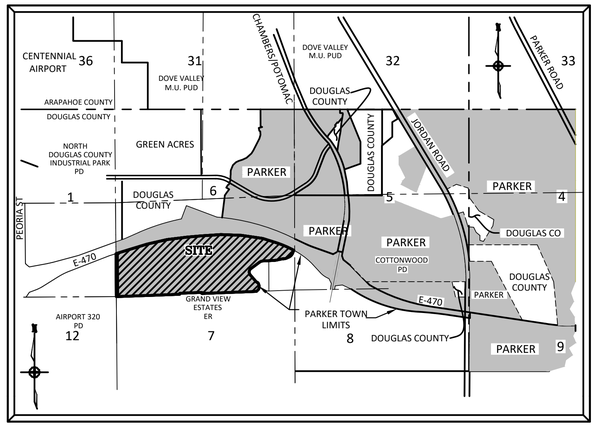
FINAL ROAD & STORM DRAINAGE CONSTRUCTION PLANS
FOR
BELFORD AVENUE
COMPARK VILLAGE SOUTH, FILING NO. 1

PARKER, COLORADO

THE WEST LINE OF THE SOUTHWEST QUARTER OF SECTION 6, TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN BEING MONUMENTED AS SHOWN HEREON HAVING A BEARING OF NORTH 00°29'49" WEST, AS DETERMINED BY GPS OBSERVATION FROM NGS CONTROL POINTS IN THE COLORADO CENTRAL ZONE, STATE PLANE COORDINATE SYSTEM TOWN OF PARKER, COUNTY OF DOUGLAS, STATE OF COLORADO



VICINITY MAP

N.T.S.

AGENCY CONTACT LIST

COMPARK LAND COMPANY
MICHAEL VICKERS
1001 BANNOCK ST, SUITE 463
DENVER, CO 80204 — 303-881-6292

MANHARD CONSULTING
RICKY J. MOORE, P.E.
7600 E ORCHARD RD, SUITE 150-N
GREENWOOD VILLAGE, CO 80111 — 303-708-0500

PARKER PUBLIC WORKS
20120 E. MAINSTREET
PARKER, CO. 80138 — 303-840-9546
STREETS - ALEX MESTDAGH
STORM WATER - MICHAEL GRABCZYK
EROSION CONTROL - MICHAEL GRABCZYK
LIFE SAFETY - RANDY CAPRA

TOWN OF PARKER POLICE DEPARTMENT
19,600 E. PARKER SQUARE DR.
PARKER, CO. 80134 — 303-841-9800

STONEGATE VILLAGE METRO DISTRICT
DISTRICT ENGINEER:
SCOTT BARNETT
MULHERN MRE, INC.
188 INVERNESS DRIVE WEST, SUITE 150
ENGLEWOOD, CO 80112 — 303-858-9909

DISTRICT MANAGER:
SARAH SJOBAKKEN
10252 STONEGATE PARKWAY
PARKER, CO 80134 — 303-858-9909

COMPARK VILLAGE CAMPUS METRO DISTRICT
C/O CLIFFTON LARSON ALLEN
8390 E. CRESCENT PARKWAY, SUITE 500
GREENWOOD VILLAGE, CO 80111 — (303) 779-4525

SOUTH METRO FIRE RESCUE AUTHORITY
MICHELLE HERIAN
9195 E. MINERAL AVE.
CENTENNIAL, CO 80112 — 720-488-7200

UTILITY NOTIFICATION COMPANY OF COLORADO
2801 SOUTH YOUNGFIELD ST, SUITE 301
GOLDEN, CO 80401 — 1-800-922-1987
LOCAL CALLS — (811)

XCEL ENERGY
MICHELLE O'NAN
5909 E. 38TH AVE.
DENVER, CO 80207 — 303-329-1618

COMCAST
KEVIN YOUNG
6850 S. TUCSON WAY
ENGLEWOOD, CO 80112 — 720-490-3867

CENTURY LINK
WILLIAM BENSON
9750 E. COSTILLA AVE.
ENGLEWOOD, CO 80112 — 303-792-6069

COLORADO DEPARTMENT OF HEALTH
4210 E. 11TH AVE.
DENVER, CO 80220 — 303-320-8333

INTERMOUNTAIN RURAL ELECTRIC ASSOCIATION
BROOKS KAUFMAN
5496 NORTH US HWY 85
P.O. BOX DRAWER A
SEDALIA, CO 80135 — 303-688-3100

BENCHMARKS: (COMPARK SOUTH)

SOURCE BENCHMARKS:
DOUGLAS COUNTY BM 1.115010
A DOUGLAS COUNTY GIS MONUMENT SET IN CONCRETE LOCATED APPROXIMATELY 130 FEET SOUTHWESTERLY OF THE CENTERLINE OF CHAMBERS ROAD AND 95 FEET NORTHWESTERLY OF THE CENTERLINE OF COMPARK BOULEVARD.
ELEVATION = 5752.84 (NAVD 88)

SITE BENCHMARKS:
1. A NO. 5 REBAR WITH 2" ALUMINUM CAP STAMPED "LS 28286, 2001" FOUND AT THE SOUTHWEST CORNER OF SECTION 6, T6S, R66W LOCATED ON THE WEST LINE OF FIRST STREET APPROXIMATELY 1000 FEET NORTH OF ELM AVENUE.
ELEVATION = 5845.51
2. A 2.5" IRON PIPE WITH 3.25" ALUMINUM CAP STAMPED "PLS 12405, 1997" FOUND AT THE SOUTHEAST CORNER OF SECTION 6, T6S, R66W LOCATED APPROXIMATELY 960 FEET NORTH OF THE CENTERLINE OF AVENTERRA PARKWAY AND APPROXIMATELY 1050 FEET WEST OF THE CENTERLINE OF CHAMBERS ROAD.
ELEVATION = 5808.06

Know what's below. Call before you dig.

SIGHT DISTANCE CERTIFICATION:

"I, THE UNDERSIGNED, HEREBY CERTIFY THAT THE PROPOSED SUBDIVISION, COMPARK VILLAGE SOUTH, FILING NO. 1, IS DESIGNED WITH ADEQUATE CORNER SIGHT DISTANCE FOR ALL INTERSECTIONS AND PEDESTRIAN CROSSING LOCATIONS. CONSIDERATION OF LANDSCAPING IMPACTS TO THE CORNER SIGHT DISTANCE AT BOTH INITIAL AND MATURE GROWTH HAS BEEN REVIEWED. THE MINIMUM CORNER SIGHT DISTANCE IS IN COMPLIANCE WITH AASHTO 'POLICY ON GEOMETRIC DESIGN OF HIGHWAY AND STREETS'."

I HEREBY AFFIRM THAT THESE CONSTRUCTION PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION.

FOR AND ON BEHALF OF MANHARD CONSULTING

Manhard CONSULTING LTD
8008 E. Arapahoe Court, Suite 110, Centennial, CO 80112 ph:303.708.0500 fx:303.708.0400 manhard.com
Civil Engineers • Surveyors • Water Resource Engineers • Water & Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

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TOWN OF PARKER APPROVALS

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, DIRECTOR OF ENGINEERING — DATE

REVISIONS			DRAWN BY
	DATE		
F.	03/02/20	UPDATE GAT & ADD OFF-LINE DET BASIN	
E.	12/21/16	FINAL SUBMITTAL	
D.	11/7/16	4TH SUBMITTAL	
C.	7/21/16	3RD SUBMITTAL	
B.	4/11/16	2ND SUBMITTAL	
A.	11/2015	1ST SUBMITTAL	EG

Manhard CONSULTING
7600 East Orchard Road, Suite 150-N, Greenwood Village, CO 80111 ph:303.708.0500 manhard.com
Civil Engineering | Surveying | Water Resource Management | Construction Management

COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
COVER SHEET

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET 1 OF 49
CLCPKC3 ---

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PRELIMINARY - NOT FOR CONSTRUCTION

Plotted: 3/3/2020 3:17 PM Dwg Name: J:\Clpkc3\ComSouth12-Filing 1 No GAT\ComSouth03-Ultimate Belford Ave\dwg\Engl\Final Drawings\Plan Set\Town\CLCPKC3 BelFord-CV01.dwg Updated By: MMcGuire

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL COMPLY WITH THE STONEGATE VILLAGE METRO DISTRICT WATER AND SANITATION SYSTEM SPECIFICATIONS, THE DOUGLAS COUNTY ROADWAY DESIGN AND CONSTRUCTION STANDARDS, THE TOWN OF PARKER ROADWAY DESIGN AND CONSTRUCTION CRITERIA, THE TOWN OF PARKER STORM DRAINAGE AND ENVIRONMENTAL CRITERIA, THE URBAN DRAINAGE AND FLOOD CONTROL DISTRICT, THE COLORADO STATE BOARD OF HEALTH, THE ENVIRONMENTAL PROTECTION AGENCY AND THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION.

2. THE CONTRACTOR SHALL CONTACT ALL APPROPRIATE UTILITY COMPANIES AND THE TOWN OF PARKER PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ANY EXISTING UTILITY (INCLUDING DEPTHS) WHICH MAY CONFLICT WITH THE PROPOSED CONSTRUCTION. ALL EXISTING UTILITIES SHALL BE PROTECTED FROM DAMAGE BY THE CONTRACTOR. DAMAGED UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE. ALL ITEMS SHOWN ON THE PLANS AS EXISTING ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. THE ACTUAL LOCATIONS MAY VARY FROM THE PLANS, ESPECIALLY IN THE CASE OF UNDERGROUND UTILITIES. WHENEVER THE CONTRACTOR DISCOVERS A DISCREPANCY IN LOCATIONS, HE SHALL CONTACT THE ENGINEER IMMEDIATELY.

3. THE DISTRICT ENGINEER AND OTHER APPROVING AGENCIES ARE TO BE NOTIFIED AT LEAST 48 HOURS PRIOR TO CONSTRUCTION.

4. THE CONTRACTOR SHALL OBTAIN, AT HIS EXPENSE, ALL PERMITS WHICH ARE NECESSARY TO PERFORM THE PROPOSED WORK, INCLUDING STREET CUTS, UTILITY INTERFERENCE AND TRAFFIC CONTROL.

5. ALL CONCRETE SHALL BE A MINIMUM OF CLASS B, 6-SACK, TYPE II, 3000 POUND COMPRESSION STRENGTH. ALL CONCRETE ASSOCIATED WITH ROADWAY CONSTRUCTION SHALL BE CLASS D.

6. THE DESIGN ENGINEER SHALL SUBMIT ONE (1) SET OF ROLLED "AS-BUILT" BLUELINE PRINTS TO THE DESIGNATED TOWN AUTHORITY FOR APPROVAL PRIOR TO PRINTING MYLAR SEPIAS AND ELECTRONIC FILES FOR THE TOWN. AFTER APPROVAL HAS BEEN GRANTED BY THE DESIGNATED TOWN AUTHORITY, FULL SIZE MYLAR SEPIA PRINTS SHALL BE TRANSMITTED TO THE TOWN.

7. ALL BACKFILL MATERIAL SHALL BE COMPACTED TO ALL APPLICABLE TOWN AND DISTRICT STANDARDS. COMPACTION TESTS MUST BE SUBMITTED TO THE TOWN AND DISTRICT PRIOR TO PROBATIONARY ACCEPTANCE.

8. ALL CURBS SHALL BE CAREFULLY AND FIRMLY BACKFILLED BY THE CONTRACTOR. ANY EXCESS MATERIAL FROM SUBGRADE TRIMMING SHALL NOT BE LEFT IN THE STREET CORE, BUT SHALL BE SPREAD UNIFORMLY IN A 20-FOOT WIDE ZONE BEHIND THE WALK.

9. REFER TO OVERLOT GRADING AND EROSION CONTROL PLAN FOR GRADING NOTES.

10. EXPANSION JOINTS WILL BE PLACED IN ALL SIDEWALKS AND CURB AND GUTTER AT PCs, PTs, AND AT ANY FIXED OBJECT, BUT IN NO CASE ANY FARTHER THAN 500 FEET APART.

11. THE APPLICANT IS 470 COMPARK LLC.

12. THE UTILITY CONTRACTOR THAT INSTALLS SANITARY SEWER, STORM SEWER, AND WATER SHALL, AFTER PROPERLY COMPLETING THE WORK, WALK THE SITE WITH THE OWNER'S REPRESENTATIVE(S) TO INSPECT MANHOLES, HYDRANTS, VALVE BOXES, AND INLETS PRIOR TO THE START OF WORK BY THE CURB, GUTTER, AND WALK CONTRACTOR. A SIMILAR FIELD INSPECTION SHALL OCCUR WITH THE UTILITY CONTRACTOR AND CURB CONTRACTOR TO INSPECT THESE ITEMS PLUS CURB STOP BOXES AND CONCRETE WORK PRIOR TO THE START OF WORK BY THE PAVING CONTRACTOR. THESE FIELD INSPECTIONS ARE INTENDED TO HELP ESTABLISH RESPONSIBILITY FOR ANY NECESSARY REPAIRS, CLEANING, ETC. THAT ARE NEEDED. THESE INSPECTIONS WITH A REPRESENTATIVE OF THE OWNER ARE IN ADDITION TO ANY INSPECTIONS BY REPRESENTATIVES OF THE TOWN OF PARKER OR COTTONWOOD WATER AND SANITATION DISTRICT.

13. ALL TESTING AND INSPECTION FOR COMPLIANCE WITH TOWN OF PARKER STANDARDS SHALL BE COMPLETED PRIOR TO PROBATIONARY ACCEPTANCE.

14. THE DESIGN ENGINEER SHALL SUBMIT ONE (1) SET OF ROLLED "AS-BUILT" BLUELINE PRINTS AND ELECTRONIC FILES TO THE DISTRICT ENGINEER FOR APPROVAL PRIOR TO PRINTING MYLAR SEPIAS FOR THE DISTRICT. AFTER APPROVAL HAS BEEN GRANTED BY THE DISTRICT ENGINEER, FULL SIZE MYLAR SEPIA PRINTS SHALL BE TRANSMITTED TO THE COTTONWOOD WATER AND SANITATION DISTRICT OFFICE AND AN ADDITIONAL SET OF ROLLED BLUELINE PRINTS SHALL BE TRANSMITTED TO THE DISTRICT ENGINEER'S OFFICE PRIOR TO PROBATIONARY ACCEPTANCE.

15. TRENCHES SHALL BE EXCAVATED AND THE PIPE EXPOSED FOR THE INSPECTION AT ANY LOCATION ON THE PROJECT IF SO ORDERED BY THE INSPECTOR.

16. CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE PROPER FUNCTIONING OF LINES (WATER AND SEWER) FOR UP TO TWO (2) YEARS FROM THE DATE OF PROBATIONARY ACCEPTANCE OF THE LINES BY THE DISTRICT. ANY MALFUNCTION DURING THIS PERIOD OF GUARANTEE SHALL BE REMEDIED BY THE CONTRACTOR TO THE SATISFACTION OF THE DISTRICT ENGINEER AT NO EXPENSE TO THE DISTRICT.

17. SURFACE GRADES ARE TO BE WITHIN PLUS OR MINUS ONE FOOT OF FINISHED GRADE AND VERIFICATION OF COMPACTION RESULTS OBTAINED PRIOR TO THE INSTALLATION OF WATER AND SEWER LINES. RESULTS MUST BE SUBMITTED TO THE DISTRICT ENGINEER.

18. NO WORK SHALL BE BACKFILLED UNTIL THE CONSTRUCTION HAS BEEN INSPECTED AND APPROVED FOR BACKFILLING BY THE DISTRICT ENGINEER OR REPRESENTATIVE OF THE DISTRICT ENGINEER.

19. ALL SERVICES WILL BE PERMANENTLY MARKED ON CURB FACE AS FOLLOWS:

"X" FOR SANITARY SERVICE SEWERS
"V" FOR WATER SERVICES

20. NO TREES SHALL BE ALLOWED IN EASEMENTS OR WITHIN 8' OF ANY WATER OR SANITARY SEWER MAINS IN RIGHT-OF-WAY. NO TREES ALLOWED WITHIN 7' OF THE EDGE OF ANY STORM SEWER.

21. BENCHMARKS:

SOURCE BENCHMARKS:
DOUGLAS COUNTY BM 1.115010
A DOUGLAS COUNTY GIS MONUMENT SET IN CONCRETE LOCATED APPROXIMATELY 130 FEET SOUTHWESTERLY OF THE CENTERLINE OF CHAMBERS ROAD AND 95 FEET NORTHWESTERLY OF THE CENTERLINE OF COMPARK BOULEVARD.
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ELEVATION = 5808.06

22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION, PROTECTION AND REPAIR OF ALL UTILITIES ENCOUNTERED DURING CONSTRUCTION, WHETHER SHOWN ON THESE PLANS OR NOT. CONTRACTOR SHALL CONTACT REPRESENTATIVES OF THE RESPECTIVE UTILITIES AND HAVE ALL UTILITIES FIELD LOCATED PRIOR TO CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL LOCATIONS OF EXISTING STRUCTURES AND UTILITIES SHOWN ON THE DRAWINGS, TO ASCERTAIN WHETHER ANY STRUCTURES AND UTILITIES MAY EXIST, AND REPAIR AND/OR REPLACE ANY STRUCTURES AND/OR UTILITIES THAT ARE DAMAGED BY THE CONTRACTOR.

23. T.C. INDICATES TOP BACK OF WALK GRADE FOR COMBINATION CURB, GUTTER, AND SIDEWALK, OR TOP BACK OF CURB FOR OTHER CURB AND GUTTER TYPES.

24. ALL DIMENSIONS AND RADII ARE TO FLOWLINE UNLESS OTHERWISE NOTED.

25. THE CONTRACTOR SHALL FURNISH THE ENGINEER WITH A SET OF "AS-BUILT" PLANS MARKED WITH ALL DEVIATIONS FROM THE CONSTRUCTION PLANS PRIOR TO INITIAL ACCEPTANCE.

26. ALL STATIONING IS ON CENTERLINE OF RIGHT OF WAY UNLESS OTHERWISE NOTED.

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 PRE-CONSTRUCTION MEETING SHALL BE SCHEDULED A MINIMUM OF 48 HOURS AND A MAXIMUM OF 96 HOURS PRIOR TO THE START OF CONSTRUCTION. A PRE-CONSTRUCTION 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 AT 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 TIE-IN	----
SANITARY SEWER CONNECTION	----
STORM SEWER CONNECTION	NONE

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 A PERIOD OF ONE (1) YEAR FROM THE DATE SHOWN ON THE TOWN OF PARKER SIGNATURE BLOCK. PLANS SHALL BE RESUBMITTED TO THE TOWN FOR APPROVAL AFTER ONE (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 HEALTH, 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.

PARKER STANDARD 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 ENVIRONMENT 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 TO 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 NON-ACCEPTANCE 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 CDOT STANDARD SPECIFICATIONS 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 SUB-GRADE 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:

A) 1 TEST FOR SUB-GRADE AND 1 TEST FOR BACKFILL AT EVERY ABOVE-GROUND APPURTENANCE (MANHOLES, INLETS, ETC.)
B) 1 TEST EVERY 200 LF OF MAINLINE TRENCHES 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 JOINTED IN SUCH A MANNER THAT THE ENDS ARE FULLY ENTERED AND THE INNER SURFACES ARE REASONABLY 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 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 JOINTS 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 & STRIPING NOTES

1. SEE SIGNAGE & STRIPING PLAN FOR NOTES.

ROADWAY NOTES:

1. PAVING SHALL NOT COMMENCE UNTIL A SOILS REPORT AND PAVEMENT DESIGN IS APPROVED BY THE ENGINEERING DIVISION AND SUB-GRADE 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-STANDARDS, AND THE TOWN OF PARKER ROADWAY DESIGN AND CONSTRUCTION CRITERIA MANUAL, LATEST EDITION, SHALL APPLY.

MASTER LEGEND

- PROPOSED SANITARY SEWER W/MANHOLE
- PROPOSED WATERLINE W/ GATE VALVE
- PROPOSED F.H. ASSEMBLY, GATE VALVE & TEE
- EXISTING SANITARY SEWER W/ MANHOLE
- EXISTING WATERLINE W/ GATE VALVE
- EXISTING FH ASSEMBLY, GATE VALVE & TEE
- EXISTING HIGH PRESSURE GAS LINE
- PROPOSED STORM SEWER W/ MANHOLE
- PROPOSED EOA, FL AND BOC
- PROPOSED SIDEWALK
- PROPOSED ROW
- PROPOSED UTILITY EASEMENT
- EXISTING TOP BACK OF CURB
- EXISTING FLOWLINE
- EXISTING LIP OF CURB/EDGE OF ASPHALT
- EXISTING STORM INLET
- PROPOSED STORM INLET
- PROPOSED WATER SERVICE W/ CURBSTOP
- PROPOSED SANITARY SERVICE
- EXISTING WATER SERVICE W/ CURBSTOP
- EXISTING SANITARY SERVICE
- CAUTION! UTILITY CROSSING
- PROPOSED CROSS PAN
- EXISTING CROSS PAN
- PROPOSED CONTOURS
- EXISTING CONTOURS
- EXISTING TELEPHONE LINE
- EXISTING ELECTRIC LINE
- EXISTING STORM
- EXIST. OVERHEAD UTILITY
- EXISTING POWER POLES
- HP — HIGH POINT
- LP — LOW POINT
- TW — TOP OF WALL ELEVATION
- M.E. — MATCH EXISTING
- INDICATES PROPERTY CORNER ELEV. PER GRADING TEMPLATES
- CUT/FILL LINE
- FLOW DIRECTION ARROW
- PROPOSED ASPHALT LIMITS
- PROPOSED SIGN
- PROPOSED STREET LIGHT

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TOWN OF PARKER APPROVALS

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TOWN OF PARKER, DIRECTOR OF ENGINEERING DATE

NO.	DATE	REVISIONS	DRAWN BY
F.	03/02/20	UPDATE GAT & ADD OFF-LINE DET BASIN	
E.	12/21/16	FINAL SUBMITTAL	
D.	11/7/16	4TH SUBMITTAL	
C.	8/24/16	3RD SUBMITTAL	
B.	4/11/16	2ND SUBMITTAL	
A.	11/2015	1ST SUBMITTAL	EG

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COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
GENERAL NOTES

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET 2 OF 49
CLCPKC3 ---

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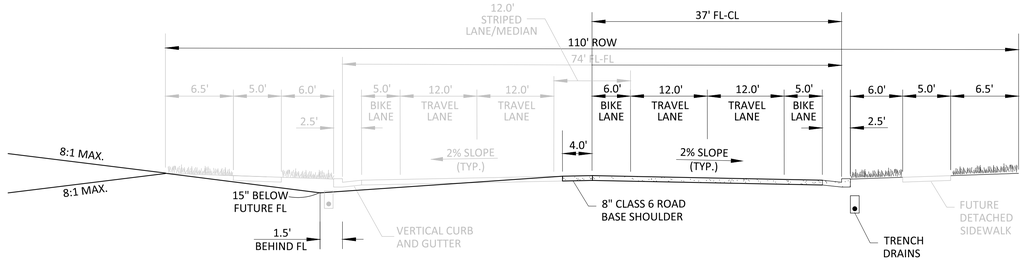


PARKER MAJOR COLLECTOR WITHIN DOUGLAS COUNTY JURISDICTION

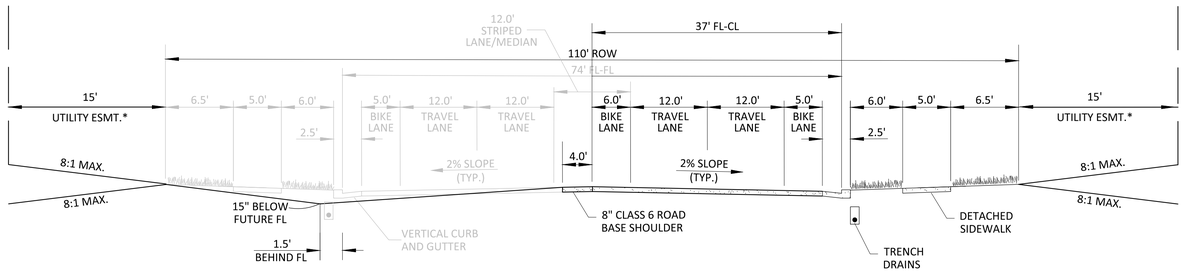
PROPOSED CONDITION

STA 13+93.54 - 44+00.69

*FUTURE IMPROVEMENTS ARE SHADED FOR REFERENCE

GENERAL NOTES:

1. TRENCH DRAINS ARE REQUIRED ON COLLECTOR STREETS, SEE STANDARD DETAIL 31.
2. ROW WIDTH SHOWN IS TYPICAL. ADDITIONAL ROW AND/OR LANES MAY BE REQUIRED BASED ON A TRAFFIC STUDY.
3. SEE STANDARD DETAIL 3 FOR TYPICAL CURB AND GUTTER INFORMATION.
4. SEE STANDARD DETAIL 4 FOR TYPICAL SIDEWALK INFORMATION.
5. *UTILITY EASEMENT WIDTH VARIES FROM TYPICAL AT CERTAIN LOCATIONS. SEE PLANS FOR LOCATION INFORMATION.



PARKER MAJOR COLLECTOR

PROPOSED CONDITION

STA 44+00.69 - 78+00

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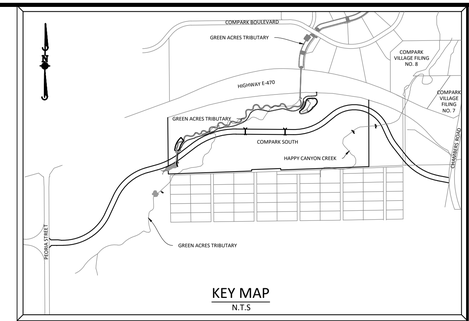
BELFORD AVENUE

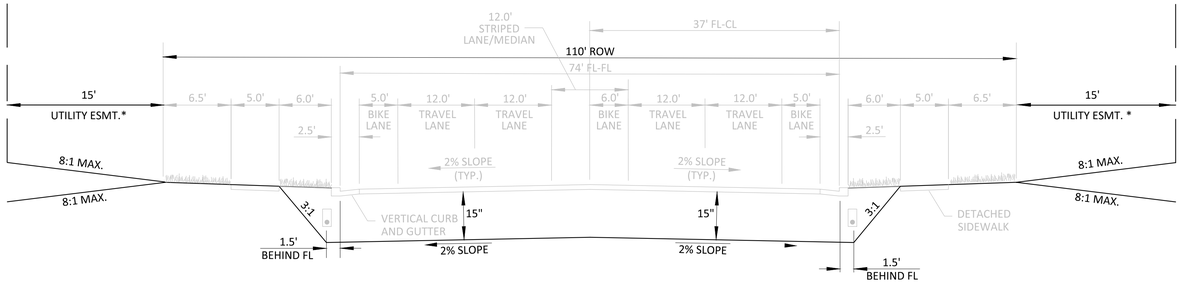


KEY MAP

N.T.S

SOURCE BENCHMARKS:

DOUGLAS COUNTY BM 1.115010
A DOUGLAS COUNTY GIS MONUMENT SET IN CONCRETE LOCATED APPROXIMATELY 130 FEET SOUTHWESTERLY OF THE CENTERLINE OF CHAMBERS ROAD AND 95 FEET NORTHWESTERLY OF THE CENTERLINE OF COMPARK BOULEVARD. ELEVATION = 5752.84 (NAVD 88)



UNDERCUT

PROPOSED CONDITION

STA 78+00 - 92+93

*FUTURE IMPROVEMENTS ARE SHADED FOR REFERENCE

** UNDERCUT DETERMINED FROM PRELIMINARY GEOTECHNICAL EVALUATION

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D.	11/1/16	4TH SUBMITTAL	
C.	6/24/16	3RD SUBMITTAL	
B.	4/11/16	2ND SUBMITTAL	
A.	11/2015	1ST SUBMITTAL	EG

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COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE

TOWN OF PARKER, COLORADO

TYPICAL ROADWAY SECITON

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET

3 OF 49

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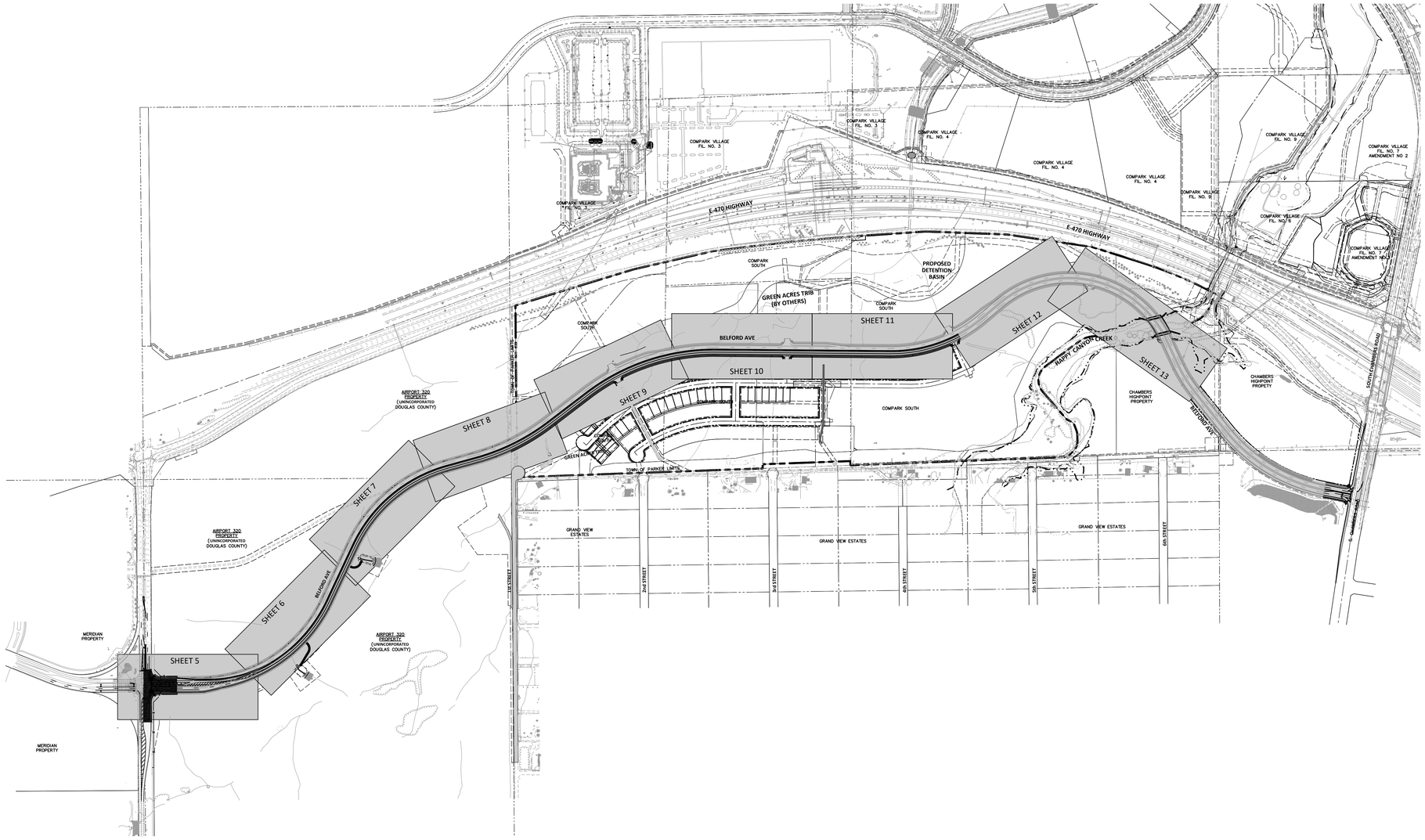

0 200 400 800

SCALE: 1"=400'

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F.	03/02/20	UPDATE GAT & ADD OFF-LINE DET BASIN	
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D.	11/1/2016	4TH SUBMITTAL	
C.	6/24/2016	3RD SUBMITTAL	
B.	4/11/16	2ND SUBMITTAL	
A.	11/2015	1ST SUBMITTAL	EG

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TOWN OF PARKER, COLORADO

STREET INDEX SHEET

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DRAWN BY: ETG
DATE: 12/2015

SHEET
4 OF 49
CLCPKC3 ---

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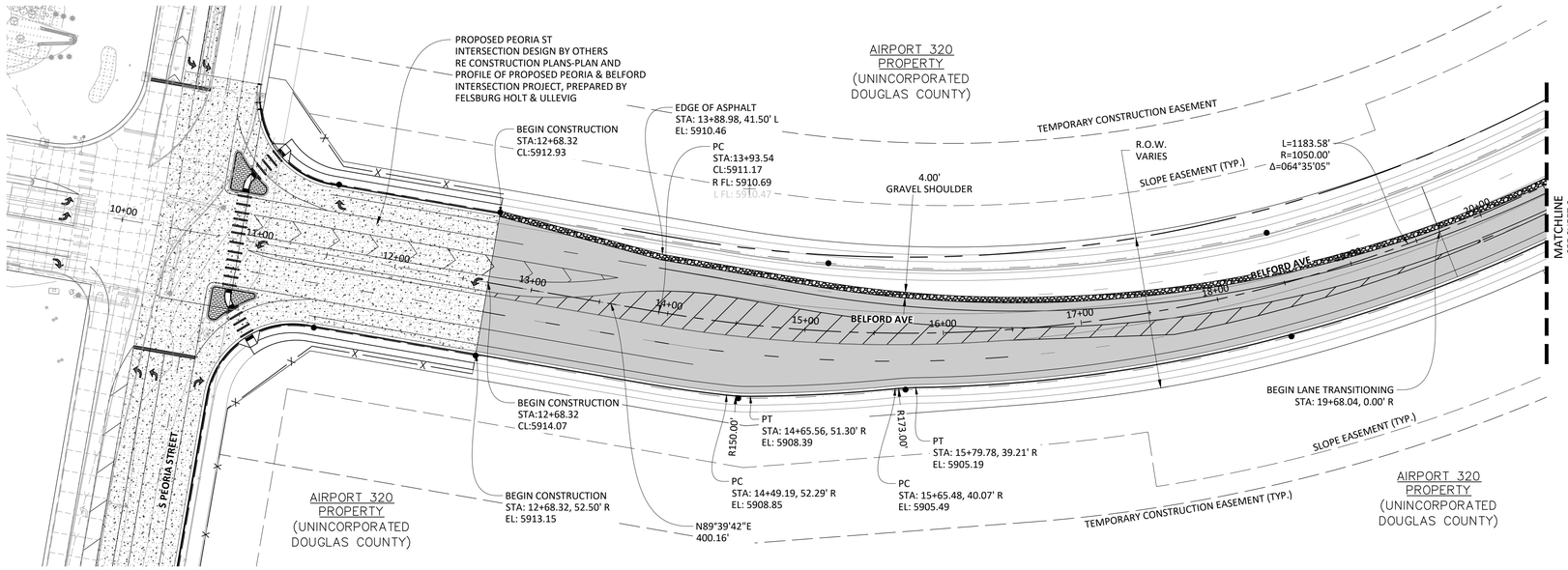
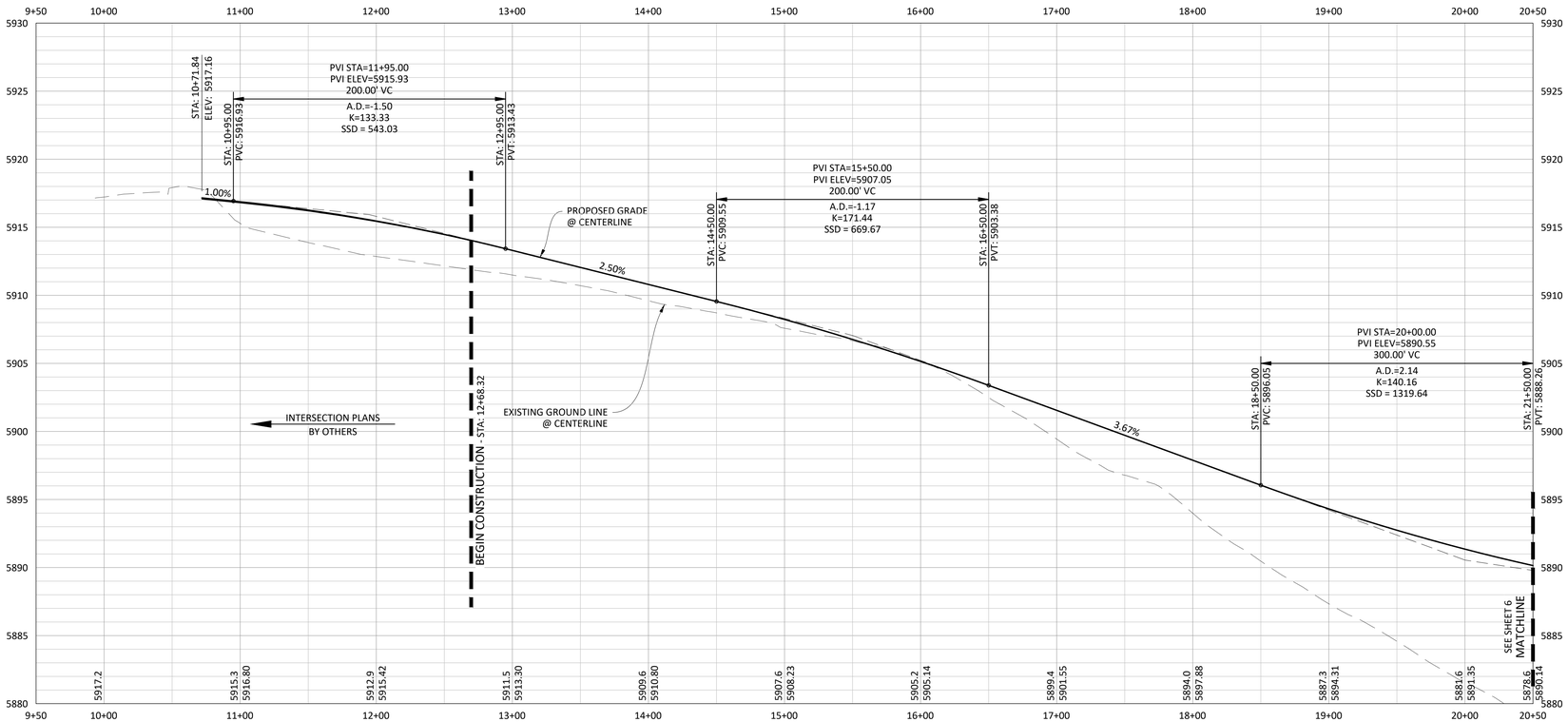
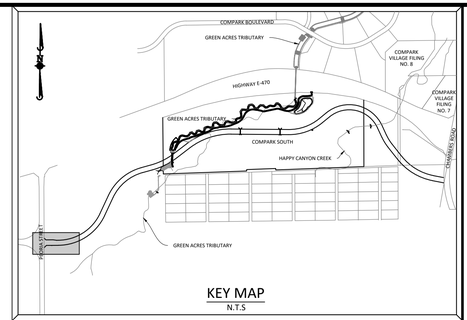


PLAN: BELFORD AVENUE



PROFILE: BELFORD AVENUE



KEY MAP
N.T.S

SOURCE BENCHMARKS:

DOUGLAS COUNTY BM 1.115010
A DOUGLAS COUNTY GIS MONUMENT SET IN CONCRETE LOCATED APPROXIMATELY 130 FEET SOUTHWESTERLY OF THE CENTERLINE OF CHAMBERS ROAD AND 95 FEET NORTHWESTERLY OF THE CENTERLINE OF COMPARK BOULEVARD. ELEVATION = 5752.84 (NAVD 88)

0 25 50 100
SCALE: 1"=50'
VERTICAL SCALE: 1"=5'

NOTES:

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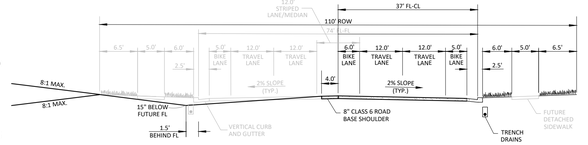

PARKER MAJOR COLLECTOR WITHIN
DOUGLAS COUNTY JURISDICTION
PROPOSED CONDITION

0 25 50 100
SCALE: 1"=50'
VERTICAL SCALE: 1"=5'

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COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
BELFORD AVENUE - PLAN & PROFILE

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET
5 OF 49
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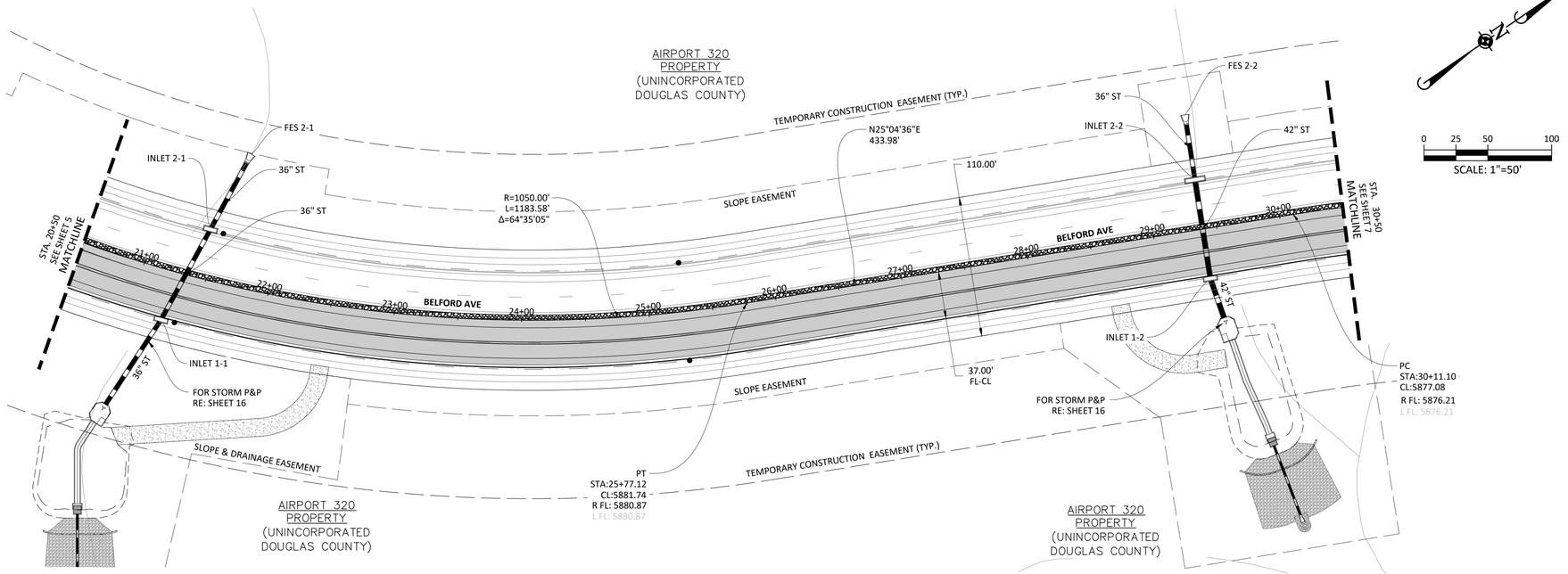
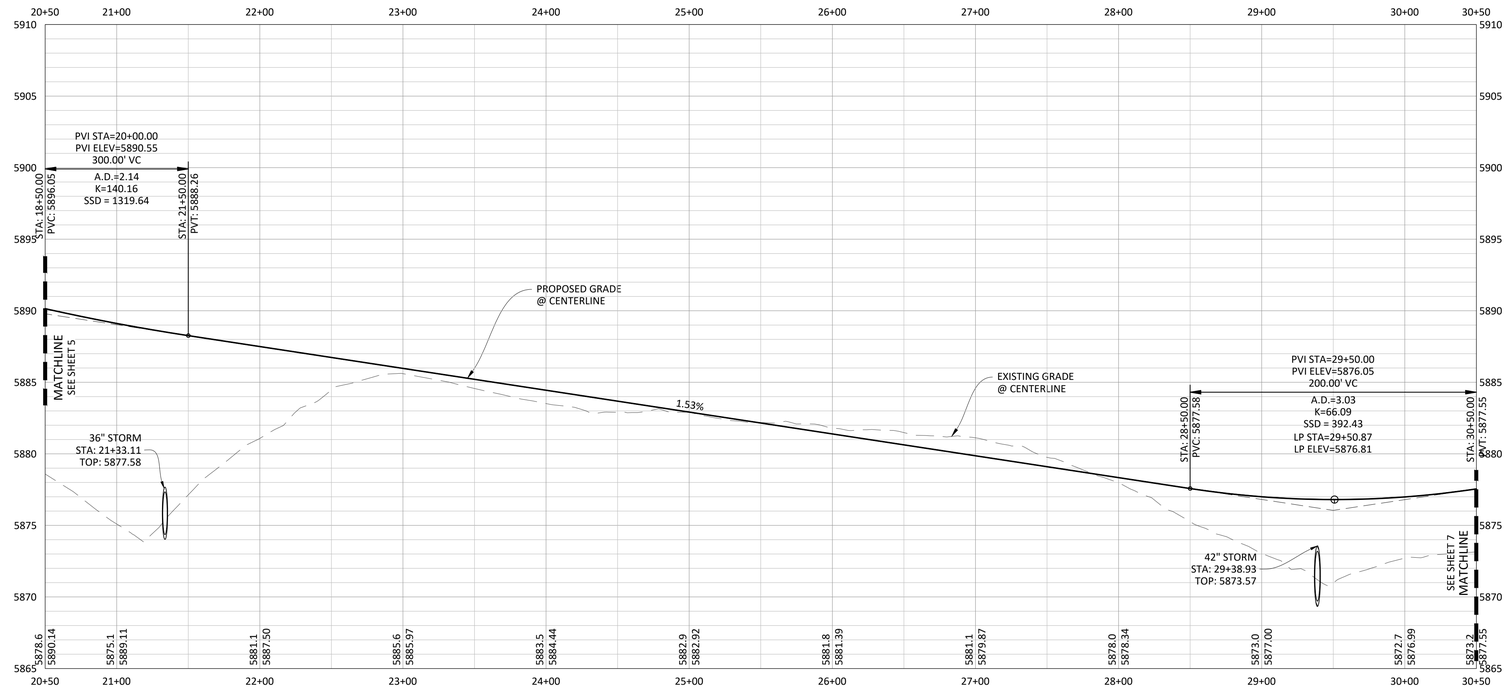
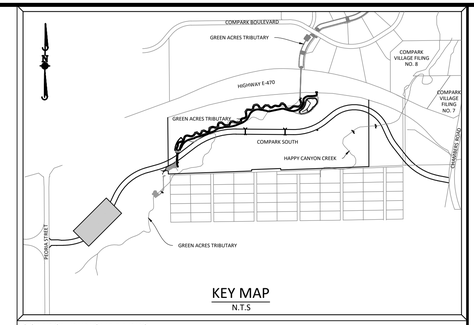


PLAN: BELFORD AVENUE



PROFILE: BELFORD AVENUE



KEY MAP
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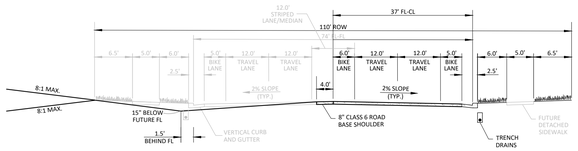

PARKER MAJOR COLLECTOR WITHIN
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PROPOSED CONDITION

0 25 50 100
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TOWN OF PARKER APPROVALS

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TOWN OF PARKER, DIRECTOR OF ENGINEERING DATE

DATE	REVISIONS	DRAWN BY
03/02/20	F. UPDATE GAT & ADD OFF-LINE DET BASIN	
12/21/16	E. FINAL SUBMITTAL	
11/2/16	D. 4TH SUBMITTAL	
6/24/16	C. 3RD SUBMITTAL	
4/11/16	B. 2ND SUBMITTAL	
11/2015	A. 1ST SUBMITTAL	EG

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COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
BELFORD AVENUE - PLAN & PROFILE

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET
6 OF 49
CLCPKC3 ---

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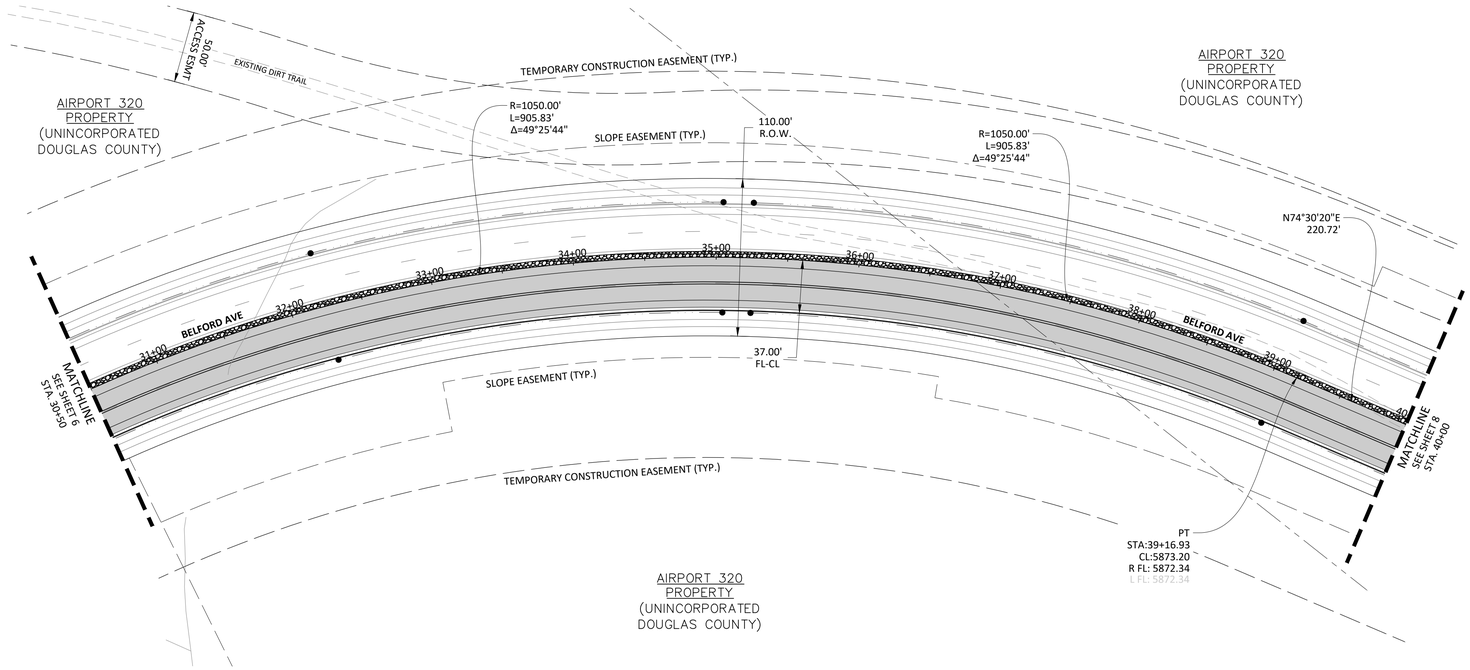
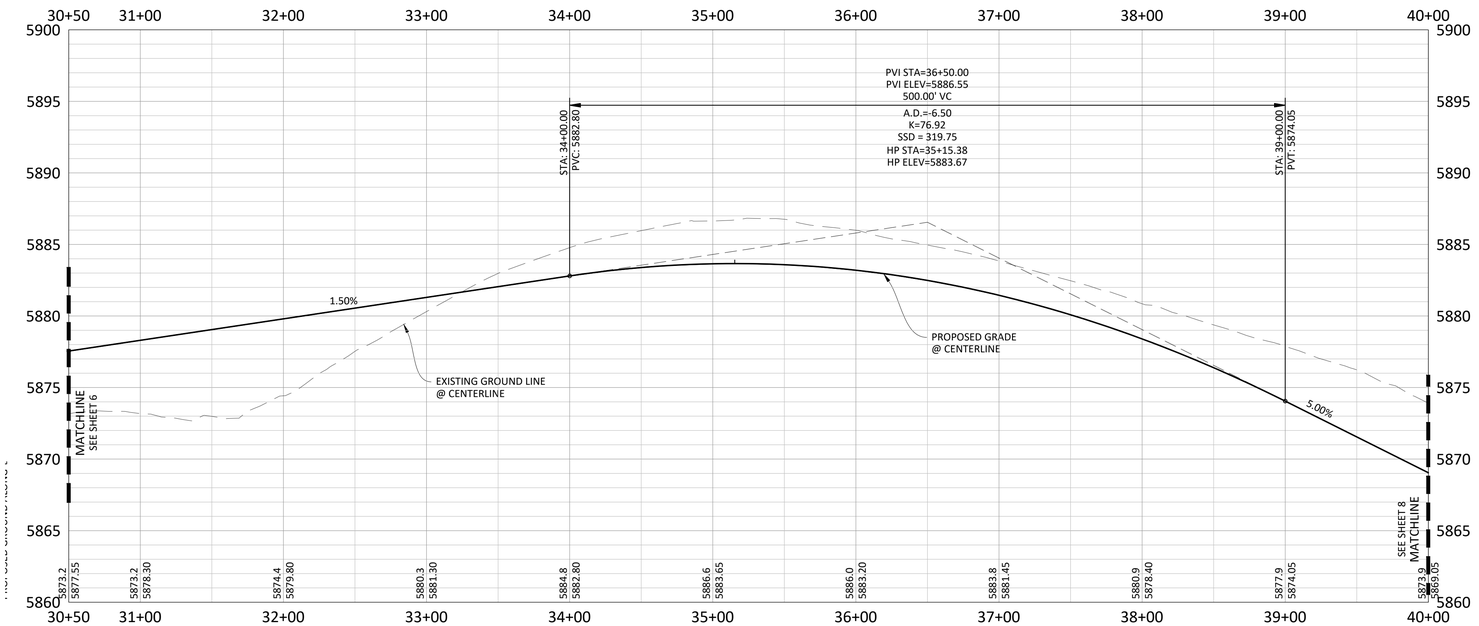
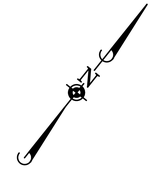


PLAN: BELFORD AVENUE



PROFILE: BELFORD AVENUE



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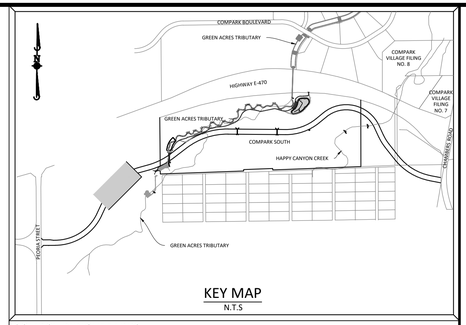

KEY MAP
N.T.S

SOURCE BENCHMARKS:

DOUGLAS COUNTY BM 1.115010
A DOUGLAS COUNTY GIS MONUMENT SET IN CONCRETE LOCATED APPROXIMATELY 130 FEET SOUTHWESTERLY OF THE CENTERLINE OF CHAMBERS ROAD AND 95 FEET NORTHWESTERLY OF THE CENTERLINE OF COMPARK BOULEVARD. ELEVATION = 5752.84 (NAVD 88)

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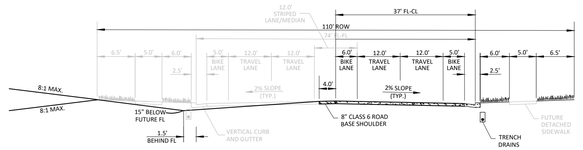

PARKER MAJOR COLLECTOR WITHIN
DOUGLAS COUNTY JURISDICTION
PROPOSED CONDITION

0 25 50 100

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

811
Know what's **below.**
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A.	11/2015	1ST SUBMITTAL	EG

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COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE

TOWN OF PARKER, COLORADO

BELFORD AVENUE - PLAN & PROFILE

PRELIMINARY - NOT FOR CONSTRUCTION

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET 7 OF 49
CLCPKC3 ---

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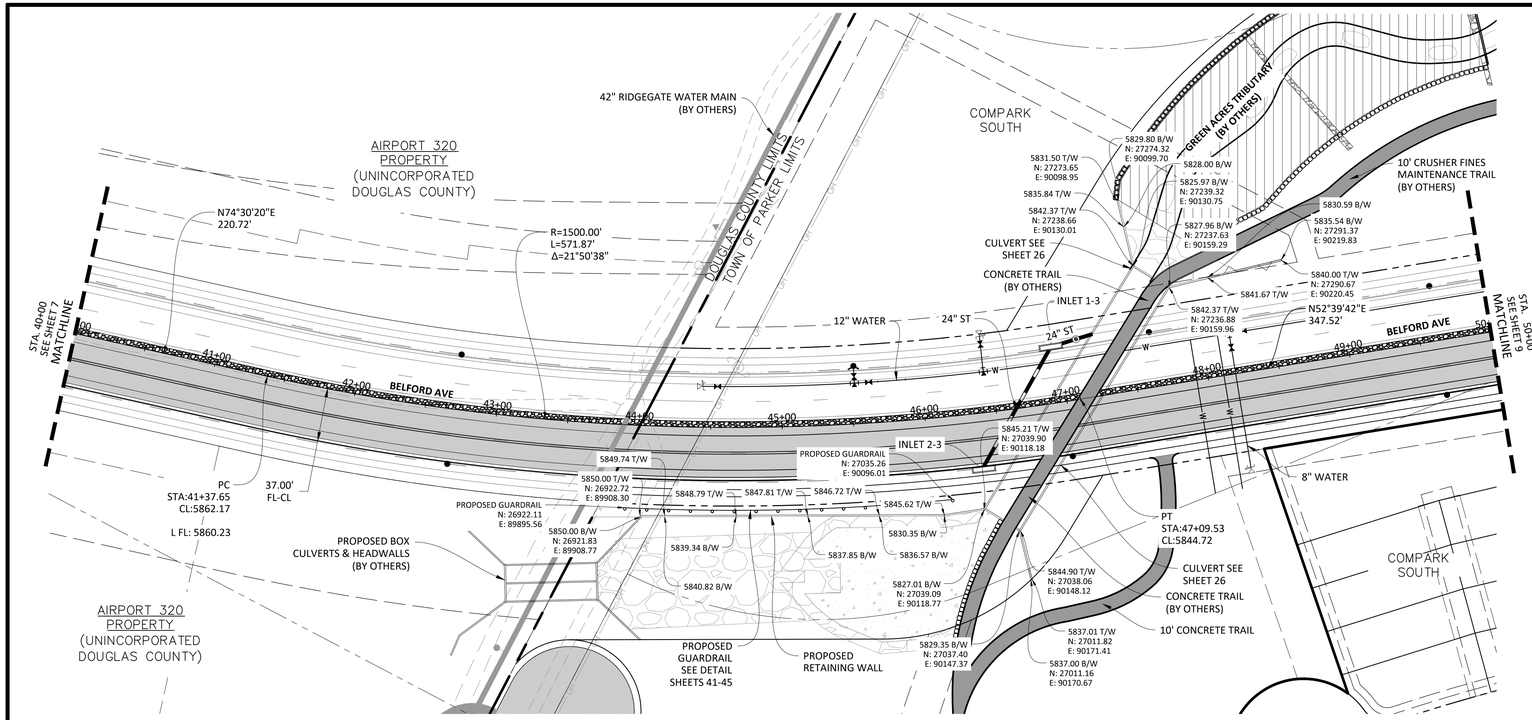
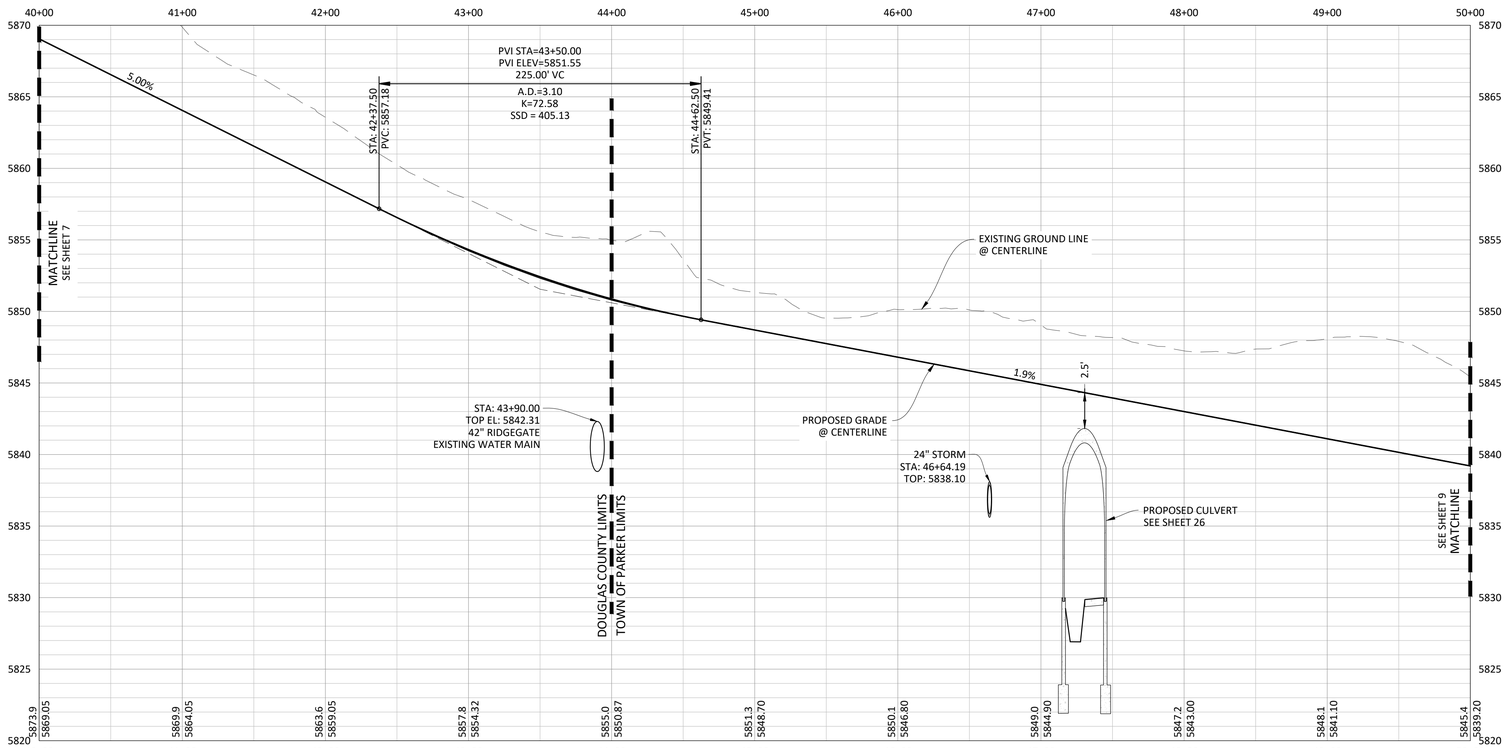
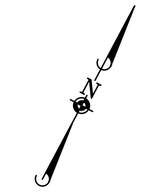
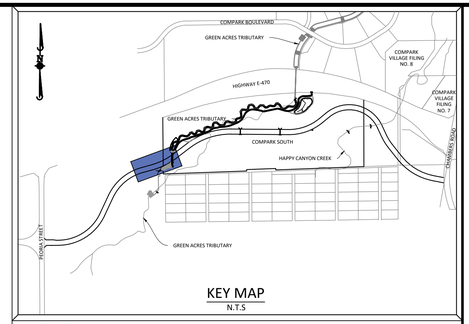


PLAN: BELFORD AVENUE



PROFILE: BELFORD AVENUE





KEY MAP
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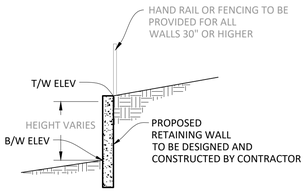
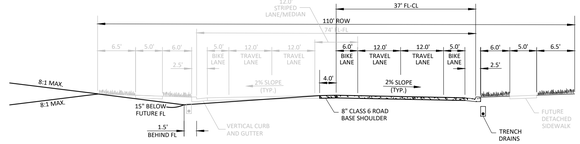
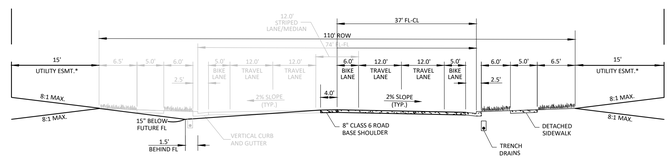


TYPICAL RETAINING WALL GRADING LABEL DETAIL
N.T.S



PARKER MAJOR COLLECTOR WITHIN DOUGLAS COUNTY JURISDICTION
PROPOSED CONDITION



PARKER MAJOR COLLECTOR
PROPOSED CONDITION

*FUTURE IMPROVEMENTS ARE SHADED FOR REFERENCE

Know what's below. Call before you dig.

0 25 50 100
SCALE: 1"=50'
VERTICAL SCALE: 1"=5'

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COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
BELFORD AVENUE - PLAN & PROFILE

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET 8 OF 49
CLCPKC3 ---

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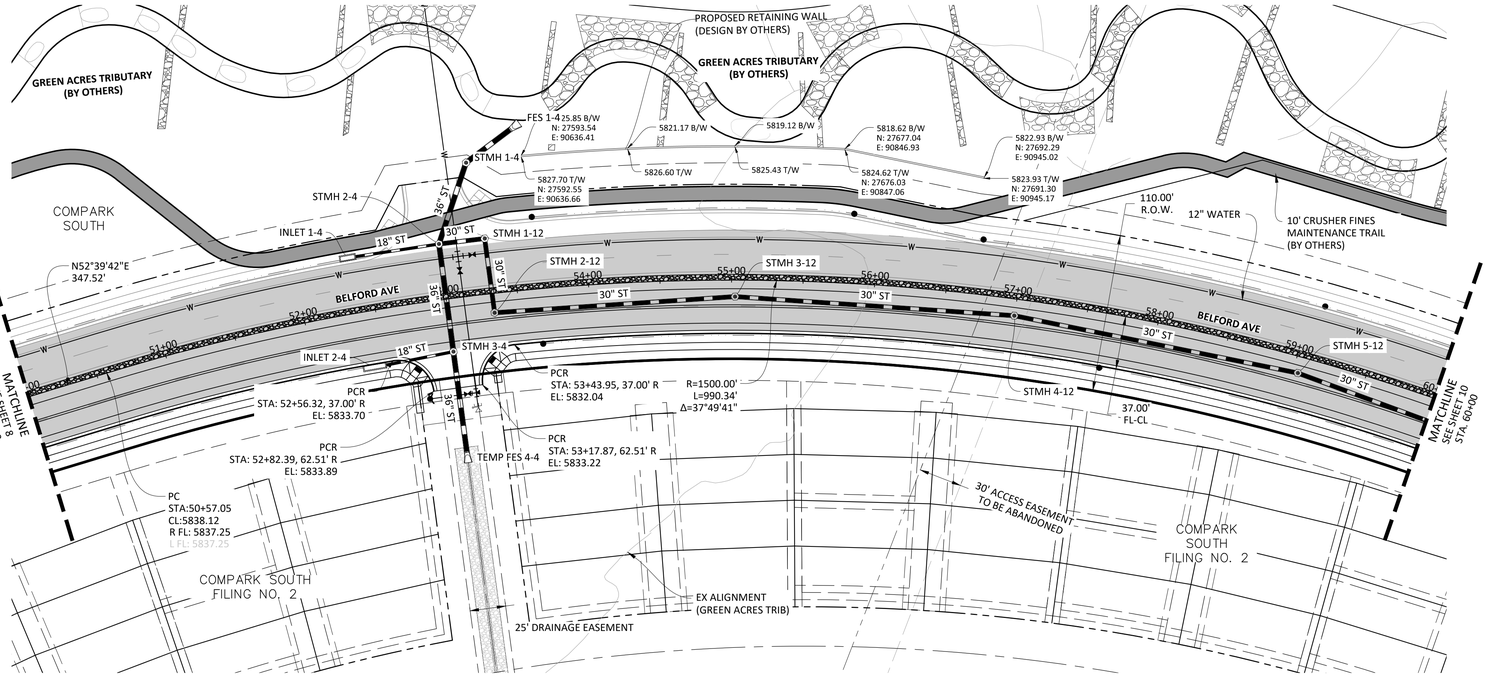
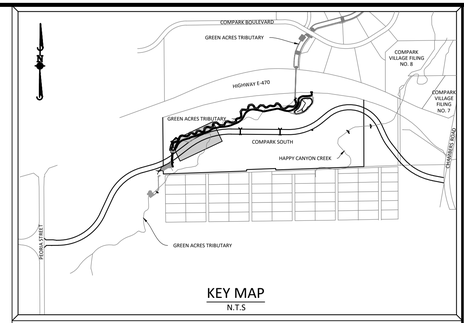


PLAN: BELFORD AVENUE



KEY MAP
N.T.S

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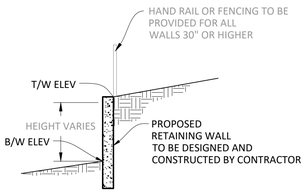

TYPICAL RETAINING WALL GRADING LABEL DETAIL
N.T.S

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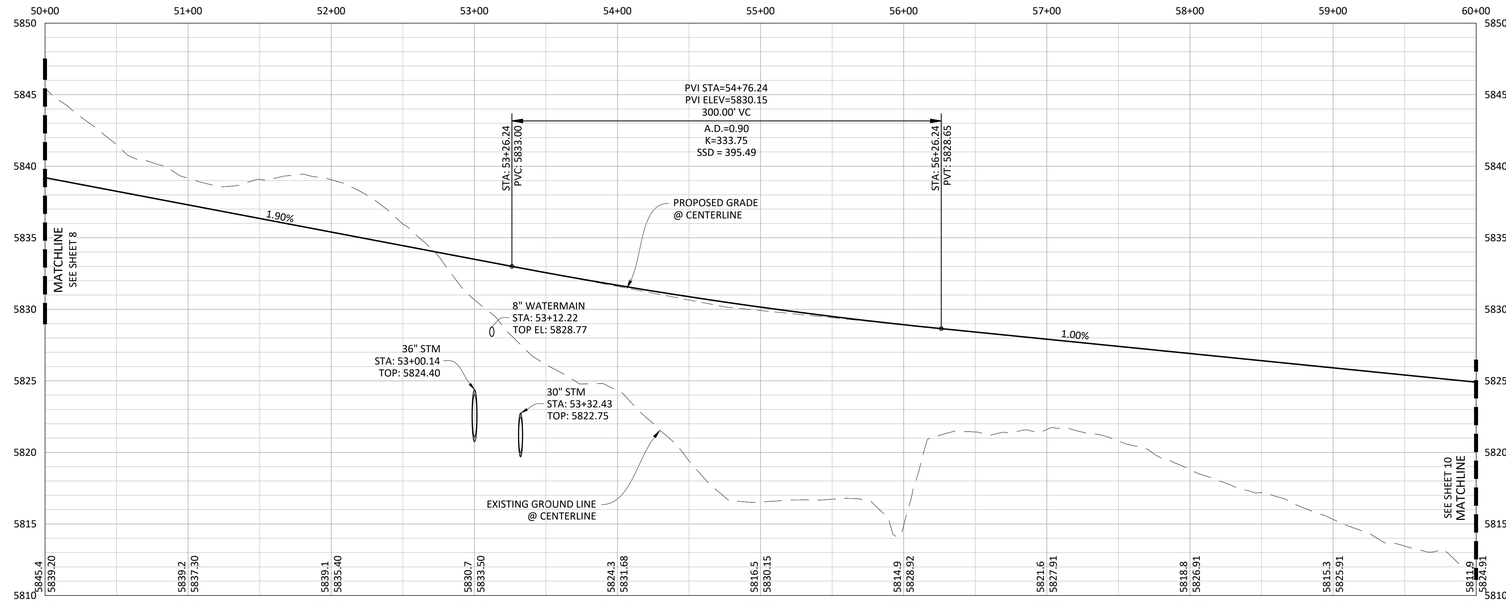
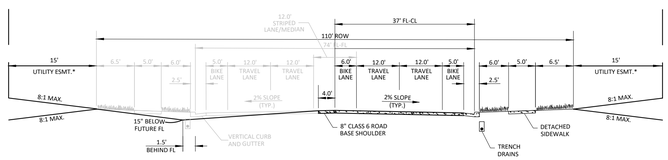


PROFILE: BELFORD AVENUE



PARKER MAJOR COLLECTOR
PROPOSED CONDITION

0 25 50 100
SCALE: 1"=50'
VERTICAL SCALE: 1"=5'

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DATE: 12/2015

SHEET
9 OF 49
CLCPKC3 ---

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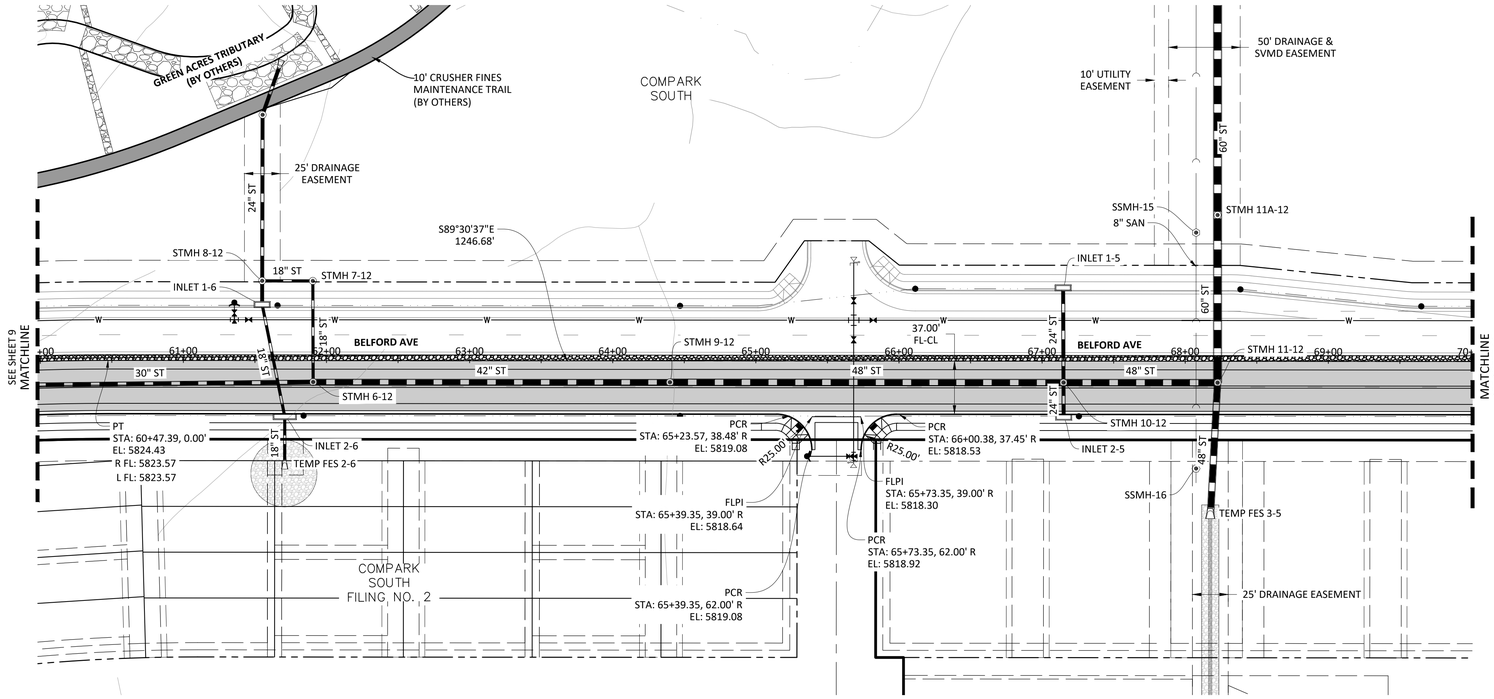
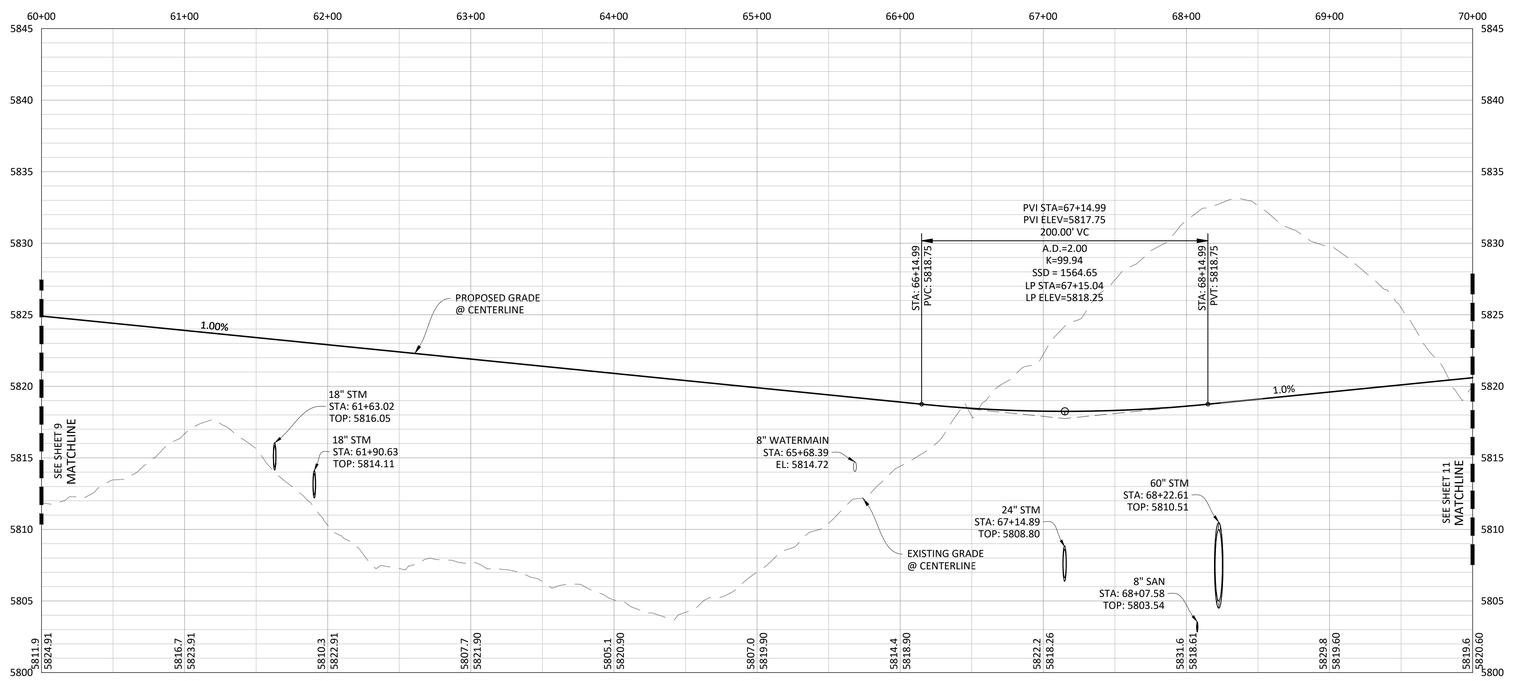
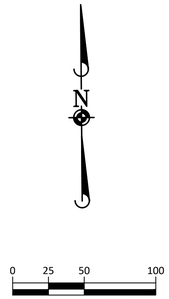
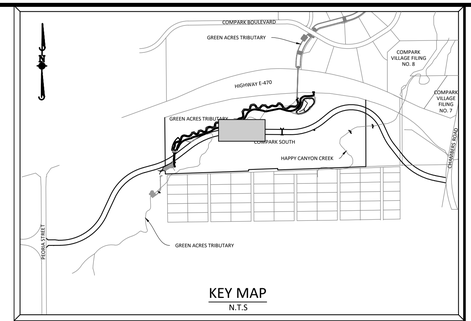


PLAN: BELFORD AVENUE



PROFILE: BELFORD AVENUE





KEY MAP
N.T.S

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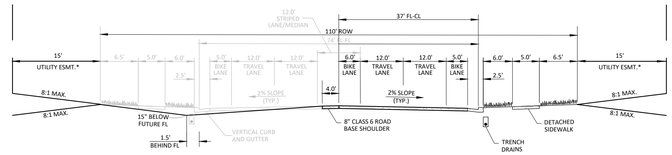

PARKER MAJOR COLLECTOR
PROPOSED CONDITION

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

TOWN OF PARKER APPROVALS

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.

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TOWN OF PARKER, DIRECTOR OF ENGINEERING DATE

DRAWN BY	DATE	REVISIONS	
ETG			
	03/02/20	UPDATE GAT & ADD OFF-LINE DET BASIN	F.
	12/21/16	FINAL SUBMITTAL	E.
	11/2/16	4TH SUBMITTAL	D.
	7/11/16	3RD SUBMITTAL	C.
	4/11/16	2ND SUBMITTAL	B.
	11/2015	1ST SUBMITTAL	A.

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COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
BELFORD AVENUE - PLAN & PROFILE

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET
10 OF 49
CLCPKC3 ---

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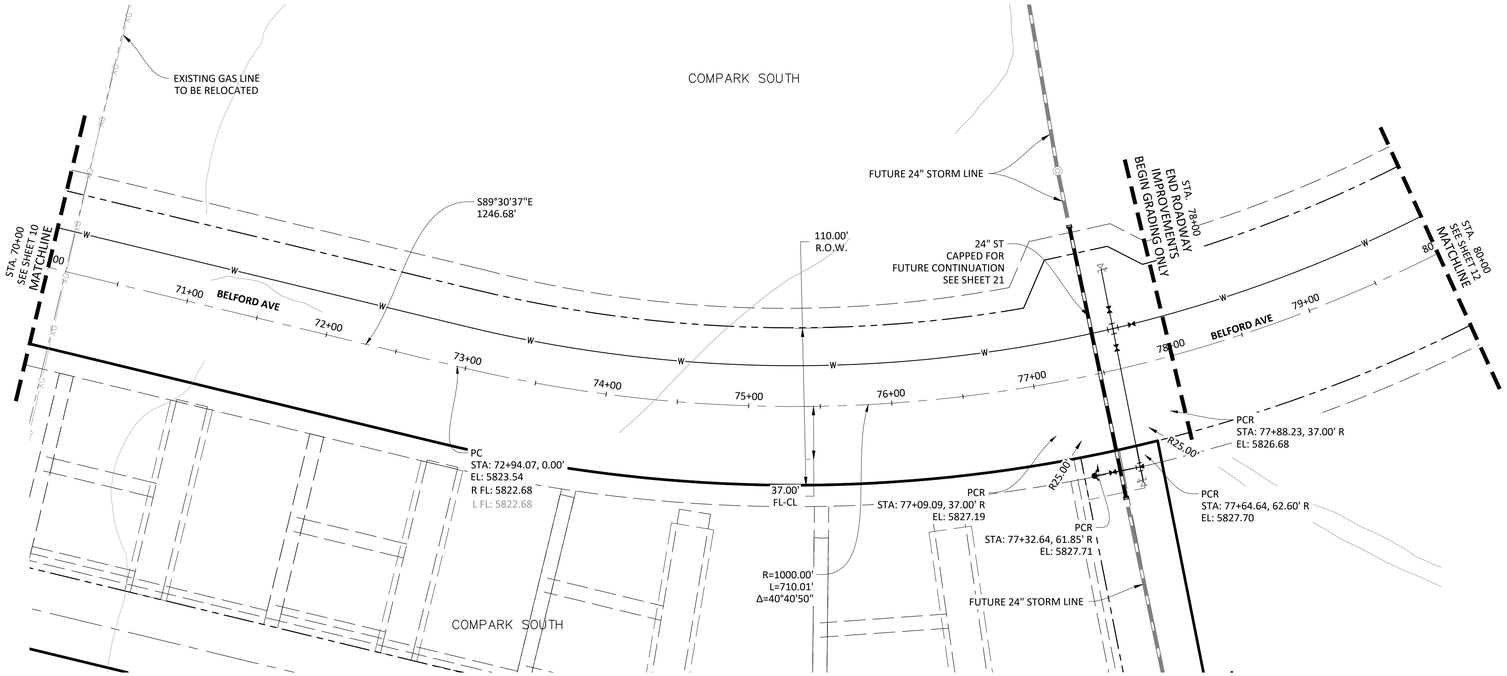
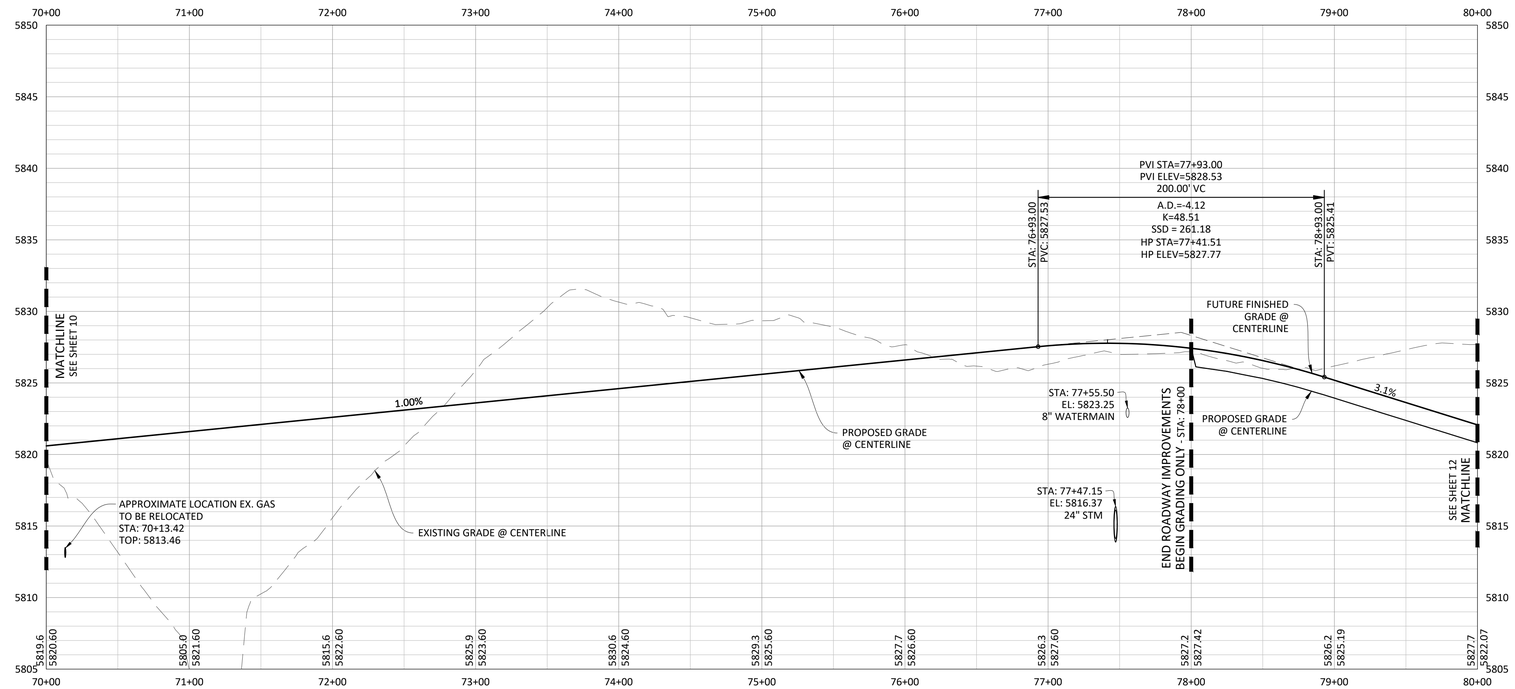
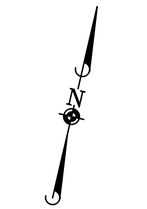


PLAN: BELFORD AVENUE



PROFILE: BELFORD AVENUE



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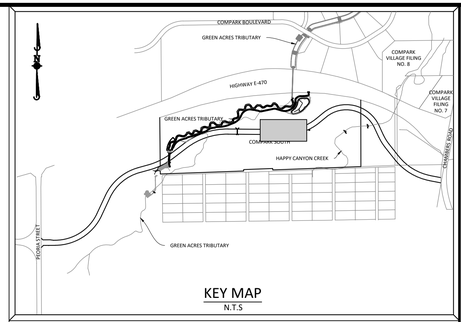

KEY MAP
N.T.S

SOURCE BENCHMARKS:

DOUGLAS COUNTY BM 1.115010
A DOUGLAS COUNTY GIS MONUMENT SET IN CONCRETE LOCATED APPROXIMATELY 130 FEET SOUTHWESTERLY OF THE CENTERLINE OF CHAMBERS ROAD AND 95 FEET NORTHWESTERLY OF THE CENTERLINE OF COMPARK BOULEVARD. ELEVATION = 5752.84 (NAVD 88)

NOTES:

1) REFER TO GENERAL NOTES ON SHEET 2 FOR ALL APPLICABLE CONSTRUCTION STANDARDS & MASTER LEGEND
2) ALL STATIONING IS CENTERLINE UNLESS OTHERWISE NOTED.REFER TO FINAL PLAT FOR RIGHT-OF-WAY AND CENTERLINE DIMENSIONS AND HORIZONTAL CONTROL.
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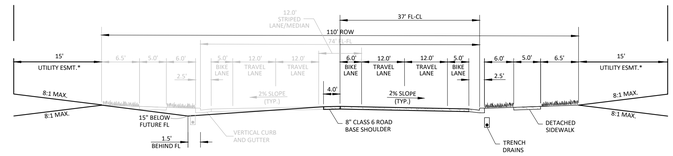
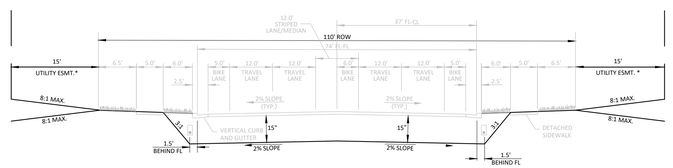
7) REFER TO SHEET 37-43 FOR STREET AND CURB DETAILS.REFER TO SHEET 44-47 FOR STORM SEWER DETAILS.



PARKER MAJOR COLLECTOR
PROPOSED CONDITION



UNDERCUT
PROPOSED CONDITION

0 25 50 100

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

Know what's **below.**
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TOWN OF PARKER APPROVALS

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TOWN OF PARKER, DIRECTOR OF ENGINEERING — DATE

DATE	REVISIONS	DRAWN BY
03/02/20	F. UPDATE GAT & ADD OFF-LINE DET BASIN	EG
12/21/16	E. FINAL SUBMITTAL	
11/2/16	D. 4TH SUBMITTAL	
8/15/16	C. 3RD SUBMITTAL	
4/11/16	B. 2ND SUBMITTAL	
11/2015	A. 1ST SUBMITTAL	

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COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
BELFORD AVENUE - PLAN & PROFILE

PRELIMINARY - NOT FOR CONSTRUCTION

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET
11 OF 49
CLCPKC3 ---

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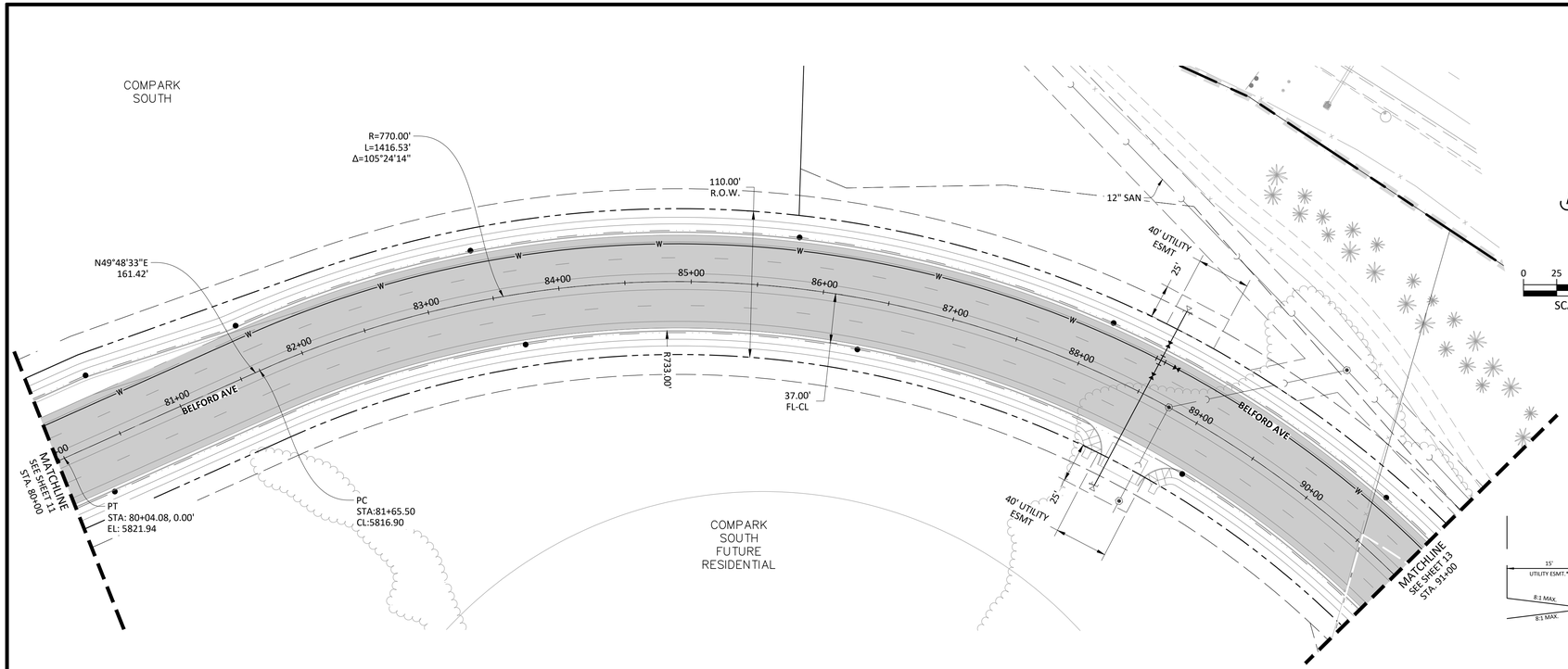

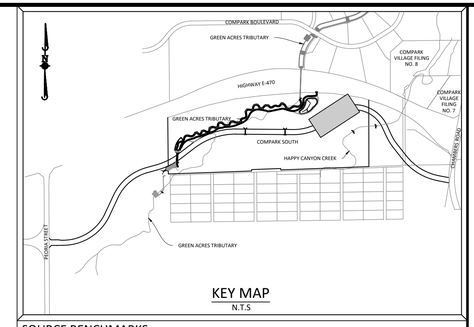

KEY MAP
N.T.S

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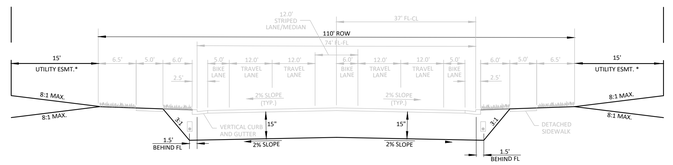

UNDERCUT
PROPOSED CONDITION

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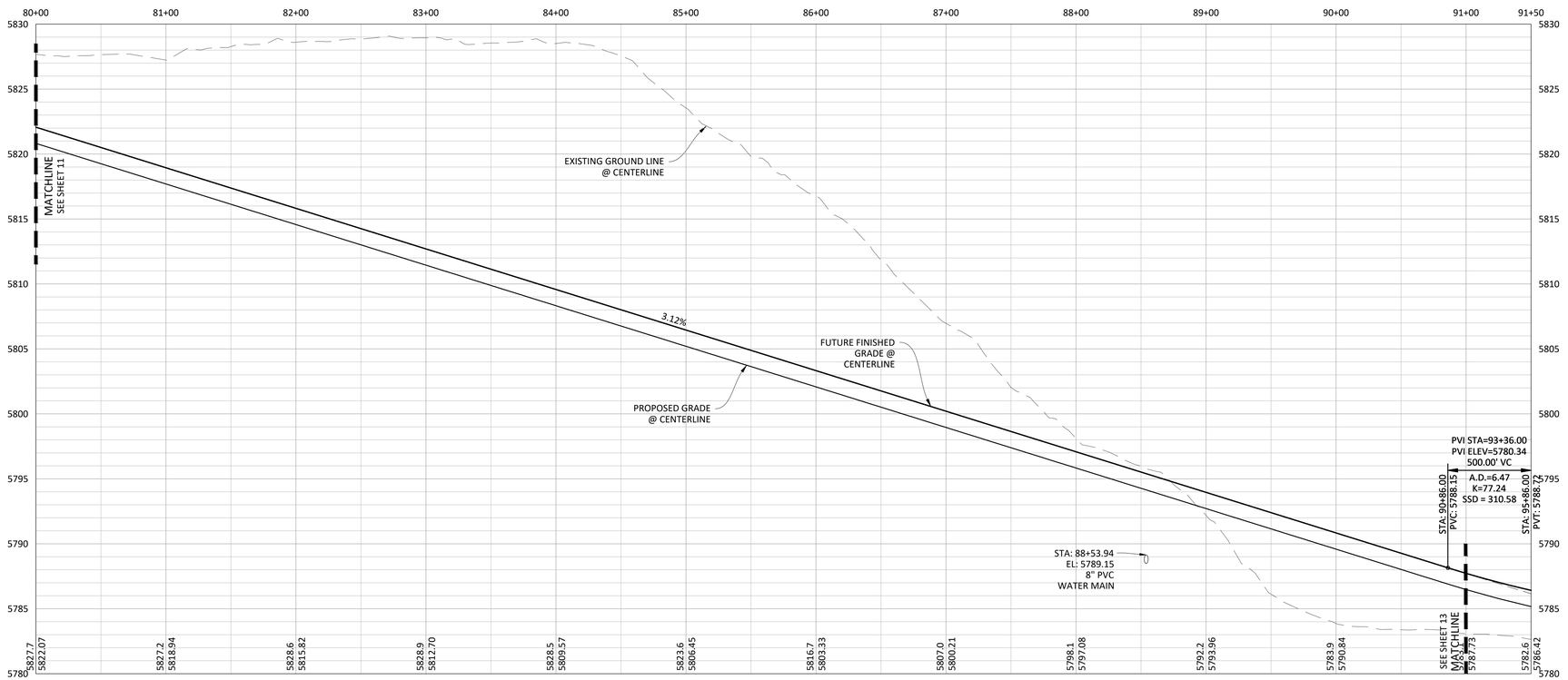
PLAN: FUTURE BELFORD AVENUE



PROFILE: BELFORD AVENUE

0 25 50 100
SCALE: 1"=50'
VERTICAL SCALE: 1"=5'

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ETG			
	03/02/20	F.	UPDATE GAT & ADD OFF-LINE DET BASIN
	12/21/16	E.	FINAL SUBMITTAL
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	4/11/16	B.	2ND SUBMITTAL
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COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
BELFORD AVENUE - PLAN & PROFILE

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET
12 OF 49
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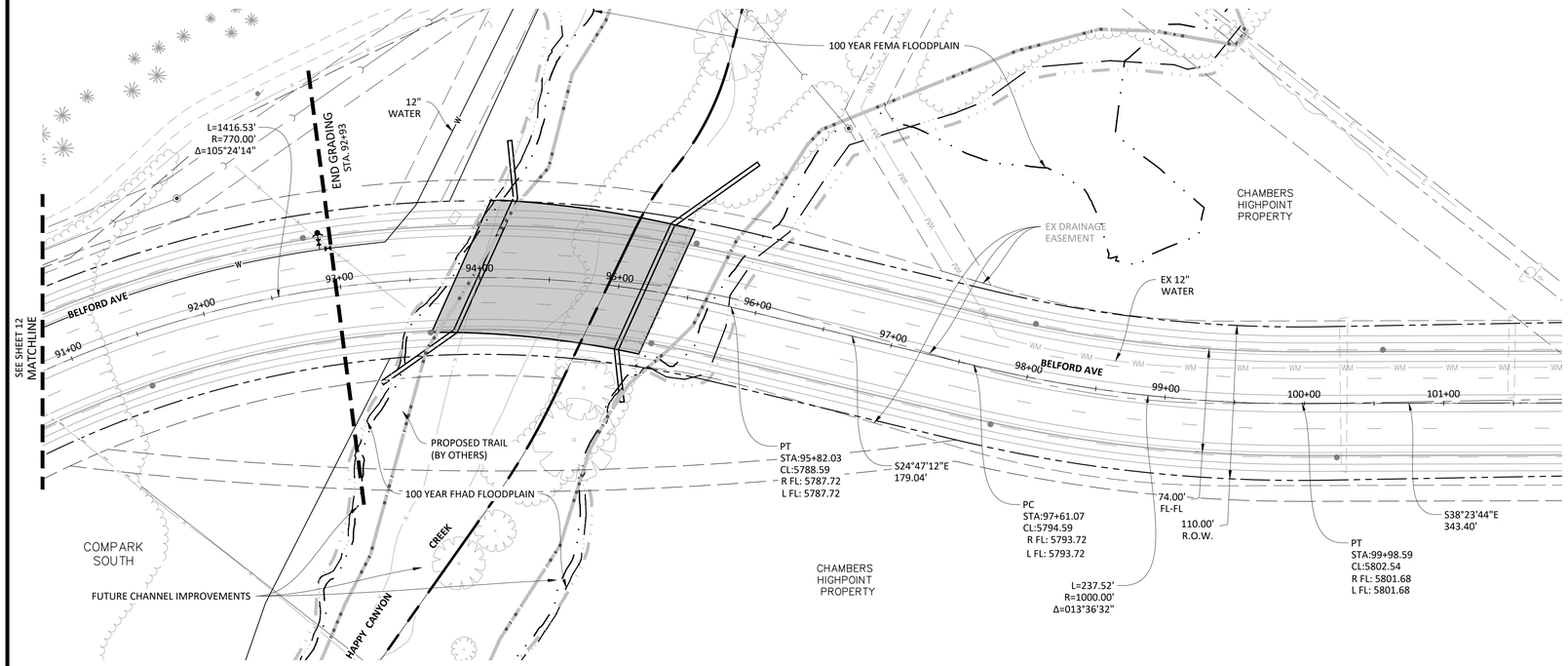
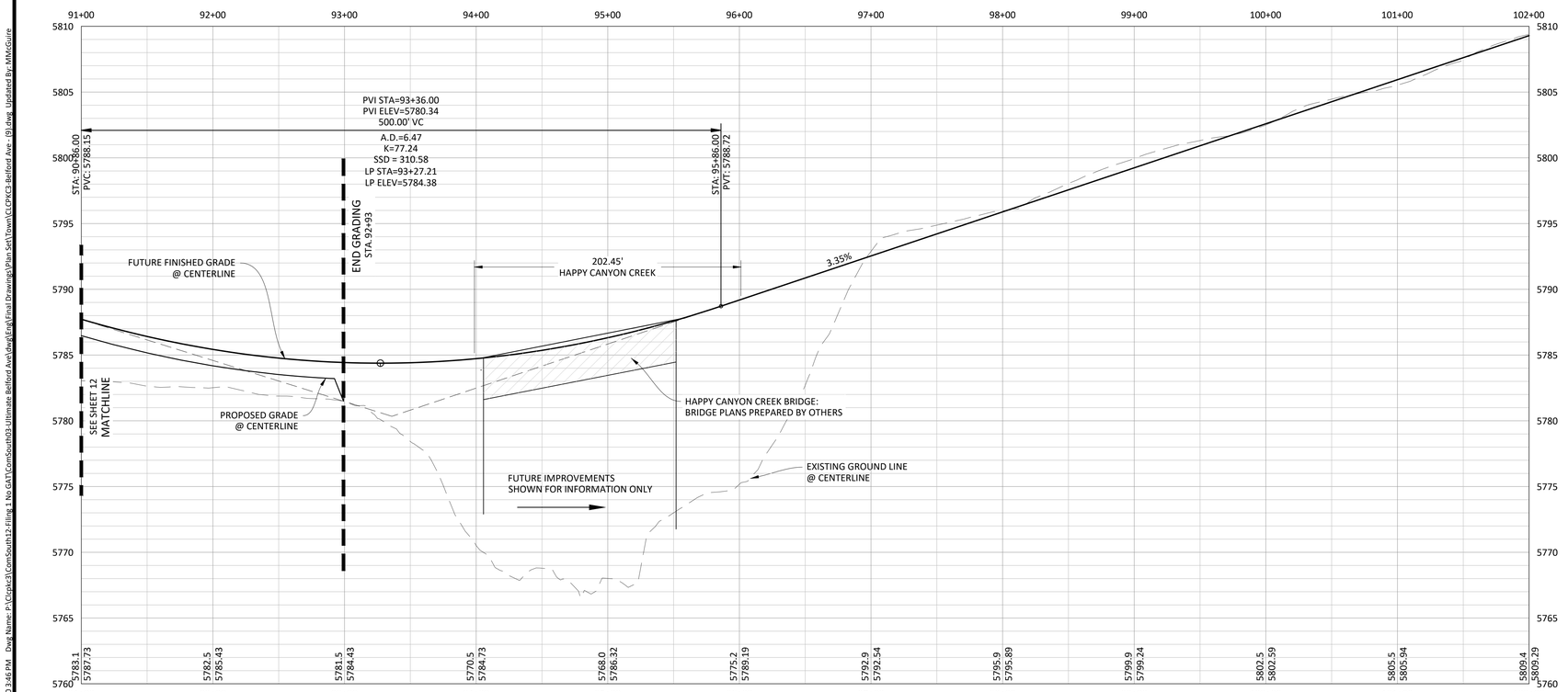
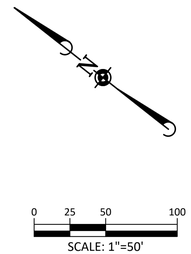
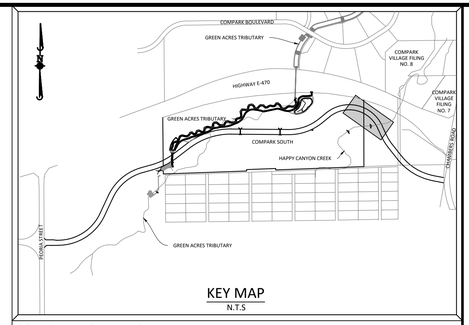


PLAN: FUTURE BELFORD AVENUE



PROFILE: BELFORD AVENUE





KEY MAP
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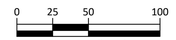

811
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COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
BELFORD AVENUE - PLAN & PROFILE

PROJ. MGR.: RIM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET
13 OF 49
CLCPKC3 ---

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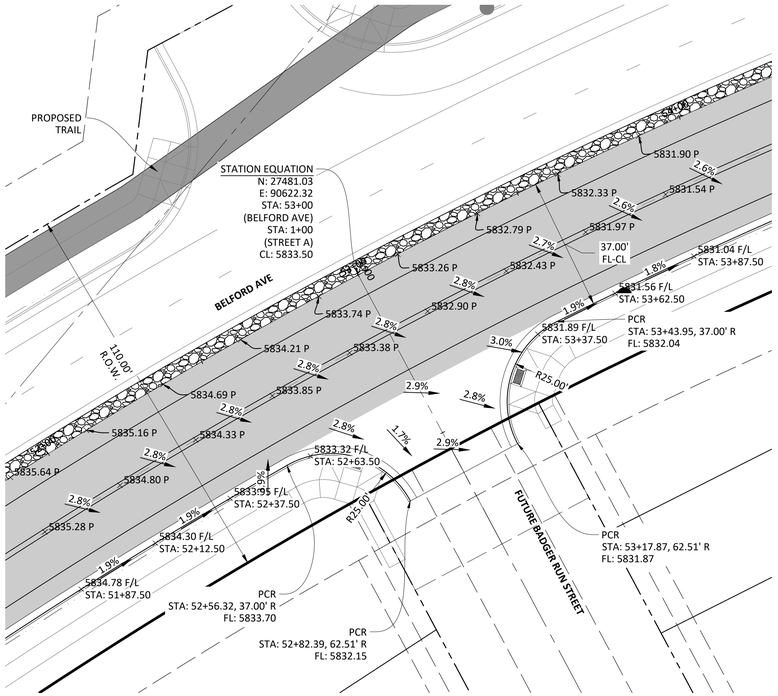
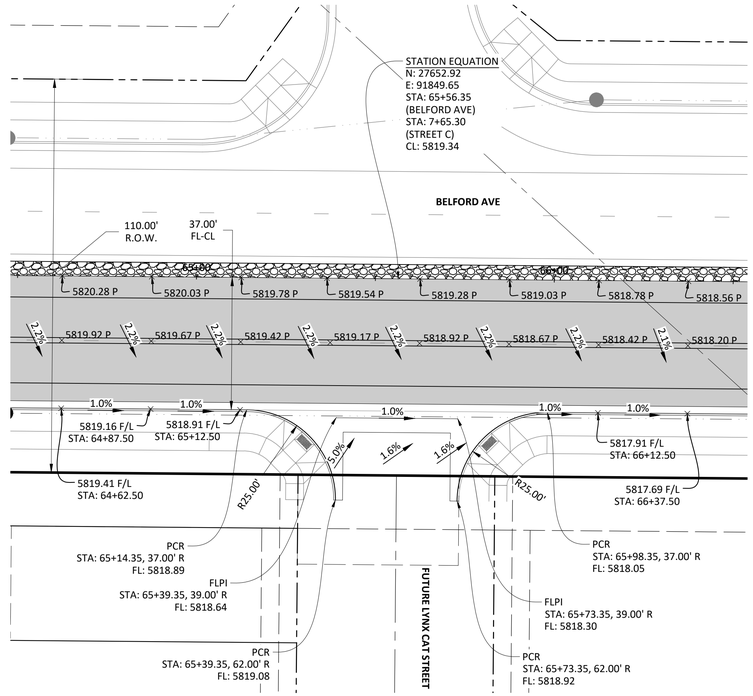
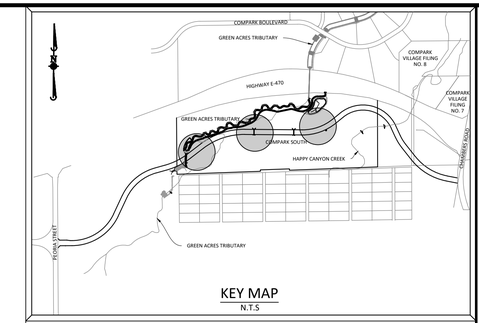


BELFORD AVENUE & FUTURE BADGER RUN STREET



BELFORD AVENUE & FUTURE LYNX CAT STREET



KEY MAP
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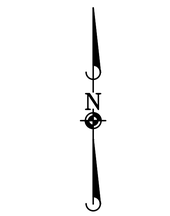

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SCALE: 1"=20'

Know what's **below.**
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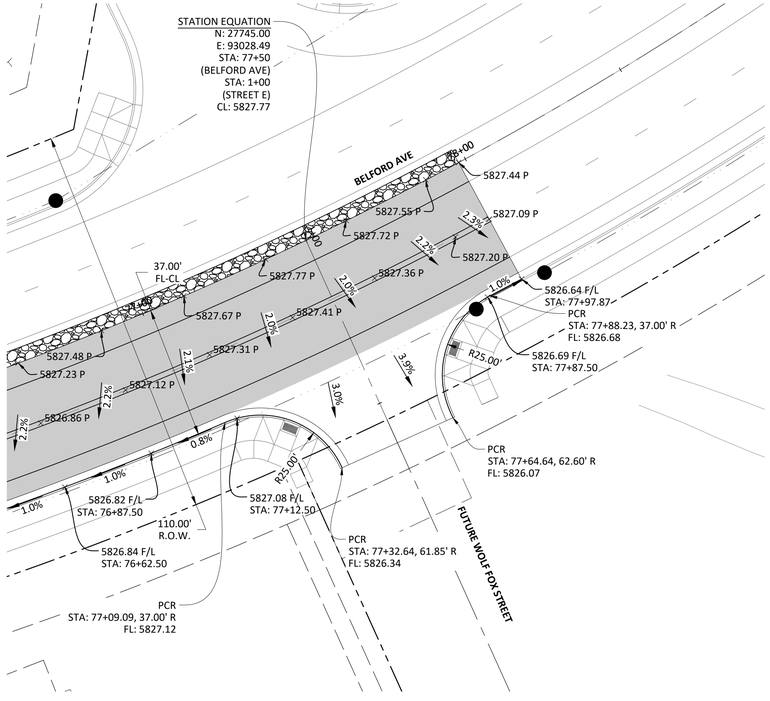

BELFORD AVENUE & FUTURE WOLF FOX STREET

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UPDATE GAT & ADD OFF-LINE DET BASIN	03/02/20	EG
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INTERSECTION DETAILS

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PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET
14 OF 49
CLCPKC3 ---

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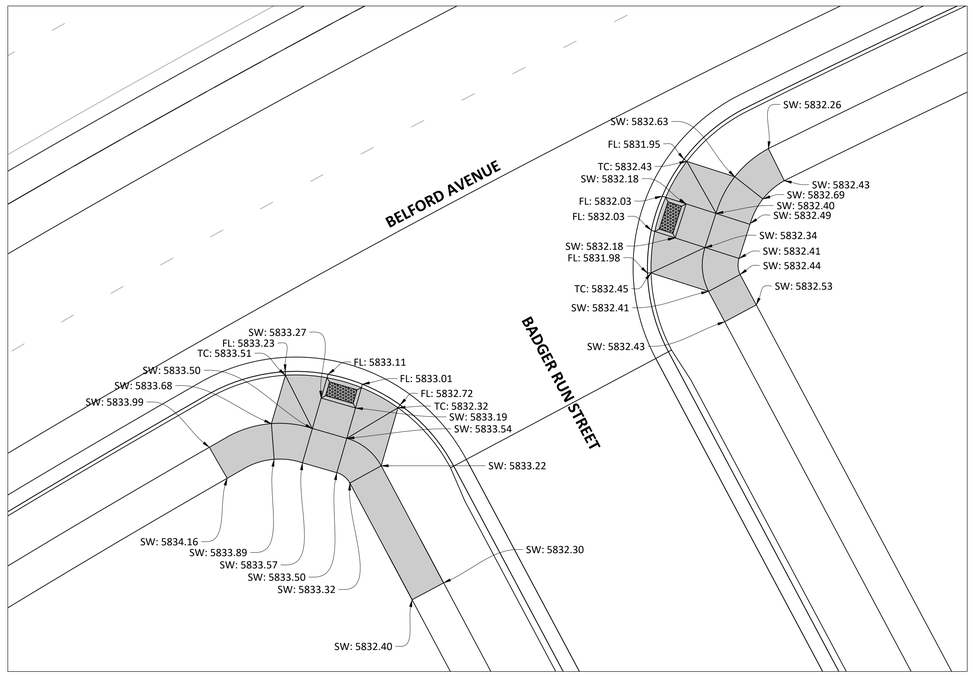
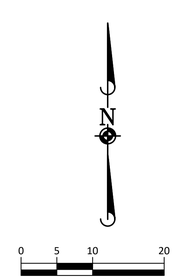
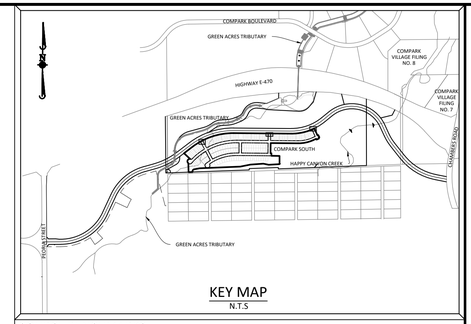
Plotted: 3/3/2020 3:48 PM Dwg Name: P:\Clcpkc3\ComSouth13-Filing 1 No GAT\ComSouth03-Ultimate Belford Ave\dwg\Eng\Final Drawings\Plan Set\Town\CLCPKC3-Belford - Intersection.dwg Updated By: MMcGuire



PLAN - BADGER RUN STREET AND BELFORD AVENUE

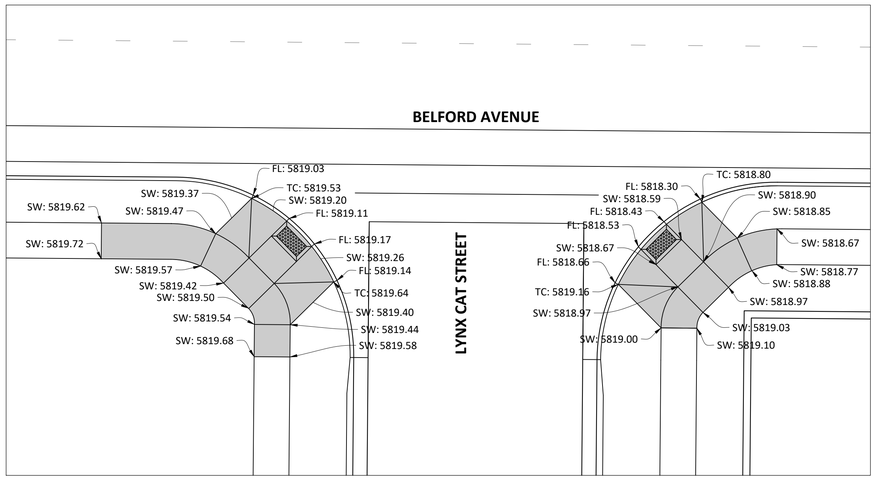




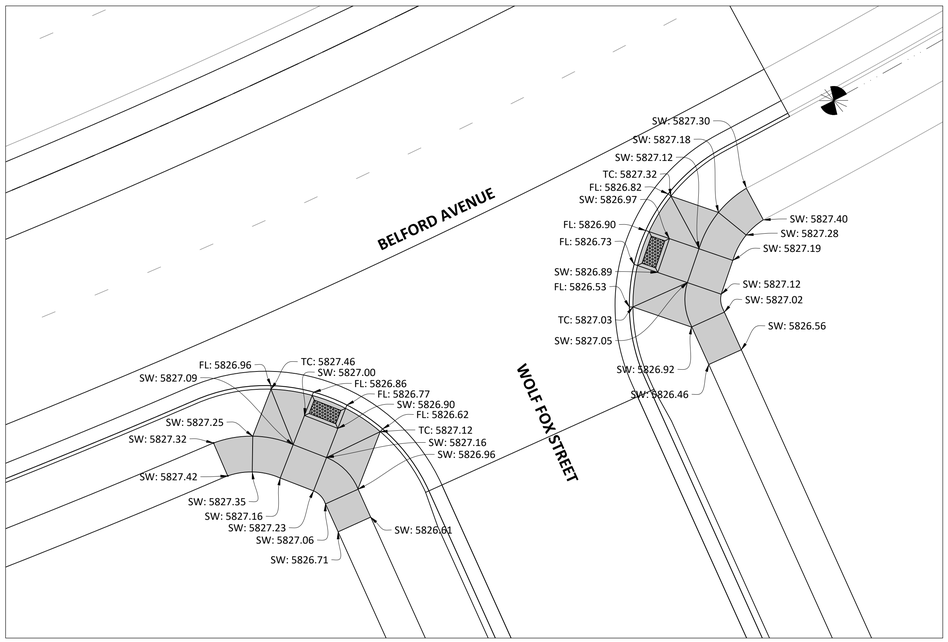
KEY MAP
N.T.S

SOURCE BENCHMARKS:

DOUGLAS COUNTY BM 1.115010
A DOUGLAS COUNTY GIS MONUMENT SET IN CONCRETE LOCATED APPROXIMATELY 130 FEET SOUTHWESTERLY OF THE CENTERLINE OF CHAMBERS ROAD AND 95 FEET NORTHWESTERLY OF THE CENTERLINE OF COMPARK BOULEVARD. ELEVATION = 5752.84 (NAVD 88)



PLAN - LYNX CAT STREET AND BELFORD AVENUE



PLAN - WOLF FOX STREET AND BELFORD AVE

	DATE	REVISIONS	DRAWN BY
F.	03/02/20	UPDATE G&T & ADD OFF-LINE DET BASIN	ETG
E.	12/21/16	FINAL SUBMITTAL	
D.	11/1/16	4TH SUBMITTAL	
C.	6/24/16	3RD SUBMITTAL	
B.	4/17/16	2ND SUBMITTAL	
A.	11/2015	1ST SUBMITTAL	

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COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE

TOWN OF PARKER, COLORADO

CURB RAMP DETAILS

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET
15 OF 49
CLCPKC3

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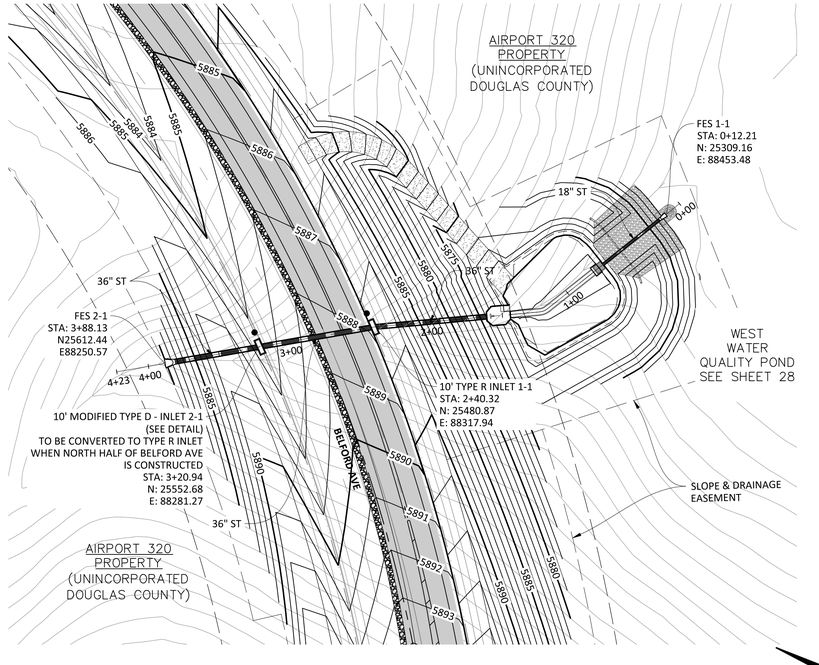
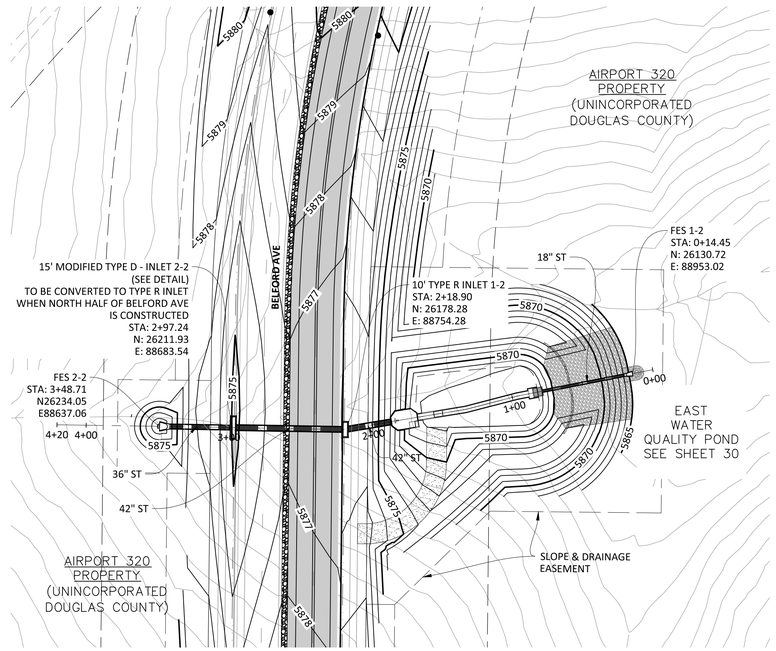
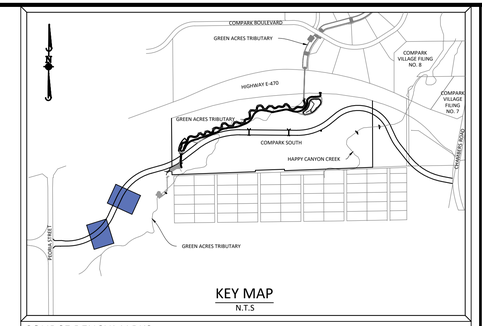
Plotted: 3/2/2020 3:49 PM Dwg Name: P:\Civil\c3\ComSouth\12-Filing 1 No GAT\ComSouth03-Ultimate Belford Ave\dwg\Eng\Final Drawings\Plan Set\Town\CLCPKC3-Curb Ramp Details.dwg Updated By: MMcGuire



PLAN: STORM-1



PLAN: STORM-2



KEY MAP
N.T.S

SOURCE BENCHMARKS:

DOUGLAS COUNTY BM 1.115010
A DOUGLAS COUNTY GIS MONUMENT SET IN CONCRETE LOCATED APPROXIMATELY 130 FEET SOUTHWESTERLY OF THE CENTERLINE OF CHAMBERS ROAD AND 95 FEET NORTHWESTERLY OF THE CENTERLINE OF COMPARK BOULEVARD. ELEVATION = 5752.84 (NAVD 88)

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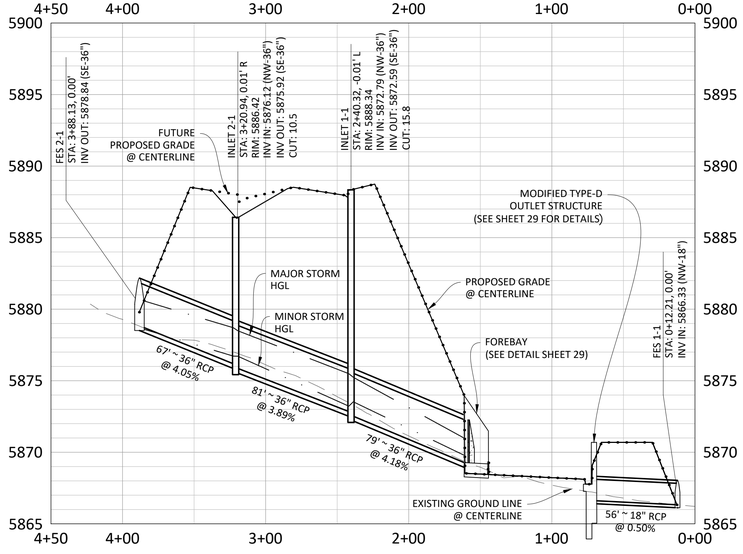
VERTICAL SCALE: 1"=5'



PROFILE: STORM-1
BELFORD AVE ℄ STA. 21+33.73

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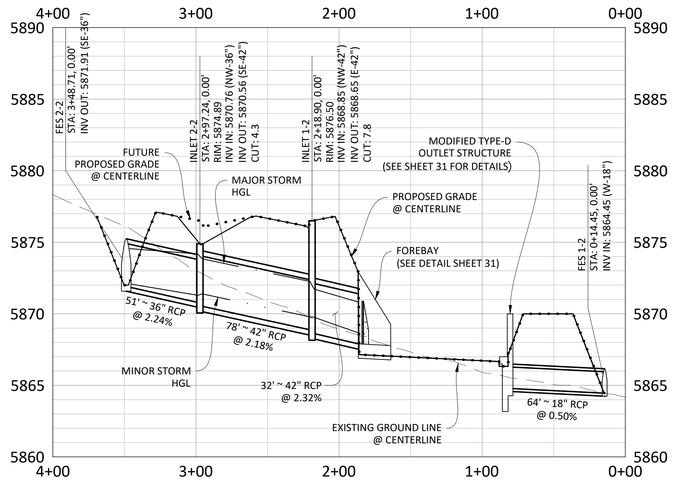
VERTICAL SCALE: 1"=5'



PROFILE: STORM-2
BELFORD AVE ℄ STA. 29+38.95

0 25 50 100
SCALE: 1"=50'
VERTICAL SCALE: 1"=5'

811
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TOWN OF PARKER APPROVALS

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, DIRECTOR OF ENGINEERING DATE

DATE	REVISIONS	DRAWN BY
03/20/20	UPDATE GAT & ADD OFF-LINE DET BASIN	
12/21/16	FINAL SUBMITTAL	
11/1/16	4TH SUBMITTAL	
6/24/16	3RD SUBMITTAL	
4/11/16	2ND SUBMITTAL	
11/2015	1ST SUBMITTAL	EG

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COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
STORM PLAN & PROFILE

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET
16 OF 49
CLCPKC3 ---

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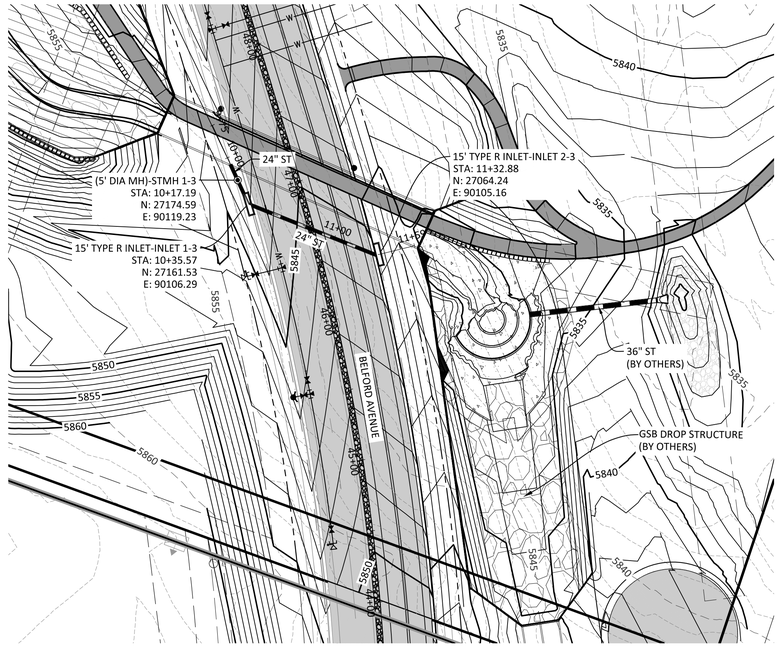
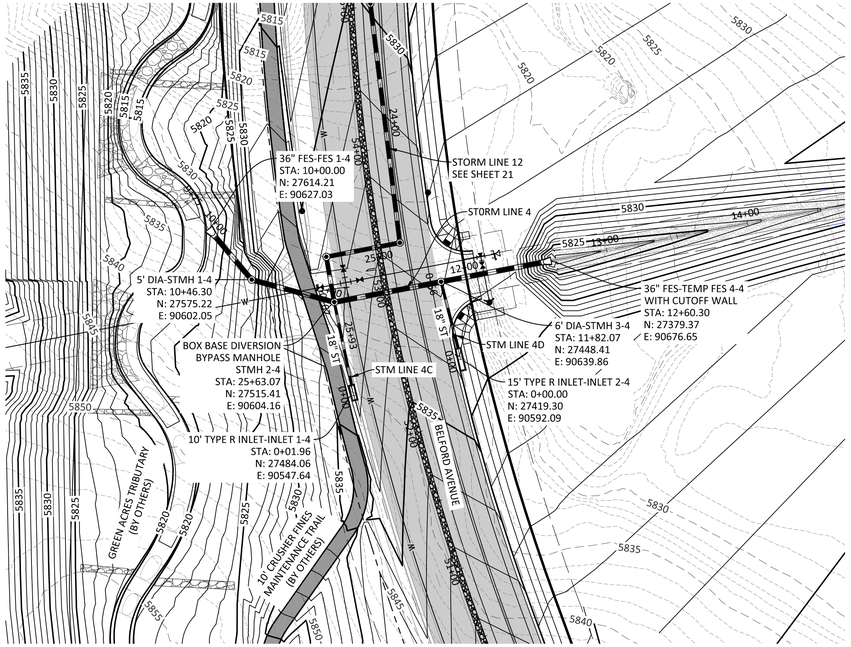
PRELIMINARY - NOT FOR CONSTRUCTION

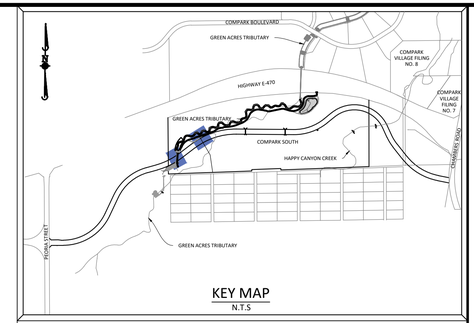
Plotted: 3/3/2020 3:53 PM Dwg Name: P:\Clcpkc3\ComSouth12-Filing 1 No GAT\ComSouth03-Ultimate Belford Ave\dwg\Eng\Final Drawings\Plan Set\Town\CLCPKC3-Storm (1).dwg Updated By: MMcGuire



PLAN: STORM-3



PLAN: STORM-4

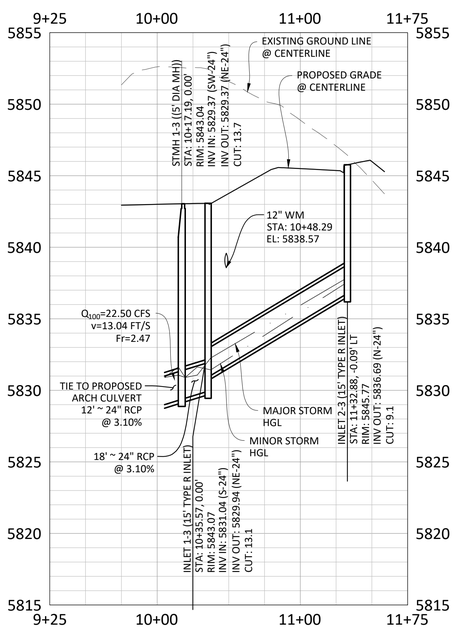


KEY MAP
N.T.S

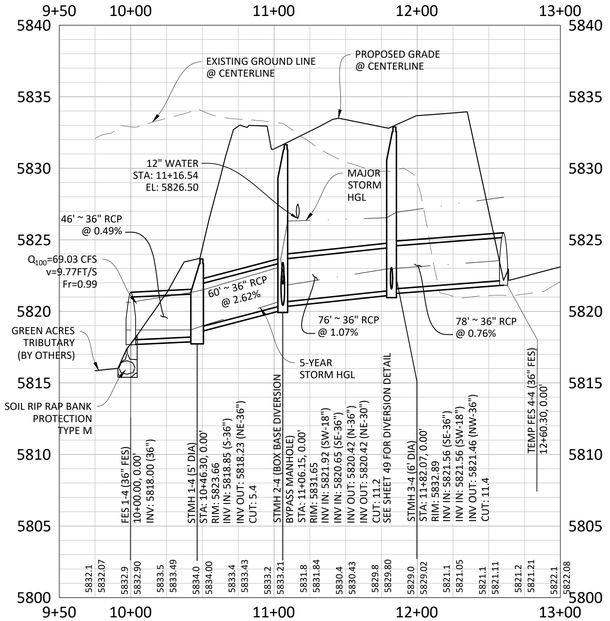
SOURCE BENCHMARKS:

DOUGLAS COUNTY BM 1.115010
A DOUGLAS COUNTY GIS MONUMENT SET IN CONCRETE LOCATED APPROXIMATELY 130 FEET SOUTHWESTERLY OF THE CENTERLINE OF CHAMBERS ROAD AND 95 FEET NORTHWESTERLY OF THE CENTERLINE OF COMPARK BOULEVARD. ELEVATION = 5752.84 (NAVD 88)

0 25 50 100
SCALE: 1"=50'
VERTICAL SCALE: 1"=5'



PROFILE: STORM-3
BELFORD AVE ℄ STA. 46+64.73



PROFILE: STORM-4
BELFORD AVE ℄ STA. 53+00

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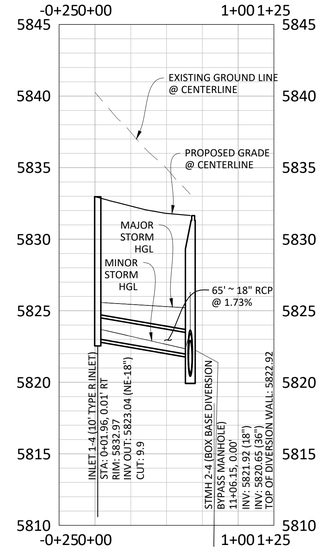
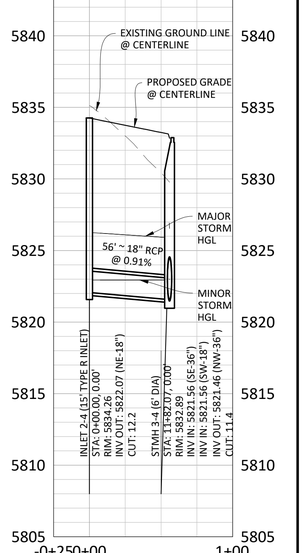
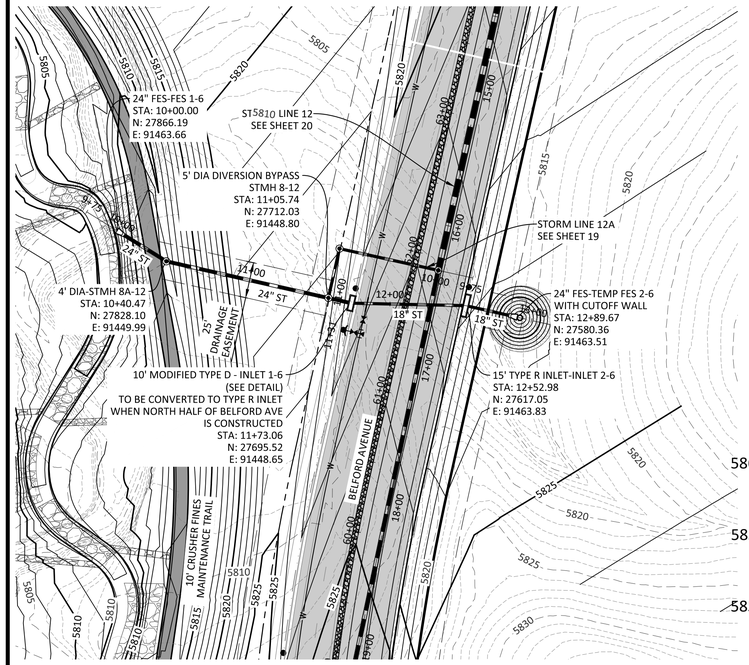


PROFILE: STORM-4C
BELFORD AVE ℄ STA. 53+00

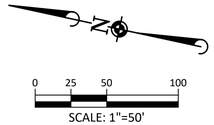


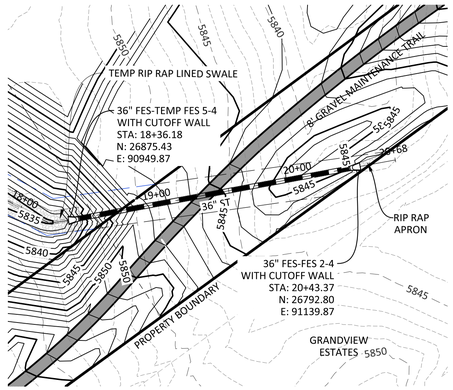
PROFILE: STORM-4D
BELFORD AVE ℄ STA. 53+00

DRAWN BY			
REVISIONS			
DATE			
	F.	03/02/20	UPDATE GAT & ADD OFF-LINE DET BASIN
	E.	12/21/16	FINAL SUBMITTAL
	D.	11/2/16	4TH SUBMITTAL
	C.	06/03/16	3RD SUBMITTAL
	B.	4/11/16	2ND SUBMITTAL
	A.	11/2015	1ST SUBMITTAL

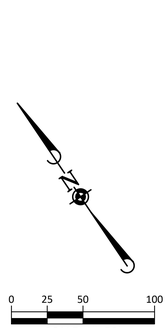


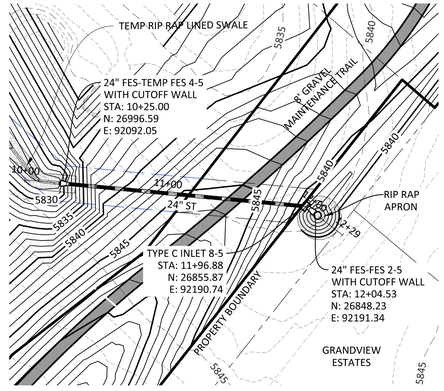
PLAN: STORM-6



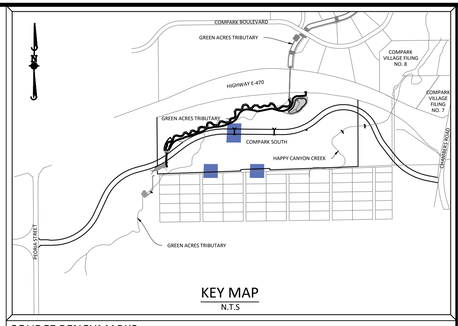


PLAN: STORM-4 (WEST BERM)



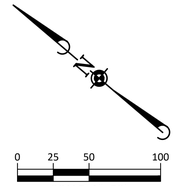


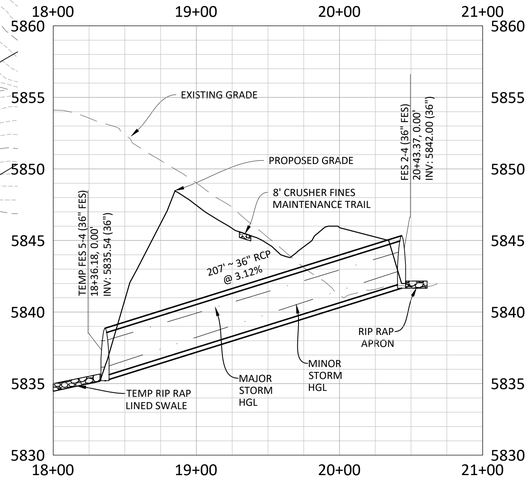
PLAN: STORM-5 (EAST BERM)



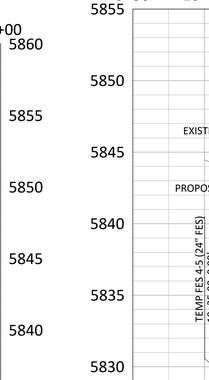
SOURCE BENCHMARKS:

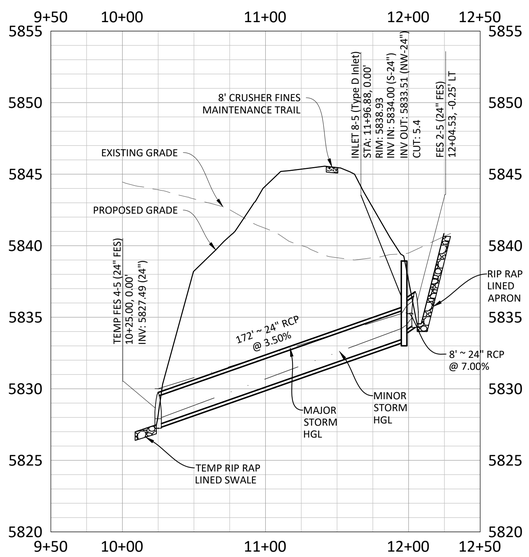
DOUGLAS COUNTY BM 1.115010
A DOUGLAS COUNTY GIS MONUMENT SET IN CONCRETE LOCATED APPROXIMATELY 130 FEET SOUTHWESTERLY OF THE CENTERLINE OF CHAMBERS ROAD AND 95 FEET NORTHWESTERLY OF THE CENTERLINE OF COMPARK BOULEVARD. ELEVATION = 5752.84 (NAVD 88)



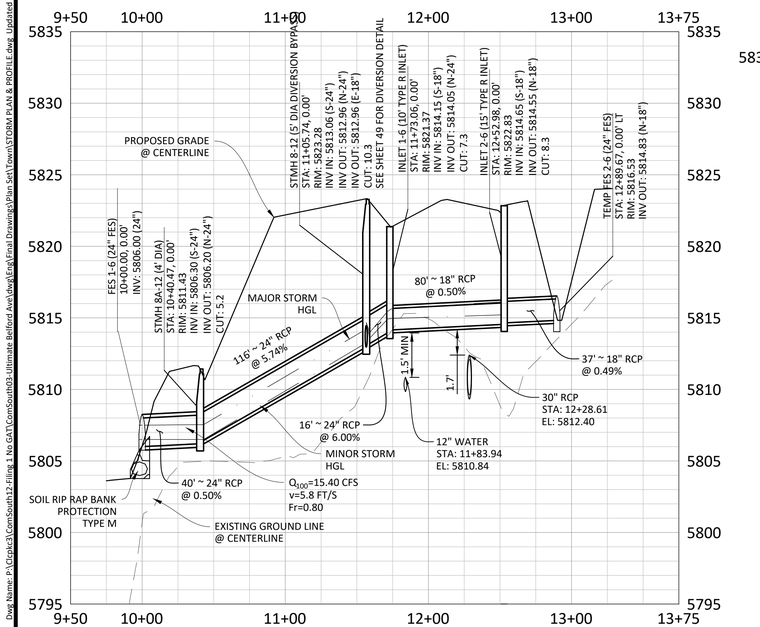


PROFILE: STORM-4 (WEST BERM)

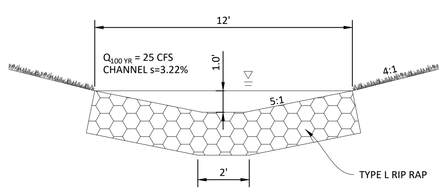




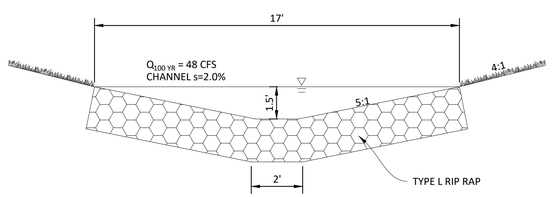
PROFILE: STORM-5 (EAST BERM)



PROFILE: STORM-6
BELFORD AVE ℄ STA. 61+55.10



TEMPORARY RIP RAP SWALE
(WEST BERM)
N.T.S



TEMPORARY RIP RAP SWALE
(EAST BERM)
N.T.S

DATE	REVISIONS	DRAWN BY
03/02/20	UPDATE GAT & ADD OFF-LINE DET BASIN	MAM
12/21/16	FINAL SUBMITTAL	EG
11/2/16	4TH SUBMITTAL	EG
10/5/16	3RD SUBMITTAL	EG
4/11/16	2ND SUBMITTAL	EG
11/2015	1ST SUBMITTAL	EG

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COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
STORM PLAN & PROFILE

PROJ. MGR.: RIM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET
18 OF 49
CLCPKC3 ---

PRELIMINARY - NOT FOR CONSTRUCTION

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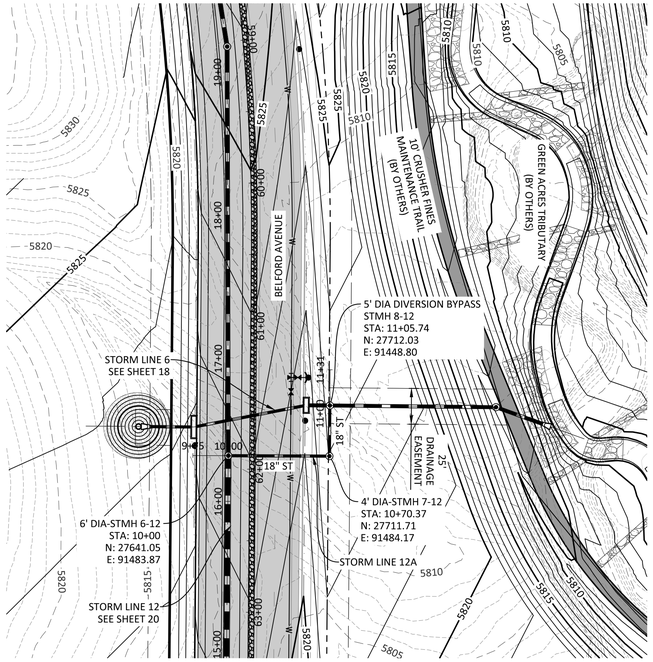
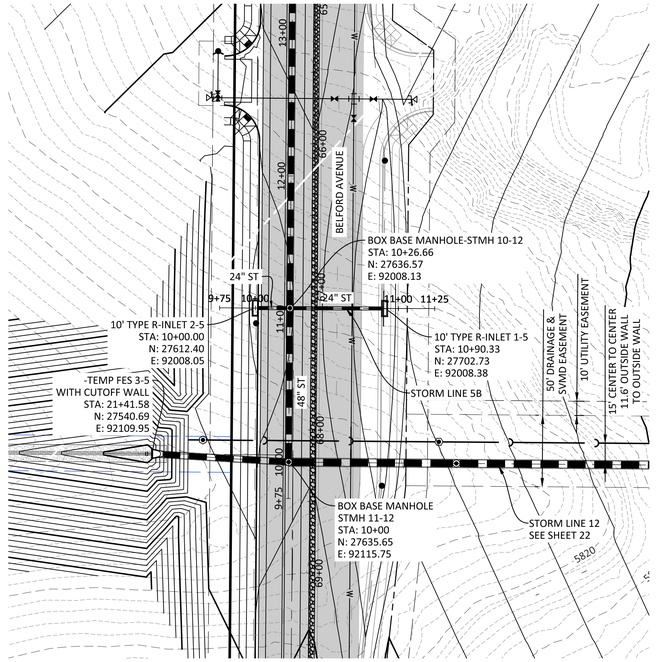
Plotted: 3/3/2020 3:55 PM Dwg Name: P:\Clcpkc3\ComSouth12-Filing 1 No GAT\ComSouth03-Ultimate Belford Ave\dwg\Eng\Final Drawings\Plan Set\Town\STORM PLAN & PROFILE.dwg Updated By: MMcGuire



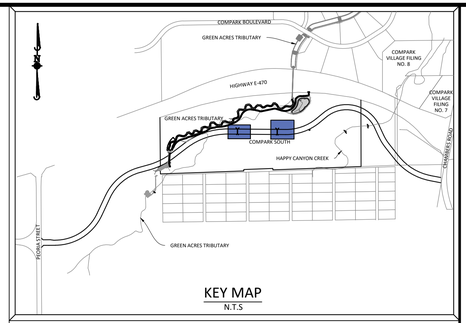
PLAN: STORM-12A

BELFORD AVE ℄ STA. 61+90.55



PLAN: STORM-5B

BELFORD AVE ℄ STA. 11+02.64



KEY MAP

N.T.S

SOURCE BENCHMARKS:

DOUGLAS COUNTY BM 1.115010
A DOUGLAS COUNTY GIS MONUMENT SET IN CONCRETE LOCATED APPROXIMATELY 130 FEET SOUTHWESTERLY OF THE CENTERLINE OF CHAMBERS ROAD AND 95 FEET NORTHWESTERLY OF THE CENTERLINE OF COMPARK BOULEVARD. ELEVATION = 5752.84 (NAVD 88)

	DATE	REVISIONS	DRAWN BY
F.	03/02/20	UPDATE GAT & ADD OFF-LINE DET BASIN	MAM
E.	12/21/16	FINAL SUBMITTAL	EG
D.	11/2/16	4TH SUBMITTAL	EG
C.	5/31/16	3RD SUBMITTAL	EG
B.	4/11/16	2ND SUBMITTAL	EG
A.	11/2015	1ST SUBMITTAL	EG

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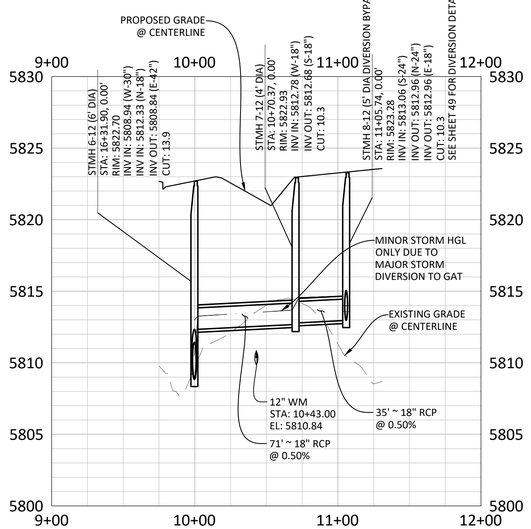
Civil Engineering | Surveying | Water Resource Management | Construction Management

0 25 50 100

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

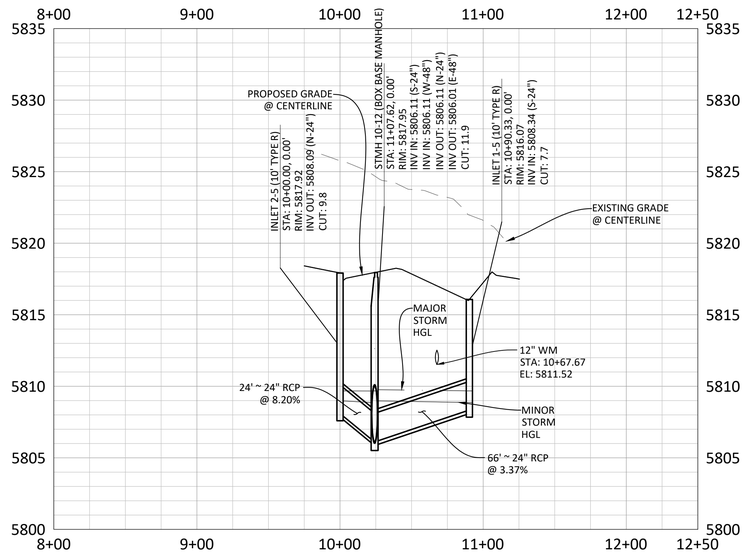


PROFILE: STORM-12A

BELFORD AVE ℄ STA. 61+90.55

0 25 50 100

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



PROFILE: STORM-5B

BELFORD AVE ℄ STA. 11+02.64

0 25 50 100

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

COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE

TOWN OF PARKER, COLORADO

STORM PLAN & PROFILE

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET
19 OF 49
CLCPKC3 ---

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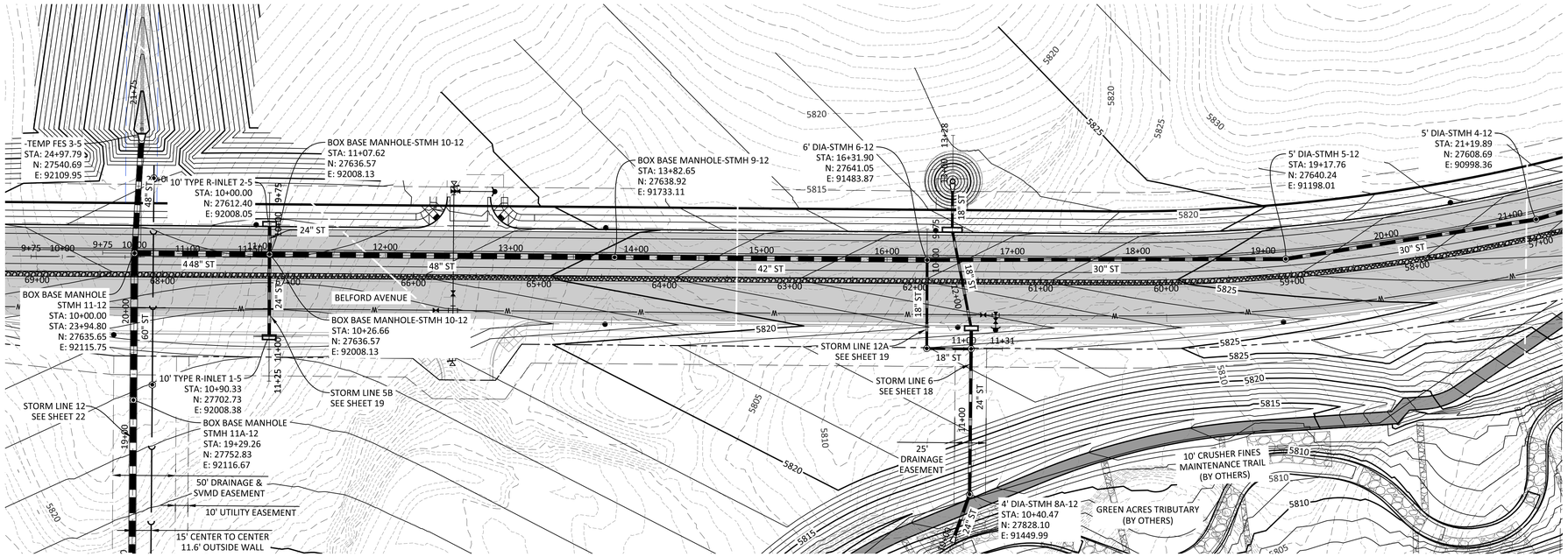
Plotted: 3/3/2020 3:56 PM Dwg Name: P:\Civpkc3\ComSouth12-Filing 1 No GAT\ComSouth03-Ultimate Belford Ave\dwg\Eng\Final Drawings\Plan Set\Town\STORM PLAN & PROFILE.dwg Updated By: MMcGuire



PLAN: STORM-12
STA: 10+00 TO 21+00

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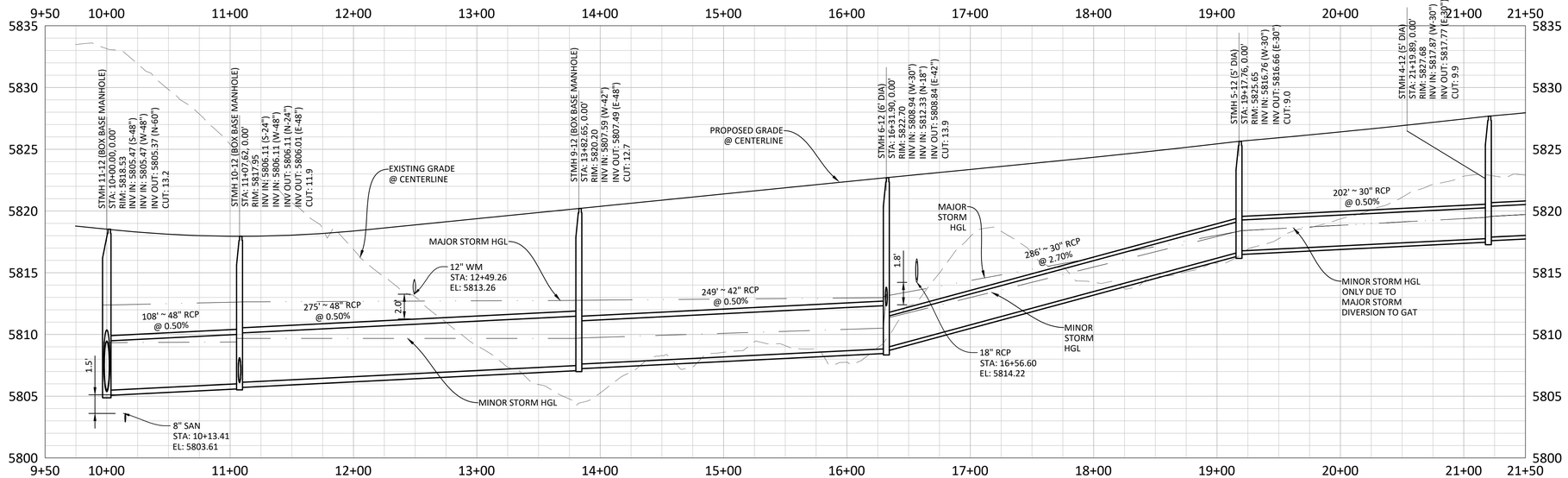

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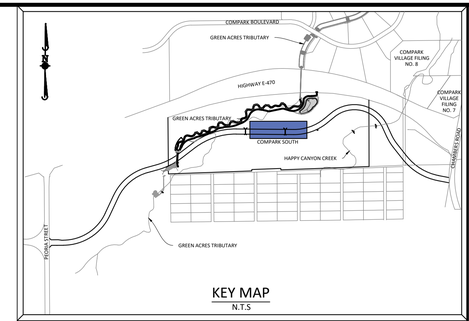
PROFILE: STORM-12



KEY MAP
N.T.S

SOURCE BENCHMARKS:

DOUGLAS COUNTY BM 1.115010
A DOUGLAS COUNTY GIS MONUMENT SET IN CONCRETE LOCATED APPROXIMATELY 130 FEET SOUTHWESTERLY OF THE CENTERLINE OF CHAMBERS ROAD AND 95 FEET NORTHWESTERLY OF THE CENTERLINE OF COMPARK BOULEVARD. ELEVATION = 5752.84 (NAVD 88)

0 25 50 100
SCALE: 1"=50'
VERTICAL SCALE: 1"=5'

DATE	REVISIONS	DRAWN BY
03/02/20	UPDATE GAT & ADD OFF-LINE DET BASIN	MAM
12/21/16	FINAL SUBMITTAL	EG
11/2/16	4TH SUBMITTAL	EG
08/15/16	3RD SUBMITTAL	EG
4/11/16	2ND SUBMITTAL	EG
11/2015	1ST SUBMITTAL	EG

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COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
STORM PLAN & PROFILE

PROJ. MGR.: RIM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET
20 OF 49
CLCPKC3 ---

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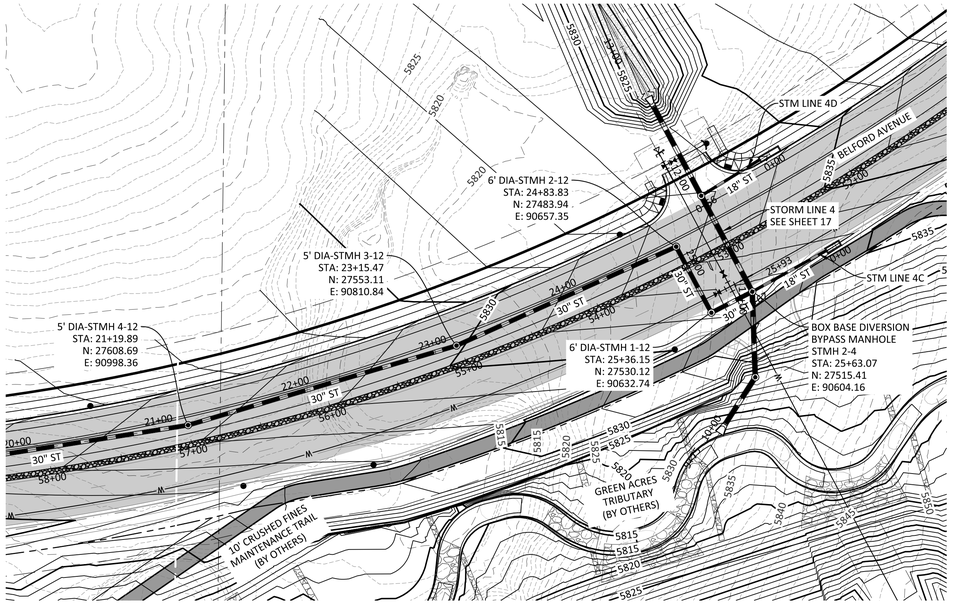
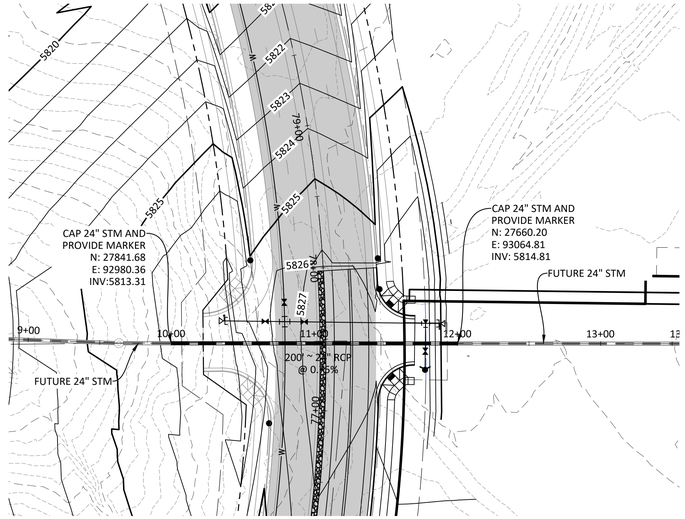
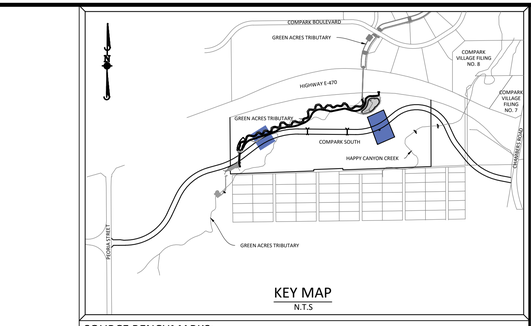


PLAN: STORM-12
STA: 21+00 TO 25+63.07



PROFILE: STORM-FUTURE STORM CAP
BELFORD AVE ℄ STA. 77+47.20



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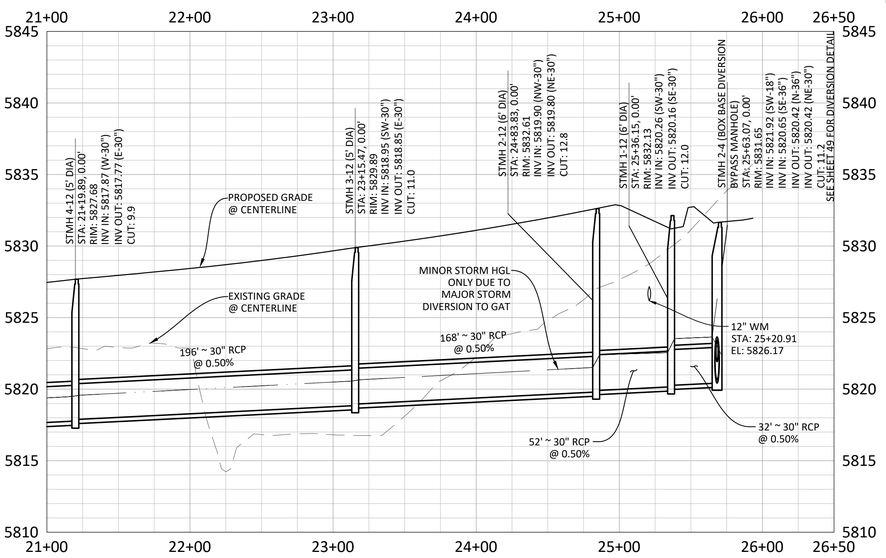
0 25 50 100
SCALE: 1"=50'
VERTICAL SCALE: 1"=5'

0 25 50 100
SCALE: 1"=50'
VERTICAL SCALE: 1"=5'



PROFILE: STORM-12
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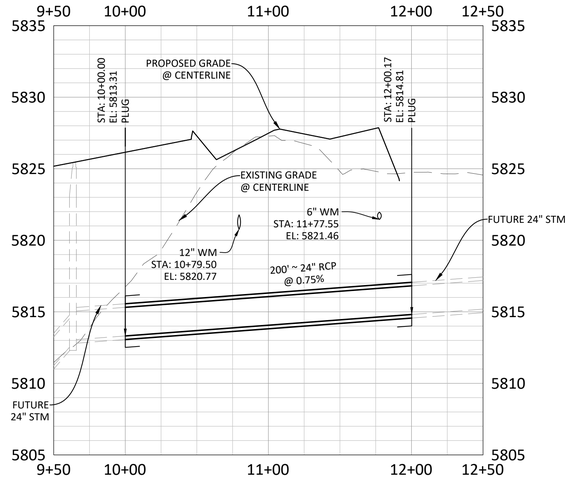

PLAN: STORM-FUTURE STORM CAP
BELFORD AVE ℄ STA. 77+47.20

0 25 50 100
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VERTICAL SCALE: 1"=5'

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6/21/16	3RD SUBMITTAL	EG
4/11/16	2ND SUBMITTAL	EG
11/2015	1ST SUBMITTAL	EG

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COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
STORM PLAN & PROFILE

PROJ. MGR.: RIM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET
21 OF 49
CLCPKC3 ---

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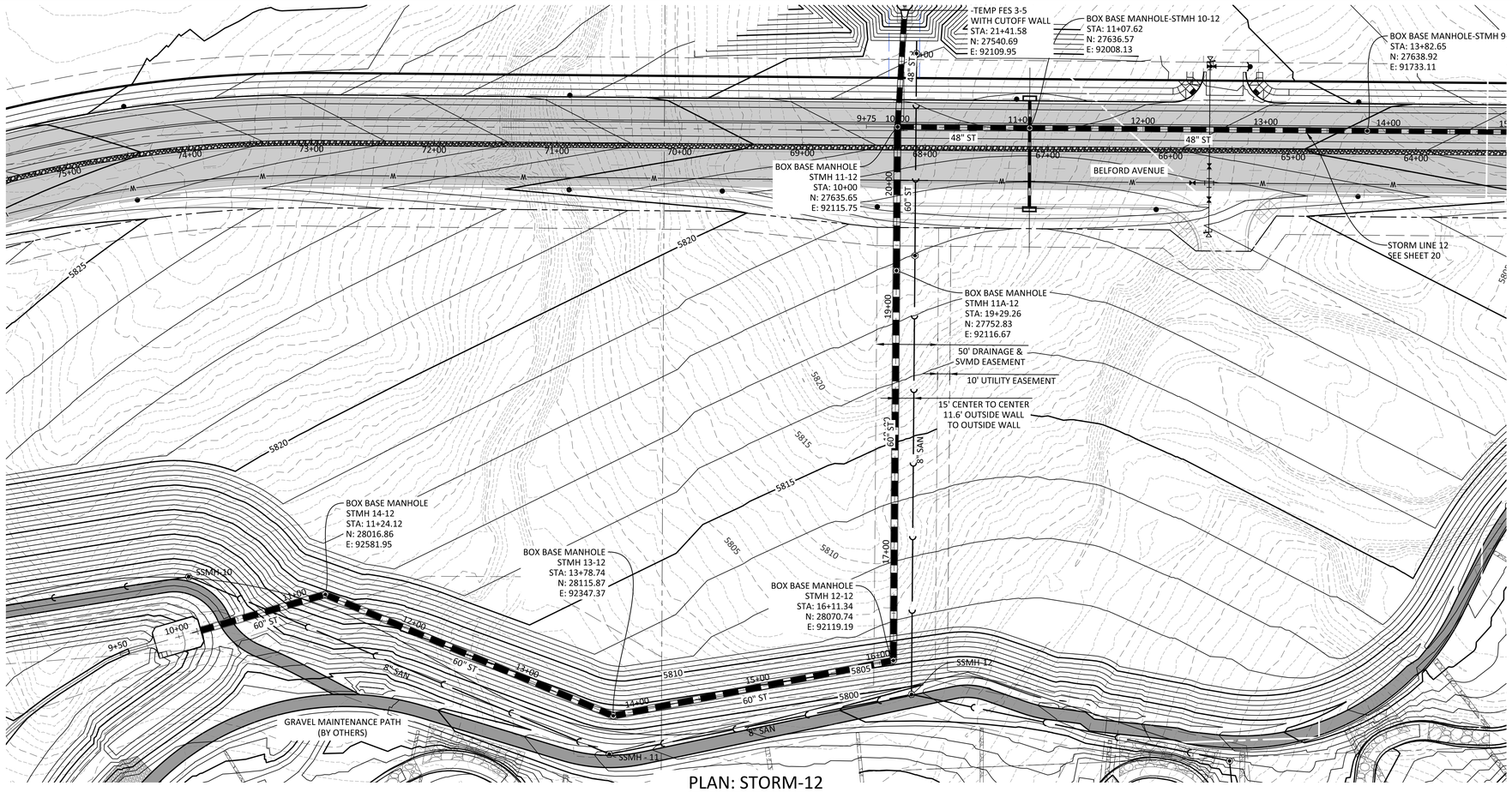
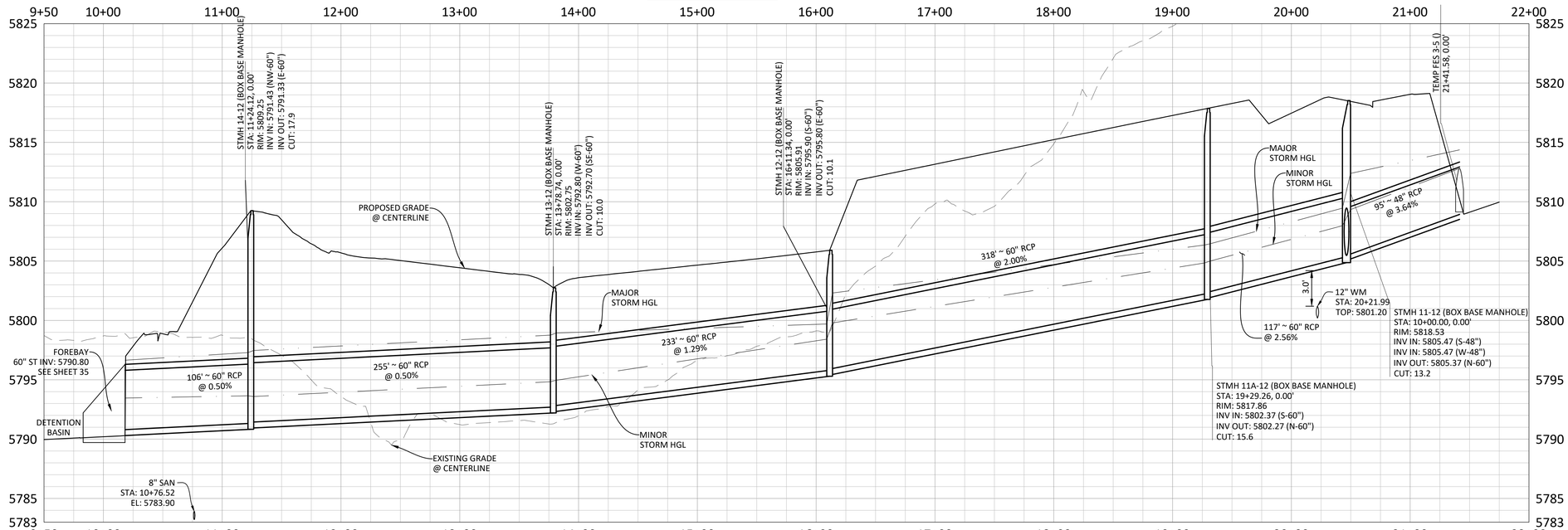
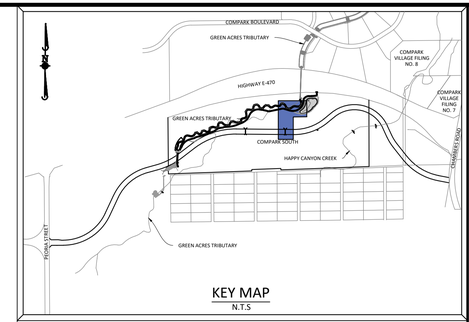


PLAN: STORM-12



PROFILE: STORM-12



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0 25 50 100
SCALE: 1"=50'
VERTICAL SCALE: 1"=5'

0 25 50 100
SCALE: 1"=50'
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11/2/16	D. 4TH SUBMITTAL	EG
6/24/16	C. 3RD SUBMITTAL	EG
4/11/16	B. 2ND SUBMITTAL	EG
11/2015	A. 1ST SUBMITTAL	EG

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COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
STORM PLAN & PROFILE

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET
22 OF 49
CLCPKC3 ---

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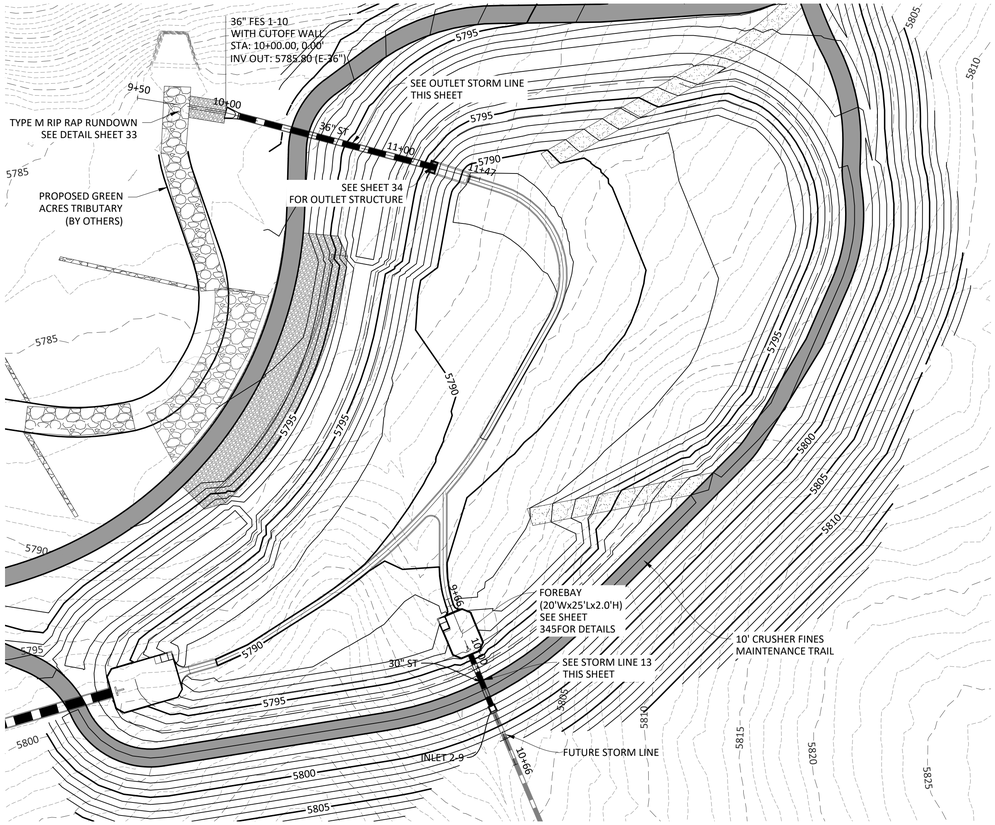
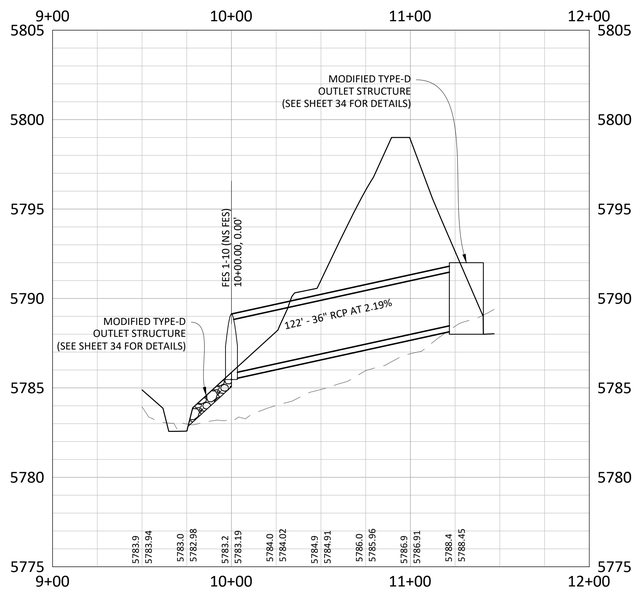
PRELIMINARY - NOT FOR CONSTRUCTION

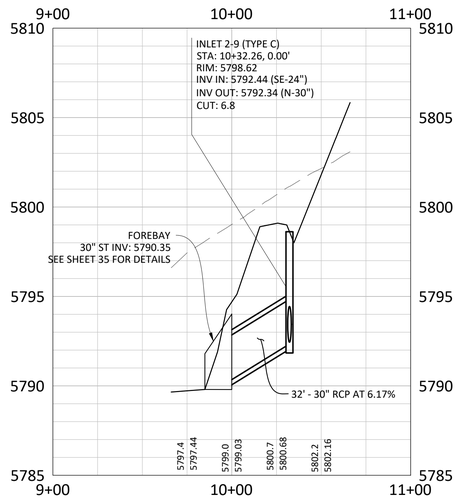
Plotted: 3/3/2020 3:57 PM Dwg Name: P:\Ctpkc3\Com\South\12-Filing 1 No GAT\Com\South\03-Ultimate Belford Ave\dwg\Eng\Final Drawings\Plan Set\Town\STORM PLAN & PROFILE.dwg Updated By: MMcGuire



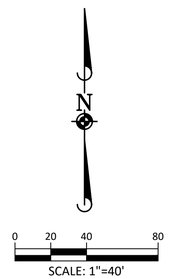
PLAN: STORM 13 & POND OUTLET

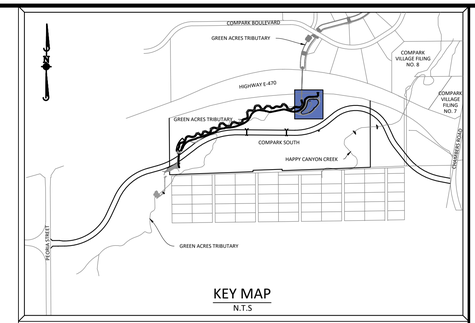


PROFILE: STORM-POND OUTLET



PROFILE: STORM-13





KEY MAP
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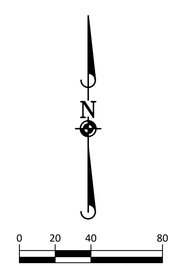
	DATE	REVISIONS	DRAWN BY
F	03/02/20	UPDATE GAT & ADD OFF-LINE DET BASIN	EG
E	12/21/16	FINAL SUBMITTAL	
D	11/1/16	4TH SUBMITTAL	
C	6/24/16	3RD SUBMITTAL	
B	4/1/16	2ND SUBMITTAL	
A	11/2015	1ST SUBMITTAL	

NOTE:

1. PRIOR TO FINAL TOP SOILING, SEEDING AND MULCHING, CONTRACTOR SHALL OBTAIN FINAL AS-BUILT VOLUME CHECK AND CERTIFICATION FROM THE ENGINEER. FAILURE TO DO SO WILL REQUIRE THE CONTRACTOR TO REMOVE AND REPLACE TOP SOIL MATERIALS AT HIS/HER EXPENSE.
2. REFER TO GENERAL NOTES ON SHEET 2 AND DETAILS ON FOLLOWING SHEETS
3. EMBANKMENT FILL SHALL MEET THE MINIMUM REQUIREMENTS OF TOWN OF PARKER AND THE GEOTECHNICAL REPORT. SEE GENERAL NOTES ON SHEET 2.

0 20 40 80
SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

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



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COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
STORM PLAN & PROFILE

PRELIMINARY - NOT FOR CONSTRUCTION

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET
23 OF 49
CLCPKC3 ---

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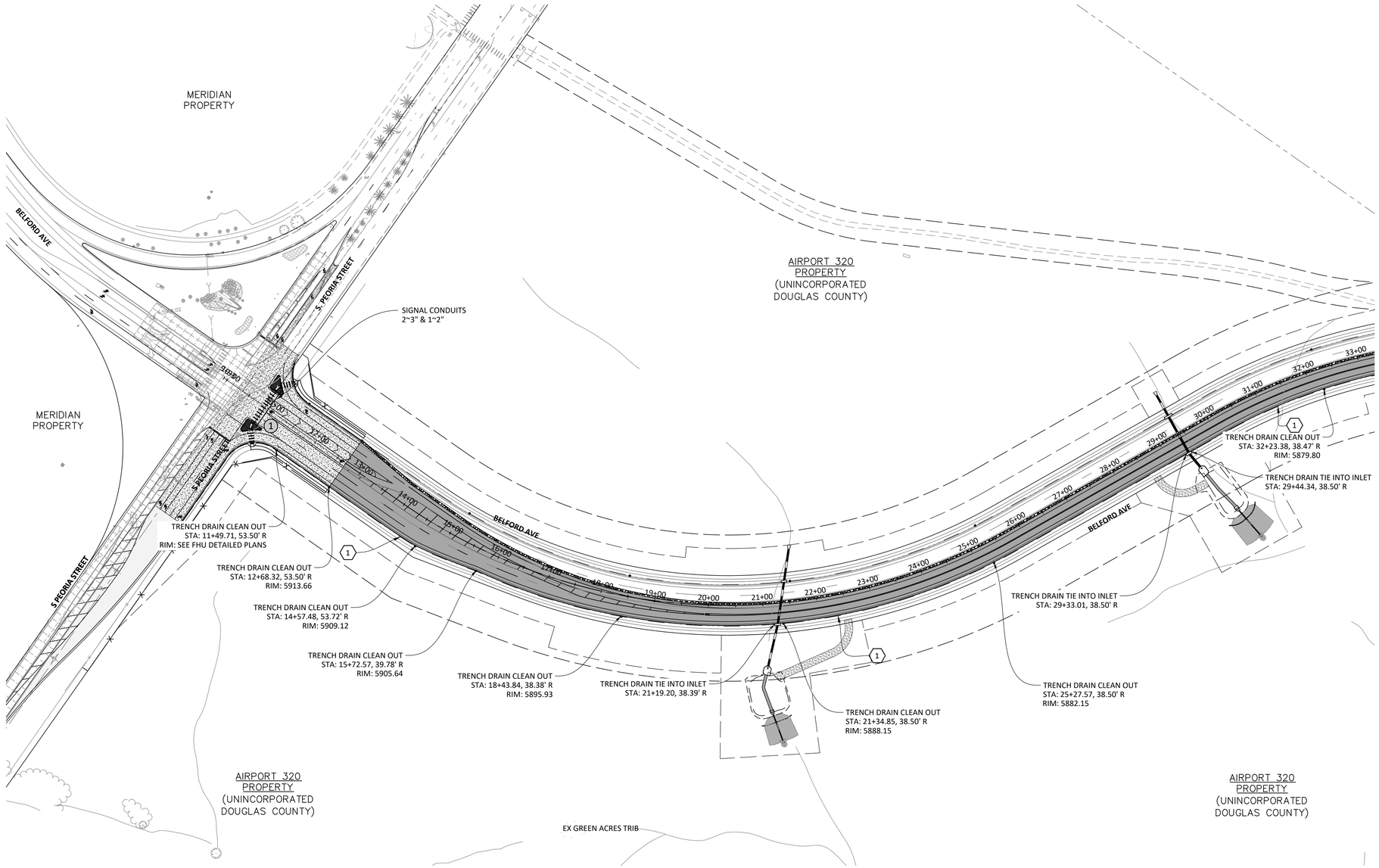
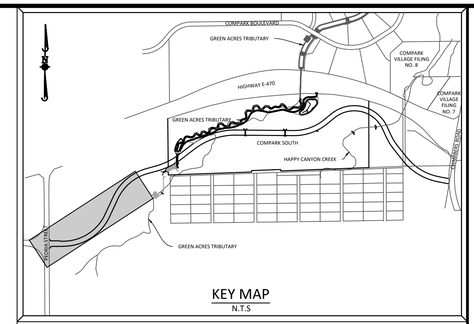
Plotted: 3/3/2020 3:59 PM Dwg Name: P:\CSpkc3\ComSouth12-Filing 1 No GAT\ComSouth03-Ultimate Belford Ave\dwg\Eng\Final Drawings\Plan Set\Town\STORM PP - POND.dwg Updated By: MMcGuire





KEY MAP
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0 50 100 200
SCALE: 1"=100'

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

LEGEND

2 CONSTRUCTION NOTE

1 UTILITY SLEEVE CROSSING N0.

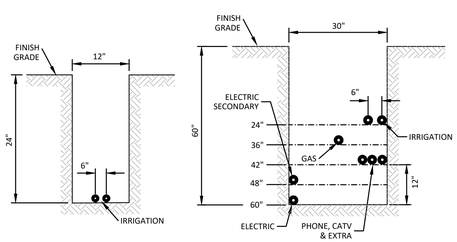
CONSTRUCTION NOTES

1. 4" TRENCHDRAIN (TYP.)
2. 4" SCH 80 CONDUIT SLEEVE PIPE REQUIRED UNDER ALL ROADWAY CROSSINGS FOR TRENCHDRAIN
3. BORE TRENCHDRAIN UNDER EXISTING ROADWAY
4. 2" CONDUIT W/ 14 GA. TRACER WIRE AND PULL ROPE FOR SIGNAL INTERCONNECT
5. ALL CONDUITS TO LANDSCAPED MEDIANS SHALL BE SWEPT UP AT 90° AND SHALL TERMINATE IN A PULL BOX SET TO FINISHED GRADE.
6. ALL INTERCONNECT CONDUITS SHALL BE SWEPT UP AT 90° TO 11"X17" QUASITE PULLBOXES. 400' SPACING MAXIMUM.

PLAN: BELFORD AVENUE

TRENCH DRAIN NOTES:

1. SEE DETAIL 31 OF STREET DETAILS FOR TRENCH DRAIN SPECIFICATIONS
2. TRENCH DRAINS SHALL TIE INTO STORM MANHOLES OR INLETS
3. CLEANOUTS SHALL BE PROVIDED AT ALL JUNCTIONS, ANGLE POINTS AND SPACED AT MAXIMUM 500' INTERVALS.



NOTE: MINIMUM REQUIREMENTS -
ELECTRIC - 12" FROM ALL OTHER UTILITIES
GAS - 12" FROM ALL OTHER UTILITIES

TYPICAL CONDUIT SLEEVE SECTIONS
N.T.S.

NOTES:

1. INSTALL CROSSINGS TO CLEAR THE ROW AND WALKS. INSTALL SLEEVES IN LINE WITH THE APPROPRIATE EASEMENTS.
2. EXTRA CROSSINGS ARE INSTALLED AT THE DISCRETION OF THE DEVELOPER.
3. THESE CROSSING LOCATIONS HAVE BEEN PROVIDED BY THE RESPECTIVE UTILITY COMPANIES AS OF THIS DATE. ANY CHANGES, ADDITIONS, OR RELOCATIONS RECEIVED BY MANHARD CONSULTING, LTD. AFTER PAVING HAS BEEN COMPLETED WILL HAVE TO BORED.
4. ALL ELECTRIC AND GAS CROSSINGS MUST BE SCHEDULE 40 GRAY PVC, PHONE AND TV ARE TO BE WHITE SCHEDULE 40 PVC. IRR AS SHOWN ABOVE.
5. ALL CROSSINGS MUST BE 95% COMPACTION AND TESTED. MARK BOTH ENDS OF SLEEVE WITH 2 X 4 POST-PAINTED.
6. XCEL REQUIRES ALL CROSSINGS TO HAVE TRACER WIRE INSTALLED NEXT TO THE SLEEVE.
7. ALL TRENCH LINES MUST BE WITHIN 6" OF FINISHED GRADE PER XCEL STANDARDS.
8. GRADE AT TRANSFORMERS MUST BE 100% TO FINISHED GRADE.

CAUTION:

HAVE ALL BURIED UTILITIES LOCATED PRIOR TO TRENCHING OR BORING.

TOWN OF PARKER APPROVALS

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, DIRECTOR OF ENGINEERING DATE

NO.	DATE	REVISIONS	DRAWN BY
F.	03/02/20	UPDATE GAT & ADD OFF-LINE DET BASIN	
E.	12/21/16	FINAL SUBMITTAL	
D.	11/7/16	4TH SUBMITTAL	
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B.	4/11/16	2ND SUBMITTAL	
A.	11/2015	1ST SUBMITTAL	ETG

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TOWN OF PARKER, COLORADO
CONDUIT SLEEVING & TRENCH DRAIN

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET 24 OF 49
CLCPKC3 ---

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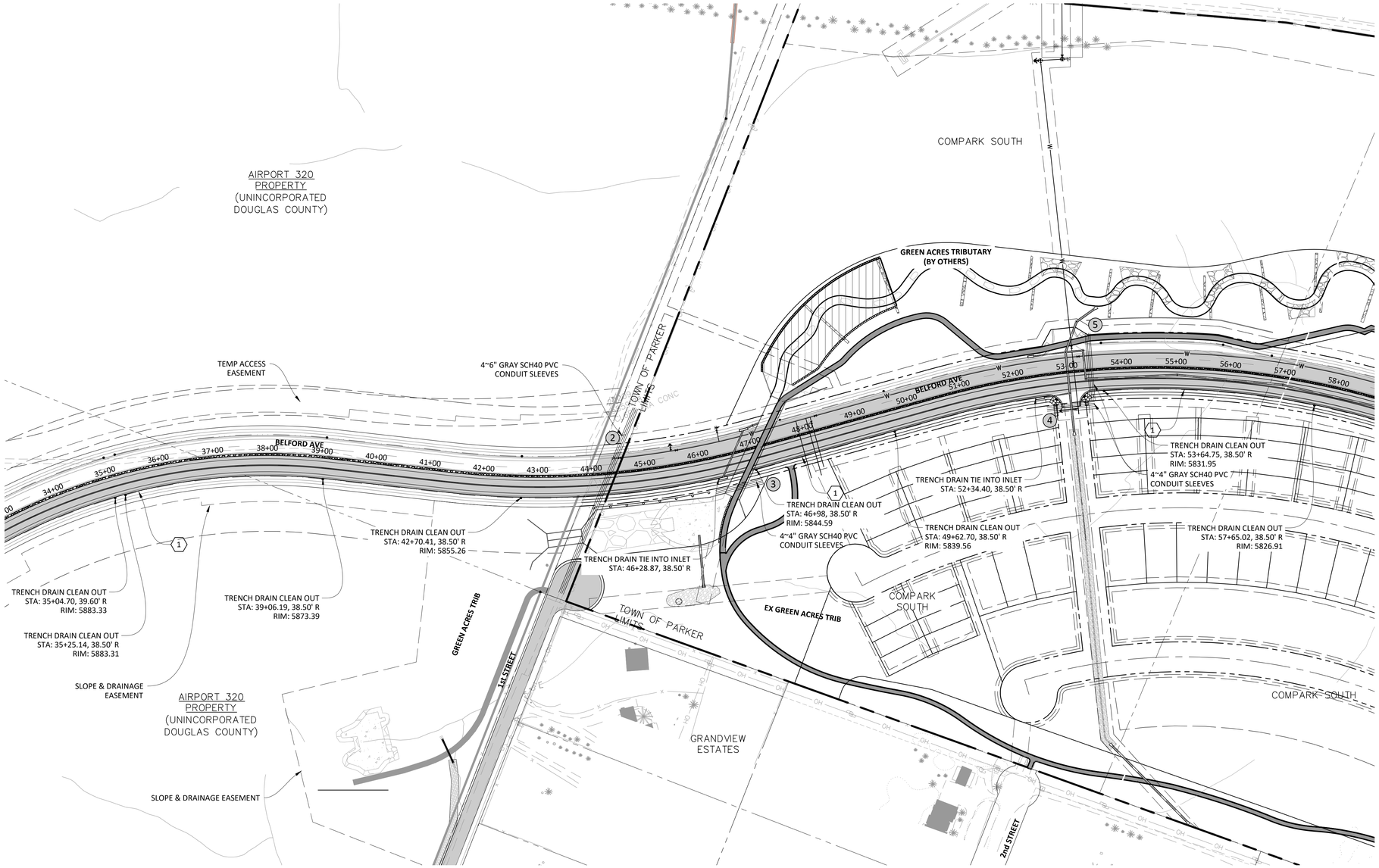
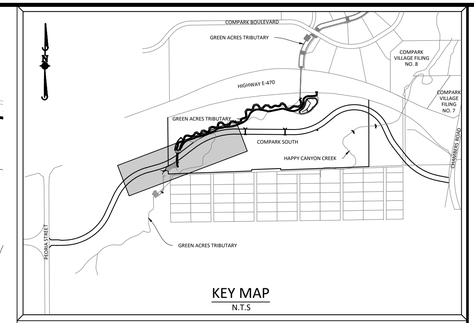
PRELIMINARY - NOT FOR CONSTRUCTION

Plotted: 3/3/2020 4:00 PM Dwg Name: P:\Clcpkc3\Com\South\12-Filing 1 NO GAT Com\South\03-Ultimate Belford Ave\dwg\Eng\Final Drawings\Plan Set\Town\CLCPKC3-Traffic Signal Interconnect (2).dwg Updated By: MMcGuire





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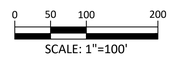
A.	11/2015	1ST SUBMITTAL	EG

Know what's below. Call before you dig.



LEGEND

(2) CONSTRUCTION NOTE

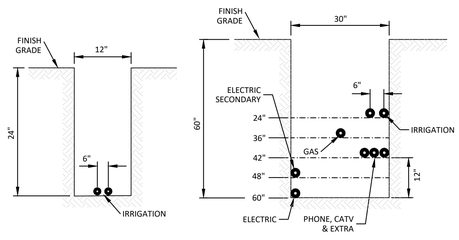
(1) UTILITY SLEEVE CROSSING N0.

CONSTRUCTION NOTES

1. 4" TRENCHDRAIN (TYP.)
2. 4" SCH 80 CONDUIT SLEEVE PIPE REQUIRED UNDER ALL ROADWAY CROSSINGS FOR TRENCHDRAIN
3. BORE TRENCHDRAIN UNDER EXISTING ROADWAY
4. 2" CONDUIT W/ 14 GA. TRACER WIRE AND PULL ROPE FOR SIGNAL INTERCONNECT
5. ALL CONDUITS TO LANDSCAPED MEDIANS SHALL BE SWEPT UP AT 90° AND SHALL TERMINATE IN A PULL BOX SET TO FINISHED GRADE.
6. ALL INTERCONNECT CONDUITS SHALL BE SWEPT UP AT 90° TO 11"X17" QUASITE PULLBOXES. 400' SPACING MAXIMUM.

TRENCH DRAIN NOTES:

1. SEE DETAIL 31 OF STREET DETAILS FOR TRENCH DRAIN SPECIFICATIONS
2. TRENCH DRAINS SHALL TIE INTO STORM MANHOLES OR INLETS
3. CLEANOUTS SHALL BE PROVIDED AT ALL JUNCTIONS, ANGLE POINTS AND SPACED AT MAXIMUM 500' INTERVALS.



NOTE: MINIMUM REQUIREMENTS -
ELECTRIC - 12" FROM ALL OTHER UTILITIES
GAS - 12" FROM ALL OTHER UTILITIES

TYPICAL CONDUIT SLEEVE SECTIONS
N.T.S.

NOTES:

1. INSTALL CROSSINGS TO CLEAR THE ROW AND WALKS. INSTALL SLEEVES IN LINE WITH THE APPROPRIATE EASEMENTS.
2. EXTRA CROSSINGS ARE INSTALLED AT THE DISCRETION OF THE DEVELOPER.
3. THESE CROSSING LOCATIONS HAVE BEEN PROVIDED BY THE RESPECTIVE UTILITY COMPANIES AS OF THIS DATE. ANY CHANGES, ADDITIONS, OR RELOCATIONS RECEIVED BY MANHARD CONSULTING, LTD. AFTER PAVING HAS BEEN COMPLETED WILL HAVE TO BORED.
4. ALL ELECTRIC AND GAS CROSSINGS MUST BE SCHEDULE 40 GRAY PVC, PHONE AND TV ARE TO BE WHITE SCHEDULE 40 PVC. IRR AS SHOWN ABOVE.
5. ALL CROSSINGS MUST BE 95% COMPACTION AND TESTED. MARK BOTH ENDS OF SLEEVE WITH 2 X 4 POST-PAINTED.
6. XCEL REQUIRES ALL CROSSINGS TO HAVE TRACER WIRE INSTALLED NEXT TO THE SLEEVE.
7. ALL TRENCH LINES MUST BE WITHIN 6" OF FINISHED GRADE PER XCEL STANDARDS.
8. GRADE AT TRANSFORMERS MUST BE 100% TO FINISHED GRADE.

CAUTION:

HAVE ALL BURIED UTILITIES LOCATED PRIOR TO TRENCHING OR BORING.

TOWN OF PARKER APPROVALS

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TOWN OF PARKER, DIRECTOR OF ENGINEERING — DATE

Manhard CONSULTING
7600 East Orchard Road, Suite 150-N, Greenwood Village, CO 80111 ph: 303.708.0500 manhard.com
Civil Engineering & Consulting | Surveying | Water Resource Management | Construction Management

COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
CONDUIT SLEEVING & TRENCH DRAIN

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET 25 OF 49
CLCPKC3 ---

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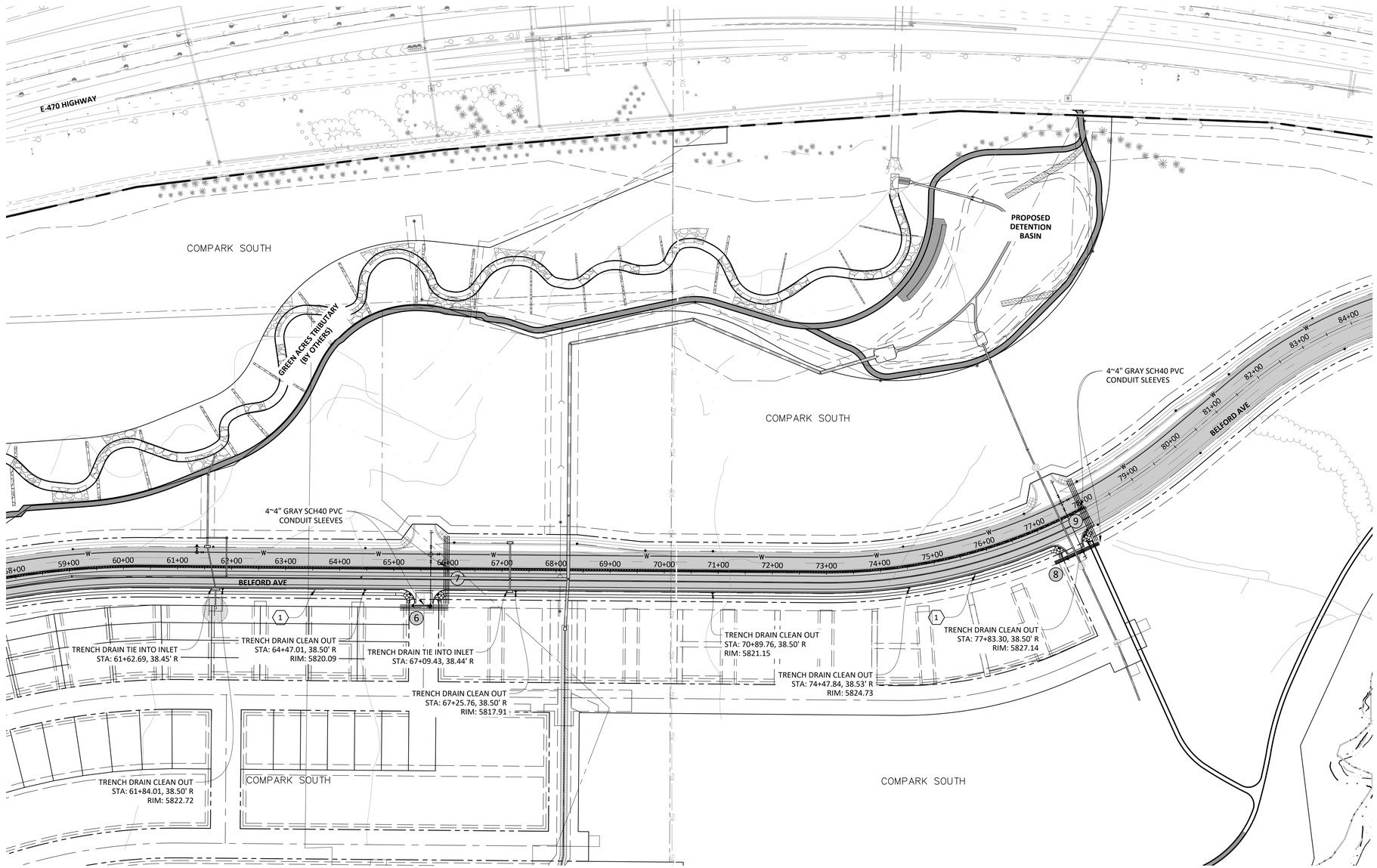
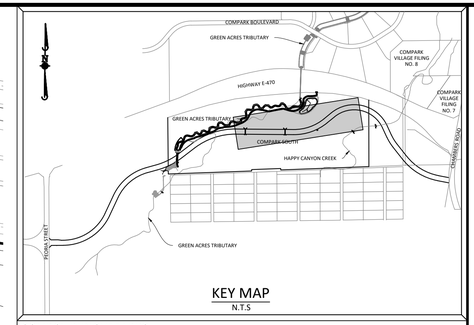
PRELIMINARY - NOT FOR CONSTRUCTION

Plotted: 3/3/2020 4:02 PM Dwg Name: P:\Clcpkc3\Com\South\2-Filing 1 No GAT\Com\South\03-Ultimate Belford Ave\dwg\Eng\Final Drawings\Plan Set\Town\CLCPKC3-Traffic Signal_Interconnect (3).dwg Updated By: MMcGuire

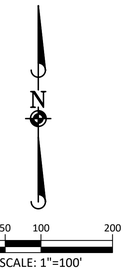




KEY MAP
N.T.S.

SOURCE BENCHMARKS:

DOUGLAS COUNTY BM 1.115010
A DOUGLAS COUNTY GIS MONUMENT SET IN CONCRETE LOCATED APPROXIMATELY 130 FEET SOUTHWESTERLY OF THE CENTERLINE OF CHAMBERS ROAD AND 95 FEET NORTHWESTERLY OF THE CENTERLINE OF COMPARK BOULEVARD. ELEVATION = 5752.84 (NAVD 88)



Know what's below. Call before you dig.

LEGEND

2	CONSTRUCTION NOTE
1	UTILITY SLEEVE CROSSING N0.

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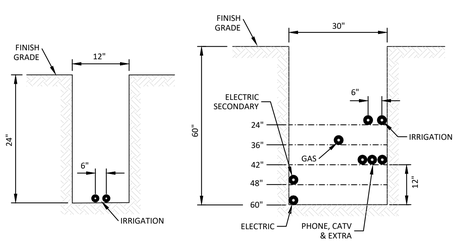

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TOWN OF PARKER, DIRECTOR OF ENGINEERING — DATE

DATE	REVISIONS	DRAWN BY
03/02/20	UPDATE GAT & ADD OFF-LINE DET BASIN	EG
12/21/16	FINAL SUBMITTAL	
11/7/16	4TH SUBMITTAL	
6/24/16	3RD SUBMITTAL	
4/11/16	2ND SUBMITTAL	
11/2015	1ST SUBMITTAL	

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Civil Engineering | Surveying | Water Resource Management | Construction Management

COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
CONDUIT SLEEVING & TRENCH DRAIN

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET
26 OF 49
CLCPKC3 ---

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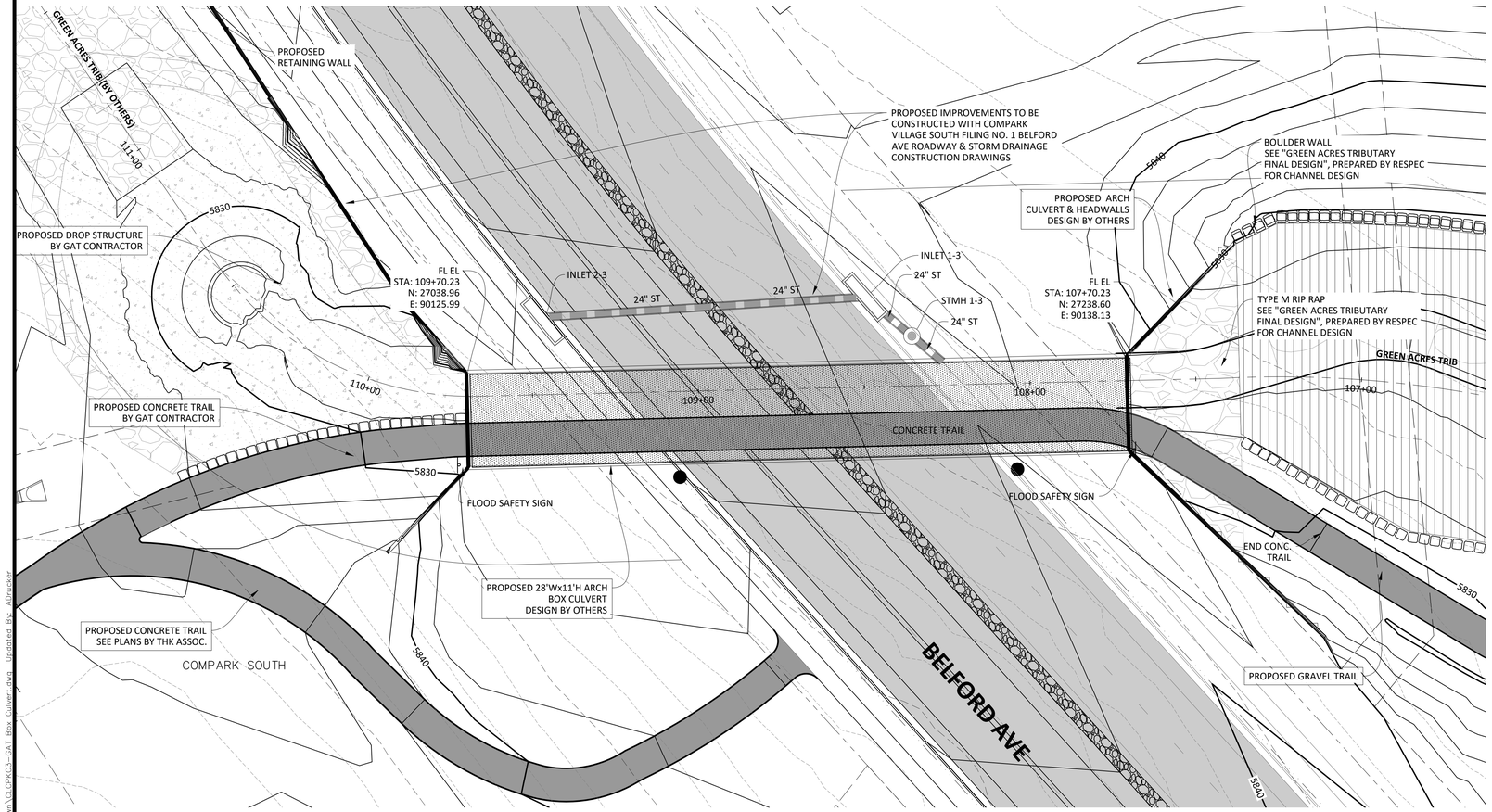
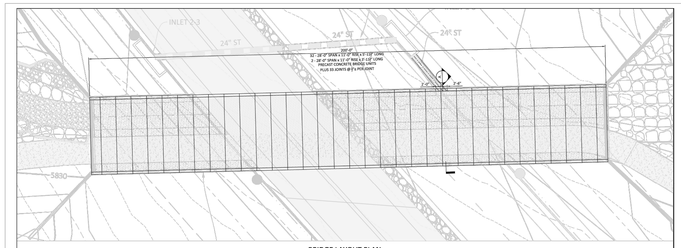
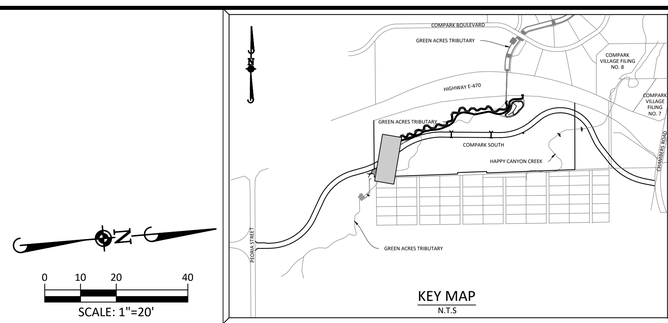
PRELIMINARY - NOT FOR CONSTRUCTION

Plotted: 3/3/2020 4:04 PM Dwg Name: P:\Clcpkc3\ComSouth12-Filing 1 No GAT\ComSouth03-Ultimate Belford Ave\dwg\Eng\Final Drawings\Plan Set\Town\CLCPKC3-Traffic Signal_Interconnect (4).dwg, Updated By: MMcGuire







0 10 20 40
SCALE: 1"=20'

SOURCE BENCHMARKS:

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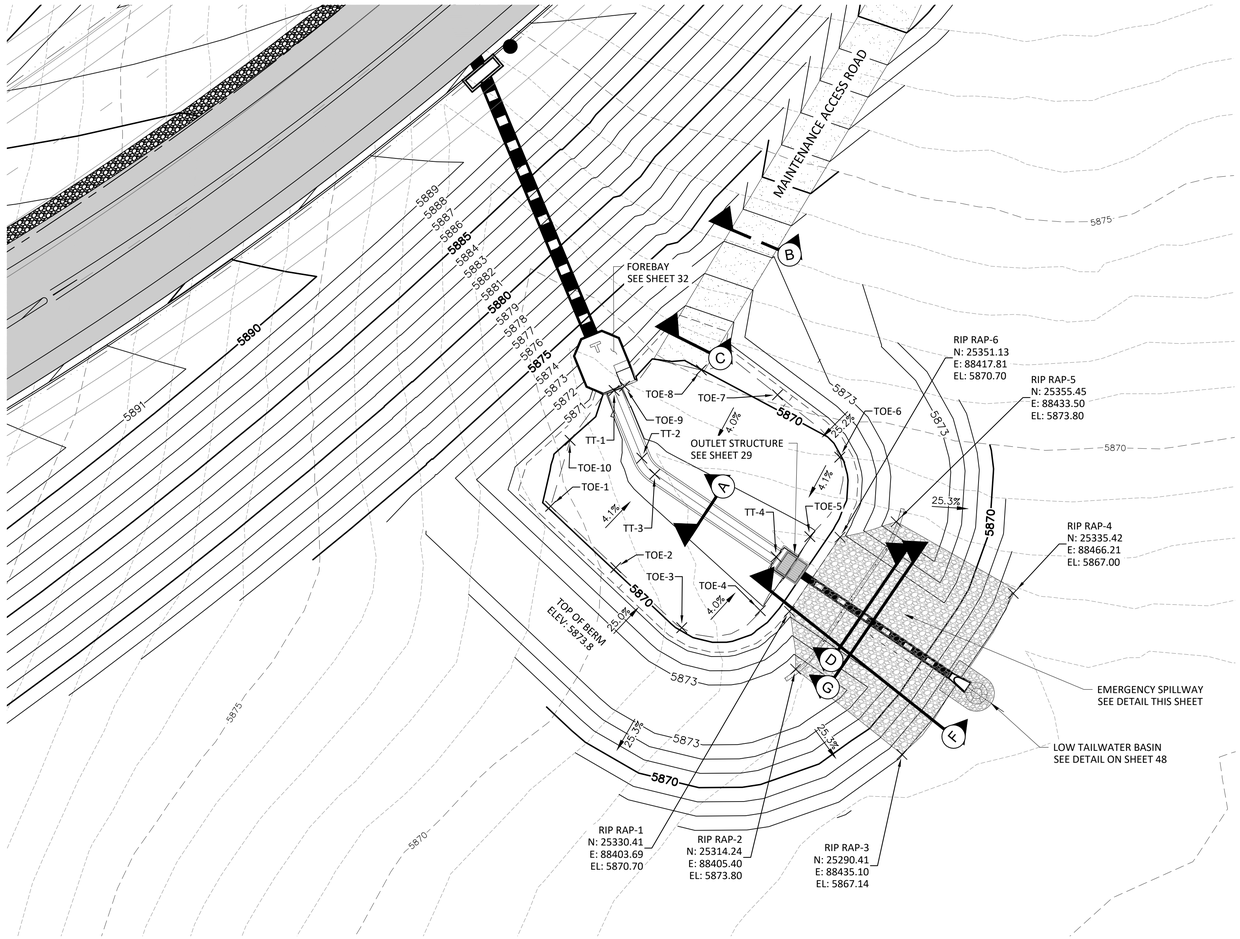
A DOUGLAS COUNTY GIS MONUMENT SET IN CONCRETE LOCATED APPROXIMATELY 130 FEET SOUTHWESTERLY OF THE CENTERLINE OF CHAMBERS ROAD AND 95 FEET NORTHWESTERLY OF THE CENTERLINE OF COMPARK BOULEVARD. ELEVATION = 5752.84 (NAVD 88)

DRAWN BY	DATE	REVISIONS	



FREQUENCY STORM	REQUIRED VOLUMES (FT^3 OR AC.–FT.)	RECORD DRAWING CALCULATIONS					
		CALC. VOL.	BY:	DATE	CALC. VOL.	BY:	DATE
EURV	0.16 AC.-FT.						

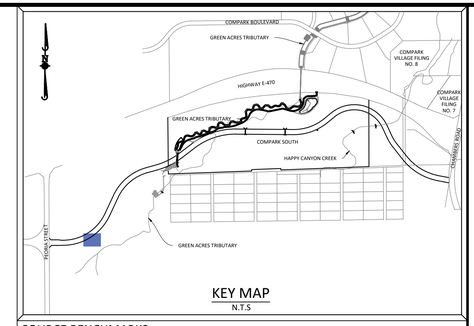
N

0 10 20 40

SCALE: 1"=20'

Point Table

Point	Elevation	Northing	Easting	Description
TOE–1	5869.80	25359.77	88336.93	POND TOE
TOE–2	5869.79	25342.64	88355.14	POND TOE
TOE–3	5869.79	25325.82	88373.57	POND TOE
TOE–4	5869.06	25330.60	88395.52	POND TOE
TOE–5	5868.93	25351.29	88409.37	POND TOE
TOE–6	5869.88	25373.50	88417.74	POND TOE
TOE–7	5870.15	25390.92	88400.34	POND TOE
TOE–8	5869.99	25397.88	88379.04	POND TOE
TOE–9	5869.95	25393.34	88357.58	POND TOE
TOE–10	5869.96	25378.21	88342.37	POND TOE
TT–1	5868.45	25392.15	88354.68	Trickle Channel
TT–2	5868.35	25373.23	88362.42	Trickle Channel
TT–3	5868.32	25368.74	88366.05	Trickle Channel
TT–4	5868.11	25345.64	88399.94	Trickle Channel



KEY MAP
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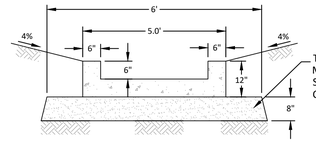
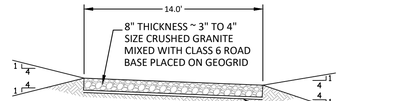
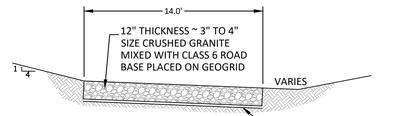


SECTION A
5.0' WIDE TRICKLE CHANNEL
½" = 1'-0"

NOTE: USE 4 POUNDS PER CU. YD. OF FIBRE MESH TO REINFORCE CONCRETE



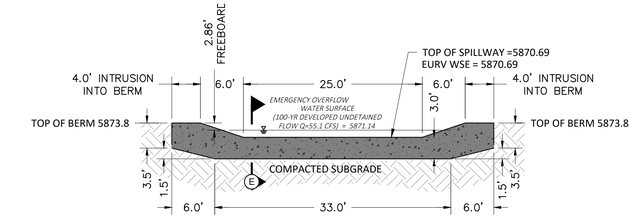
SECTION B
MAINTENANCE ACCESS ROAD
ABOVE EURV WATER SURFACE
¼" = 1'-0"



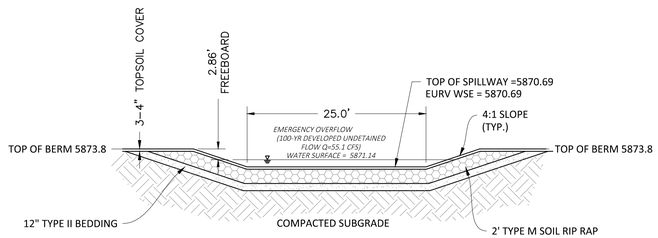
SECTION C
MAINTENANCE ACCESS ROAD
BELOW EURV WATER SURFACE
¼" = 1'-0"

NOTE:

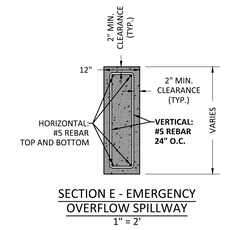
1. PRIOR TO FINAL TOP SOILING, SEEDING AND MULCHING, CONTRACTOR SHALL OBTAIN FINAL AS-BUILT VOLUME CHECK AND CERTIFICATION FROM THE ENGINEER. FAILURE TO DO SO WILL REQUIRE THE CONTRACTOR TO REMOVE AND REPLACE TOP SOIL MATERIALS AT HIS/HER EXPENSE.
2. REFER TO GENERAL NOTES ON SHEET 2 AND DETAILS ON FOLLOWING SHEETS
3. EMBANKMENT FILL SHALL MEET THE MINIMUM REQUIREMENTS OF TOWN OF PARKER AND THE GEOTECHNICAL REPORT. SEE GENERAL NOTES ON SHEET 2.
4. THIS WATER QUALITY BASIN HAS BEEN SIZED TO SERVE AS A TEMPORARY SEDIMENT BASIN DURING CONSTRUCTION. ONCE CONSTRUCTION IS COMPLETE, THE SPILLWAY SHALL BE LOWERED TO THE EURV WATER SURFACE ELEVATION, AS SHOWN ON THE DETAIL ON THIS SHEET.



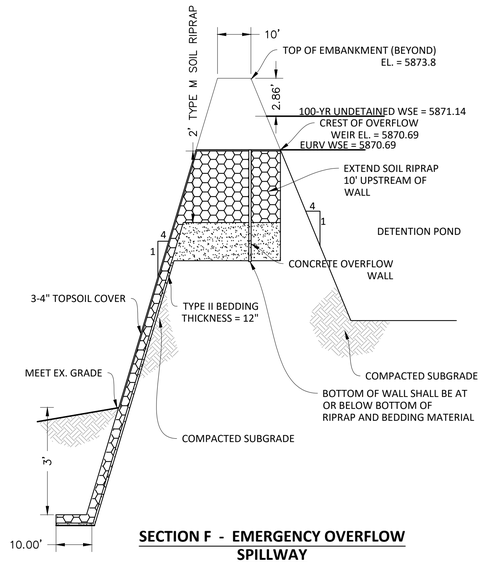
SECTION D - EMERGENCY OVERFLOW SPILLWAY CUTOFF WALL
1" = 10'



SECTION G - EMERGENCY OVERFLOW SPILLWAY



SECTION E - EMERGENCY OVERFLOW SPILLWAY
1" = 2'



SECTION F - EMERGENCY OVERFLOW SPILLWAY
1" = 20'H
1"=2'V

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

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TOWN OF PARKER, DIRECTOR OF ENGINEERING — DATE

DRAWN BY	DATE	REVISIONS	
EG			
	F. 03/02/20	UPDATE GAT & ADD OFF-LINE DET BASIN	
	E. 12/21/16	FINAL SUBMITTAL	
	D. 6/17/16	4TH SUBMITTAL	
	C. 5/24/16	3RD SUBMITTAL	
	B. 4/11/16	2ND SUBMITTAL	
	A. 11/2015	1ST SUBMITTAL	

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7600 East Orchard Road, Suite 150-N, Greenwood Village, CO 80111 ph:303.708.0500 manhard.com
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COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
WEST WATER QUALITY POND PLAN

PRELIMINARY - NOT FOR CONSTRUCTION

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET 28 OF 49
CLCPKC3

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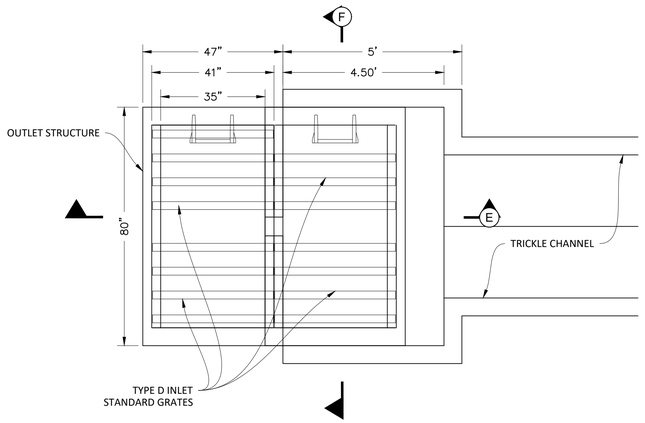
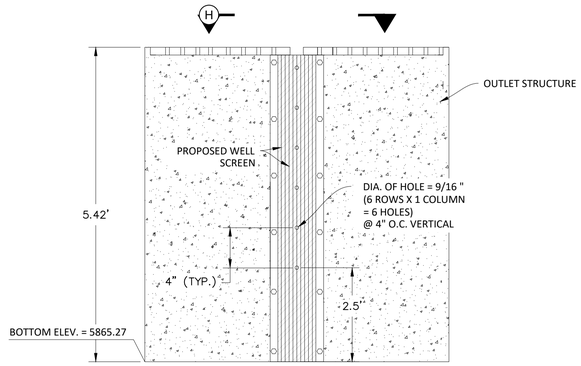
Plotted: 3/3/2020 4:08 PM Data Name: P:\Civpkc3\ComSouth12-Filing 1 No 6A\ComSouth03-Ultimate Belford Ave\Data\Final Drawings\Plan Set\Town\Civ\CPKC3-Pond Plan.dwg Updated By: MAcGuire

jbockey@thkassoc.com

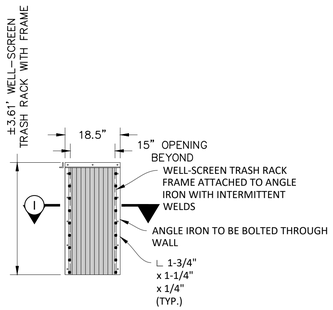
NOTE: DRAINAGE STRUCTURES REQUIRE FINAL SHOP DRAWINGS AND STRUCTURAL ENGINEERING TO BE SUBMITTED TO THE TOWN OF PARKER AND MANHARD CONSULTING FOR FINAL REVIEW AND APPROVAL. ANY CHANGE IN STRUCTURE TYPE, CONFIGURATION OR SHAPE WILL REQUIRE A "NOTICE OF CHANGE" AND WILL REQUIRE REVISIONS TO THE CIVIL DRAWINGS TO REFLECT THEIR CHANGES.



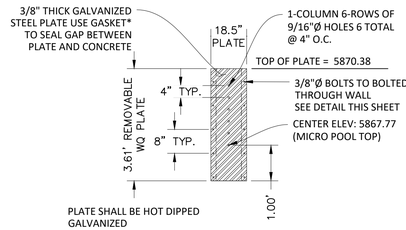
PLAN - WEST POND OUTLET STRUCTURE
1"=2'



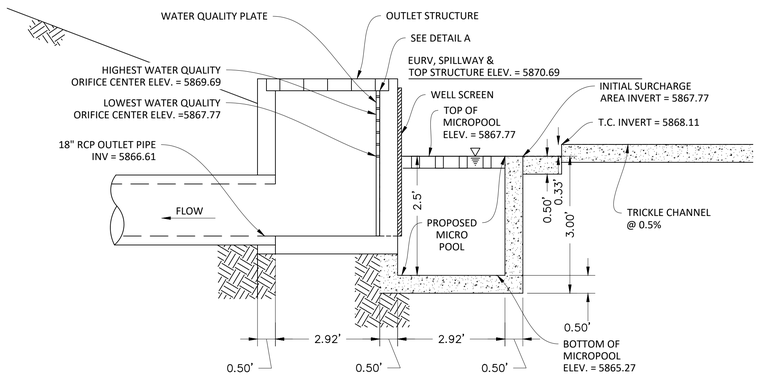
PROFILE VIEW SECTION F-F
N.T.S.



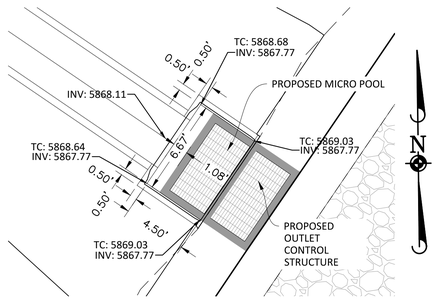
WELL-SCREEN TRASH RACK DETAIL
N.T.S.



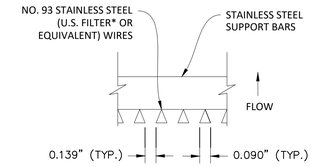
WATER QUALITY
CONTROL PLATE
N.T.S.



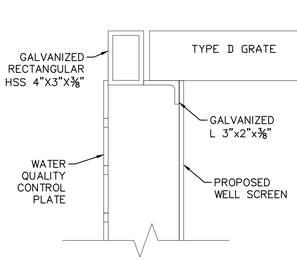
PROFILE VIEW SECTION E-E
N.T.S.



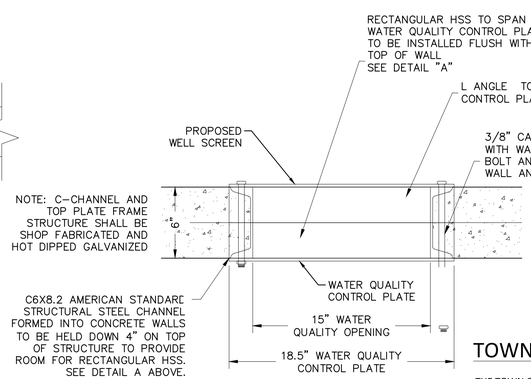
WEST POND INITIAL SURCHARGE AREA
1"=5'



SECTION I-I WELL-SCREEN TRASH RACK
N.T.S.



DETAIL A
INSTALLATION INFORMATION
N.T.S.



SECTION H-H
OPENING DETAIL
N.T.S.

NOTES:

1. REFER TO CDOT M-604-11 STANDARD, TYPE 'D' INLET, FOR CONCRETE, STEEL, GRATE, AND STEP REQUIREMENTS, REINFORCING BARS SHALL BE PLACED IN ALL INTERIOR, EXTERIOR AND BASE WALLS.

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TOWN OF PARKER, DIRECTOR OF ENGINEERING DATE

	DATE	REVISIONS	DRAWN BY
F.	03/02/20	UPDATE GAT & ADD OFF-LINE DET BASIN	
E.	12/21/16	FINAL SUBMITTAL	
D.	6/7/16	4TH SUBMITTAL	
C.	5/4/16	3RD SUBMITTAL	
B.	4/11/16	2ND SUBMITTAL	
A.	11/2015	1ST SUBMITTAL	EG

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COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
OUTLET STRUCTURE WEST

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET
29 OF 49
CLCPKC3 ---

PRELIMINARY - NOT FOR CONSTRUCTION

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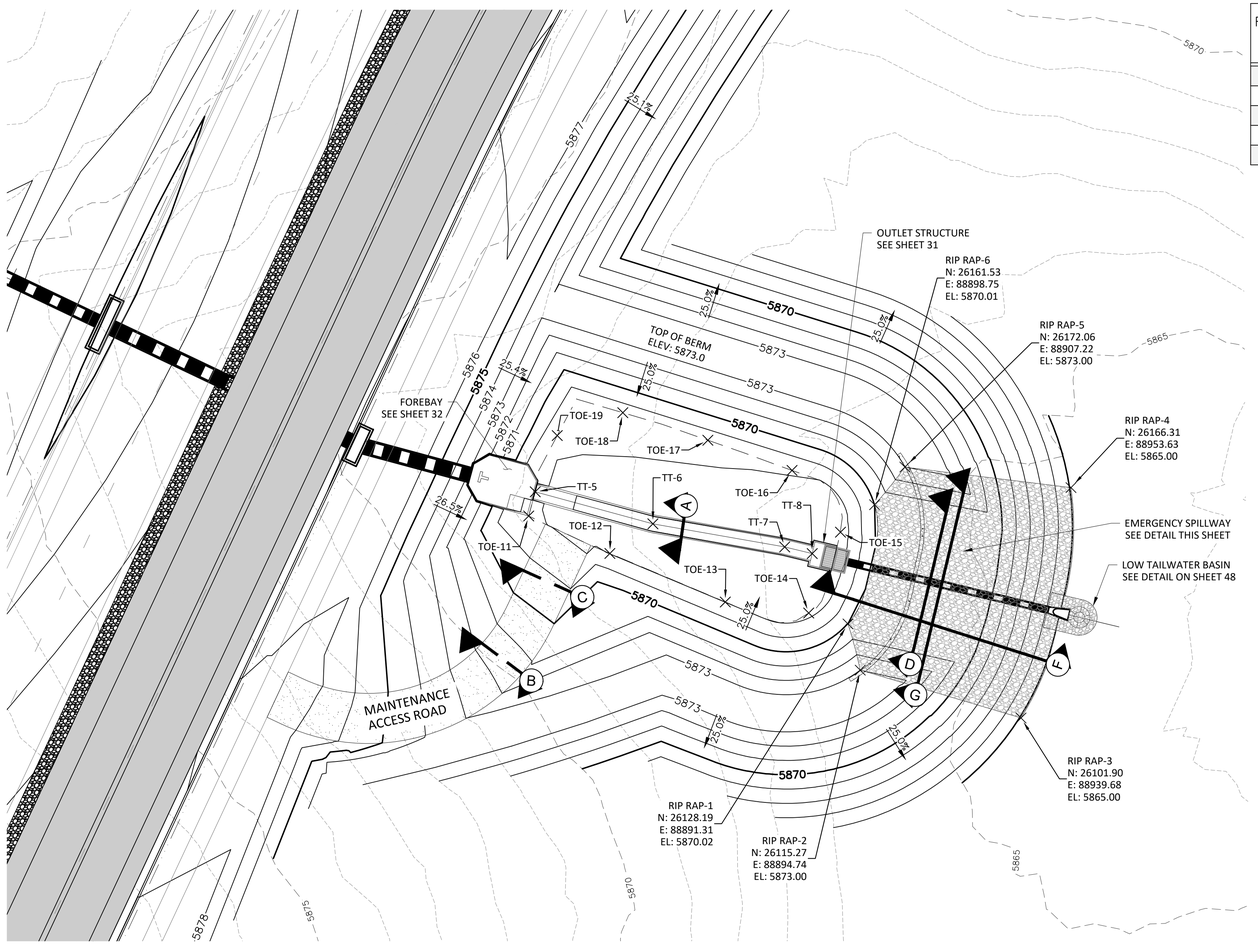
Plotted: 3/3/2020 4:08 PM Dwg. Name: P:\Clpkc3\ComSouth12-Filing 1 No. GAT\ComSouth03-Ultimate Belford Ave\dgn\Eng\Final Drawings\Plan Set\Town\Cl CPKC3-Outlet Structure.dwg Updated By: MM-Claire

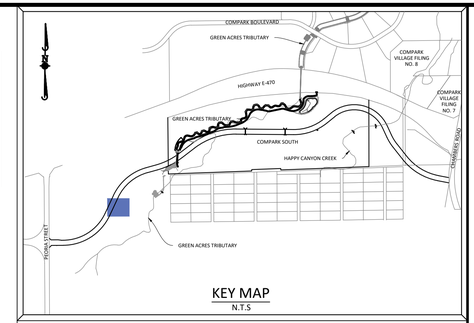


FREQUENCY STORM	REQUIRED VOLUMES (FT^3 OR AC.–FT.)	RECORD DRAWING CALCULATIONS					
		CALC. VOL.	BY:	DATE	CALC. VOL.	BY:	DATE
EURV	0.23 AC.-FT.						

N

0 10 20 40

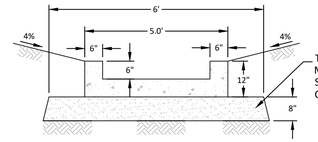
SCALE: 1"=20'



KEY MAP
N.T.S

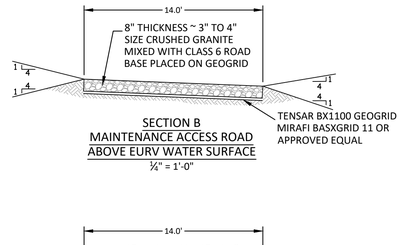
SOURCE BENCHMARKS:

DOUGLAS COUNTY BM 1.115010
A DOUGLAS COUNTY GIS MONUMENT SET IN CONCRETE LOCATED APPROXIMATELY 130 FEET SOUTHWESTERLY OF THE CENTERLINE OF CHAMBERS ROAD AND 95 FEET NORTHWESTERLY OF THE CENTERLINE OF COMPARK BOULEVARD. ELEVATION = 5752.84 (NAVD 88)

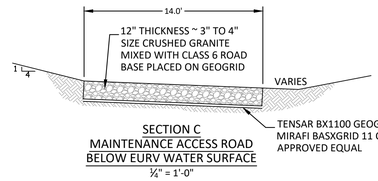


SECTION A
5.0' WIDE TRICKLE CHANNEL
½" = 1'-0"

NOTE: USE 4 POUNDS PER CU. YD. OF FIBRE MESH TO REINFORCE CONCRETE

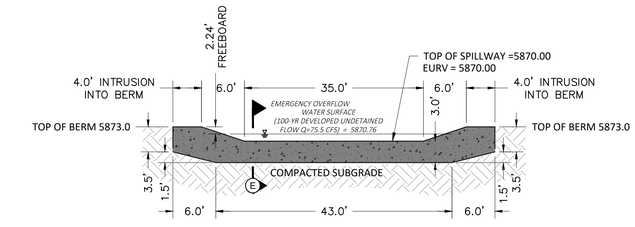


SECTION B
MAINTENANCE ACCESS ROAD
ABOVE EURV WATER SURFACE
¼" = 1'-0"

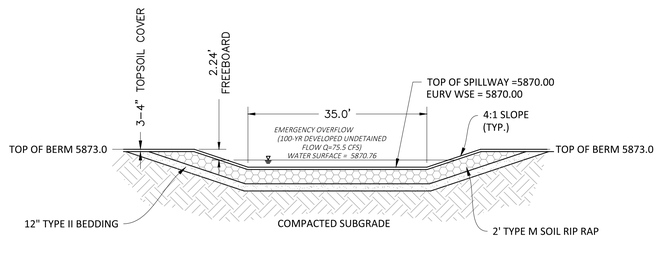


SECTION C
MAINTENANCE ACCESS ROAD
BELOW EURV WATER SURFACE
¼" = 1'-0"

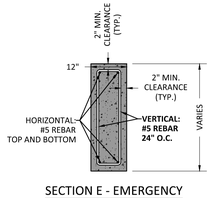
Point Table				
Point	**Elevation**	**Northing**	**Easting**	**Description**
TOE–11	5868.56	26158.38	88802.07	POND TOE
TOE–12	5867.99	26147.91	88824.77	POND TOE
TOE–13	5867.99	26134.33	88857.03	POND TOE
TOE–14	5867.77	26131.25	88880.33	POND TOE
TOE–15	5867.43	26153.85	88889.22	POND TOE
TOE–16	5868.07	26171.11	88875.68	POND TOE
TOE–17	5868.29	26179.55	88852.15	POND TOE
TOE–18	5868.47	26187.25	88828.37	POND TOE
TOE–19	5868.16	26180.86	88810.05	POND TOE
TT–5	5867.06	26165.13	88803.90	Trickle Channel
TT–6	5866.89	26156.19	88836.79	Trickle Channel
TT–7	5866.70	26149.71	88873.62	Trickle Channel
TT–8	5866.66	26147.87	88881.32	Trickle Channel



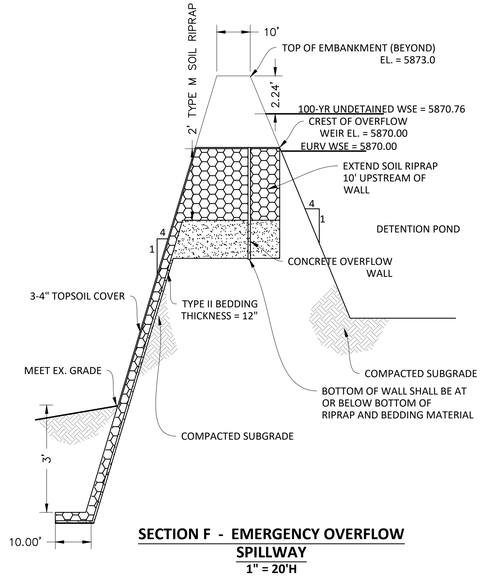
SECTION D - EMERGENCY OVERFLOW SPILLWAY CUTOFF WALL
1" = 10'



SECTION G - EMERGENCY OVERFLOW SPILLWAY
1" = 10'



SECTION E - EMERGENCY
OVERFLOW SPILLWAY
1" = 2'



SECTION F - EMERGENCY OVERFLOW SPILLWAY
1" = 20'H
1"=2'V

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

NOTE:

1. PRIOR TO FINAL TOP SOILING, SEEDING AND MULCHING, CONTRACTOR SHALL OBTAIN FINAL AS-BUILT VOLUME CHECK AND CERTIFICATION FROM THE ENGINEER. FAILURE TO DO SO WILL REQUIRE THE CONTRACTOR TO REMOVE AND REPLACE TOP SOIL MATERIALS AT HIS/HER EXPENSE.
2. REFER TO GENERAL NOTES ON SHEET 2 AND DETAILS ON FOLLOWING SHEETS
3. EMBANKMENT FILL SHALL MEET THE MINIMUM REQUIREMENTS OF TOWN OF PARKER AND THE GEOTECHNICAL REPORT. SEE GENERAL NOTES ON SHEET 2.
4. THIS WATER QUALITY BASIN HAS BEEN SIZED TO SERVE AS A TEMPORARY SEDIMENT BASIN DURING CONSTRUCTION. ONCE CONSTRUCTION IS COMPLETE, THE SPILLWAY SHALL BE LOWERED TO THE EURV WATER SURFACE ELEVATION, AS SHOWN ON THE DETAIL ON THIS SHEET.

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TOWN OF PARKER, DIRECTOR OF ENGINEERING — DATE

DRAWN BY	DATE	REVISIONS	
EG	F. 03/02/20	UPDATE GAT & ADD OFF-LINE DET BASIN	
	E. 12/21/16	FINAL SUBMITTAL	
	D. 6/17/16	4TH SUBMITTAL	
	C. 6/14/16	3RD SUBMITTAL	
	B. 4/11/16	2ND SUBMITTAL	
	A. 11/2015	1ST SUBMITTAL	

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COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
EAST WATER QUALITY POND PLAN

PROJ. MGR.:	RJM
PROJ. ASSOC.:	BRB
DRAWN BY:	ETG
DATE:	12/2015

SHEET
30 OF 49
CLCPKC3

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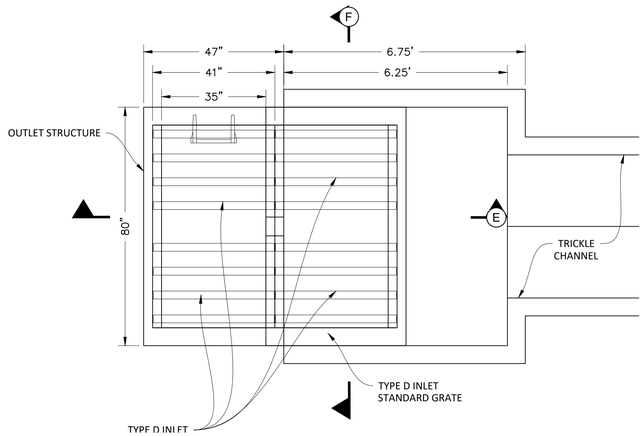
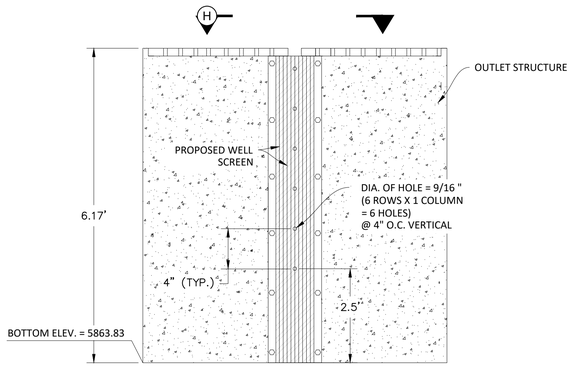
PRELIMINARY - NOT FOR CONSTRUCTION

Plotted: 3/3/2020 4:10 PM Data Name: P:\Civil\3-Projects\ComSouth\12-Filing 1 No. GAT\ComSouth03-Ultimate Belford Ave\dwg\Final Drawings\Plan Set\Town\CLCPKC3-Pond1 Plan.dwg Updated By: MMcGuire

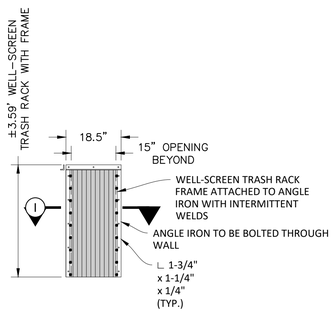
NOTE: DRAINAGE STRUCTURES REQUIRE FINAL SHOP DRAWINGS AND STRUCTURAL ENGINEERING TO BE SUBMITTED TO THE TOWN OF PARKER AND MANHARD CONSULTING FOR FINAL REVIEW AND APPROVAL. ANY CHANGE IN STRUCTURE TYPE, CONFIGURATION OR SHAPE WILL REQUIRE A "NOTICE OF CHANGE" AND WILL REQUIRE REVISIONS TO THE CIVIL DRAWINGS TO REFLECT THEIR CHANGES.



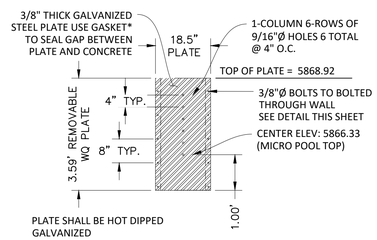
PLAN - EAST POND OUTLET STRUCTURE
1"=2'



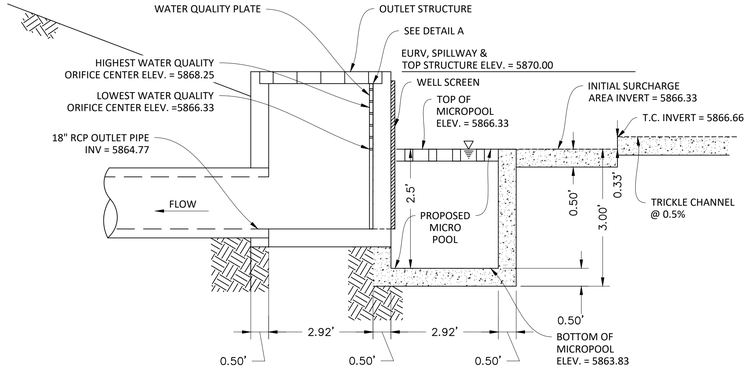
PROFILE VIEW SECTION F-F
N.T.S.



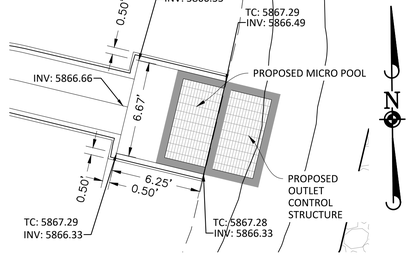
WELL-SCREEN
TRASH RACK DETAIL
N.T.S.



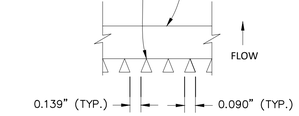
WATER QUALITY
CONTROL PLATE
N.T.S.



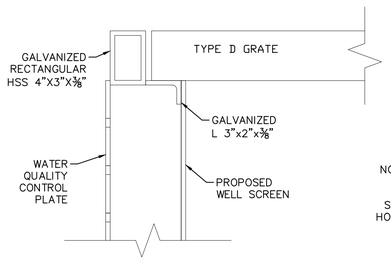
PROFILE VIEW SECTION E-E
N.T.S.



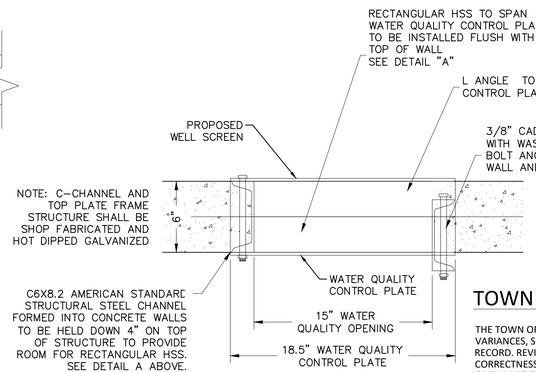
EAST POND INITIAL SURCHARGE AREA
1"=5'



SECTION I-I WELL-SCREEN TRASH RACK
N.T.S.



DETAIL A
INSTALLATION INFORMATION
N.T.S.



SECTION H-H
OPENING DETAIL
N.T.S.

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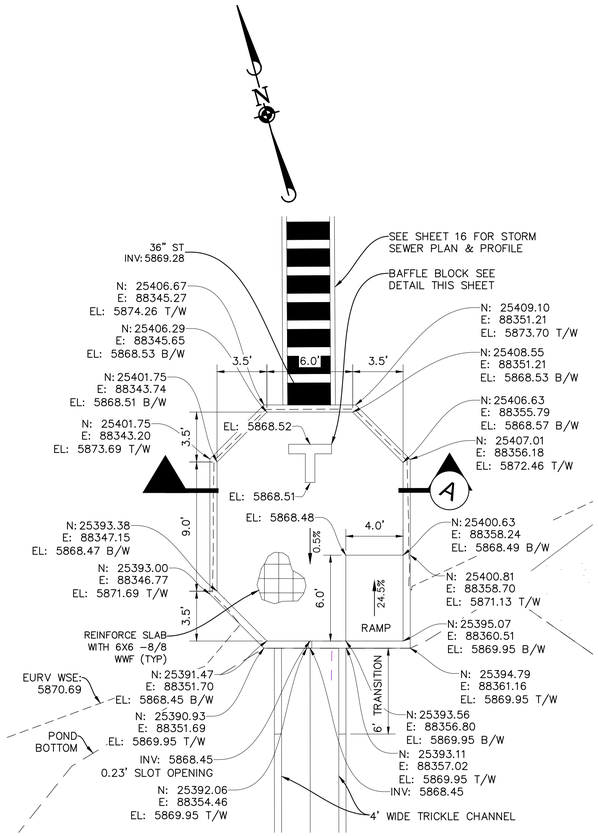
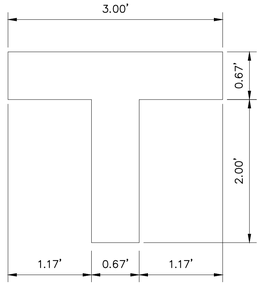
TOWN OF PARKER, DIRECTOR OF ENGINEERING DATE

| DRAWN BY | | |



WEST WATER QUALITY POND FOREBAY
1"=5'



WEST WATER QUALITY POND FOREBAY BAFFLE BLOCK DETAIL
1"=1'

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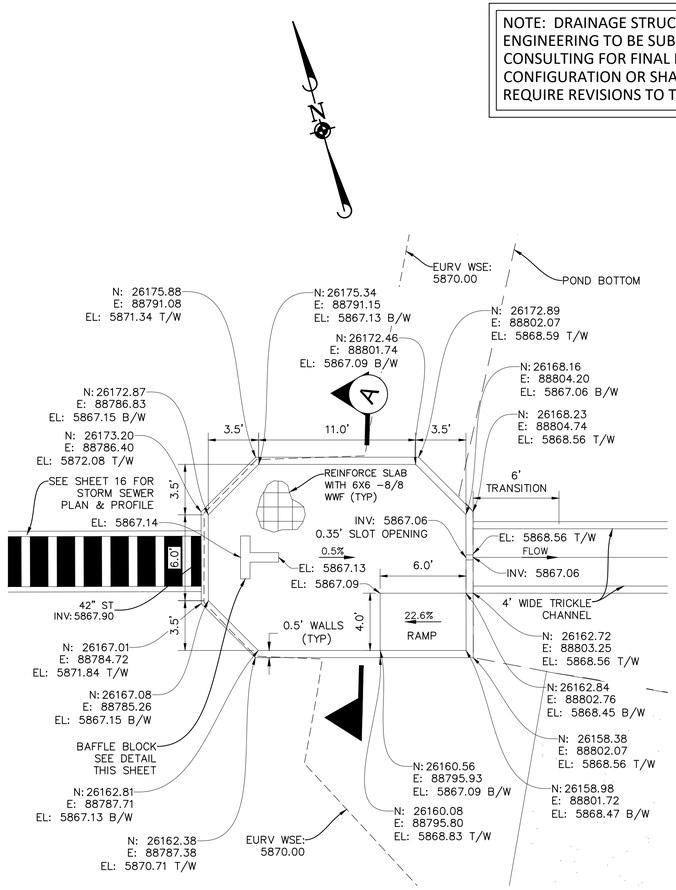
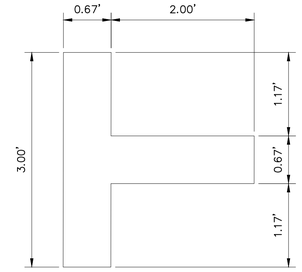
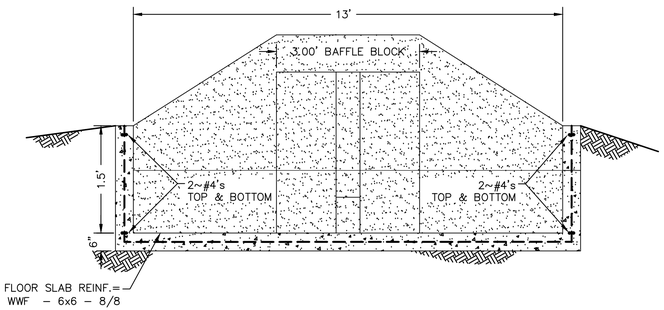


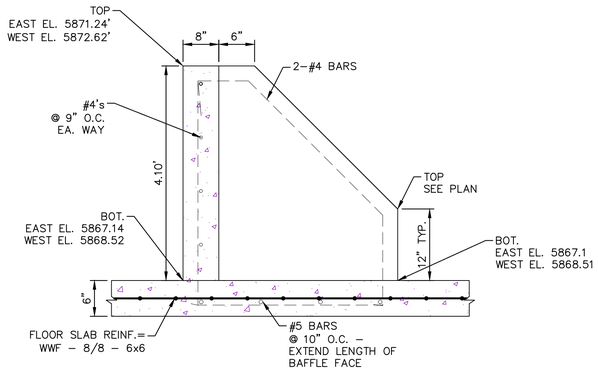
EAST WATER QUALITY POND FOREBAY
1"=5'



EAST WATER QUALITY POND FOREBAY BAFFLE BLOCK DETAIL
1"=1'



SECTION A-A
N.T.S.



BAFFLE BLOCK REINFORCING DETAIL
1"=0.5'

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

TOWN OF PARKER APPROVALS

THE TOWN OF PARKER REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE TOWNS 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, DIRECTOR OF ENGINEERING — DATE

DATE	REVISIONS	DRAWN BY
03/02/20	F. UPDATE GAT & ADD OFF-LINE DET BASIN	EG
12/21/16	E. FINAL SUBMITTAL	
6/21/16	D. 4TH SUBMITTAL	
3/24/16	C. 3RD SUBMITTAL	
4/11/16	B. 2ND SUBMITTAL	
11/2015	A. 1ST SUBMITTAL	

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COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
WATER QUALITY FOREBAY PLAN

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET 32 OF 49
CLCPKC3

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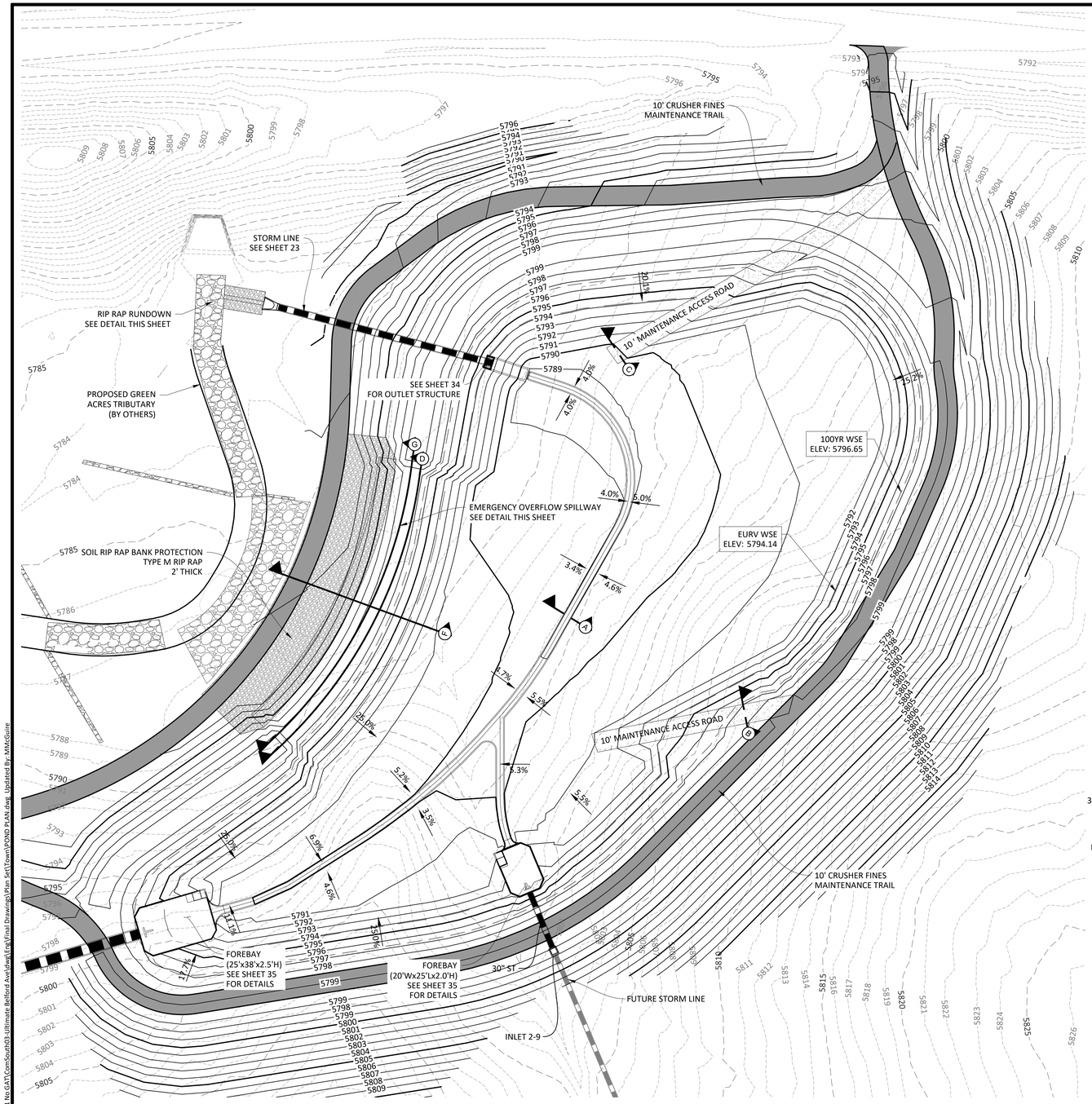
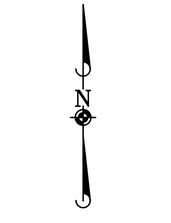
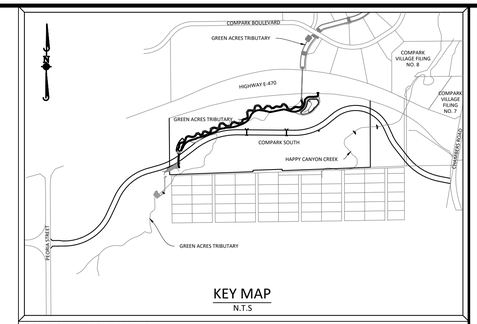
PRELIMINARY - NOT FOR CONSTRUCTION

Plotted: 3/3/2020 4:11 PM Dwg Name: P:\Clcpkc3\ComSouth\2-Filing 1 No. GAT\ComSouth03-Ultimate Belford Ave\data\Engr\Final Drawings\Plan Set\Town\CLCPKC3-Forebay Plan.dwg Updated By: MMcGuire



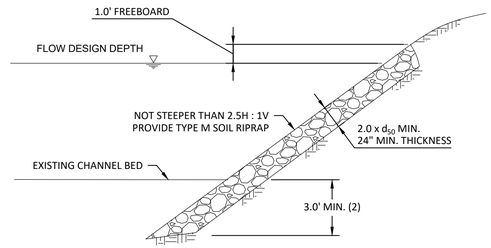




KEY MAP
N.T.S

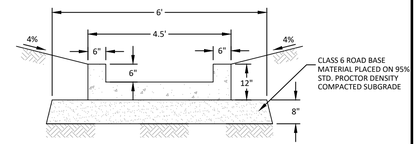
SOURCE BENCHMARKS:

DOUGLAS COUNTY BM 1.115010
A DOUGLAS COUNTY GIS MONUMENT SET IN CONCRETE LOCATED APPROXIMATELY 130 FEET SOUTHWESTERLY OF THE CENTERLINE OF CHAMBERS ROAD AND 95 FEET NORTHWESTERLY OF THE CENTERLINE OF COMPARK BOULEVARD. ELEVATION = 5752.84 (NAVD 88)



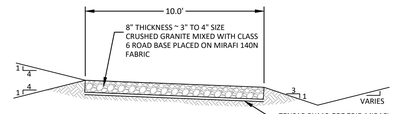
(1) USE SOIL RIPRAP WHEN d_{50} IS LESS THAN OR EQUAL TO TYPE M. (SUGGEST USE OF SOIL RIPRAP FOR LARGER RIPRAP SIZES AS WELL)
(2) 5 - FEET MINIMUM IN SANDY OR EROSIVE SOILS
(3) ELIMINATE GRANULAR BEDDING WHEN SOIL-RIPRAP IS USED

RIP-RAP TOE PROTECTION
N.T.S.

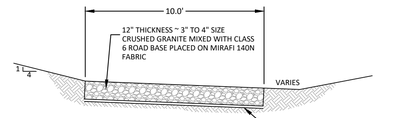


SECTION A
4.5' WIDE TRICKLE CHANNEL
½" = 1'-0"

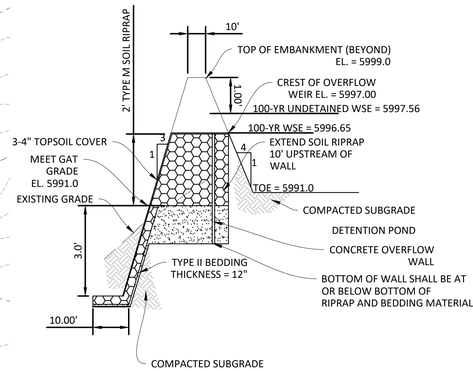
NOTE: USE 4 POUNDS PER CU. YD. OF FIBRE MESH TO REINFORCE CONCRETE



SECTION B
MAINTENANCE ACCESS ROAD
ABOVE EURV WATER SURFACE
¼" = 1'-0"



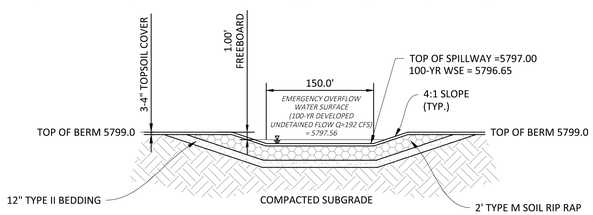
SECTION C
MAINTENANCE ACCESS ROAD
BELOW EURV WATER SURFACE
¼" = 1'-0"



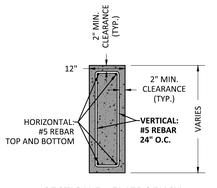
SECTION F - EMERGENCY OVERFLOW SPILLWAY
N.T.S.

NOTE:

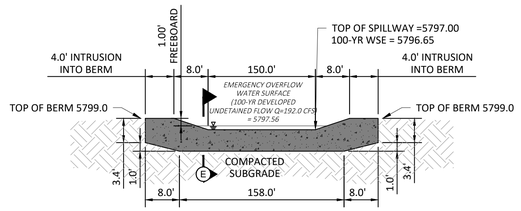
1. PRIOR TO FINAL TOP SOILING, SEEDING AND MULCHING, CONTRACTOR SHALL OBTAIN FINAL AS-BUILT VOLUME CHECK AND CERTIFICATION FROM THE ENGINEER. FAILURE TO DO SO WILL REQUIRE THE CONTRACTOR TO REMOVE AND REPLACE TOP SOIL MATERIALS AT HIS/HER EXPENSE.
2. REFER TO GENERAL NOTES ON SHEET 2 AND DETAILS ON FOLLOWING SHEETS
3. EMBANKMENT FILL SHALL MEET THE MINIMUM REQUIREMENTS OF TOWN OF PARKER AND THE GEOTECHNICAL REPORT. SEE GENERAL NOTES ON SHEET 2.



SECTION G - EMERGENCY OVERFLOW SPILLWAY
N.T.S.



SECTION E - EMERGENCY OVERFLOW SPILLWAY CUTOFF WALL
1" = 2'



SECTION D - EMERGENCY OVERFLOW SPILLWAY CUTOFF WALL
N.T.S.

Know what's below.
Call before you dig.

DATE	REVISIONS	DRAWN BY
03/02/20	UPDATE GAT & ADD OFF-LINE DET BASIN	
12/21/16	FINAL SUBMITTAL	
11/1/16	4TH SUBMITTAL	
6/24/16	3RD SUBMITTAL	
4/1/16	2ND SUBMITTAL	
11/2015	1ST SUBMITTAL	EG

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COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
DETENTION POND PLAN

PRELIMINARY - NOT FOR CONSTRUCTION

PROJ. MGR.:	RJM
PROJ. ASSOC.:	BRB
DRAWN BY:	ETG
DATE:	12/2015

SHEET
33 OF 49
CLCPKC3 ---

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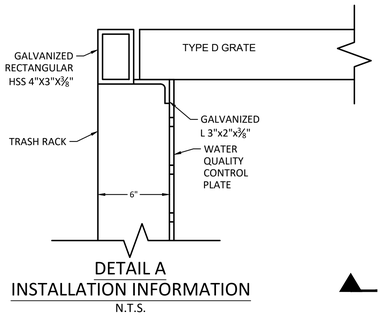
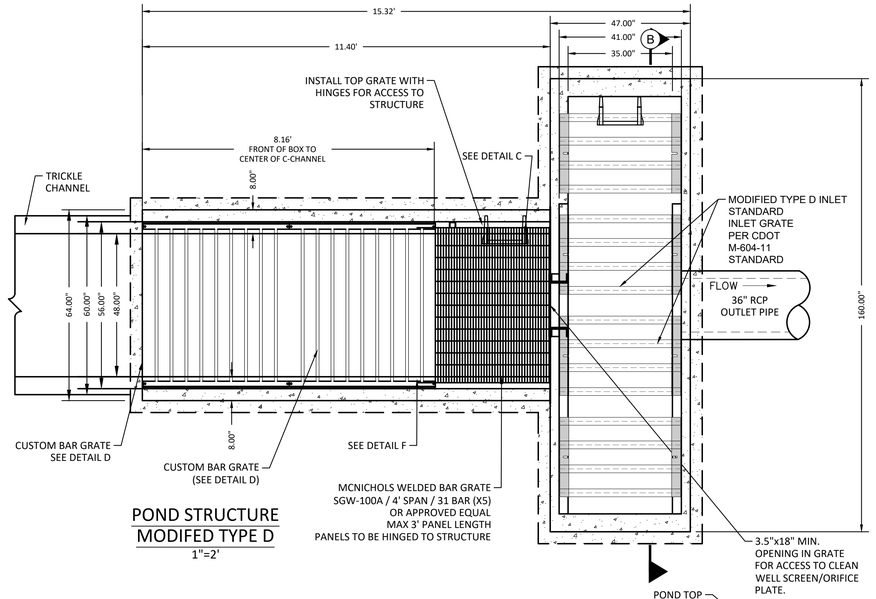
Plotted: 3/3/2020 4:16 PM Dwg Name: P:\Ctpnk3\ComSouth12-Filing 1 No GAT\ComSouth03-Ultimate Belford Ave\dwg\Eng\Final Drawings\Plan Set\Town\POND PLAN.dwg Updated By: MMcGuire



DETAIL A
INSTALLATION INFORMATION
N.T.S.



POND STRUCTURE
MODIFED TYPE D
1"=2'

NOTES:
1. REFER TO CDOT M-604-11 STANDARD, TYPE "D" INLET FOR CONCRETE, STEEL GRATE AND STEP REQUIREMENTS. REINFORCING BARS SHALL BE PLACED IN ALL INTERIOR, EXTERIOR AND BASE WALLS.

2. STEPS SHALL BE PROVIDED , AS SHOWN ON DETAIL AND SHALL BE IN ACCORDANCE WITH AASHTO M 199.

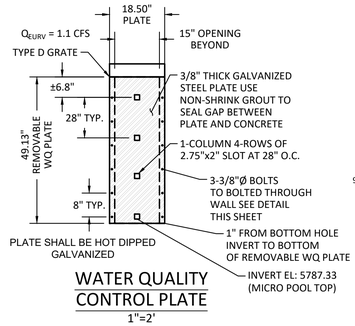
3. GRATES SHALL BE STANDARD GRATE TYPE.

4. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS TO ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION.

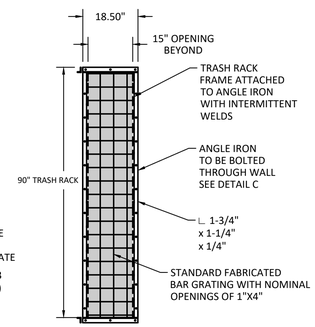
5. CONTRACTOR TO HAVE PROFESSIONAL ENGINEER DESIGN AND CERTIFY THE OUTLET STRUCTURE.

6. NO GAP SHALL BE PRESENT AT THE TOP OF THE OUTLET STRUCTURE BETWEEN THE WELL SCREEN AND ORIFICE PLATE.

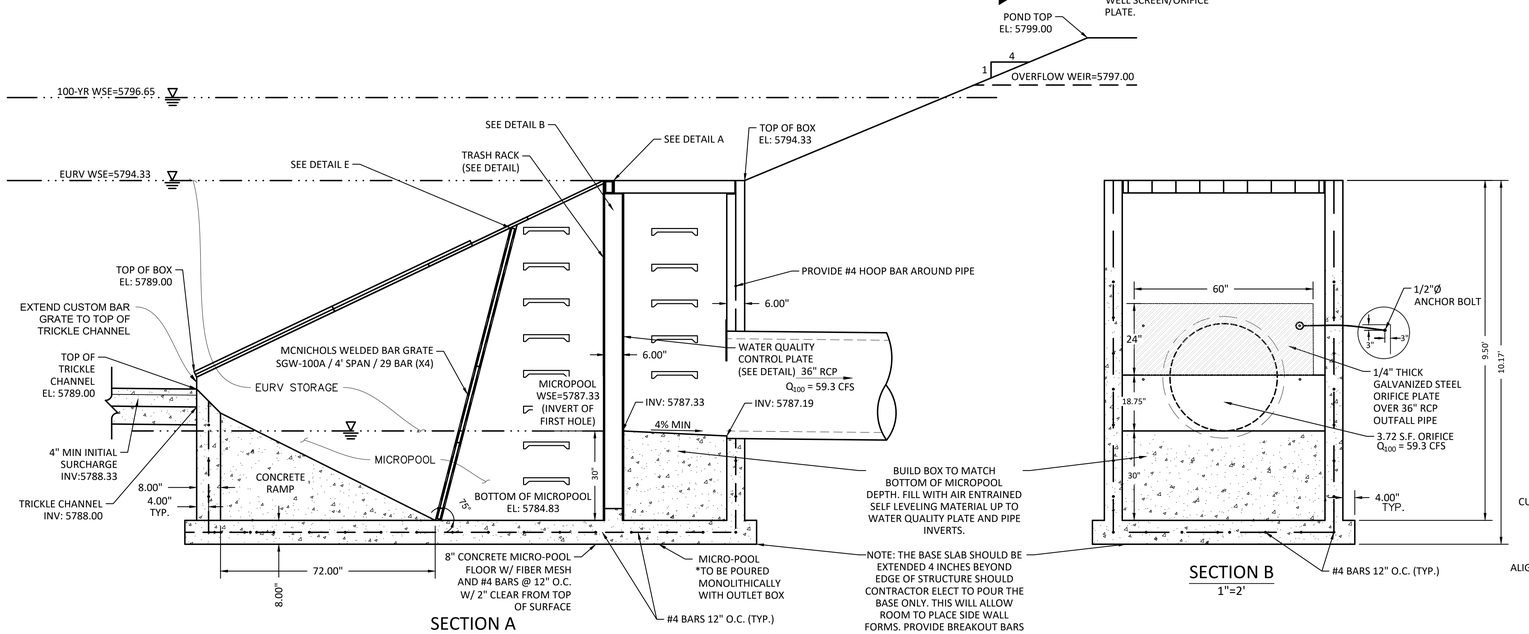
NOTE: DRAINAGE STRUCTURES REQUIRE FINAL SHOP DRAWINGS AND STRUCTURAL ENGINEERING TO BE SUBMITTED TO THE TOWN OF PARKER AND MANHARD CONSULTING FOR FINAL REVIEW AND APPROVAL. ANY CHANGE IN STRUCTURE TYPE , CONFIGURATION OR SHAPE WILL REQUIRE A "NOTICE OF CHANGE" AND WILL REQUIRE REVISIONS TO THE CIVIL DRAWINGS TO REFLECT THEIR CHANGES.



WATER QUALITY
CONTROL PLATE
1"=2'

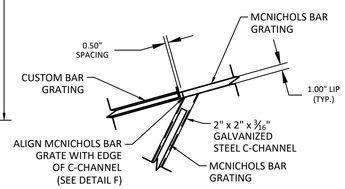


TRASH RACK DETAIL
1"=2'

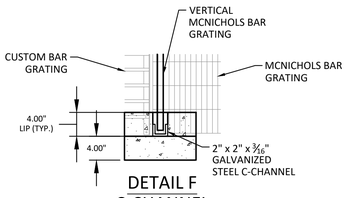


SECTION A
1"=2'

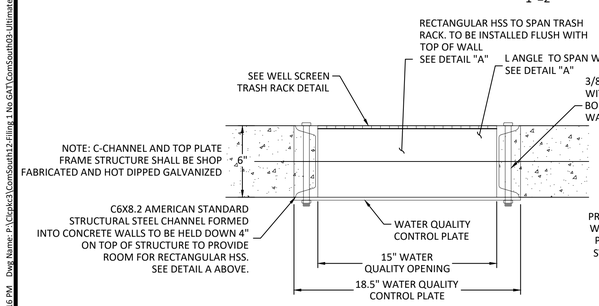
SECTION B
1"=2'



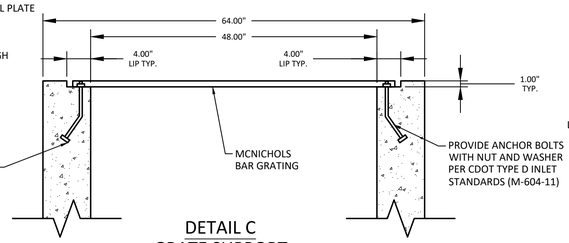
DETAIL E
GRATE JUNCTION
N.T.S.



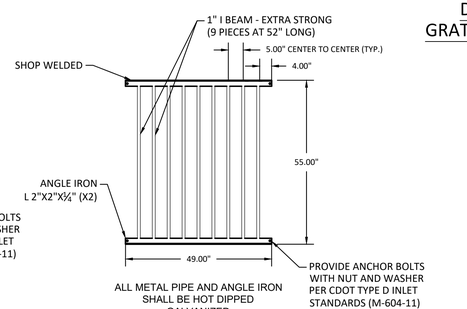
DETAIL F
C-CHANNEL
N.T.S.



DETAIL B
OPENING DETAIL
N.T.S.



DETAIL C
GRATE SUPPORT
N.T.S.



DETAIL D
CUSTOM BAR GRATE
N.T.S.

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

DATE	REVISIONS	DRAWN BY
03/02/20	UPDATE GAT & ADD OFF-LINE DET BASIN	ETG
12/21/16	FINAL SUBMITTAL	
11/1/16	4TH SUBMITTAL	
6/24/16	3RD SUBMITTAL	
4/11/16	2ND SUBMITTAL	
11/2015	1ST SUBMITTAL	

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COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
DETENTION POND OUTLET STRUCTURE DETAIL

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET
34 OF 49
CLCPKC3 ---

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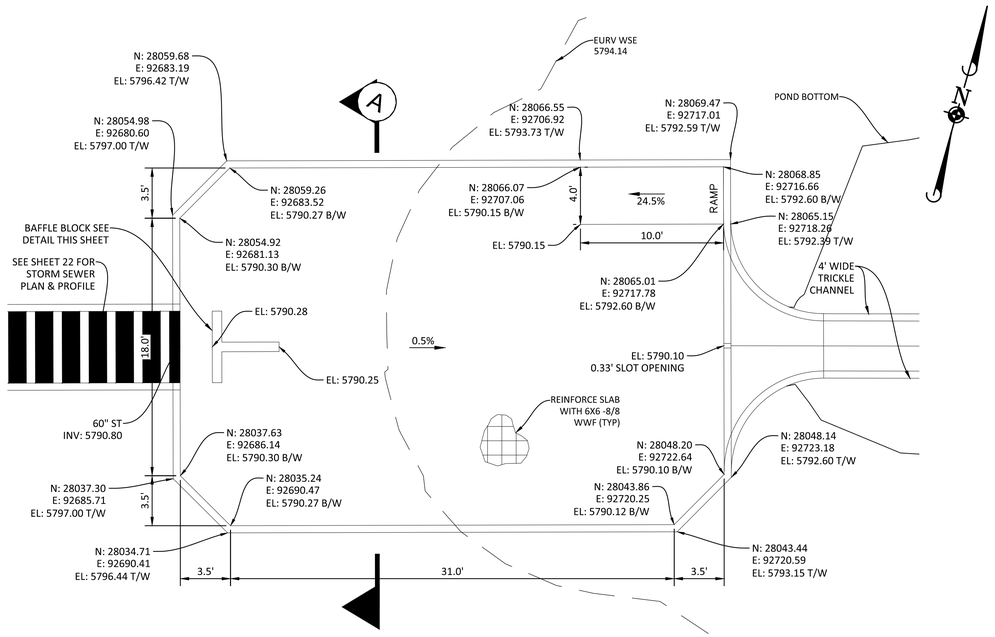
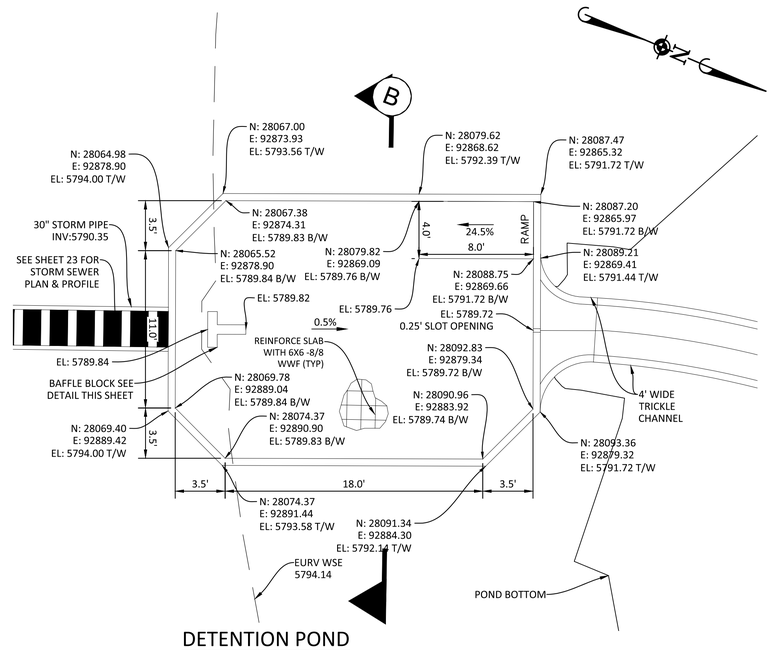
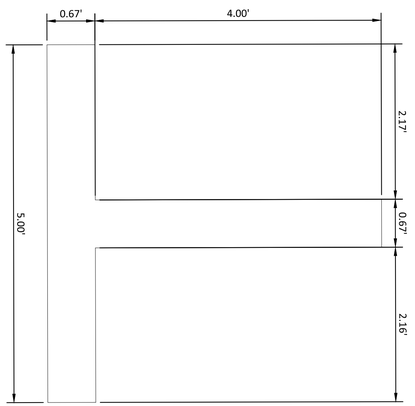
Plotted: 3/3/2020 4:16 PM Dwg Name: P:\Clcpkc3\ComSouth12-Filing 1 No GAT\ComSouth03-Ultimate Belford Ave\dwg\Eng\Final Drawings\Plan Set\Town\CLCPKC3-STORM OUTLET STRUCTURE.dwg Updated By: MMcGuire



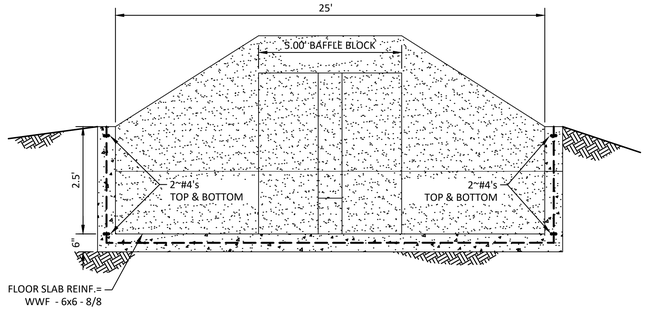
DETENTION POND
FOREBAY A
1"=5'



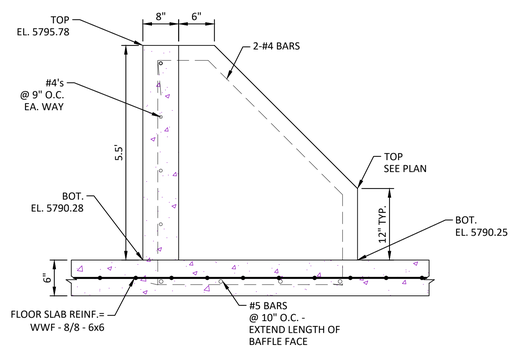
DETENTION POND
FOREBAY B
1"=5'



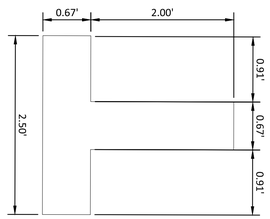
DETENTION POND
FOREBAY A
BAFFLE BLOCK DETAIL
1"=1'



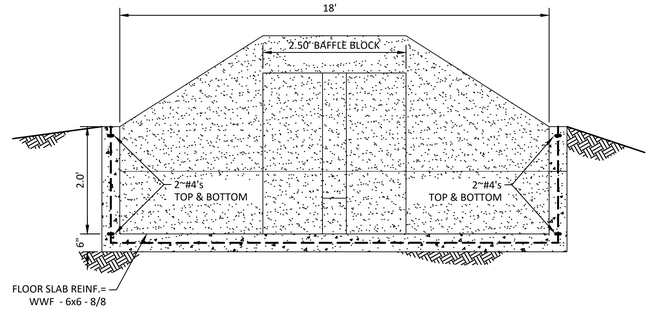
SECTION A-A
N.T.S.



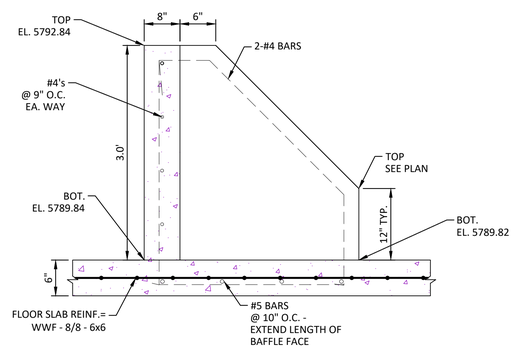
BAFFLE BLOCK
REINFORCING DETAIL
1"=0.5'



DETENTION POND
FOREBAY B
BAFFLE BLOCK DETAIL
1"=1'



SECTION B-B
N.T.S.



BAFFLE BLOCK
REINFORCING DETAIL
1"=0.5'

REVISIONS				DRAWN BY
DATE				
	F.	03/02/20	UPDATE GAT & ADD OFF-LINE DET BASIN	MAM
	E.	12/21/16	FINAL SUBMITTAL	EG
	D.	11/1/16	4TH SUBMITTAL	EG
	C.	05/31/16	3RD SUBMITTAL	EG
	B.	4/11/16	2ND SUBMITTAL	EG
	A.	11/2015	1ST SUBMITTAL	EG

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COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
DETENTION POND FOREBAY PLAN

PROJ. MGR.:	RJM
PROJ. ASSOC.:	BRB
DRAWN BY:	ETG
DATE:	12/2015

SHEET
35 OF 49
CLCPKC3 ---

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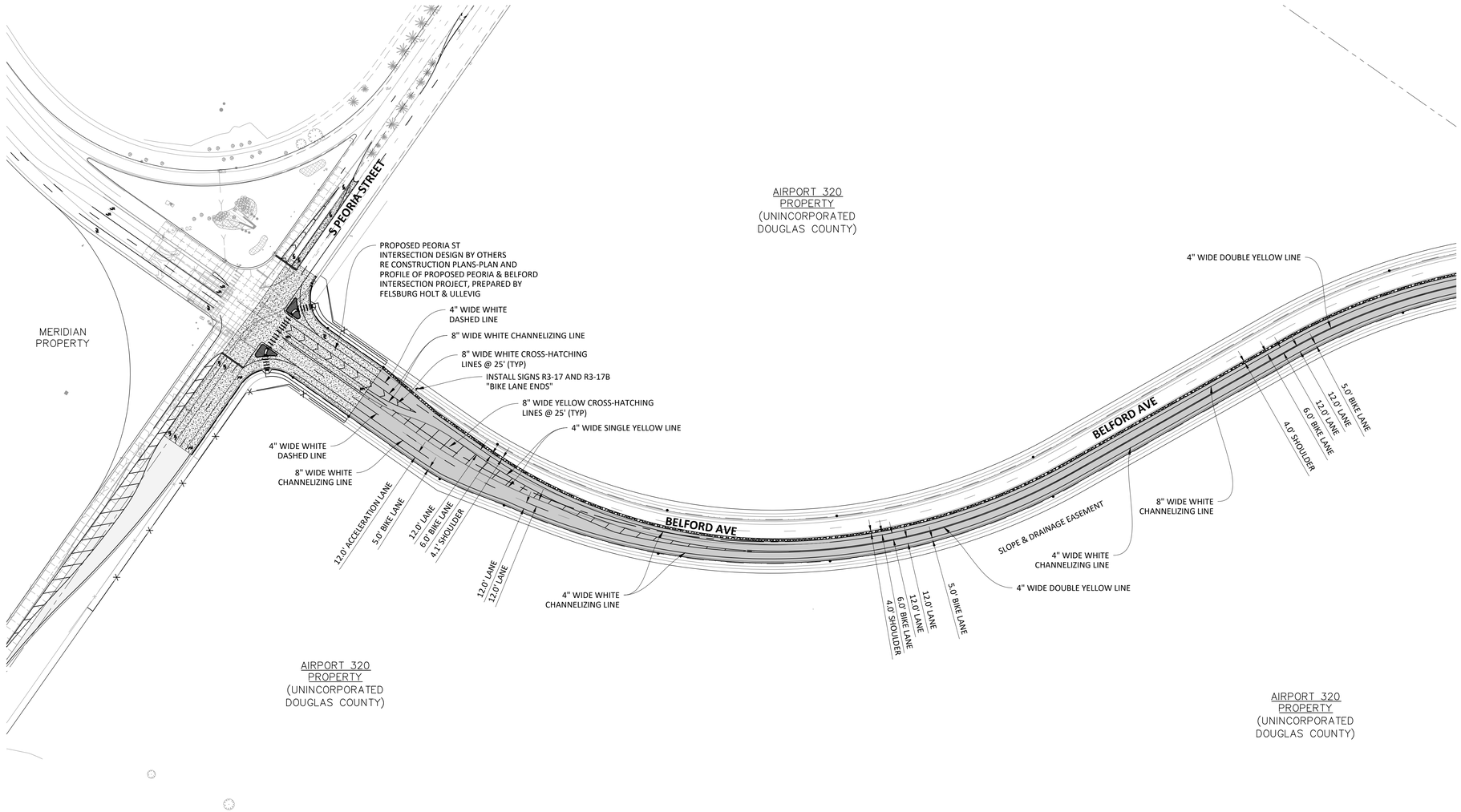
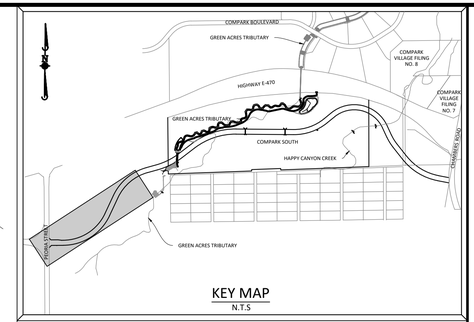
PRELIMINARY - NOT FOR CONSTRUCTION

Plotted: 3/3/2020 4:17 PM Dwg Name: P:\Clcpkc3\ComSouth12-Filing 1 NO GAT\ComSouth03-Ultimate Belford Ave\dwg\Eng\Final Drawings\Plan Set\Town\Detention Pond - Forebay Plan.dwg Updated By: MMcGuire





KEY MAP
N.T.S

SOURCE BENCHMARKS:

DOUGLAS COUNTY BM 1.115010
A DOUGLAS COUNTY GIS MONUMENT SET IN CONCRETE LOCATED APPROXIMATELY 130 FEET SOUTHWESTERLY OF THE CENTERLINE OF CHAMBERS ROAD AND 95 FEET NORTHWESTERLY OF THE CENTERLINE OF COMPARK BOULEVARD. ELEVATION = 5752.84 (NAVD 88)

0 50 100 200
SCALE: 1"=100'

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

LEGEND

IIIII	CROSS WALK 24" X 10' WHITE EVENLY SPACED
↑	THROUGH LANE
↰	LEFT TURN ONLY
↱	RIGHT TURN ONLY
↑↰	LEFT OR THROUGH ONLY
↑↱	RIGHT OR THROUGH ONLY

NOTES

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TOWN OF PARKER APPROVALS

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TOWN OF PARKER, DIRECTOR OF ENGINEERING — DATE

DATE	REVISIONS	DRAWN BY
03/02/20	F. UPDATE GAT & ADD OFF-LINE DET BASIN	
12/21/16	E. FINAL SUBMITTAL	
11/2/16	D. 4TH SUBMITTAL	
6/24/16	C. 3RD SUBMITTAL	
4/11/16	B. 2ND SUBMITTAL	
11/2015	A. 1ST SUBMITTAL	EG

Manhard CONSULTING
7600 East Orchard Road, Suite 150-N, Greenwood Village, CO 80111 ph: 303.708.0500 manhard.com
Civil Engineering | Surveying | Water Resource Management | Construction Management

COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
SIGNAGE AND STRIPING

PROJ. MGR.: RIM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET
36 OF 49
CLCPKC3 ---

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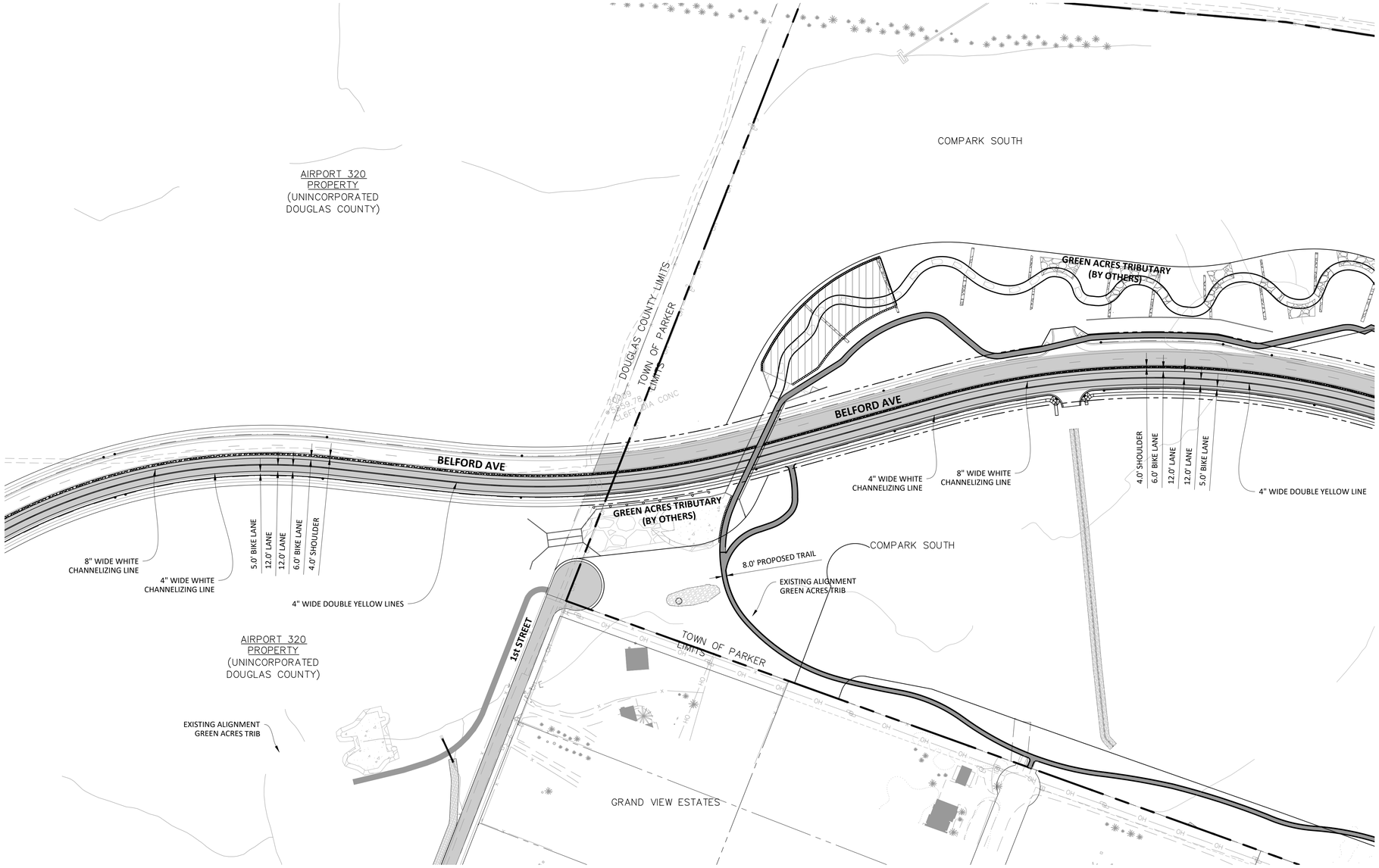
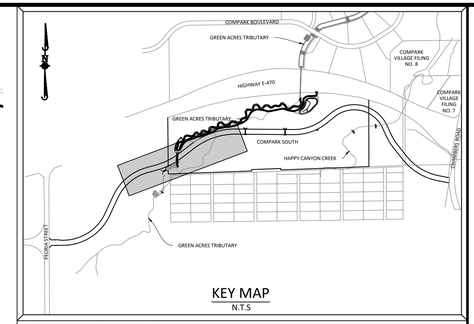
PRELIMINARY - NOT FOR CONSTRUCTION

Plotted: 3/3/2020 4:18 PM Dwg Name: P:\Clcpkc3\ComSouth12-Filing 1 No GAT\ComSouth03-Ultimate Belford Ave\dwg\Eng\Final Drawings\Plan Set\Town\CLCPKC3-Signage and Striping (1).dwg Updated By: SKoziol

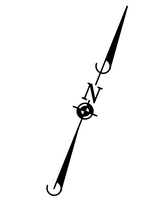




KEY MAP
N.T.S

SOURCE BENCHMARKS:

DOUGLAS COUNTY BM 1.115010
A DOUGLAS COUNTY GIS MONUMENT SET IN CONCRETE LOCATED APPROXIMATELY 130 FEET SOUTHWESTERLY OF THE CENTERLINE OF CHAMBERS ROAD AND 95 FEET NORTHWESTERLY OF THE CENTERLINE OF COMPARK BOULEVARD. ELEVATION = 5752.84 (NAVD 88)



0 50 100 200
SCALE: 1"=100'

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

LEGEND

IIIIII	CROSS WALK 24" X 10' WHITE EVENLY SPACED
↑	THROUGH LANE
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TOWN OF PARKER, COLORADO
SIGNAGE AND STRIPING

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET
37 OF 49
CLCPKC3 ---

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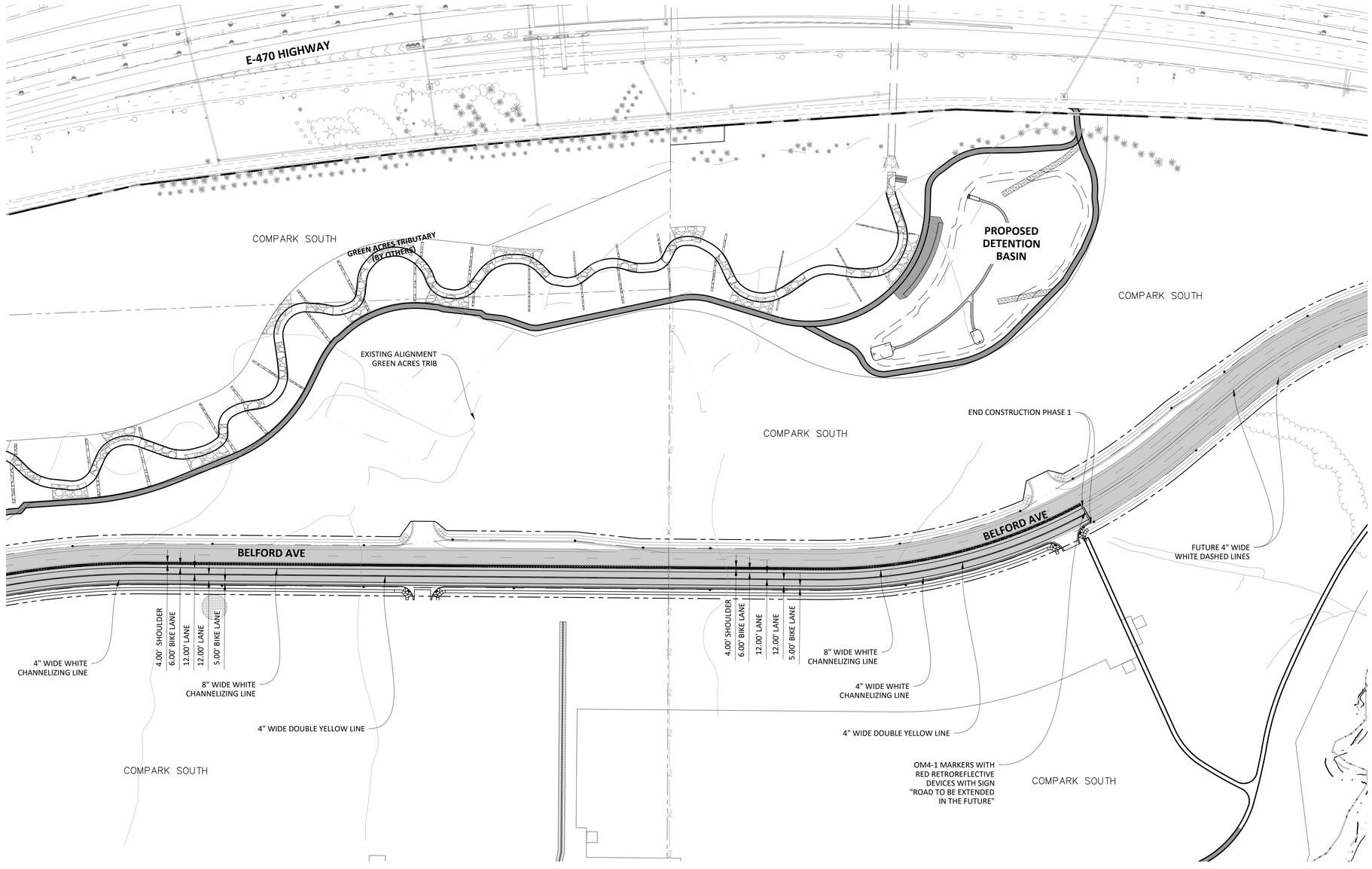
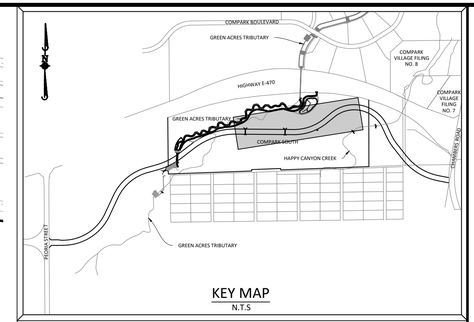
PRELIMINARY - NOT FOR CONSTRUCTION

Plotted: 3/3/2020 4:20 PM Dwg Name: J:\Clpkc3\Com\South12-Filing 1 No GAT\Com\South03-Ultimate Belford Ave\dwg\Engl\Final Drawings\Plan Set\Town\CLCPKC3-Signage and Striping (2).dwg Updated By: SKotsch





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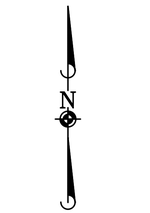

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SIGNAGE AND STRIPING

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET
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PRELIMINARY - NOT FOR CONSTRUCTION

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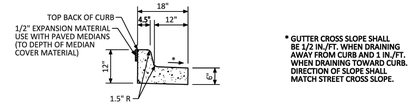
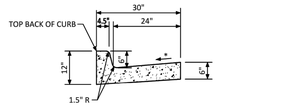
Plotted: 3/3/2020 4:21 PM Dwg Name: P:\Ccpkc3\ComSouth12-Filing 1 No GAT\ComSouth03-Ultimate Belford Ave\dwg\Engl\Final Drawings\Plan Set\Town\CLCPKC3-Signage and Striping-[3].dwg Updated By: MMcGuire

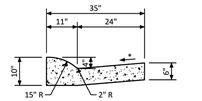


MEDIAN CURB AND GUTTER SECTION
(CDOT CURB AND GUTTER TYPE 2 (SECTION I-B))

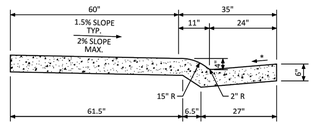
* GUTTER CROSS SLOPE SHALL BE 1/2 IN./FT. WHEN DRAINING AWAY FROM CURB AND 1 IN./FT. WHEN DRAINING TOWARD CURB. DIRECTION OF SLOPE SHALL MATCH STREET CROSS SLOPE.



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



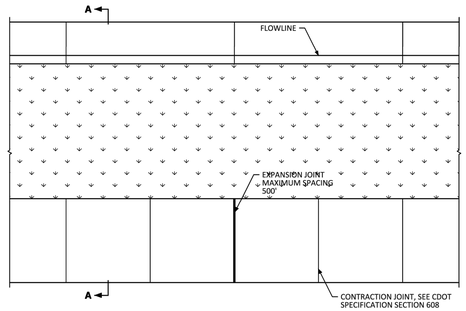
MOUNTABLE CURB AND GUTTER SECTION



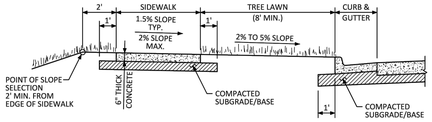
MONOLITHIC COMBINATION CURB, GUTTER AND SIDEWALK SECTION

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

PARKER COLORADO | **CURB, GUTTER, AND SIDEWALK SECTIONS STANDARD DETAIL** | DATE DECEMBER 2016 | DETAIL 3 | 1 OF 1



JOINT SPACING



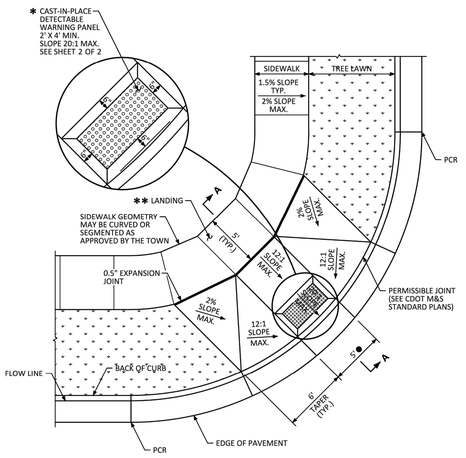
SECTION A-A

GENERAL NOTES

1. CONTRACTION JOINTS ON CONCRETE TRAILS SHALL BE SAWCUT.

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

PARKER COLORADO | **DETACHED SIDEWALK STANDARD DETAIL** | DATE DECEMBER 2016 | DETAIL 4 | 1 OF 2



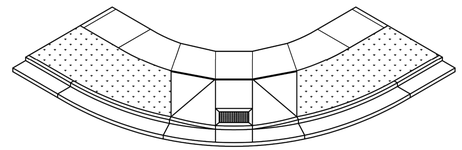
✱ DETECTABLE WARNINGS SHALL BE ONE OF CAST-IN-PLACE THE PRODUCTS APPROVED FOR USE AS LISTED ON CDOT'S APPROVED LIST.

✱✱ LANDING SHALL HAVE A MAXIMUM OF 2% SLOPE IN EACH DIRECTION.

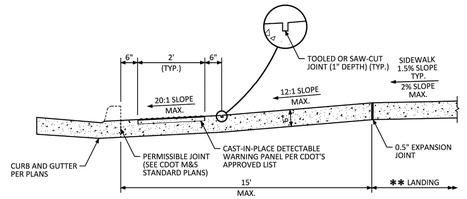
● FOR RESIDENTIAL COLLECTOR/COLLECTOR LAYOUT OR COLLECTOR/ARTERIAL LAYOUT, CURB RAMP SHALL BE 7' WIDE.

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

PARKER COLORADO | **DIAGONAL CURB RAMP (DETACHED SIDEWALK) LAYOUT STANDARD DETAIL** | DATE DECEMBER 2016 | DETAIL 15 | 1 OF 2



ISOMETRIC

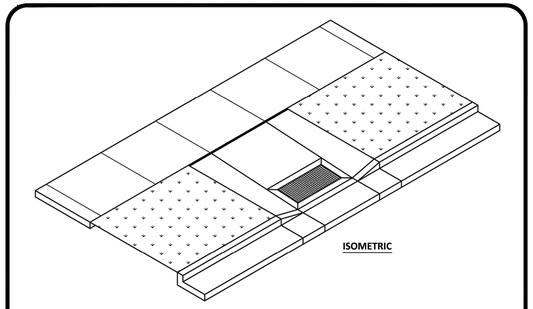


SECTION A-A

✱✱ LANDING SHALL HAVE A MAXIMUM OF 2% SLOPE IN EACH DIRECTION.

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

PARKER COLORADO | **DIAGONAL CURB RAMP LAYOUT STANDARD DETAIL** | DATE DECEMBER 2016 | DETAIL 15 | 2 OF 2



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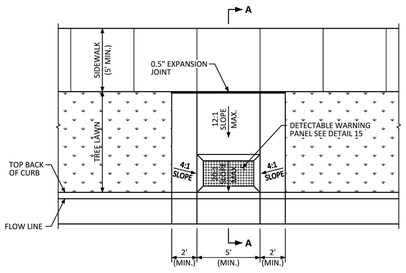
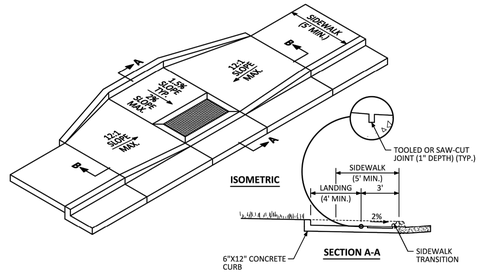


MIDBLOCK CURB RAMP

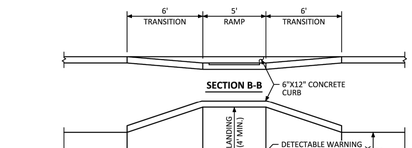
NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.

PARKER COLORADO | **MIDBLOCK CURB RAMP LAYOUT STANDARD DETAIL** | DATE DECEMBER 2016 | DETAIL 17 | 1 OF 2

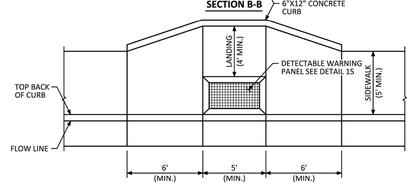


ISOMETRIC

SECTION A-A



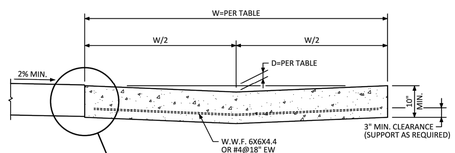
SECTION B-B



MIDBLOCK CURB RAMP

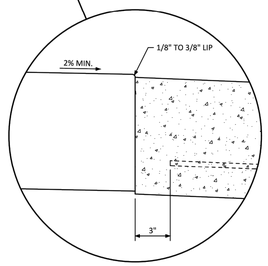
NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.

PARKER COLORADO | **MIDBLOCK CURB RAMP LAYOUT STANDARD DETAIL** | DATE DECEMBER 2016 | DETAIL 17 | 2 OF 2



SECTION A-A

WIDTH (W)	DEPTH (D)
8'-0" (TYP.)	3"
10'-0"	2 1/2"

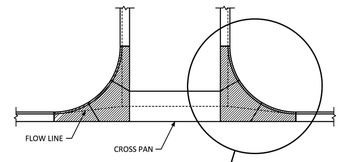


GENERAL NOTES

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

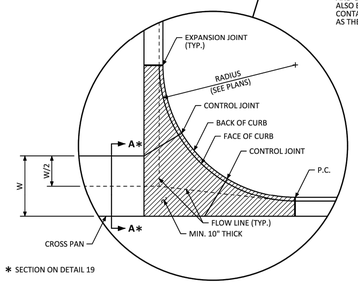
NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE TOWN OF PARKER.

PARKER COLORADO | **INTERSECTION CROSS PAN LAYOUT STANDARD DETAIL** | DATE DECEMBER 2016 | DETAIL 19 | 1 OF 2



PLAN VIEW

THIS AREA SHALL BE POURED MONOLITHICALLY WITH CURB AND GUTTER. THIS AREA SHALL ALSO BE THE SAME THICKNESS AND CONTAIN THE SAME REINFORCING AS THE CROSS PAN.



✱ SECTION ON DETAIL 19

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.

PARKER COLORADO | **INTERSECTION CROSS PAN LAYOUT STANDARD DETAIL** | DATE DECEMBER 2016 | DETAIL 19 | 2 OF 2

NO.	DATE	REVISIONS	DRAWN BY
F.	03/02/20	UPDATE GAT & ADD OFF-LINE DET BASIN	
E.	12/21/16	FINAL SUBMITTAL	
D.	11/1/16	4TH SUBMITTAL	
C.	6/24/16	3RD SUBMITTAL	
B.	4/11/16	2ND SUBMITTAL	
A.	11/2015	1ST SUBMITTAL	EG

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COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
STREET DETAILS

PROJ. MGR.: RIM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET 39 OF 49
CLCPKC3 ---

PRELIMINARY - NOT FOR CONSTRUCTION

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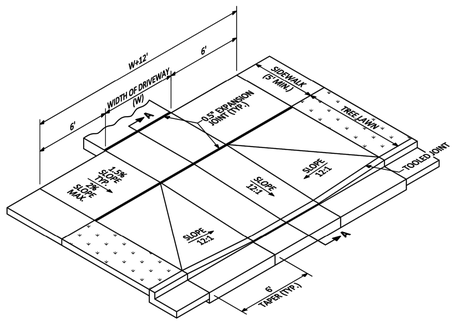
Plotted: 3/3/2020 4:21 PM Dwg Name: P:\Clcpkc3\ComSouth12-Filing 1 No GAT\ComSouth03-Ultimate Belford Ave\dwg\Engr\Final Drawings\Plan Set\Town\Cd CPKC3-Street Details.dwg Updated By: SKotsbab



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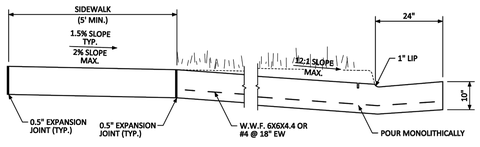
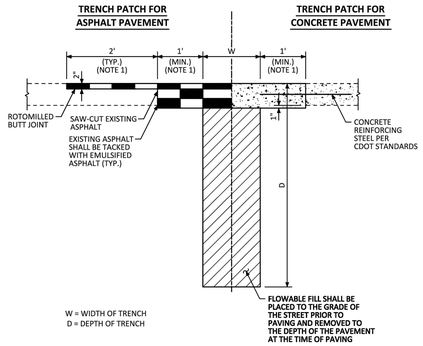


SECTION A-A

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

PARKER COLORADO | **COMMERCIAL DRIVEWAY WITH DETACHED SIDEWALK STANDARD DETAIL** | DATE DECEMBER 2016 | DETAIL 20 (2 OF 2)



GENERAL NOTES

1. SEE SECTION 9 OF THE ROADWAY CRITERIA MANUAL FOR LIMITS OF PATCHING. RECOMPACTION PER TOWN STANDARDS IS REQUIRED UNDER THE LIMITS OF THE PATCHING.

ASPHALT PAVEMENT NOTES

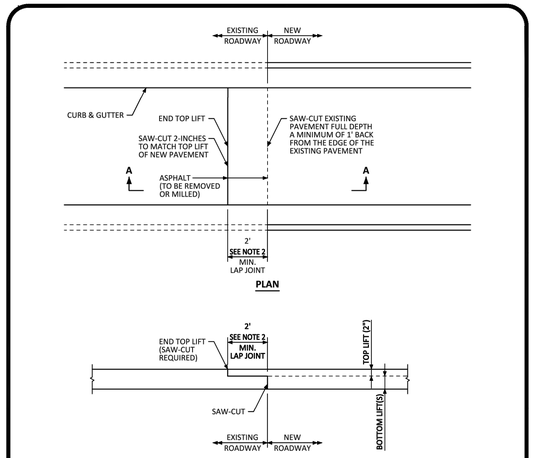
1. HOT MIX ASPHALT PATCH TO BE 6" THICK OR EXISTING PAVEMENT THICKNESS +1" (WHICHEVER IS GREATEST).
2. THE MINIMUM LIFT THICKNESS SHALL BE AT LEAST THREE TIMES (PREFERABLY FOUR TIMES) THE NOMINAL AGGREGATE SIZE. MAXIMUM LIFT THICKNESS SHALL BE FIVE TIMES THE NOMINAL AGGREGATE SIZE.
3. THE TOP LIFT OF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

PARKER COLORADO | **MINIMUM STREET PATCH DETERMINATION STANDARD DETAIL** | DATE DECEMBER 2016 | DETAIL 25 (1 OF 1)



PLAN

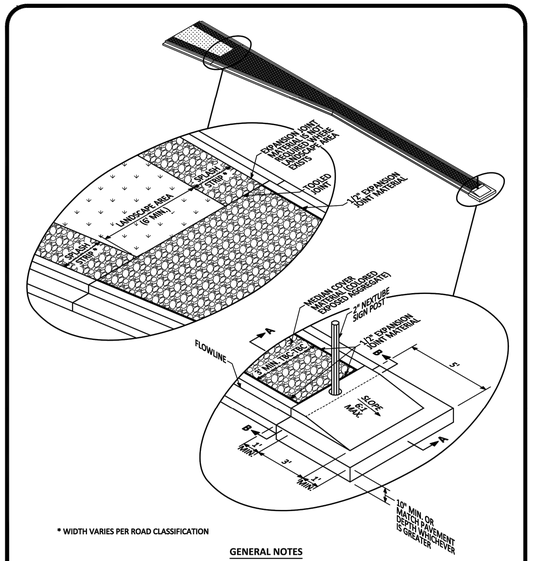
SECTION A-A

GENERAL NOTES

1. SAW-CUT EXISTING PAVEMENT FULL DEPTH TO PROVIDE A VERTICAL EDGE PRIOR TO PLACEMENT OF NEW ASPHALT AND SAW-CUT THE LAP JOINT 2-INCHES DEEP AT THE LAP JOINT DISTANCE.
2. THIS DETAIL APPLIES TO BOTH TRANSVERSE (WITH A 2-FOOT MIN. LAP JOINT) AND LONGITUDINAL (WITH A 1-FOOT MIN. LAP JOINT) ASPHALT JOINTS BETWEEN EXISTING AND NEW PAVEMENT.
3. SPECIFICATIONS AND ILLUSTRATIONS FOR CONCRETE PAVEMENT JOINTS ARE LOCATED IN CDOT'S M&S STANDARD PLANS AND CDOT'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
4. TEMPORARY ASPHALT RAMPS PLACED AT A 20:1 MAX. SLOPE SHALL BE REMOVED OR MILLED PRIOR TO PLACING FINAL ASPHALT.

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

PARKER COLORADO | **ASPHALT CONNECTION BETWEEN EXISTING AND NEW PAVEMENT STANDARD DETAIL** | DATE DECEMBER 2016 | DETAIL 26 (1 OF 1)



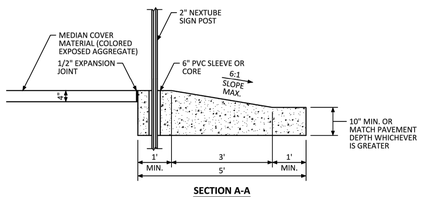
* WIDTH VARIES PER ROAD CLASSIFICATION

GENERAL NOTES

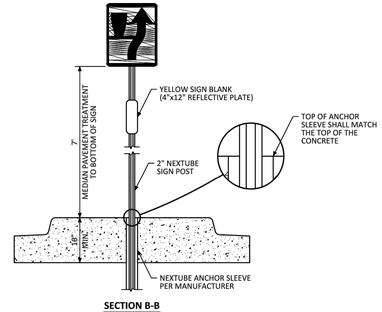
1. MEDIAN COVER MATERIAL SHALL BE DAVIS COLOR "RUSTIC BROWN" AND HAVE AN EXPOSED AGGREGATE FINISH. CONCRETE SHALL BE CDOT CLASS "B" WITH 3/8" MAXIMUM AGGREGATE SIZE.
2. TOOLED JOINTS IN THE MEDIAN COVER MATERIAL SHALL MATCH CURB AND GUTTER JOINTS.

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

PARKER COLORADO | **MEDIAN BULL NOSE ISOMETRIC STANDARD DETAIL** | DATE DECEMBER 2016 | DETAIL 27 (1 OF 2)



SECTION A-A



SECTION B-B

GENERAL NOTES

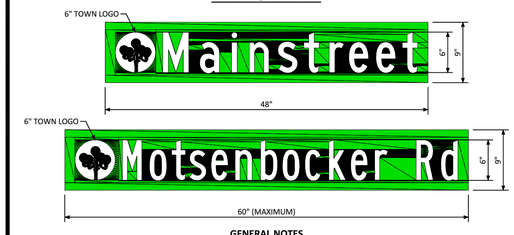
1. IF MEDIAN WIDTH IS GREATER THAN 12', ADDITIONAL DELINEATORS WILL BE REQUIRED. COORDINATE WITH DESIGNATED TOWN AUTHORITY.

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

PARKER COLORADO | **MEDIAN BULL NOSE TYPICAL SECTIONS STANDARD DETAIL** | DATE DECEMBER 2016 | DETAIL 27 (2 OF 2)

LOCAL STREETS

ARTERIALS/COLLECTORS

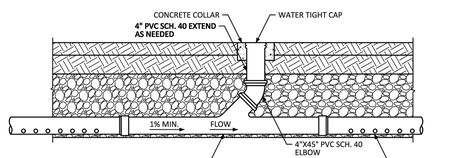


GENERAL NOTES

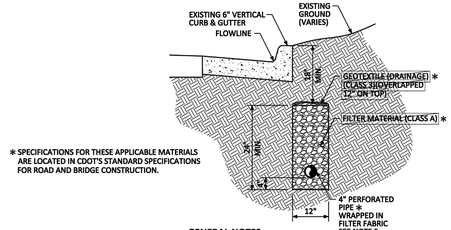
1. STREET NAME SIGNS SHALL BE ON EXTRUDED ALUMINUM BLANKS. ARTERIALS/COLLECTORS SHALL HAVE 9" HIGH PANELS. LOCALS MAY HAVE 6" HIGH PANELS. ARTERIAL/COLLECTOR SIZE BLANKS SHALL NOT EXCEED 60". LOCAL SIZE BLANKS SHALL NOT EXCEED 48".
2. SIGN POSTS FOR INSTALLING STREET NAME SIGNS SHALL BE 12 GAUGE Nex/S-SquareTube STEEL. FINISH TO BE HOT DIPPED GALVANIZED (ASTM A-653 G90). SIZE OF POST TO BE NOMINAL 2" x 2".
3. SIGN MOUNTING HARDWARE TO BE ZINC OR CADMIUM PLATED.
4. SIGN SHEETING SHALL BE REFLECTORIZED AND AFFIXED TO BOTH SIDES OF STREET NAME SIGN BLANK. PRIMARY SHEETING MATERIAL TO BE HIGH INTENSITY PRISMATIC WHITE WITH GREEN TRANSPARENT ELECTRO-CUT FILM. TOWN LAMP LOGO TO BE BLACK FILM ON WHITE SHEETING.
5. STREET NAME FONTS SHALL BE STANDARD HIGHWAY GOTHIC SERIES. TOTAL CHARACTERS INCLUDING SUFFIX SHALL NOT EXCEED 14.
6. MOUNTING HEIGHTS AND LOCATIONS TO BE PER MUTCD GUIDELINES OR AS DIRECTED BY THE TOWN.

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

PARKER COLORADO | **GROUND MOUNTED STREET NAME PANELS** | DATE DECEMBER 2016 | DETAIL 32 (1 OF 1)



PLAN VIEW OF CLEANOUT COLLAR
(REQUIRED IN UNPAVED AREAS)



✻ SPECIFICATIONS FOR THESE APPLICABLE MATERIALS ARE LOCATED IN CDOT'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

GENERAL NOTES

1. TRENCH DRAIN SHALL BE LOCATED HORIZONTALLY AT EDGE OF CONTINUOUS IMPERMEABLE SECTION.
2. TRENCH DRAINS SHALL BE TRANSITIONED TO PVC SCH. 40, NON-PERFORATED PIPE WHEN RAN UNDER ROADWAY HARDSCAPES/INTERSECTIONS.
3. CLEANOUTS SHALL BE PROVIDED AT ALL JUNCTIONS, ANGLE POINTS AND SPACED MAX. OF 500' INTERVALS.
4. TRENCH DRAINS SHALL TIE INTO STORM MANHOLE OR INLETS.
5. PERFORATED PIPE MATERIAL SHALL CONSIST OF CONTECH A-2000 PERFORATED PIPE, SDR-26 PERFORATED PRESSURE PIPE, HDPE SCH. 40 PERFORATED PIPE, N-12 ADS PIPE OR APPROVED EQUAL.

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

PARKER COLORADO | **TRENCH DRAIN DETAIL SECTION STANDARD DETAIL** | DATE DECEMBER 2016 | DETAIL 30 (1 OF 1)

NO.	DATE	REVISIONS	DRAWN BY
F.	03/02/20	UPDATE GAT & ADD OFF-LINE DET BASIN	
E.	12/21/16	FINAL SUBMITTAL	
D.	11/7/16	4TH SUBMITTAL	
C.	08/31/16	3RD SUBMITTAL	
B.	4/11/16	2ND SUBMITTAL	
A.	11/2015	1ST SUBMITTAL	EG

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COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
STREET DETAILS

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET 40 OF 49
CLCPKC3 ---

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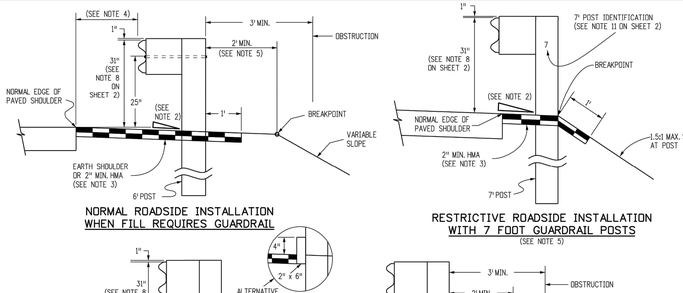
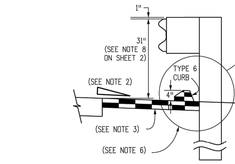
Plotted: 3/3/2020 4:21 PM Dwg Name: P:\Clcpkc3\ComSouth12-Filing 1 No GAT\ComSouth03-Ultimate Belford Ave\dwg\Eng\Final Drawings\Plan Set\Town\CLCPKC3-Street Details.dwg, Updated By: SKotsbb

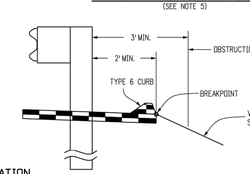


NORMAL ROADSIDE INSTALLATION
WHEN FILL REQUIRES GUARDRAIL

RESTRICTIVE ROADSIDE INSTALLATION
WITH 7 FOOT GUARDRAIL POSTS
(SEE NOTE 5)

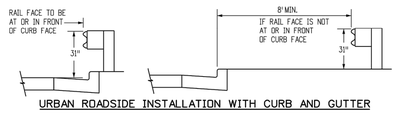


OPTION A

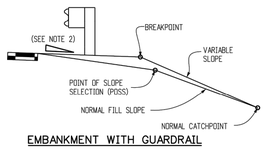


OPTION B (PREFERRED)

ROADSIDE INSTALLATION
WITH EROSION CONTROL CURB



URBAN ROADSIDE INSTALLATION WITH CURB AND GUTTER



EMBANKMENT WITH GUARDRAIL

(NOTE: THE CATCHPOINT REMAINS THE SAME AS THAT FOR "NORMAL" FILL SLOPE. FOR THE WIDER "Z" DISTANCES, THE VARIABLE SLOPE MAY "CATCH" AT THE POSS.)

LOCATION	SPACING
ALL LOCATIONS EXCEPT BRIDGE RAIL LOCATIONS	6'-3"
BRIDGE OR STRUCTURE APPROACH	SEE SHEETS 11 & 19

NORMAL CENTER-TO-CENTER POST SPACING

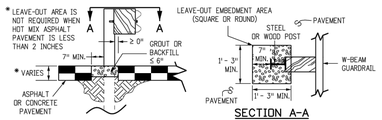
GENERAL NOTES (CONTINUE ON SHEET 2)

1. TOLERANCE FOR TOP OF GUARDRAIL BEAM IS ±1 IN.
2. RATE OF SLOPE DEPENDS ON GUARDRAIL LOCATION:
   A. FOR GUARDRAIL FACE 2 FT. OR LESS FROM THE NORMAL EDGE OF PAVED SHOULDER, CONTINUE THE RATE OF SLOPE OF THE NORMAL PAVED SHOULDER TO THE BREAKPOINT.
   B. FOR GUARDRAIL FACE MORE THAN 2 FT. FROM THE NORMAL EDGE OF THE PAVED SHOULDER, THE SLOPE SHALL BE 10:1 OR FLATTER.
3. WHEN SPECIFIED ON THE PLANS, EXTEND A 2 IN. MINIMUM THICKNESS PAVED SURFACE TO 1 FT. BEHIND THE GUARDRAIL POSTS OR TO THE EROSION CONTROL CURB AS SHOWN ON PLANS. ASPHALT CUTTING & PATCHING OR OTHER APPROVED METHOD SHALL BE USED TO MINIMIZE DAMAGE TO ALL PAVED SURFACES UNDER GUARDRAIL INSTALLATIONS. ALL REPAIRS TO THE PAVED AREA WILL NOT BE MEASURED AND PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE WORK. A MINIMUM 3 IN. THICK FIBER REINFORCED CONCRETE PAVEMENT MAY ALSO BE USED FOR PAVING BENEATH THE GUARDRAIL. INSTALL THE POST IN A ½ IN. OVERSIZED FORMED HOLE FOR GUARDRAIL RUNS AND TERMINALS AS DIRECTED. PAYMENT FOR THIS PAVED SURFACE WILL BE MADE UNDER A PAVEMENT OR CONCRETE PAY ITEM WITH QUANTITIES SHOWN ON THE PLANS.
4. THE MINIMUM GUARDRAIL OFFSET FROM PAVED SHOULDER EDGE SHALL BE:
   0 FT. FOR SHOULDERS 8 FT. OR WIDER
   2 FT. FOR SHOULDERS 6 FT. OR LESS

   THE GUARDRAIL OFFSET FROM PAVED INSIDE SHOULDER EDGE OF A DIVIDED HIGHWAY SHALL BE;
   0 FT. MINIMUM FOR SHOULDERS 6 FT. OR WIDER
   2 FT. DESIRABLE FOR 4 FT. SHOULDERS

   THE ABOVE 2 FT. GUARDRAIL TO SHOULDER OFFSET IS DESIRABLE BUT NOT REQUIRED FOR:
   A. FOR AN EXISTING HIGHWAY WITH A DESIGN SPEED LESS THAN 50 MPH, THE MINIMUM OFFSET IS 4 FT. FROM THE TRAVELED WAY.
   B. FOR A ONE-WAY ONE-LANE RAMP, AND WHERE ONE OR MORE OF THE FOLLOWING ARE TRUE:
      (1) THE NON-OFFSET GUARDRAIL BEGINS AT LEAST 100 FT. BEYOND RAMP NOSE.
      (2) THE NON-OFFSET GUARDRAIL IS NOT LOCATED ON THE RAMP EXIT OR ENTRANCE CURVE CONNECTION TO THE MAJOR HIGHWAY.
      (3) THE RAMP SHOULDERS ARE 4 FT. OR WIDER.

   USE OF GREATER THAN MINIMUM OFFSET DIMENSIONS IS ENCOURAGED TO MEET THE DESIRABLE GOAL OF PLACING THE GUARDRAIL AS FAR AS POSSIBLE FROM THE TRAVEL WAY, EVEN FOR SHORT DISTANCES, WHILE PROVIDING A SMOOTH CHANGE IN GUARDRAIL ALIGNMENT.
5. IF 2 FT. CANNOT BE PROVIDED BETWEEN THE BACK OF THE GUARDRAIL POST AND THE BREAKPOINT, USE 7 FT. GUARDRAIL POSTS. REFER TO THE "RESTRICTIVE ROADSIDE INSTALLATION" DETAIL.
6. WHEN SPECIFIED ON THE PLANS, INSTALL 4 IN. HIGH TYPE 6 CURB WITH ITS FACE AT OR BEHIND THE RAIL FACE AS AN ALTERNATIVE WHEN SPECIFIED ON THE PLANS, INSTALL A 2 IN. x 6 IN. TREATED (AASHTO M 133) WOOD CURB. FASTEN WITH A 4 IN. LAG BOLT AND WASHER AT EACH WOOD POST, OR WITH A 1/4 IN. DIA. BOLT WITH WASHER AND NUT AT EACH STEEL POST. IF THE 2 IN. x 6 IN. WOOD CURB IS SPECIFIED, IT WILL BE INCLUDED IN THE COST OF THE GUARDRAIL. IF APPROVED BY THE ENGINEER, A 2 IN. x 4 IN. TREATED WOOD CURB MAY BE SUBSTITUTED FOR THE 2 IN. x 6 IN. CURB AND SET ON TOP OF PAVEMENT SURFACE AND ATTACHED AS DESCRIBED ABOVE. NO SPLICING SHALL BE ALLOWED IN WOOD CURBS. ADJACENT BOARDS SHALL BE BUTTED TOGETHER AND BOLTED AT A POST LOCATION. JOINTS SHALL BE LOCATED AT THE POSTS.



SECTION A-A

LEAVE-OUT AREA FOR GUARDRAIL POSTS LOCATED IN PAVEMENT

NOTE: LEAVE-OUT AREAS SHALL BE PROVIDED FOR ALL GUARDRAIL POSTS LOCATED IN PAVEMENT * TO ALLOW THE POSTS TO ROTATE IN THEIR EMBEDMENT SUCH THAT VEHICLE IMPACT LOADS ARE DISTRIBUTED THROUGH THE POST INTO THE EMBEDMENT MATERIAL PRIOR TO THE POSTS BREAKING PREMATURELY.

Computer File Information			Sheet Revisions	
Creation Date: 11/01/18	Initials: JJP		Date:	Comments
Last Modification Date: 12/21/18	Initials: LTA	(R-X)	12/21/18	Revised the "Option B" detail as Preferred.
Full Path: www.codot.gov/business/designsupport		(R-X)		
Drawing File Name: 6060101019.dgn		(R-X)		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English		(R-X)		

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MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 3 W-BEAM 31 INCHES

Issued By: Project Development Branch November 1, 2018

STANDARD PLAN NO. M-606-1

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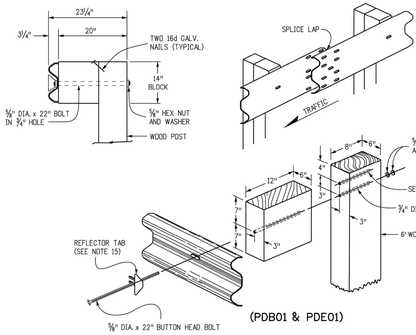
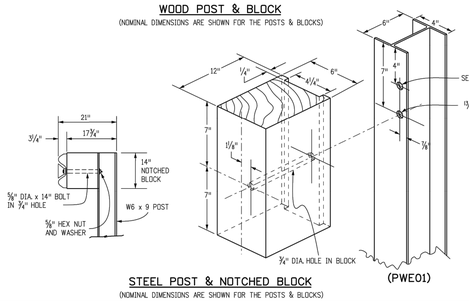


(PDB01 & PDE01)

WOOD POST & BLOCK

(NOMINAL DIMENSIONS ARE SHOWN FOR THE POSTS & BLOCKS)



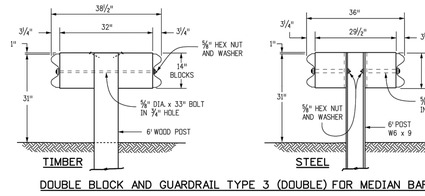
(PWE01)

STEEL POST & NOTCHED BLOCK

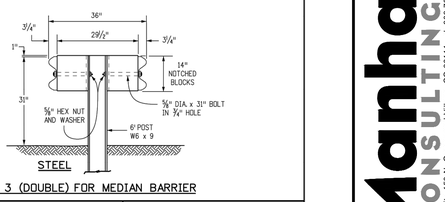
(NOMINAL DIMENSIONS ARE SHOWN FOR THE POSTS & BLOCKS)

GENERAL NOTES (CONTINUED FROM SHEET 1)

7. SEE SHEETS 7 AND 9 FOR CURB TREATMENTS AT GUARDRAIL TERMINALS.
8. IF THIS DIMENSION WILL BE LESS THAN 28 INCHES, RESET GUARDRAIL HEIGHT TO 28 INCHES OR ABOVE.
9. ALL W-BEAM SPLICES, AND SPLICES OF TERMINAL CONNECTORS TO W-BEAM SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC UNLESS OTHERWISE NOTED IN THE PLANS OR BY THE MANUFACTURER.
10. MATERIAL TYPE AND SHAPE OF POSTS AND BLOCKS SHALL BE THE SAME THROUGHOUT THE PROJECT EXCEPT WHEN SPECIFIC POSTS AND BLOCKS ARE SPECIFIED, i.e. AT END ANCHORAGES AND BOX CULVERTS.
11. WHEN SPECIFIED IN THE CONTRACT, 7 FT. POSTS SHALL BE INSTALLED INSTEAD OF THE STANDARD 6 FT. POSTS. THE 7 FT. POSTS SHALL BE MARKED WITH THE NUMBER 7 TO ENSURE PERMANENT INDENTIFICATION. STEEL POSTS SHALL BE STAMPED PRIOR TO GALVANIZING. THE NUMBER 7 SHALL BE A MINIMUM 2 IN. TALL AND LOCATED AS SHOWN ON THE ELEVATION VIEW ON SHEET 1.
12. THE STANDARD 3 IN. x 1⅜ IN. x 3/16 IN. RECTANGULAR WASHER USED UNDER POST BOLT HEADS IN THE PAST MAY REMAIN IN EXISTING INSTALLATIONS BUT SHALL NOT BE USED IN NEW CONSTRUCTION, REPAIRS, OR RESETTING OF RAIL, EXCEPT WHEN SPECIFICALLY IDENTIFIED ON THE STANDARD PLAN.
13. STANDARD GALVANIZED ROUND STEEL WASHERS SHALL BE USED UNDER ALL NUTS IN CONTACT WITH WOOD POSTS.
14. AN ADDITIONAL HOLE SHALL BE PROVIDED IN THE POSTS TO FACILITATE FUTURE RAISING OF THE RAIL ELEMENTS AND BLOCKS FOR OVERLAYS.
15. RETROREFLECTOR TABS SHALL BE INSTALLED AT 25 FT. INTERVALS (SEE SHEETS 6 AND 8 FOR EXCEPTIONS). RETROREFLECTOR TABS WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK. THE TABS SHALL BE MOUNTED SO THE BOLT SLOT FACES AWAY FROM TRAFFIC, AND THE RETROREFLECTOR SURFACE FACES THE APPROACHING TRAFFIC FOR ONE-WAY ROADS. FOR TWO-WAY ROADS, BOTH SIDES OF THE TABS SHALL BE RETROREFLECTIVE, SO THAT DELINEATION IS PROVIDED FOR BOTH DIRECTIONS OF TRAVEL. THE RETROREFLECTIVE SHEETING COLOR SHALL MATCH THE COLOR OF THE ADJACENT TRAVEL WAY EDGE LINE. SEE THE RETROREFLECTOR TAB DETAIL ON SHEET 3.
16. AT THE TIME OF INSTALLATION, WOOD POSTS OR BLOCKS WITH SEASONING CHECKS GREATER THAN ¼ IN. SHALL NOT BE USED WHEN THE CHECK EXTENDS THE FULL LENGTH OF THE PIECE.
17. WOOD BLOCKS SHALL BE CUT FROM THE SAME CROSS-SECTION, SPECIES, AND GRADE, AND SHALL RECEIVE THE SAME PRESERVATIVE TREATMENT AS THE POSTS WHEN WOOD POSTS ARE USED.
18. REFERENCES SUCH AS @@POB01@, @@POE01@, AND @@PWE01@ IN THIS STANDARD PLAN SPECIFY HARDWARE DETAILS FROM @@A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE@ PREPARED BY THE AASHTO-AGC-ARTBA JOINT COOPERATIVE COMMITTEE.
19. RAIL BLOCKS MANUFACTURED FROM SYNTHETIC MATERIAL WILL BE ACCEPTED AS ALTERNATIVES TO WOOD BLOCKS FOR USE WITH STEEL POSTS PROVIDED THAT THE BLOCKS HAVE RECEIVED FHWA APPROVAL.
20. WOOD POSTS SHALL BE MADE OF TIMBER WITH AN EXTREME FIBER STRESS IN BENDING OF 1200 PSI STRESS GRADING AND POST DIMENSIONS SHALL CONFORM WITH THE RULES OF THE WEST COAST INSPECTION BUREAU, OR THE SOUTHERN PINE BUREAU, OR THE WESTERN WOOD PRODUCTS ASSOCIATION. TIMBER FOR POSTS SHALL BE EITHER ROUGH SAWN (UNPLANED) OR S4S (SURFACED FOUR SIDES) WITH NOMINAL DIMENSIONS INDICATED. ONLY ONE TYPE OF SURFACE FINISH SHALL BE USED FOR POSTS AND BLOCKS IN ANY ONE CONTINUOUS LENGTH OF GUARDRAIL.
21. GLULAM POSTS AND BLOCKS WILL BE ACCEPTED AS ALTERNATIVES PROVIDED THAT THE SUPPLIED MATERIALS HAVE RECEIVED FHWA APPROVAL AND ARE CERTIFIED AS IDENTICAL TO THE SPECIMENS USED FOR TESTING AND APPROVAL.
22. PRESSURE TREATMENT OF POSTS AND BLOCKS SHALL CONFORM TO AASHTO M 133 EXCEPT THAT BLOCKS NEED NOT BE INCISED. PRESERVATION ASSAY RETENTION REPORTS SHALL BE SUBMITTED TO THE ENGINEER. THE CONTRACTOR SHALL CERTIFY THAT THE SPECIES AND GRADE MEET THE REQUIREMENTS OF THE CONTRACT.
23. W-BEAM AND THRIE-BEAM GUARDRAIL POSTS SHALL BE MANUFACTURED USING AASHTO M 270 (ASTM A 709) GRADE 36 STEEL UNLESS CORROSION RESISTANT STEEL IS REQUIRED, IN WHICH CASE THE POST SHALL BE MANUFACTURED FROM AASHTO M 270 (ASTM A 709) GRADE 50W STEEL. THE DIMENSIONS OF THE CROSS-SECTION SHALL CONFORM TO A W6 X 9 SECTION AS DEFINED IN AASHTO M 160 (ASTM A 6). W6 X 8.5 WIDE FLANGE STEEL POSTS ARE AN ACCEPTABLE ALTERNATIVE TO THE W6 X 9.
24. AFTER THE SECTION IS CUT AND ALL HOLES ARE DRILLED OR PUNCHED THE COMPONENT SHALL BE ZINC-COATED CONFORMING TO AASHTO M 111 (ASTM A 123) UNLESS CORROSION-RESISTANT STEEL IS USED. WHEN CORROSION-RESISTANT STEEL IS USED THE PORTION OF THE POST TO BE EMBEDDED IN SOIL SHALL BE ZINC-COATED CONFORMING TO AASHTO M 111 (ASTM A 123) AND THE PORTION ABOVE THE SOIL SHALL NOT BE ZINC-COATED, PAINTED OR OTHERWISE TREATED.
25. FIELD MODIFICATION TO RAIL ELEMENTS IS ALLOWED PER MANUFACTURER'S RECOMMENDATIONS, OR WITH THE APPROVAL OF THE STANDARDS AND SPECIFICATIONS UNIT. POSTS SHALL NOT BE MODIFIED. COMPONENTS ON WHICH THE SPELTER COATING HAS BEEN DAMAGED SHALL BE EITHER REGALVANIZED OR RECOATED IN CONFORMANCE WITH AASHTO M 36, OR PAINTED WITH ONE FULL BRUSH COAT OF ZINC RICH PAINT CONFORMING TO MILITARY SPECIFICATION DOD-P-21035A.



TIMBER



STEEL

DOUBLE BLOCK AND GUARDRAIL TYPE 3 (DOUBLE) FOR MEDIAN BARRIER

Computer File Information			Sheet Revisions	
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Last Modification Date: 12/21/18	Initials: LTA	(R-X)	12/21/18	Revised Gen. Notes 9, 19 and 25
Full Path: www.codot.gov/business/designsupport		(R-X)		
Drawing File Name: 6060101019.dgn		(R-X)		
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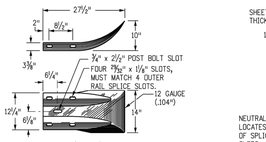
MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 3 W-BEAM 31 INCHES

Issued By: Project Development Branch November 1, 2018

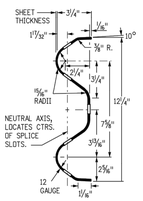
STANDARD PLAN NO. M-606-1

Sheet No. 2 of 19



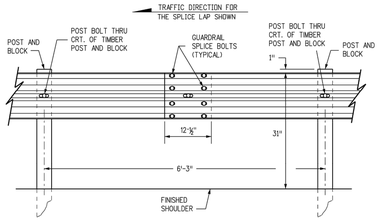
(RWE01a)

TERMINAL SECTION (FLARED)



(RWM02a)

W-BEAM RAIL SECTION

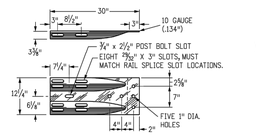


W-BEAM RAIL SPLICE

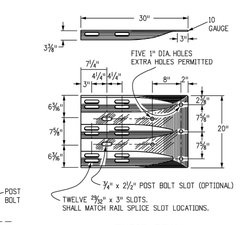
PART	MATERIAL SPEC.	GALVANIZING SPEC.	CORROSION-RESISTANT SPEC.
W-BEAM RAIL & TERMINAL SECTIONS	AASHTO M 180, CLASS A OR B	AASHTO M 180, TYPE 1 OR 2	AASHTO M 180, TYPE 4
BASE PLATE	ASTM A 36	AASHTO M 111	N.A.
NUTS, BOLTS & STUDS FOR GENERAL USE	ASTM A 307	AASHTO M 232, CLASS C OR ASTM B 695 CLASS 50 TYPE 1	
HIGH STRENGTH BOLTS & NUTS	ASTM A 325		
HIGH STRENGTH STUDS & NUTS	ASTM A 449		
ROUND STEEL WASHERS	ASTM F 436		
RECTANGULAR WASHERS	AASHTO M 180		
OTHER FITTINGS	ASTM A 36	AASHTO M 111	

THE TABULATION OF GUARDRAIL WILL SPECIFY THE TYPE OF CORROSION PROTECTION: GALVANIZED OR CORROSION - RESISTANT STEEL.

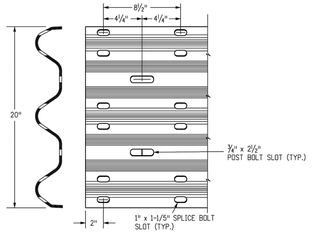
STEEL POSTS SHALL HAVE THE SAME CORROSION PROTECTION AS SPECIFIED FOR THE METAL BEAM RAIL. PUNCHING, DRILLING, CUTTING, OR WELDING OF POSTS WILL NOT BE PERMITTED AFTER GALVANIZING.



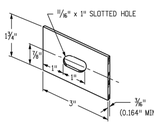
TERMINAL SECTION (CONNECTOR)



THRIE BEAM
TERMINAL SECTION (CONNECTOR)

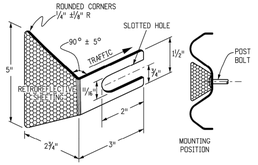


THRIE BEAM DETAIL



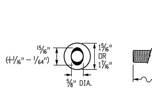
(FWW03)

RECTANGULAR WASHER
(TO BE USED ONLY WHERE SPECIFIED.)



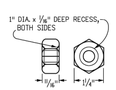
RETROREFLECTOR TAB

NOTE: RETROREFLECTOR TABS SHALL BE MANUFACTURED FROM 12 TO 14 GAUGE STEEL AND SHALL CONFORM TO THE REQUIREMENTS OF S STANDARD S-612-1.



BUTTON HEAD BOLT WITH OVAL SHOULDER

WASHER



HEX NUT

DIAMETER & TYPE (INCHES)	12" BLOCKS L = LENGTH (INCHES)	THREAD LENGTH (INCHES)	INTENDED USE	AASHTO-AGC-ARTBA STANDARD NUMBER	NO. BOLTS, NUTS & WASHERS
⅝	11/4	FULL (1 1/2)	ALL RAIL SPLICES	FBB01	8 PER SPLICE*
BUTTONHEAD OVAL SHLDR.	22	MIN. 2½	SINGLE BLOCK & POST (TIMBER)	FBB04	1 PER POST
	33	MIN. 2	DOUBLE BLOCK & POST (TIMBER)	FBB05	1 PER POST
	14	MIN. 2	FASTEN NOTCHED BLOCK TO STEEL POST	FBB03	1 PER BLOCK
WASHERS NOT USED AT RAIL SPLICES					

Computer File Information			Sheet Revisions	
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MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 3 W-BEAM 31 INCHES

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STANDARD PLAN NO. M-606-1

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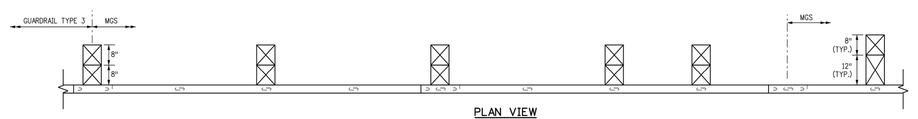
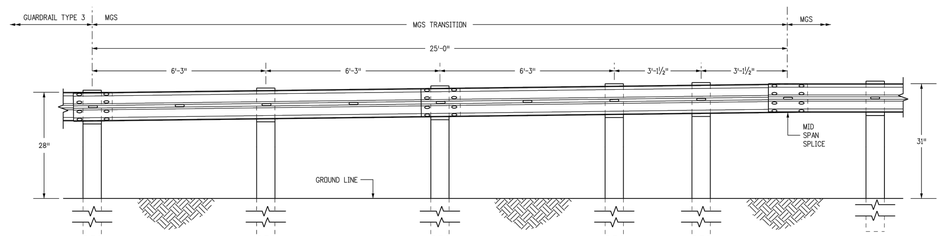
NOTES

1. THE MGS TRANSITION FROM A TYPE 3 GUARDRAIL SHALL BE COMPLETED OUTSIDE THE MGS END ANCHORAGE LIMITS.

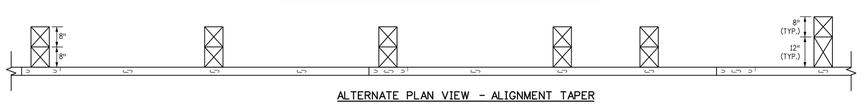


PLAN VIEW



ELEVATION VIEW

TRANSITION FROM 28 INCH GUARDRAIL TO 31 INCH MGS



ALTERNATE PLAN VIEW - ALIGNMENT TAPER

Computer File Information			Sheet Revisions	
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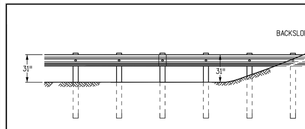
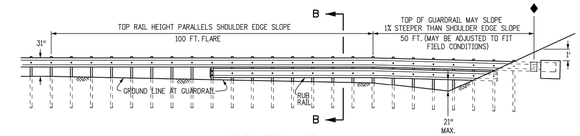
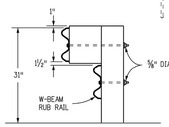




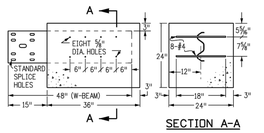
SEE TYPE 3B (RUB RAIL) PLAN VIEW FOR ALIGNMENT. THE 100 FT. FLARE LENGTH MAY BE SHORTENED IF THE SLOPE IS LESS THAN 8 FT. WIDE.

END ANCHORAGE TYPE 3B
(WITHOUT ROADSIDE DITCH AT GUARDRAIL)



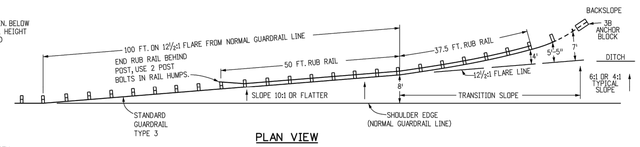
SECTION B-B

MOUNT A W-BEAM RUB RAIL 1-½" IN. BELOW THE TOP RAIL WHEN THE TOP RAIL HEIGHT EXCEEDS 33 IN. ABOVE THE GROUND



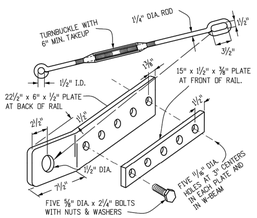
SECTION A-A

TYPE 3B ANCHOR BLOCK DETAIL



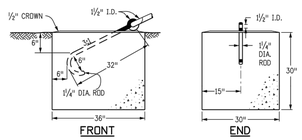
♦ END OF GUARDRAIL PAY LENGTH

PLAN VIEW
END ANCHORAGE TYPE 3B (RUB RAIL)
(WITH ROADSIDE DITCH AT GUARDRAIL)

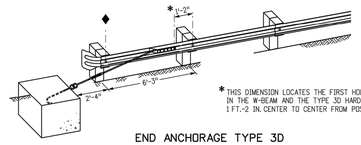


TYPE 3D HARDWARE DETAILS

NOTE: ALL PARTS SHALL BE GALVANIZED



TYPE 3D ANCHOR BLOCK DETAIL



END ANCHORAGE TYPE 3D DEPARTURE TERMINAL

Computer File Information		Sheet Revisions	
Creation Date: 11/01/18 Initials: JJP		Date:	Comments
Last Modification Date: 12/21/18 Initials: LTA	(R-X)		
Full Path: www.codot.gov/business/designsupport	(R-X)		
Drawing File Name: 6060105019.dgn	(R-X)		
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MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 3 W-BEAM 31 INCHES

Issued By: Project Development Branch November 1, 2018

STANDARD PLAN NO. M-606-1

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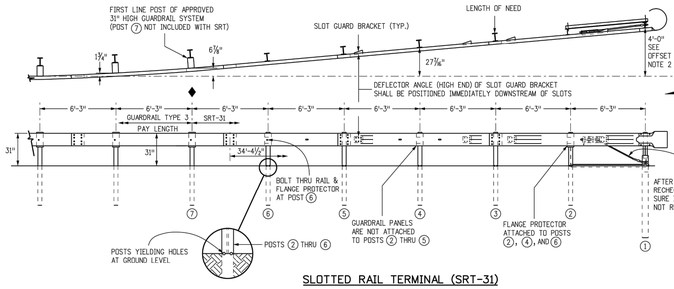
OFFSET NOTES

1. POST OFFSET DIMENSIONS ARE GIVEN TO THE CENTER OF THE TRAFFIC FACE OF POSTS.
2. THE GUARDRAIL BETWEEN POST (1) THRU (7) IS ON A STRAIGHT LINE FLARE.

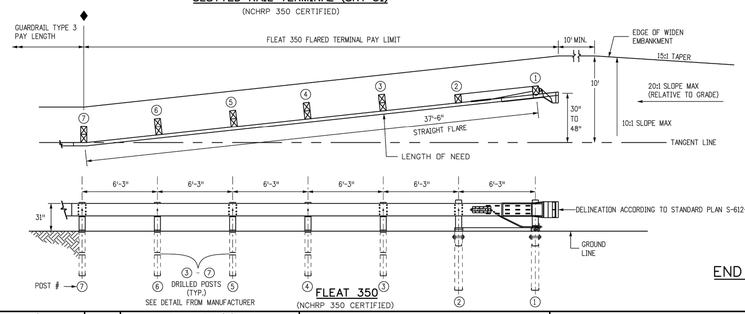


SLOTTED RAIL TERMINAL (SRT-31)
(NCHRP 350 CERTIFIED)

♦ END OF GUARDRAIL PAY LENGTH

NOTES

1. THE END ANCHORAGES (FLARED) SHALL EITHER BE THE SLOTTED RAIL TERMINAL SRT-31 AS MANUFACTURED BY TRINITY HIGHWAY PRODUCTS LLC (TELEPHONE #: 800-772-7976), OR THE FLEAT-350, AS MANUFACTURED BY ROAD SYSTEMS INC. (TELEPHONE #: 432-263-2435). ONE END ANCHORAGE (FLARED) SHALL INCLUDE ALL POST, RAIL, AND ALL HARDWARE ITEMS REQUIRED FOR A COMPLETE UNIT. THE END ANCHORAGE (FLARED) SHALL BE INSTALLED CONFORMING TO THE MANUFACTURER'S RECOMMENDATIONS. THE CONTRACTOR SHALL PROVIDE A COPY OF THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND PARTS LIST TO THE ENGINEER PRIOR TO INSTALLATION OF THE DEVICE.
2. IN HEAVY SNOW LOCATIONS, TRIM POSTS (1) AND (2) (IF THEY ARE WOODEN) FLUSH WITH RAIL TOP AND TREAT END WITH SEALANT, IN CONFORMANCE WITH AASHTO M 133.
3. POSTS SHALL BE DRILLED FOR BREAKAWAY ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.
4. SEE SHEETS 1, 3 AND 5 FOR STANDARD GUARDRAIL TYPE 3 AND INSTALLATION DETAILS.
5. RETROREFLECTOR TABS SHALL NOT BE USED ON END ANCHORAGE POSTS.
6. DELINEATION SHALL BE APPLIED TO THE END PIECE, AND SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.



FLEAT 350
(NCHRP 350 CERTIFIED)

END ANCHORAGES (FLARED)

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Last Modification Date: 12/21/18 Initials: LTA	(R-X)		
Full Path: www.codot.gov/business/designsupport	(R-X)		
Drawing File Name: 6060106019.dgn	(R-X)		
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MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 3 W-BEAM 31 INCHES

Issued By: Project Development Branch November 1, 2018

STANDARD PLAN NO. M-606-1

Sheet No. 6 of 19

REVISIONS				DRAWN BY
DATE				
	F.	03/02/20	UPDATE GAT & ADD OFF-LINE DET BASIN	
	E.	12/21/16	FINAL SUBMITTAL	
	D.	11/7/16	4TH SUBMITTAL	
	C.	05/31/16	3RD SUBMITTAL	
	B.	4/11/16	2ND SUBMITTAL	
	A.	11/2015	1ST SUBMITTAL	EG

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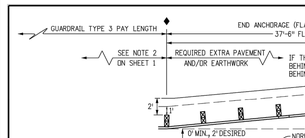
Civil Engineering | Water Resource Management | Construction Management

COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE

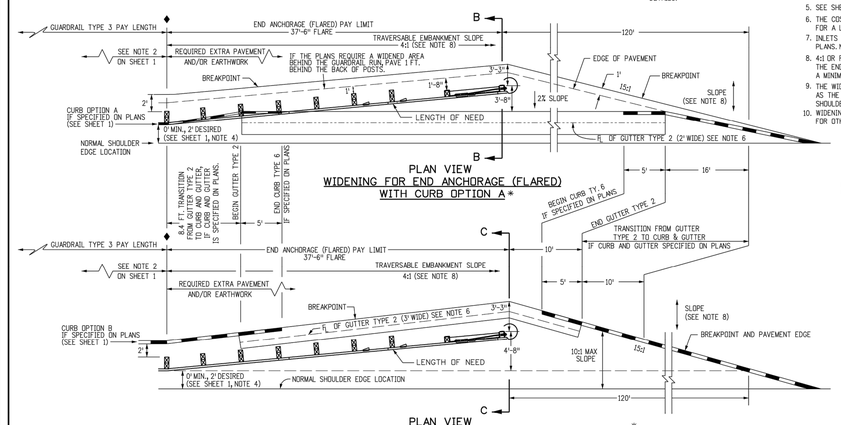
TOWN OF PARKER, COLORADO

STREET DETAILS



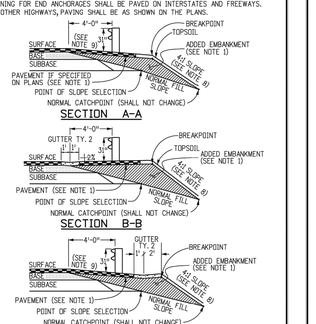
PLAN VIEW
WIDENING FOR END ANCHORAGE (FLARED) *

* THIS PLAN VIEW SHOWS ONLY THE SRT-31. THE FLEAT-350 USES THE SAME WIDENING DETAILS.



PLAN VIEW
WIDENING FOR END ANCHORAGE (FLARED) WITH CURB OPTION A *

PLAN VIEW
WIDENING FOR END ANCHORAGE (FLARED) WITH CURB OPTION B *



SECTION A-A

SECTION B-B

SECTION C-C

Computer File Information		Sheet Revisions	
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Full Path: www.codot.gov/business/designsupport	(R-X)		
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MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 3 W-BEAM 31 INCHES

Issued By: Project Development Branch November 1, 2018

STANDARD PLAN NO. M-606-1

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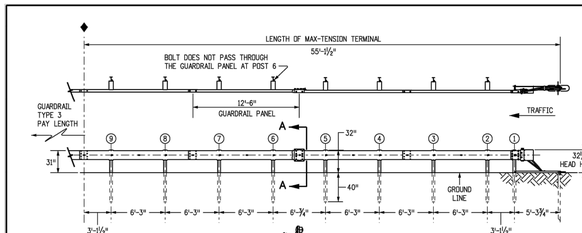
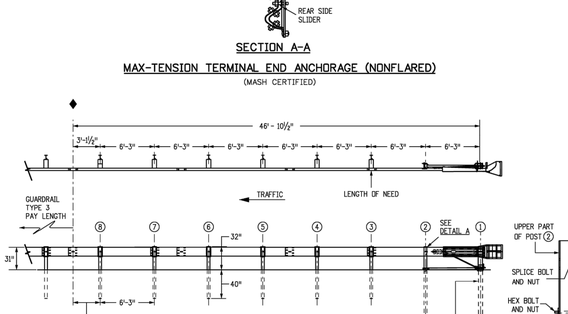
NOTES

1. PAYMENT FOR THE ADDED EMBANKMENT (APPROXIMATELY 45 CU. YDS.) FOR THE FLARE SHALL BE AS FOLLOWS:
   A. UNDER PAY ITEM 203 WHEN THE CONTRACT PLAN INCLUDES PAY ITEM 203
   B. INCLUDED IN THE COST OF THE END ANCHORAGE (FLARED) WHEN THE CONTRACT PLANS DO NOT INCLUDE PAY ITEM 203. THE ADDED EMBANKMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH SUBSECTION 203.07, AASHTO T 99.
2. WHEN THE WIDENED AREA IS PAVED, PAVEMENT FOR THE PAVEMENT (APPROX. 70 SQ. YDS.) SHALL BE AS FOLLOWS:
   A. UNDER PAY ITEM 403 OR 412 WHEN THE CONTRACT PLAN INCLUDES PAY ITEM 403 OR 412
   B. INCLUDED IN THE COST OF THE END ANCHORAGE (FLARED) WHEN THE CONTRACT PLAN DOES NOT INCLUDE PAY ITEM 403 OR 412 (SEE SHEET 1, NOTE 2 FOR PAVEMENT TYPES)
3. CONCRETE PAVED AREAS SHALL HAVE THEIR TAPERED ENDS SQUARED OFF AS DIRECTED BY THE ENGINEER.
4. WHEN OVERLAY PAVING, THE FINISHED SURFACE AT EACH POST SHALL NOT BE ABOVE THE TOP BREAKAWAY HOLE OR STRUT ASSEMBLY. THE WIDENED AREA AT THE FLARED END ANCHORAGE SHOULD NOT BE OVERLAYED UNLESS PAVEMENT CONDITIONS WARRANT IT BEING OVERLAYED. ANY OVERLAY PAVEMENT ABUTTING THE FLARED END ANCHORAGE SHALL BE TAPERED TO PREVENT A DROP IN THE PAVED SURFACE BELOW THE RAIL.
5. SEE SHEETS 1, 2, 3, AND 5 FOR STANDARD TYPE 3 GUARDRAIL INSTALLATION DETAILS.
6. THE COST OF THE GUTTER WILL BE PAID FOR AS "GUTTER TYPE 2 (2 FT.)" FOR A LENGTH OF 134 FT. OR "GUTTER TY. 2 (3 FT.)" FOR A LENGTH OF 40 FT.
7. INLETS OR RUNDOWNS MAY BE USED INSTEAD OF THE GUTTER IF SPECIFIED ON THE PLANS. NO ADDITIONAL CURB SHALL BE ADDED IN THE VICINITY OF THE END ANCHORAGE.
8. 4:1 OR FLATTER SLOPES IN THE TRAVERSABLE AREA SHALL BE USED BEHIND THE END ANCHORAGE, AND IN ADVANCE OF POST (1) IF THIS IS NOT POSSIBLE, A MINIMUM 3:1 SLOPE MAY BE USED IF APPROVED BY THE ENGINEER.
9. THE WIDENED AREA, EXCEPT FOR CURB OPTION A, SHALL HAVE THE SAME GRADING AS THE ADJACENT GUARDRAIL: 10:1 OR FLATTER IF MORE THAN 2 FT. FROM SHOULDER OR SLOPE EQUAL TO ROADWAY SLOPE IF 2 FT. OR LESS FROM SHOULDER.
10. WIDENING FOR END ANCHORAGES SHALL BE PAVED ON INTERSTATES AND FREEWAYS. FOR OTHER HIGHWAYS, PAVING SHALL BE AS SHOWN ON THE PLANS.



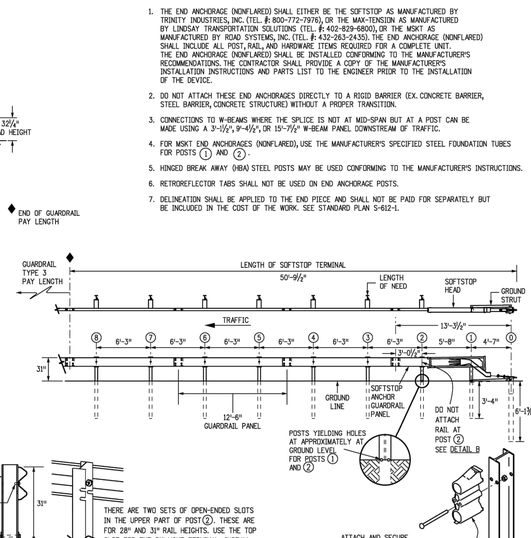
SECTION A-A
MAX-TENSION TERMINAL END ANCHORAGE (NONFLARED)
(MASH CERTIFIED)

♦ END OF GUARDRAIL PAY LENGTH



MSKT TERMINAL END ANCHORAGE (NONFLARED)
(MASH CERTIFIED)

DETAIL A



DETAIL B

SOFTSTOP TERMINAL END ANCHORAGE (NONFLARED)
(MASH CERTIFIED)

END ANCHORAGES (NONFLARED)

NOTES FOR NONFLARED

1. THE END ANCHORAGE (NONFLARED) SHALL EITHER BE THE SOFTSTOP AS MANUFACTURED BY TRINITY INDUSTRIES, INC. (TEL. #: 800-772-7976), OR THE MAX-TENSION AS MANUFACTURED BY LINDSAY TRANSPORTATION SOLUTIONS (TEL. #: 402-829-6800), OR THE MSKT AS MANUFACTURED BY ROAD SYSTEMS, INC. (TEL. #: 432-263-2435). THE END ANCHORAGE (NONFLARED) SHALL INCLUDE ALL POST, RAIL, AND HARDWARE ITEMS REQUIRED FOR A COMPLETE UNIT. THE END ANCHORAGE (NONFLARED) SHALL BE INSTALLED CONFORMING TO THE MANUFACTURER'S RECOMMENDATIONS. THE CONTRACTOR SHALL PROVIDE A COPY OF THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND PARTS LIST TO THE ENGINEER PRIOR TO THE INSTALLATION OF THE DEVICE.
2. DO NOT ATTACH THESE END ANCHORAGES DIRECTLY TO A RIGID BARRIER (EX. CONCRETE BARRIER, STEEL BARRIER, CONCRETE STRUCTURE) WITHOUT A PROPER TRANSITION.
3. CONNECTIONS TO W-BEAMS WHERE THE SPLICE IS NOT AT MID-SPAN BUT AT A POST CAN BE MADE USING A 3'-1½", 9'-4½", OR 15'-7½" W-BEAM PANEL DOWNSTREAM OF TRAFFIC.
4. FOR MSKT END ANCHORAGES (NONFLARED), USE THE MANUFACTURER'S SPECIFIED STEEL FOUNDATION TUBES FOR POSTS (1) AND (2).
5. HINGED BREAK AWAY (HBA) STEEL POSTS MAY BE USED CONFORMING TO THE MANUFACTURER'S INSTRUCTIONS.
6. RETROREFLECTOR TABS SHALL NOT BE USED ON END ANCHORAGE POSTS.
7. DELINEATION SHALL BE APPLIED TO THE END PIECE AND SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE WORK. SEE STANDARD PLAN S-612-1.

Computer File Information		Sheet Revisions	
Creation Date: 11/01/18 Initials: JJP		Date:	Comments
Last Modification Date: 12/21/18 Initials: LTA	(R-X)		
Full Path: www.codot.gov/business/designsupport	(R-X)		
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MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 3 W-BEAM 31 INCHES

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STANDARD PLAN NO. M-606-1

Sheet No. 8 of 19

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DRAWN BY: ETG
DATE: 12/2015

SHEET 42 OF 49
CLCPKC3 ---

PRELIMINARY - NOT FOR CONSTRUCTION

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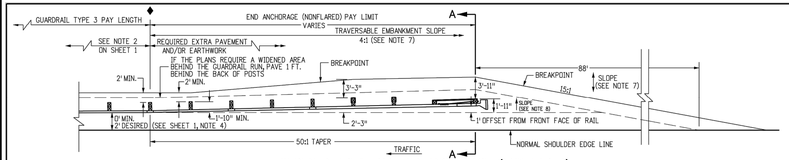

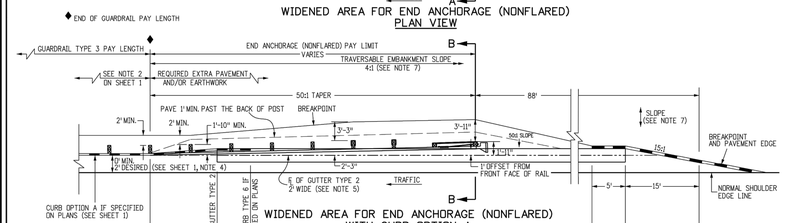

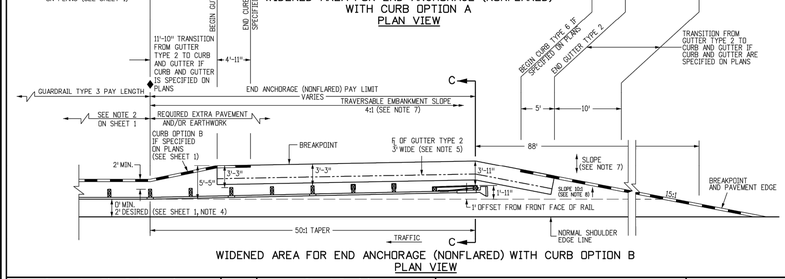

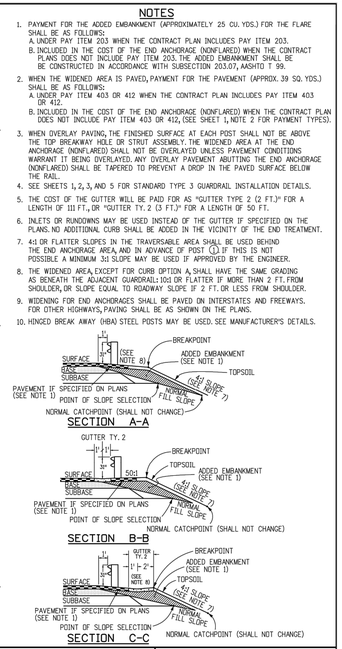

NOTES

1. PAYMENT FOR THE ADDED EMBANKMENT (APPROXIMATELY 25 CU. YDS.) FOR THE FLARE SHALL BE AS FOLLOWS:
   A. UNDER PAY ITEM 203 WHEN THE CONTRACT PLAN INCLUDES PAY ITEM 203.
   B. INCLUDED IN THE COST OF THE END ANCHORAGE (NONFLARED) WHEN THE CONTRACT PLANS DOES NOT INCLUDE PAY ITEM 203, THE ADDED EMBANKMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH SUBSECTION 203.07, AASHTO T 99.
2. WHEN THE WIDENED AREA IS PAVED, PAYMENT FOR THE PAVEMENT (APPROX. 39 SQ. YDS.) SHALL BE AS FOLLOWS:
   A. UNDER PAY ITEM 403 OR 412 WHEN THE CONTRACT PLAN INCLUDES PAY ITEM 403 OR 412.
   B. INCLUDED IN THE COST OF THE END ANCHORAGE (NONFLARED) WHEN THE CONTRACT PLAN DOES NOT INCLUDE PAY ITEM 403 OR 412, (SEE SHEET 1, NOTE 2 FOR PAYMENT TYPES).
3. WHEN OVERLAY PAVING, THE FINISHED SURFACE AT EACH POST SHALL NOT BE ABOVE THE TOP BREAKWAY HOLE OR STRUT ASSEMBLY. THE WIDENED AREA AT THE END ANCHORAGE (NONFLARED) SHALL NOT BE OVERLAYED UNLESS PAVEMENT CONDITIONS WARRANT IT BEING OVERLAYED, ANY OVERLAY PAVEMENT ABUTTING THE END ANCHORAGE (NONFLARED) SHALL BE TAPERED TO PREVENT A DROP IN THE PAVED SURFACE BELOW THE RAIL.
4. SEE SHEETS 1, 2, 3, AND 5 FOR STANDARD TYPE 3 GUARDRAIL INSTALLATION DETAILS.
5. THE COST OF THE GUTTER WILL BE PAID FOR AS "GUTTER TYPE 2 (2 FT.)" FOR A LENGTH OF 111 FT., OR "GUTTER TY. 2 (3 FT.)" FOR A LENGTH OF 50 FT.
6. INLETS OR RUNDOWNS MAY BE USED INSTEAD OF THE GUTTER IF SPECIFIED ON THE PLANS. NO ADDITIONAL CURB SHALL BE ADDED IN THE VICINITY OF THE END TREATMENT.
7. 4:1 OR FLATTER SLOPES IN THE TRAVERSABLE AREA SHALL BE USED BEHIND THE END ANCHORAGE AREA, AND IN ADVANCE OF POST ①. IF THIS IS NOT POSSIBLE A MINIMUM 3:1 SLOPE MAY BE USED IF APPROVED BY THE ENGINEER.
8. THE WIDENED AREA, EXCEPT FOR CURB OPTION A, SHALL HAVE THE SAME GRADING AS BENEATH THE ADJACENT GUARDRAIL: 10:1 OR FLATTER IF MORE THAN 2 FT. FROM SHOULDER, OR SLOPE EQUAL TO ROADWAY SLOPE IF 2 FT. OR LESS FROM SHOULDER.
9. WIDENING FOR END ANCHORAGES SHALL BE PAVED ON INTERSTATES AND FREEWAYS. FOR OTHER HIGHWAYS, PAVING SHALL BE AS SHOWN ON THE PLANS.
10. HINGED BREAK AWAY (HBA) STEEL POSTS MAY BE USED. SEE MANUFACTURER'S DETAILS.

Computer File Information		Sheet Revisions		
Creation Date: 11/01/18	Initials: JJP		Date:	Comments
Last Modification Date: 12/21/18	Initials: LTA	(R-X)		
Full Path: www.codot.gov/business/designsupport		(R-X)		
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MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 3 W-BEAM 31 INCHES

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STANDARD PLAN NO. M-606-1

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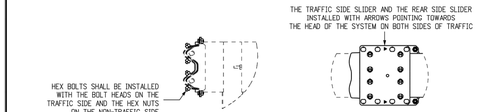
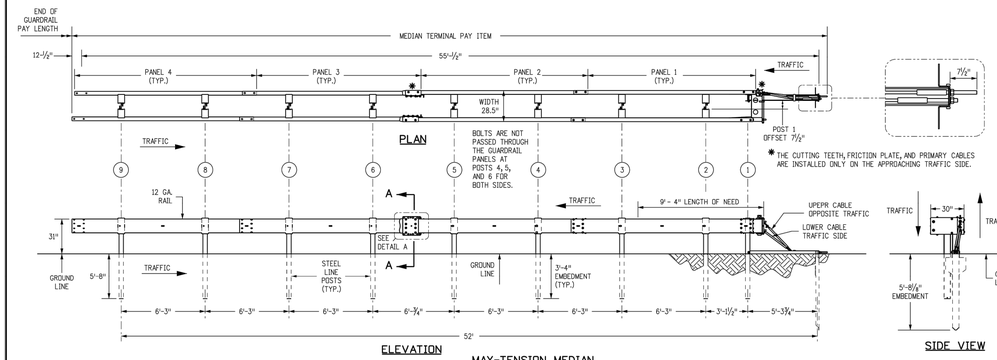


MEDIAN TERMINAL NOTES

1. THE MEDIAN TERMINAL SHALL BE THE MAX-TENSION MEDIAN AS MANUFACTURED BY BY BARRIER SYSTEM BY LINDSAY (LINDSAY TRANSPORTATION SOLUTIONS) (TEL. #: 888 800-3691).
2. THE MAX-TENSION SHALL BE APPLIED DIRECTLY TO W-BEAM GUARDRAIL SYSTEMS AT, OR TRANSITIONED TO, 31 INCH WITH PANELS AND POST SPACING CONFIGURED AT MID-SPAN SPLICE. TRANSITIONS TO STRONG POST W-BEAM GUARDRAIL SYSTEMS OR OTHER BARRIERS WHERE THE SPLICE IS NOT MID-SPAN SHALL BE ACCOMPLISHED USING A 3 FT.-1-1/2 INCH, 9 FT.-4-1/2 INCH OR 15 FT.-7-1/2 INCH PANELS AFTER THE MAX-TENSION SYSTEM (MIN. OF 50 FT. DOWNSTREAM OF THE FIRST POST). TRANSITIONS TO OTHER BARRIER SYSTEMS SHALL ALSO BE AT A MIN. OF 50 FT. DOWNSTREAM FROM THE FIRST POST. SEE SHEET 4.
3. THE MAX-TENSION SHALL NOT BE ATTACHED DIRECTLY TO RIGID BARRIERS SUCH AS CONCRETE BARRIERS, STEEL BARRIERS OR CONCRETE STRUCTURES WITHOUT PROPER TRANSITION. IF ROCK OR STIFF SOIL IS ENCOUNTERED, THE POSTS AND SOIL ANCHOR MAY BE INSTALLED BY AUGURING AND BACKFILLING THE HOLE.
4. EITHER 8 INCH OR 12 INCH COMPOSITE OR TIMBER BLOCKOUTS SHALL BE USED PER MANUFACTURER'S RECOMMENDATIONS.
5. EITHER 12 FT.-6 INCH OR 25 FOOT PANELS SHALL BE USED DEPENDING ON SITE CONDITIONS OR CONNECTED BARRIER SYSTEMS.
6. RAIL PANELS SHALL BE LAPPED PER MANUFACTURER'S INSTALLATION MANUAL, REGARDLESS OF AN UPSTREAM OR DOWNSTREAM END SYSTEM POSITION.
7. ALL STEEL COMPONENTS SHALL BE GALVANIZED PER ASTM A123 OR EQUIVALENT UNLESS OTHERWISE STATED.
8. ONE MEDIAN TERMINAL SHALL INCLUDE ALL POSTS, RAIL, AND HARDWARE ITEMS REQUIRED FOR A COMPLETE UNIT. THE DEVICE SHALL BE INSTALLED IN CONFORMANCE WITH THE MANUFACTURER'S INSTRUCTIONS. THE CONTRACTOR SHALL PROVIDE A COPY OF THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND PARTS LISTS TO THE ENGINEER PRIOR TO THE INSTALLATION OF THE DEVICE.
9. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE MEDIAN TERMINAL SHALL BE INSTALLED FOR BIDIRECTIONAL TRAFFIC APPLICATION.
10. EACH INSTALLATION SHALL BE SUPERVISED AND CERTIFIED AS CORRECT UPON COMPLETION BY A REPRESENTATIVE OF THE DEVICE MANUFACTURER OR BY AN EMPLOYEE OF THE CONTRACTOR WHO IS A CERTIFIED INSTALLER. THE CERTIFIED INSTALLER SHALL HAVE COMPLETED DEVICE TRAINING AND SHALL BE REGISTERED WITH THE MANUFACTURER AS A CERTIFIED INSTALLER. IF NO CERTIFICATION IS AVAILABLE, THE PROJECT ENGINEER OR DESIGNEE MAY INSPECT AND CERTIFY INSTALLATION.
11. DELINEATION, IF REQUIRED, SHALL BE APPLIED TO THE END PIECE AND WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE WORK. SEE STANDARD PLAN S-612-1.



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Creation Date: 11/01/18	Initials: JJP		Date:	Comments
Last Modification Date: 12/21/18	Initials: LTA	(R-X)	12/21/18	Replaced the CAT 350, Breakmaster, and the FLEAT-MT median terminals (deleted Sheet 13) with the MAX-TENSION median terminal to comply with the MASH only crash cushion device by the December 31, 2018 deadline.
Full Path: www.codot.gov/business/designsupport		(R-X)		
Drawing File Name: 60601010019.dgn		(R-X)		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English		(R-X)		

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STANDARD PLAN NO. M-606-1

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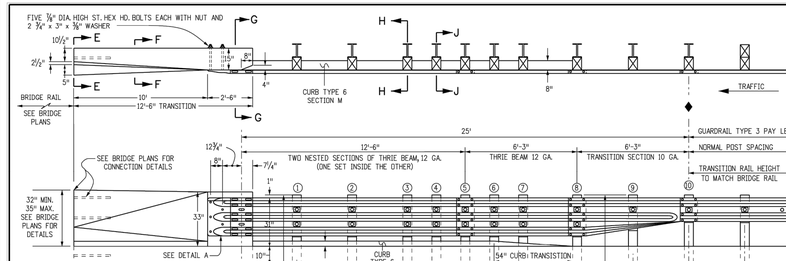
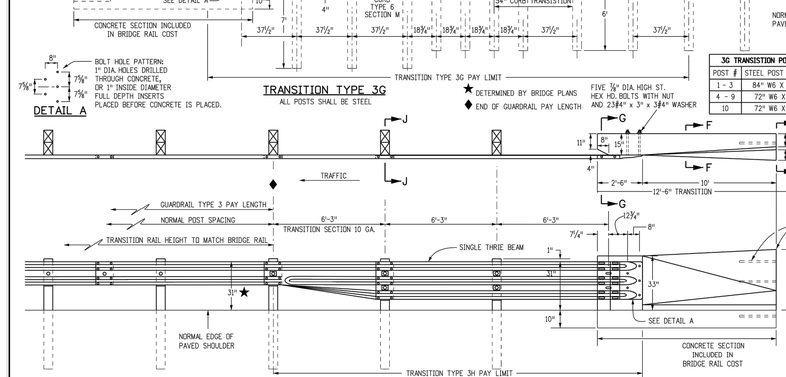


3G TRANSITION POST / BLOCK SIZING		
POST #	STEEL POST SIZE	BLOCKOUT SIZE
1 - 3	84" W6 X 15	6" X 12" X 19"
4 - 9	72" W6 X 9	6" X 12" X 19"
10	72" W6 X 9	6" X 12" X 14"



NOTES

1. TRANSITION TYPE 3G IS FOR USE AT BOTH ENDS OF BRIDGES ON TWO-WAY HIGHWAYS AND AT THE APPROACH END OF BRIDGES ON ONE-WAY HIGHWAYS.
2. TRANSITION TYPE 3H IS FOR USE AT THE TRAILING END OF BRIDGES ON ONE-WAY HIGHWAYS.
3. THE THRIE BEAM SECTION IN TRANSITIONS TYPES 3G AND 3H MAY BE SHOP BENT TO FIT CURVES THAT ARE GREATER THAN OR EQUAL TO A 10 FT. RADIUS. HOWEVER, THE 6 FT.-3 IN. TRANSITION SECTION SHALL NOT BE BENT.
4. A 12 FT.-6 IN. CONCRETE TRANSITION IS REQUIRED BETWEEN THE TYPE 3G OR 3H AND TYPE 7 BRIDGE RAIL. SEE STANDARD PLAN M-606-13 FOR THE TRANSITION BETWEEN TYPE 3 GUARDRAIL AND TYPE 7 GUARDRAIL.
5. TRANSITIONS TYPE 3G AND TYPE 3H ARE ALSO USED TO CONNECT TO TYPE 8 AND TYPE 10 BRIDGE RAIL. SEE BRIDGE PLANS FOR CONNECTION DETAILS.
6. BACKUP PLATE IS NOT REQUIRED AT POSTS ON TYPE 3G AND 3H.
7. (D) THIS SYMBOL IN THE ELEVATION DRAWINGS SHOWS THE LOCATIONS WHERE A RECTANGULAR WASHER IS REQUIRED UNDER THE POST BOLT HEAD.
8. CURB TYPE 6 SECTION M, MAY BE ASPHALT OR CONCRETE. THE COST OF CURB IS INCLUDED IN THE WORK, UNLESS A SEPARATE PAY ITEM IS INCLUDED IN THE BID SCHEDULE.
9. FOR TYPE 3G, POSTS ① THRU ③ ARE 7 FT. LONG. ALL OTHER POSTS SHALL BE A STANDARD 6 FT. LONG UNLESS OTHERWISE SPECIFIED IN THE CONTRACT.
10. NOTCHED RAIL BLOCKS MANUFACTURED FROM SYNTHETIC MATERIAL WILL BE ACCEPTED AS ALTERNATIVES TO WOOD NOTCHED BLOCKS FOR USE WITH STEEL POSTS PROVIDED THAT THE BLOCKS HAVE RECEIVED FHWA APPROVAL AND ARE CERTIFIED AS IDENTICAL TO THE SPECIMENS USED FOR TESTING AND APPROVAL. STEEL BLOCKS ARE NOT ALLOWED.

Computer File Information		Sheet Revisions		
Creation Date: 11/01/18	Initials: JJP		Date:	Comments
Last Modification Date: 12/21/18	Initials: LTA	(R-X)		
Full Path: www.codot.gov/business/designsupport		(R-X)		
Drawing File Name: 60601011019.dgn		(R-X)		
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MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 3 W-BEAM 31 INCHES

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STANDARD PLAN NO. M-606-1

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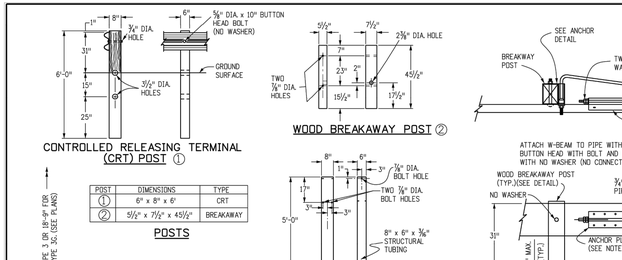
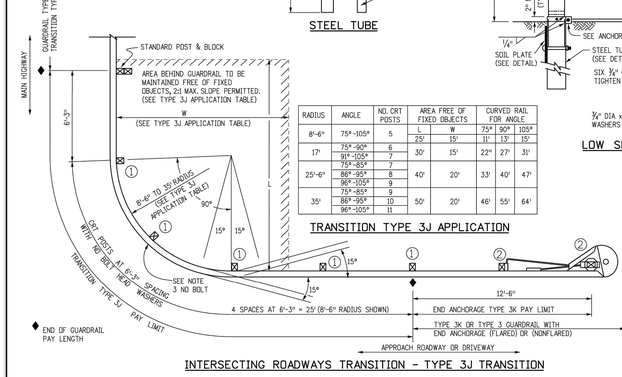


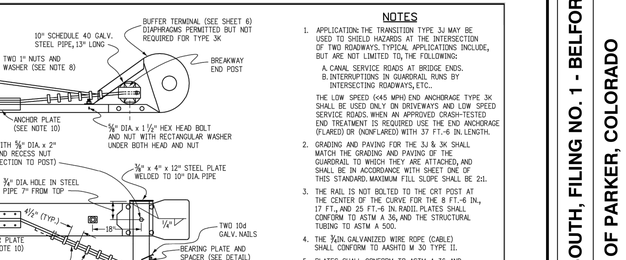
POST	DIMENSIONS	TYPE
①	6" x 8" x 6'	CRT
②	5½" x 7½" x 45½"	BREAKAWAY

POSTS



RADIUS	ANGLE	NO. CRT POSTS	AREA FREE OF FIXED OBJECTS		CURVED RAIL FOR ANGLE		
			L	W	75°	90°	105°
8'-6"	75°-105°	5	25'	15'	11'	13'	15'
17'	75°-90°	6	30'	15'	22'	27'	31'
	91°-105°	7					
25'-6"	75°-85°	7	40'	20'	33'	40'	47'
	86°-95°	8					
	96°-105°	9					
35'	75°-85°	9	50'	20'	46'	55'	64'
	86°-95°	10					
	96°-105°	11					

TRANSITION TYPE 3J APPLICATION



NOTES

1. APPLICATION: THE TRANSITION TYPE 3J MAY BE USED TO SHIELD HAZARDS AT THE INTERSECTION OF TWO ROADWAYS. TYPICAL APPLICATIONS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
   A. CANAL SERVICE ROADS AT BRIDGE ENDS.
   B. INTERRUPTIONS IN GUARDRAIL RUNS BY INTERSECTING ROADWAYS, ETC...
   THE LOW SPEED (<45 MPH) END ANCHORAGE TYPE 3K SHALL BE USED ONLY ON DRIVEWAYS AND LOW SPEED SERVICE ROADS. WHEN AN APPROVED CRASH-TESTED END TREATMENT IS REQUIRED USE THE END ANCHORAGE (FLARED) OR (NONFLARED) WITH 37 FT.-6 IN. LENGTH.
2. GRADING AND PAVING FOR THE 3J & 3K SHALL MATCH THE GRADING AND PAVING OF THE GUARDRAIL TO WHICH THEY ARE ATTACHED, AND SHALL BE IN ACCORDANCE WITH SHEET ONE OF THIS STANDARD. MAXIMUM FILL SLOPE SHALL BE 2:1.
3. THE RAIL IS NOT BOLTED TO THE CRT POST AT THE CENTER OF THE CURVE FOR THE 8 FT.-6 IN., 17 FT., AND 25 FT.-6 IN. RADII. PLATES SHALL CONFORM TO ASTM A 36, AND THE STRUCTURAL TUBING TO ASTM A 500.
4. THE ⅜IN. GALVANIZED WIRE ROPE (CABLE) SHALL CONFORM TO AASHTO M 30 TYPE II.
5. PLATES SHALL CONFORM TO ASTM A 36, AND STRUCTURAL TUBING TO ASTM A 500. WELDING SHALL MEET ALL REQUIREMENTS OF THE AMERICAN WELDING SOCIETY.
6. ALL STRUCTURAL STEEL SHALL BE GALVANIZED IN CONFORMANCE WITH ASTM A 123. POSTS SHALL NOT BE PUNCHED, DRILLED, CUT, OR WELDED AFTER GALVANIZING.
7. WHEN THE SOIL PLATE WELDED OPTION IS SELECTED, SOIL PLATE CONNECTION BOLT HOLES ARE NOT REQUIRED.
8. OUTSIDE NUT SHALL BE TORQUED AGAINST INSIDE NUT WITH THE CABLE INSTALLED TAUT BETWEEN THE ANCHOR PLATE AND FIRST POST.
9. ALL CURVED GUARDRAIL SHALL BE SHOP BENT.
10. SEE SHEET 5 FOR ANCHOR PLATE AND OTHER DETAILS.
11. THE STEEL TUBE MAY BE DRIVEN WITH WOOD POST INSERTED IF NO DAMAGE OCCURS TO THE POST OR BOLTS.

Computer File Information		Sheet Revisions		
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Last Modification Date: 12/21/18	Initials: LTA	(R-X)	12/21/18	Removed reference to Transition Type 3K, overdrive.
Full Path: www.codot.gov/business/designsupport		(R-X)		
Drawing File Name: 60601012019.dgn		(R-X)		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English		(R-X)		

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MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 3 W-BEAM 31 INCHES

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DATE	REVISIONS	DRAWN BY
03/02/20	UPDATE GAT & ADD OFF-LINE DET BASIN	ETG
12/21/16	FINAL SUBMITTAL	
11/7/16	4TH SUBMITTAL	
8/23/16	3RD SUBMITTAL	
4/11/16	2ND SUBMITTAL	
11/2015	1ST SUBMITTAL	

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TOWN OF PARKER, COLORADO
STREET DETAILS

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET 43 OF 49
CLCPKC3

PRELIMINARY - NOT FOR CONSTRUCTION

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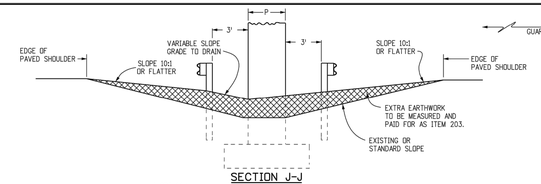
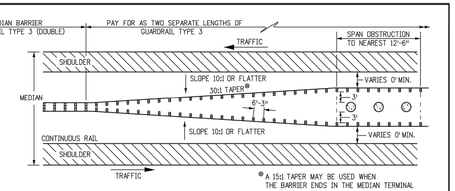
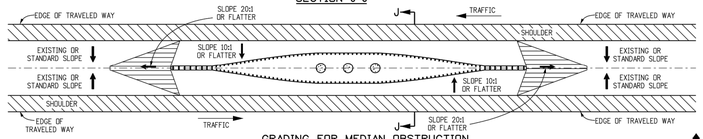


SECTION J-J

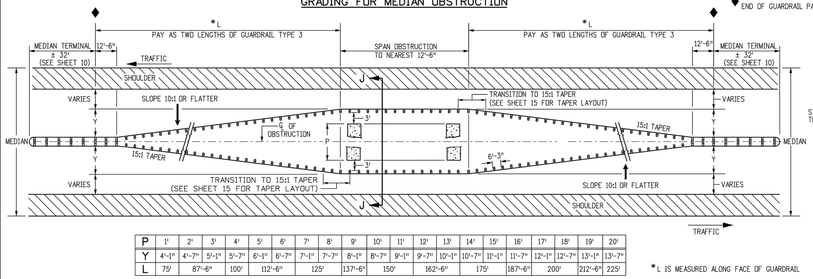


*A 15:1 TAPER MAY BE USED WHEN THE BARRIER ENDS IN THE MEDIAN TERMINAL

OBSTRUCTION IN MEDIAN 30 FT. WIDE OR LESS



GRADING FOR MEDIAN OBSTRUCTION



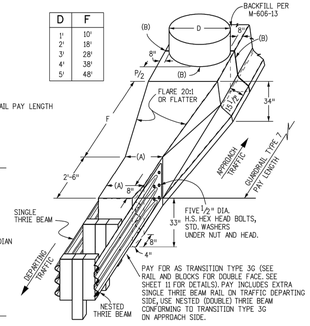
P	1'	2'	3'	4'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'
Y	4'-1"	4'-7"	5'-1"	5'-7"	6'-1"	6'-7"	7'-1"	7'-7"	8'-1"	8'-7"	9'-1"	9'-7"	10'-1"	10'-7"	11'-1"	11'-7"	12'-1"	12'-7"	13'-1"	13'-7"
L	75'	87'-6"	100'	112'-6"	125'	137'-6"	150'	162'-6"	175'	187'-6"	200'	212'-6"	225'							

*L IS MEASURED ALONG FACE OF GUARDRAIL

GUARDRAIL FOR OBSTRUCTION IN MEDIANS WIDER THAN 30 FT.

NOTE: FOR OBSTRUCTIONS (P) THAT ARE WIDER THAN 20 FT. IN MEDIANS USE SHEET 16.

D	F
1'	10'
2'	18'
3'	28'
4'	38'
5'	48'



END OF GUARDRAIL PAY LENGTH

PAY FOR AS TRANSITION TYPE 3G (SEE RAIL AND BLOCKS FOR DOUBLE FACE. SEE SHEET 11 FOR DETAILS). PAY INCLUDES EXTRA SINGLE THRIE BEAM RAIL ON TRAFFIC DEPARTING SIDE, USE NESTED (DOUBLE) THRIE BEAM CONFORMING TO TRANSITION TYPE 3G ON APPROACH SIDE.

(A). TIMBER POSTS 2 FT., STEEL POSTS 1 FT.-9 1/2 IN.

(B). 1/2 IN. PREFORMED JOINT MATERIAL

NARROW MEDIAN DETAIL

USUALLY LESS THAN 30 FT. WIDE MEDIAN WITH ALL PAVED SURFACE

OBSTRUCTIONS IN MEDIANS

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Creation Date: 11/01/18	Initials: JJP	Date:	Comments
Last Modification Date: 12/21/18	Initials: LTA		
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Drawing File Name: 60601013019.dgn			
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MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 3 W-BEAM 31 INCHES

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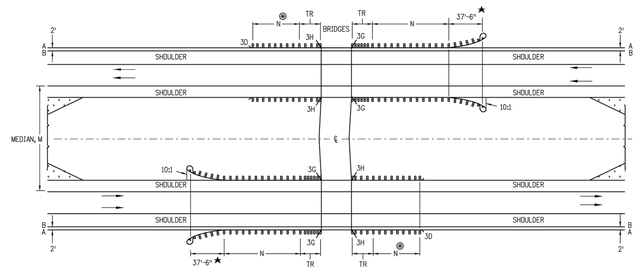

MULTILANE DIVIDED HIGHWAYS FOR STEEP EMBANKMENTS IN MEDIAN

NOTES

1. MEDIAN BARRIERS TANGENT TO THE ROADWAY MAY BE USED WHERE THE SHOULDER SLOPES IN THE MEDIAN ARE STEEP.
2. BARRIER LENGTHS SHALL BE INCREASED TO ACCOUNT FOR STEEP EMBANKMENTS OR OTHER HAZARDS WITHIN CLOSE PROXIMITY OF BRIDGES.

⊗ – DO NOT CONSTRUCT THE TR AND GUARDRAIL ON THE TRAILING BRIDGE ENDS IF SITE CONDITIONS DO NOT WARRANT THE USE OF GUARDRAIL.

N – SHOWN ON PLANS, LENGTH TO SHIELD ALL HAZARDS IS BASED ON GUARDRAIL'S LENGTH OF NEED COMPUTATION, SEE AASHTO ROADWAY DESIGN GUIDE. THE MINIMUM SHALL BE 12 FT. – 6 IN., WHERE SITE CONDITIONS ALLOW. THE TOTAL LENGTH OF NEED WILL INCLUDE THE LENGTH OF TRANSITION, THE LENGTH OF RAIL (NL) AND ANY REDIRECTIVE LENGTH IN THE RAIL END TREATMENT.

TR – 18 FT.-9 IN. FOR 3G AND 3H.

A – EDGE OF 8 FT. OR 10 FT. SHOULDER.

B – EDGE OF 6 FT. OR LESS SHOULDER.

★ – END ANCHORAGE CAN BE FLARED OR NONFLARED.

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Creation Date: 11/01/18	Initials: JJP	Date:	Comments
Last Modification Date: 12/21/18	Initials: LTA		
Full Path: www.codot.gov/business/designsupport			
Drawing File Name: 60601014019.dgn			
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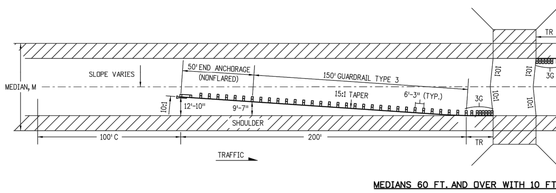
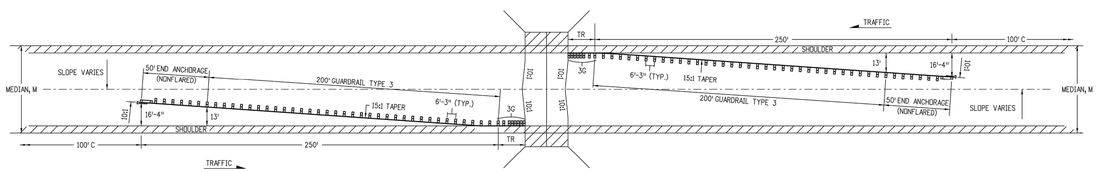
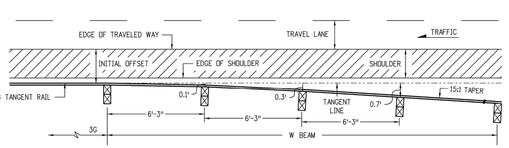


MEDIANS 60 FT. AND OVER WITH 10 FT. OR WIDER SHOULDERS.

TR = 18 FT.-9 IN FOR TRANSITION TYPE 3G.
C = CHANGE: 100 FT. TRANSITION TO NORMAL SLOPE.
M = WIDTH OF MEDIAN.



MEDIANS 60 FT. AND OVER WITH 4 to 8 FT. SHOULDERS.



TRANSITION TO TYPICAL 15:1 TAPER

NOTES

1. GUARDRAIL TRANSITIONS FROM PARALLEL TO ROADWAY SHOULDER AT 3G SEGMENT TO 15:1 TAPER WITHIN 18'-9" BASED ON POST OFFSET DIMENSIONS SHOWN.
2. SEE SHEET 14 FOR THE RIGHT SHOULDER GUARDRAIL LAYOUT.

MULTILANE DIVIDED HIGHWAYS – (DEPRESSED MEDIANS, 60 FT. AND OVER WITH OPEN HAZARDS OR OBSTRUCTIONS)

Computer File Information		Sheet Revisions	
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Last Modification Date: 12/21/18	Initials: LTA		
Full Path: www.codot.gov/business/designsupport			
Drawing File Name: 60601015019.dgn			
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MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 3 W-BEAM 31 INCHES

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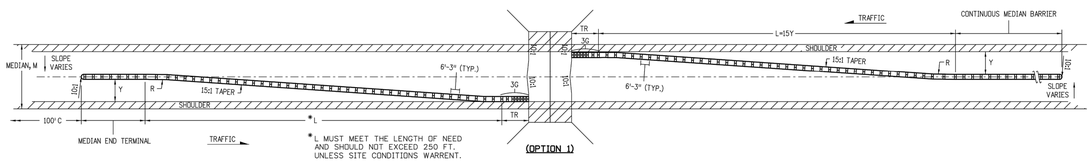
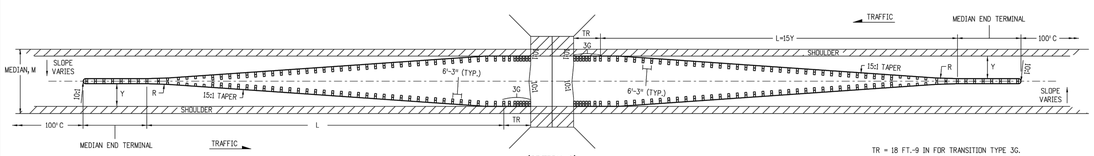
NOTES

1. GUARDRAIL TRANSITIONS FROM PARALLEL TO ROADWAY SHOULDER AT 3G SEGMENT TO 15:1 TAPER WITHIN 18'-9" BASED ON POST OFFSET DIMENSIONS SHOWN.
2. THE OPTION 1 LAYOUT SHALL BE USED WHEN "Y" EXCEEDS 16 FEET OR WHEN MEDIAN BARRIER IS CONTINUOUS.
3. THE OPTION 2 LAYOUT SHALL BE USED WHEN "Y" IS 16 FEET OR LESS.
4. SEE SHEET 14 FOR RIGHT SHOULDER GUARDRAIL LAYOUT.



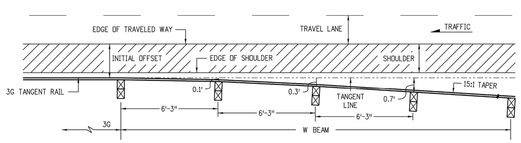
* L MUST MEET THE LENGTH OF NEED AND SHOULD NOT EXCEED 250 FT. UNLESS SITE CONDITIONS WARRENT.

(OPTION 1)



(OPTION 2)

TR = 18 FT.-9 IN FOR TRANSITION TYPE 3G.
C = CHANGE: 100 FT. TRANSITION TO NORMAL SLOPE.
M = WIDTH OF MEDIAN.
L = TOTAL LENGTH PAID AS GUARDRAIL TYPE 3.
Y = FINAL OFFSET AT END.



TRANSITION TO TYPICAL 15:1 TAPER

MULTILANE DIVIDED HIGHWAYS – (DEPRESSED MEDIANS, 21 – 59 FT. WITH OPEN HAZARDS OR OBSTRUCTIONS)

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Creation Date: 11/01/18	Initials: JJP	Date:	Comments
Last Modification Date: 12/21/18	Initials: LTA		
Full Path: www.codot.gov/business/designsupport			
Drawing File Name: 60601016019.dgn			
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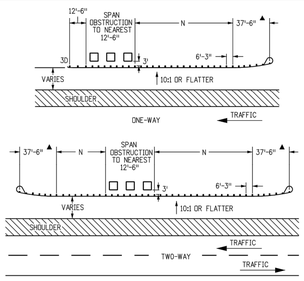
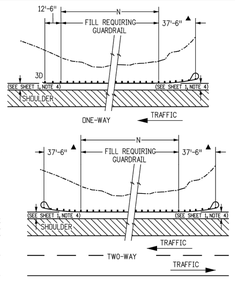
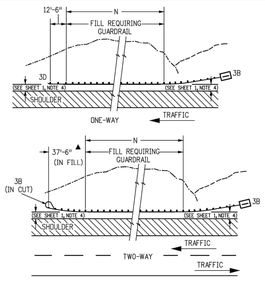






GUARDRAIL FOR ROADSIDE OBSTRUCTIONS

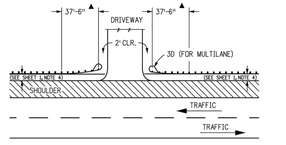
GUARDRAIL FOR ROADSIDE FILL CONSTRUCTION

GUARDRAIL FOR ROADSIDE CUT-TO-FILL CONDITION

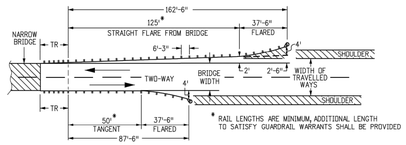
NOTES

1. THE TYPE 3G OR 3H TRANSITIONS (SEE SHEET 11) SHALL BE USED TO CONNECT A TYPE 3 W-BEAM TO TYPE 7 CONCRETE BARRIER OR TO A TYPE 7, 8, OR 10 BRIDGE RAIL.
2. "TR" WILL BE 18 FT.-9 IN. FOR THE TRANSITIONS TYPE 3G AND 3H.
3. THE GUARDRAIL LENGTH DIMENSION "N" IS THE LENGTH AS DETERMINED BY THE LENGTH OF NEED COMPUTATION AND IS SHOWN ON THE PLANS. THE MINIMUM IS 12 FT.-6 IN. WHERE SITE CONDITIONS ALLOW. THE OVERALL REQUIRED LENGTH OF NEED CAN INCLUDE THE LENGTH OF TRANSITION, THE LENGTH OF RAIL (N), AND ANY REDIRECTIVE LENGTH IN THE RAIL END TREATMENT. A TRAVERSABLE SLOPE SHALL BE PROVIDED BEHIND THE TERMINAL TO DIMENSION "N" PRIOR TO THE OBSTRUCTION UNLESS OTHERWISE APPROVED BY THE ENGINEER.

▲ END ANCHORAGE CAN BE FLARED OR NONFLARED

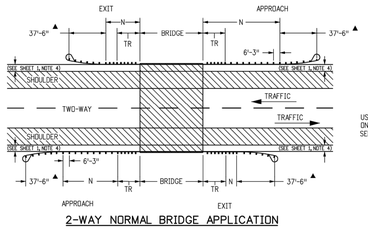


LAYOUT FOR DRIVEWAY APPROACH

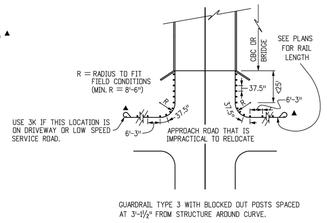


* RAIL LENGTHS ARE MINIMUM, ADDITIONAL LENGTH TO SATISFY GUARDRAIL WARRANTS SHALL BE PROVIDED

2-WAY NARROW APPLICATION



2-WAY NORMAL BRIDGE APPLICATION



GUARDRAIL TYPE 3 WITH BLOCKED OUT POSTS SPACED AT 3'-1½" FROM STRUCTURE AROUND CURVE.

INTERRUPTED STRUCTURE APPROACH

(USE TYPE 3J ON SHEET 12 WHEN PRACTICAL)

Computer File Information		Sheet Revisions	
Creation Date: 11/01/18 Initials: JJP		Date:	Comments
Last Modification Date: 12/21/18 Initials: LTA	(R-X)		
Full Path: www.codot.gov/business/designsupport	(R-X)		
Drawing File Name: 60601017019.dgn	(R-X)		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)		

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MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 3 W-BEAM 31 INCHES

Issued By: Project Development Branch November 1, 2018

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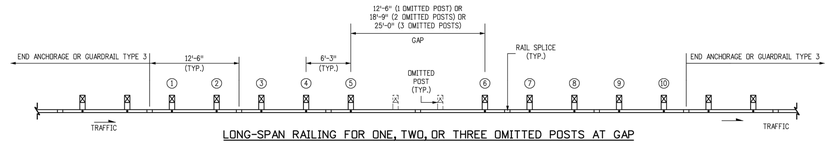
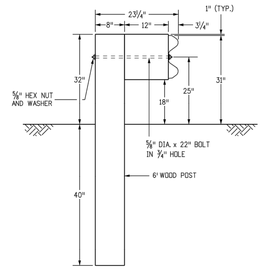
NOTES

1. POSTS ①, ②, ⑨, and ⑩ MAY BE TIMBER OR STEEL.
2. THE NUMBER OF OMITTED POSTS IS DEPENDENT ON THE LENGTH OF THE GAP.

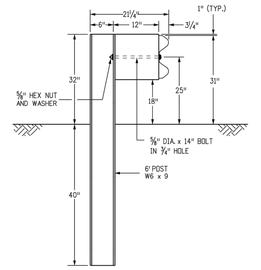


LONG-SPAN RAILING FOR ONE, TWO, OR THREE OMITTED POSTS AT GAP



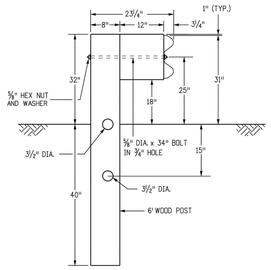
TIMBER POST

POSTS ①-② AND ⑨-⑩
(SEE NOTE 1)



STEEL POST

POSTS ①-② AND ⑨-⑩
(SEE NOTE 1)



BREAKWAY TIMBER POST

POSTS ③ - ⑧

Computer File Information		Sheet Revisions	
Creation Date: 11/01/18 Initials: JJP		Date:	Comments
Last Modification Date: 12/21/18 Initials: LTA	(R-X)		
Full Path: www.codot.gov/business/designsupport	(R-X)		
Drawing File Name: 60601018019.dgn	(R-X)		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)		

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MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 3 W-BEAM 31 INCHES

Issued By: Project Development Branch November 1, 2018

STANDARD PLAN NO. M-606-1

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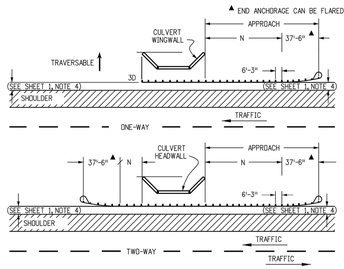
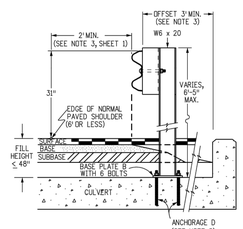
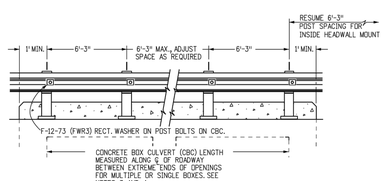


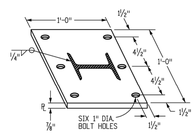
GUARDRAIL FOR CULVERTS



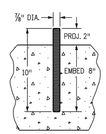
INSIDE MOUNT ON CBC



RAIL PLACEMENT FOR INSIDE MOUNT



BASE PLATE B
(FOR INSIDE MOUNT)



ANCHORAGE D
(FOR INSIDE MOUNT)

NOTES

1. LOCATION AND LENGTH OF MEDIAN GUARDRAIL APPROACHES TO CULVERTS WITH FULL HEADWALL AND WINGWALLS SHALL BE AS SHOWN FOR BRIDGES ON SHEET 15. THE GUARDRAIL TYPE 3 SHALL CONTINUE ACROSS THE CULVERT AS SHOWN ON THIS SHEET.
2. RIGHT SHOULDER BOX CULVERT TREATMENT IS SHOWN ON THIS SHEET FOR CULVERTS 20 FT. OR LESS IN LENGTH.
3. GUARDRAIL ACROSS CULVERTS WITH A LENGTH OF 20 FT. OR LESS SHALL BE AS FOLLOWS:
   A. FILL HEIGHT AT GUARDRAIL POST 48 IN. OR GREATER: CONSTRUCTION AND PAYMENT WILL BE AS GUARDRAIL TYPE 3.
   B. FILL HEIGHT AT GUARDRAIL POST LESS THAN 48 IN. AND BLOCK FACE TO HEADWALL OFFSET OF 3 FT. OR GREATER: CONSTRUCTION AND PAYMENT AS GUARDRAIL TYPE 3.
   C. FILL HEIGHT AT GUARDRAIL POST 48 IN. OR LESS AND BLOCK FACE TO HEADWALL OFFSET LESS THAN 3 FT: CONSTRUCTION ACCORDING TO HEADWALL MOUNT DETAILS AND PAYMENT AS BRIDGE RAIL TYPE 3.
4. GUARDRAIL ACROSS CULVERTS WITH LENGTH GREATER THAN 20 FT. SHALL BE AS FOLLOWS:
   A. FILL HEIGHT AT GUARDRAIL POSTS 48 IN. OR GREATER: CONSTRUCTION AND PAYMENT WILL BE FOR STANDARD GUARDRAIL TYPE 3.
   B. FILL HEIGHT AT GUARDRAIL POSTS 48 IN. OR LESS: CONSTRUCTION AND PAYMENT IN ACCORDANCE WITH THE CONTRACT BRIDGE PLANS. WHEN BLOCK FACE TO HEADWALL OFFSET IS 3 FT. OR GREATER: CONSTRUCTION AND PAYMENT AS GUARDRAIL TYPE 3.
5. ANCHORAGE D: SIX BOLTS FOR BASE PLATE "B" WITH INSIDE MOUNT. THE BOLTS SHALL BE 7/8 IN. DIA X 10 IN. HIGH STRENGTH RODS THREADED FULL LENGTH AND ALL GALVANIZED. RODS SHALL BE CAST-IN-PLACE FOR A NEW STRUCTURE. FOR AN EXISTING STRUCTURE, THE RODS SHALL BE INSTALLED IN 1-1/4 IN. DIA HOLES WITH NON-SHRINK GROUT OR EPOXY CONFORMING TO ASTM C 881.
6. THE GUARDRAIL LENGTH DIMENSION "N" IS THE LENGTH AS DETERMINED BY THE LENGTH OF NEED COMPUTATION AND IS SHOWN ON THE PLANS. THE MINIMUM IS 12 FT.-6 IN. WHERE SITE CONDITIONS ALLOW. THE OVERALL REQUIRED LENGTH OF NEED CAN INCLUDE THE LENGTH OF TRANSITION, THE LENGTH OF RAIL (N), AND ANY REDIRECTIVE LENGTH IN THE RAIL END TREATMENT.
7. ALL POSTS, BASE PLATES, AND ANCHOR BOLTS SHALL BE FABRICATED FROM ASTM A 36 STEEL. THE ABOVE MATERIAL, W-BEAM, AND ALL ANCHOR BOLTS AND MISCELLANEOUS BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH SECTION 509. CONCRETE, REINFORCING STEEL, AND STRUCTURAL STEEL ELEMENTS SHALL BE IN ACCORDANCE WITH SECTIONS 601, 602, AND 509, RESPECTIVELY.
8. POST ANCHORS, ENCASED IN CONCRETE, SHALL BE ASTM A 36 STEEL, AND NEED NOT BE GALVANIZED.
9. PRIOR TO FABRICATION OF BRIDGE RAIL, THREE SETS OF WORKING DRAWINGS WHICH COMPLY WITH THE REQUIREMENTS OF SECTION 105 SHALL BE SUBMITTED TO THE ENGINEER FOR INFORMATION ONLY.

Computer File Information		Sheet Revisions	
Creation Date: 11/01/18 Initials: JJP		Date:	Comments
Last Modification Date: 12/21/18 Initials: LTA	(R-X)	12/21/18	Deleted the Transition Type 3G and Guardrail Type 3 Approach, Headwall Mount on CBC, Headwall Mount Post, Blocking Tubes End and Anchor details. Deleted previous Gen. Notes 6, 9, and 11.
Full Path: www.codot.gov/business/designsupport	(R-X)		
Drawing File Name: 60601019019.dgn	(R-X)		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)		

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MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 3 W-BEAM 31 INCHES

Issued By: Project Development Branch November 1, 2018

STANDARD PLAN NO. M-606-1

Sheet No. 19 of 19

DRAWN BY	DATE	REVISIONS
ETG		
	03/02/20	UPDATE GAT & ADD OFF-LINE DET BASIN
F.	12/21/16	FINAL SUBMITTAL
E.	11/7/16	4TH SUBMITTAL
D.	05/31/16	3RD SUBMITTAL
C.	4/11/16	2ND SUBMITTAL
B.	11/2015	1ST SUBMITTAL
A.		

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Civil Engineering & Surveying | Water Resource Management | Construction Management

COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
STREET DETAILS

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET 45 OF 49
CLCPKC3 ---

PRELIMINARY - NOT FOR CONSTRUCTION

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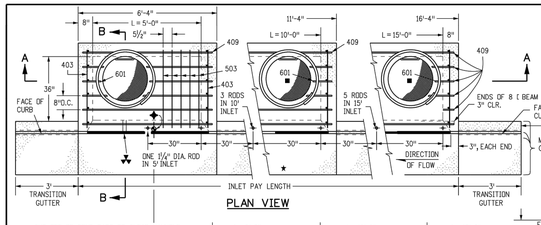
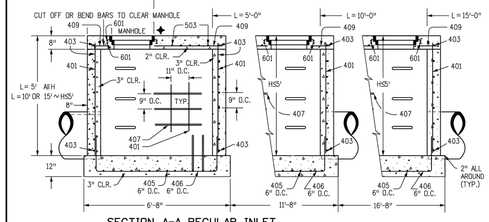
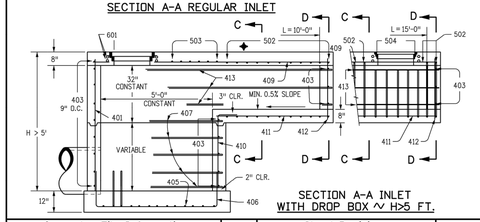
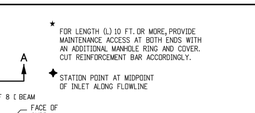
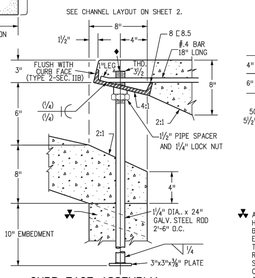
Plotted: 3/3/2020 4:22 PM Dwg Name: P:\Clcpkc3\ComSouth12-Filing 1 NO GAT\ComSouth03-Ultimate Belford Ave\dwg\Eng\Final Drawings\Plan Set\Town\CLCPKC3-Street Details.dwg Updated By: SKotob

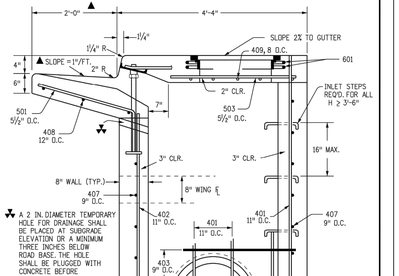


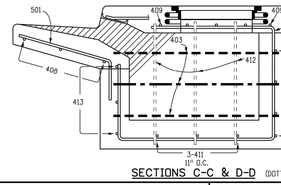












FOR LENGTH (L) 10 FT. OR MORE, PROVIDE MAINTENANCE ACCESS AT BOTH ENDS WITH AN ADDITIONAL MANHOLE RING AND COVER. CUT REINFORCEMENT BAR ACCORDINGLY.

✦ STATION POINT AT MIDPOINT OF INLET ALONG FLOWLINE

* 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.

MEET SHAPE OF NORMAL BARRIER CURB AND GUTTER HERE.

GENERAL NOTES:

SEE SHEET 2.

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

Sheet Revisions	
Date:	Comments

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CURB INLET TYPE R

Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO.
M-604-12
Standard Sheet No. 1 of 2
Project Sheet Number:

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

* VARIABLE REFER TO TABLE TWO.
■ INCLUDE #4, 18 IN. BARS (SEE CHANNEL LAYOUT).

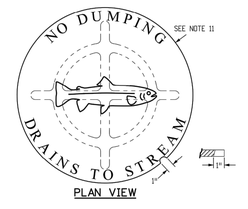
REGULAR INLETS | DROP BOX INLETS

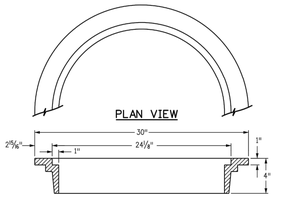
TABLE ONE ∼ BAR LIST FOR CURB INLETS, TYPE "R"

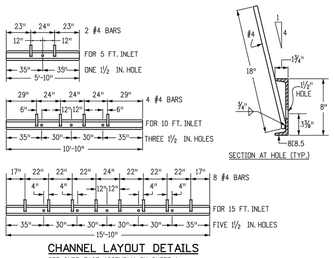
"H"	LENGTH 401	LENGTH 402	LENGTH 410	NO. REQ'D. REGULAR 403	NO. REQ'D. REGULAR 407	NO. REQ'D. DROP BOX 403	NO. REQ'D. DROP BOX 407	L = 5 FT. CONC. CU. YDS.	L = 5 FT. STEEL LBS.	L = 10 FT. CONC. CU. YDS.	L = 10 FT. STEEL LBS.	L = 15 FT. CONC. CU. YDS.	L = 15 FT. STEEL LBS.
3'-0"	2'-8"	1'-8"		10	7			3.2	285	5.3	497	7.4	706
3'-6"	3'-2"	2'-2"		10	7			3.4	305	5.7	528	7.9	747
4'-0"	3'-8"	2'-8"		12	9			3.7	326	6.0	559	8.4	786
4'-6"	4'-2"	3'-2"		12	9			3.9	334	6.4	571	8.8	803
5'-0"	4'-8"	3'-8"		14	11			4.1	354	6.7	602	9.3	844
5'-6"	5'-2"	4'-2"	3"-5"	16	13	15	6	4.4	375	6.0	607	7.4	850
6'-0"	5'-8"	4'-8"	3"-11"	16	13	16	6	4.6	382	6.2	616	7.6	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

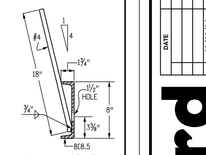
NOTES: FOR L = 5 FT., L = 10 FT., AND L = 15 FT.
REGULAR INLETS: TOTAL QUANTITIES NEEDED ARE OUTSIDE THE HEAVY BLACK LINE.
DROP BOX INLETS: TOTAL QUANTITIES NEEDED ARE INSIDE THE HEAVY BLACK LINE.
STEEL WEIGHTS DO NOT INCLUDE STRUCTURAL STEEL CHANNEL.

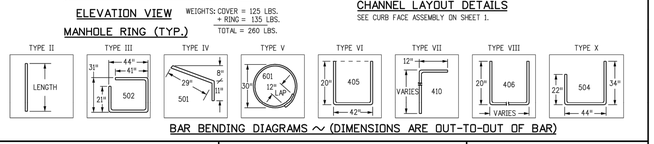
TABLE TWO ∼ BARS AND QUANTITIES VARIABLE WITH "H"











GENERAL NOTES

1. CONCRETE SHALL BE CLASS B. INLET MAY BE CAST-IN-PLACE OR PRECAST.
2. CONCRETE WALLS SHALL BE FORMED ON BOTH SIDES AND SHALL BE 8 INCHES THICK.
3. INLET STEPS SHALL BE IN CONFORMANCE WITH AASHTO M 199.
4. CURB FACE ASSEMBLY SHALL BE GALVANIZED AFTER WELDING.
5. EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED ¾ OF A INCH. 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 INCH MINIMUM CLEARANCE. ALL REBENDING BARS SHALL BE GRADE 60 AND EPOXY COATED.
7. DIMENSIONS AND WEIGHTS OF TYPICAL MANHOLE RING AND COVER ARE NOMINAL.
8. MATERIAL FOR MANHOLE RINGS AND COVERS SHALL BE GRAY OR DUCTILE CAST IRON IN ACCORDANCE WITH SUBSECTION 712.06.
9. SINCE PIPE ENTRIES INTO THE INLET ARE VARIABLE, THE DIMENSIONS SHOWN ARE TYPICAL. ACTUAL DIMENSIONS AND QUANTITIES FOR CONCRETE AND REINFORCEMENT SHALL BE AS REQUIRED IN THE WORK. QUANTITIES INCLUDE VOLUMES OCCUPIED BY PIPES.
10. STRUCTURAL STEEL SHALL BE GALVANIZED AND SHALL BE IN ACCORDANCE WITH SUBSECTION 712.06.
11. ALL MANHOLE COVERS SHALL BE CAST WITH A "NO DUMPING DRAINS TO STREAM" MESSAGE AND A FISH SYMBOL. THE SURFACE OF THE MANHOLE COVER SHALL HAVE A NON-SLIP PATTERN.

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

Sheet Revisions	
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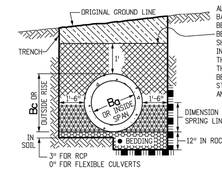
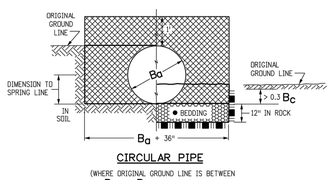
CURB INLET TYPE R

Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO.
M-604-12
Standard Sheet No. 2 of 2
Project Sheet Number:



● THE BEDDING MATERIAL FOR RIGID PIPE IN SOIL SHALL BE 3 IN. OF LOOSE STRUCTURE BACKFILL (CLASS 1 OR 2). BEDDING IS NOT REQUIRED FOR FLEXIBLE PIPE IN SOIL. BEDDING MATERIAL FOR RIGID OR FLEXIBLE PIPE IN ROCK SHALL BE 12 IN. OF LOOSE STRUCTURE BACKFILL, CLASS 1.



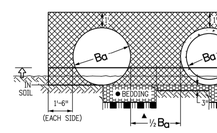
▲ WHEN TWO OR MORE CONDUITS ARE LAID SIDE-BY-SIDE, THEY SHALL BE PLACED SO THAT THEY ARE ½ OUTSIDE DIAMETER, OR ½ OUTSIDE SPAN, OR 3 FT. APART, WHICHEVER IS LESS. HOWEVER, IF END SECTIONS ARE USED, THE MINIMUM SPACING SHALL BE 1 FT. BETWEEN END SECTIONS.

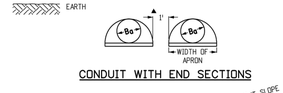
GENERAL NOTES

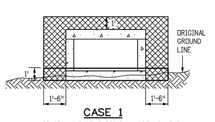
1. EXCAVATION AND BACKFILL PATTERNS DIFFERENT FROM THOSE INDICATED ON THESE SHEETS WILL BE SHOWN ELSEWHERE ON THE PLANS.
2. EXCAVATION FOR CHANNEL CHANGE OR CHANNEL IMPROVEMENT WILL BE EITHER UNCLASSIFIED EXCAVATION OR MUCK EXCAVATION AND WILL BE NOTED ON THE PLANS. EXCAVATION FROM THE CHANNEL FLOWLINE TO THE DEPTH REQUIRED FOR THE NEW STRUCTURE AND INCIDENTAL CHANNEL EXCAVATION WILL BE PAID FOR AS STRUCTURE EXCAVATION.
3. STRUCTURE FOOTINGS WHICH ARE LOCATED IN ROCK SHALL BE POURED OUT TO UNDISTURBED ROCK WITHOUT FORMING IN CONFORMANCE WITH SUBSECTION 601.09(b).
4. STRUCTURAL PLATE CULVERTS SHALL BE CONSTRUCTED AS SHOWN ON THE PLANS.
5. B_a EQUALS THE INSIDE DIAMETER OF A PIPE AND B_c EQUALS THE OUTSIDE DIAMETER OF A PIPE. FOR THIN WALLED PIPES, IT IS ASSUMED THAT $B_a = B_c$.
6. APPROXIMATE STRUCTURE EXCAVATION AND BACKFILL QUANTITIES, UP TO 1 FT. OVER THE PIPE WILL BE SHOWN ON THE PLANS, FOR INFORMATION ONLY.

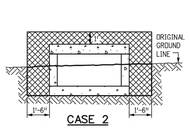
LEGEND

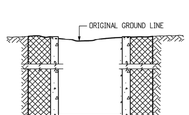
STRUCTURE EXCAVATION LIMITS
STRUCTURE BACKFILL, CLASS 1 OR 2, AS SHOWN ON PLANS
STRUCTURE BACKFILL, CLASS 1
EMBANKMENT MATERIAL
EARTH
ROCK
BEDDING
CONCRETE
= WHEN FLOW LINE OF CULVERT IS LESS THAN 0.3 B_c BELOW THE ORIGINAL GROUND LINE, EMBANKMENT SHALL BE BUILT UP TO 0.3 B_c ABOVE THE FLOW LINE AND TRENCH EXCAVATED TO THE BOTTOM OF PIPE OR AS SHOWN.

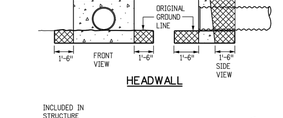












Computer File Information	
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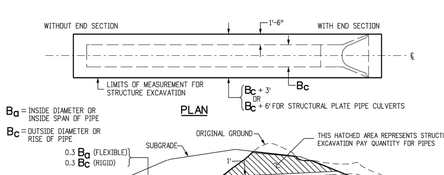
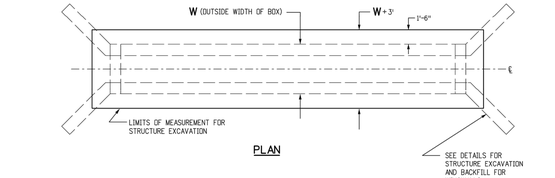
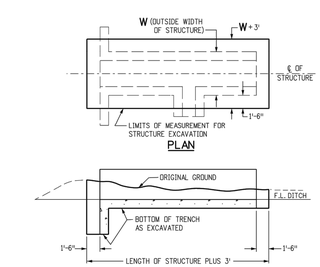
EXCAVATION AND BACKFILL FOR STRUCTURES

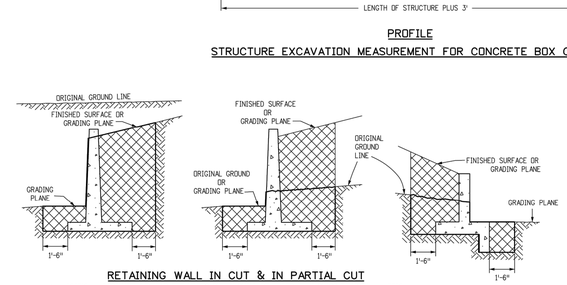
Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO.
M-206-1
Standard Sheet No. 1 of 2
Project Sheet Number:









LEGEND
STRUCTURE EXCAVATION LIMITS
STRUCTURE BACKFILL, CLASS 1 OR 2, AS SHOWN ON PLANS
CONCRETE

Computer File Information	
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EXCAVATION AND BACKFILL FOR STRUCTURES

Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO.
M-206-1
Standard Sheet No. 2 of 2
Project Sheet Number:

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

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DATE	REVISIONS	DRAWN BY
03/02/20	UPDATE GAT & ADD OFF-LINE DET BASIN	ETG
12/21/16	FINAL SUBMITTAL	
11/7/16	4TH SUBMITTAL	
8/12/16	3RD SUBMITTAL	
4/11/16	2ND SUBMITTAL	
11/2015	1ST SUBMITTAL	

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Civil ■ Water Resource Management ■ Construction Management

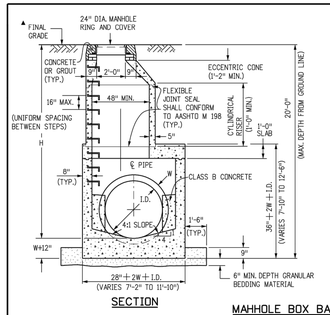
COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
STORM DETAILS

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET
46 OF 49
CLCPKC3

PRELIMINARY - NOT FOR CONSTRUCTION

Plotted: 3/3/2020 4:23 PM Dwg Name: P:\Civil\c3\ComSouth12-Filing 1 No GAT\ComSouth03-Ultimate Belford Ave\dwg\Eng\Final Drawings\Plan Set\Town\CLCPKC3-Storm Details.dwg Updated By: MMcGuire



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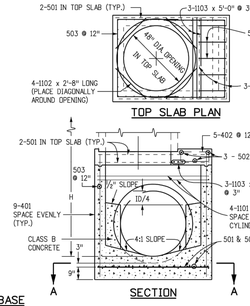
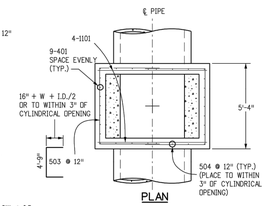
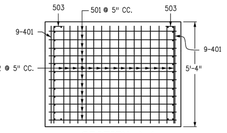


MAHHOLE BOX BASE





GENERAL NOTES

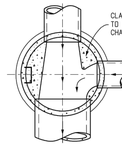
1. SINCE ALL PIPE ENTRIES INTO THE BASE ARE VARIABLE, THE DIMENSIONS SHOWN ARE TYPICAL. ACTUAL DIMENSIONS AND QUANTITIES FOR CONCRETE AND REINFORCEMENT SHALL BE AS REQUIRED IN THE WORK.
2. THE PRECAST FLAT TOP MAY BE USED ON ANY MANHOLE. THE ECCENTRIC CONE MAY BE USED WHEN THE MANHOLE "H" HEIGHT IS AT LEAST 8 FT.
3. THE MANHOLE RING FRAME SHALL BE SET IN A BED OF GROUT. THE FRAME SHALL BE SURROUNDED WITH A CEMENT GROUT IN UNPAVED AREA, OR A CONCRETE COLLAR IN PAVED AREA. SEE DETAILS ON SHEETS 2 AND 3.
4. DESIGN OF BOX BASE IS BASED ON STRAIGHT RUNS OF PIPE OR CHANGE IN DIRECTION OF LESS THAN 45°. SPECIAL DESIGN IS REQUIRED FOR 45° OR GREATER.
5. PRECAST MANHOLES AND REINFORCEMENT SHALL CONFORM TO AASHTO M 199 (ASTM C 478).
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 CONFORM TO AASHTO M 199.
8. ALL REINFORCING STEEL SHALL BE GRADE 60 AND EPOXY COATED. VERTICAL STEEL SHALL BE PLACED AT CENTERLINE OF WALL. ALL BARS SHALL HAVE A 2 IN. MINIMUM CLEARANCE.
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. THE SLOPE OF THE MANHOLE COVER SHALL MATCH THE ROADWAY PROFILE AND CROSS SLOPE.

▲ WHEN FINAL GRADE IS PAVEMENT SURFACE, RECESS MANHOLE RING AND COVER 1/4" MIN. TO 1/2" MAX.

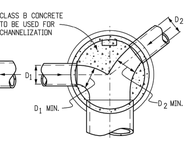
MARK	SIZE	TYPE	WT. #/FT.	BARS	I.D. 54"	60"	66"	72"	84"	96"	FORMULAS
401	4	I	0.668	(NO. REQ'D. (LENGTH (WEIGHT *	18 8'-1" 97.2	18 8'-8" 104.2	18 9'-3" 111.2	18 9'-10" 118.2	18 11'-0" 132.3	18 12'-2" 146.3	401 BAR LENGTH = 32" + 2W + I.D.
402	4	III	0.668	(NO. REQ'D. (LENGTH (WEIGHT *	5 5'-5" 18.1	5 6'-0" 20.0	5 6'-7" 22.0	5 7'-2" 23.9	5 8'-4" 27.8	5 9'-6" 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 5'-0" 114.7	23 5'-0" 119.9	25 5'-0" 130.4	26 5'-0" 135.6	29 5'-0" 151.2	32 5'-0" 166.9	502 NUMBER BARS REQ'D. = 3 + $\left(\frac{24+I.D.+2W}{6}+1\right)$ @ 5"
503	5	II	1.043	(NO. REQ'D. (LENGTH (WEIGHT *	16 12'-10" 214.2	16 13'-5" 223.9	18 14'-0" 262.8	18 14'-7" 273.8	20 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'-0"+2(16+W+I.D./2)
504	5	I	1.043	(NO. REQ'D. (LENGTH (WEIGHT *	12 8'-4" 101.2	14 8'-8" 126.6	14 9'-3" 135.1	16 9'-10" 164.1	18 11'-0" 206.5	20 12'-2" 253.8	504 NUMBER BARS REQ'D. = 2 $\left(\frac{2W+I.D.-4}{12}+1\right)$ @ 12"
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 8'-11" 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" 16"+W+I.D./2
* REINFORCING STEEL TOTAL					965.6	1,037.5	1,127.2	1,204.0	1,380.2	1,601.6	TYPE III 12" 12" 7" I.D.+2W-38"
CONCRETE = CUBIC YARDS = TOTAL					4.0	4.6	7.3	5.7	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.

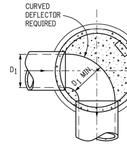
QUANTITIES FOR CONCRETE MANHOLE BOX BASE



THROUGH PIPE ONE LATERAL



ANGLED LATERALS



SHARP ANGLE

TYPICAL CHANNELIZATION DETAILS

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

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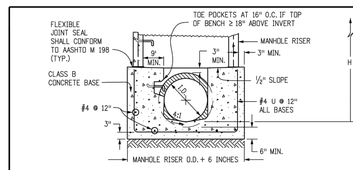
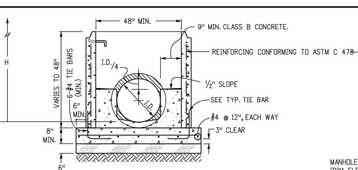
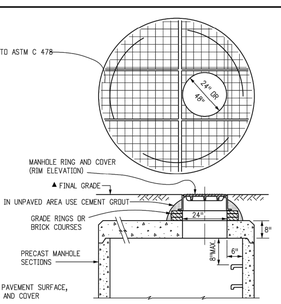
MANHOLES

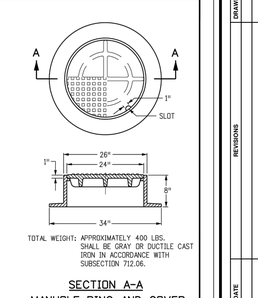
Issued by the Project Development Branch: July 31, 2019

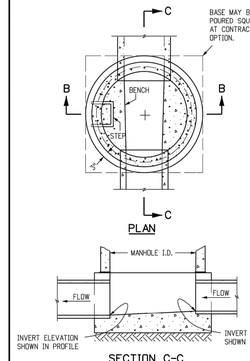
STANDARD PLAN NO. M-604-20
Standard Sheet No. 1 of 3
Project Sheet Number:

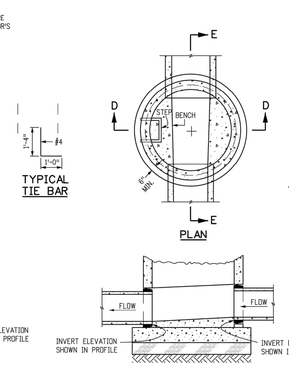


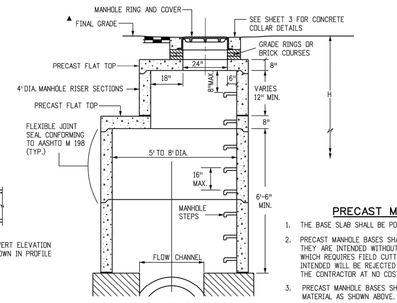












PRECAST MANHOLE BASES NOTES:

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

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

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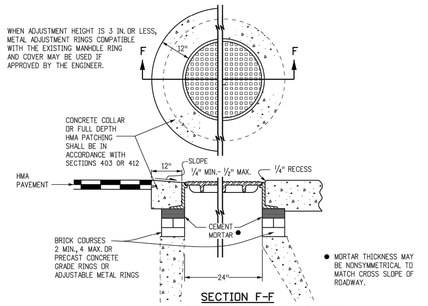
MANHOLES

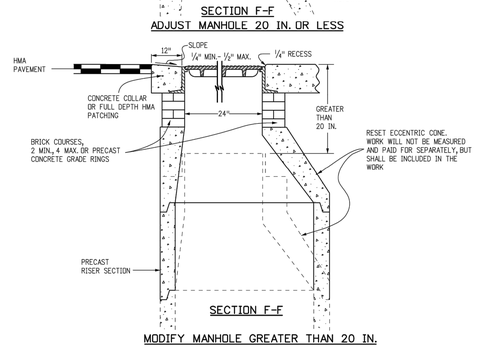
Issued by the Project Development Branch: July 31, 2019

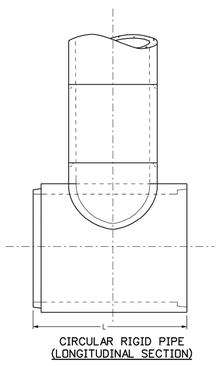
STANDARD PLAN NO. M-604-20
Standard Sheet No. 2 of 3
Project Sheet Number:

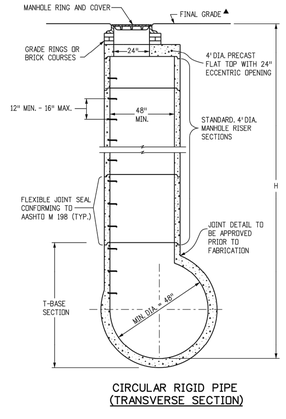
T-BASE MANHOLES NOTES

1. THE T-BASE SECTION SHALL BE SHOP-FABRICATED FOR DELIVERY TO THE CONSTRUCTION SITE AS A COMPLETE UNIT.
2. THESE DETAILS SHOW ONLY THE CONCEPTUAL AND STANDARD DIMENSIONAL REQUIREMENTS FOR TYPE T-BASE MANHOLES. THE CONTRACTOR SHALL FURNISH DETAILED SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION. THE DETAILS SHOWN HEREIN APPLY ONLY TO 48 IN. AND GREATER DIAMETER PIPES.
3. EXCEPT FOR CLASS OF PIPE, SPECIFICATIONS FOR THE MANHOLE SHALL BE THE SAME AS THOSE REQUIRED FOR THE ADJOINING PIPE.
4. THE T-BASE SECTION SHALL MAINTAIN ITS INTERNAL SHAPE AND FLOW AREA. GROUTING OR FILLING SHALL BE APPLIED SO AS TO NOT DISTURB THE NORMAL FLOW OR REDUCE THE AREA.









MANHOLE T-BASE

Computer File Information		Sheet Revisions	
Creation Date: 07/31/19		Date:	Comments
Designer Initials: JBK	(R-X)		
Last Modification Date: 07/31/19	(R-X)		
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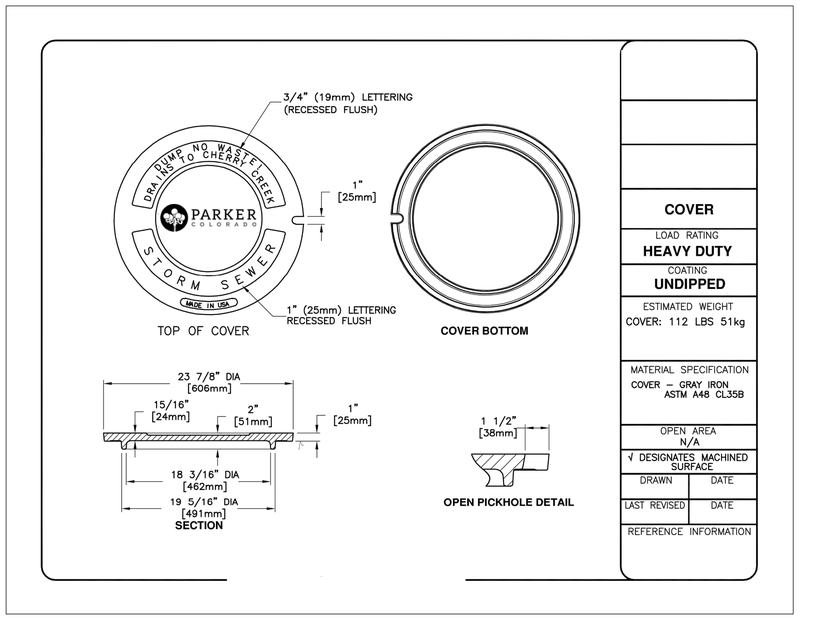
MANHOLES

Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO. M-604-20
Standard Sheet No. 3 of 3
Project Sheet Number:



COVER
LOAD RATING HEAVY DUTY
COATING UNDIPPED
ESTIMATED WEIGHT COVER: 112 LBS 51kg
MATERIAL SPECIFICATION COVER – GRAY IRON ASTM A48 CL35B
OPEN AREA N/A
√ DESIGNATES MACHINED SURFACE
DRAWN DATE
LAST REVISED DATE
REFERENCE INFORMATION

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

DATE	REVISIONS	DRAWN BY
03/02/20	UPDATE GAT & ADD OFF-LINE DET BASIN	ETG
12/21/16	FINAL SUBMITTAL	
11/7/16	4TH SUBMITTAL	
10/24/16	3RD SUBMITTAL	
4/11/16	2ND SUBMITTAL	
11/2015	1ST SUBMITTAL	

Manhard CONSULTING
7600 East Orchard Road, Suite 150-N, Greenwood Village, CO 80111 ph: 303.708.0500 manhard.com
Civil Engineering | Surveying | Water Resource Management | Construction Management

COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
STORM DETAILS

PROJ. MGR.: RJM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET 47 OF 49
CLCPKC3 ---

PRELIMINARY - NOT FOR CONSTRUCTION

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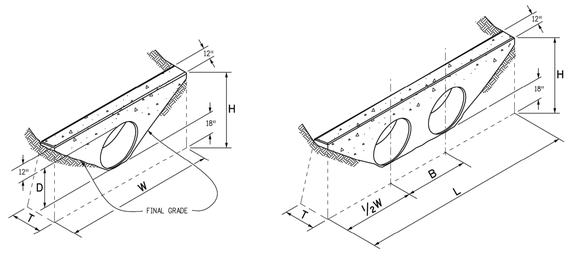
Plotted: 3/3/2020 4:23 PM Dwg Name: P:\Clcpkc3\ComSouth13-Filing 1 No GAT\ComSouth03-Ultimate Belford Ave\dwg\Engl\Final Drawings\Plan Set\Town\CLCPKC3 Storm Details.dwg Updated By: MMcGuire



SINGLE PIPE

DOUBLE PIPE

CONCRETE HEADWALL INSTALLATIONS

SEE STANDARD PLAN M-601-10 FOR REINFORCING DETAILS.

PIPE		PIPE DIAMETER (AND EQUIVALENT DIAMETER) (IN.)											
		18		24		30		36		42		48	
TYPE	MATERIAL	SINGLE	DOUBLE	SINGLE	DOUBLE	SINGLE	DOUBLE	SINGLE	DOUBLE	SINGLE	DOUBLE	SINGLE	DOUBLE
CIRCULAR	RIGID	1.0	1.3	1.5	2.0	2.0	2.7	2.8	3.6	3.6	4.6	4.6	6.0
	FLEXIBLE	1.1	1.4	1.6	2.1	2.2	3.0	3.0	4.0	3.9	5.3	5.0	6.8
ELLIPTICAL	RIGID	23 x 14		30 x 19		38 x 24		45 x 29		53 x 34		60 x 38	
		0.9	1.2	1.3	1.6	1.7	2.2	2.3	2.9	2.9	3.7	3.5	4.4
ARCH	METAL	22 x 13		29 x 18		36 x 22		43 x 27		50 x 31		58 x 36	
		0.9	1.3	1.4	1.9	1.8	2.4	2.4	3.4	3.2	4.4	3.4	5.0

CONCRETE QUANTITIES FOR ONE CONCRETE HEADWALL (CUBIC YARDS)

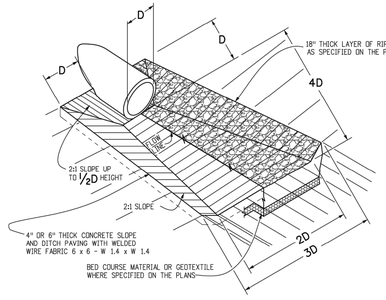
THICKNESS	MATERIAL	PIPE DIAMETER (IN.)					
		18	24	30	36	42	48
4"	CONCRETE	0.4	0.8	1.2			
6"	CONCRETE				2.6	3.6	4.7
18"	RIPRAP	2.0	3.5	5.4	7.8	10.7	13.9

PIPE OUTLET PAVING (CUBIC YARDS)

NOTE: VOLUME OCCUPIED BY PIPE HAS BEEN DEDUCTED.

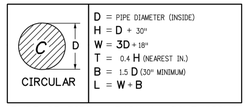
GENERAL NOTES

1. FOR SIZE AND LOCATION OF PIPES, SEE THE PLANS.
2. ALL CONCRETE SHALL BE CLASS B.
3. FOOTINGS IN ROCK SHALL BE POURED OUT TO ROCK AND NOT FORMED IN ACCORDANCE WITH SUBSECTION 601.09(b).
4. EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED ¾ IN.
5. HEADWALL SHALL HAVE REINFORCING STEEL INSTALLED IN A PATTERN SIMILAR TO STANDARD PLAN M-601-10.
6. THE COST OF REINFORCING STEEL SHALL BE INCLUDED IN THE WORK UNLESS THE STEEL QUANTITIES ARE LISTED IN THE PLANS AND ARE PAID FOR SEPARATELY.



PIPE OUTLET PAVING

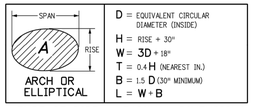
MAY BE USED WITH MULTIPLE PIPES.



CIRCULAR

D = PIPE DIAMETER (INSIDE)
H = D + 30"
W = 3D + 18"
T = 0.4 H (NEAREST IN.)
B = 1.5 D (30" MINIMUM)
L = W + B

TYPE OF PIPE HEADWALL DIMENSIONS



ARCH OR ELLIPTICAL

D = EQUIVALENT CIRCULAR DIAMETER (INSIDE)
H = RISE + 30"
W = 3D + 18"
T = 0.4 H (NEAREST IN.)
B = 1.5 D (30" MINIMUM)
L = W + B

TYPE OF PIPE HEADWALL DIMENSIONS

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

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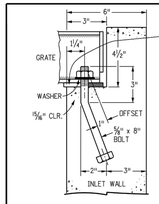
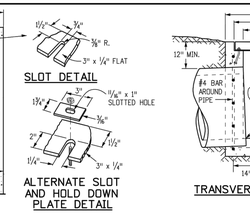
HEADWALLS AND PIPE OUTLET PAVING

Issued by the Project Development Branch: July 31, 2019

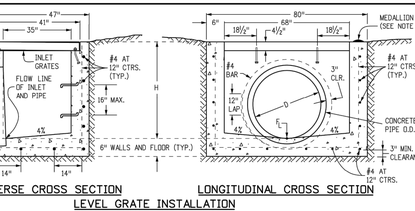
STANDARD PLAN NO. M-601-12
Standard Sheet No. 1 of 1
Project Sheet Number:



ALTERNATE SLOT AND HOLD DOWN PLATE DETAIL



TRANSVERSE CROSS SECTION LEVEL GRATE INSTALLATION

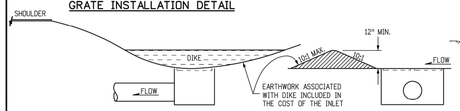


LONGITUDINAL CROSS SECTION LEVEL GRATE INSTALLATION

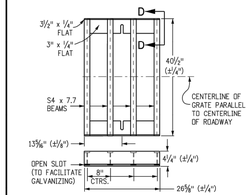
GENERAL NOTES

1. INLET TYPE D IS NOT HS-20 RATED AND SHALL NOT BE PLACED IN PAVED ROADWAYS. THIS INLET SHALL BE USED ONLY OUTSIDE PAVED ROADWAYS.
2. CONCRETE SHALL BE CLASS B. INLET MAY BE CAST-IN-PLACE OR PRECAST.
3. SEE PLANS FOR SIZE AND LOCATION OF PIPE.
4. STRUCTURAL STEEL FOR GRATES AND GRATE INSTALLATION HARDWARE SHALL BE GALVANIZED AND SHALL BE IN ACCORDANCE WITH SUBSECTION 712.06.
5. STANDARD INLET GRATES SHALL BE USED ON ALL TYPE D INLETS UNLESS CLOSE MESH GRATES ARE SPECIFIED ON THE PLANS.
6. CLOSE MESH GRATES ARE RECOMMENDED WHERE FOOT TRAFFIC OR BICYCLE ROUTES ARE IN CLOSE PROXIMITY TO GRATE. THIS GRATE IS NOT ADA COMPLIANT OR BICYCLE FRIENDLY AND SHALL NOT BE PLACED DIRECTLY IN SIDEWALKS, CROSSWALKS OR BIKE PATHS.
7. STEPS SHALL BE PROVIDED WHEN INLET DIMENSION "H" IS EQUAL TO OR GREATER THAN 3 FEET-6 INCHES AND SHALL CONFORM WITH AASHTO M 199.
8. REINFORCING BARS SHALL BE GRADE 60, EPOXY COATED, AND DEFORMED #4, AND SHALL HAVE A 2 INCH MIN. CLEARANCE. CUT OR BEND BARS AROUND PIPE AS REQUIRED.
9. ALL INLETS SHALL HAVE A 4 INCH DIA. METAL MEDALLION WITH A "NO DUMPING DRAINS TO STREAM" MESSAGE ON IT. THE MEDALLION SHALL HAVE A FISH SYMBOL WITH A BLUE BACKGROUND. IT SHALL BE FIRMLY ATTACHED TO THE INLETS SURFACE WITH A PERMANENT FASTENER.

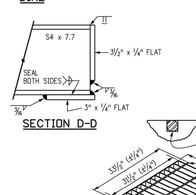
GRATE INSTALLATION DETAIL



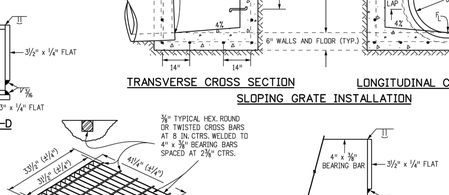
TRANSVERSE VIEW LONGITUDINAL VIEW DIKE



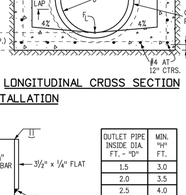
STANDARD INLET GRATE



SECTION D-D



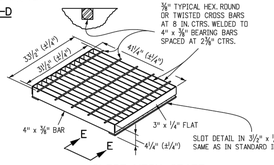
TRANSVERSE CROSS SECTION SLOPING GRATE INSTALLATION



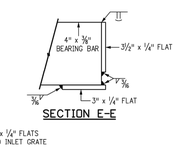
LONGITUDINAL CROSS SECTION SLOPING GRATE INSTALLATION

TWO STEEL GRATE PER INLET QUANTITIES

NO. PIECES	DESCRIPTION	LENGTH	LBS PER FT.	WEIGHT (LBS.)
8	S4 x 7.7 BEAM	40"	7.70	206
4	3½" x ¼" FLAT	26⅝"	2.98	26
4	3" x ¼" FLAT	26⅝"	2.55	24
TOTAL LBS. = 256				



CLOSE MESH GRATE



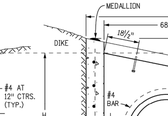
SECTION E-E

OUTLET PIPE INSIDE DIA. FT. = "D"	MIN. "H" FT.
1.5	3.0
2.0	3.5
2.5	4.0
3.0	4.5
3.5	5.0

"H" FT.	CONCRETE CU. YDS.	STEEL LBS.	CIRCULAR PIPE RANGE INSIDE DIA., IN. = "D"
3.0	1.5	127	18
3.5	1.7	149	18-24
4.0	1.9	157	18-30
4.5	2.0	179	18-36
5.0	2.2	187	18-42
5.5	2.4	208	18-42
6.0	2.6	215	18-42
6.5	2.8	236	18-42
7.0	2.9	243	18-42
7.5	3.1	264	18-42
8.0	3.3	271	18-42
8.5	3.5	292	18-42
9.0	3.6	299	18-42
9.5	3.8	320	18-42
10.0	4.0	327	18-42

▼ CONCRETE AND STEEL QUANTITIES ARE FOR ONE ENTIRE INLET BEFORE DEDUCTION FOR VOLUME OCCUPIED BY PIPE. WEIGHT OF STEEL INCLUDES A RING FOR THE MAXIMUM PIPE DIAMETER.

QUANTITIES FOR ONE INLET



PLAN VIEW
(SHOWING ANCHOR BOLT LAYOUT)

Computer File Information		Sheet Revisions	
Creation Date: 07/31/19		Date:	Comments
Designer Initials: JBK	(R-X)		
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INLET, TYPE D

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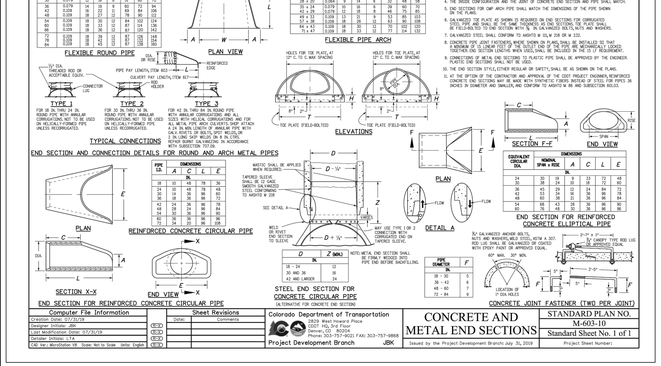
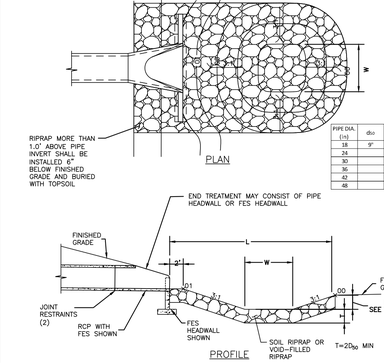
STANDARD PLAN NO. M-604-11
Standard Sheet No. 1 of 1
Project Sheet Number:





GENERAL NOTES

1. DIMENSIONS OF END SECTIONS MAY VARY SLIGHTLY FROM THOSE SHOWN ON THE TABLES DUE TO VARIATIONS IN CORRUGATION PROFILE.
2. CONCRETE END SECTIONS SHALL BE FURNISHED WITH TONGUE OR GROOVE AS REQUIRED.
3. DESIGN LENGTH OF PIPE OR SIDE DRAIN IS BASED ON LENGTH OF END SECTION SHOWN IN TABLE, MAY ADDITIONAL PIPE REQUIRED TO PROVIDE THE DESIGN LENGTH SHALL BE FURNISHED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT.
4. THE SKEW CONFIGURATION AND THE JOINT OF CONCRETE END SECTION AND PIPE SHALL MATCH.
5. END SECTIONS FOR CMP ARCH PIPE SHALL MATCH THE DIMENSIONS OF THE PIPE SHOWN IN TABLE.
6. GALVANIZED TOE PLATE AT SKEWS IS REQUIRED ON END SECTIONS FOR CORRUGATED STEEL PIPE AND PIPE ARCH. TOE PLATE THICKNESS ON END SECTIONS FOR PLATE SHALL BE THE SAME AS THE PIPE WALL THICKNESS. SEE TABLE FOR DIMENSIONS AND WEIGHTS.
7. GALVANIZED STEEL SHALL CONFORM TO AASHTO M 218 OR M 232.
8. CONCRETE PIPE JOINT FASTENERS WHERE SHOWN ON PLANS SHALL BE INSTALLED SO THAT A MINIMUM OF 12 LINEAR FEET OF THE OUTLET END OF THE PIPE ARE MECHANICALLY LOCKED TOGETHER. THE JOINT FASTENER SHALL CONFORM TO DETAILS SHOWN. THE PLACEMENT OF JOINT FASTENERS SHALL BE INCLUDED IN THE CY REQUIREMENTS.
9. CONSTRUCTION OF METAL END SECTIONS FOR PLASTIC PIPE SHALL BE APPROVED BY THE ENGINEER. PLASTIC END SECTIONS SHALL NOT BE USED.
10. THE END SECTION STYLE, EITHER REGULAR OR SAFETY, SHALL BE AS SHOWN ON THE PLANS.
11. AT THE OPTION OF THE CONTRACTOR AND APPROVAL OF THE COST PROJECT ENGINEER, REINFORCED CONCRETE END SECTIONS MAY BE MADE WITH SYNTHETIC FIBERS INSTEAD OF STEEL FOR PIPES 36 INCHES IN DIAMETER AND SMALLER, AND CONFORM TO AASHTO M 86 AND SUBSECTION 601.03.

Computer File Information		Sheet Revisions	
Creation Date: 07/31/19		Date:	Comments
Designer Initials: JBK	CED		
Last Modification Date: 07/31/19	CED		
Detailer Initials: LTA	CED		
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	CED		

Colorado Department of Transportation
2829 West Howard Place
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Project Development Branch JBK

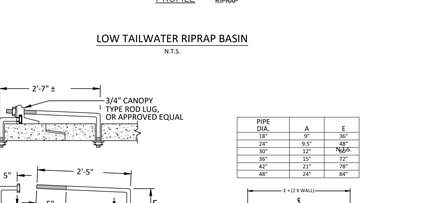
CONCRETE AND METAL END SECTIONS

Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO. M-603-10
Standard Sheet No. 1 of 1
Project Sheet Number:

PIPE OUTLET PAVING

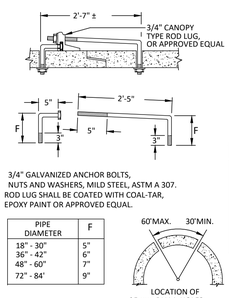
MAY BE USED WITH MULTIPLE PIPES.



PIPE DIA. (in)	d₀₀	T (ft.)	W (ft.)	L (ft.)
18	9"	1.5	6	6
24			8	8
30			10	10
36			12	12
42			14	14
48			16	16

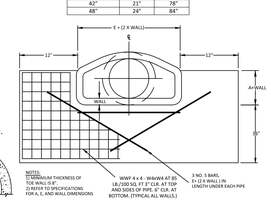
LOW TAILWATER RIPRAP BASIN

N.T.S.



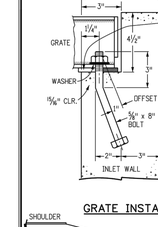
CONCRETE JOINT FASTENER (TWO PER JOINT)

PIPE DIA.	A	E
18"	9"	36"
24"	9.5"	48"
30"	12"	60"
36"	15"	72"
42"	21"	78"
48"	24"	84"

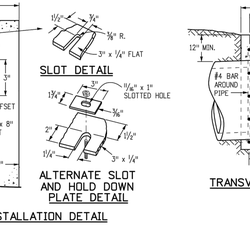


FLARED END SECTION TOEWALL DETAIL

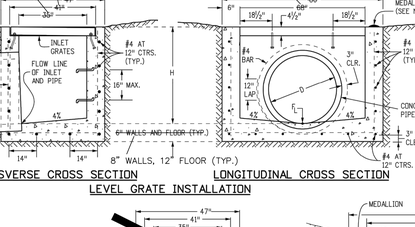
N.T.S.



ALTERNATE SLOT AND HOLD DOWN PLATE DETAIL



TRANSVERSE CROSS SECTION LEVEL GRATE INSTALLATION

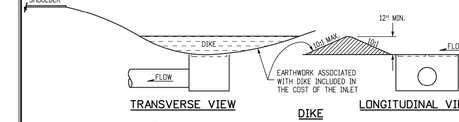


LONGITUDINAL CROSS SECTION LEVEL GRATE INSTALLATION

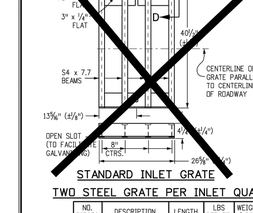
GENERAL NOTES

1. INLET TYPE D IS NOT HS-20 RATED AND SHALL NOT BE PLACED IN PAVED ROADWAYS. THIS INLET SHALL BE USED ONLY OUTSIDE PAVED ROADWAYS.
2. CONCRETE SHALL BE CLASS B. INLET MAY BE CAST-IN-PLACE OR PRECAST.
3. SEE PLANS FOR SIZE AND LOCATION OF PIPE.
4. STRUCTURAL STEEL FOR GRATES AND GRATE INSTALLATION HARDWARE SHALL BE GALVANIZED AND SHALL BE IN ACCORDANCE WITH SUBSECTION 712.06.
5. STANDARD INLET GRATES SHALL BE USED ON ALL TYPE D INLETS UNLESS CLOSE MESH GRATES ARE SPECIFIED ON THE PLANS.
6. CLOSE MESH GRATES ARE RECOMMENDED WHERE FOOT TRAFFIC OR BICYCLE ROUTES ARE IN CLOSE PROXIMITY TO GRATE. THIS GRATE IS NOT ADA COMPLIANT OR BICYCLE FRIENDLY AND SHALL NOT BE PLACED DIRECTLY IN SIDEWALKS, CROSSWALKS OR BIKE PATHS.
7. STEPS SHALL BE PROVIDED WHEN INLET DIMENSION "H" IS EQUAL TO OR GREATER THAN 3 FEET-6 INCHES AND SHALL CONFORM WITH AASHTO M 199.
8. REINFORCING BARS SHALL BE GRADE 60, EPOXY COATED, AND DEFORMED #4, AND SHALL HAVE A 2 INCH MIN. CLEARANCE. CUT OR BEND BARS AROUND PIPE AS REQUIRED.
9. ALL INLETS SHALL HAVE A 4 INCH DIA. METAL MEDALLION WITH A "NO DUMPING DRAINS TO STREAM" MESSAGE ON IT. THE MEDALLION SHALL HAVE A FISH SYMBOL WITH A BLUE BACKGROUND. IT SHALL BE FIRMLY ATTACHED TO THE INLETS SURFACE WITH A PERMANENT FASTENER.

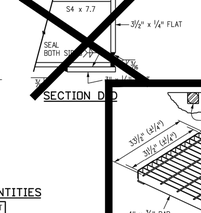
GRATE INSTALLATION DETAIL



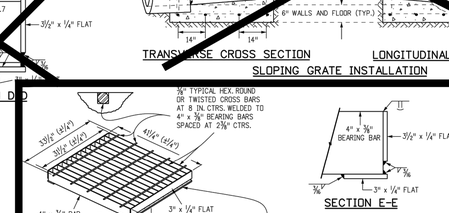
TRANSVERSE VIEW LONGITUDINAL VIEW DIKE



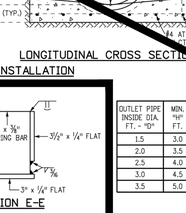
STANDARD INLET GRATE



SECTION D-D



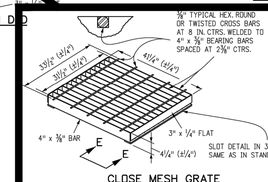
TRANSVERSE CROSS SECTION SLOPING GRATE INSTALLATION



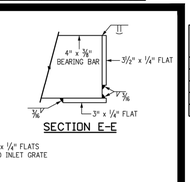
LONGITUDINAL CROSS SECTION SLOPING GRATE INSTALLATION

TWO STEEL GRATE PER INLET QUANTITIES

NO. PIECES	DESCRIPTION	LENGTH	LBS PER FT.	WEIGHT (LBS.)
8	S4 x 7.7 BEAM	40"	7.70	206
4	3½" x ¼" FLAT	26⅝"	2.98	26
4	3" x ¼" FLAT	26⅝"	2.55	24
TOTAL LBS. = 256				



CLOSE MESH GRATE



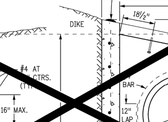
SECTION E-E

OUTLET PIPE INSIDE DIA. FT. = "D"	MIN. "H" FT.
1.5	3.0
2.0	3.5
2.5	4.0
3.0	4.5
3.5	5.0

"H" FT.	CONCRETE CU. YDS.	STEEL LBS.	CIRCULAR PIPE RANGE INSIDE DIA., IN. = "D"
3.0	1.5	127	18
3.5	1.7	149	18-24
4.0	1.9	157	18-30
4.5	2.0	179	18-36
5.0	2.2	187	18-42
5.5	2.4	208	18-42
6.0	2.6	215	18-42
6.5	2.8	236	18-42
7.0	2.9	243	18-42
7.5	3.1	264	18-42
8.0	3.3	271	18-42
8.5	3.5	292	18-42
9.0	3.6	299	18-42
9.5	3.8	320	18-42
10.0	4.0	327	18-42

▼ CONCRETE AND STEEL QUANTITIES ARE FOR ONE ENTIRE INLET BEFORE DEDUCTION FOR VOLUME OCCUPIED BY PIPE. WEIGHT OF STEEL INCLUDES A RING FOR THE MAXIMUM PIPE DIAMETER.

QUANTITIES FOR ONE INLET



PLAN VIEW
(SHOWING ANCHOR BOLT LAYOUT)

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

Colorado Department of Transportation
2829 West Howard Place
CDOT HQ, 3rd Floor
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Phone: 303-757-9021 FAX: 303-757-9868
Project Development Branch JBK

MODIFIED INLET, TYPE D

Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO. M-604-11
Standard Sheet No. 1 of 1
Project Sheet Number:

Manhard CONSULTING
7600 East Orchard Road, Suite 150-N, Greenwood Village, CO 80111 ph: 303.708.0500 manhard.com
Water Resource Management | Construction Management

DRAWN BY	DATE	REVISIONS
EG	03/02/20	UPDATE GAT & ADD OFF-LINE DET BASIN
	12/21/16	FINAL SUBMITTAL
	11/7/16	4TH SUBMITTAL
	6/13/16	3RD SUBMITTAL
	4/11/16	2ND SUBMITTAL
	11/2015	1ST SUBMITTAL

COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
STORM DETAILS

PRELIMINARY - NOT FOR CONSTRUCTION

PROJ. MGR.: RIM
PROJ. ASSOC.: BRB
DRAWN BY: ETG
DATE: 12/2015

SHEET 48 OF 49
CLCPKC3 ---

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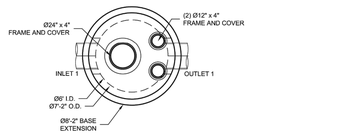
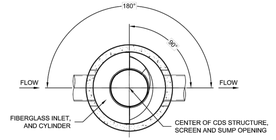
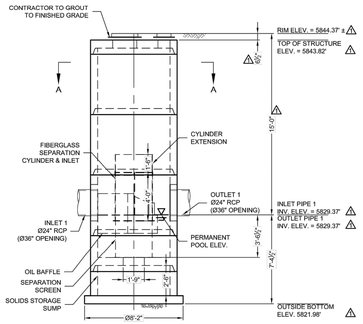
Plotted: 3/3/2020 4:23 PM Dwg Name: P:\Clpkc3\Com\South\2-Filing 1 No GAT\Com\South\03-Ultimate Belford Ave\dwg\Eng\Final Drawings\Plan Set\Town\CLCPKC3-Storm Details.dwg Updated By: MMcGuire



PLAN VIEW



SECTION A-A



ELEVATION VIEW

MATERIAL LIST (PROVIDED BY CONTECH)

COUNT	DESCRIPTION	INSTALLED BY
1	FIBERGLASS INLET AND CYLINDER	CONTECH
1	2400 micron, 3' O.D. x 3.04' SEP. SCREEN	CONTECH
1	CYLINDER EXTENSION	CONTRACTOR
1	SEALANT FOR JOINTS (BY PRECASTER)	CONTRACTOR
1	Ø24" x 4" FRAME & COVER, EJ#41600389, OR EQUIV.	CONTRACTOR
2	Ø12" x 4" FRAME & COVER, EJ#41610201, OR EQUIV.	CONTRACTOR

SITE DESIGN DATA

WATER QUALITY FLOW RATE	0 CFS
PEAK FLOW RATE	29.2 CFS
RETURN PERIOD OF PEAK FLOW	100 YRS

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
5. IF REQUIRED, PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.
6. CDS STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

⚠ STRUCTURE WEIGHT
APPROXIMATE HEAVIEST PICK = 10000 LBS.
STRUCTURE IS DELIVERED IN 6 PIECES

MAX FOOTPRINT = Ø8'-2"

CONTECH
CONTRACT
DRAWING

LPICO
LAYOUT 1A
3030-6-FGIS
1026 / FIT2886

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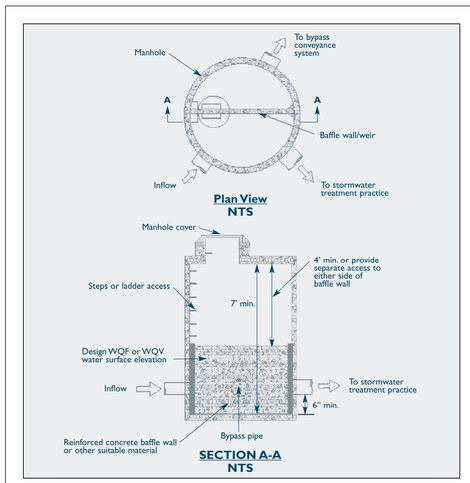
MARK	DATE	REVISION DESCRIPTION	APP
1	7/20/16	INLET/OUTLET & RIM ELEVATIONS	KJW

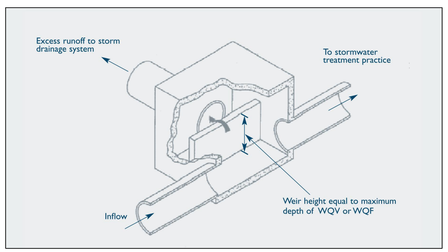
CDS3030-6-C - 5#2946-10
COMPARK SOUTH
PARKER, CO
for SYSTEM: STMH 1-3

CONTECH ENGINEERED SOLUTIONS LLC
9025 Centre Pointe Drive, Suite 400
West Chester, OH 45069
800.338.1122
513.645.7000
513.645.7993 FAX
www.ContechES.com

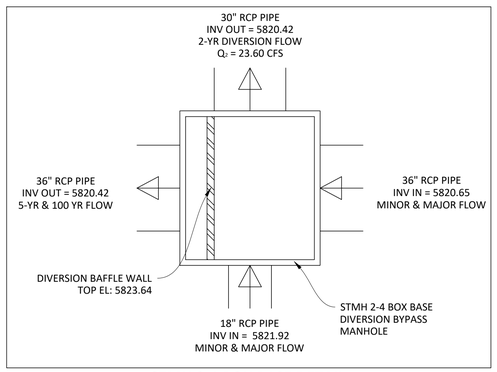
CDS
Continuous Deflective Separation
Patented Technology

DATE: 07/15/16	SCALE: 3/16" = 1'-0"
DESIGNED: JHR	DRAWN: KJW
CHECKED: XXX	APPROVED: -----
PROJECT No.: 5#2946	SEQUENCE No.: 10
SHEET: 1 OF 1	

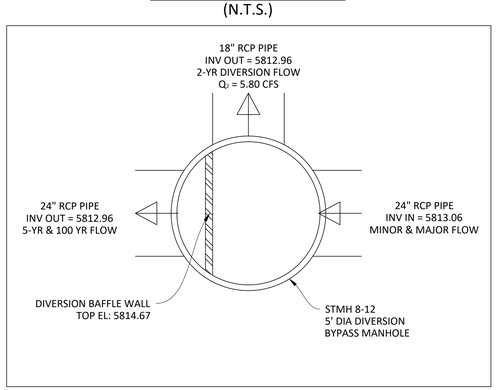




DIVERSION DETAIL
(N.T.S.)



STMH 2-4 BOX BASE DETAIL
(N.T.S.)



STMH 8-12 DIVERSION DETAIL
(N.T.S.)

MARK	DATE	REVISIONS	DRAWN BY
F	03/02/20	UPDATE GAT & ADD OFF-LINE DET BASIN	
E	12/21/16	FINAL SUBMITTAL	
D	11/7/16	4TH SUBMITTAL	
C	6/24/16	3RD SUBMITTAL	
B	4/11/16	2ND SUBMITTAL	
A	11/2015	1ST SUBMITTAL	EG

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COMPARK VILLAGE SOUTH, FILING NO. 1 - BELFORD AVENUE
TOWN OF PARKER, COLORADO
STORM DETAILS

PROJ. MGR.:	RJM
PROJ. ASSOC.:	BRB
DRAWN BY:	ETG
DATE:	12/2015

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49 OF 49
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