP DRAWINGS ARE TO BE SUBMITTED AT LEAST 48 HOURS PRIOR TO THE INSTALLATION OF ANY MATERIALS FOR ALL PIPES, FITTINGS AND APPURTENANCES.

COTTONWOOD WATER NOTES

1. EXISTING VALVES IN THE DISTRICT SERVICE AREA MAY ONLY BE OPERATED BY DISTRICT PERSONNEL.

2. BEFORE ANY TAPS ARE MADE TO MAINS, APPLICATION(S) FOR THE TAPS MUST BE RECEIVED AND APPROVED BY THE DISTRICT.

3. IRRIGATION DEMANDS MUST BE FORMALLY SUBMITTED FOR ALL PROJECT REQUIRING WATER FOR LANDSCAPING PURPOSES.

4. FINAL PLUMBING PLANS MUST BE RECIEVED AND REVIEWED BY THE DISTRICT ENGINEER BEFORE WATER SERVICE TAPS CAN BE AWARDED IN ORDER TO PREFORM FIXTURE UNIT ANALYSIS TO VERIFY TAP SIZE FOR ALL COMMERCIAL, INDUSTRIAL AND MULTI-FAMILY DEVELOPMENTS.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROCUREMENT OF ALL PERMITS NECESSARY FOR THE CONSTRUCTION OF THE WATER LINE WORK.

6. PRIOR TO INSTALLATION OF WATER MAINS, ROAD CONSTRUCTION MUST HAVE PROGRESSED TO AT LEAST THE "SUB-GRADE" STAGE. SUB-GRADE IS DEFINED AS AN ELEVATION OF NO MORE THAN SEVEN (7) INCHES BELOW THE FINISHED STREET GRADE. THE CONTRACTOR WILL ADJUST ALL VALVE BOXES AND FIRE HYDRANTS TO THE FINAL FINISHED GRADE.

7. ALL WATER MAINS SHALL HAVE A MINIMUM OF FOUR AND ONE-HALF (4-1/2) FEET OF COVER AND ARE TO BE THREE (3) FEET FROM THE EDGE OF THE GUTTER PAN.

8. DISTANCE FOR WATERLINES IS THE HORIZONTAL DISTANCE BETWEEN CENTER OF FITTING TO CENTER OF VALVE, METER, ETC. THEREFORE, THE DISTANCES SHOWN ON THE PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT AT FITTING DIMENSIONS.

9. ALL HYDRANT LATERALS AND FIRE LINES SHALL BE DUCTILE IRON PIPE CLASS 50 AND FULLY RESTRAINED WITH POLYWRAP.

10. ALL WATER LINE VALVES SHALL BE SET AT THE INTERSECTION OF THE EXTENDED PROPERTY LINE AND WATER LINE, EXCEPT WHERE THAT POINT FALLS IN THE FLOW LINE OF A CONCRETE CROSS PAN. IN THAT CASE, THE VALVE SHALL BE LOCATED SO THAT THE SURFACE DRAINAGE DOES NOT INFILTRATE THE VALVE BOX. IF A TAPPING TEE IS NOT LOCATED ON A PROPERTY LINE THEN THE ASSOCIATED VALVE WILL NOT BE REQUIRED AS SHOWN ON THE PLANS. VALVE BOXES SHALL BE SET AT AN ELEVATION IN ACCORDANCE WITH COUNTY PAVING REQUIREMENTS.

11. ALL VALVES, VALVE BOXES, CURB STOPS AND/OR METER PIT COVERS SHALL HAVE THE WORD "WATER" STAMPED ON THEM. ALL POTABLE WATER VALVES SHALL BE OPENED IN A CLOCKWISE DIRECTION. ALL VALVE BOXES AND FIRE HYDRANTS WILL BE ADJUSTED TO THE FINAL FINISHED GRADE BY THE CONTRACTOR.

12. ALL IRRIGATION AND NON-POTABLE PIPE SHALL BE PURPLE IN COLOR OR SHALL BE LABELED WITH PURPLE TAPE READING "CAUTION NONPOTABLE WATER" ALONG THE FULL LENGTH OF THE PIPE.

13. POLYETHYLENE WRAPPINGS SHALL BE INSTALLED AROUND ALL DUCTILE IRON PIPE, FITTINGS, VALVES, FIRE HYDRANT BARRELS, AND RODS AND CLAMPS. THE POLYETHYLENE SHALL HAVE A MINIMUM THICKNESS OF EIGHT (8) MILS.

14. TRACER WIRE, GAUGE 12 COPPER, SHALL BE INSTALLED ON ALL WATER LINES, FIRE HYDRANTS LATERALS AND APPURTENANCES.

15. INDIVIDUAL SERVICE LINES ARE REQUIRED TO HAVE PRV'S WHEN SYSTEM PRESSURE EXCEEDS 80 PSI IN ACCORDANCE WITH UNIFORM PLUMBING CODE.

16. A BACKFLOW PREVENTION DEVICE APPROVED BY DENVER WATER IS REQUIRED ON THE TREATED WATER SERVICE LINE FOR:
A. ALL COMMERCIAL AND MULTI-FAMILY DOMESTIC TAPS.
B. FIRE LINES

15. ALL WATER LINES SHALL BE CHLORINATED IN ACCORDANCE WITH AWWA C-651, "DISINFECTING WATER MAINS." THE REQUIRED METHOD IS TO USE SUFFICIENT CHLORINE TABLET TO PRODUCE A 25 MG/L SOLUTION. THESE TABLETS SHALL BE ADHERED TO THE TOP OF THE PIPE WITH A FOOD GRADE ADHESIVE SUCH AS PERMATED CLEAR R.T.V. CHLORINATION OF 16-INCH AND LARGER PIPE REQUIRE A CHLORINE SLURRY. THE CHLORINATION OF ANY FINISHED PIPELINE SHALL BE COMPLETED PRIOR TO HYDROSTATIC TESTING.

16. THE WATER QUALITY CONTROL DIVISION OF THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT (CDPHE) REQUIRES ALL WATER LINE CONTRACTORS TO POSSESS A CURRENT DISCHARGE PERMIT FOR DISCHARGES OF CHLORINATED AND PROCESS WATERS ASSOCIATED WITH THE INSTALLATION OF NEW MAINS OR CONDUITS. CONTACT CDPHE WATER QUALITY CONTROL DIVISION AT (303) 692-3539 FOR INFORMATION ON OBTAINING THE REQUIRED PERMIT.

17. HYDROSTATIC TESTING: ALL WATER LINES SHALL BE HYDROSTATIC TESTED IN ACCORDANCE WITH AWWA C-600 SECTION 4 "HYDROSTATIC TESTING". ALL WATER LINES SHALL BE TESTED TO A MINIMUM OF 150 PSI. THE TEST SHALL BE SCHEDULED WITH THE DISTRICT AUTHORITY AND COORDINATED WITH ANY OTHER REVIEWING OR APPROVING AGENCY. THE CONSTRACTOR SHALL FURNISH ALL EQUIPMENT FOR TESTING. THE ALLOWABLE LEAKAGE RATES ARE AS FOLLOWS:

PIPE I.D.	ALLOWABLE LEAKAGE PER 1000 FEET D.I.P	PVC
4"	0.37 GAL/HOUR	0.33 GAL/HOUR
6"	0.55 GAL/HOUR	0.50 GAL/HOUR
8"	0.74 GAL/HOUR	0.66 GAL/HOUR
12"	1.10 GAL/HOUR	1.00 GAL/HOUR
16"	1.47 GAL/HOUR	
20"	1.84 GAL/HOUR	

18. ONLY ONE (1) POINT OF CONNECTION WILL BE ALLOWED UNTIL ALL TESTING OF NEW INSTALLATIONS IS COMPLETED TO THE DISTRICT'S SATISFACTION.

19. PROBATIONARY ACCEPTANCE OF THE NEW WATER LINES IS CONTINGENT UPON RECEIVING COPIES OF:

A. PASSING WATER LINE TRENCH COMPACTION TEST RESULTS;
B. PASSING HYDROSTATIC PRESSURE TEST RESULTS;
C. RECORD DRAWINGS
D. PASSING HEALTH DEPARTMENT TESTS (CHLORINE AND/OR CLEAR WATER AS REQUIRED)

20. THE COST OF THE WATER LINE CONSTRUCTION IS $________________________.

21. THE STATIC PRESSURE MEASURED AT THE PUMP STATION LOCATED AT NORTH OF COTTONWOOD DRIVE IS 120 PSI.

COTTONWOOD SANITARY SEWER NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROCUREMENT OF ALL PERMITS NECESSARY FOR THE CONSTRUCTION OF THE SANITARY SEWER LINE WORK.

2. THE CONTRACTOR IS RESPONSIBLE FOR:
A. NOTIFYING THE DISTRICT 48 HOURS IN ADVANCE OF ANY NEED TO SHUT DOWN ANY PORTION OF THE EXISTING SANITARY SEWER SYSTEM.
B. NOTIFYING THE DISTRICT 48 HOURS IN ADVANCE OF THE WORK.
C. IN CASE OF AN EMERGENCY AFTER WORKING HOURS, CALL THE DISTRICT OFFICE AT (303) 986-2275 FOR RECORDED INSTRUCTIONS.

3. UNDERDRAINS ARE NOT PART OF THE SANITARY SEWER LINES OR SYSTEM AND WILL NOT BE ALLOWED IN THE SAME TRENCH AS THE SANITARY SEWER MAINS. UNDERDRAINS SHALL NOT BE ACCEPTED, MAINTAINED OR SUBJECT TO CONSTRUCTION OBSERVATION BY THE DISTRICT. THE DISTRICT HAS NO SPECIFICATIONS FOR UNDERDRAINS AND WILL ONLY REVIEW THEIR PROPOSED LOCATION RELATIVE TO THE SANITARY SEWER LINES.

4. THE CONTRACTOR SHALL VERIFY EXISTING MANHOLE INVERTS TO BE CONNECTED TO PRIOR TO CONSTRUCTION STAKING AND CONSTRUCTION.

5. PRIOR TO INSTALLATION OF SANITARY SEWER MAINS, ROAD CONSTRUCTION MUST HAVE PROGRESSED TO AT LEAST THE SUB-GRADE STAGE. SUB-GRADE IS DEFINED AS AN ELEVATION OF NO MORE THAN SEVEN (7) INCHES BELOW THE FINISHED STREET GRADE. THE CONTRACTOR SHALL ADJUST ALL MANHOLE COVERS TO THE FINAL FINISHED GRADE.

6. THE LENGTH OF SANITARY SEWER IS THE HORIZONTAL DISTANCE BETWEEN CENTERS OF MANHOLE. THEREFORE DISTANCES SHOWN ON THE PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT AND MANHOLE DIMENSIONS.

7. THE PIPE USED FOR SANITARY SEWER MAINS SHALL BE IN ACCORDANCE WITH ASTM D-3034 SDR 35 PVC PIPE IN PAVED RIGHTS-OF-WAY AND EASEMENTS, AND AWWA C-900 CLASS 165 (DR25) IN UNPAVED EASEMENTS OR AS NOTED ON THE PROJECT PLANS.

8. MANHOLE RIMS SHALL BE SET AT AN ELEVATION RELATIVE TO THE PAVEMENT, IN ACCORDANCE WITH COUNTY STANDARDS. WHETHER THE MANHOLE IS IN A PAVED OR UNPAVED GRADE, A MAXIMUM ACCEPTABLE VERTICAL ADJUSTMENT UTILIZING CONCRETE RINGS IS TWELVE (12) INCHES.

9. THE CONTRACTOR SHALL TAKE CARE TO PROPERLY SHAPE ALL MANHOLE INVERTS AND BENCHES IN ACCORDANCE WITH DISTRICT STANDARDS AND SPECIFICATIONS, TO PROMOTE SMOOTH FLOW THROUGH THE MANHOLE. INVERTS OF LINES INTERSECTING AT 90 DEGREES AND AT HIGHLY DIVERGENT OR FLAT SLOPES ARE ESPECIALLY CRITICAL. MANHOLE INVERTS SHALL BE CONSTRUCTED WITH A SMOOTH TROWEL FINISH, AND BENCHES FINISHED WITH A LIGHT BROOM, NON-SKID FINISH.

10. TRACER WIRE, GAUGE 12 COPPER, SHALL BE INSTALLED ON ALL SEWER LINES, MANHOLES, AND CLEANOUTS.

11. THE SANITARY SEWER SERVICE SHALL BE STUBBED OUT. THE END OF THE STUB SHALL BE WITNESSED BY A WOOD, CARSONITE OR METAL POST AT LEAST FOUR FEET LONG, BURIED TO EXPOSE ONE FOOT. THE CONTRACTOR SHALL FURNISH THE AUTHORITY WITH AN AS-BUILT LOCATION OF THE WYE.

12. THE SANITARY SEWER SYSTEM WILL BE TESTED IN ACCORDANCE WITH THE DISTRICT STANDARDS AND SPECIFICATIONS. THE DISTRICT WILL REQUIRE THE DEVELOPER TO:

A. LOW PRESSURE AIR TEST 100% OF THE NEW SYSTEM, AND
B. DEFLECTION TEST, AT A MINIMUM 33% OF THE SYSTEM FIFTEEN (15) FEET OR LESS IN DEPTH, AND 100% OF THE SYSTEM GREATER THAN FIFTEEN (15) FEET IN DEPTH.
C. JET AND TV/VIDEO TAPE 100% OF THE SYSTEM.

13. PROBATIONARY ACCEPTANCE OF THE NEW SANITARY SEWER MAINS IS CONTINGENT UPON RECEIVING COPIES OF:

A. SANITARY SEWER TRENCH COMPACTION TEST RESULTS,
B. RECORD DRAWINGS, AND
C. COMPLETION OF SYSTEM TESTING.

14. CONNECTIONS TO EXISTING DISTRICT LINES WILL BE PERMITTED UPON ACCEPTANCE OF THE NEW SANITARY SEWER SYSTEM. EXISTING PIPE AT THE POINT OF CONNECTION SHALL NOT BE "BROKEN OUT" UNTIL THE NEW SYSTEM IS ACCEPTED.

15. MONITORING MANHOLES ARE REQUIRED FOR ALL COMMERCIAL AND INDUSTRICAL SANITARY SERVICE LINES.

16. PIPE BEDDING UP TO 16-FEET IN DEPTH IS TO BE SQUEEGEE. PIPE BEDDING IN EXCESS OF 16-FEET IN DEPTH IS TO BE 3/4-INCH AGGREGATE. PIPE BEDDING IN EXCESS OF 22-FEET MUST BE SPECIFIED BY THE DISTRICT ENGINEER.

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

REVISION	DATE
COMMENTS	05/26/2015
COMMENTS-2	07/07/2015
Final Plans	08/18/2015

MM&D ENGINEERING SERVICES, INC.

William E. Miller, PE 13389
ENGINEERING
CONSTRUCTION MANAGEMENT
9125 N. Clydesdale Road PH (303) 908-0062
Castle Rock, Colorado 80108 FAX (303) 708-8399

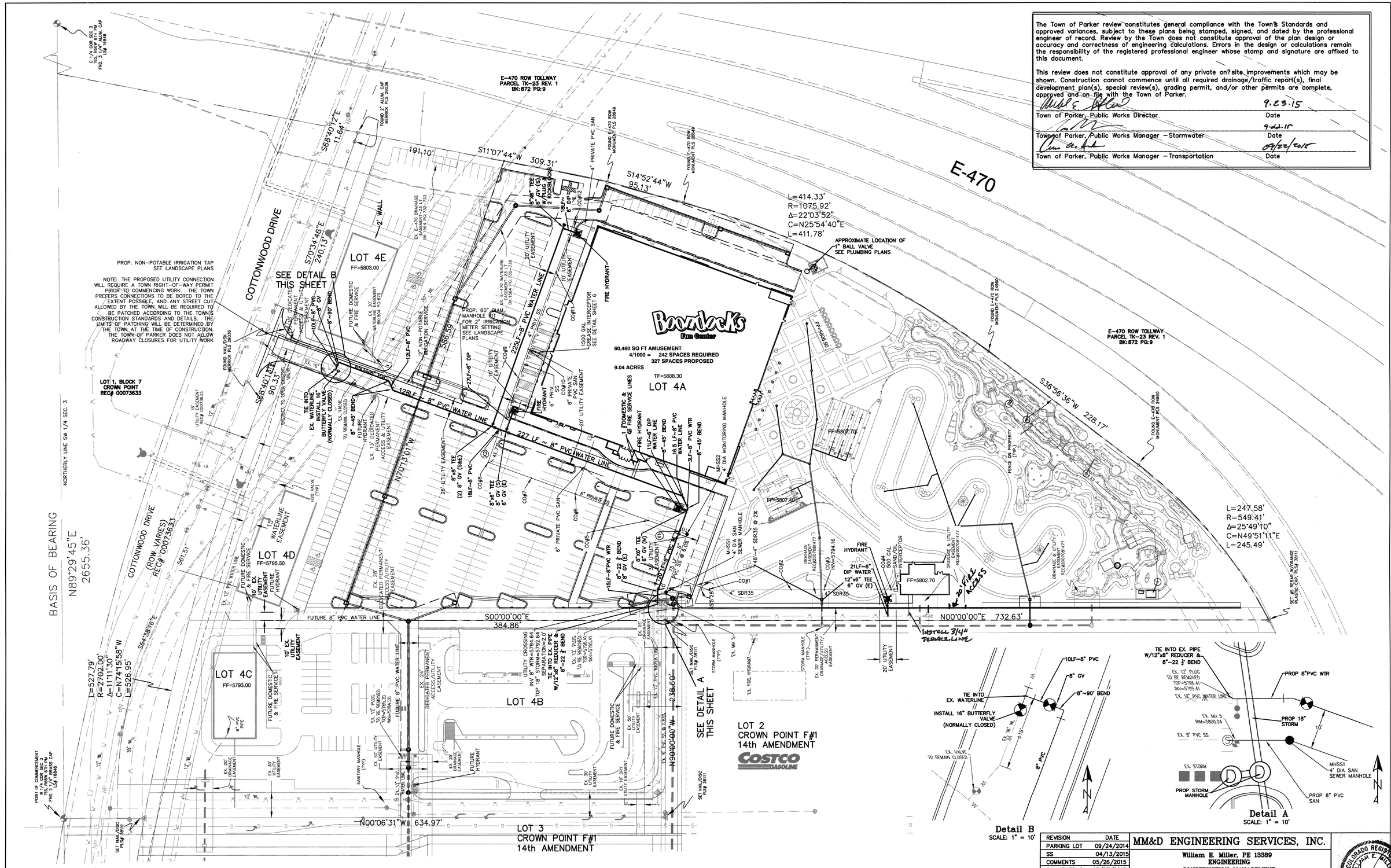
Boondocks
Parker, Colorado
Water & Sanitary Sewer Notes
Utility Plan

submittal 03/10/2015
DATE 09/16/2014
DES/DFT/CHK WEM/km
PROJ. NO. 13-343
SHEET 2 OF 8

The Town of Parker review constitutes general compliance with the Town's Standards and approved variances, subject to these plans being stamped, signed, and dated by the professional engineer of record. Review by the Town does not constitute approval of the plan design or accuracy and correctness of engineering calculations. Errors in the design or calculations remain the responsibility of the registered professional engineer whose stamp and signature are affixed to this document.

This review does not constitute approval of any private on?site improvements which may be shown. Construction cannot commence until all required drainage/traffic report(s), final development plan(s), special review(s), grading permit, and/or other permits are complete, approved and on file with the Town of Parker.

Town of Parker, Public Works Director	Date 9.23.15
Town of Parker, Public Works Manager – Stormwater	Date 9.22.15
Town of Parker, Public Works Manager – Transportation	Date 09/22/2015



Utility Crossings

ID	TOP SS	BOP W/L	SEPARATION
X1	5797.03	5799.03	2.0'
X2	5800.50	5802.50	2.0'

NOTE: COTTONWOOD WATER AND SANITATION DISTRICT WILL NOT OWN OR MAINTAIN PRIVATE SANITARY SEWER SERVICES

NOTE:
DOMESTIC & FIRE SERVICE LINES AND SANITARY SERVICE LINES TO LOTS 4B–4E ARE APPROXIMATE. FINAL LOCATION WILL BE DETERMINED WITH FUTURE CONSTRUCTION.

REVISION	DATE
PARKING LOT	09/24/2014
SS	04/13/2015
COMMENTS	05/26/2015
COMMENTS–2	07/07/2015
Final Plans	08/18/2015

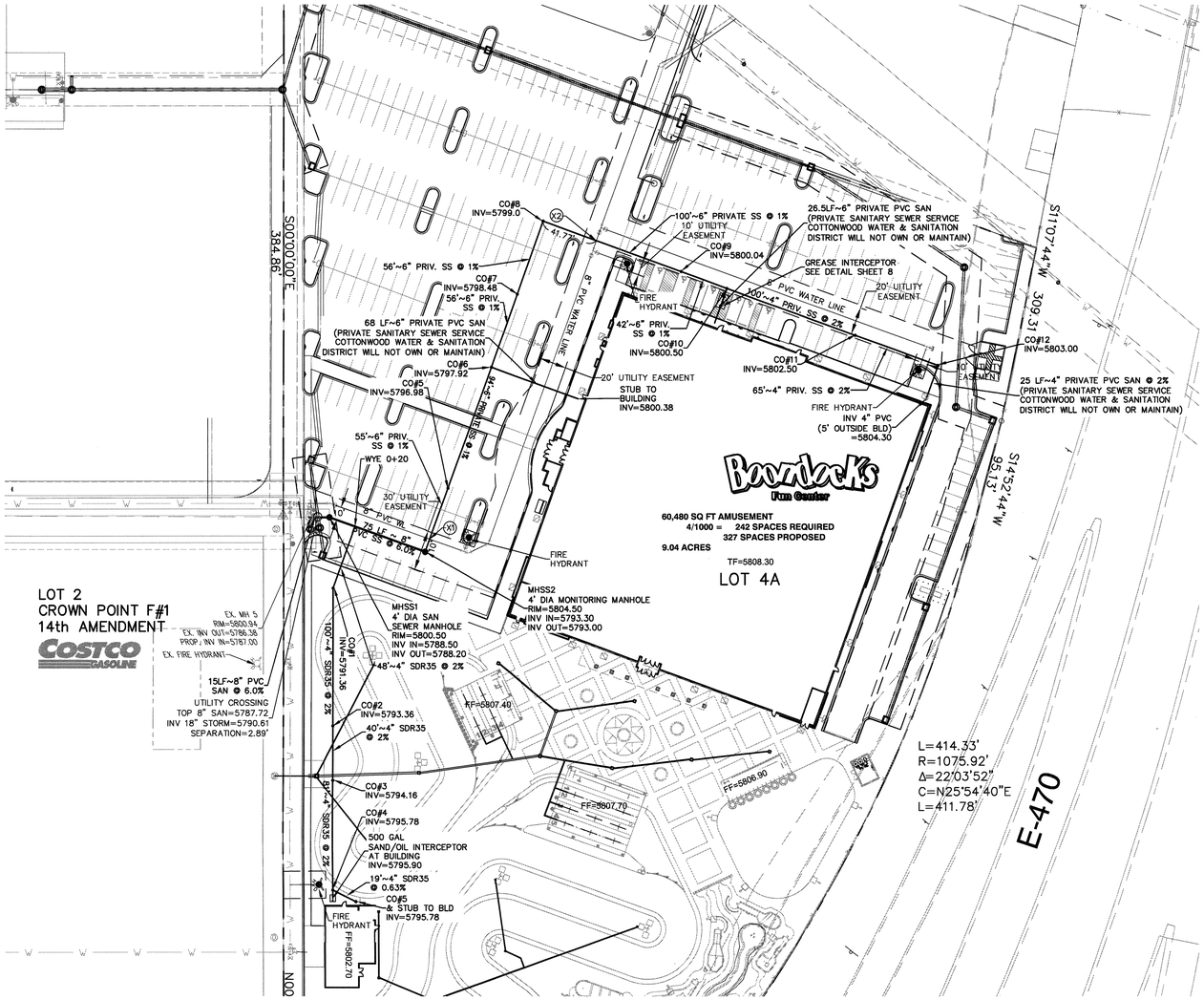
MM&D ENGINEERING SERVICES, INC.
William E. Miller, PE 13389
ENGINEERING
CONSTRUCTION MANAGEMENT
9125 N. Clydesdale Road PH (303) 908–0062
Castle Rock, Colorado 80108 FAX (303) 708–8399

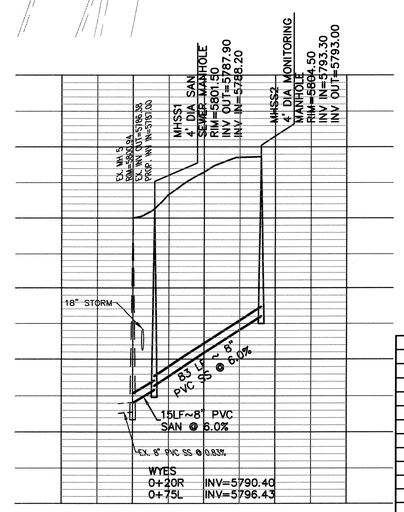
Boondocks
Parker, Colorado
Overall Utility Plan

COLORADO REGISTERED WILLIAM E. MILLER 13389 PROFESSIONAL ENGINEER

DATE 09/16/2014
DES/DFT/CHK WEM/km
PROJ. NO. 13-343
SHEET 3 OF 8

NOTE:
DOMESTIC & FIRE SERVICE LINES AND SANITARY SERVICE LINES TO LOTS 4B~4E ARE APPROXIMATE. FINAL LOCATION WILL BE DETERMINED WITH FUTURE CONSTRUCTION.





Oil Interceptor Calculation

	EQUATION: C = (5+(A/100))*7.5		EQUATION FROM IPC 2012
	C= MINIMUM CAPACITY OF SEPARATOR (CUBIC FEET)		
	A= FLOOR AREA SERVED (SQUARE FEET)		
	7.5= CONVERSION FROM CUBIC FEET TO GALLONS		
ZONE	A	C EXACT (GAL)	C (GAL) WITH ~ 1.5 SAFETY FACTOR
MAINTENANCE BLD	1725	166.9	251

Utility Crossings

ID	TOP SS	BOP W/L	SEPARATION
X1	5797.03	5799.03	2.0'
X2	5800.50	5802.50	2.0'

NOTE: COTTONWOOD WATER AND SANITATION DISTRICT WILL NOT OWN OR MAINTAIN PRIVATE SANITARY SEWER SERVICES

N

50' 0 50' 100'

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

REVISION	DATE
PARKING LOT	09/24/2014
SS	04/13/2015
COMMENTS	05/26/2015
COMMENTS-2	07/07/2015
Final Plans	08/18/2015

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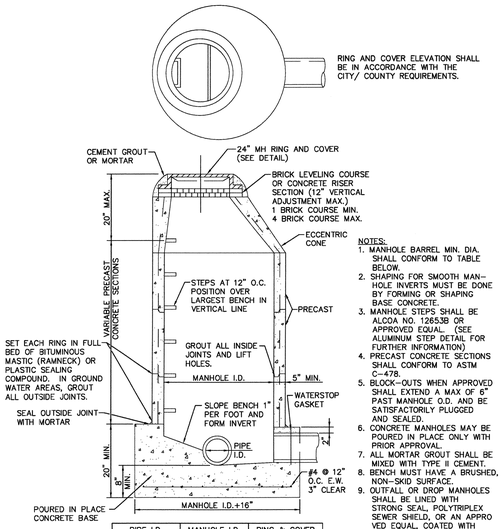
Castle Rock, Colorado 80108 FAX (303) 708-8399

Boondocks
Parker, Colorado
Sanitary Sewer Plan
& Profile

COLORADO REGISTERED WILLIAM E. MILLER 13389 PROFESSIONAL ENGINEER
8/24/15

DATE 09/16/2014
DES/DFT/CHK WEM/km
PROJ. NO. 13-343
SHEET 4 OF 8

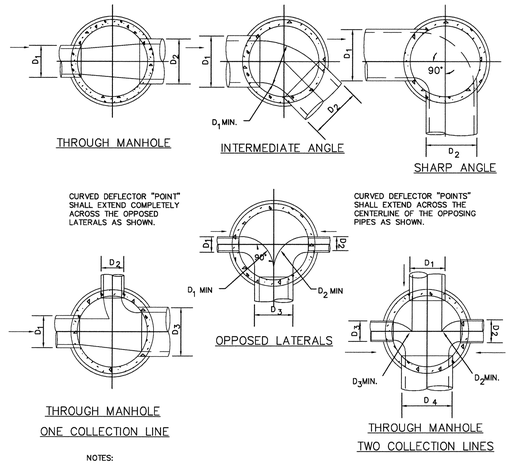


PIPE I.D.	MANHOLE I.D.	RING & COVER
18" & SMALLER	4'-0"▲	24"
21" TO 48"	5'-0"	30"
54"	6'-0"	30", 36" W/ 24"
60" & LARGER	SPECIAL DESIGN	INNER COVER

▲ WHENEVER MORE THAN A TWO WAY MANHOLE OF MAX. PIPE I.D. IS REQUIRED, THE MANHOLE SHOULD BE INCREASED TO LARGER DIA., EG. 18"x18"x18", REQUIRES 5'-0" I.D.

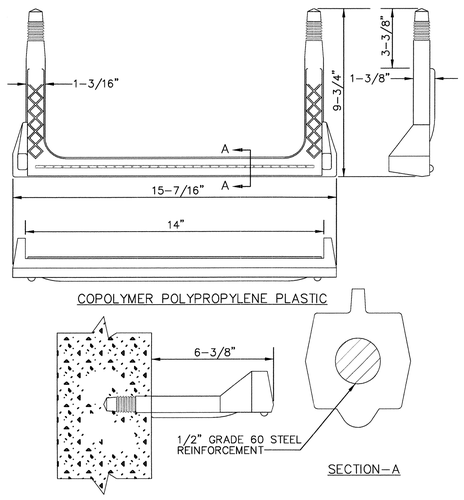
NOTES:
1. MANHOLE BARREL MIN. DIA. SHALL CONFORM TO TABLE BELOW.
2. SHAPING FOR SMOOTH MANHOLE INVERTS MUST BE DONE BY FORMING OR SHAPING BASE CONCRETE.
3. MANHOLE STEPS SHALL BE ALCOA NO. 12653B OR APPROVED EQUAL. (SEE ALUMINUM STEP DETAIL FOR FURTHER INFORMATION)
4. PRECAST CONCRETE SECTIONS SHALL CONFORM TO ASTM C-478.
5. BLOCK-OUTS WHEN APPROVED SHALL EXTEND A MAX OF 6" PAST MANHOLE O.D. AND BE SATISFACTORILY PLUGGED AND SEALED.
6. CONCRETE MANHOLES MAY BE POURED IN PLACE ONLY WITH PRIOR APPROVAL.
7. ALL MORTAR GROUT SHALL BE MIXED WITH TYPE II CEMENT.
8. BENCH MUST HAVE A BRUSHED, NON-SKID SURFACE.
9. OUTFALL OR DROP MANHOLES SHALL BE LINED WITH STRONG SEAL, POLYTRIPLEX SEWER SHIELD, OR AN APPROVED EQUAL COATED WITH 20 MIL. MIN. APPLIED IN 4-7 MIL. LAYERS, PER MANUFACTURER'S SPECIFICATIONS.
10. PRE-CAST CONCRETE BASES SHALL NOT BE USED WITHOUT PRIOR APPROVAL OF THE DISTRICT.

Kennedy/Jenks Consultants | COTTONWOOD WATER AND SANITATION DISTRICT | PRECAST MANHOLE
(303) 985-3636 DRAWING NO.: CTWD-2S DATE: 7/2013

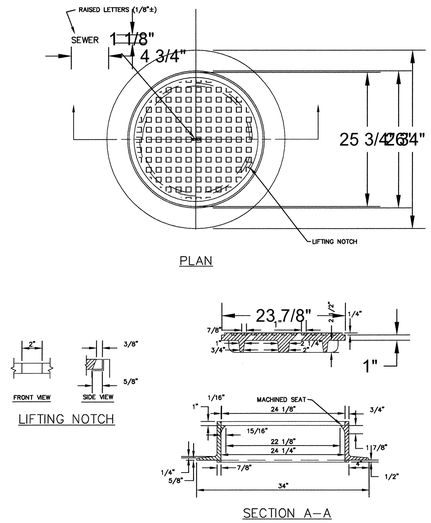


NOTES:
1. PIPE INVERT ELEVATIONS AND DROP THROUGH MANHOLES SHALL BE IN CONFORMANCE WITH THE REVIEWED AND SIGNED CONSTRUCTION PLANS. THE INTENTION IS TO PROMOTE SMOOTH, NON-TURBULENT FLOW THROUGH THE MANHOLES BY KEEPING THE LARGER LINES LOWER IN THE MANHOLE AND BRINGING THE SMALLER LINES IN SLIGHTLY HIGHER.
2. MAXIMUM INSIDE DROP THROUGH ANY MANHOLE SHALL BE 12 INCHES.
3. MINIMUM DROP THROUGH ANY MANHOLE SHALL BE 0.2 FT.
4. ALL INVERT DEFLECTORS SHALL BE CURVED IN SHAPE TO PROVIDE SMOOTH FLOW TRANSITIONS AS SHOWN ON THIS DETAIL.
5. MINIMUM ANGLE BETWEEN THE CENTERLINE OF ANY INCOMING PIPE AND THE CENTERLINE OF THE OUTGOING PIPE SHALL BE 90 DEGREES.

Kennedy/Jenks Consultants | COTTONWOOD WATER AND SANITATION DISTRICT | BASE AND DEFLECTOR
(303) 985-3636 DRAWING NO.: CTWD-3S DATE: 7/2013



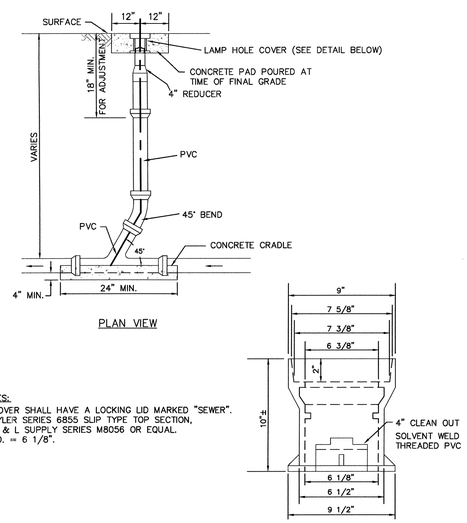
Kennedy/Jenks Consultants | COTTONWOOD WATER AND SANITATION DISTRICT | PLASTIC STEP
(303) 985-3636 DRAWING NO.: CTWD-5S DATE: 7/2013



NOTE:
1. CASTING SPECIFICATIONS: ASTM A-48 WITH A MINIMUM TENSILE STRENGTH OF 25 KSI (CLASS 25)
2. ALL CASTINGS TO BE DIPPED IN ASPHALT BASE PAINT (OR APPROVED EQUAL)
3. CASTINGS SHALL BE AS SPECIFIED BELOW OR EQUAL: (CAST IRON ONLY)

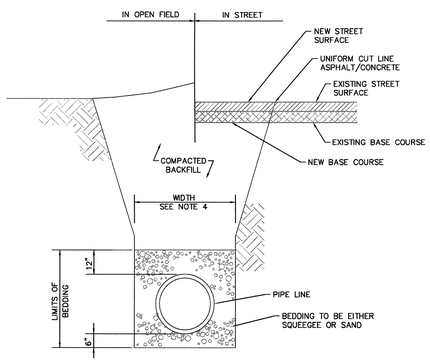
MANUFACTURES	CAT. #
NEENAH CASTINGS, INC.	R-1706
	MH-400-24 C.I.
HUTCHINSON FDRY. & STL. INC.	MH-400

Kennedy/Jenks Consultants | COTTONWOOD WATER AND SANITATION DISTRICT | 24" MANHOLE RING AND COVER
(303) 985-3636 DRAWING NO.: CTWD-6S DATE: 7/2013



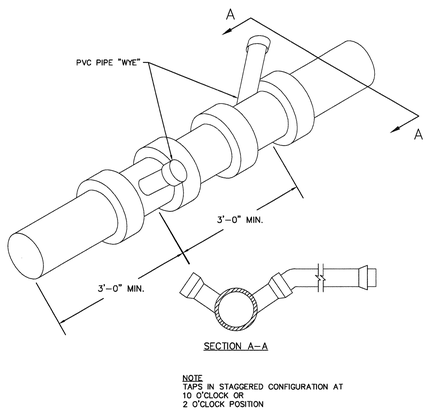
NOTES:
1. COVER SHALL HAVE A LOCKING LID MARKED "SEWER".
2. TYLER SERIES 6855 SLIP TYPE TOP SECTION, D & L SUPPLY SERIES M8056 OR EQUAL.
3. I.D. = 6 1/8".

Kennedy/Jenks Consultants | COTTONWOOD WATER AND SANITATION DISTRICT | IN-LINE CLEANOUT
(303) 985-3636 DRAWING NO.: CTWD-10S DATE: 7/2013



NOTES:
1. MINIMUM COVER TO BE 4.5' BELOW OFFICIAL STREET GRADE.
2. TRENCH TO BE BRACED OR SHEETED AS NECESSARY FOR THE SAFETY OF THE WORKMEN AND PROTECTION OF OTHER UTILITIES IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL SAFETY REGULATIONS.
3. PIPE SHALL BE BEDDED FROM 6" BELOW THE BOTTOM OF THE PIPE TO 12" ABOVE THE TOP OF THE PIPE.
4. TRENCH WIDTH SHALL NOT BE MORE THAN 16" NOR LESS THAN 12" WIDER THAN THE LARGEST OUTSIDE DIAMETER OF THE PIPE.
5. SHOULD THE TRENCH BE EXCAVATED WIDER THAN ALLOWED, A CONCRETE CRADLE SHALL BE PLACED WITH 2500 P.S.I. CONCRETE FROM THRENCH BOTTOM TO PIPE SPRINGLINE.
6. COMPACTION SHALL BE AS FOLLOWS: PIPE ZONE BEDDING 6" UNDER AND 12" OVER PIPE WILL REQUIRE 70% RELATIVE DENSITY TRENCH ZONE ABOVE BEDDING MATERIALS, FULL TRENCH SECTION IN ROADWAY OR STREET R.O.W. LIMITS WILL REQUIRE 95% S.P.D. TRENCH ZONE ABOVE BEDDING MATERIALS, OUTSIDE OF STREET R.O.W. WILL REQUIRE 90% S.P.D.

Kennedy/Jenks Consultants | COTTONWOOD WATER AND SANITATION DISTRICT | STANDARD BEDDING
(303) 985-3636 DRAWING NO.: CTWD-14S DATE: 7/2013



NOTE
TAPS IN STAGGERED CONFIGURATION AT 10 O'CLOCK OR 2 O'CLOCK POSITION

NOTES:
1. SANITARY SEWER SERVICE TAPS SHALL BE LOCATED ON THE MAIN AT THE 2 O'CLOCK OR 10 O'CLOCK POSITION.
2. THE MINIMUM DISTANCE BETWEEN ANY TWO CONSECUTIVE FITTINGS SHALL BE 3 FEET, MEASURED BETWEEN FITTING CENTERLINES.
3. SANITARY SEWER SERVICE TAPS SHALL NOT BE MADE WITHIN 3 FEET OF A PIPE JOINT, OR 5 FEET FROM EDGE OF MANHOLE BASE.
4. A MAXIMUM OF FOUR SERVICE TAPS ARE ALLOWED PER 20 FOOT LENGTH OF PIPE.
5. ALL SANITARY SEWER TAPS SHALL USE "WYE" STYLE FITTINGS. TEES ARE NOT ALLOWED.
6. SERVICE CONNECTIONS TO MANHOLES SHALL BE PERFORMED IN ACCORDANCE WITH THE "SERVICE CONNECTION TO DEAD-END MANHOLE" CONSTRUCTION DETAIL.

Kennedy/Jenks Consultants | COTTONWOOD WATER AND SANITATION DISTRICT | SEWER SERVICE CONNECTION TO NEW
(303) 985-3636 DRAWING NO.: CTWD-19BS DATE: 7/2013

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

REVISION	DATE
COMMENTS	05/26/2015
COMMENTS-2	07/07/2015
Final Plans	08/18/2015

MM&D ENGINEERING SERVICES, INC.
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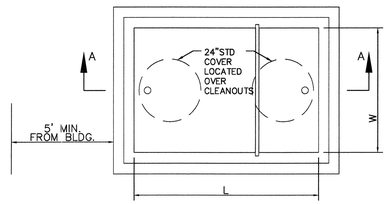
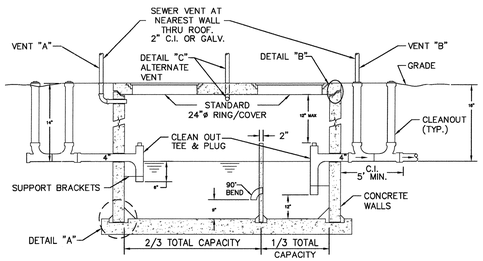
Boondocks
Parker, Colorado
Sanitary Sewer Details
Utility Plan

COLORADO REGISTERED WILLIAM E. MILLER 13389 PROFESSIONAL ENGINEER

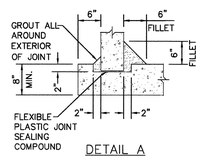
submittal 03/10/2015
DATE 09/16/2014
DES/DFT/CHK WEM/km
PROJ. NO. 13-343
SHEET 5 OF 8



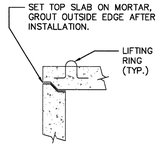
PLAN



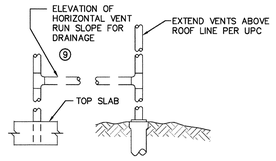
SECTION "A–A"



DETAIL A



DETAIL B



DETAIL C

GENERAL NOTES:

1. THESE STANDARD DETAILS SHALL ONLY BE CONSTRUED TO SHOW CONCEPTUAL AND STANDARD DIMENSIONAL REQUIREMENTS FOR SAND & OIL INTERCEPTOR AND SHALL NOT BE USED FOR CONSTRUCTION. THE ARCHITECT/ENGINEER SHALL FURNISH STRUCTURAL DESIGN CRITERIA, HYDRAULIC LOADING, VOLUME & RETENTION TIME REQUIREMENTS AND DETAILED CONSTRUCTION DRAWINGS, INCLUDING SITE PLAN FOR APPROVAL PRIOR TO CONSTRUCTION.
2. SECONDARY TANK HAS VOLUME EQUAL TO 1/3 OF TOTAL CAPACITY.
3. ALL PIPE AND FITTINGS TO BE SCHEDULE 40 PVC EXCEPT WHERE NOTED OTHERWSE AND SHALL BE 4" MINIMUM DIAMETER.
4. WELLS, BOTTOM AND TOP SLAB TO BE REINFORCED THROUGHOUT. ADDITIONAL DIAGONAL REINFORCING TOP AND BOTTOM IS REQUIRED AROUND ACCESS OPENINGS. ALL REBAR SHALL HAVE A 3" MINIMUM COVER TO FACE OF CONCRETE.
5. THICKNESS OF WALLS, BOTTOM AND TOP SLAB TO BE DETERMINED FROM STRUCTURAL LOADING REQUIREMENTS BY ARCHITECT/ENGINEER. CAST-IN- PLACE BOTTOM SLAB SHALL NOT BE LESS THAN 8" THICK.
6. INLET AND OUTLET PIPE SIZES SHALL BE DETERMINED BY ARCHITECT/ENGINEER BUT SHALL NOT BE LESS THAN 4" DIAMETER (OUTLET PIPE INVERT TO BE 2" LOWER THAN INLET).
7. REINFORCED CONCRETE BOTTOM SLAB SHOWN. (MAY BE INTEGRALLY CAST WITH PRE-CAST WALL SECTIONS AT CONTRACTOR'S OPTION).
8. ALL JOINTS IN PRE-CAST SECTIONS TO BE SEALED WITH FLEXIBLE PLASTIC JOINT SEALING COMPOUND TO FED. SPEC. S-SS-C0210 (EXCEPT TOP SLAB).
9. VENT PIPE MATERIALS AND LOCATION SHALL BE IN ACCORDANCE WITH THE PLUMBING CODE.
10. ROUND OR CIRCULAR GREASE INTERCEPTOR WILL REQUIRE SPECIAL DESIGN AND APPROVAL.
11. PRE-CAST CONCRETE SHAPES ARE SHOWN: CAST-IN-PLACE CONCRETE STRUCTURE IS OPTIONAL.
12. PRE-CAST REINFORCED CONCRETE SECTIONS SHALL BE IN ACCORDANCE WITH ASTM-C-478.
13. DESIGN CRITERIA: (MINIMUM)

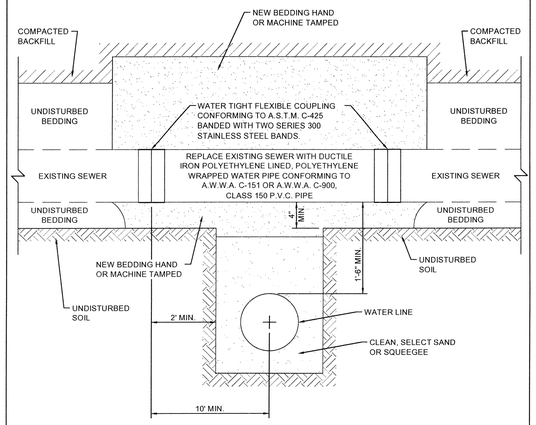
UNIT WEIGHT OF "SOIL"	120 PCF
EQUIVALENT FLUID PRESSURE	30 PCF
LIVELOADS (IF APPLICABLE)	AASHTO H=20
CONCRETE STRENGTH (F'c)(TYPE II CEMENT)	4000 PSI

TOP SLAB MAY BE ONE PIECE OF MULTIPLE SEGMENT CONSTRUCTION AT CONTRACTOR'S OPTION.

14. SUPPORT BRACKETS AND CLEAN-OUT PLUGS SHALL BE BRASS
15. OTHER VARIOUS COMBINATIONS OF TANK DIMENSIONS MAY BE SUBMITTED FOR APPROVAL, PROVIDED THAT ANY ALTERNATE DESIGN SHALL HAVE THE SAME BASIC PROPORTIONAL DIMENSIONS, COMPARABLE VOLUMES AND FUNCTIONAL CAPABILITIES AS THESE STANDARD DETAILS.
16. DRAWINGS ARE NOT TO SCALE.
17. DEPENDING ON THE SEWAGE LOADING TYPE, A SAMPLING STATION OR MANHOLE MAY BE REQUIRED. DISTRICT TO DETERMINE UPON REVIEW.
18. VENT "A" MAY RISE A MINIMUM OF 42" ABOVE FIXTURE FLOOD LINE AND MAY COMBINE WITH VENT "B" ABOVE THE 42" LINE TO FORM A SINGLE VENT THROUGH THE ROOF.
19. PLUMBING PER CITY/COUNTY STANDARDS.
20. MINIMUM CAPACITY SHALL BE 500 GALLONS UNLESS OTHERWISE APPROVED BY THE DISTRICT.
21. SUBMIT SHOP DRAWING DETAILS TO DISTRICTS ENGINEER, FOR APPROVAL, PRIOR TO CONSTRUCTION.

Kennedy/Jenks Consultants | COTTONWOOD WATER AND SANITATION DISTRICT | CLASS A COMMERCIAL OIL AND SAND TRAP

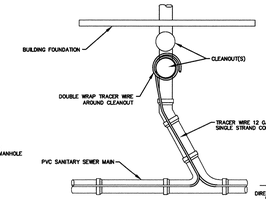
(303) 985-3636 DRAWING NO.: CTWD-21S DATE: 8/2014



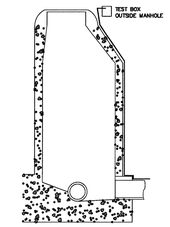
NOTES:
1. THIS STANDARD APPLIES ONLY FOR NON-PRESSURIZED SANITARY SERVICE TAPS AND SANITARY SEWERS EIGHT (8) INCH AND SMALLER SANITARY SEWERS MAY NOT BE CUT WITHOUT THE EXPRESSED CONSENT OF THE DISTRICT. A DISTRICT REPRESENTATIVE WILL BE ON SITE DURING CONSTRUCTION.
2. DUCTILE IRON PIPE USED TO REPLACE SECTION OF SANITARY SEWER SHALL BE PLACED IN A TRENCH, BEDDED, BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE DISTRICT SPECIFICATIONS.

Kennedy/Jenks Consultants | COTTONWOOD WATER AND SANITATION DISTRICT | SEWER CROSSING

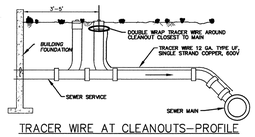
(303) 985-3636 DRAWING NO.: CTWD-28S DATE: 7/2013



TRACER WIRE AT CLEANOUTS–PLAN VIEW



TRACER WIRE AT MANHOLES

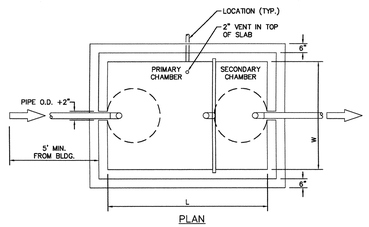


TRACER WIRE AT CLEANOUTS–PROFILE

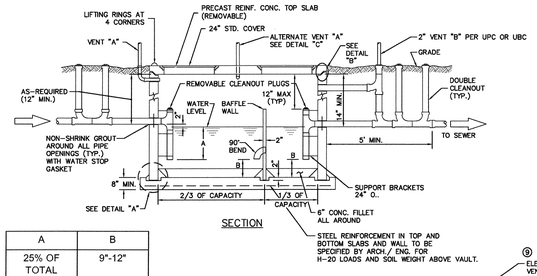
PVC SANITARY SEWER MAIN & SERVICE TRACER WIRE INSTALLATION DETAIL

Kennedy/Jenks Consultants | COTTONWOOD WATER AND SANITATION DISTRICT | TRACER WIRE

(303) 985-3636 DRAWING NO.: CTWD-30S DATE: 7/2013

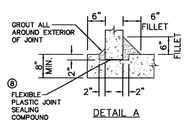


PLAN

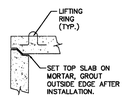


SECTION

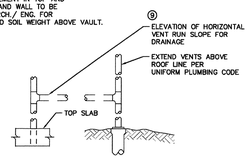
A	B
25% OF TOTAL DEPTH	9"-12"



DETAIL A



DETAIL B



DETAIL C

GENERAL NOTES:

1. THESE STANDARD DETAILS SHALL ONLY BE CONSTRUED TO SHOW CONCEPTUAL AND STANDARD DIMENSIONAL REQUIREMENTS FOR GREASE INTERCEPTOR AND SHALL NOT BE USED FOR CONSTRUCTION. THE ARCHITECT/ENGINEER SHALL FURNISH STRUCTURAL DESIGN CRITERIA, HYDRAULIC LOADING, VOLUME & RETENTION TIME REQUIREMENTS AND DETAILED CONSTRUCTION DRAWINGS, INCLUDING SITE PLAN FOR APPROVAL PRIOR TO CONSTRUCTION.
2. SECONDARY TANK HAS VOLUME EQUAL TO 1/3 OF TOTAL CAPACITY.
3. ALL PIPE AND FITTINGS TO BE SCHEDULE 40 PVC EXCEPT WHERE NOTED OTHERWSE AND SHALL BE 4" MINIMUM DIAMETER.
4. WELLS, BOTTOM AND TOP SLAB TO BE REINFORCED THROUGHOUT. ADDITIONAL DIAGONAL REINFORCING TOP AND BOTTOM IS REQUIRED AROUND ACCESS OPENINGS. ALL REBAR SHALL HAVE A 3" MINIMUM COVER TO FACE OF CONCRETE.
5. THICKNESS OF WALLS, BOTTOM AND TOP SLAB TO BE DETERMINED FROM STRUCTURAL LOADING REQUIREMENTS BY ARCHITECT/ENGINEER. CAST-IN- PLACE BOTTOM SLAB SHALL NOT BE LESS THAN 8" THICK.
6. INLET AND OUTLET PIPE SIZES SHALL BE DETERMINED BY ARCHITECT/ENGINEER BUT SHALL NOT BE LESS THAN 4" DIAMETER (OUTLET PIPE INVERT TO BE 2" LOWER THAN INLET).
7. REINFORCED CONCRETE BOTTOM SLAB SHOWN. (MAY BE INTEGRALLY CAST WITH PRE-CAST WALL SECTIONS AT CONTRACTOR'S OPTION).
8. ALL JOINTS IN PRE-CAST SECTIONS TO BE SEALED WITH FLEXIBLE PLASTIC JOINT SEALING COMPOUND TO FED. SPEC. S-SS-C0210 (EXCEPT TOP SLAB).
9. VENT PIPE MATERIALS AND LOCATION SHALL BE IN ACCORDANCE WITH THE PLUMBING CODE.
10. ROUND OR CIRCULAR GREASE INTERCEPTOR WILL REQUIRE SPECIAL DESIGN AND APPROVAL.
11. PRE-CAST CONCRETE SHAPES ARE SHOWN: CAST-IN-PLACE CONCRETE STRUCTURE IS OPTIONAL.
12. PRE-CAST REINFORCED CONCRETE SECTIONS SHALL BE IN ACCORDANCE WITH ASTM-C-478.
13. DESIGN CRITERIA: (MINIMUM)

UNIT WEIGHT OF "SOIL"	120 PCF
EQUIVALENT FLUID PRESSURE	30 PCF
LIVELOADS (IF APPLICABLE)	AASHTO H=20
CONCRETE STRENGTH (F'c)(TYPE II CEMENT)	4000 PSI

TOP SLAB MAY BE ONE PIECE OF MULTIPLE SEGMENT CONSTRUCTION AT CONTRACTOR'S OPTION.

14. SUPPORT BRACKETS AND CLEAN-OUT PLUGS SHALL BE BRASS
14. OTHER VARIOUS COMBINATIONS OF TANK DIMENSIONS MAY BE SUBMITTED FOR APPROVAL, PROVIDED THAT ANY ALTERNATE DESIGN SHALL HAVE THE SAME BASIC PROPORTIONAL DIMENSIONS, COMPARABLE VOLUMES AND FUNCTIONAL CAPABILITIES AS THESE STANDARD DETAILS.
15. DRAWINGS ARE NOT TO SCALE.
16. REFER TO LITTLETON/ENGLEWOOD WASTEWATER TREATMENT PLANT FATS, OILS, AND GREASE POLICY FOR GREASE INTERCEPTOR SIZING.

Kennedy/Jenks Consultants | COTTONWOOD WATER AND SANITATION DISTRICT | GREASE INTERCEPTOR

(303) 985-3636 DRAWING NO.: CTWD-27S DATE: 7/2013

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REVISION	DATE
COMMENTS	05/26/2015
COMMENTS-2	07/07/2015
Final Plans	08/18/2015

MM&D ENGINEERING SERVICES, INC.

William E. Miller, PE 13389
ENGINEERING
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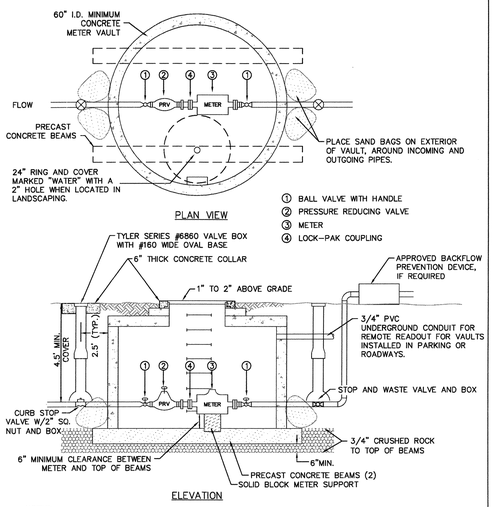
9125 N. Clydesdale Road PH (303) 908-0062
Castle Rock, Colorado 80108 FAX (303) 708-8399

Boondocks
Parker, Colorado
Sanitary Sewer Details
Utility Plan

COLORADO REGISTERED WILLIAM E. MILLER 13389 PROFESSIONAL ENGINEER

submittal 08/18/2015
DATE 09/16/2014
DES/DFT/CHK WEM/km
PROJ. NO. 13-343
SHEET 6 OF 8

No XREF
C:\USERS\KATHRYN\DOCUMENTS\MMD ENGINEERING\13-343 BOONDOCKS\ENGINEERING\SITE PLAN AND CP\UTILITY PLAN\05-08 13-343 DTLS.DWG

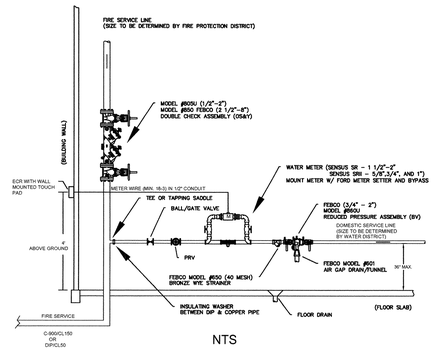


NOTES:

1. ALL INSTALLATIONS WHERE THE STATIC PRESSURE EXCEEDS 100 psi, WILL REQUIRE A P.R.V.
2. THE DISTANCE BETWEEN THE P.R.V. AND THE METER MUST BE AT LEAST 3 PIPE DIAMETERS.
3. WHEN METER VAULT AND/OR CURB STOP BOX IS LOCATED IN LANDSCAPED AREAS, A 6" THICK CONCRETE COLLAR WILL BE REQUIRED AROUND THE MANHOLE RING AND COVER AND THE CURB STOP BOX.

Kennedy/Jenks Consultants | COTTONWOOD WATER AND SANITATION DISTRICT | 1.5" AND 2" METER IN VAULT WITHOUT BYPASS (IRRIGATION USE)

(303) 985-3636 DRAWING NO.: CTWD-35W.2 DATE: 8/2015



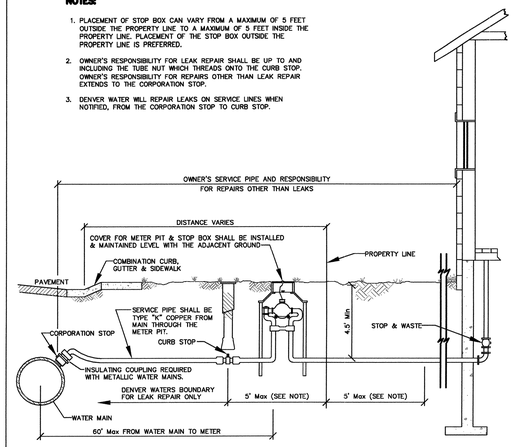
NOTES:
1. DOMESTIC SERVICE LINE TO BE INSTALLED A MINIMUM OF 18" AND A MAXIMUM OF 36" ABOVE FLOOR SLAB.
2. PROVIDE A MINIMUM OF 12" SEPARATION FROM WALL WITH 24" CLEAR SPACE IN FRONT OF DEVICE.
3. MINIMUM AIR GAP REQUIRED TO MEET LOCAL CODE AND HEALTH STANDARDS. DIRECT DISCHARGE TO FLOOR SLAB.
4. BFPD MUST FACE OPEN AREA. BFPD MUST BE FEBCO OR APPROVED EQUAL (I.E. WATTS DOMESTIC 009 QTV AND FLANGED 007 OSY).
5. WATER METER - POSITIVE DISPLACEMENT ENCODE METER WITH ELECTRONIC TOUCH READ.
6. CONTACT KEN TIM (P) 303-851-0479 OR DOUG STONE (P) 303-550-9088 FOR METER INSPECTIONS.
7. PIPE MATERIAL WITHIN 5 FEET OF BUILDING TO BE DETERMINED BY LOCAL BUILDING DEPARTMENT (DIP PREFERRED).
8. TO BE INSTALLED IN MECHANICAL ROOM WITH TEMPERATURE CONTROL DEVICE AND EXTERNAL DOOR ACCESS.
9. KEYED FOR FPD AND WATER DISTRICT (NOX BOX).

Kennedy/Jenks Consultants | COTTONWOOD WATER AND SANITATION DISTRICT | DOMESTIC FIRE SERVICE

(303) 985-3636 DRAWING NO.: CTWD-30W DATE: 2/2014

NOTES:

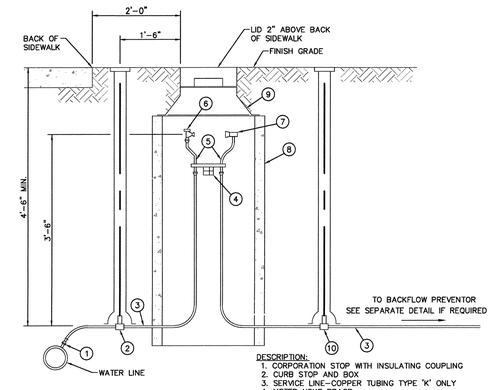
1. PLACEMENT OF STOP BOX CAN VARY FROM A MAXIMUM OF 5 FEET OUTSIDE THE PROPERTY LINE TO A MAXIMUM OF 5 FEET INSIDE THE PROPERTY LINE. PLACEMENT OF THE STOP BOX OUTSIDE THE PROPERTY LINE IS PREFERRED.
2. OWNER'S RESPONSIBILITY FOR LEAK REPAIR SHALL BE UP TO AND INCLUDING THE TUBE NUT WHICH THREADS ONTO THE CURB STOP. OWNER'S RESPONSIBILITY FOR REPAIRS OTHER THAN LEAK REPAIR EXTENDS TO THE CORPORATION STOP.
3. DENVER WATER WILL REPAIR LEAKS ON SERVICE LINES WHEN NOTIFIED, FROM THE CORPORATION STOP TO CURB STOP.



SHOULD ANY SITUATION ARISE OTHER THAN SHOWN CONCERNING THE DEPTH OR OBSTRUCTION OF SERVICE LINE OR THE PLACEMENT OF METER PIT OR STOP BOX CALL FIELD INSPECTOR OR FIELD SUPERVISOR.

Kennedy/Jenks Consultants | COTTONWOOD WATER AND SANITATION DISTRICT | RESIDENTIAL DOMESTIC WATER SERVICE

(303) 985-3636 DRAWING NO.: CTWD-31W DATE: 2/2013



NOTES:

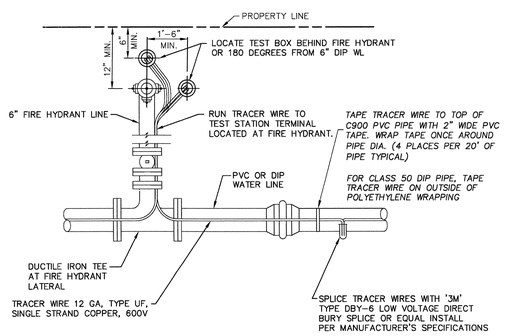
1. SERVICE LINE MUST HAVE MIN. 4'-6" COVER.
2. THERE SHALL NOT BE ANY CONNECTIONS MADE WITHIN 5'-0" OF THE METER.
3. ONLY CONCRETE METER PITS SHALL BE ACCEPTED.

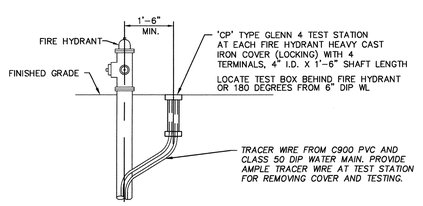
DESCRIPTION:

1. CORPORATION STOP WITH INSULATING COUPLING
2. CURB STOP AND BOX
3. SERVICE LINE-COPPER TUBING TYPE 'K' ONLY
4. METER YOKE BRACE
5. METER YOKE-FORD 80 SERIES WITH LOCKING SHUT-OFF VALVE AND CHECK VALVE. FORD COPPERSETTER FOR COPPER SERVICE WITH TUBE NUTS AND WRING LOCKS.
6. LOCKING SHUT-OFF VALVE
7. CHECK VALVE
8. METER PIT-24" I.D. x 28" O.D. x 4'-0" IN ONE FOOT SECTIONS.
9. METER PIT HOOD-CASINGS, INC. M-70 AL OR APPROVED EQUAL. LID SHALL BE CAST IRON.
10. DRAIN AND WASTE VALVE AND BOX

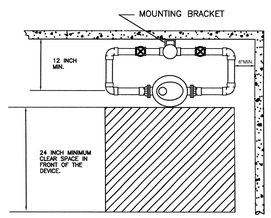
Kennedy/Jenks Consultants | COTTONWOOD WATER AND SANITATION DISTRICT | ¾-INCH & 1-INCH IRRIGATION METER DETAIL

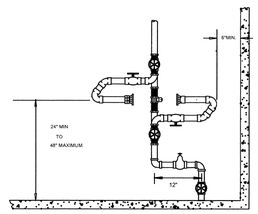
(303) 985-3636 DRAWING NO.: CTWD-32W DATE: 2/2014





DATE 11/93	COTTONWOOD WATER AND SANITATION DISTRICT	PVC & DIP WATER MAIN TRACER WIRE INSTALLATION DETAIL
REVISION 2/08		
DRAWING NO. CTWD-13W	MEURER & ASSOCIATES	



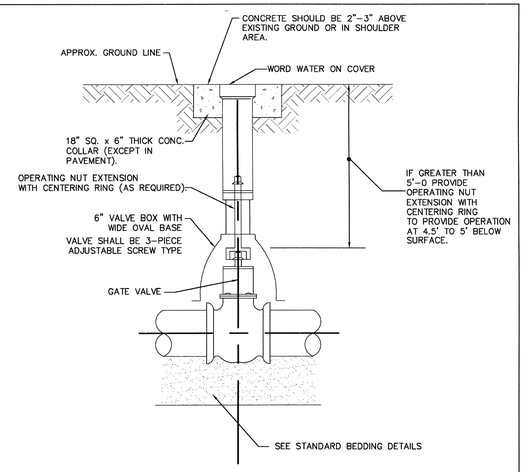


NOTE:

1. AN APPROVED REDUCED PRESSURE PRINCIPAL DEVICE WILL BE REQUIRED DOWN STREAM OF THE WATER METER ASSEMBLY FOR ALL COMMERCIAL PROJECTS.
2. THE DEVICE SHALL BE INSTALLED AT AN ELEVATION THAT IS NO LESS THAN 24" OR MORE THAN 48" ABOVE THE FINISHED FLOOR. THE DEVICE SHALL BE PLACED 12" AWAY FROM THE ADJACENT WALL TO THE CENTER OF THE DEVICE WITH A MINIMUM OF 24" OF CLEAR SPACE IN FRONT OF THE DEVICE FROM FLOOR TO CEILING. IF THE WATER METER AND BACKFLOW PREVENTION DEVICE ARE TO BE INSTALLED IN SERIES, THERE SHALL BE A MINIMUM OF 24" CLEARANCE BETWEEN THE DEVICES.

Kennedy/Jenks Consultants | COTTONWOOD WATER AND SANITATION DISTRICT | TYPICAL 1-1/2" AND 2" INTERIOR WATER METER ASSEMBLY

(303) 985-3636 DRAWING NO.: CTWD-34W DATE: 2/2014



NOTES

1. CARE SHALL BE TAKEN WHEN INSTALLING VALVES TO ASSURE PROPER SUPPORT. 3/4" WASHED ROCK SHALL BE INSTALLED UNDER THE VALVE TO PROVIDE ADDITIONAL SUPPORT WHERE REQUIRED
2. VALVES SHALL NOT BE PLACED IN CONC. CROSS PANS. VALVES SHALL BE OPEN RIGHT OPERATION.
3. VALVES & FITTINGS SHALL BE WRAPPED WITH MIN. 8 MIL. THICKNESS POLYETHYLENE WRAP
4. VALVES ON POTABLE WATER LINES ARE OPEN-RIGHT. VALVES ON NON-POTABLE WATER LINES ARE OPEN-LEFT.

ACCEPTABLE VALVE BOXES

A. TYLER SCREW - TYPE "C" CAST IRON VALVE BOX ASSEMBLY SERIES 6860 WITH NO. 160 OVAL BASE
B. CASTING INC. 6860 SERIES, CI 160B OVAL BASE
C. STAR PIPE, VB-0006 SERIES

Kennedy/Jenks Consultants | COTTONWOOD WATER AND SANITATION DISTRICT | RESILIENT SEATED GATE VALVE DETAIL

(303) 985-3636 DRAWING NO.: CTWD-1W DATE: 8/2014

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

REVISION	DATE
COMMENTS	05/26/2015
COMMENTS-2	07/07/2015
Final Plans	08/18/2015

MM&D ENGINEERING SERVICES, INC.

William E. Miller, PE 13389
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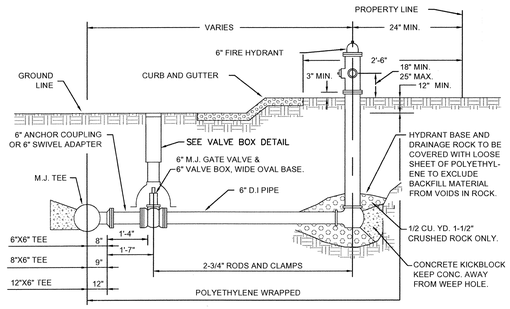
Boondocks
Parker, Colorado
Water Details
Utility Plan

COLORADO REGISTERED PROFESSIONAL ENGINEER WILLIAM E. MILLER 13889 SUPERVISOR OF ENGINEERING

DATE 09/18/2014
DES/DFT/CHK WEM/km
PROJ. NO. 13-343
SHEET 7 OF 8



ONLY THE FOLLOWING FIRE HYDRANTS AND VALVE BOXES LISTED BELOW SHALL BE ACCEPTED FOR CONSTRUCTION.

FIRE HYDRANTS

A. AMERICAN AVK SERIES 27
B. MEULLER CENTURION MODEL A-473.
C. WATEROUS PACER MODEL WB-67-250.

ACCEPTABLE VALVE BOXES

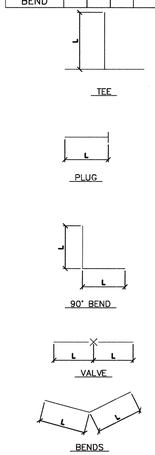
A. TYLER SCREW - TYPE "C" CAST IRON VALVE BOX ASSEMBLY SERIES 6860 WITH NO. 160 OVAL BASE
B. CASTING INC. 6860 SERIES, CI 160B OVAL BASE
C. STAR PIPE, VB-0006 SERIES

Kennedy/Jenks Consultants | COTTONWOOD WATER AND SANITATION DISTRICT | FIRE HYDRANT ASSEMBLY

(303) 985-3636 DRAWING NO.: WB-4W DATE: 8/2014

ROD DIAMETER, GRADE & LENGTH OF RESTRAINED PIPE

PIPE SIZE	4"			6"			8"			12"			16"			20"			24"		
FITTING	D	L	G	D	L	G	D	L	G	D	L	G	D	L	G	D	L	G	D	L	G
90° BEND, TEE, PLUG	3/4"	30'	MS	3/4"	45'	MS	3/4"	60'	MS	3/4"	86'	HS	1"	108'	HS	1 1/4"	132'	HS	–	155'	–
VALVE	3/4"	30'	MS	3/4"	45'	MS	3/4"	60'	MS	3/4"	86'	HS	1"	108'	HS	1 1/4"	132'	HS	–	155'	–
45° BEND	3/4"	9'	MS	3/4"	13'	MS	3/4"	18'	MS	3/4"	25'	MS	1"	32'	MS	3/4"	39'	HS	–	45'	–
22 1/2° BEND	3/4"	1'	MS	3/4"	4'	MS	3/4"	5'	MS	3/4"	7'	MS	3/4"	8'	MS	3/4"	10'	MS	–	12'	–
11 1/4° BEND	–	–	–	–	–	–	3/4"	1'	MS	3/4"	2'	MS	3/4"	2'	MS	3/4"	3'	MS	–	3'	–

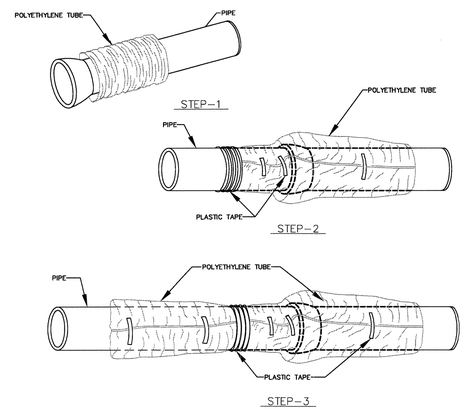


NOTES:

1. LENGTH OF RESTRAINED PIPE MEASURED EACH WAY FROM VALVES AND BENDS.
2. CLAMPS, RODS & MEGALUGS NOT ALLOWED FOR 24" & LARGER PIPES.
3. D=DIAMETER, L=LENGTH, G=GRADE, MS=MILD STEEL, HS=HIGH STRENGTH.
4. MIN 4.5' GROUND COVER REQD.
5. BASED ON 150 PSI INTERNAL PRESSURE.
6. MS = MILD STEEL ROD ASTM A 36.
7. HS = HIGH STRENGTH ROD ASTM A 193 GRADE B7.
8. NUTS SHALL BE ASTM A 307 GRADE A OR B HEXAGON HEAVY SERIES. HS NUTS SHALL CONFORM TO MS-22.
9. SEE TIE ROD DETAIL DRAWING. ALSO, TIE ROD COUPLING DETAILS, CLAMP DETAILS AND SET CLAMP DETAILS.
10. LENGTH REFERS TO THE AMOUNT OF PIPE WHICH MUST BE RESTRAINED TOGETHER AND IS NOT NECESSARILY THE LENGTH OF THE RODS.
11. LENGTH OF RESTRAINED PIPE CHART IS ALSO FOR THE LENGTH OF JOINT RESTRAINT FOR MEGALUGS.
12. CROSSES MUST BE RESTRAINED IN ALL APPLICABLE DIRECTIONS.
13. 12" AND SMALLER IN LINE VALVES AND TEES SHALL HAVE A MECHANICAL JOINT RESTRAINT DEVICE ON EACH SIDE OF THE FITTING OR VALVE. MECHANICAL JOINT RESTRAINT DEVICE SHALL BE PER MS-2.
14. A SECOND VALVE WILL BE REQD TO BE CLOSED WHEN EXCAVATING NEXT TO A EXIST VALVE.
15. ON PLUGS, TEES AND BENDS KICKBLOCK SHALL BE USED IN ADDITION TO RESTRAINT.
16. WHEN REDUCERS ARE USED ON VALVE INSTALLATIONS THE LENGTH OF RESTRAINT SHALL BE BASED ON THE SIZE OF THE PIPE NOT THE SIZE OF THE VALVE.

Kennedy/Jenks Consultants | COTTONWOOD WATER AND SANITATION DISTRICT | LENGTH OF RESTRAINED PIPE

(303) 985-3636 DRAWING NO.: WB-9W DATE: 8/2014



FIELD INSTALLATION-POLYETHYLENE WRAP

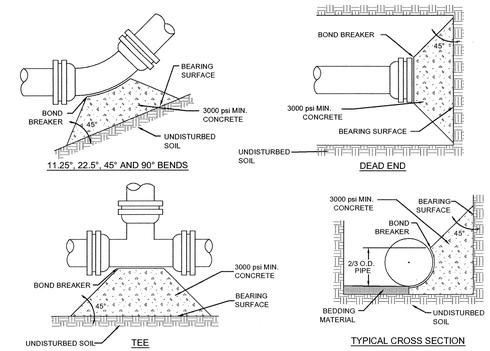
STEP-1 PLACE TUBE OF POLYETHYLENE MATERIAL AROUND PIPE PRIOR TO LOWERING PIPE INTO TRENCH.

STEP-2 PULL THE TUBE OVER THE LENGTH OF THE PIPE. TAPE TUBE TO PIPE AT JOINT. FOLD MATERIAL AROUND THE ADJACENT SPIGOT END AND WRAP WITH THREE CIRCUMFERENTIAL TURNS OF TWO-INCH WIDE PLASTIC TAPE TO HOLD PLASTIC TUBE AROUND SPIGOT END.

STEP-3 ADJACENT TUBE OVERLAPS FIRST TUBE AND IS SECURED WITH PLASTIC ADHESIVE TAPE. THE POLYETHYLENE TUBE MATERIAL COVERING THE PIPE WILL BE LOOSE. EXCESS MATERIAL SHALL BE NEATLY DRAWN UP AROUND THE PIPE BARREL, FOLDED INTO AN OVERLAP ON TOP OF THE PIPE AND HELD IN PLACE BY MEANS OF PIECES OF THE PLASTIC TAPE AT APPROXIMATELY THREE TO FIVE FOOT INTERVALS.

Kennedy/Jenks Consultants | COTTONWOOD WATER AND SANITATION DISTRICT | POLYETHYLENE WRAP DETAIL

(303) 985-3636 DRAWING NO.: CTWD-10W DATE: 8/2014



MINIMUM BEARING SURFACE AREA

(IN SQUARE FEET)

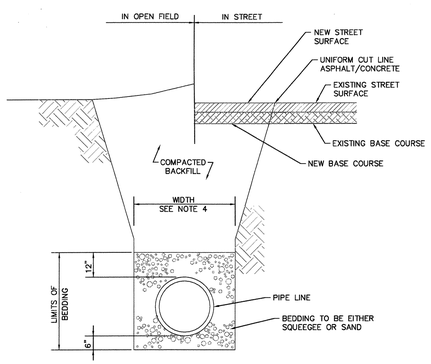
SIZE OF PIPE	BENDS				TEE OR DEAD END
	11.25°	22.5°	45°	90°	
4"	1.00	1.00	1.00	2.00	1.50
6"	1.00	1.25	2.25	4.25	3.00
8"	1.00	2.00	4.00	7.50	5.25
12"	2.25	4.50	8.75	16.00	11.25
16"	3.75	7.50	14.50	27.00	19.00
20"	5.00	10.00	19.50	35.50	25.00
24"	7.00	14.00	27.75	51.00	36.00

NOTES:

1. BEARING AREAS SHOWN ON THE CHART ARE MINIMUM AREAS AND ARE DESIGNED USING THE FOLLOWING CRITERIA:
   1.1. INTERNAL WORKING PRESSURE OF 150 PSI.
   1.2. TRANSIENT (WATER HAMMER) PRESSURE OF 120 PSI FOR 6 AND 8-INCH DIAMETER LINES, 110 PSI FOR 12-INCH LINES, AND 80 PSI FOR 16-INCH AND 20-INCH LINES.
   1.3. MINIMUM UNDISTURBED SOIL BEARING CAPACITY OF 3000 PSI.
2. ALL SIZES OF BENDS, TEES, AND DEAD ENDS SHALL HAVE KICKBLOCKS.
3. RODDING IS ALSO REQUIRED ON FITTINGS. SEE LENGTH OF PIPE RESTRAINT DETAIL FOR SPECIFIC REQUIREMENTS.
4. ALL BENDS SHALL BE RESTRAINED.

Kennedy/Jenks Consultants | COTTONWOOD WATER AND SANITATION DISTRICT | KICKBLOCK

(303) 985-3636 DRAWING NO.: CTWD-12W DATE: 8/2014



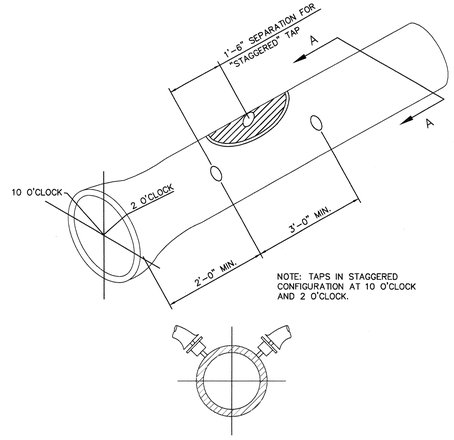
TYPICAL TRENCH SECTION

NOTES:

1. MINIMUM COVER TO BE 4.5' BELOW OFFICIAL STREET GRADE.
2. TRENCH TO BE BRACED OR SHEETED AS NECESSARY FOR THE SAFETY OF THE WORKMEN AND PROTECTION OF OTHER UTILITIES IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL SAFETY REGULATIONS.
3. PIPE SHALL BE BEDDED FROM 6" BELOW THE BOTTOM OF THE PIPE TO 12" ABOVE THE TOP OF THE PIPE.
4. TRENCH WIDTH SHALL NOT BE MORE THAN 16" NOR LESS THAN 12" WIDER THAN THE LARGEST OUTSIDE DIAMETER OF THE PIPE.
5. SHOULD THE TRENCH BE EXCAVATED WIDER THAN ALLOWED, A CONCRETE CRADLE SHALL BE PLACED WITH 2500 P.S.I. CONCRETE FROM THRENCH BOTTOM TO PIPE SPRINGLINE.
6. COMPACTION SHALL BE AS FOLLOWS: PIPE ZONE BEDDING 6" UNDER AND 12" OVER PIPE WILL REQUIRE 70% RELATIVE DENSITY TRENCH ZONE ABOVE BEDDING MATERIALS, FULL TRENCH SECTION IN ROADWAY OR STREET R.O.W. LIMITS WILL REQUIRE 95% S.P.D. TRENCH ZONE ABOVE BEDDING MATERIALS, OUTSIDE OF STREET R.O.W. WILL REQUIRE 90% S.P.D.

Kennedy/Jenks Consultants | COTTONWOOD WATER AND SANITATION DISTRICT | STANDARD BEDDING

(303) 985-3636 DRAWING NO.: CTWD-16 DATE: 2/2014

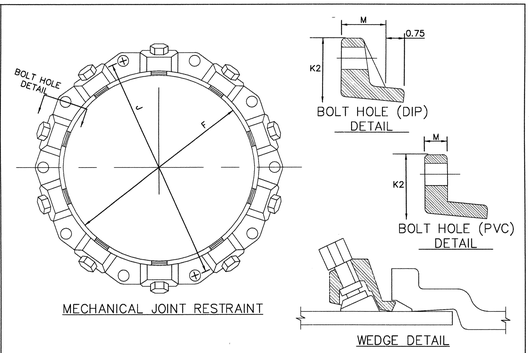


WATER

SERVICE TAPS - WATER SERVICE TAPS SHALL BE MADE AT EITHER THE 2 O'CLOCK OR THE 10 O'CLOCK POSITION ON THE CIRCUMFERENCE OF A WATER MAIN. THE MINIMUM DISTANCE BETWEEN A TAP MADE AT THE 2 O'CLOCK POSITION AND THE ONE MADE AT THE 10 O'CLOCK POSITION SHALL BE 18-INCHES MEASURED ALONG THE PIPE. THE MINIMUM DISTANCE BETWEEN SUCCESSIVE TAPS MADE EITHER AT THE 2 O'CLOCK OR THE 10 O'CLOCK POSITION SHALL BE 3-FEET. THE MINIMUM DISTANCE FROM EITHER THE BELL OR THE SPIGOT END OF A PIPE TO A TAP SHALL BE 2-FEET. A MAXIMUM OF 4 WATER SERVICE TAPS SHALL BE ALLOWED PER LENGTH OF PIPE. REFERENCE IS MADE TO THE DENVER WATER DEPARTMENT ENGINEERING STANDARDS CHAPTER 3, SECTION 3.07, FOR THE REQUIREMENTS ON TAPPING METHODS AND CONNECTIONS. ALL TAPS SHALL BE MADE USING BRASS SADDLES CONFORMING TO DISTRICT AND DENVER WATER DEPARTMENT SPECIFICATIONS.

Kennedy/Jenks Consultants | COTTONWOOD WATER AND SANITATION DISTRICT | DOMESTIC WATER TAPPING DETAIL

(303) 985-3636 DRAWING NO.: CTWD-20W DATE: 2/2014



DIMENSIONS

	NOMINAL PIPE SIZE	NO. OF BOLTS	NO. OF WEDGES	K2 INCHES	J INCHES	F INCHES	M INCHES	
PVC	4"	2	2	9.13	7.50	4.90	0.50	PVC
	6"	6	3	11.13	9.50	7.00	0.50	
	8"	6	4	13.38	11.75	9.15	0.62	
	10"	8	6	15.63	14.00	11.20	0.62	
	12"	8	8	17.88	16.25	13.30	0.62	
DI	4"	4	2	9.12	7.50	4.90	0.75	DI
	6"	6	3	11.12	9.50	7.00	0.88	
	8"	6	4	13.37	11.75	9.15	1.00	
	10"	8	6	15.62	14.00	11.20	1.00	
	12"	8	8	17.88	16.25	13.30	1.25	

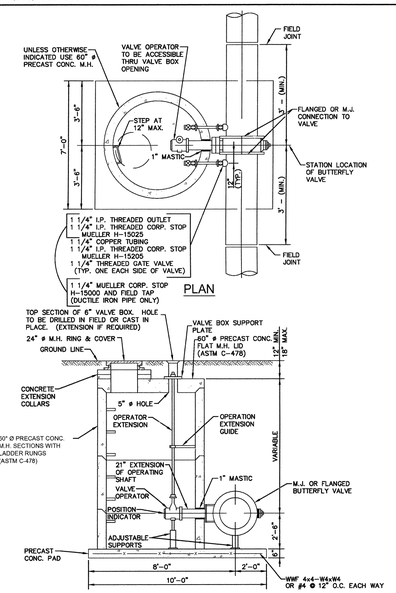
DIMENSIONS FOR 16" AND 20" D.I. PIPE NOT SHOWN

NOTES:

1. USE EBAA IRON "MEGALUG", SERIES 1100 (D.I.P.), SERIES 2000PV (P.V.C.) OR APPROVED EQUAL
2. IF ENCASED IN CONCRETE, POLYETHYLENE WRAP MUST BE USED TO PREVENT CONCRETE INTRUSION INTO WEDGE PACKET

Kennedy/Jenks Consultants | COTTONWOOD WATER AND SANITATION DISTRICT | MECHANICAL JOINT RESTRAINT

(303) 985-3636 DRAWING NO.: CTWD-23W DATE: 8/2014



Kennedy/Jenks Consultants
143 Union Boulevard
Suite 600
Lakewood, CO 80228
303.985.3636 tel.
303.985.3800 fax

COTTONWOOD WATER AND SANITATION DISTRICT

BUTTERFLY VALVE AND VAULT ASSEMBLY DETAIL

DRAWING NO.: DATE: PAGE:

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

REVISION	DATE
COMMENTS	05/26/2015
COMMENTS-2	07/07/2015

MM&D ENGINEERING SERVICES, INC.

William E. Miller, PE 13389
ENGINEERING
CONSTRUCTION MANAGEMENT
9125 N. Clydesdale Road PH (303) 908-0062
Castle Rock, Colorado 80108 FAX (303) 708-8399

Boondocks
Parker, Colorado
Water Details
Utility Plan

COLORADO REGISTERED PROFESSIONAL ENGINEER WILLIAM E. MILLER 13389

submittal 03/10/2015

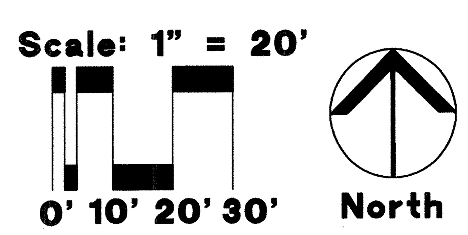
DATE 09/16/2014
DES/DFT/CHK WEM/km
PROJ. NO. 13-343
SHEET 8 OF 8

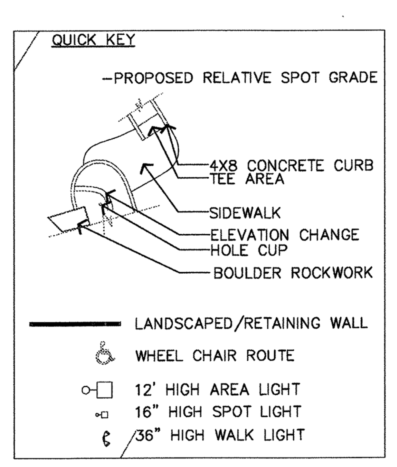
A. GENERAL CONSTRUCTION NOTES

1. These construction documents indicate the general design intent only. It is the general contractor's responsibility to provide any additional construction details required and to dictate methods of construction. The contractor shall verify all dimensions of manufactured components and relationships between materials or components. The contractor shall verify existing conditions and dimensions shown on the drawings.
2. The landscape architect shall be notified of any discrepancies or deficiencies in the drawings prior to construction. Should any condition arise which would not normally be anticipated, or should any condition arise which does not match the construction documents, notify the landscape architect for direction.
3. The information contained and noted within these documents represents new construction unless otherwise identified as existing construction.
4. The general contractor shall coordinate all means, methods, techniques, sequences, procedures and scheduling of all construction activities and operations for the construction of the project; safety requirements for construction; obtaining and compliance with all permits.
5. The contractor warrants to the owner that all materials and equipment furnished under their contract will be new unless otherwise specified, and that all work shall be of good quality, free from faults or defects, and in conformance with the contract documents and generally accepted industry-wide standards and practices. All work not conforming to these requirements, including substitutions not properly approved or authorized, may be considered defective. If required, the contractor shall furnish satisfactory evidence as to the kind and type of quality of materials and equipment. The owner and landscape architect have the authority to reject the work, and the owner may require that the unsatisfactory or non-compliant work be removed and replaced with that which is specified in the construction documents.
6. All work performed and materials installed shall be in strict accordance, as a minimum standard, with all applicable codes, regulations and ordinances of all authorities of this jurisdiction. Contractors shall give all notices, secure all permits, and comply with all laws, ordinances, rules, regulations and lawful orders of any public authority bearing on the performance of the work.
7. This is a custom design for this specific project. These construction documents may not be used on any other site without the landscape architect's prior, written approval. Any changes to these construction documents, without prior written consent by the Owner/landscape architect, shall constitute acceptance and responsibility by the contractor of that change.
8. Should questions arise regarding the construction documents, existing conditions, and/or design intent, the general contractor shall be responsible for obtaining a clarification from the Owner/landscape architect prior to submittal of proposals and proceeding with the work.
9. The contractor shall preserve and protect all existing construction, fixtures, furnishings, equipment, and finishes that are not indicated on the construction documents as demolition items. The contractor shall repair or replace any damage occurring to the existing items or finishes to remain, at no additional cost to the owner.
10. The contractor shall be knowledgeable of all information within the construction documents, coordinate this information with all the requirements of their trades and agreement with the owner, and field verify all existing conditions affected by their work.
11. Do not scale drawings. The dimensions govern.
12. Large scale views govern smaller scale drawings.
13. Written and noted information govern drawings.
14. All dimensions are to face of framing unless noted otherwise.
15. All dimensions are plus/minus (+/-) unless noted otherwise. Contractor to field verify all dimensions.
16. The general contractor shall consider that all items noted "by owner" shall require coordination with the owner for construction requirements.
17. The drawings include finish information for the general contractor to coordinate construction. Finish samples shall be submitted to the landscape architect or the Owner for final approval prior to ordering materials and installation.
18. All new construction shall align and match existing construction conditions wherever possible. Notify the Owner and landscape architect at all conditions where this criteria cannot be met.
19. The general contractor shall notify the Owner and landscape architect of all conditions that vary from the design intent identified within these documents.
20. The general contractor is responsible with complying with all manufacturer's recommendations for storage, preparation, fabrication, installation, and curing of all materials and systems.
21. The general contractor shall review with the Owner/landscape architect all field conditions where new systems interface with existing construction and determine with the Owner/landscape architect the detail requirements for the construction.
22. The general contractor is responsible for, and shall coordinate all plumbing, electrical, and mechanical trades to ensure that they execute and inspect all work in accordance with all underwriters, local and state codes, rules, and regulations applicable to the trade affected as minimum standard. If the plans call for requirements that exceed these rules and regulations, the greater requirement shall be followed. Follow recommendations of njpa, smacna, epa, osha, and ashrae, ibc, nfpa, ieee, nema, cbm, ansi, neca, icea, and neta.
23. The general contractor is responsible for coordinating fixtures and equipment that comply with the design intent indicated within the landscape architectural construction documents.

B. SITE PREPARATION & DEMOLITION NOTES

1. Perform site preparation and demolition as shown and specified. The work includes but is not limited to the following:
   a. Protection of existing off-site trees and landscaping to remain.
   b. Protecting existing on & off-site signs, pavement, fences, utilities and their improvements to remain.
   c. Removing any existing shrubs and perennial on the subject site.
   d. Striping and stockpiling top soil (in new construction areas) for future use with final grading.
2. Perform site preparation and demolition before commencing earthwork and site construction.
3. Locate, protect, and maintain active utilities, bench-marks and site improvements to remain.
4. Provide necessary barricades, covering and protection to prevent damage to existing improvements to remain.
5. Set up traffic detour system for vehicles, bicycles, and Pedestrians as needed.
6. Restore to original grades and conditions, areas adjacent to the site disturbed or damaged as a result of site preparation work.
7. Protection of existing trees
   a. Locate and suitably identify off-site trees and improvements to remain.
   b. Protect existing trees scheduled to remain against injury or damage, including cutting, breaking, or skinning of roots, trunks or branches; smothering by stockpiled construction materials, excavated materials, or vehicle traffic within branch spread.
8. Disposal of Waste Materials
   a. Haul from site and legally dispose of materials that are not useful in the construction or the project and that are not scheduled to be salvaged and reinstalled.
   b. Haul off and disposal shall occur on a regular basis so that discarded materials are not stockpiled on-site.
9. Top Soil Striping and Stockpiling: Within those areas designated for re-grading and new construction, it is recommended that the existing top soil be striped and stockpiled on-site (if possible) for future replacement at the final grading stage. See engineer's plans for grading information and details.
10. Cleaning. Upon completion of site preparation work, or portion thereof, clean areas worked on each day, remove debris, tools and equipment. Maintain the site clear and clean, and free of materials and debris and suitable for the unobstructed site work operations.





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6201 So. Hudson Ct., Centennial, CO 80121
(303) 694-9484 FAX (303) 694-9272
Job # 409

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

REVISIONS	
DESCRIPTION	DATE
PKG. ISLAND/STM SWR REV.	8/3/15

OWNER
SELECT DEVELOPMENT & CONTRACTING, LLC
660 EAST FRANKLIN ROAD, MERIDIAN, ID 83642

PROJECT
Boondocks Fun Center
CROWN POINT DEVELOPMENT
PARKER, CO

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Architecture • Planning
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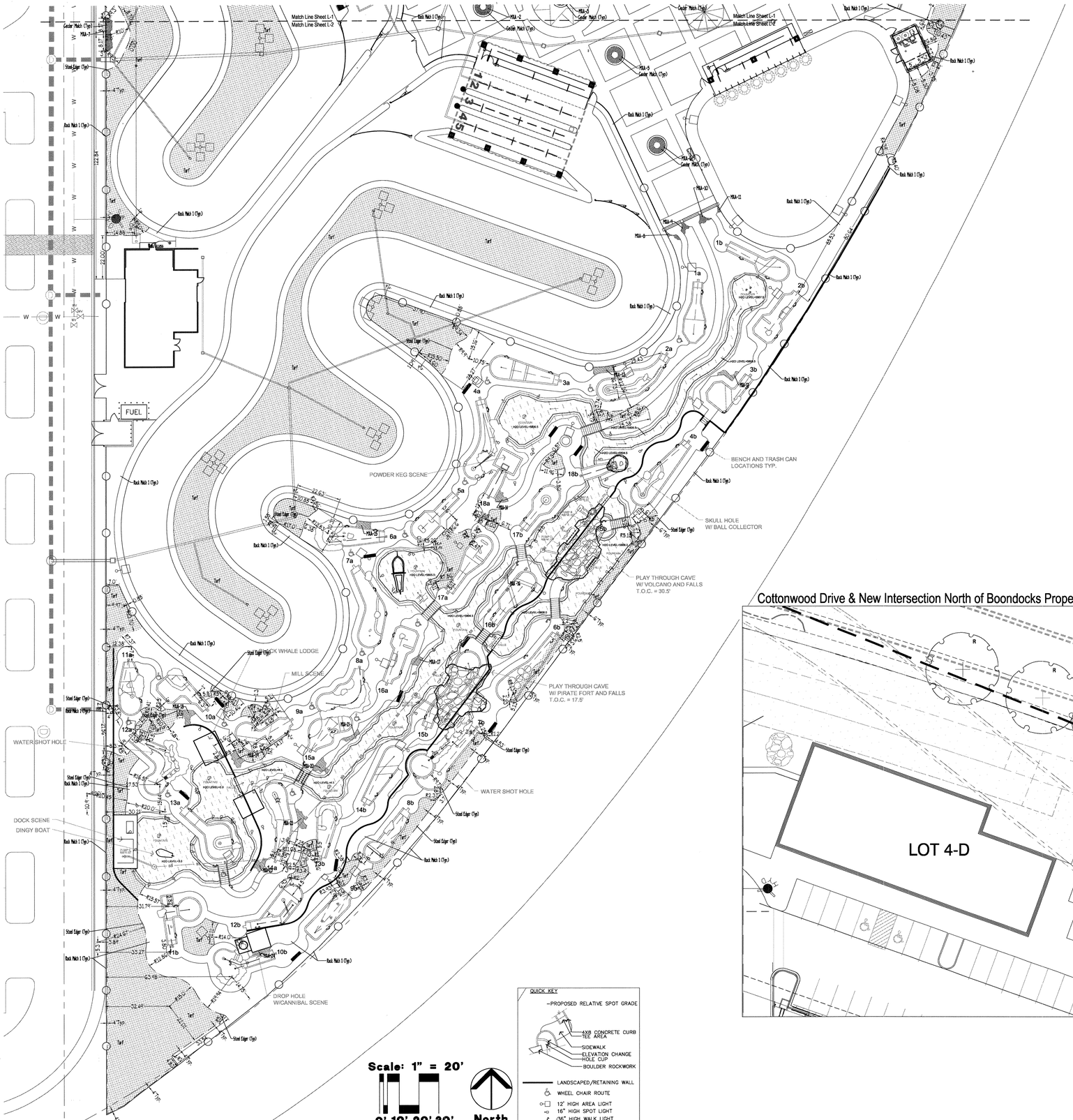
KIRBY J. SMITH 430 9/1/15 03/04/2008 Original Date of Licensure STATE OF COLORADO LICENSED LANDSCAPE ARCHITECT

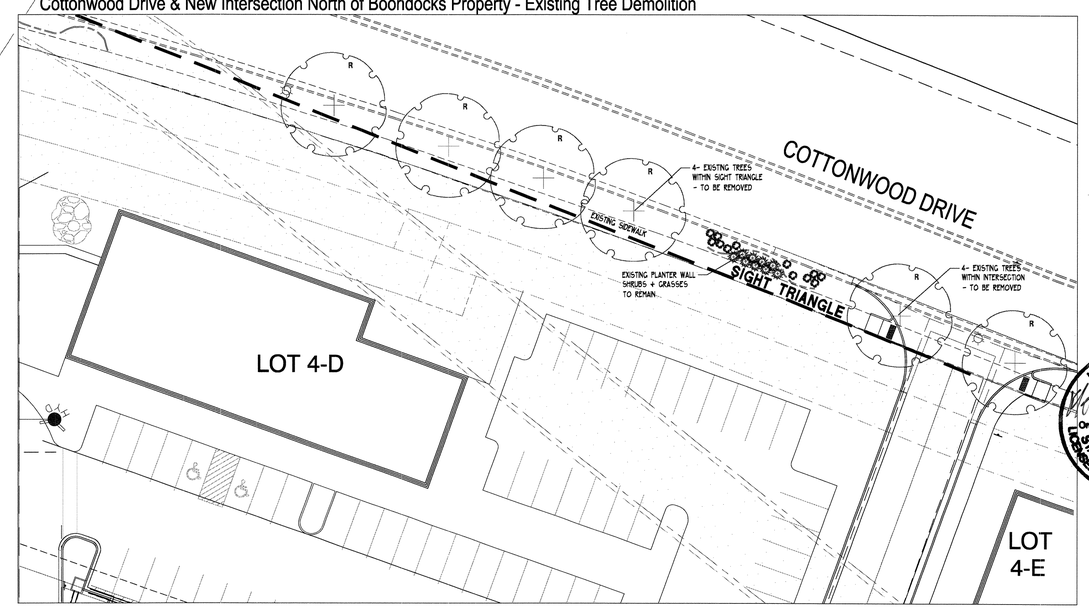
CONSTRUCTION DRAWINGS
LAYOUT PLAN (NORTH)

SHEET DATA	
DRAWN BY:	KJS
CHECKED BY:	KJS
SCALE:	1" = 20'
DATE:	5/29/15
PROJECT #:	14001

SHEET NUMBER
L-1



Cottonwood Drive & New Intersection North of Boondocks Property - Existing Tree Demolition



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REVISIONS

DESCRIPTION	DATE
PKG. ISLANDS/TM SWR REV.	8/3/15

OWNER

SELECT DEVELOPMENT & CONTRACTING, LLC
660 EAST FRANKLIN ROAD, MERIDIAN, ID 83642

PROJECT

Boondocks
Fun Center
CROWN POINT DEVELOPMENT
PARKER, CO

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(208) 345-0566 (208) 345-1718 Fax (208) 387-0889
office@rpboise.com

KIRBY J. SMITH 430 03/04/2008 Original Date of Licensure STATE OF COLORADO LICENSED LANDSCAPE ARCHITECT 8/1/15

CONSTRUCTION DRAWINGS
LAYOUT & DEMO PLAN (SOUTH)

SHEET DATA

DRAWN BY:	KJS
CHECKED BY:	KJS
SCALE:	1" = 20'
DATE:	5/29/15
PROJECT #	14001

SHEET NUMBER

L-2

PLANT LEGEND

CGP 6'-8' White Fir 50'X20'-25'
CSP 6' Colorado Spruce 60'X35'
BSP 8' Bakeri Spruce 30'X10'
PIN 6' Pinon Pine 25' X 15'
AUS 6' Austrian Pine 50'X20'
PON 6' Ponderosa Pine 40'X25'
MEJ 5-7 Gal. Medora Juniper 10'X5'
SPA 5-7 Gal. Spartan Juniper 15'X5'
WBL 10 Gal. Wichita Blue Juniper 20'X5'
GSM Crimson Sentry Maple 25'X15'
IMP Imperial Locust 35'X25'
SHA Shademaster Honeylocust 50'X35'
BOA 2.5" Gal. Burr Oak 70' X 50'
TEX Texas Rd Oak 50' X 40'
ROA Northern Red Oak 50'X30'
EOA English Oak 50'X40'
RU Redmond Linden 40'X25'
GMG Amur Maple 6' Clump-#15 20'x15'
ALG Thinleaf Alder 20'X10'
GRT Goldenrain Tree 30'X25'
PRF Prairiefire Crab 20'X20'
TCC Thunderchild Crab 20'X20'

BSL Scotch Lens Broom 3'X4'
BSG Spanish Gold Broom 4'X6'
EGG Euonymus Emerald Gaiety 3'X5'
AND Andora Juniper 18'X6'
ARM Armstrong Juniper 4'X4'
BCH Blue Chip Juniper 10'X6'
BUF Buffalo Juniper 12'X6'
HUG Hughes Juniper 18'X6'
OLD Old Gold Juniper 3'X4'

RBA Red Barberry 4'X5'
CPB Crimson Pygmy Barberry 2'X3'
BRE Butterfly Bush 5'X5'
BMS Blue Mist Spirea 3'X3'
RTD Redtwig Dogwood 8' X 8'

CTT Tom Thumb Cotoneaster 1'X3'
GD1 Cotoneaster, Shrub 6'X4'
CMO Rock Cotoneaster 2'X3.5'
DBB Dwarf Burning Bush 5'X4'
RSA Russian Sage 4'X3'
GFP Goldfinger Potentilla 3'X4'
GDP Gold Drop Potentilla 3' X 3'
PBS Pawnee Buttes Sand Cherry 1.5'X6'

GSP 8 Gal. Globe Spruce 3'X4'
MGL 6 Gal. Slowmound Mugho Pine 3'X4'
MMO 6 Gal. Mops Mugho Pine 5'X6'
MAQ Oregon Grape Holly 6'X6'
MGO Compact Oregon Grape Holly 3'X4'-5'
MRE Mahonia Repens 1.5'X2'

SEA Seagreen Juniper 8'X6'
WIL Blue Rug Juniper 6'X6'

DSP Daphne Spirea 2'x2'
LPS Little Princess, Pink Spirea 2'x3'
NFS Neon Flash Spirea 3'X3'
SFQ Fairy Queen Spirea 3'X3'
MKL Miss Kim Lilac 5'x5'
CPL Common Purple Lilac 15'X8'

CSU Staghorn Cutleaf Sumac 8'X6'
VKS Koreanspice Viburnum 6' X 6'
VBM Blue Muffin Viburnum 6'X6'
DAC Dwarf American Cranberry 6'X4'
KNP Knockout Pink Rose 3'x3'
KNR Knockout Red Rose 3'x3'

Perennials To Be Included in MXA Mixed Annuals/Perennials Areas:
YAM Yarrow Moonshine/Pink/Yellow 20'X21'
HSU Hyssop Sunset 24'-36'X18'-30'
REV Red Valerian 24'x24'
GOM Gopeopsis Moonbeam 18'-24'x12'-18'

CPM Coneflower Magnus 24-36'x24'
GAI Gaillardia Burgundy 14'-24'X12'-24'
ELA English Lavender 12'-18'x12'-18'
RGD Goldstrum Rudbeckia 30'X24'
SMN Salvia, May Night 18'X18'

Ornamental Grasses
FKG Feather Reed Grass 5-6'x24'
AVG Blue Avena Grass 2'X2'
PMG Maiden Grass, Purple/Flame 3'-4'X18'-24'
RSG Red Switch Grass 3'-4'X24'-30'
LBG Little Bluestem 3-4'x2'

30X30X30' 36'X36'X30' 60'X60'X36' Precast Concrete Planters
Irrigated Turf ('Revelle' - Texas Hybrids mix)
Water Features, Fountains + Falls
MXA Mixed Annuals/Perennials

QUICK KEY
PROPOSED RELATIVE SPOT GRADE
4X8 CONCRETE CURB TEE AREA
SIDEWALK
ELEVATION CHANGE
HOLE CUP
BOULDER ROCKWORK
LANDSCAPED/RETAINING WALL
WHEEL CHAIR ROUTE
12' HIGH AREA LIGHT
16" HIGH SPOT LIGHT
36" HIGH WALK LIGHT

Scale: 1" = 20'
0' 10' 20' 30'
North

REVISIONS

DESCRIPTION	DATE
PKG. ISLANDS/TM DWR REV	8/3/15

OWNER
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PROJECT
Boardecks Fun Center
CROWN POINT DEVELOPMENT
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KIRBY J. SMITH 439 9/4/15 03/04/2008 Original Date of Licensure STATE OF COLORADO LICENSED LANDSCAPE ARCHITECT

CONSTRUCTION DRAWINGS
LANDSCAPE PLAN
(NORTH)

SHEET DATA

DRAWN BY:	KJS
CHECKED BY:	KJS
SCALE:	1" = 20'
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PROJECT #:	14001

SHEET NUMBER
L-3

Prepared By:
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WHEEL CHAIR ROUTE
12' HIGH AREA LIGHT
16" HIGH SPOT LIGHT
36" HIGH WALK LIGHT

Scale: 1" = 20'
0' 10' 20' 30'
North

PLANT & MATERAILS SCHEDULE

QTY.	ITEM	COMMON NAME	SCIENTIFIC NAME	SIZE	Comments
		DECIDUOUS SHADE TREES			
4	IMP	Imperial Honeylocust	Gleditsia triacanthos inermis 'Imperial'	2" Cal.	B&B
22	SHA	Shademaster Honeylocust	Gleditsia triacanthos inermis 'Shademaster'	2" Cal.	B&B
8	RLI	Redmond Linden	Tilia americana 'Redmond'	2" Cal.	B&B
7	CSM	Crimson Sentry Maple	Acer platanoides 'Crimson Sentry'	2" Cal.	B&B
4	BOA	Bur Oak	Quercus macrocarpa	2" Cal.	B&B
4	EOA	English Oak	Quercus robur	2" Cal.	B&B
3	ROA	Northern Red Oak	Quercus rubra	2" Cal.	B&B
28	TEX	Texas Red Oak	Quercus buckleyi	2" Cal.	B&B
		EVERGREEN TREES			
5	CCF	Concolor Fir/White Fir	Abies concolor	6' Ht.	B&B
7	AUS	Austrian Pine	Pinus nigra	6' Ht.	B&B
7	PIN	Pinion Pine	Pinus edulis	6' Ht.	B&B
8	PON	Ponderosa Pine	Pinus ponderosa	6' Ht.	B&B
21	BSP	Bakeri Spruce	Picea pungens 'Bakeri'	6' Ht	B&B
2	CSP	Colorado Blue Spruce	Picea pungens	6'Ht.	B&B
15	MEJ	Medora Juniper	Juniperus scopulorum 'Medora'	7 Gal.	4' Min. Ht.
5	SPA	Spartan Juniper	Juniperus chinensis 'Spartan'	7 Gal.	4' Min. Ht.
7	WBL	Wichita Blue Juniper	Juniperus scopulorum 'Wichita Blue'	7 Gal.	4' Min. Ht.
		DECID. ORNAMENTAL TREES			
14	PRF	Prairiefire Crab	Malus ssp. 'Prairiefire'	1.75" Cal	B&B
6	ALC	Thinleaf Alder	Alnus tenufolia	15 Gal.	6'Clump multistaked
11	TCC	Thunderchild Crab	Malus x 'Thunderchild'	1.75" Cal	B&B
12	GRT	Goldenrain Tree	Koelreuteria paniculata	1.75" Cal	B&B
18	GMC	Ginnala Maple	Acer ginnala	6'-8' Clump	B&B
		DECIDUOUS SHRUBS			
84	CPB	Crimson Pygmy Barberry	Berberis thunbergii 'Autropurpurea Nana'	5 Gal.	18"Min. Ht.
51	RBA	Red Barberry	Berberis thunbergii 'Autropurpurea'	5 Gal.	18"Min Ht.
106	DBB	Euonymus alatus 'Compacta'	Euonymus alatus 'Compacta'	5 Gal.	18"mult-staked
26	BRE	Butterfly Bush	Buddleia davidii	5 Gal.	24"mult-staked
39	DAC	Dwarf American Cranberry	Viburnum trilobum 'Compactum'	5 Gal.	18"mult-staked
13	RTD	Red Twig Dogwood	Cornus sericea 'Baileyi'	5 Gal.	24"-30"mult-staked
3	CPL	Common Purple Lilac	Syringa vulgaris	5 Gal.	18"-24"mult-staked
39	MKL	Miss Kim Lilac	Syringa patula 'Miss Kim'	5 Gal.	18"-24"mult-staked
63	GDP	Gold Drop Potentilla	Potentilla fruticosa 'Gold Drop'	5 Gal.	18"-24"mult-staked
71	GFP	Goldfinger Potentilla	Potentilla fruticosa 'Goldfinger'	5 Gal.	24"mult-staked
75	RSA	Russian Sage	Perovskia atriplicifolia	5 Gal.	24"mult-staked
6	PBS	Pawnee Buttes Sand Cherry	Prunus besseyi 'Pawnee Buttes'	5 Gal.	18"mult-staked
66	BMS	Blue Mist Spirea	Caryopteris x clandonensis	5 Gal.	18"-24"mult-staked
9	DSP	Daphne Spirea	Spirea japonica var. alpina	5 Gal.	18"mult-staked
97	SFQ	Fairy Queen Spirea	Spirea trilobata 'Fairy Queen"	5 Gal.	24"mult-staked
111	NFS	Neon Flash Spirea	Spirea japonica 'Neon Flash'	5 Gal.	24"mult-staked
26	LPS	Little Princess Spirea	Spirea japonica 'Little Princess'	5 Gal.	18"mult-staked
16	VBM	Blue Muffin Viburnum	Viburnum dentatum 'Christom'	5 Gal.	24"-30"mult-staked
23	VKS	Koreanspice Viburnum	Viburnum carlesii	5 Gal.	24"-30"mult-staked
10	CSU	Staghorn Cutleaf Sumac	Rhus typhina 'Lanciniata'	5 Gal.	24"mult-staked
61	KNP	Knockout Pink Rose	Rosa 'RADcon'	2 to 5 Gal.	24"mult-staked
55	KNR	Knockout Red Rose	Rosa 'Radrazz'	2 to 5 Gal.	24"mult-staked
		BROADLEAF EVERGREEN SHRUBS			
25	BSL	Broom, Scotch Lens	Cytisus dallmorei 'Lena'	5Gal.	20"-24" Min. Ht.
56	BSG	Broom, Spanish Gold	Cytisus purgan 'Spanish Gold'	5Gal.	20"-24" Min. Ht.
11	CTT	Tom Thumb Cotoneaster	Cotoneaster apiculatus 'Tom Thumb'	5Gal.	18" Min. Spread
27	CDI	Shrub Cotoneaster	Cotoneaster dielectatus	5Gal.	20"-24" Min. Ht.
4	CHO	Rock Cotoneaster	Cotoneaster horizontalis	5Gal.	18" Min. Spread
16	EDG	Canadale Gold Euonymus	Euonymous fortunei 'Canadale Gold'	5Gal.	18"-20" Min. Ht.
32	MAQ	Mahonia/Oregon Grape	Mahonia aquifolium 'Kings Ransom'	5Gal.	20" Min. Ht.
17	MGO	Compact Mahonia/Oregon Grape	Mahonia aquifolium 'Compacta'	5Gal.	20" Min. Ht.
85	MRE	Creeping Oregon Grape	Mahonia repens	1 Gal.	12" Min Ht.
		EVERGREEN SHRUBS			
9	AND	Andora Juniper	Juniperus.horizontalis "Youngstown"	5Gal.	18" Min. Spread
16	ARM	Armstrong Juniper	Juniperus chinensis 'Armstrongii'	5Gal.	18" Min. Spread
13	BCH	Blue Chip Juniper	Juniperus.horizontalis 'Blue Chip'	5Gal.	18" Min. Spread
45	BUF	Buffalo Juniper	Juniperus sabina 'Buffalo'	5Gal.	18" Min. Spread
52	HUG	Hughes Juniper	Juniperus.horizontalis 'Hughes'	5Gal.	18" Min. Spread
3	SEA	Sea Green Juniper	Juniperus x media 'Sea Green'	5Gal.	18" Min. Spread
19	OLD	Old Gold/Gold Coast Juniper	Juniperus x media 'Old Gold'	5Gal.	18" Min. Spread
10	WIL	Wilton/Blue Rug Juniper	Juniperus.horizontalis 'Wiltonii'	5Gal.	18" Min. Spread
19	MMO	Mugo Pine, Mops	Pinus mugo 'Mops'	3Gal.	24" Min Ht.
7	MSL	Mugo Pine, Slowmound	Pinus mugo 'Slowmound'	3Gal.	12" Min Ht.
9	GSP	Globe Blue Spruce	Picea pungens 'Globosa'	3Gal.	18" Min. Ht.
		ORNAMENTAL GRASSES			
192	AVG	Blue Avena /Oat Grass	Helictotrichon sempervirens	1 Gal.	12" Min Spread
217	FRG	Feather Reed Grass	Calamagrostis acutiflora 'Karl Foerster'	1 Gal.	24"-30" o.c.
118	LBG	Little Bluestem	Schizachyrium scopulorum 'Blues'	1 Gal.	Min. 24" o.c.
121	PMG	Maiden Grass, Purple/Flame	Miscanthus sinensis 'Purpurescens'	1 Gal.	18"-24" o.c.
87	RCG	Red Switch Grass	Panicum virgatum 'Shenandoah'	1 Gal.	24"-30" o.c.
		PERENNIALS/GROUNDCOVERS			
3	COM	Coreopsis, Moonbeam	Coreopsis verticillata 'Moonbeam'	1Gal.	12"-18" o.c.
8	CPM	Coneflower", "Magnus"	Echinacea purpurea	1Gal.	18"-24" o.c.
3	GAI	Gaillardia, Burgundy Blanket Flower	Gaillarcia aristata	1 Gal.	18"-24" o.c.
2	HSU	Hyssop, Sunset	Agastache rupestris	1 Gal.	24" o.c.
5	ELA	English Lavender	Lavandula angustifolia 'Munstead'	1 Gal.	18" o.c.
3	REV	Red Valerian/Jupiter's Beard	Centranthus ruber	1Gal.	18" o.c.
8	RGD	Rudbeckia, Blackeyed Susan	Rudbeckia fulgida 'Goldsturm'	1Gal.	18" o.c.
12	SMN	Salvia, May Night	Salvia sylvestris x 'Mainacht'	1 Gal.	18" o.c.
6	YAM	Moonshine Yarrow	Achillea 'Moonshine'	1 Gal.	18"-24" o.c.
		ANNUALS			
750	MXA	Mixed Annuals & Winter Pansies		2" – 6" pots	10" o.c.

All Plant Materials Available at Alameda Wholesale Nursery

Turf Areas: Approx. 27,131 square feet total - To be sodded with "Reveille", Texas Hybrids mix, or approved equal.
Rock Mulch 1 Beds: Approx. 21,997 square feet total – Tan River Rock 1-1/2", or owner approved equal.
Rock Mulch 2 Beds: Approx. 8,498 square feet total – Mt. Granite or Bluestone 1-1/2", or owner approved equal.
Cedar Mulch Beds: Approx. 1,241 square feet total – Cascade Cedar, or owner approved equal. Minimum 4" depth for all planting beds, planters, and trees rings within turf areas.
Steel Edger: Approx. 1,202 linear feet – Rolled top,14 gage, green painted Dura-edge, or approved equal.

C. SITE PLAN LANDSCAPE NOTES:

1. All work shall conform to local Town Codes, and contractor shall be responsible for obtaining all necessary permits. Contractor shall verify location of all existing underground utilities, lines, and structures prior to excavation or trenching. Damage to these utilities shall be repaired by the contractor at no cost to the owner or the landscape architect.
2. No substantial change from the approved landscape plan may occur without prior review of the Parker Water and Sanitation District, which may require additional irrigation taps for changes due to more water intensive landscaping.
3. All plants shall meet or exceed the plant quality and species standards of the American Standard for Nursery Stock ANSI Z80.1-2004, as amended. Selected plant materials shall be healthy and shall be nursery-grown and adapted to the local area.
4. Unless otherwise indicated on the plan, all trees shall be located at least 4 ft. from the parking lot curb or edge of a parking island.
5. All shrub beds and turf areas shall receive the following soil amendments per 1000 s.f.: 3 CY "Supreme Organics" compost (50% cow manure, 50% wood fines, supplied by Jensen Sales, Inc., Denver) or equivalent, plus 15 lbs of 20-10-5 commercial fertilizer. Rototill to a minimum depth of 6".
6. Plant backfill mix shall be: 1/3 "Supreme Organics", or approved equal
   2/3 on site soil
7. All annual and perennial beds, and freestanding planters areas will be mulched with shredded Cascade cedar, or other acceptable shredded cedar mulch, to a depth of 3". With no weed barrier.
8. All trees in turf grass areas must have tree rings mulched with shredded Cascade cedar, or other acceptable shredded cedar mulch, to a depth of 3", over Dupont "Typar' weed barrier, or approved equal.
9. Shrub beds near mini-golf course and race track areas to be mulched with 1-1/2" Mountain Granite or Bluestone to a depth of 3", over Dupont "Typar' weed barrier, or approved equal.
10. All parking lot island and parking lot perimeter areas to be mulched with 1-1/2" Tan (Western) River Rock to a depth of 3", over Dupont 'Typar' weed barrier, or approved equal.
11. Steel edger to be rolled top, 14 gage X 4" deep, green painted Dura-edge edger, or approved equal.
12. All landscaped areas and plant materials shall be watered by automatic underground systems. The irrigation system will provide full coverage to all turf and plant material areas. Turf areas to be spray irrigated, and shrubs and trees to be drip irrigated.
13. Landscaped areas and plant materials shown on these plans indicate those proposed to be installed. However, alternative plant materials may be installed during final construction, if done in compliance with the Town approved plant lists.
14. The Owner, his successors and assigns, shall be responsible for installation, maintenance and replacement of all landscaping materials shown or indicated on the approved Site Plan or Landscape Plan on file in the Planning Department. Landscaping will be installed as delineated on the plan, and in conjunction with any development phasing.

Prepared By:
Kirby Smith & Associates, Inc.
Land Planning•Site Design•Landscape Architecture
6200 So. Hudson Ct., Centennial, CO 80121
(303) 694-9454 FAX (303) 694-9272

Job # 409

CALL UTILITY NOTIFICATION CENTER OF COLORADO
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REVISIONS

DESCRIPTION	DATE
PEG, ISLANDS'IM SWR REV	8/3/15

OWNER
SELECT DEVELOPMENT & CONTRACTING, LLC
660 EAST FRANKLIN ROAD, MERIDIAN, ID 83642

PROJECT
Parker's
CROWN POINT DEVELOPMENT
PARKER, CO

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Peter H. Rockwell, Architect
Architecture • Planning
595 S Americana Boulevard Boise, Idaho 83702
(208) 345-0566 (208) 345-1718 Fax (208) 387-0889
office@prboise.com

KIRBY J. SMITH 430 8/1/15
03/04/2008 Original Date of Licensure
STATE OF COLORADO LICENSED LANDSCAPE ARCHITECT

CONSTRUCTION DRAWINGS
LANDSCAPE PLAN (SOUTH)

SHEET DATA

DRAWN BY:	KJS
CHECKED BY:	KJS
SCALE:	1" = 20'
DATE:	5/29/15
PROJECT #:	14001

SHEET NUMBER
L-4

Boondocks Site Calculations

Parker, CO — **Crown Point Center**

Parking	126,496.00 sf	2.90 acre(s)	32.1% of total site	
Landscape Islands	12,674.00 sf	10% of parking lot		10%
Total Parking Area	**126,496.00 sf**	**2.90 acre(s)**	**32.1% of total site**	
'Green' Space	77,467.00 sf	1.78 acre(s)	19.7% of total site	15%
Landscape w/o Parking Islands	64,793.00 sf	1.49 acre(s)	16.5% of total site	
Hardscape	27,571.00 sf	0.63 acre(s)	7.0% of total site	
Entry Plaza	3,987.00 sf			
Rear Patio	23,584.00 sf			
Total Landscape Area	**105,038.00 sf**	**2.41 acre(s)**	**26.7% of total site**	
Main Building	60,480.00 sf	1.39 acre(s)	15.4% of total site	
Maintenance Building	1,950.00 sf			
Pump House	248.00 sf			
Total Building Area	**62,678.00 sf**	**1.44 acre(s)**	**15.9% of total site**	
Attractions	65,142.00 sf	1.50 acre(s)	16.5% of total site	
Bumper Boats Pond	8,671.00 sf			
Go Cart Tracks	56,471.00 sf	1.30 acre(s)	14.3% of total site	
Back of House circulation	34,340.00 sf	0.79 acre(s)	8.7% of total site	
Total Attraction Area	**99,482.00 sf**	**2.28 acre(s)**	**25.3% of total site**	
Total Site	**393,695.60 sf**	**9.04 acre(s)**		

Plant Material Areas (Entire Site)

Site Area Description	Size/Sq. Ft.
Turf Areas - Reveille Texas hybrid bluegrass (Irrigated)	27,131 Sq. Ft.
Planting Areas (Irrigated)	31,696 Sq. Ft.
Total Landscape Area	**58,827 Sq. Ft.**

Parking Area Landscape Island Summary

Area/Sq. Ft.	Trees: Deciduous/Ornamental	Trees: Evergreen	Shrubs	Grasses	Notes
12,674 Sq. Ft.	48	1	293	99	

Overall Site Landscape Area Summary (Excluding Parking Lot Islands)

Area/Sq. Ft.	Trees: Deciduous/Ornamental	Trees: Evergreen	Shrubs	Grasses	Notes
64,793 Sq. Ft.	93	76	1232	636	Evergreen Trees = 45% Deciduous Trees = 55%

Grand Total Overall Site Area Summary (Not Covered By Bldg. & Req. Pkg.)

Area/Sq. Ft.	Trees: Deciduous/Ornamental	Trees: Evergreen	Shrubs	Grasses	Notes
204,520 Sq. Ft.	141	77	1525	735	At 1 Tree & 5 Shrubs/1500 sf = 136 Trees & 681 Shrubs Required Evergreen Trees = 35%

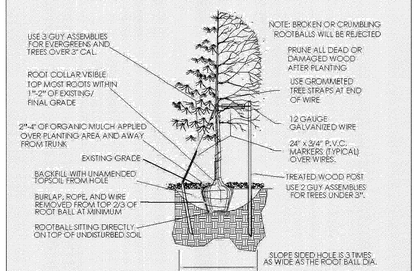
Landscape Area	High Water TURF (6,000sf = 1 SFE)	Low Water Native Grass and Spray Shrubs & Perennials (10,000sf = 1 SFE)	Drip Irrigated area (20,000sf = 1 SFE)	Non-Irrigated area (calculated) Areas	Sub-Total of	PWSD one SFE per 6000	SFE Requirement (Sub-Total Calculation divided by 6000 = requirement)
Area #1	27,131 sf x 1 = 27,131	2086 sf x .6 = 1252	23,330 sf x .3 = 6,999	6280 sf x 0 = 0	35,382 sf	6,000	5.90 SFE's = 2" Tap Required

Scale: 1" = 10'

0' 5' 10' 15'

North

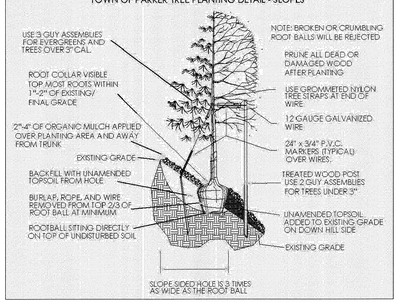
TOWN OF PARKER PLANTING STANDARDS



- Excavate planting holes with sloping sides. Make excavations at least three times as wide as the root ball diameter and no deeper than the distance from the top most roots in the root ball to the bottom of the root ball to allow for settling. Do not disturb soil at bottom of planting holes, but do score the sides of the planting hole. The planting area shall be loosened and aerated at least three times the diameter of the root ball. Backfill shall consist of existing on site topsoil – no amendments shall be used unless otherwise specified.
- Trees shall be planted with the root collar/flare visible above grade AND two or more structural roots located within the top 1" to 2" of the root ball/finished grade measured 3" to 4" from trunk. This includes trees that are set on slopes (see slope planting detail). Trees that do not have a visible root collar shall be rejected. Do not cover the root ball with soil.
- When root ball will remain intact, cut off bottom 1/3 of wire basket before placing tree in hole, cut off remainder of basket AFTER tree is set in hole, remove basket completely. At a minimum, the top 2/3 of the burlap and basket shall be removed from the root ball on all trees. Remove all nylon ties, twine, rope and burlap. Remove unnecessary packing material.
- Form soil into a 3" to 5" tall watering ring (saucer) around planting area. This is not necessary in irrigated turf areas. Apply 2" to 4" depth of specified mulch over planting area and inside saucers, away from trunk.
- Staking and guying of trees is optional in most planting situations. In areas of extreme winds, or on steep slopes, staking may be required to stabilize trees. Staking and guying must be removed within 1 year of planting date.
- Tree wrap is not to be used on any new plantings, except in late fall planting situations, and only then after consultation with the Town Arborist.
- Resetting of improperly planted trees will only be allowed if it is determined that doing so will in no way compromise the root ball, and shall only be done with approval of the Town Arborist.

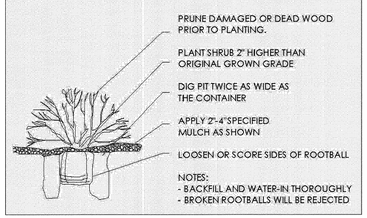
TOWN OF PARKER PLANTING STANDARDS

TOWN OF PARKER TREE PLANTING DETAIL - SLOPES



TOWN OF PARKER PLANTING STANDARDS

TOWN OF PARKER PLANTING DETAIL – SHRUBS



NOTES:
- BACKFILL AND WATER-IN THOROUGHLY
- BROKEN ROOTBALLS WILL BE REJECTED

Wausau Tile

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Metal & Concrete Site Furnishings Planters

Planters : Concrete Site Furnishings

TF4205

Price: $1,345.00

Item Number: TF4205

Drain Hole: (1) 2" Dia. drain hole

Hardware: (4) 5/8" Dia. lifting inserts

Note: Lifting inserts are to ONLY be used when planter is EMPTY

Accepts Reservoir System

Size: 60" x 60" x 36"

Unit Weight: 3,470 lbs.

Reinforcing: 3/8" Dia. steel rebar

Material: Reinforced concrete

Files and Downloads

TF4205 Drawing (DWG)

TF4205 Drawing (PDF)

TF4205 Spec (PDF)

Concrete Spec (PDF)

Site Furnishings Color Options (PDF)

TF4900 Reservoir System (PDF)

Standard Exposed and Weatherstone Colors

A-1 Tan Exposed Aggregate; A-2 Exposed Aggregate (Misty Gray); A-3 Exposed Aggregate (Sand); A-4 Exposed Aggregate (Brown); A-5 Exposed Aggregate (White); S-1 Weatherstone (Gray); S-2 Weatherstone (French Gray); S-3 Weatherstone (Sand)

RESERVOIR SYSTEM

Reservoir Planter Specifications TF4900

PART ONE

1.1 SUMMARY
A. Section Includes: Furnish Reservoir Planter System indicated on drawings or specified herein.

1.5 SUBMITTALS
A. Submit product data, shop drawings and samples.
1. Product Data: Manufacturer's specifications and technical data edited specifically for proposed system, including the following specific information:
a. Detailed specification of construction fabrication.
b. Manufacture's installation instructions
c. Maintenance literature
d. Product warranty
2. Shop Drawings: Indicate pertinent dimensions, general construction, component connections anchoring methods, hardware and installation procedures.
3. Samples as requested by Architect.

1.6 QUALITY ASSURANCE
A. Qualifications of Manufacturer: Manufacturer to be prequalified by specifier prior to bidding. Failure to comply will result in disqualification of bid. Manufacturer to have at least five year experience in the manufacturer of Reservoir Planter System field proven for at least five years.

1.10 WARRANTY
Manufacturer shall submit a written warranty for precast products for the period of two years upon acceptance of products.

PART TWO

2.1 MANUFACTURERS
A. Acceptable manufacturer for Reservoir Planter System Model TF4900 to be known as Wausau Tile, Inc.
P.O. Box 1520, Wausau, WI 54402-1520
(800) 388-8728
B. Clarification Note: Drawings and installation specification are based on manufacturers proprietary literature from Wausau Tile, Inc. Other manufacturers shall comply with minimum levels of material and detailing indicated on drawings or specified herein.

2.2 MATERIALS
A. Non-woven Polypropylene wicks of synthetic fiber. (4.5 oz. per yd) Resistant to fungus and mildew, indigestibe to insects.
B. (1) 2" Dia. hot dipped galvanized steel fill pipe
C. (1) porous membrane (same material as wicks)
D. (1) thick foam insulation, custom fitted to contours of specified Wausau Tile planter.
E. (1) hit dipped galvanized pipe strap
F. (1) 5/8" Dia. stainless steel bolt
G. (1) Rubber plug with compression key lock
H. Stainless steel drain lines (cast directly into Wausau Tile planters

2"-4" MULCH; 1" FOAM INSULATION; PLANTING SOIL; WICK SYSTEM; POROUS MEMBRANE; GRAVELY STONE; RESERVOIR FILL PIPE; PIPE STRAP; OVER-FLOW DRAIN LINE; RESERVOIR DRAIN LINE

Site Furnishing Division - PO Box 1520, Wausau, WI 54402-1520 - (800-388-8728) - www.wausautile.com

Date: 6/17/13

Wausau Tile

MADE IN WAUSAU. Wausau Tile

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Metal & Concrete Site Furnishings Planters

Planters : Concrete Site Furnishings

TF4195

Price: $600.00

Item Number: TF4195

Drain Hole: (1) 2" Dia. drain hole

Hardware: (2) 5/8" Dia. lifting inserts

Note: Lifting inserts are to ONLY be used when planter is EMPTY

Accepts Reservoir System

Size: 36" x 36" x 30"

Unit Weight: 1,400 lbs.

Reinforcing: 3/8" Dia. steel rebar

Material: Reinforced concrete

Files and Downloads

TF4195 Drawing (DWG)

TF4195 Drawing (PDF)

TF4195 Spec (PDF)

Concrete Spec (PDF)

Site Furnishings Color Options (PDF)

TF4900 Reservoir System (PDF)

Standard Exposed and Weatherstone Colors

A-1 Tan Exposed Aggregate; A-2 Exposed Aggregate (Misty Gray); A-3 Exposed Aggregate (Sand); A-4 Exposed Aggregate (Brown); A-5 Exposed Aggregate (White); S-1 Weatherstone (Gray); S-2 Weatherstone (French Gray); S-3 Weatherstone (Sand)

Wausau Tile

MADE IN WAUSAU. Wausau Tile

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Metal & Concrete Site Furnishings Planters

Planters : Concrete Site Furnishings

TF4180

Price: $1,060.00

Item Number: TF4180

Large rectangular planter that incorporates our unique Reservoir System.

Drain Hole: (1) 2" Dia. drain hole

Hardware: (4) 5/8" Dia. lifting inserts

Note: Lifting inserts are to ONLY be used when planter is EMPTY

Accepts Reservoir System

Size: 96" x 30" x 30"

Unit Weight: 2,620 lbs.

Reinforcing: 3/8" Dia. steel rebar

Material: Reinforced concrete

Files and Downloads

TF4180 Drawing (DWG)

TF4180 Drawing (PDF)

TF4180 Spec (PDF)

Concrete Spec (PDF)

Site Furnishings Color Options (PDF)

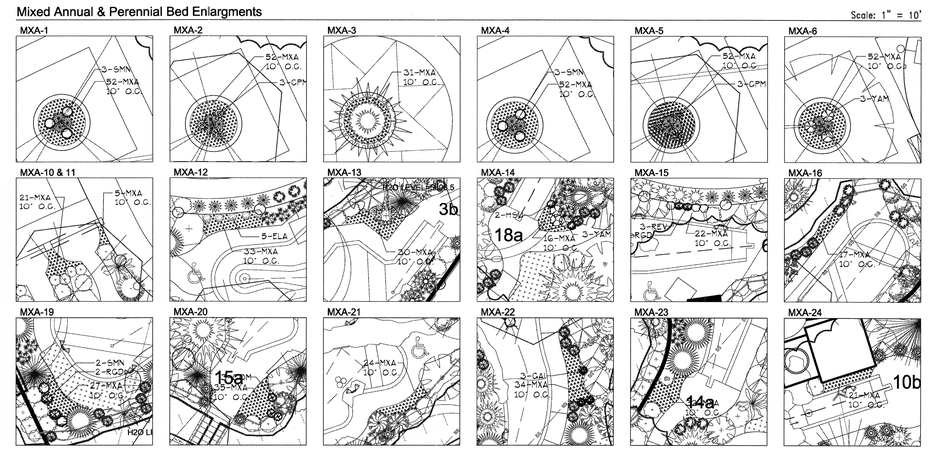
TF4900 Reservoir System (PDF)

Standard Exposed and Weatherstone Colors

A-1 Tan Exposed Aggregate; A-2 Exposed Aggregate (Misty Gray); A-3 Exposed Aggregate (Sand); A-4 Exposed Aggregate (Brown); A-5 Exposed Aggregate (White); S-1 Weatherstone (Gray); S-2 Weatherstone (French Gray); S-3 Weatherstone (Sand)

Mixed Annual & Perennial Bed Enlargments

Scale: 1" = 10'



Prepared By:

Kirby Smith & Associates, Inc.
Land Planning•Site Design•Landscape Architecture
6201 So. Buckley Ct. Centennial, CO 80121
(303) 694-9454 FAX (303) 694-9272
Job # 409

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REVISIONS

DESCRIPTION	DATE
PKG. ISLANDS/TM SWR REV.	8/3/15

OWNER

SELECT DEVELOPMENT & CONTRACTING, LLC
660 EAST FRANKLIN ROAD, MERIDIAN, ID 83642

PROJECT

Boondocks Fun Center
CROWN POINT DEVELOPMENT
PARKER, CO

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Peter H. Rockwell, Architect
Architecture • Planning
595 S Americana Boulevard Boise, Idaho 83702
(208) 345-0566 (208) 345-1718 Fax (208) 387-0889
office@prboise.com

KIRBY J. SMITH 430 — 03/04/2008 Original Date of Licensure — STATE OF COLORADO — LICENSED LANDSCAPE ARCHITECT

CONSTRUCTION DRAWINGS
LANDSCAPE PLAN
(PLANT LIST NOTES & DETAILS)

SHEET DATA	
DRAWN BY:	KJS
CHECKED BY:	KJS
SCALE:	1" = 20'
DATE:	5/29/15
PROJECT #:	14001

SHEET NUMBER

L-5

D. GENERAL LANDSCAPE CONSTRUCTION NOTES

1. Contractor shall be responsible for making himself familiar with all underground utilities, pipes and structures. Contractor shall take sole responsibility for costs incurred due to damage and replacement of said utilities.

2. Contractor shall not willfully proceed with construction as designed when it is obvious that unknown obstructions, area discrepancies and/or grade differences exist that may not have been known during design. Such conditions shall be immediately brought to the attention of the Owner's authorized representative. The contractor shall assume full responsibility for all necessary revisions due to failure to give such notifications.

3. All existing improvements, materials and plant material to remain shall be properly and adequately protected from damage during demolition and new construction operations. It shall be the responsibility of the Contractor to restore to the original condition any of these existing items that are damaged or disturbed in any way. All materials to be reused or salvaged shall be stored in an area designated by the Owner for that purpose. All salvaged materials shall remain the property of the Owner.

4. Do not disturb existing paving, lighting, landscaping or irrigation that exists adjacent to the site unless otherwise noted on plans.

5. Streets, sidewalks and adjacent property shall be protected throughout the work as required by local codes and regulations unless approved by the Owner.

6. All materials specified to be removed shall be disposed of off-site per local codes and regulations. Contractor shall coordinate method of disposal with Owner's authorized representative prior to commencement of work.

7. Contractor shall be responsible for any coordination with subcontractors as required to accomplish all landscape construction operations. All piping, conduit, sleeves, etc., shall be set in place prior to installation of construction items.

8. Contractor shall be responsible for obtaining all necessary permits, including but not limited to sign permits and building permits (for electrical and irrigation installations etc., as required).

9. Refer to City, County, and/or District regulations, codes, standard plans and specifications where applicable.

10. All dimensions are from outside face of paving, building walls, and fences, unless otherwise noted on plans.

11. Prior to installation of any construction items, forms with steel in place and compacted subgrade complete shall be inspected and approved by the Owner's Authorized Representative.

12. All steel edger shall have smooth, continuous curves as indicated on plans.

13. All property lines, dimensions and lot lines shall be verified prior to commencing work.

14. Contractor is responsible for compliance with "Occupational Safety and Health Administration" (OSHA) standards for job site conditions.

E. SITE LANDSCAPE GRADING AND EXCAVATION NOTES

1. General:
   a. Perform site grading work in compliance with project Civil Engineer's grading and erosion control plans, plot plan's specified grades, and applicable requirements of governing authorities having jurisdiction.

   b. Owner will provide benchmarks in the field to establish horizontal and vertical controls. The Contractor shall employ a licensed surveyor or civil engineer to layout work and establish the necessary markers, benchmarks and stakes. Benchmarks and other reference points shall be carefully maintained, and if disturbed, shall be replaced as directed, at no cost to the Owner.

   c. Any existing debris encountered during grading operations, must be removed from the site. The depressions left by removal of debris must be backfilled with acceptable fill material are required.

   d. Excavations shall be free from loose material and water at all times. Provide pumping when necessary to keep excavations free of water.

2. Fill Materials:
   a. For fill in landscaped areas check with Owner's Authorized Representative regarding availability of any acceptable fill material on site.

   b. For application of topsoil check with Owner's Authorized Representative regarding availability of stockpiled topsoil located on site (may be outside of construction limits).

   c. On-site excavated materials may be used where approved by the soils engineer or Owner's Authorized Representative.

3. Excavation:
   a. Excavate to levels as required to complete work indicated. Allow sufficient clearance and excavation for proper placing of forms. Excavate to indicated elevations with allowance for proper fill material. Excavate unsatisfactory soil materials encountered that extend below required elevations, as recommended by soils engineer.

   b. Bottom of excavation shall be level undisturbed earth. Do not carry excavation below indicated depths. Remove loose material from excavation.

   c. All excavations shall be inspected and approved by the soils engineer or Owner's Authorized Representative before any concrete is poured.

   d. Over-excavation not authorized in writing by the Owner and subsequent backfilling of the same shall be performed at no additional cost to the Owner.

4. Placing Fill:
   a. Deliver material at uniform rate to permit satisfactory procedure to result in well and uniformly compacted fill. Spread fill material in horizontal layers not greater than 6 inches thick. If, in the opinion of the soils engineer or Owner's Authorized Representative, the material proposed for use in compacted fill is too wet to permit adequate compaction, it shall be dried in an acceptable manner prior to placement and compaction.

   b. When the moisture content of the fill material is below that specified by the soils report, water shall be added until the moisture content is as specified to assure thorough bonding during the compacting process.

   c. See soils report or manufacture's specifications for compaction requirements.

   d. Backfill or fill operations adjacent to or over footings and foundation walls shall not commence until all forms and debris have been removed and construction has been examined and is acceptable to the engineer or Owner's Authorized Representative.

5. Damaged Earth: Earth that has been rendered unfit to receive planting due to concrete water, mortar, or lime or other construction waste or debris dumped on it shall be completely removed and replaced with clean earth.

6. Topsoil: After rough grading is completed and approved, the Contractor shall spread top soil specified herein, to a uniform depth of 4" over all turf areas and in all plating bed areas. Till or disc topsoil to a minimum depth of 6" and finish grade to ± .10 ft. in all landscaped areas.

7. Settlement: Settlement in backfill, fill, or in structures built over backfill or fill, which may occur within guarantee period stated in general contract conditions shall be corrected at no cost to Owner. Any structures damaged by settlement shall be restored to their original condition by contractor at no cost to Owner.

9. Unusual Conditions: In the event that any unusual conditions not covered by the special provisions are encountered during grading operations, the soil engineer, Owner and/or Owner's Authorized Representative shall immediately be notified for directions.

10. Grading: Rough grading shall be performed over the entire contract area not otherwise specified. Rough grading shall be within plus 0 or minus 0.1 foot of final subgrade elevations.

11. Protection of Completed Work: Protect all finished areas from weather damage by whatever means as required to prevent erosion of graded areas or sloughing off of slopes.

F. LANDSCAPING CONSTRUCTION NOTES

1. General:
   a. Plant measurements specified in the comments column of the plant list are minimum acceptable sizes and are to govern over the suggested nominal gallon sizes listed in the container size column. Measure plants before any pruning with branches in normal position.

   b. Quality of Materials - Plant materials shall be available for inspection at their sources and at the site and may be rejected if, in the Owner's Authorized Representative's opinion, they fail to meet specified quality or appearance. Remove rejected material promptly from the site.

   c. Plants shall have a habit of growth that is normal for the species. They shall be healthy, vigorous, and free from insect pests, plant diseases and injuries. All plant material shall be inspected stock, conforming to State and Federal regulations.

   d. Maintenance Instructions - At completion of work, submit three copies of written instructions to Owner's Authorized Representative for maintenance and care of landscaping. Include directions for irrigation, fertilizing, spraying and mowing as required for continued and proper maintenance through a full growth season and dormant period. Maintenance will be responsibility of the installer until date of acceptance of the landscaping.

   e. Warranty - At completion of work, furnish written warranty as follows:

      Warrant seeded areas through the specified maintenance periods, but not less than 12 (twelve) months after installation. Reseed areas that have failed to survive or appear to be unhealthy or which contains evidence of drought stress with holes or discolored areas larger than 4" diameter.

      Warrant sodded areas through the specified maintenance periods, but not less than 12 (twelve) months after installation. Replace sod that has failed to survive or appears to be unhealthy or which contains evidence of drought stress with holes or discolored areas larger than 4" diameter.

      Warrantee trees, shrubs and groundcovers for a period of one year against defects including death and unsatisfactory growth, but excepting defects resulting from neglect of Owner, or abuse or damage by others. Replace plants that are dead, or that are, in the opinion of the Owner's Authorized Representative, unhealthy or unsightly or have lost their natural shape due to dead branches or excessive pruning. Replace planting not later than the next succeeding season with plants of the same variety and size originally specified. Restore areas damaged by this work to their original condition. Remove dead or defective plant material from the site. Further warrant replacements for one full year following replacement planting.

2. Product Delivery, Storage and Handling -

   a. General - Notify Owner's Authorized Representative of delivery schedule not less than 16 working hours in advance of each type of material.

   b. Seed - Deliver seed to site in containers bearing the supplier's certification of the seed mixture as packaged and labeled in accordance with the Federal Seed Act.

   c. Sod – Deliver sod properly loaded on vehicles and protected from exposure sun, wind and heating in accordance with standard practice and labeled in accordance with Federal Seed act. Do not drop sod from loading carts, trucks, or pallets.

   d. Packaged Materials - Deliver fertilizer to site in original unopened containers bearing manufacturer's guaranteed chemical analysis, name, trade name, trademark and conformance to State law.

   e. Plant Materials - Containerize with limbs bound, properly wrap and prepare for shipping in accordance with recognized standard practice. Keep root system moist and protect from adverse conditions due to climate and transportation, between the time they are dug and actual planting.

      Identify each plant with grower's label affixed to the plant giving the data necessary to indicate conformance to specifications. Use durable waterproof labels with water resistant ink which will remain legible for at least 60 days.

      Deliver trees and shrubs after preparation for planting have been completed and plant immediately. If planting is delayed more than six hours after delivery, set trees and shrubs in shade, protect from weather and mechanical damage, and keep roots moist as follows:

      Set balled stock on ground and cover ball with soil, peat moss, or other acceptable materials.

      Handling - Do not drop plants. Do not lift plants by the trunk, stems, or foliage. Handle plants by the ball or the container. Reject balled plants if the ball is broken or the trunk is loose in the ball. Protect plants at all times from drying out or injury. Minor broken and damaged roots shall be pruned before planting. Major damage shall be cause for rejection as determined by the Owner's Authorized Representative.

3. Coordination with Lawns - Plant trees, shrubs, and groundcovers after final grades are established and prior to planting of lawns, unless otherwise acceptable to the Owner's Authorized Representative. If planting of trees and shrubs occurs after lawn work, protect lawn areas and promptly repair damage to lawns resulting from planting operations.

4. Utilities - Determine location of underground utilities and perform work in a manner which will avoid possible damage. Do not permit heavy equipment such as trucks, rollers, tractors, or bulldozers to damage utilities. Hand excavate, as required, to minimize the possibility of damage to underground utilities. Installer shall maintain grade stakes set by others until removal by Contractor.

   Any damage to underground piping or wiring arising out of work of this Section must be corrected and repaired by the installer to the satisfaction of the Owner's Authorized Representative.

   Preventive damage to risers of underground lawn sprinkling system and similar obstructing work located in landscape areas.

5. Products -
   a. Organic Mulch - Annual & perennial plant bed mulch, shrub bed mulch, and tree saucer mulch in turf areas shall be shredded Cascade Cedar wood fiber mulch (available at Renewable Fiber) or approved equal. Mulch shall be installed to a depth of 3", unless otherwise indicated on the plans. Installer to provide sample for owner's approval prior to delivery. (See Landscape Plan for specified mulch types).

   b. Rock Mulch – Where specified, shrub bed mulch shall be clean crushed (angular) stone, 1 1/2" - 3" size. Color shall be as specified on Plan & Material Summary, Installer to provide sample for owner's approval prior to delivery. (See Landscape Plan for specified mulch types).

   c. River Rock Mulch – Where specified, mulch shall be clean washed river rock (round edged stones), 1 1/2" - 3" size. Color shall be as specified Plan & Material Summary. Installer to provide sample for owner's approval prior to delivery. (See Landscape Plan for specified mulch types).

   d. Cobble Mulch – Where specified, mulch shall be clean washed river cobble (round edged stones), 4" - 12" size. Color shall be as specified Plan & Material Summary, Installer to provide sample for owner's approval prior to delivery. (See Landscape Plan for specified mulch types).

   e. Step Stones and Strip Stone Edging – See Section D. Miscellaneous Furnishings for more information.

   f. Pre-Emergent Herbicide - For all mulched areas, provide Dacthal (DCPA), or Preen (Trifluralin) pre-emergent selective herbicide in granular form, or approved equal.

   g. Post-Emergent Herbicide - For all sodded areas and planting beds, provide Roundup (Glyphosate) as manufactured by Monsanto Company, or approved equal.

   h. Organic Matter – For all sod/seed areas and planting beds provide equal parts shredded sphagnum peat humus and compost from either plant sources or dairy/poultry (manure) sources, as follows. Plant compost shall be low in content of mineral and woody material having not less than 50% decomposed organic matter by weight, calculated on an oven-dry basis, with a pH reading of 6.5 or less. Dairy/poultry manure shall be well-rotted (minimum of one year old) unleached manure free from sticks and refuse and low in salts. The manure shall have been turned with a machine loader at least twice (such as spring and fall) to facilitate the elimination of live weed seeds by the natural heat process, and shall be machine ground to a fine, even consistency.

   i. Peat Humus - For sodded areas provide shredded, machine ground, native mountain peat, low in content of mineral and woody material having not less than 50% decomposed organic matter by weight, calculated on an oven-dry basis, with a pH reading of 6.5 or less. Deliver to the site in bulk, measured on a volume basis.

   j. Cow Manure - Well-rotted (minimum of one year old) unleached manure free from sticks and refuse and low in salts. The manure shall have been turned with a machine loader at least twice (such as spring and fall) to facilitate the elimination of live weed seeds by the natural heat process, and shall be machine ground to a fine, even consistency.

   k. Commercial Fertilizer - Complete fertilizer of neutral character with some elements derived from organic sources and containing the following percentages of available plant nutrients:

      - For soil preparation of seed areas and planting beds provide 18% nitrogen, 46% phosphoric acid and 10% potassium.

      - For planting of trees and shrubs, provide 20% nitrogen, 10% phosphoric acid and 5% potassium, in slow release tablet form.

      - For sod after installation, provide 20% nitrogen, 10% phosphoric acid, 5% potassium, 9% sulfur, 1% iron.

   l. Plant Backfills – For backfill of trees and shrubs, use 2/3 excavated material and 1/3 organic matter (or topsoil, if approved in advance by owner). Excavated material is that on-site material excavated from planting pits which is free from wood, rocks or stones having a dimension greater than 1" and free of other foreign or deleterious material. Topsoil may be that which has been stripped off the site during over lot grading operations and may be stockpiled on the site. If topsoil is not available on site, Contractor shall import organic matter (see above) or topsoil. If topsoil is to be used, it shall be approved in advance by Owner's Authorized Representative at source of material.

6. Grass Sod and Seed -

   a. Sod - Varieties shall be as noted on the Landscape Plan (see Plant Summary Table and associated information on landscape plans). If not specified there, the sod shall be a blend of 90% Fescue/10% Bluegrass varieties. Grass varieties shall have moderate to good resistance to the following turf-grass diseases: Helminthosporium spp.; Powdery mildew; Stripe smut; Stem rust; Fusarium blight; and Typhula blight. Provide healthy, field grown sod, free from other grasses, weeds, insects and their eggs, diseases, stones and debris, and a minimum of one year old. Furnish from a sod farm where it has received regular watering, fertilizing, weed control, and spraying. Mow sod to 1-1/2" to 2" height prior to cutting and cut to a uniform thickness of ¾" to 1". Deliver in rolls 6" long and 18" wide. Small, irregular or broken pieces of sod will not be accepted. Do not cut more sod than can be put in place at the Site the same day. Deliver sod in the site within 24 hours of harvesting and protect from drying out, exposure of roots to the sun, and other injury. Do not plant dormant sod, or if ground is frozen.

   b. Seeding - Varieties shall be as noted on the Landscape Plan (see Plant Summary Table and associated information on landscape plans). Broadcast seed at a rate of 40 to 60 PLS/Sq. Ft. based on seed mix and seed company recommendations. Apply an even coat (approx. 1/4" depth) of peat moss or clean straw mulch. Firm soil surface with lawn roller, crimp and/or otherwise secure mulch and seed to the soil surface to adequately prevent soil erosion due to the effect of either wind or water (it shall be the contractors responsibility to prevent such erosion). Do not sow seed if ground is frozen.

   c. Hydro-Seeding - Varieties shall be as noted on the Landscape Plan (see Plant Summary Table and associated information on landscape plans). Hydro seed at a rate of 40 to 60 PLS/Sq. Ft. based on seed mix and seed company recommendations. The mulch shall be 100% genuine wood fiber mulch, containing tackifier. The mulch and tackifier shall be approved by the Owner's Representative prior to placement. All seed shall be uniformly mixed. The mulch and seed will be mixed with water to form a slurry. Approximately 33 to 37 pounds of mulch material will be used per 100 gallons of water, sufficient to secure mulch and seed to the soil surface to adequately prevent soil erosion due to the effect of either wind or water (it shall be the contractors responsibility to prevent such erosion). Do not sow seed if ground is frozen. The contractor will inform the Owner's Representative a minimum of 48 hours prior to commencement of hydroseeding.

7. Tree, Shrub, Groundcover and Perennial Materials -

   a. General - Provide nursery grown trees and shrubs except as otherwise indicated, grown in a recognized nursery in accordance with good horticultural practice, with healthy root systems developed by transplanting or root pruning. Provide only healthy vigorous stock, free of disease, insects, eggs, larvae and defects such as knots, sunscald, injuries, abrasions or disfigurements. Provide plants grown in Hardiness Zones 2, 3, 4 and 5 only as defined in U.S. Department of Agriculture publications. Grower's certificates may be required when doubt exists as to the origin of plant material.

   b. Balled and Burlapped Requirements - Provide balled and burlapped trees and shrubs unless noted as container plants. Dig balled and burlapped plants with firm, natural balls of earth of the diameter specified or larger to encompass the fibrous and feeding root system necessary for full recovery of the plant. Provide ball size per ANSI Z60.1. Use rigid containers for shipping which will hold ball shape and protect roots.

   c. Container Grown Stock Requirements - Provide container stock trees and shrubs transplanted into a container and grown in the container for a length of time sufficient to develop new fibrous roots so that root mass will retain its shape and hold together when removed from the container.

      Use rigid containers which will hold ball shape and protect root mass during shipping of not less than the minimum sizes recommended by ANSI Z60.1.

      Where formal arrangements or consecutive order of trees or shrubs are shown, select stock for uniform height and spread, and label with number to assure symmetry in planting.

   d. Name and Variety - Provide the trees and shrubs true to name and variety established by the American Joint Committee on Horticultural Nomenclature "Standardized Plant Names", Second Edition, 1942.

   e. Deciduous Trees - Where shade trees are required, provide single stem trees with straight trunk and leader, free of branches to a point.

      Where small trees of upright or spreading type are required, provide trees with single stem, branched or pruned naturally according to species and type.

      Where shown as "clump" or "multi-stem" provide trees with 3 or more main stems starting from the ground.

   f. Deciduous Shrubs and Ground Covers - Form: Provide deciduous shrubs with not less than the minimum number of canes required by ANSI Z60.1 for the type and height of shrub required. Furnish container grown stock.

   g. Coniferous and Broadleaf Evergreens - Size: Dimension indicates minimum spread for spreading and semi-spreading type evergreens and height for all other types. Provide evergreens with well balanced form complying with requirements for other size relationships to the primary dimension shown.

   h. Wrapping - Tree wrap tape not less than 4" wide, designed to prevent winter bark injury. Secure with flexible grafting ties.

   i. Stakes - For deciduous trees, hardwood stakes, approximately 6' height. x 2" diameter. For evergreen trees, steel "T" posts painted green, 30" bottom portion with anchor intact.

   j. Guys - 2-strand twisted pliable steel wire, not less than 12 gage for wire ties and guys. Provide 2" wide nylon webbing cut to required lengths to connect wire to tree trunks.

   k. Steel Edging - Provide commercial grade, 14 gage, galvanized steel rolled top edging. Install edging with three pins per each ten foot section. All steel edger shall have smooth, continuous curves as indicated on plans.

   l. Geotextile Fabric - Typar 3301 - 3 oz. or approved equal. Provide staking where needed to prevent movement of fabric.

8. Inspection - Installer must examine the subgrade, verify the elevations observe the conditions under which work is to be performed, and notify the Owner's Representative of unsatisfactory conditions. Do not proceed with the work until unsatisfactory conditions have been corrected in manner acceptable to Owner.

   Proceed with and complete the landscape work as rapidly as portions of the site become available, working within the seasonal limitations for each kind of landscape work required.

   Cooperate with any other Contractors and trades which may be working in and adjacent to the landscape work areas. Examine drawings which show the development of the entire site and become familiar with the scope of all work required.

9. Applying Post-Emergent Herbicide - Apply post-emergent herbicide to all weed growth at sod areas before sodding and planting bed areas or as otherwise directed by Owner's Authorized Representative. Mix and apply per manufacturer's label instructions for perennial weeds. Repeat applications may be necessary to control weeds regenerating from underground parts, after establishment. Fall treatments shall be applied before a killing frost. Allow 7 or more days after application before final preparation or seeding.

   Seeded areas - After initial grading, water the area lightly and allow a minimum of 12 days for weed seeds to germinate in the newly upturned soil. Kill sprouted weed growth with light raking during final seed bed preparation.

   Do not proceed with work until weed growth has been controlled.

10. Excavation for Planting - Where rubble fill is encountered, notify Owner's Authorized Representative and prepare planting pits properly by removal of rubble or other acceptable methods. When conditions encountered are severe and extensive (as determined by Owner's Authorized Representative) proceed with additional work at the direction of the Owner's Authorized Representative.

    Obstructions: If rock which is not rippable, underground construction work, or other obstructions are encountered in excavation for planting of trees or shrubs, notify the Owner's Authorized Representative and revise locations as directed.

    Drainage: If subsoil conditions indicate the retention of water in planting areas, as shown by seepage or other evidence indicating presence of under ground water, notify the Owner's Authorized Representative before backfilling.

11. Soil Preparation -

    a. General - Limit preparation to areas which will be planted in the immediate future and to areas where main and lateral irrigation lines have been installed.

    b. Sod/Seeded Areas & Planting Beds - Immediately prior to application of the required soil amendments, thoroughly rip, disc, or cultivate area to a depth of 6" (12" if possible) for all seed/sod areas and plant beds.

       - Apply organic matter to all plant beds, and sod/seed areas at uniform rate of 4 cubic yards of organic matter per 1000 sq. ft.

       - After organic matter has been placed, thoroughly rototill to a depth of 6" immediately after spreading of the soil amendments. Discing or ripping in is not acceptable.

       - Apply diammonium phosphate fertilizer at a rate of 5 lbs. per 1000 sq. ft. uniformly to all sod/seed areas and plant beds.

       - Combined applications may be permitted if certified by supplier to meet specifications and approved in writing by Owner's Authorized Representative prior to application.

    c. Preparation of Unchanged Grades - Where lawns are to be planted in areas that have not been altered or disturbed by excavation, grading, or stripping operations, prepare soil for lawn planting as follows: Till to depth of not less than 6" (12" if possible); remove high areas and fill in depressions; apply soil amendments and initial fertilizers as specified above; till soil to a homogeneous mixture of fine texture, free of lumps, clods, stones, roots, and other extraneous matter.

12. Fine Grading - Grade lawn areas to a smooth, even surface with a loose, uniformly fine texture. Roll, rake and remove ridges and fill depressions, as required to meet finish grades. Limit fine grading to areas which can be planted within the immediate future. Allow for sod thickness in areas to be sodded.

    Moisten prepared lawn areas before planting if soil is very dry. Water thoroughly and allow surface to dry off before planting of lawns. Do not create a muddy soil condition or cause surface erosion.

    Restore prepared areas to specified condition if eroded or otherwise disturbed after fine grading and prior to planting.

G. LANDSCAPE IRRIGATION NOTES

1. All landscaped areas and plant materials shall be watered by an automatic underground irrigation system. Contractor shall install a new irrigation system necessary to maintain healthy plant growth to all landscape areas (including new shrub and tree plantings, annuals and perennials, and turf areas) in accordance with irrigation plans provided herewith.

2. Drip irrigation, on a separate zone, shall be provided for new tree and shrub areas. Drip irrigation or micro-spray systems shall be provided for perennial and groundcover areas. Spray irrigation may be used for turf areas.

H. MISCELLANEOUS FURNISHINGS

1. Precast Concrete Planters:

   a. Refer to plans and details for related information on locations and layout.

   b. Work in this section includes furnishing and installing precast concrete planters, planter reservoir systems, and backfill with topsoil planter mix.

   c. Refer to Architect's specifications for color and finish specification for planters.

   d. All planters shall be sound and free of cracks or other defects that would significantly impact the strength or permanence of the planter.

   e. Planter and reservoir system installation shall be per manufactures specifications.

2. Retaining Walls:

   a. Refer to Civil Engineer's plans and/or Miniature Golf Course Designer's plans for related information on construction details, specifications and materials for any retaining walls.

3. Benches/Tables/Trash Receptacles:

   a. Refer to Architect's plans for related information on locations, construction details, specifications and materials for the above site furnishings.

4. Water Features:

   a. Refer to Miniature Golf Course Designer's plans for related information on location, layout, construction details, specifications and materials for the proposed water features.

5. Hardscape Areas & Sidewalks:

   a. Refer to Civil Engineer's, Architect's and/or Miniature Golf Course Designer's plans for related information on layout, construction details, specifications and materials for all hardscape areas and sidewalks.

REVISIONS

DESCRIPTION	DATE
PKG. ELANDSTM DWR REV	8/3/15

OWNER

SELECT DEVELOPMENT & CONTRACTING, LLC
660 EAST FRANKLIN ROAD, MERIDIAN, ID 83642

PROJECT

Buckets Fun Center
CROWN POINT DEVELOPMENT
PARKER, CO

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KIRBY J. SMITH 430
03/04/2008
Original Date of Licensure
STATE OF COLORADO
LICENSED LANDSCAPE ARCHITECT

CONSTRUCTION DRAWINGS
LANDSCAPE PLAN (NOTES)

SHEET DATA

DRAWN BY:	KJS
CHECKED BY:	KJS
SCALE:	1" = 20'
DATE:	5/29/15
PROJECT #:	14001

SHEET NUMBER

L-6

Prepared By:
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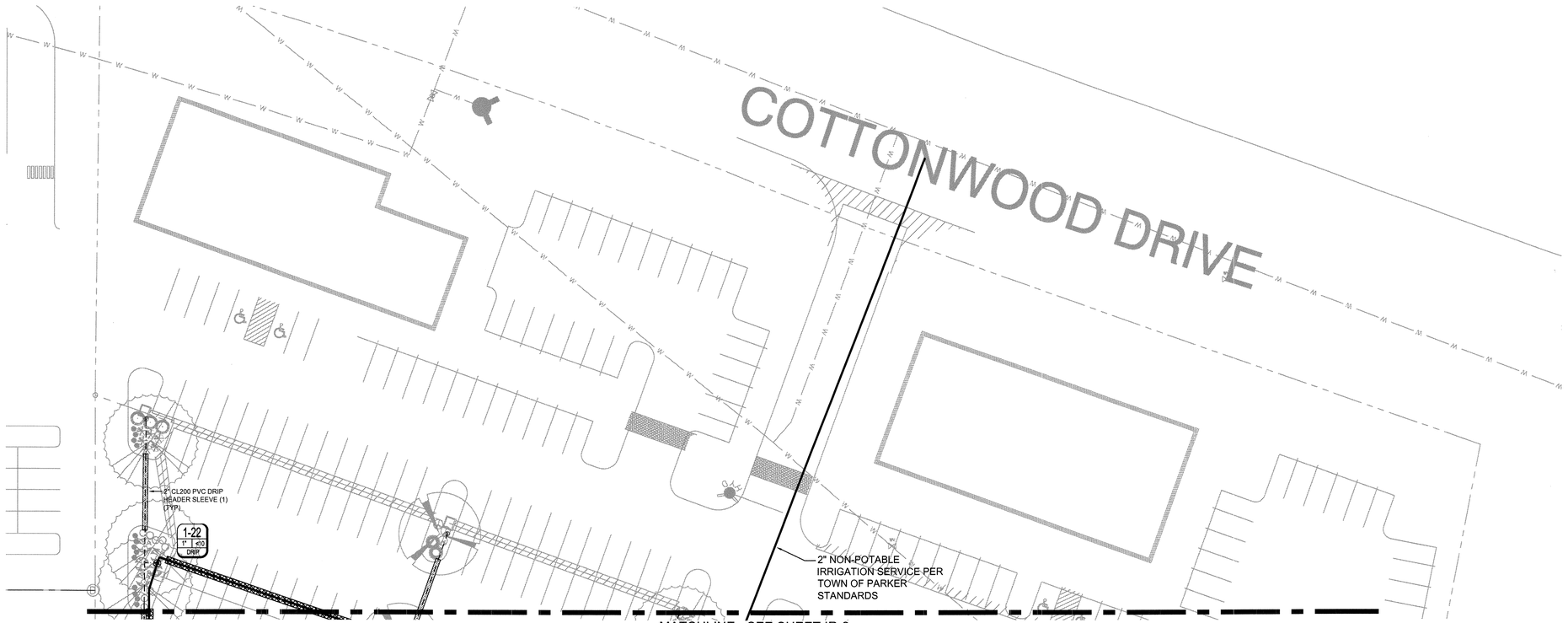
Job # 408

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.



IRRIGATION LEGEND

Qty	Symbol	Description
8		TORO 8-H PRECISION SERIES NOZZLE WITH HUNTER PROS-06-PRS30-CV 6" POP UP SPRINKLER ASSEMBLY - SEE DETAIL
1		TORO 8-Q PRECISION SERIES NOZZLE WITH HUNTER PROS-06-PRS30-CV 6" POP UP SPRINKLER ASSEMBLY - SEE DETAIL
2		TORO 8-T PRECISION SERIES NOZZLE WITH HUNTER PROS-06-PRS30-CV 6" POP UP SPRINKLER ASSEMBLY - SEE DETAIL
48		TORO 10-H PRECISION SERIES NOZZLE WITH HUNTER PROS-06-PRS30-CV 6" POP UP SPRINKLER ASSEMBLY - SEE DETAIL
2		TORO 10-Q PRECISION SERIES NOZZLE WITH HUNTER PROS-06-PRS30-CV 6" POP UP SPRINKLER ASSEMBLY - SEE DETAIL
18		TORO 15-H PRECISION SERIES NOZZLE WITH HUNTER PROS-06-PRS30-CV 6" POP UP SPRINKLER ASSEMBLY - SEE DETAIL
2		TORO 15-Q PRECISION SERIES NOZZLE WITH HUNTER PROS-06-PRS30-CV 6" POP UP SPRINKLER ASSEMBLY - SEE DETAIL
1		TORO 4X15 RCS PRECISION SERIES NOZZLE WITH HUNTER PROS-06-PRS30-CV 6" POP UP SPRINKLER ASSEMBLY - SEE DETAIL
2		TORO 4X30 SST PRECISION SERIES NOZZLE WITH HUNTER PROS-06-PRS30-CV 6" POP UP SPRINKLER ASSEMBLY - SEE DETAIL
1		HUNTER MP ROTATOR MP CORNER (TURQUOISE) NOZZLE WITH HUNTER PROS-06-PRS40-CV 6" POP UP SPRINKLER ASSEMBLY - SEE DETAIL
22		HUNTER MP ROTATOR MP LEFT STRIP (IVORY) NOZZLE WITH HUNTER PROS-06-PRS40-CV 6" POP UP SPRINKLER ASSEMBLY - SEE DETAIL
19		HUNTER MP ROTATOR MP RIGHT STRIP (COPPER) NOZZLE WITH HUNTER PROS-06-PRS40-CV 6" POP UP SPRINKLER ASSEMBLY - SEE DETAIL
50		HUNTER MP ROTATOR MP SIDE STRIP (BROWN) NOZZLE WITH HUNTER PROS-06-PRS40-CV 6" POP UP SPRINKLER ASSEMBLY - SEE DETAIL
27		HUNTER MP ROTATOR MP1000 180 DEG (MAROON) NOZZLE WITH HUNTER PROS-06-PRS40-CV 6" POP UP SPRINKLER ASSEMBLY - SEE DETAIL
1		HUNTER MP ROTATOR MP1000 360 DEG (OLIVE) NOZZLE WITH HUNTER PROS-06-PRS40-CV 6" POP UP SPRINKLER ASSEMBLY - SEE DETAIL
18		HUNTER MP ROTATOR MP1000 90 DEG (MAROON) NOZZLE WITH HUNTER PROS-06-PRS40-CV 6" POP UP SPRINKLER ASSEMBLY - SEE DETAIL
12		HUNTER MP ROTATOR MP2000 90 DEG (BLACK) NOZZLE WITH HUNTER PROS-06-PRS40-CV 6" POP UP SPRINKLER ASSEMBLY - SEE DETAIL
5		HUNTER MP ROTATOR MP2000 120 DEG (BLACK) NOZZLE WITH HUNTER PROS-06-PRS40-CV 6" POP UP SPRINKLER ASSEMBLY - SEE DETAIL
57		HUNTER MP ROTATOR MP2000 180 DEG (BLACK) NOZZLE WITH HUNTER PROS-06-PRS40-CV 6" POP UP SPRINKLER ASSEMBLY - SEE DETAIL
2		HUNTER MP ROTATOR MP2000 210 DEG (GREEN) NOZZLE WITH HUNTER PROS-06-PRS40-CV 6" POP UP SPRINKLER ASSEMBLY - SEE DETAIL
5		HUNTER MP ROTATOR MP2000 360 DEG (RED) NOZZLE WITH HUNTER PROS-06-PRS40-CV 6" POP UP SPRINKLER ASSEMBLY - SEE DETAIL
19		HUNTER ICV-101G-AS 1" PRESSURE REGULATING DRIP REMOTE CONTROL VALVE ASSEMBLY WITH RAIN BIRD QCKCHK BASKET FILTER - SEE DETAIL
6		HUNTER ICV-101G-AS 1" PRESSURE REGULATING REMOTE CONTROL VALVE ASSEMBLY - SEE DETAIL
2		HUNTER ICV-151G-AS 1-1/2" PRESSURE REGULATING REMOTE CONTROL VALVE ASSEMBLY - SEE DETAIL
1	C	WEATHERMATIC SL1600-3YR-BUNDLE-FLOW - SMARTLINE 48 STATION ET BASED 2-WIRE WALL MOUNT CONTROLLER INCLUDES SLW5 WEATHER SENSOR AND SMARTLINK FLOW AIR CARD
13		HUNTER HQ-5RC 1" QUICK COUPLING VALVE ASSEMBLY - SEE DETAIL
8		MATCO 10RS 2" THREADED RESILIENT WEDGE GATE VALVE ASSEMBLY - SEE DETAIL
1		NIBCO T113-IRR 1-1/2" BRONZE GATE ISOLATION VALVE ASSEMBLY - SEE DETAIL
2		LASCO 101N TUBV 1" PVC THREADED BALL VALVE FOR GOLF COURSE WATER FEATURE FILL - SEE DETAIL
52		MANUAL DRIP LINE FLUSH VALVE ASSEMBLY - SEE DETAIL
1	IR	2" INCH NON-POTABLE TAP & WATER METER

2,900 LF	2" CL200 PVC SOLVENT WELD MAINLINE PIPE - 24" BURY
300 LF	1-1/2" CL200 PVC SOLVENT WELD MAINLINE PIPE - 24" BURY
4,140 LF	1" CL200 PVC SOLVENT WELD LATERAL PIPE - 18" BURY
100 LF	1-1/4" CL200 PVC SOLVENT WELD LATERAL PIPE - 18" BURY
120 LF	1-1/2" CL200 PVC SOLVENT WELD LATERAL PIPE - 18" BURY
260 LF	2" CL200 PVC SOLVENT WELD LATERAL PIPE - 18" BURY
1,000 LF	1" CL 200 PVC SOLVENT WELD PIPE TO ANNAUL BEDS - 18" BURY
7,000 LF	1" POLYETHYLENE DRIP HEADER TUBING
2,000 LF	2" CL200 PVC DRIP HEADER SLEEVE PIPE
100 LF	3" CL200 PVC LATERAL SLEEVE PIPE
860 LF	4" CL200 PVC MAINLINE SLEEVE PIPE WITH SEPARATE 3" CL200 PVC WIRE SLEEVE

IRRIGATION NOTES

1. IRRIGATION SYSTEM DESIGNED FOR 50 PSI DYNAMIC PRESSURE. CONTRACTOR TO STATIC PRESSURE PRIOR TO INSTALLATION. STATIC PRESSURE MUST BE MINIMUM 70 PSI.
2. ALL SLEEVE PIPE OPENINGS SHALL BE DOUBLE WRAPPED WITH 6 MIL POLYETHYLENE PLASTIC AND SECURED USING WIRE "ZIP" TIES AROUND SLEEVE AND PIPE.
3. MINIMUM PIPE SIZE SHALL BE 1" DIAMETER UNLESS OTHERWISE NOTED ON PLAN.
4. PIPE HOPS FOR DRIP LINE HEADER NOT SHOWN ON PLANS FOR CLARITY PURPOSED. UNDER NO CIRCUMSTANCES SHALL DRIP HEADER LINE BE CONNECTED TO LATERALS LINES OR MAINLINE.
5. CONTRACTOR SHALL PROVIDE 120 VOLT 15 AMP ELECTRICAL SERVICE TO CONTROLLER LOCATION.
6. ACTUAL CONTROLLER LOCATION SHALL BE DETERMINED IN THE FIELD BY OWNERS REPRESENTATIVE.
7. DRIP EMITTERS SHALL BE PRESSURE COMPENSATING TYPE. DRIP EMITTER LOCATIONS ARE NOT SHOWN ON PLAN FOR GRAPHICAL PURPOSES. EMITTERS SHALL BE INSTALLED PER THE FOLLOWING QUANTITIES:
   #2 CONTAINER = TWO 0.5 GPH EMITTER
   #5 CONTAINER = TWO 1.0 GPH EMITTERS
   2" CALIPER TREE = 36" DRIP RING W/ .6 GPH EMITTERS/24" SPACING
   6'- 8' CONIFER = 48" DRIP RING W/ .6 GPH EMITTERS/24" SPACING
   3" CALIPER TREE = 48" DRIP RING W/ .6 GPH EMITTERS/24" SPACING
8. CONTRACTOR SHALL INSTALL WEATHERMATIC SLFSI-T20 2" FLOW SENSOR AT POINT OF CONNECTION LOCATION. INSTALL FLOW SENSOR DOWNSTREAM OF MASTER VALVE AND RUN MANUFACTURER RECOMMENDED COMMUNICATION WIRE TO CONTROLLER. AND MAKE ALL NECESSARY CONNECTIONS FOR PROPER OPERATION. FLOW SENSORS SHALL BE LINE SIZE AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS.
9. CONTRACTOR SHALL PROVIDE 3 YEARS OF WEB ACCESS SERVICE FOR THE CONTROLLER NETWORK. SUBSCRIPTION SHALL COMMENCE AT THE START OF THE FIRST OPERATIONAL GROWING SEASON.
10. CONTRACTOR SHALL PROVIDE AND INSTALL WEATHERMATIC SLW5 WEATHER SENSOR AT CONTROLLER LOCATION.

TWO WIRE CONTROLLER NOTES

1. TWO WIRE DECODER CONTROL WIRE SHALL BE WEATHERMATIC SLWIRE 14-2 TWISTED PAIR WIRE AND SHALL MEET ALL CONTROLLER MANUFACTURERS RECOMMENDATIONS.
2. CONTRACTOR SHALL PROVIDE AND INSTALL WEATHERMATIC SLDEC SERIES DECODERS AS REQUIRED TO COMPLETE SYSTEM INSTALLATION AND OPERATION. MULTIPLE ADDRESS DECODERS MAY BE USED WHERE REMOTE CONTROL VALVES ARE IN CLOSE PROXIMITY TO EACH OTHER. ONLY ONE SOLENOID PER ADDRESS IS ALLOWED.
3. INSTALL WEATHERMATIC SLGDT LIGHTNING ARRESTOR/SURGE PROTECTION AND GROUND GROUND ROD AT CONTROLLER LOCATION, CONTROL WIRE END, AND EVERY 500 LF OF CONTROL WIRE. GROUNDING MUST OBTAIN 10 OHMS OF RESISTANCE OR LOWER AS TESTED WITH APPROPRIATE EARTH GROUND RESISTANCE TESTER. EARTH GROUND TESTS SHALL BE PERFORMED BY A QUALIFIED TECHNICIAN PROVIDED BY THE CONTROLLER SUPPLIER.

VALVE ID KEY

A1 — STATION NUMBER
10 — PRECIPITATION RATE (in/hr)
P 25 — STATION FLOW (GPM)
— VALVE SIZE

GENERAL NOTES

1. THIS SYSTEM IS INTENDED TO UTILIZE A NON-POTABLE WATER SOURCE . ALL PIPING , SPRINKLERS, EMISSION DEVICES, AND CONTROL VALVES SHALL INCLUDE PURPLE, NON POTABLE WARNINGS AND MARKINGS.
2. BACK FLOW PREVENTION, IF REQUIRED, SHALL BE INSTALLED TO MEET ALL LOCAL CODES.
3. CONTOUR PLAN OF SITE NOT AVAILABLE AT TIME OF DESIGN. PLAN ASSUMES MAXIMUM ELEVATION DIFFERENCE OF +/- 10' BETWEEN POC AND CONTROL VALVE 1-13.
4. ALL PIPING SHOWN ON PLANS IS DIAGRAMMATIC AND LOCATIONS SHOWN ARE FOR CLARITY ONLY. ALL PIPING SHALL BE ROUTED IN PLANTING AREAS AND SHALL AVOID TREE LOCATIONS. PIPING SHALL MAINTAIN A MINIMUM OF 10 LF FROM TREE ROOT BALLS.
5. DRIP HEADER LINES SHOWN ON PLANS INDICATE PROXIMITY OF DRIP ZONES. ALL TREES AND SHRUBS SHALL INCLUDE EMITTERS AND/OR DRIP RINGS. REFER TO NOTES FOR EMITTER SIZE AND QUANTITIES. EMITTER LOCATIONS AND DISTRIBUTION TUBING NOT SHOWN ON PLANS FOR GRAPHICAL AND CLARITY PURPOSES. ZONES ARE DESIGNED TO ACCOMMODATE 5 GPM NOT TO EXCEED 10 GPM
6. REMOTE CONTROL VALVES FOR TURF SHALL BE INSTALLED IN ADJACENT SHRUB BEDS OR WITHIN 2LF OF WALKWAYS AND CURBS OR IN TURF AREAS NOT CONTROLLED BY VALVE IN QUESTION.
7. ANY QUANTITIES SHOWN ON PLAN ARE ESTIMATED QUANTITIES ONLY. FIELD CONDITIONS MAY VARY AND MAY ALTER ACTUAL QUANTITIES. CONTRACTOR TO VERIFY FIELD CONDITIONS PRIOR TO INSTALLATION.
8. ALL SPRINKLER NOZZLES SHALL BE ADJUSTED FOR OPTIMUM COVERAGE AND MINIMUM OVERSPRAY.
9. REMOTE CONTROL VALVES SHALL BE INSTALLED PER DETAILED DRAWINGS AND SHALL HAVE ONE CONTROL VALVE PER VALVE BOX.
10. ALL ELECTRICAL WORK SHALL BE IN COMPLIANCE WITH N.E.C. AND ALL LOCAL CODES.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO ANY EXCAVATION.
12. ALL TRENCHES SHALL BE BACKFILLED IN 6" LIFTS OF CLEAN SOIL FREE OF ROCKS AND RUBBISH AND COMPACTED TO 95% PROCTOR DENSITY. CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO ANY EXCAVATION.
13. CARE SHALL BE TAKEN TO ENSURE THAT NO SOIL OR DEBRIS ENTERS THE PIPE DURING INSTALLATION.
14. ALL PIPE ENDS SHALL BE PROPERLY CLEANED AND SHALL BE FREE OF ANY BURRS AND/OR SHAVINGS AS A RESULT OF THE PIPE BEING CUT.
15. ALL LINES SHALL BE THOROUGHLY FLUSHED PRIOR TO INSTALLATION OF NOZZLES.

Scale: 1" = 20'

0' 10' 20' 30'

North

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Job # 409

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

REVISIONS

DESCRIPTION	DATE
PKG. BLAND/STM SWR REV.	7/17/15

OWNER

SELECT DEVELOPMENT & CONTRACTING, LLC
660 EAST FRANKLIN ROAD, MERIDIAN, ID 83642

PROJECT

Barnes & Noble
CROWN POINT DEVELOPMENT
PARKER, CO

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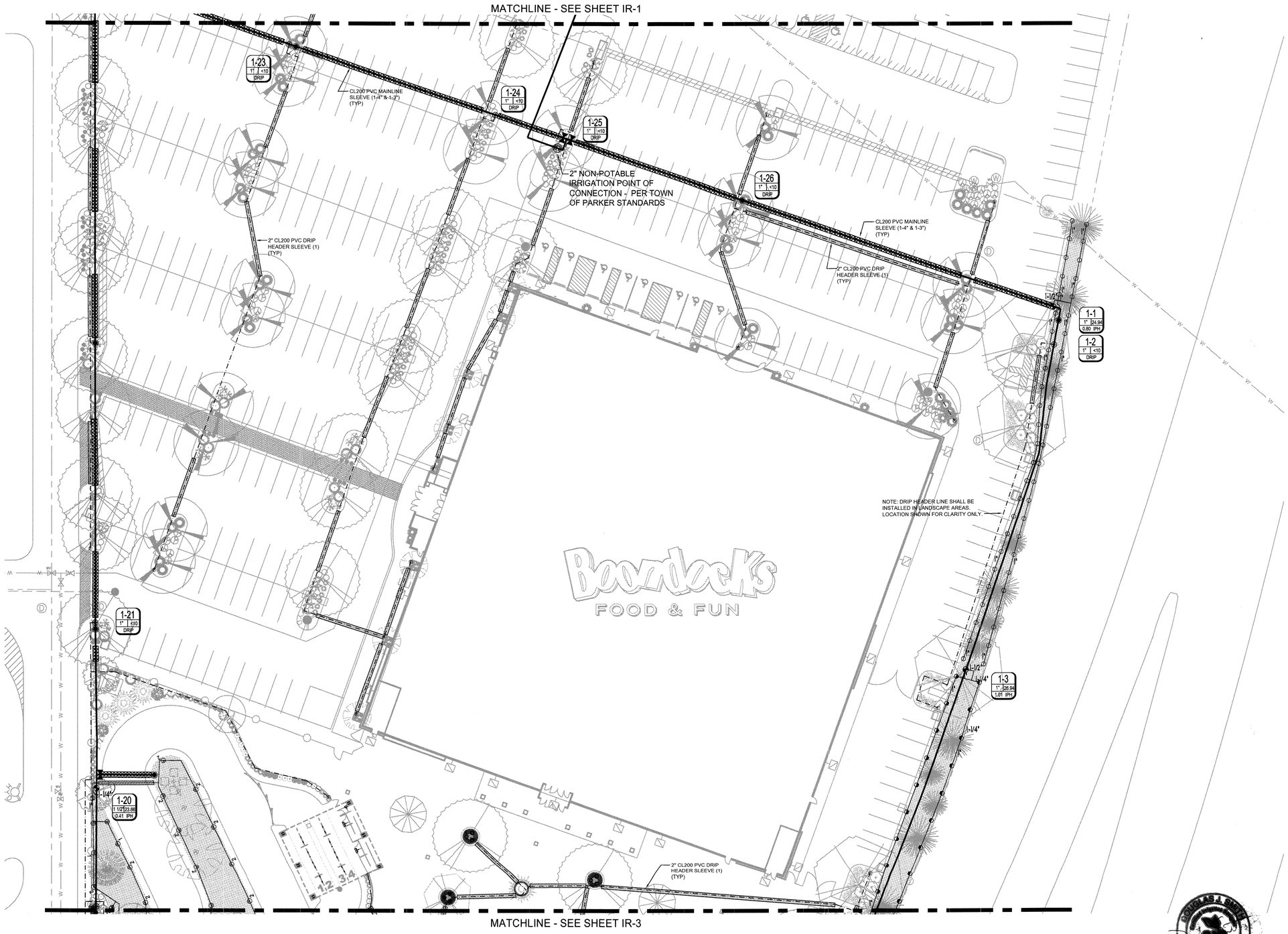
CONSTRUCTION DRAWINGS
IRRIGATION PLAN
NORTH

SHEET DATA

DRAWN BY:	DJS
CHECKED BY:	DJS
SCALE:	1" = 20'
DATE:	5/29/15
PROJECT # 14001	

SHEET NUMBER

IR-1



Scale: 1" = 20'

0' 10' 20' 30'

North

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CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS

DESCRIPTION	DATE
PKG. ISLANDS/STM SWR REV	7/17/15

OWNER

SELECT DEVELOPMENT & CONTRACTING, LLC
660 EAST FRANKLIN ROAD, MERIDIAN, ID 83642

PROJECT

Boardwalk's Fun Outdoor
CROWN POINT DEVELOPMENT
PARKER, CO

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CONSTRUCTION DRAWINGS
IRRIGATION PLAN CENTER

SHEET DATA

DRAWN BY:	DJS
CHECKED BY:	DJS
SCALE:	1" = 20'
DATE:	5/29/15
PROJECT # 14001	

SHEET NUMBER

IR-2

MATCHLINE - SEE SHEET IR-2

NOTE: DRIP HEADER LINE SHALL BE INSTALLED IN LANDSCAPE AREAS. LOCATION SHOWN FOR CLARITY ONLY.

PROPOSED CONTROLLER LOCATION. CONTRACTOR SHALL PROVIDE 120V 15AMP SERVICE TO CONTROLLER.

1-4 | 1" | <10 | DRIP

3" CL200 PVC LATERAL SLEEVE (1) (TYP)

NOTE: LATERAL LINES MAY BE INSTALLED IN COMMON TRENCH.

1-5 | 1 1/2" | 33.56 | 0.43 IPH

1-6 | 1" | 9.98 | 0.53 IPH

1-7 | 1" | <10 | MS/SPRAY

1-8 | 1" | <10 | DRIP

1-9 | 1" | <10 | DRIP

NOTE: ZONE 1-7 FOR ANNUAL BEDS ONLY. EMISSION DEVICES NOT SHOWN. CONTRACTOR TO PROVIDE HIGH EFFICIENCY SPRAY HEADS OR MICROSPRAY ADAPTERS ON 12" HIGH POP SPRINKLER BODIES. ALL BODIES MUST INCLUDE CHECK VALVES AND PRESSURE REGULATION

NOTE: ALL PIPING UNDER ANY HARDSCAPE SHALL BE SLEEVED IN CL200 PVC SLEEVE PIPE. LOCATIONS NOT SHOWN FOR CLARITY PURPOSES.

1" CL200 PVC GOLF COURSE POND AUTO FILL LINE. INSTALL LASCO 101N TUBV ISOLATION VALVE. AUTO FILL CONTROL VALVE BY GOLF COURSE CONTRACTOR.

1-10 | 1" | <10 | DRIP

TRASH AND TRASH CAN LOCATIONS TYP

1-11 | 1" | 11.88 | 1.42 IPH

SKULL HOLE W/ BALL COLLECTOR

PLAY THROUGH CAVE W/ VOLCANO AND FALLS T.O.C. = 30.5'

1-12 | 1" | <10 | DRIP

PLAY THROUGH CAVE W/ PIRATE FORT AND FALLS T.O.C. = 17.5'

E-470

FUEL

1-19 | 1" | <10 | DRIP

POWDER KEG SCENE

NOTE: ZONE 1-17 FOR ANNUAL BEDS ONLY. EMISSION DEVICES NOT SHOWN. CONTRACTOR TO PROVIDE HIGH EFFICIENCY SPRAY HEADS OR MICROSPRAY ADAPTERS ON 12" HIGH POP SPRINKLER BODIES. ALL BODIES MUST INCLUDE CHECK VALVES AND PRESSURE REGULATION

1-18 | 1" | <10 | DRIP

1-17 | 1" | <10 | MS/SPRAY

1-16 | 1" | 4.43 | 1.87 IPH

BLACK WHALE LODGE

MILL BOBBER

WATER SHOT HOLE

WATER SHOT HOLE

DOCK SCENE

DINGY BOAT

NOTE: ALL PIPING UNDER ANY HARDSCAPE SHALL BE SLEEVED IN CL200 PVC SLEEVE PIPE. LOCATIONS NOT SHOWN FOR CLARITY PURPOSES.

1" CL200 PVC GOLF COURSE POND AUTO FILL LINE. INSTALL LASCO 101N TUBV ISOLATION VALVE. AUTO FILL CONTROL VALVE BY GOLF COURSE CONTRACTOR.

NOTE: ZONE 1-14 FOR ANNUAL BEDS ONLY. EMISSION DEVICES NOT SHOWN. CONTRACTOR TO PROVIDE HIGH EFFICIENCY SPRAY HEADS OR MICROSPRAY ADAPTERS ON 12" HIGH POP SPRINKLER BODIES. ALL BODIES MUST INCLUDE CHECK VALVES AND PRESSURE REGULATION

1-15 | 1" | <10 | DRIP

1-14 | 1" | <10 | MS/SPRAY

1-13 | 1" | 20.44 | 0.44 IPH

DROP HOLE W/CANNIBAL SCENE

Scale: 1" = 20'

0' 10' 20' 30'

North

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CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

REVISIONS

DESCRIPTION	DATE
PKG. BLAND/STM SWR REV.	7/17/15

OWNER

SELECT DEVELOPMENT & CONTRACTING, LLC
660 EAST FRANKLIN ROAD, MERIDIAN, ID 83642

PROJECT

Bowlers Fun Outdoor
CROWN POINT DEVELOPMENT
PARKER, CO

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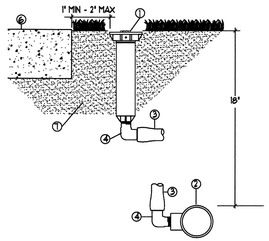
CONSTRUCTION DRAWINGS
IRRIGATION PLAN SOUTH

SHEET DATA

DRAWN BY:	DJS
CHECKED BY:	DJS
SCALE:	1" = 20'
DATE:	5/29/15
PROJECT #	14001

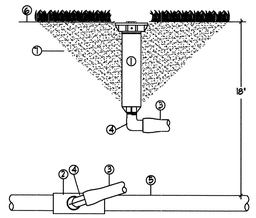
SHEET NUMBER

IR-3



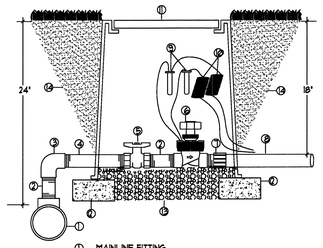
1. SPRINKLER HEAD (SEE LEGEND)
2. SCH 40 PVC LATERAL FITTING
3. RAINBIRD 5P SWING PIPE
4. RAINBIRD 5BE-050 BARBED FITTING
5. PVC LATERAL PIPE (SEE LEGEND)
6. CONCRETE OR ASPHALT HARDSCAPE
7. CLEAN COMPACTED BACKFILL

A FIXED SPRAY SPRINKLER ASSEMBLY
W/ SWING PIPE — NTS



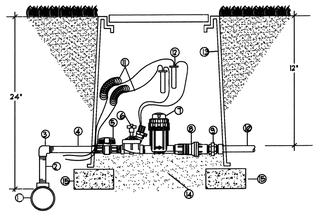
1. SPRINKLER HEAD (SEE LEGEND)
2. SCH 40 PVC LATERAL FITTING
3. RAINBIRD 5P SWING PIPE
4. RAINBIRD 5BE-050 BARBED FITTING
5. PVC LATERAL PIPE (SEE LEGEND)
6. CLEAN COMPACTED BACKFILL

B FIXED SPRAY SPRINKLER ASSEMBLY
W/ SWING PIPE — NTS



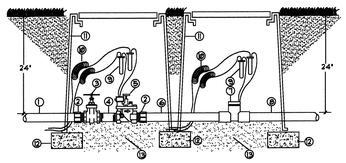
1. MAINLINE FITTING
2. SCH 80 PVC NIPPLE - TBE 4" LENGTH
3. SCH 80 PVC THREADED 90 DEG ELBOW
4. SCH 80 PVC NIPPLE - TBE 18" LENGTH
5. SCH 80 PVC THREADED BALL VALVE
6. REMOTE CONTROL VALVE (SEE LEGEND)
7. SCH 80 PVC MALE ADAPTER
8. LATERAL PIPING (SEE LEGEND)
9. 3M DBY WATERTIGHT CONNECTOR
10. 36" WIRE EXPANSION LOOPS
11. CARSON / BROOKS 1419 VALVE BOX
12. CMU SUPPORT BLOCK
13. 2 CUBIC FT WASHED PEA GRAVEL
14. CLEAN AND COMPACTED BACKFILL

C REMOTE CONTROL VALVE ASSEMBLY
WITH BALL VALVE ISOLATION



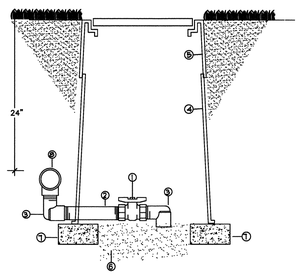
1. MAINLINE FITTING
2. SCH 80 PVC THREADED NIPPLE - 10" LENGTH
3. SCH 80 PVC THREADED ELBOW
4. SCH 80 PVC THREADED NIPPLE - 12" LENGTH
5. PVC BALL VALVE
6. REMOTE CONTROL VALVE (SEE LEGEND)
7. BASKET FILTER
8. PRESSURE REGULATOR
9. SCH. 80 PVC THREADED UNION
10. LATERAL PIPE (SEE LEGEND)
11. EXPANSION LOOPS - 36" MINIMUM
12. 3-M DBY CONNECTOR
13. CARSON 1419 VALVE BOX W/ LID (EXTENSIONS AS REQUIRED)
14. WASHED PEA GRAVEL - 2 CF MINIMUM
15. 4" X 8" X 16" CONCRETE BLOCK SUPPORT

D REMOTE CONTROL DRIP VALVE ASSY.
W/ FILTER & REGULATOR — NTS



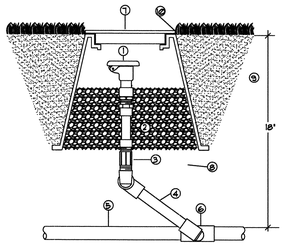
1. SERVICE LINE
2. SCH 40 PVC MALE ADAPTER
3. NIBCO T-113 BRONZE GATE VALVE
4. SCH. 80 PVC THREADED NIPPLE (LINE SIZE X 6" LENGTH)
5. REMOTE CONTROL VALVE (SEE LEGEND)
6. CLASS 200 PVC PIPE - MINIMUM 10X PIPE DIAMETER LENGTH
7. SCH 80 PVC FLOW SENSOR (SEE LEGEND)
8. MAINLINE PIPE (SEE LEGEND)
9. 3M DBY CONNECTOR
10. EXPANSION LOOPS - 36" MINIMUM
11. CARSON 1419 VALVE BOX W/ LID AND EXTENSIONS AS REQ'D
12. 4" X 8" X 16" CONCRETE BLOCK SUPPORT
13. WASHED PEA GRAVEL - 2 CF MINIMUM

E MASTER VALVE ASSEMBLY
WITH FLOW SENSOR — NTS



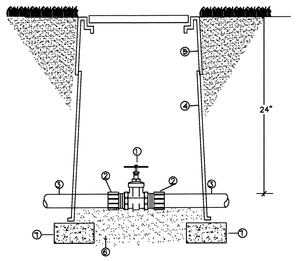
1. BRASS GATE VALVE
2. SCH. 80 PVC NIPPLE (TBE) - 4" LENGTH
3. SCH. 40 PVC STREET ELL (T X T)
4. CARSON 1419 VALVE BOX W/ LID
5. VALVE BOX EXTENSIONS (AS REQUIRED)
6. WASHED PEA GRAVEL - 2 CF MINIMUM
7. 4" X 8" X 16" CONCRETE BLOCK SUPPORT
8. MAINLINE TEE

F MANUAL DRAIN VALVE ASSEMBLY
NTS



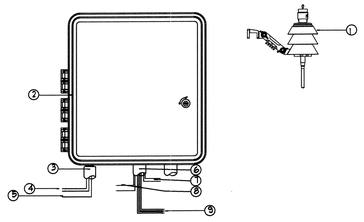
1. QUICK COUPLING VALVE(SEE LEGEND)
2. EXCALIBUR 1" X 6" FLEX NIPPLE
3. SCH 80 PVC THREADED COUPLING
4. LASCO G112-212 UNITIZED SWING JOINT
5. LATERAL PIPE (SEE LEGEND)
6. SCH 40 PVC LATERAL FITTING
7. CARSON 910 10" ROUND VALVE BOX
8. WASHED PEA GRAVEL - 1 CF MINIMUM
9. CLEAN COMPACTED BACKFILL
10. FINISH GRADE

G QUICK COUPLING VALVE ASSEMBLY
1" INLET — NTS



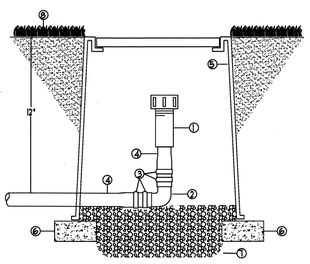
1. BRASS GATE VALVE (SEE LEGEND)
2. SCH. 80 PVC MALE ADAPTER
3. MAINLINE PIPE (SEE LEGEND)
4. CARSON 1419 VALVE BOX W/ LID
5. VALVE BOX EXTENSIONS (AS REQUIRED)
6. WASHED PEA GRAVEL - 2 CF MINIMUM
7. 4" X 8" X 16" CONCRETE BLOCK SUPPORT

H MAINLINE ISOLATION VALVE ASSEMBLY



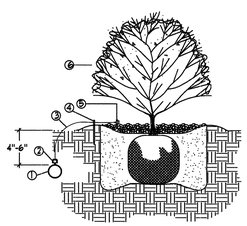
1. WIRELESS WEATHER SENSOR - SEE LEGEND
2. WALL MOUNT CONTROLLER - SEE LEGEND
3. CONDUIT 115V A.C.
4. POWER SUPPLY WIRES
5. GROUND WIRE
6. CONDUIT 24V A.C.
7. RAIN STAT WIRES
8. MASTER VALVE WIRE
9. 24V CONTROL VALVE WIRES

I WALL MOUNT CONTROLLER ASSEMBLY
WITH WIRELESS WEATHER SENSOR — NTS



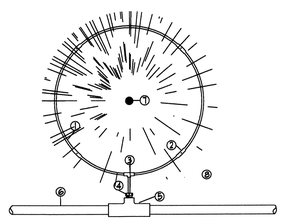
1. ¾" FLUSHABLE END CAP
2. ¾" INSERT 90 DEG ELBOW
3. STAINLESS STEEL PINCH CLAMP
4. ¾" POLYETHLYENE DRIP TUBING
5. CARSON 1206 1" ECONO VALVE BOX W/ VIOLET T-COVER
6. BRICK PAVER SUPPORT
7. FINISH GRADE
8. ½ CUBIC FT WASHED PEA GRAVEL

J FLUSHABLE END CAP ASSEMBLY
NTS



1. ¾" POLYETHYLENE DRIPLINE TUBING
2. DRIP EMITTER - SEE IRRIGATION LEGEND / NOTES
3. ¼" DISTRIBUTION TUBING
4. ¼" TUBING STAKE
5. BUG CAP - SEE IRRIGATION LEGEND / NOTES
6. TYPICAL PLANTING DETAIL - FOR REFERENCE ONLY. (SEE PLANTING PLANS)

K TYPICAL DRIP EMITTER PLACEMENT
NTS



1. LANDSCAPE DRIPLINE - 30" DIAMETER RING
2. LANDSCAPE DRIPLINE EMITTER
3. COMPRESSION FITTING -TEE
4. ¼" MIPT X INSERT MALE ADAPTER
5. SCH. 40 PVC 1" X ½" REDUCING TEE
6. LATERAL DRIP FEEDER LINE
7. CENTER OF TREE OR SHRUB
8. CANOPY EDGE OF TREE OR SHRUB

NOTE: DRIPLINE FITTINGS BRAND MUST MATCH DRIPLINE TYPE

L TREE / SHRUB DRIP RING ASSEMBLY
PLAN VIEW — NTS

ParkerWater & SANITATION DISTRICT

Landscape/Irrigation Worksheet

Project Name: Boondocks Fun Center

Landscape/Irrigation Tap address (physical location of tap) Cottonwood Drive

Landscape Area	High Water TURF (6,000sf = 1 SFE)	Low Water Native Grass and Spray Shrubs & Perennials (10,000sf = 1 SFE)	Drip Irrigated area (20,000sf = 1 SFE)	Non-Irrigated area	Sub-Total of (calculated) Areas	PWSD one SFE per 6000	SFE Requirement (Sub-Total Calculation divided by 6000 = requirement)
Area #1	27,131 sf x 1 = 27,131	2,086 sf x .6 = 2,086	23,614 sf x .3 = 7,084	6,280 sf x 0 = 0	35,467 sf	6,000	5.91 SFE's

Worksheet Completed by: Doug Smith
Company: Smith Irrigation Design, LLC
Address: 9499 High Cliffe Street, Highlands Ranch, CO
Phone #: 303-471-7377

Owner/Developer: _____
Attn: _____
Billing Address: _____
Phone #: _____

ET Controller (with Rain Sensor)

Manufacturer	Weathermatic Smartline w/ SLW5 weather sensor
Model number	SLM48DM

Tap Size Requirements:
0 - 1 SFE's requires a 3/4-inch tap
1.1 - 2.0 SFE's requires a 1-inch tap
2.1 - 4.0 SFE's requires a 1 1/2-inch tap
4.1 - 7.0 SFE's requires a 2-inch tap
7.1 - 16.0 SFE's requires a 3-inch tap

Smith IRRIGATION DESIGN, LLC
9499 HIGH CLIFFE STREET, HIGHLANDS RANCH, CO 80129
PHONE 303-471-7377 WWW.SMITH-IRRIGATION.COM

Prepared By:
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Job # 409

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS

DESCRIPTION	DATE
PKG. ISLANDS/SIM SWR.REV.	7/17/15

OWNER
SELECT DEVELOPMENT & CONTRACTING, LLC
660 EAST FRANKLIN ROAD, MERIDIAN, ID 83642

PROJECT
Boondocks Fun Outdoor
CROWN POINT DEVELOPMENT
PARKER, CO

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office@prboise.com

CONSTRUCTION DRAWINGS
IRRIGATION DETAILS

SHEET DATA

DRAWN BY:	DJS
CHECKED BY:	DJS
SCALE:	1" = 20'
DATE:	5/29/15
PROJECT #	14001

SHEET NUMBER
IR-4