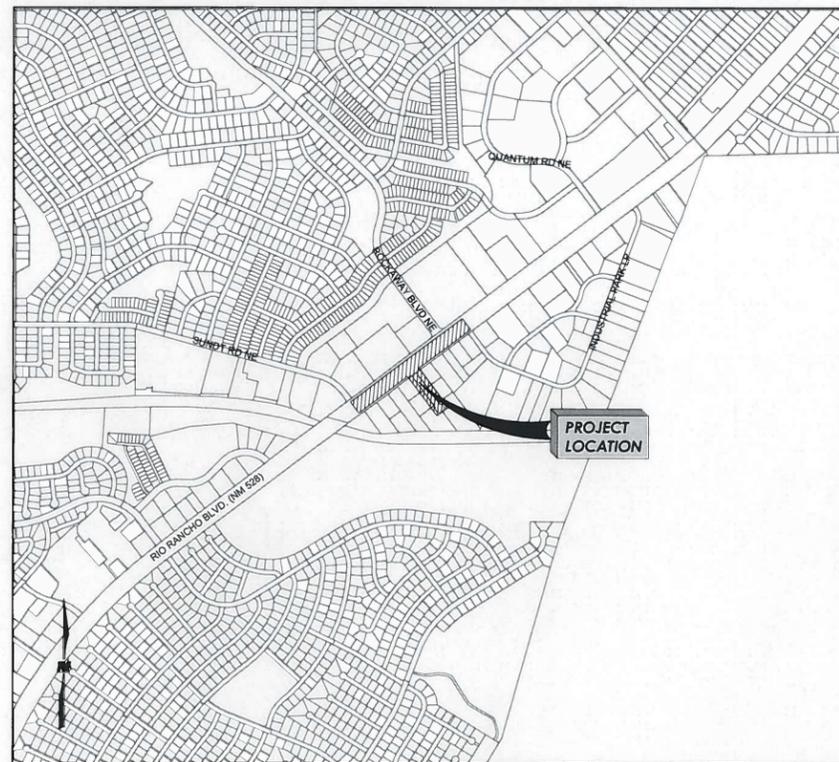


# CONSTRUCTION PLANS FOR INDUSTRIAL PARK SEWER SYSTEM IMPROVEMENTS

CITY OF RIO RANCHO  
SANDOVAL COUNTY, NEW MEXICO  
CITY PROJECT NO. WW1501



LOCATION MAP

SHEET NO.	DRAWING TITLE
<b>GENERAL</b>	
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G-003	GENERAL ABBREVIATIONS AND LEGEND
G-004	QUANTITY SUMMARIES
G-005	NMDOT ENVIRONMENTAL CLEARANCE
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<b>CIVIL</b>	
C-201	SEWER PLAN AND PROFILE
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C-501	TYPICAL SEWER DETAILS I
C-502	TYPICAL SEWER DETAILS II
<b>TRAFFIC</b>	
TC-501	TRAFFIC CONTROL I
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TC-503	TRAFFIC CONTROL III
TC-504	TRAFFIC CONTROL IV
TC-505	TRAFFIC CONTROL V

CITY OF  
RIO RANCHO:

*[Signature]*  
DEPARTMENT OF PUBLIC WORKS  
ENGINEERING DIVISION

DATE: 7/29/16

**WILSON & COMPANY**  
2600 THE AMERICAN RD. SE SUITE 100  
RIO RANCHO, NM 87124  
PHONE: 505-898-8021  
FAX: 505-898-8301  
www.wilsonco.com

CONSULTANTS



PROJECT NAME  
CITY OF RIO RANCHO  
INDUSTRIAL PARK  
SEWER SYSTEM  
IMPROVEMENTS

REV	DATE	DESCRIPTION	BY

PROJECT NO:	1560020600
DESIGNED BY:	JMW
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	01/05/2016

SHEET TITLE  
COVER SHEET

SHEET NO:  
G-001

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GENERAL NOTES

- 1. All construction shall be performed in accordance with 1) the project construction plans, 2) the project specifications, 3) the current edition of the City of Rio Rancho standard details, 4) the current edition of the NMDOT Standard Specifications for Highway and Bridge Construction, and 5) the New Mexico Standard Specifications for Public Works Construction and details, as prepared by the New Mexico Chapter, American Public Works Association and addendum. In the case of conflicting specifications, the City of Rio Rancho will determine which specification governs.
2. The Contractor agrees to assume the sole and complete responsibility for the job site conditions during the course of construction of the project, including safety of all persons and property. This requirement shall apply continuously and not be limited to normal working hours, and the Contractor shall defend, indemnify and hold the City and Engineer harmless from any and all liability, real or alleged, in connection with the performance of the work on this project, except for liability arising from the sole negligence of the City or Engineer.
3. No modifications to these plans shall be made without the written consent of the City, Engineer, and all approval signatories. The Engineer shall not be responsible for construction methods or techniques or for the prosecution of the work as shown on these plans. The Engineer shall not be held responsible for the acts or omissions of the Contractor, Subcontractors, or other persons performing any work, as shown in the project Contract Documents.
4. A Right-of-Way Use Permit and Traffic Control Plan (TCP) are required for all work performed within the public Right-of-Way. Provisions contained within Chapter 96 of the City of Rio Rancho Municipal Code shall govern. All construction signing, barricading, and channelization devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). The Contractor is responsible for the setup and maintenance of all traffic control devices. Any modifications to the approved traffic control plan must be approved by the City prior to any changes being implemented. A Traffic Control Supervisor must be available for the duration of the project 24 hours a day and seven days a week. Access to residents and businesses must be maintained at all times.
5. The Contractor shall designate at least one emergency contact person, and shall provide telephone numbers where this person can be contacted at any time. This information shall be provided to the City's Project Manager.
6. The Contractor is responsible for obtaining all necessary permits from all jurisdictional authorities before the start of construction.
7. All work on this project shall be performed in accordance with applicable federal, state, and local laws, rules and regulations concerning construction safety, health, and environmental protection.
8. Existing site improvements which are damaged or displaced by the Contractor shall be removed and replaced by the Contractor at the Contractor's own expense. The work shall be approved by the City before construction of the repairs. Repairs must be accepted by the City before final payment.
9. The Contractor shall only utilize the designated staging areas for storage of all equipment and materials. The City assumes no responsibility or liability for the Contractor's equipment and material in the staging area. Security shall be the sole responsibility of the Contractor. If no staging area is designated on these plans, an offsite staging area shall be provided by the Contractor at the Contractor's expense, or the Contractor may negotiate with the City to use an onsite area.
10. Unless otherwise noted, all roadway stationing is along the centerline of the roadway right-of-way.
11. Unless otherwise noted, stationing of channels and/or pipes in drainage easements is along the centerline of the channel/pipe.
12. The Contractor shall be responsible for determining, in advance of their construction operations, if overhead utility lines, support structures, poles, guys, etc., are an obstruction to construction operations. If any obstruction is evident, the Contractor shall be responsible for coordinating with the appropriate utility owner to remove or support the utility obstruction. All costs for these requirements are incidental to the Contract.
13. Facilities which are not specifically located with actual vertical and horizontal controls on the construction documents, are shown approximate and in accordance with the best available information provided by various owners of the facilities, and supplemented by visual surface information where appropriate. Accuracy, location, and completeness of this information is the sole responsibility of the Contractor and should be verified, by any means necessary, before the initiation of construction. Should a conflict exist, the Contractor shall notify the City, Engineer, and the City's Project Manager immediately.
14. It is mandatory that a preconstruction meeting be held before commencing construction. The Contractor is responsible for contacting the City's Project Manager to determine the time and location of the preconstruction meeting.
15. At the preconstruction meeting, the Contractor shall submit a detailed construction schedule to the City's Project Manager. The schedule will be updated on a monthly basis and submitted with the monthly invoice.
16. Any work performed without the approval of the City of Rio Rancho and/or all work and materials not in conformance with the specifications is subject to removal and replacement at the Contractor's expense.
17. The Contractor shall contact NM 811 at 1-800-321-2537 for utility spots in accordance with applicable state law.
18. The Contractor shall confine their work to within the construction limits and/or public right-of-way to preserve existing vegetation, landscaping, and private property. Approval of these plans does not give or imply any permission to trespass or work on private property. Permission must be granted in writing by the Owner of that property.
19. It is the sole responsibility of the Contractor to keep the job site free from trash on a daily basis, and all materials will be neatly organized. Trash and/or non-used materials shall not be buried onsite.
20. The Contractor shall park equipment and vehicles so as not to interfere with normal activities of residents, other Contractors, or Emergency Services.
21. The Contractor will provide construction staking utilizing approved construction plans, the appropriate Right-of-Way maps, recorded plats, and City of Rio Rancho standard details. Each revision to the plans shall be recorded in the plan revision block. Plans shall include a location map with legal description(s) and location grid.
22. The Contractor shall maintain an up-to-date and accurate set of Working Record Drawings, redlined drawings, in accordance with the City or Rio Rancho's Development Process Manual (DPM) Chapter II.7. These Working Record Drawings shall reflect all approved changes to the original plans throughout the construction process. At the completion of construction, the Contractor shall submit the Working Record Drawings as outlined in the City or Rio Rancho's DPM Chapter II.7. Also, the Contractor shall ensure that all submittals, permitting, and construction activities are in accordance with the City or Rio Rancho's DPM and applicable ordinances. All costs for these requirements are incidental to the Contract.
23. No work shall be performed in a floodplain without written authorization from the City's Floodplain Manager.
24. Any work performed in a drainage way, channel, arroyo, or floodplain must be protected by the means identified in the Temporary Erosion Control and Sediment plans accepted by the City.
25. Vibration monitoring will be at the Contractor's discretion and incidental to the Contract.

SOILS

- 1. Unless otherwise specified subgrade soils and structural fill materials shall be compacted to the following percentages of the ASTM D-1557 maximum density.

Table with 2 columns: MATERIALS and PERCENT (%). Rows include STRUCTURAL FILL IN THE BUILDING AREA (95), SUB BASE FOR SLAB SUPPORT (95), MISCELLANEOUS BACKFILL BELOW STRUCTURAL FILL OR ROAD (95), MISCELLANEOUS BACKFILL BELOW UNPAVED, NON-BUILDING AREAS (90), ROAD SUB GRADE (95), SIDEWALK SUB GRADE (95), CURB AND GUTTER SUBGRADE (95), and ARROYOS (90).

ROADWAY GENERAL NOTES

- 1. No paving construction activities shall be started until all underground utilities within the roadway are completed, tested, and approved. All water valve boxes and electrical, telephone, television, and sewer manholes in the construction area shall be adjusted to finished grade.
2. All signs, barricades, channelization devices, pavement markings, sign frames and erection of such devices shall conform to the requirements of the "Manual on Uniform Traffic Control Devices for streets and highways" (MUTCD), current edition.
3. All street striping altered or destroyed during construction shall be replaced by the Contractor to match the original conditions (i.e. type, spacing) at the location prior to construction, or as shown in this plan set.
4. Street grades shall be restored by the Contractor to the existing grades unless otherwise directed by the City of Rio Rancho. Smooth transitions shall be made between existing pavement which remains in place and pavement which is replaced. When abutting new pavement to existing, saw cut back existing pavement to a neat, straight line as required to remove any broken or cracked pavement. Refer to standard drawing PS-02.
5. The location of all valves and manholes must be referenced at all times by the Contractor during construction and made accessible daily upon completion of all paving activities.

EROSION CONTROL/ENVIRONMENTAL PROTECTION/STORM WATER POLLUTION PREVENTION PLAN

- 1. The Contractor shall be responsible for fulfilling all necessary National Pollutant Discharge Elimination System (NPDES) requirements including, but not limited to, obtaining an NPDES permit before construction, filling out the Notice of Intent (NOI) application, and filling out the Notice of Termination (NOT) application. The Contractor shall also be responsible for the implementation of and inspection reports for the Storm Water Pollution Prevention Plan (SWPPP). The Contractor shall submit the SWPPP with the proposed construction staging area and temporary sanitary facilities clearly shown. Any check dams, silt fences, or other Best Management Practices (BMP) that are required in the approved SWPPP shall be included in and are incidental to the SWPPP bid amount.
2. The Contractor is required to keep a current copy of the SWPPP at the construction site or at an easily accessible location so that it can be made available at the time of an onsite inspection or upon request by the EPA; a state, tribal, or local agency approving storm water management plans; the operator of a storm sewer system receiving discharges from the site; or representatives of the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS).
3. The Contractor shall conform to all City, County, State and Federal dust and erosion control regulations. The Contractor shall prepare and obtain any necessary dust or erosion control permits from the regulatory agencies.
4. The Contractor shall either promptly remove any material excavated within the public Right-of-Way or install BMPs according to NPDES requirements to prevent discharge of excavated material within the public Right-of-Way during a rain or wind event. All costs for these requirements are incidental to the Contract.
5. The Contractor shall implement the approved SWPPP and ensure that no soil erodes from the site into public Right-of-Way or onto private property.
6. The Contractor shall mitigate erosion of temporary or permanent dirt swales by installing BMPs identified in the approved SWPPP in the swales perpendicular to the direction of flow, and at intervals as specified in the SWPPP.
7. Construction areas shall be watered for dust control in compliance with government ordinances. The Contractor shall be responsible for locating and supplying water as required. Watering, as required for construction and dust control, shall be considered incidental to construction and no measurement or payment shall be made therefore.
8. Any areas disturbed by construction and not covered by landscaping or an impervious surface shall be re-vegetated with native grass seeding. When construction activities cease and earth disturbing activities will not resume within 14 days, stabilization measures must be initiated. Unless indicated otherwise on these plans or on the landscaping plan, native grass seeding shall be in accordance with Section 1012 of the New Mexico Standard Specifications for Public Works Construction, APWA NM Chapter, current edition.
9. All waste products from the construction site, including items designated for removal, construction waste, construction equipment waste products (oil, gas, tires, etc.), garbage, grubbing, excess cut material, vegetative debris, etc. shall be appropriately disposed of offsite at no additional cost to the City. It shall be the Contractor's responsibility to obtain permits required to haul or dispose of waste products. It shall be the Contractor's responsibility to ensure that the waste disposal site complies with government regulations regarding the environment, endangered species, and archaeological resources.
10. The Contractor shall be responsible for the cleanup and reporting of spills of hazardous materials associated with the construction site. Hazardous materials include gasoline, diesel fuel, motor oil, solvents, chemicals, paints, etc. which may be a threat to the environment. The Contractor shall report the discovery of past or present spills to the New Mexico Environment Department Emergency Response Team at (505) 827-9329.
11. The Contractor shall comply with all applicable regulations concerning surface and underground water. Contact with surface water by construction equipment and personnel shall be minimized. Equipment maintenance and refueling operations shall be performed in an environmentally safe manner in compliance with government regulations.
12. Where storm inlets are susceptible to inflow of silt or debris from construction activities, protection shall be provided on their upstream side utilizing BMPs according to NPDES requirements. All costs for these requirements are incidental to the Contract.
13. Storm Water Pollution Prevention Plans (SWPPP) and accompanying Federal EPA Administrative Procedures shall meet the City of Rio Rancho guidelines and procedures outlined in the current addition of the New Mexico State Highway and Transportation Department Storm Water Management Guidelines for Construction and Industrial Activities Manual.
14. The Contractor shall provide adequate means for cleaning trucks and/or other equipment of mud before entering public streets. It is the Contractor's responsibility to clean streets and take whatever measures are necessary to ensure that all roads are maintained in a clean, mud and dust-free condition at all times.
15. No work may begin in a an arroyo or other drainage way until authorization has been provided by the U.S. Army Corp. of Engineers and the City of Rio Rancho Flood Plain Manager.

WATER GENERAL NOTES

- 1. For water connections to existing lines, the Contractor shall notify the City's Project Manager a minimum of 48 hours before the connection.
2. Compression joints may be used on copper service lines. Flared joints shall be used when connecting to plastic lines.
3. Valve boxes shall be brought to surface elevation upon completion of the surface course of pavement. Concrete collars shall be constructed to surface elevations.
4. Flushing of water lines shall be metered and reported to the City's Project Manager on a weekly basis. Preference for disposal is (1) on available land surface or (2) in storm sewers. Disposal methods shall be discussed with the City's Project Manager.
5. Flushing, disinfection and testing of water lines shall be coordinated with the City's Project Manager.
6. It will be the Contractor's sole responsibility to protect and maintain, in service, all existing utilities. The Contractor shall adequately support and protect existing utilities affected by the Contractor's trenching activity. In the event that existing utilities are damaged by the Contractor's operations, the Contractor shall arrange for and coordinate prompt repair by the respective utility and shall bear the cost of the repairs.
7. All water lines must have tracer wire and marker balls per City of Rio Rancho standard drawings.
8. The City of Rio Rancho shall approve material submittals before construction.
9. Before any water line installation, the following conditions will occur:
a) The water line route will be cleared and grubbed and then graded to plan elevation
b) The water line will be staked when outside an area with curb and gutter.
10. The City of Rio Rancho Utilities Operations Division shall be the only personnel authorized to operate existing valves, fire hydrants, etc. for construction purposes. All shutoffs must be coordinated with the City's Project Manager seven (7) days before proposed shutoff and shall comply with the accepted shutoff plan.
11. The Contractor is responsible for testing of all lines, including but not limited to, hydrostatic and bacteria testing, disinfecting, and flushing. The Contractor is responsible for the testing of the water line system before acceptance by the City. Testing shall be performed to demonstrate the functionality of the system. All costs for these requirements are incidental to the Contract.
12. For non-hot tap water connections to existing lines, the Contractor shall prepare and submit to the City's Project Manager, for acceptance, a water shutoff plan 48 hours before the connection is to take place.
13. The Contractor shall mark the top of the curb with a "W" for water lines following service installations and before final acceptance.

WASTEWATER GENERAL NOTES

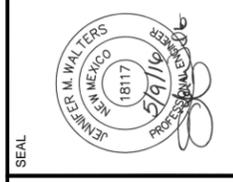
- 1. Sewer/Water lines shall be placed in separate trenches at a distance of 15 feet typically or a minimum of 10 feet apart horizontally. The water line shall be placed a minimum of 1.5 feet higher in elevation than the sewer line. At all crossings of water and sewer lines, the water line shall be a minimum of 1.5 feet higher than the sewer line or the sewer line shall be C-900 pressurized pipe.
2. It will be the Contractor's sole responsibility to protect and maintain in service all existing utilities. The Contractor shall adequately support and protect existing utilities affected by the Contractor's trenching activity. In the event that existing utilities are damaged by the Contractor's operations, the Contractor shall arrange for and coordinate with the Project Manager, prompt repair by the respective utility and shall bear the cost of the repairs.
3. The City of Rio Rancho shall approve material submittals before construction
4. Prior to the sewer line installation, the following conditions will occur:
a) The sewer line route will be cleared and grubbed and then graded to plan elevation
b) The sewer line will be staked when outside an area with curb and gutter
5. All sewer lines must have tracer wire and marker balls per City of Rio Rancho standard drawings.
6. The City of Rio Rancho Utilities Operations Division shall be the only personnel authorized to operate existing valves, etc. for construction purposes. All shutoffs must be coordinated with the City's Project Manager seven (7) days before to proposed shutoff and shall comply with the accepted shutoff plan.
7. 30 days following installation and backfill of sewer lines, a deflection test using a hand pulled mandrel shall be performed in the presence of the City's Inspector. All costs for these requirements are incidental to the Contract.
8. Air testing of sewer lines and hydrostatic testing of force mains shall be conducted in the presence of the City's Inspector. All costs for these requirements are incidental to the Contract.
9. All sewer service lines shall be inspected by TV camera and videoed then provided to the City's Inspector for review before acceptance by the City. In the event that the first inspection or subsequent inspections after that do not pass, the Contractor will be required to perform additional inspections of the sewer service lines using a TV camera at the Contractor's expense.
10. Manholes shall meet the City of Rio Rancho standards except that there shall be no ladder rungs installed.
11. The Contractor is responsible for testing of all force main lines, including but not limited to hydrostatic and bacteria testing, disinfecting, and flushing. All costs for these requirements are incidental to the Contract.
12. If bypass pumping is required, then a bypass pumping plan must be submitted to the City's Project Manager, for acceptance, seven (7) days before bypass pumping begins.
13. The Contractor shall mark the top of the curb and pan of the gutter with "S" for sanitary sewer following service installation and before final acceptance.
14. Manholes shall be raised to surface course of pavement. Octagonal concrete collars shall be constructed to surface elevation.
15. No bricks shall be used to adjust manholes to finished grade.

ADA GENERAL NOTES

- 1. These drawings provide guidance for compliance with the current public right of way accessibility guidelines (PROWAG). These standards shall apply to all new and altered sidewalks.
2. Surfaces shall be stable, firm, and slip resistant. Sidewalk and curb ramp surfaces shall provide consistent slopes within each section.
3. All street striping altered or destroyed during construction shall be replaced by the Contractor to All broom finishes shall be perpendicular to the direction of pedestrian travel.
4. A vertical change of 1/4 inch (6mm) or less is allowed. If between 1/4 inch and 1/2 inch (6mm and 13mm), then it needs to be beveled 2:1. Changes greater than 1/2 inch shall be ramped.
5. Openings or cracks in sidewalk surfaces shall not exceed 1/2 inch (13mm). Elongated openings should be placed so that the long dimension is perpendicular or diagonal to the dominant direction of travel.
6. The least possible curb ramp slope shall be used. Curb ramps running slope shall not exceed 12:1. Where existing terrain is steep, curb ramps shall not exceed 15 feet in length.
7. Provide a flush transition between curb ramps, sidewalks, gutter, and edge of pavement, free of drainage lip, abrupt grade changes, drop-offs, or any surface irregularities. A 5% (20:1) or flatter transition taper shall be provided from the street to the gutter for curb ramps locations (this may require special treatment of the edge of CGFC) when diagonal (not in line with crosswalks) curb ramps are necessary. A 2% (50:1) transition or "lower landing" shall be provided. The gutter running slope (flow line) shall not exceed 2% measured along the bottom of the curb ramp.
8. Curb ramps shall be located to provide the most direct route of travel across the traffic lanes.
9. Two directional (in line with the crosswalks) curb ramps per corner are used in order to provide short and direct crossings for the user.
10. Sign posts, utility poles, fire hydrants, traffic signals standards, light poles, pull boxes, meters, valves, etc., shall not be located in the curb ramp including side flares and landings.
11. In order to better accommodate conditions in the field, the contractor shall obtain final approval of curb ramp locations from the project manager and the city manager and the city traffic engineer. When necessitated by existing physical conditions. Alternate curb ramps must be submitted to the project manager for approval by the city traffic engineer.
12. Landings shall be a minimum of 48" x 48". Slopes shall not exceed 2% (50:1) in all directions.
13. Detectable warnings are required at all street intersections, signalized driveways, commercial driveways 30' wide or greater, and marked mid-block crosswalks.
14. Concrete Procedural note: Before scheduling delivery of concrete, contractor shall meet with City Inspector/PM to ensure the concrete formwork is constructed to dimensions and grades shown on plans and meets PROWAG, 2011 Technical Design Criteria, Caltrate 24" electronic digital level with Contractor's electronic digital level prior to verifying measurements. Verify measurements meet requirements or require correction of all discrepancies before scheduling of concrete to ensure the finished concrete will meet PROWAG. When all measurements meet requirements then the inspector shall permit concrete pour. Repeat the procedure after concrete pour to ensure the curb ramp meets PROWAG compliance. Final acceptance of a curb ramp does not occur until the final inspection of the project. This procedure shall be considered incidental to the installation of the ADA curb ramps.
15. The contractor shall submit a proposed work plan for pedestrian improvements to the project engineer for review and approval prior to initiating this work. This plan shall include the method proposed to maintain pedestrian access to businesses, schools, hospitals, buildings, etc. throughout the pedestrian improvements construction in particular. The contractor, at minimum, shall maintain a 48" clear path for pedestrians so as to meet ADA accessibility requirements. All temporary pedestrian facilities implemented during construction shall comply with ADA standards.
16. Sidewalk and curb ramp cross slope is recommended to be constructed for a cross slope of 1.5% typical, but shall not exceed 2.0% cross slope on the pedestrian access route.

WILSON & COMPANY logo and contact information: 2600 THE AMERICAN RD. SE SUITE 100 RIO RANCHO, NM 87124 PHONE: 505-898-8021 FAX: 505-898-8501 www.wilsonco.com

CONSULTANTS



SEAL

CITY OF RIO RANCHO INDUSTRIAL PARK SEWER SYSTEM IMPROVEMENTS

PROJECT NAME

Table with 3 columns: REV., DATE, DESCRIPTION. Includes a 'BY' column for the first row.

Table with 2 columns: FIELD, VALUE. Includes PROJECT NO: 1560020600, DESIGNED BY: JMW, DRAWN BY: CRU, CHECKED BY: BJA, DATE: 01/05/2016.

SHEET TITLE: CORR STANDARD GENERAL NOTES

SHEET NO: G-002

ABBREVIATIONS

CORR STANDARD ABBREVIATIONS

Table of CORR STANDARD ABBREVIATIONS including AP (ANALYSIS POINT), BC (BEGIN CURVE), BCR (BEGIN CURB RETURN), BK (BOOK), BLDG (BUILDING), BM (BENCH MARK), BOP (BEGINNING OF PROJECT), BVC (BEGIN VERTICAL CURVE), BW (BASE OF WALL), CATV (CABLE TV LINE), CB (CATCH BASIN), CF (CURB FACE), CG (CURB AND GUTTER), CL (CENTERLINE), CMP (CORRUGATED METAL PIPE), CO (CLEAN OUT), CONC (CONCRETE), CORR (CITY OF RIO RANCHO), CY (CUBIC YARDS), DEFL (DEFLECT), DUE (DRAINAGE UTILITY EASEMENT), DI (DROP INLET), DIA (DIAMETER), DELTA (DELTA), EA (EACH), EC (END CURVE), ECR (END CURB RETURN), EL (ELEVATION), EOP (END OF PROJECT), EP (EDGE OF PAVEMENT), ESMT (EASEMENT), EVC (END VERTICAL CURVE), EW (EACH WAY), EXIST (EXISTING), FF (FINISH FLOOR), FG (FINISH GRADE), FH (FIRE HYDRANT), FL (FLOW LINE), FOC (FACE OF CURB), FP (FINISHED PAD), GAS (GAS), GM (GAS METER), GV (GATE VALVE), HORIZ (HORIZONTAL), INT (INTERSECTION), INV (INVERT), INV EL (INVERT ELEVATION), LF (LINEAR FEET), LP (LIGHT POLE), LT (LEFT), MH (MANHOLE), NG (NATURAL GROUND), OC (ON CENTER), PB (PULL BOX), PC (POINT OF CURVATURE), PCC (POINT OF COMPOUND CURVATURE), PG (PAGE), PGL (PROFILE GRADE LINE PER TYPICAL SECTION), PI (POINT OF INTERSECTION), PL (PROPERTY LINE), PRC (POINT OF REVERSE CURVATURE), PUE (POINT OF TANGENCY), PVC (PUBLIC UTILITY EASEMENT), PVMT (POLYVINYL CHLORIDE PIPE), RAD (PAVEMENT), RCP (RADIUS), RD (REINFORCED CONCRETE PIPE), REF (ROOF DRAIN), RT (REFERENCE), R/W,ROW (RIGHT), S (RIGHT-OF-WAY), SAS (SLOPE), SD (SANITARY SEWER LINE), SF (STORM DRAIN), STA (SQUARE FEET), STD (STATION), SW (STANDARD), SY (SIDEWALK), T (TANGENT), TA (TOP OF ASPHALT), TAC (TOP OF ASPHALT CURB), TBC (TOP BACK OF CURB), TC (TOP OF CONCRETE), TEL (TELEPHONE LINE, RISER OR BOX), TRANS (TOP OF PIPE), TW (TRANSVERSE), TYP (TOP OF WALL), UE (TYPICAL), UT (UNDERGROUND ELECTRICAL LINE), VC (UNDERGROUND TELEPHONE LINE), VERT (VERTICAL CURVE), VPI (VERTICAL), W (VERTICAL POINT OF INTERSECTION WATERLINE), WM (WATER METER), WSEL (WATER SURFACE ELEVATION), WV (WATER VALVE).

GENERAL ABBREVIATIONS

Table of GENERAL ABBREVIATIONS including Ø (DIAMETER), # (NUMBER), & (AND), @ (AT), CL (CENTERLINE), A/C (AIR CONDITIONING), AB (ANCHOR BOLT), ABND (ABANDON OR ABANDONED), ADDL (ADDITIONAL), ADJ (ADJUSTABLE, ADJUST), ADPT (ADAPTER), AFG (ABOVE FINISHED GRADE), AHU (AIR HANDLING UNIT), AL (ALUMINUM), ANSI (AMERICAN NATIONAL STANDARDS INSTITUTE), APPROX (APPROXIMATE (LY)), AR (ACID RESISTANT), ARCH (ARCHITECT (URAL) (URE)), ARND (AROUND), ASP (ACTIVATED SLUDGE PUMP), ASPH (ASPHALT), ASTM (AMERICAN SOCIETY FOR TESTING MATERIALS), ATC (AUTOMATIC TEMPERATURE CONTROL), AUTO (AUTOMATIC), AUX (AUXILIARY), AWWA (AMERICAN WATER WORKS ASSOCIATION), AVG (AVERAGE), B&C (BOX AND COVER), BFP (BELT FILTER PRESS), BHP (BRAKE HORSEPOWER), BF (BLIND FLANGE), BLDG (BUILDING), BLW (BELOW), BM (BENCHMARK), BOT (BOTTOM), BOW (BOTTOM OF WALL), BRG (BEARING), BTU (BRITISH THERMAL UNIT), BTWN (BETWEEN), BYND (BEYOND), C (CENTIGRADE), CAP (CAPACITY), CIRC (CIRCUMFERENTIAL), CIT (CITRIC ACID), CFM (CUBIC FEET PER MINUTE), CFS (CUBIC FEET PER SECOND), CJ (CONSTRUCTION JOINT), CLR (CLEAR), CMU (CONCRETE MASONRY UNIT), CO (CLEAN OUT), COL (COLUMN), COMB (COMBINATION), COMP (COMPRESSOR), CON (CONCENTRIC), CONC (CONCRETE), CONN (CONNECTION), CONST (CONSTRUCTION), CONT (CONTINUE (D, S, CONTINUOUS)), CTJ (CONTROL JOINT), CTR (CENTER (ED)), CU FT (CUBIC FOOT (FEET)), CWO (CHAIN WHEEL OPERATOR), DCT BK (DUCT BANK), DET (DETAIL), DHDPE (DOUBLE-WALLED HDPE), DI (DUCTILE IRON), DIA (DIAMETER), Δ (DELTA), DIAG (DIAGONAL), DIFF (DIFFUSER), OD (OUTSIDE DIAMETER), DIV (DIVISION), DN (DOWN), DPVC (DOUBLE-WALLED PVC), DRN (DRAIN), DWG (DRAWING), DWL (DOWEL(S)), E (EASTING), E & I (ELECTRICAL & INSTRUMENTATION), EA (EACH), ECC (ECCENTRIC), EF (EACH FACE), EL (ELEVATION), ELEC (ELECTRICAL), EMERG (EMERGENCY), ENGR (ENGINEER), EOP (EDGE OF PAVEMENT), EQ (EQUAL), EQPT (EQUIPMENT), EQUIV (EQUIVALENT), ES (EACH SIDE), ESEW (EMERGENCY SHOWER AND EYEWASH), ETC (ETCETERA), EW (EACH WAY), EXP (EXPANSION), EXP JT (EXPANSION JOINT), EXIST (EXISTING), EXT (EXTERIOR), EXT D (EXTENDED), FAB (FABRICATED), F (FAHRENHEIT), FAC (FACILITY), FC (FACE OF CURB), FD (FLOOR DRAIN), FE (FLANGED END), FG (FINISH GRADE), FIG (FIGURE), FIS (FEEDER ISOLATION SWITCH GEAR), FL (FLOOR), FLG (FLOORING), FM (FORCE MAIN), FRP (FIBERGLASS REINFORCED PLASTIC), FS (FAR SIDE), FT (FEET/FOOT), FTG (FOOTING/FITTING), GAL (GALLON), GALVS (GALVANIZED STEEL).

GENERAL ABBREVIATIONS (CONT)

Table of GENERAL ABBREVIATIONS (CONT) including GPD (GALLONS PER DAY), GPM (GALLONS PER MINUTE), GRAV (GRAVITY), GSKT (GASKET), GRATING (GRATING), HAS (HEADED ANCHOR STUD), HB (HOSE BIB), HEX (HEXAGON), HGT (HEIGHT), HORIZ (HORIZONTAL), HP (HIGH POINT (HORSEPOWER)), HS (HIGH SERVICE (HIGH STRENGTH)), HWA (HIGH WATER ALARM), HWL (HIGH WATER LEVEL), HWO (HAND WHEEL OPERATOR), HYD (HYDRANT), Hz (HERTZ), I & C (INSTRUMENTATION & CONTROL), ID (INSIDE DIAMETER), INV EL (INVERT ELEVATION), IF (INSIDE FACE), IN (INCH), INT (INTERIOR), INV (INVERT), IRR (IRRIGATION), JB (JUNCTION BOX), JCT (JUNCTION), JT (JOINT), K (KELVIN), KWH (KILOWATT HOUR), LAT (LATITUDE), LB (POUND), LF (LINEAL FEET), LLH (LONG LEG HORIZONTAL), LLV (LONG LEG VERTICAL), LONG (LONGITUDE), LP (LOW POINT (LOW PRESSURE)), LNTL (LINTEL), LR (LONG RADIUS), LWA (LOW WATER ALARM), LWL (LOW WATER LEVEL), MAG (MAGNETIC), MAX (MAXIMUM), MCC (MOTOR CONTROL CENTER), MEAS (MEASURE), MFG (MANUFACTURED), MFR (MANUFACTURER), MGL (MILLIGRAMS PER LITER), MGD (MILLION GALLONS PER DAY), MH (MANHOLE), MIN (MINIMUM), MISC (MISCELLANEOUS), MJ (MECHANICAL JOINT), MO (MOTOR OPERATOR), MON (MONUMENT), MPH (MILES PER HOUR), MTD (MOUNTED), N (NORTHING), NBS (NATIONAL BUREAU OF STANDARDS), NEC (NATIONAL ELECTRICAL CODE), NEMA (NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION), NFPA (NATIONAL FIRE PROTECTION ASSOCIATION), NIC (NOT IN CONTRACT), NO (NUMBER), NOS (NATIONAL OCEANOGRAPHIC SURVEY), NS (NON-SHRINK), NTS (NOT TO SCALE), O/E (OR EQUAL), OC (ON CENTER), OD (OUTSIDE DIAMETER), OF (OUTSIDE FACE), OH (OVERHEAD (DOOR)), OPNG(S) (OPENING(S)), OPP (OPPOSITE), OPP HD (OPPOSITE HAND), OPT (OPTION(AL)), PC (POINT OF CURVE (ATURE)), PDSH (PRESSURE DIFFERENTIAL SENSOR (HIGH)), PE (PLAIN END), PERF (PERFORATED), PI (POINT OF INTERSECTION), PLT (PLANT), PNEU (PNEUMATIC), PPM (PARTS PER MILLION), PRESS (PRESSURE), PRIM (PRIMARY), PS (PUMP STATION), PSI (POUNDS PER SQUARE INCH), PT (POINT), QTY (QUALITY OR QUANTITY), RISER(S) (RISER(S)), R/W (RIGHT-OF-WAY), RAD (RADIUS), RCP (REINFORCED CONCRETE PIPE), RD (ROOF DRAIN), RED (REDUCER), REF (REFERENCE/REFER), REINF (REINFORCE (D, ING)), REQD (REQUIRED), RJ (RESTRAINED JOINT (S)), RPM (REVOLUTIONS PER MINUTE), RR (RAILROAD), SEG (SEGMENT), S (SOUTH), SAS (SANITARY SEWER (GRAVITY)), SD (STORM DRAIN (SEWER)), SHC (SODIUM HYPOCHLORITE), SHEET (SHEET), SHT (SIMILAR), SIM (SIMILAR), SL (SLEEVE), SLV (SPECIFICATION (SPECIFIED)), SPEC (SPECIFICATION), SPR (SPRING), SQ (SQUARE), SST (STAINLESS STEEL).

GENERAL ABBREVIATIONS (CONT)

Table of GENERAL ABBREVIATIONS (CONT) including STA (STATION), STD (STANDARD), STIF (STIFFENER), STIR (STIRRUP), STRUC (STRUCTURE (S, URAL)), SWD (SIDE WATER DEPTH), SWK (SIDEWALK), SYM (SYMMETRICAL), T (TREAD (S)), T&B (TOP AND BOTTOM), TAN (TANGENCY), TC (TOP OF CURB ELEVATION), TECH (TECHNICAL), TEL (TELEPHONE), TEMP (TEMPERATURE), TM (TELEMETER OR TIME), TO (TOP OF), TOS (TOP OF STEEL), TV (TELEVISION), TYP (TYPICAL), W (WEST), WL (WATER LINE), WWTP (WASTE WATER TREATMENT PLANT).

PIPING MATERIALS

Table of PIPING MATERIALS including BSP (BLACK STEEL PIPE), CI (CAST IRON PIPE), CISP (CAST IRON SOIL PIPE), CMP (CORRUGATED METAL PIPE), CS (CARBON STEEL), CU (COPPER PIPE), DHDPE (DOUBLE WALLED HDPE PIPE), DI (DUCTILE IRON PIPE), DPVC (DOUBLE WALLED PVC PIPE), FRP (FIBERGLASS REINFORCED PLASTIC), GALV (GALVANIZED STEEL PIPE), HDPE (HIGH DENSITY POLYETHYLENE), PLYP (POLYETHYLENE PIPE), PVC (POLYVINYL CHLORIDE PIPE), RCP (REINFORCED CONCRETE PIPE), SST (STAINLESS STEEL PIPE), VCP (VITRIFIED CLAY PIPE).

PROCESS FLOW STREAM

Table of PROCESS FLOW STREAM including AIR (COMPRESSED AIR), BA (BASIN AIR), BP (BYPASS OR BACKPULSE), CA (CITRIC ACID (50%)), CIT (CITRIC ACID), CLS (CHLORINE SOLUTION), CW (COLD WATER), DRN (DRAIN), EFF (EFFLUENT), FA (FOUL AIR), FE (FINAL EFFLUENT), FIL (FILTRATE), FM (FORCE MAIN), GS (GRIT SLURRY), HC (HOSE CONNECTION), INF (RAW AND SCREENED INFLUENT), MC (MAINTENANCE CLEAN), MF (MICROFILTERED), MFE (MICROFILTERED EFFLUENT), ML (MIXED LIQUOR), MLR (MIXED LIQUOR RECYCLE), MLRS (MIXED LIQUOR RESCREEN), OF (OVERFLOW), PW (PLANT WATER (NON-POTABLE)), POT (POTABLE WATER), RAS (RETURN ACTIVATED SLUDGE), SHC (SODIUM HYPOCHLORITE (12%)), TD (TANK DRAIN), WAS (WASTE ACTIVATED SLUDGE).

PIPING NOMENCLATURE

Table of PIPING NOMENCLATURE including BCV (BALL CHECK VALVE), BF (BLIND FLANGE), BVF (BUTTERFLY VALVE), BPRV (BACK PRESSURE REGULATING VALVE), BV (BALL VALVE), COMP JT (COMPRESSION JOINT), CV (CHECK VALVE (AIR CUSHION)), EXP JT (EXPANSION JOINT), FAC (FLANGED ADAPTOR), FE (FLANGED END), FH (COUPLING FIRE HYDRANT), FS (FLOOR STAND), GV (GLOBE VALVE), GV (GATE VALVE), HFAC (HARNESSED FLANGED ADAPTOR COUPLING), KGV (KNIFE GATE VALVE), MJ (MECHANICAL JOINT), MV (MUD VALVE), PBAV (PLASTIC BALL VALVE), PCV (PRESSURE CONTROL VALVE), PE (PLAIN END), POJ (PUSH ON JOINT), PRV (PRESSURE RELIEF VALVE), PV (PLUG VALVE), PVRV (PRESSURE VACUUM RELIEF VALVE), RJ (RESTRAINED JOINT), SJ (SOLDERED JOINT), SOLV (SOLENOID VALVE), THD (THREADED), TUBV (TRUE UNION BALL VALVE), UN (UNION), VB (VALVE BOX), VC (VICTAULIC COUPLING (SHOULDERED ENDS)), WAP (WALL PIPE), WJ (WELDED JOINT), WP (WELDED PIPE), WSV (WALL SLEEVE).

GENERAL LEGEND

UTILITY LINE STYLES

Table of UTILITY LINE STYLES including EFF (REUSE WATER LINE), E (UNDERGROUND ELECTRICAL CONDUIT), FM (FORCE MAIN), FO (FIBER OPTIC LINE), G (GAS LINE), UGE (UNDERGROUND ELECTRIC MAIN LINE), OHE (OVERHEAD ELECTRIC LINE), SAS (GRAVITY SANITARY SEWER LINE), SD (STORM DRAIN), TV (UNDERGROUND TELECOMMUNICATIONS), W (WATER LINE).

WWTP PROCESS LINE STYLES

Table of WWTP PROCESS LINE STYLES including AIR (COMPRESSED AIR), BA (BASIN AIR), BP (BYPASS OR BACKPULSE), CA (CITRIC ACID (50%)), CIT (CITRIC ACID), CLS (CHLORINE SOLUTION), CW (COLD WATER), DRN (DRAIN), EFF (EFFLUENT), FA (FOUL AIR), FE (FINAL EFFLUENT), FIL (FILTRATE), FM (FORCE MAIN), GS (GRIT SLURRY), HC (HOSE CONNECTION), INF (RAW AND SCREENED INFLUENT), MC (MAINTENANCE CLEAN), MF (MICROFILTERED), MFE (MICROFILTERED EFFLUENT), ML (MIXED LIQUOR), MLR (MIXED LIQUOR RECYCLE), MLRS (MIXED LIQUOR RESCREEN), OF (OVERFLOW), PW (PLANT WATER (NON-POTABLE)), POT (POTABLE WATER), RAS (RETURN ACTIVATED SLUDGE), SHC (SODIUM HYPOCHLORITE (12%)), TD (TANK DRAIN), WAS (WASTE ACTIVATED SLUDGE).

MISCELLANEOUS SYMBOLS

Table of MISCELLANEOUS SYMBOLS including CONCRETE, MASONRY BLOCK, GROUT, GRAVEL, GRATING, CENTERLINE, STEEL UNLESS NOTED OTHERWISE, EARTH FILL, UNDISTURBED EARTH.



CONSULTANTS



SEAL

CITY OF RIO RANCHO INDUSTRIAL PARK SEWER SYSTEM IMPROVEMENTS

PROJECT NAME

Table with columns: REV., DATE, DESCRIPTION, BY.

Table with project details: PROJECT NO: 1560020600, DESIGNED BY: JMW, DRAWN BY: CRU, CHECKED BY: BJA, DATE: 01/05/2016

SHEET TITLE: GENERAL ABBREVIATIONS AND LEGEND

SHEET NO: G-003

5/9/2016 M:\MSD\15-600-206-002\_Disciplines\_SHEETS\8\_sheets - utilities\01\_GEN\1560206\_G-004.dwg

**Quantity Summary**  
City Bid Package for Industrial Park Sewer System Improvements

Bid Item	SpecType	Spec#	Item Description	Unit	Est Qty	Final Qty
001	NMDOT	621000	MOBILIZATION/DEMOBILIZATION (NOT TO EXCEED 5% ABOVE SUBTOTAL)	LS	1	
002	NMDOT	618000	TRAFFIC CONTROL MANAGEMENT	LS	1	
003	NMDOT	603281	SWPPP PLAN PREPARATION AND MAINTENANCE	LS	1	
004	NMDOT	414000	COLD MILLING (ASPHALT)	SY	1436	
005	NMDOT	416000	MINOR PAVEMENT	SY	1436	
006	NMAPWA	701.01.01	TRENCHING, BACKFILLING & COMPACTION, FOR UP TO 16" SEWER PIPE, 8' OR LESS IN DEPTH, PIPE NOT INCLUDED	LF	1000	
007	NMAPWA	701.10.02	TRENCHING, BACKFILLING & COMPACTION, FOR UP TO 16" SEWER PIPE, OVER 8' TO 12' IN DEPTH, PIPE NOT INCLUDED	LF	521	
008	NMAPWA	701.01.03	TRENCHING, BACKFILLING & COMPACTION, FOR UP TO 16" SEWER PIPE, OVER 12' TO 16' IN DEPTH, PIPE NOT INCLUDED	LF	350	
009	NMAPWA	701.01.04	TRENCHING, BACKFILLING & COMPACTION, FOR UP TO 16" SEWER PIPE, OVER 16' TO 20' IN DEPTH, PIPE NOT INCLUDED	LF	100	
010	NMAPWA	901.03.01.01	4" PVC SDR-35 GRAVITY SANITARY SEWER LINE PIPE (SERVICE CONNECTION)	LF	136	
011	NMAPWA	901.03.01.03	8" PVC SDR-35 GRAVITY SANITARY SEWER LINE PIPE	LF	1539	
012	NMAPWA	901.03.01.04	10" PVC SDR-35 GRAVITY SANITARY SEWER LINE PIPE	LF	433	
013	NMAPWA	901.09.02.08	10" SANITARY SEWER LINE CONNECTION TO EXISTING MANHOLE	EA	1	
014	NMAPWA	905.04.02	WASTEWATER SAMPLING MANHOLE - COMPLETE-IN-PLACE	EA	6	
015	NMAPWA	905.03.03.01	SEWER SERVICE CONNECTION - COMPLETE-IN-PLACE	EA	6	
016	NMAPWA	920	MANHOLE 4' DIA TYPE "C" 3'-16' DEEP - COMPLETE-IN-PLACE	EA	1	
017	NMAPWA	920.03.01.11	MANHOLE 4' DIA TYPE "E" 6'-10' DEEP - COMPLETE-IN-PLACE	EA	3	
018	NMAPWA	920.03.01.37	MANHOLE 6' DIA TYPE "E" 10' - 14' DEEP - COMPLETE-IN-PLACE	EA	2	

**GENERAL NOTES**

- COLD MILLED ASPHALT CONCRETE MATERIAL SHALL BE MILLED TO PROVIDE A NOMINAL 1-1/2" MAXIMUM
- COLD MILLINGS SHALL BE HAULED AND STOCKPILED OFFSITE NO MORE THAN FIVE MILES FROM PROJECT LOCATION

**WILSON & COMPANY**  
 2600 THE AMERICAN RD. SE SUITE 100  
 RIO RANCHO, NM 87124  
 PHONE: 505-898-8021  
 FAX: 505-898-8501  
 www.wilsonco.com

CONSULTANTS



PROJECT NAME  
**CITY OF RIO RANCHO  
 INDUSTRIAL PARK  
 SEWER SYSTEM  
 IMPROVEMENTS**

REV.	DATE	DESCRIPTION	BY

PROJECT NO: 1560020600  
 DESIGNED BY: JMW  
 DRAWN BY: CRU  
 CHECKED BY: BJA  
 DATE: 01/05/2016

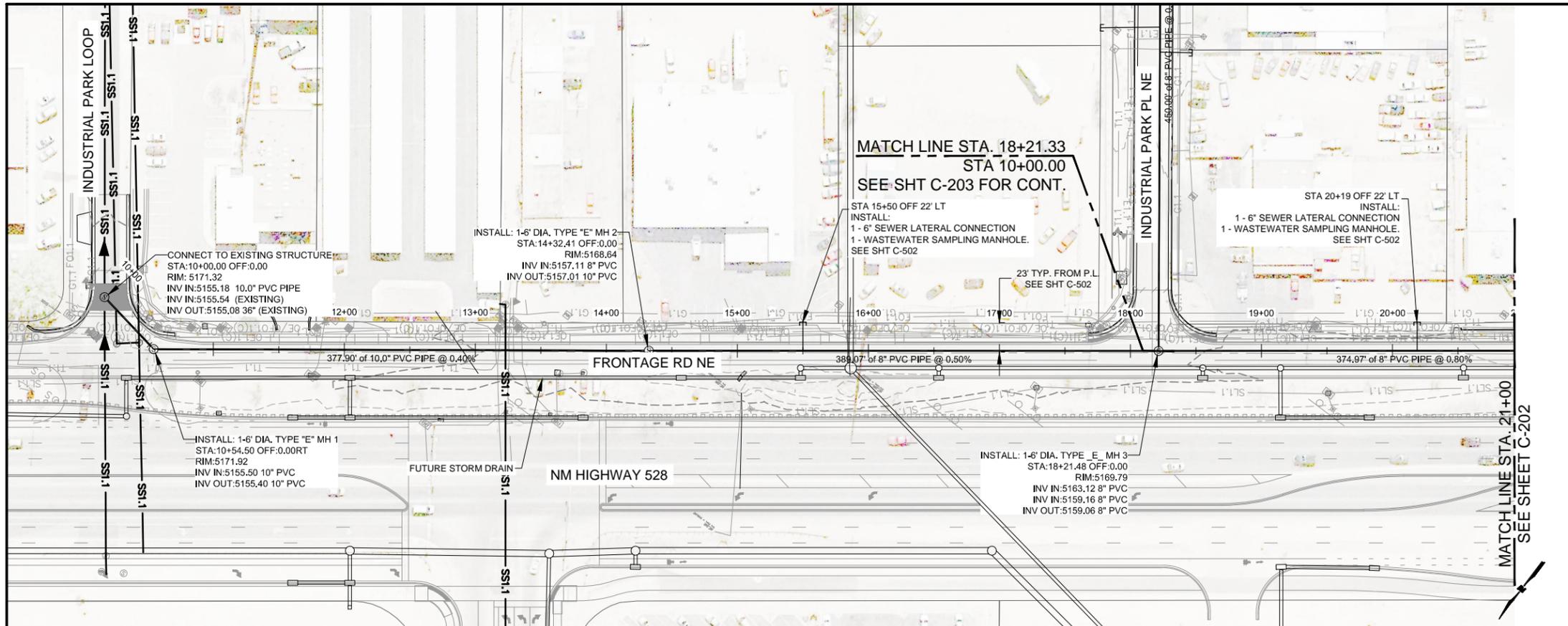
SHEET TITLE  
**QUANTITY SUMMARIES**

SHEET NO:  
**G-004**

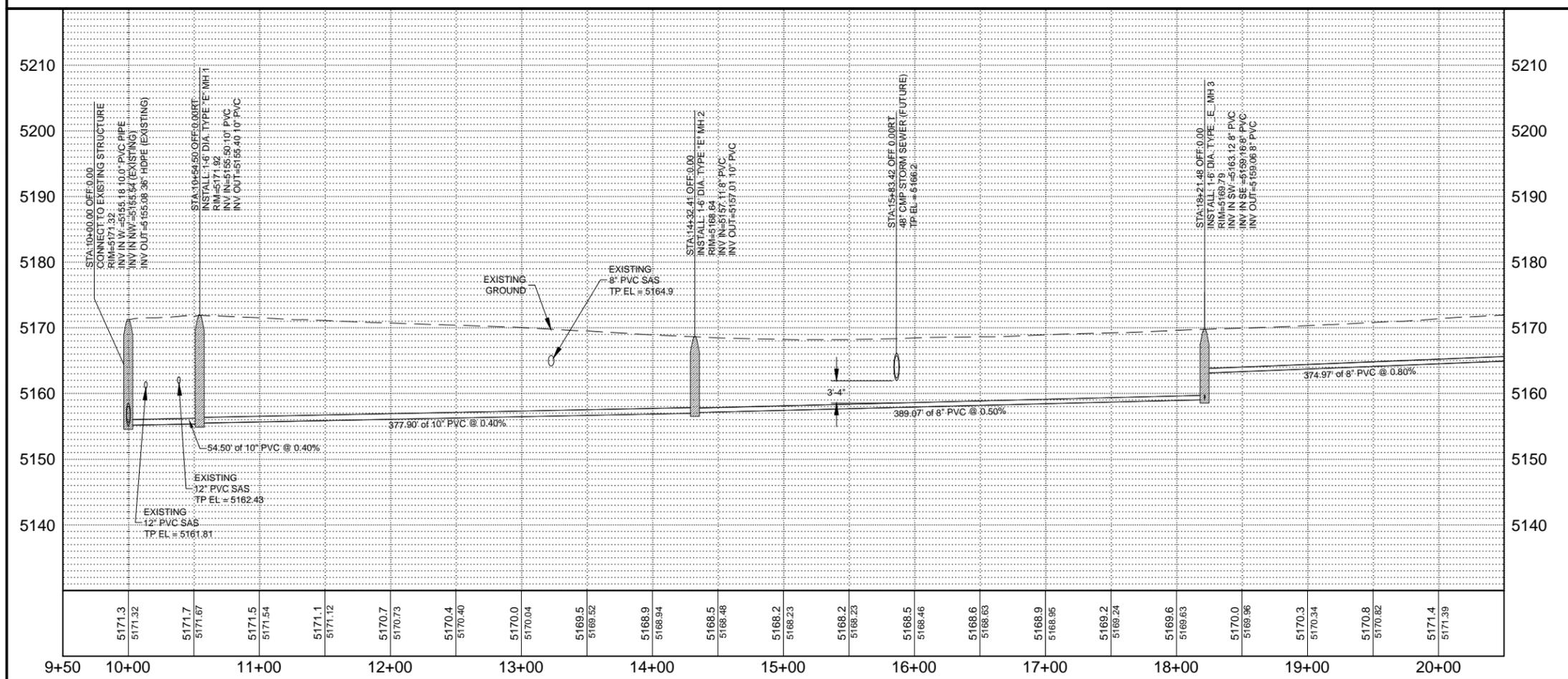




5/9/2016 M:\MSD15-600-206-002\_Disciplines\ SHEETS8\_sheets - utilities02\_CIVIL\IP&P\SI1560206\_C-201.dwg

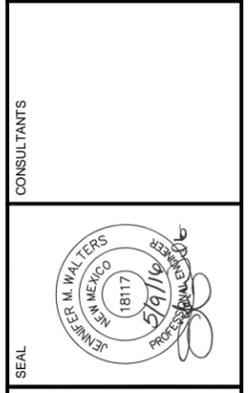


PLAN: SCALE: 1"=50'  
 PROFILE: SCALE: 1"=50' HORZ SCALE: 1"=10' VERT



- ### GENERAL NOTES
- CENTER 20' JOINT FOR SAS ON ALL POTABLE WATER CROSSINGS TYP.
  - RIM ELEVATIONS ARE SET ACCORDING TO BEST AVAILABLE RECORD INFORMATION. CONTRACTOR TO ADJUST RIM ELEVATION TO FINISH/EXISTING GRADE IN THE FIELD.
  - THE PROFILE SHOWN ON THIS SHEET ONLY DISPLAYS THE PRIMARY MATERIAL IN FOCUS PER THIS SHEET TITLE. ALL OTHER PROPOSED & EXISTING UTILITIES ARE NOT SHOWN FOR CLARITY UNLESS OTHERWISE INDICATED.
  - LOCATION OF ALL UTILITIES SHALL BE FIELD VERIFIED BY CONTRACTOR PRIOR TO BEGINNING WORK. THE LOCATION OF EXISTING UTILITIES SHOWN ON THE DRAWINGS ARE BASED ON AVAILABLE RECORD INFORMATION, ABOVE GROUND FEATURES VISIBLE IN THE FIELD, AND VERBAL DESCRIPTIONS BY THE CITY OF RIO RANCHO. IN THE EVENT CONDITIONS IN THE FIELD ARE NOT AS SHOWN ON THE DRAWINGS, CONTRACTOR SHALL MODIFY THE PUBLIC INFRASTRUCTURE PROJECT MANAGER IMMEDIATELY SO THAT NECESSARY CHANGES TO THE DESIGN MAY BE MADE WITH THE MINIMUM OF INTERRUPTION TO THE PROJECT SCHEDULE.
  - USE TRENCH BOX WHERE NECESSARY TO PREVENT DAMAGE TO OTHER UTILITIES, INCIDENTAL TO CONSTRUCTION.
  - CONTRACTOR SHALL FURNISH AND INSTALL SAMPLING PORTS ON ALL COMMERCIAL/INDUSTRIAL SERVICE CONNECTIONS PER CITY DETAIL ON SHT. C-502.

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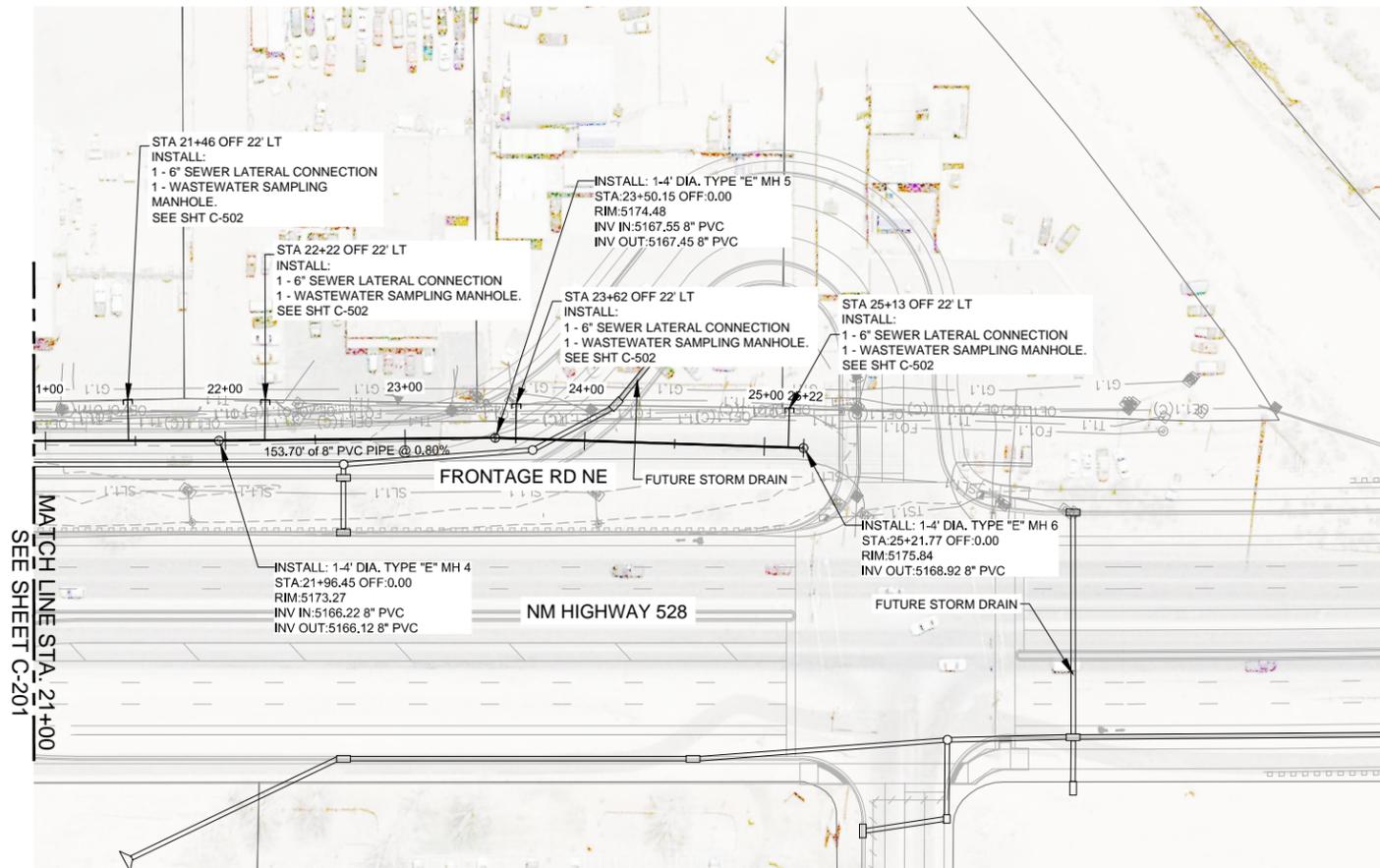
PROJECT NAME  
**CITY OF RIO RANCHO  
 INDUSTRIAL PARK  
 SEWER SYSTEM  
 IMPROVEMENTS**

REV.	DATE	DESCRIPTION	BY

PROJECT NO: 1560020600  
 DESIGNED BY: JMW  
 DRAWN BY: CRU  
 CHECKED BY: BJA  
 DATE: 01/05/2016

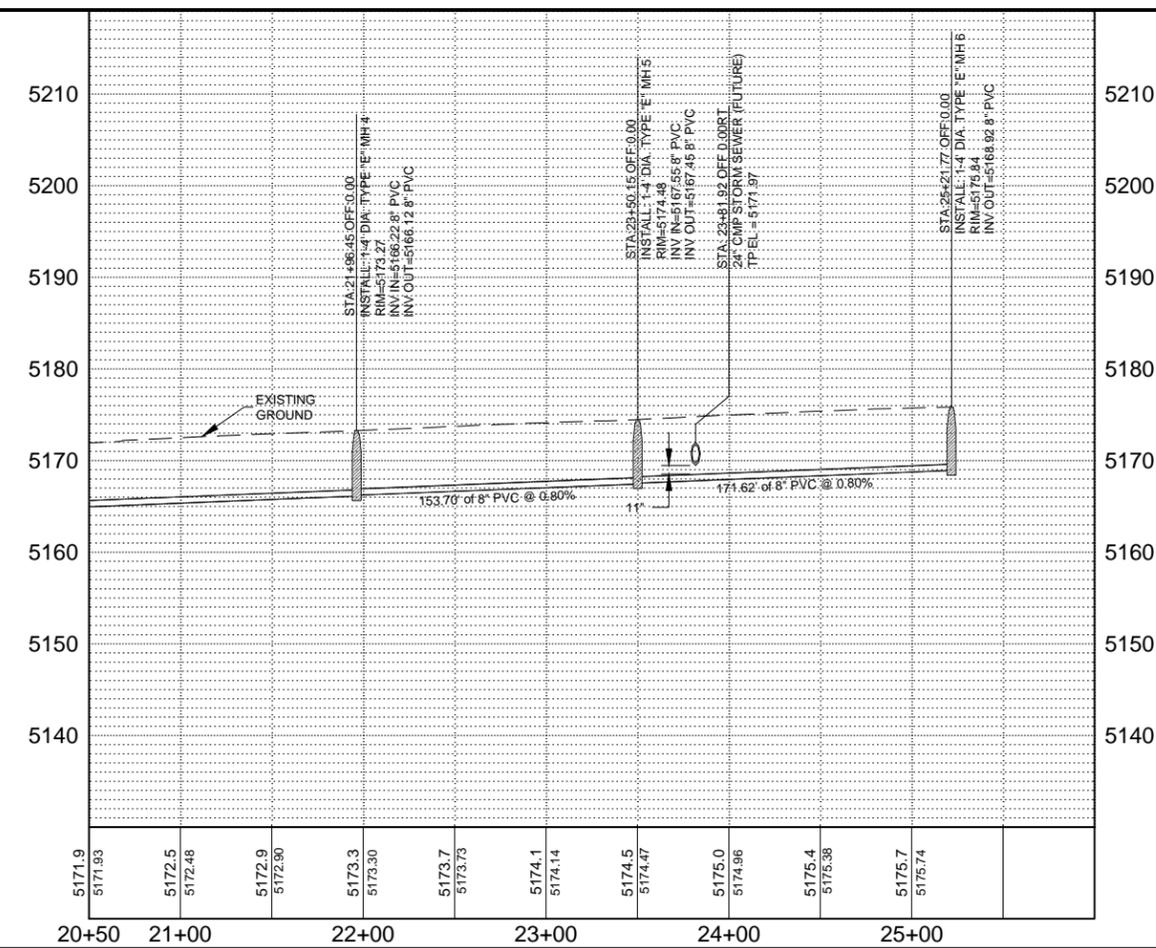
SHEET TITLE  
**SEWER PLAN AND  
 PROFILE**

SHEET NO:  
**C-201**



PLAN:  
SCALE: 1"=50'

PROFILE:  
SCALE: 1"=50' HORZ  
SCALE: 1"=10' VERT



**GENERAL NOTES**

- CENTER 20' JOINT FOR SAS ON ALL POTABLE WATER CROSSINGS TYP.
- RIM ELEVATIONS ARE SET ACCORDING TO BEST AVAILABLE RECORD INFORMATION. CONTRACTOR TO ADJUST RIM ELEVATION TO FINISH/EXISTING GRADE IN THE FIELD.
- THE PROFILE SHOWN ON THIS SHEET ONLY DISPLAYS THE PRIMARY MATERIAL IN FOCUS PER. THIS SHEET TITLE. ALL OTHER PROPOSED & EXISTING UTILITIES ARE NOT SHOWN FOR CLARITY UNLESS OTHERWISE INDICATED.
- LOCATION OF ALL UTILITIES SHALL BE FIELD VERIFIED BY CONTRACTOR PRIOR TO BEGINNING WORK. THE LOCATION OF EXISTING UTILITIES SHOWN ON THE DRAWINGS ARE BASED ON AVAILABLE RECORD INFORMATION, ABOVE GROUND FEATURES VISIBLE IN THE FIELD, AND VERBAL DESCRIPTIONS BY THE CITY OF RIO RANCHO. IN THE EVENT CONDITIONS IN THE FIELD ARE NOT AS SHOWN ON THE DRAWINGS, CONTRACTOR SHALL MODIFY THE PUBLIC INFRASTRUCTURE PROJECT MANAGER IMMEDIATELY SO THAT NECESSARY CHANGES TO THE DESIGN MAY BE MADE WITH THE MINIMUM OF INTERRUPTION TO THE PROJECT SCHEDULE.
- USE TRENCH BOX WHERE NECESSARY TO PREVENT DAMAGE TO OTHER UTILITIES, INCIDENTAL TO CONSTRUCTION.
- CONTRACTOR SHALL FURNISH AND INSTALL SAMPLING PORTS ON ALL COMMERCIAL/INDUSTRIAL SERVICE CONNECTIONS PER CITY DETAIL ON SHT. C-502.

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CONSULTANTS



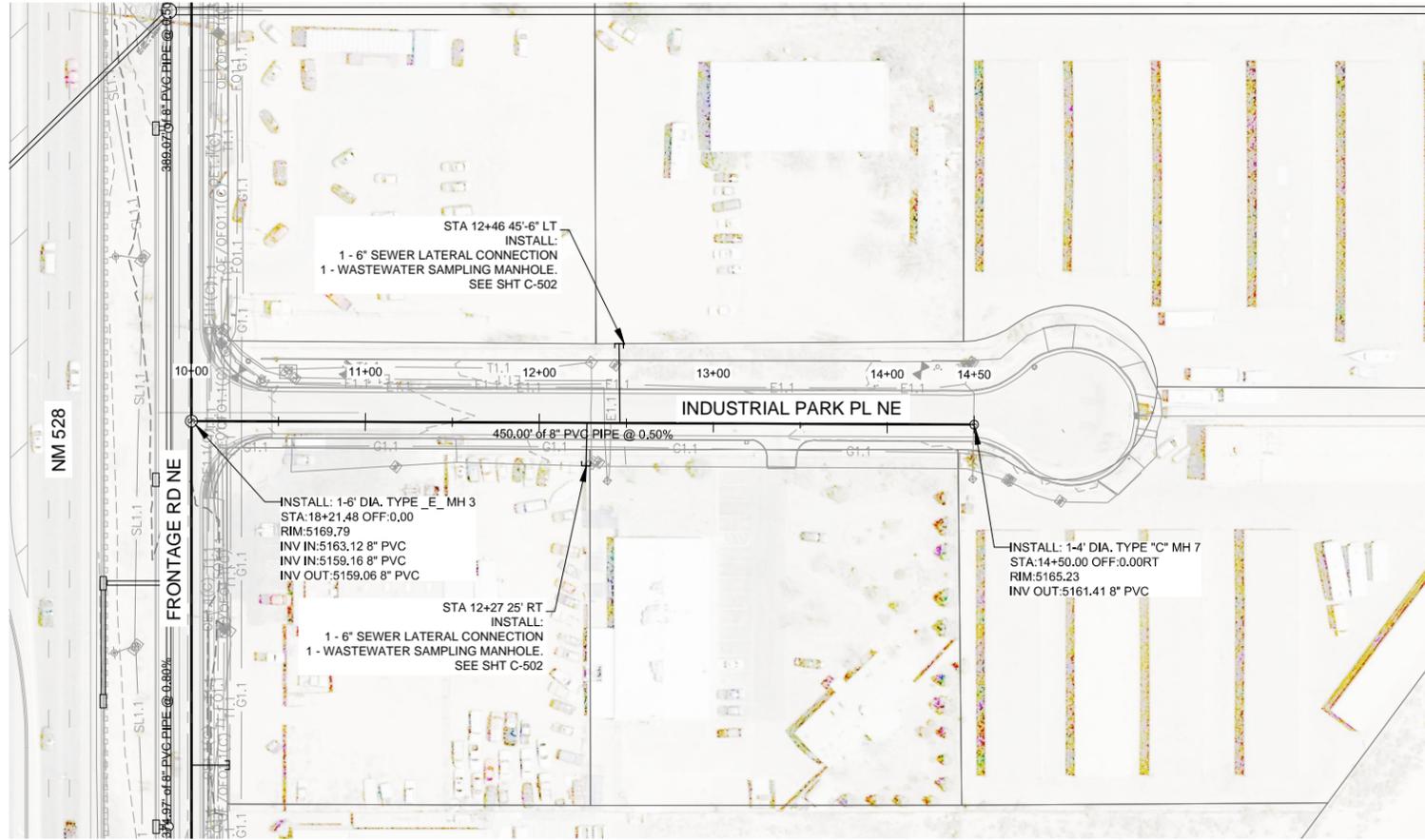
PROJECT NAME  
**CITY OF RIO RANCHO  
INDUSTRIAL PARK  
SEWER SYSTEM  
IMPROVEMENTS**

REV.	DATE	DESCRIPTION	BY

PROJECT NO: 1560020600  
DESIGNED BY: JMW  
DRAWN BY: CRU  
CHECKED BY: BJA  
DATE: 01/05/2016

SHEET TITLE  
**SEWER PLAN AND  
PROFILE**

SHEET NO:  
**C-202**



PLAN:  
SCALE: 1"=50'

PROFILE:  
SCALE: 1"=50' HORZ  
SCALE: 1"=10' VERT

**GENERAL NOTES**

1. CENTER 20' JOINT FOR SAS ON ALL POTABLE WATER CROSSINGS TYP.
2. RIM ELEVATIONS ARE SET ACCORDING TO BEST AVAILABLE RECORD INFORMATION. CONTRACTOR TO ADJUST RIM ELEVATION TO FINISH/EXISTING GRADE IN THE FIELD.
3. THE PROFILE SHOWN ON THIS SHEET ONLY DISPLAYS THE PRIMARY MATERIAL IN FOCUS PER THIS SHEET TITLE. ALL OTHER PROPOSED & EXISTING UTILITIES ARE NOT SHOWN FOR CLARITY UNLESS OTHERWISE INDICATED.
4. LOCATION OF ALL UTILITIES SHALL BE FIELD VERIFIED BY CONTRACTOR PRIOR TO BEGINNING WORK. THE LOCATION OF EXISTING UTILITIES SHOWN ON THE DRAWINGS ARE BASED ON AVAILABLE RECORD INFORMATION. ABOVE GROUND FEATURES VISIBLE IN THE FIELD, AND VERBAL DESCRIPTIONS BY THE CITY OF RIO RANCHO, IN THE EVENT CONDITIONS IN THE FIELD ARE NOT AS SHOWN ON THE DRAWINGS, CONTRACTOR SHALL MODIFY THE PUBLIC INFRASTRUCTURE PROJECT MANAGER IMMEDIATELY SO THAT NECESSARY CHANGES TO THE DESIGN MAY BE MADE WITH THE MINIMUM OF INTERRUPTION TO THE PROJECT SCHEDULE.
5. USE TRENCH BOX WHERE NECESSARY TO PREVENT DAMAGE TO OTHER UTILITIES, INCIDENTAL TO CONSTRUCTION.
6. CONTRACTOR SHALL FURNISH AND INSTALL SAMPLING PORTS ON ALL COMMERCIAL/INDUSTRIAL SERVICE CONNECTIONS PER CITY DETAIL ON SHT. C-502.

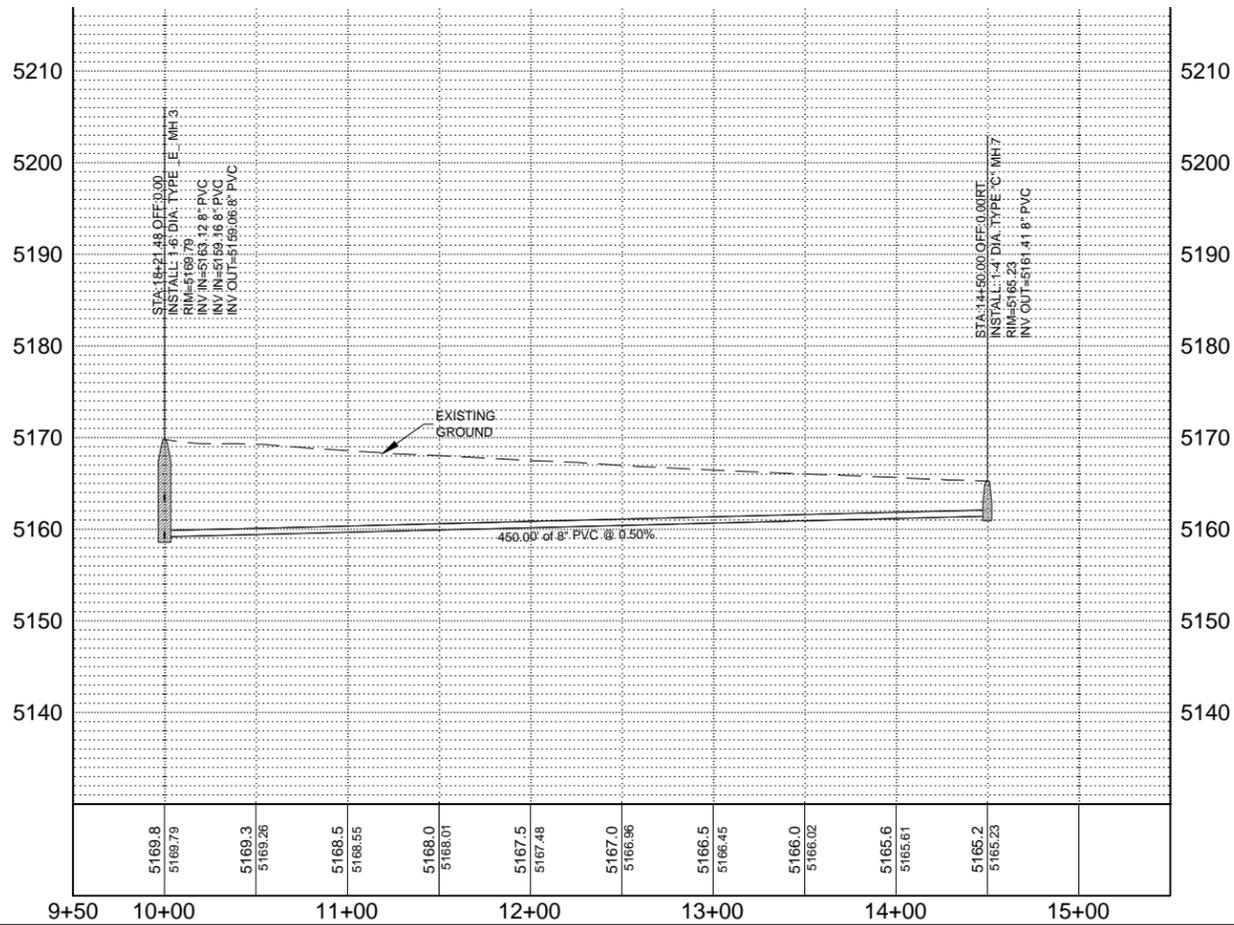
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CONSULTANTS



SEAL

PROJECT NAME  
**CITY OF RIO RANCHO  
INDUSTRIAL PARK  
SEWER SYSTEM  
IMPROVEMENTS**



REV.	DATE	DESCRIPTION	BY

PROJECT NO: 1560020600  
DESIGNED BY: JMW  
DRAWN BY: CRU  
CHECKED BY: BJA  
DATE: 01/05/2016

SHEET TITLE  
**SEWER PLAN AND  
PROFILE**

SHEET NO:  
**C-203**

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5/9/2016

**SEWER MANHOLE FRAMES AND COVERS**

City of Rio Rancho—Public Works Department  
 STANDARD DRAWING S-2

APPROVED BY: [Signature]  
 DATE: 7/9/11  
 REV: 2/06

**SEWER MANHOLE FRAMES AND COVERS**

City of Rio Rancho—Public Infrastructure Department  
 STANDARD DRAWING S-2 (2 OF 2)

APPROVED BY: [Signature]  
 DATE: 7/9/11  
 REV: 2/06

**STANDARD CONCRETE MANHOLE TYPE "E"**

City of Rio Rancho—Public Works Department  
 STANDARD DRAWING S-3 (1 OF 2)

APPROVED BY: [Signature]  
 DATE: 7/9/11  
 REV: 5/15

**GENERAL NOTES:**

- INSTALL NEOPRENE "O" RING ON PVC PIPE AND MORTAR TO MANHOLE FOR TIGHT SEAL.
- FOR PRESSURE TYPE MANHOLE COVER USE SAME AS SHOWN WITH EIGHT (8) NO. 1 2" x 2" BOLTS AND NEOPRENE GASKET. BOLT HOLES SHALL BE PREDRILLED IN COVER AND TAPPED IN FRAME.
- SAG SERVICES SHALL NOT BE ALLOWED IN MANHOLES.
- IF SEWER MAIN AT A MANHOLE IS TO BE CONTINUED TO A FUTURE STREET, A 20" STUB-OUT TO BE INSTALLED WITH CAP AND WITH 1% MIN. SLOPE.
- IN UNIMPROVED AND UNPAVED ROADS, MANHOLE RIMS AND CONCRETE COLLARS ARE TO BE INSTALLED AT EXISTING ROAD GRADE.
- IN OFF-SITE AREAS, ELEVATIONS OF MANHOLE RIMS AND CONCRETE SHALL BE INSTALLED 6" ABOVE NATURAL GROUND.
- 12" MAXIMUM OF ADJUSTMENT RINGS TO BE USED ON MANHOLES.
- NON-SHRINK MORTAR INSIDE AND OUTSIDE OF MANHOLE JOINTS. USE NON-SHRINK GROUT FOR JOINTS, FILLETS & PIPE PENETRATIONS.
- USE JOINT COMPOUND IN ALL MANHOLE BARREL JOINTS.
- TYPE E MANHOLES NOT TO BE USED FOR DEPTHS LESS THAN 6' MEASURED FROM INVERT TO RIM.
- MANHOLES GREATER THAN 18" IN DEPTH SHALL BE OF PRECAST CONCRETE SECTIONS ONLY.
- DESIGN APPLIES TO 4' AND 6' I.D. MANHOLES.
- COMPACT ALL BACKFILL AROUND MANHOLES TO 95% ASTM D 1557.
- POSITION MANHOLES OPENING OVER THE UPSTREAM SIDE OF MAIN LINE.
- MANHOLES SHALL BE CAST-IN-PLACE OR PRECAST. NO BRICK MANHOLES SHALL BE ALLOWED.
- SEWER MANHOLES SHALL BE COATED PER NMAPWA SECTION 902.
- SCRIBE MANHOLE COLLAR TO INDICATE DIRECTION OF FLOW.
- STORM DRAIN MANHOLES SHALL HAVE STEPS.

City of Rio Rancho—Public Works Department  
 STANDARD DRAWING S-3 (2 OF 2)

APPROVED BY: [Signature]  
 DATE: 7/9/11  
 REV: 5/15

**PIPE BEDDING**

City of Rio Rancho—Public Infrastructure Department  
 STANDARD DRAWING S-4

APPROVED BY: [Signature]  
 DATE: 7/9/11  
 REV: 2/06

**TYPICAL SEWER LATERAL CONNECTION**

City of Rio Rancho—Public Infrastructure Department  
 STANDARD DRAWING S-7

APPROVED BY: [Signature]  
 DATE: 7/9/11  
 REV: 9/08

**STANDARD AIR TEST FOR SEWER MAINS**

City of Rio Rancho—Public Infrastructure Department  
 STANDARD DRAWING S-9

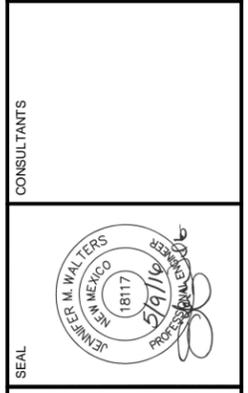
APPROVED BY: [Signature]  
 DATE: 7/9/11  
 REV: 2/06

**DROP MANHOLE CONNECTION**

City of Rio Rancho—Public Works Department  
 STANDARD DRAWING S-10

APPROVED BY: [Signature]  
 DATE: 7/9/11  
 REV: 2/06

**WILSON & COMPANY**  
 2600 THE AMERICAN RD. SUITE 100  
 RIO RANCHO, NM 87124  
 PHONE: 505-898-8021  
 FAX: 505-898-8501  
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**CITY OF RIO RANCHO**  
**INDUSTRIAL PARK**  
**SEWER SYSTEM**  
**IMPROVEMENTS**

REV.	DATE	DESCRIPTION	BY

PROJECT NO: 1560020600  
 DESIGNED BY: JMW  
 DRAWN BY: CRU  
 CHECKED BY: BJA  
 DATE: 01/05/2016

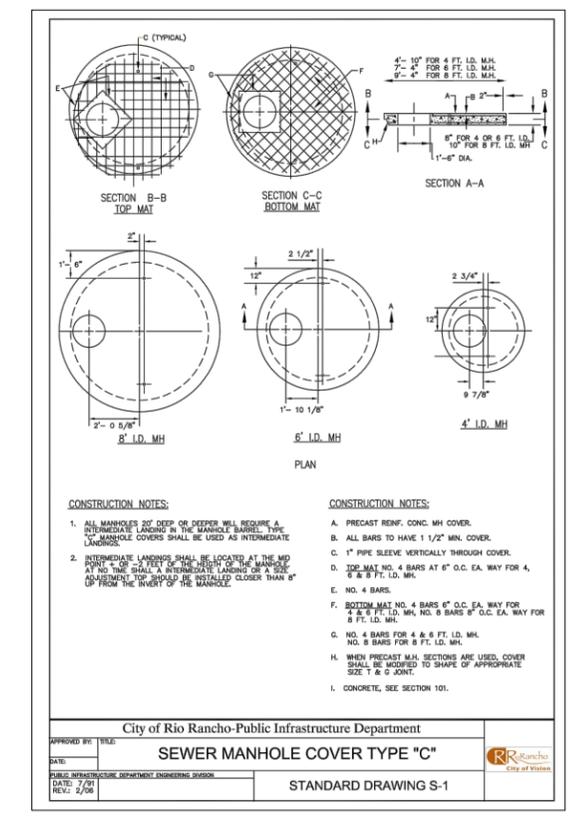
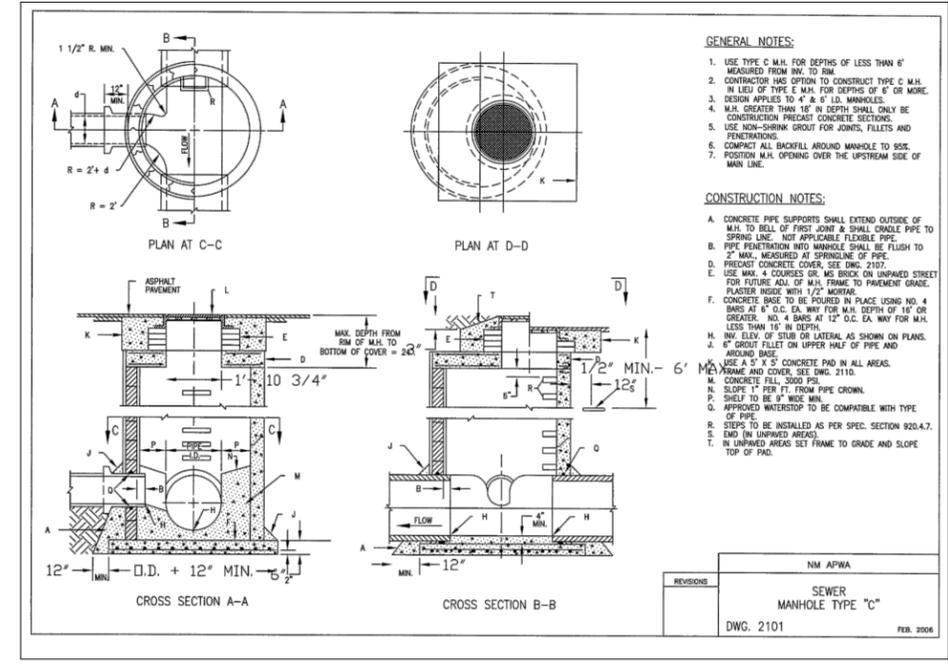
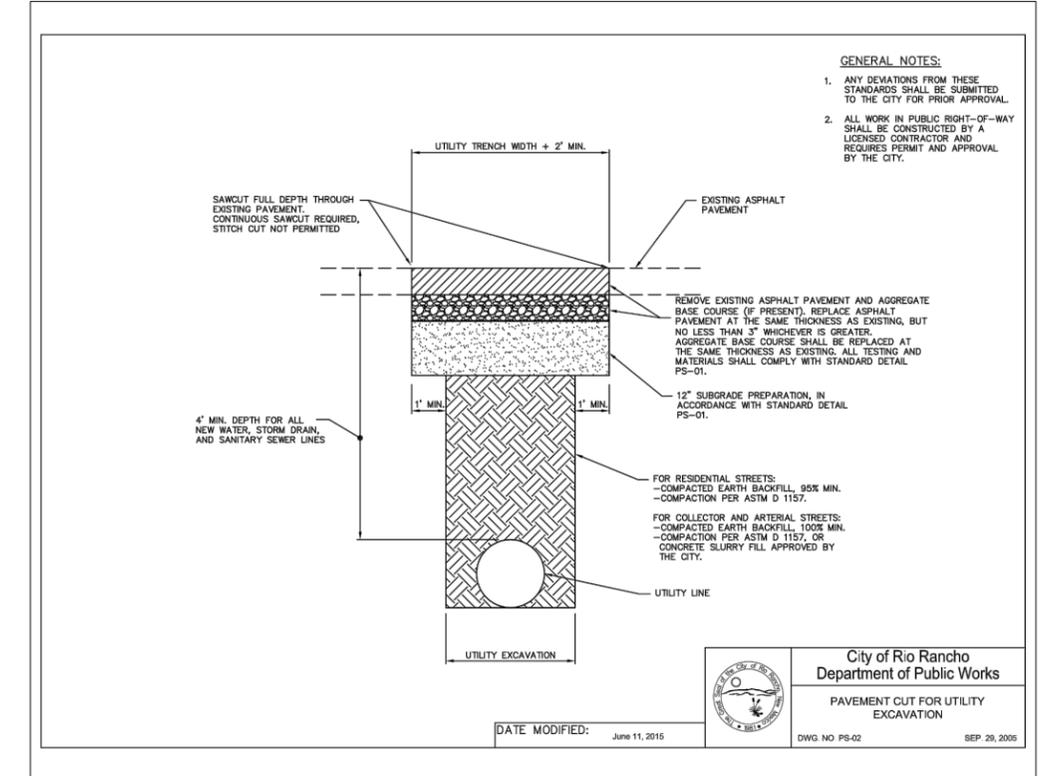
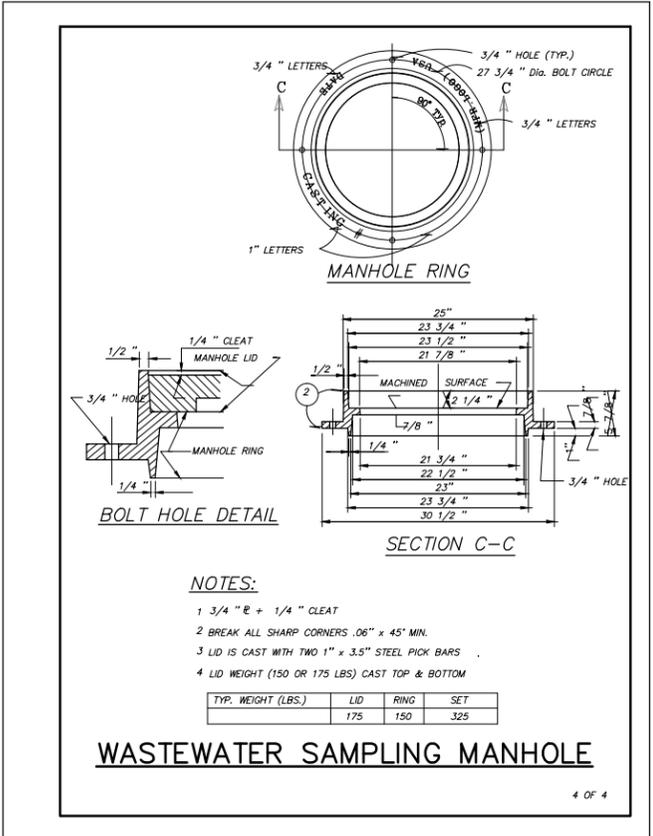
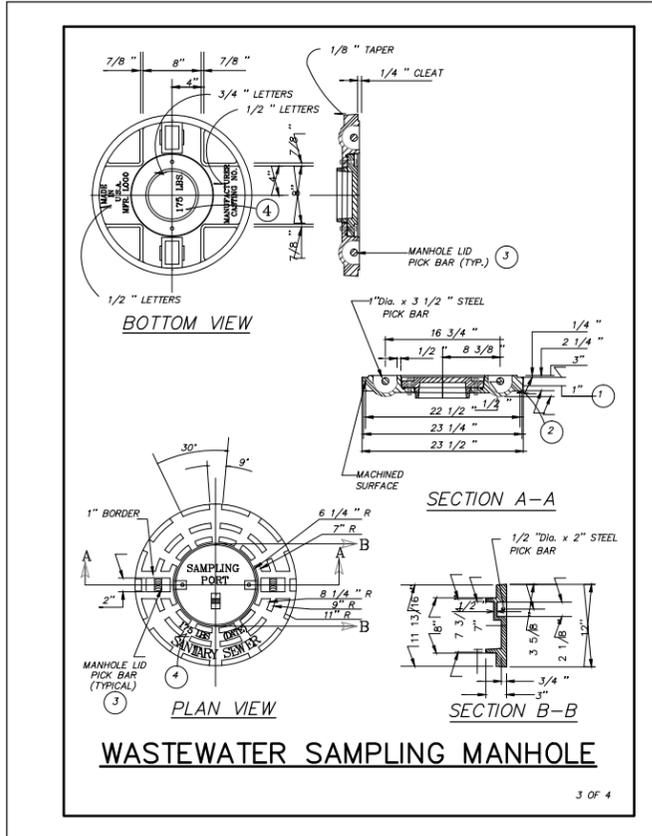
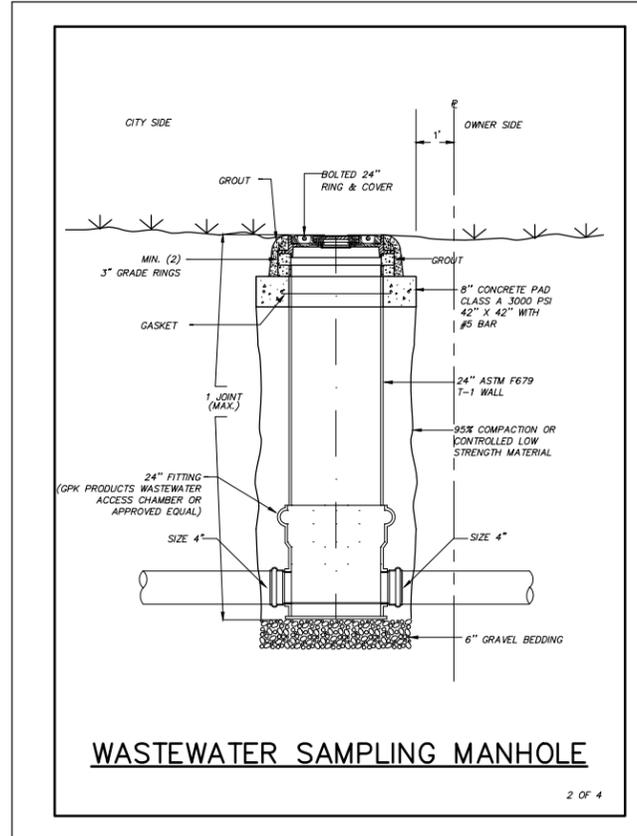
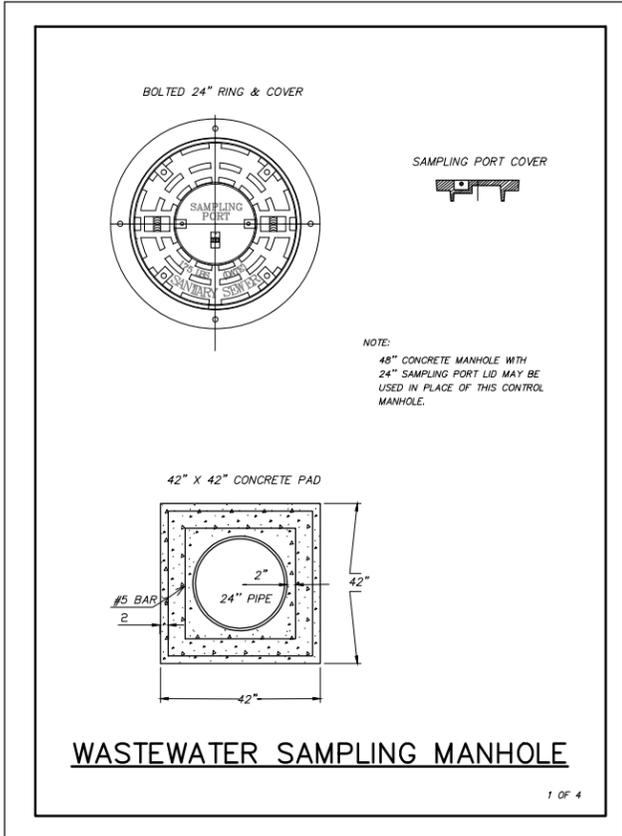
SHEET TITLE  
**TYPICAL DETAILS I**

SHEET NO:  
**C-501**

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1 2 3 4 5 6 7 8 9 10



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2600 THE AMERICAN RD. SE SUITE 100  
RIO RANCHO, NM 87124  
PHONE: 505-898-8021  
FAX: 505-898-8501  
www.wilsonco.com

CONSULTANTS  
SEAL  
JENNIFER M. WALTERS  
NEW MEXICO  
18117  
5/9/19  
PROFESSIONAL ENGINEER

PROJECT NAME  
**CITY OF RIO RANCHO  
INDUSTRIAL PARK  
SEWER SYSTEM  
IMPROVEMENTS**

REV.	DATE	DESCRIPTION	BY

PROJECT NO: 1560020600  
DESIGNED BY: JMW  
DRAWN BY: CRU  
CHECKED BY: BJA  
DATE: 01/05/2016  
SHEET TITLE  
**TYPICAL DETAILS II**  
SHEET NO:  
**C-502**



**TRAFFIC CONTROL GENERAL NOTES (CONTINUED):**

**17. TEMPORARY CONCRETE WALL BARRIER (CWB):** When flaring the leading end of a Temporary Wall Barrier (CWB) within a construction work zone, the flare rate shall be done in accordance with the rates shown in the table below: (NMDOT Standard Drawing 606-20-5/5)

Roadway Speed Limit	Minimum Taper/ Flare Rate	Desirable Taper/ Flare Rate
Less than 45 MPH	8:1	18:1
Between 45 MPH and 55 MPH	10:1	24:1
Greater than 55 MPH	15:1	30:1

- a. When temporary wall barrier is placed in a construction work zone, a 5' clear area is required between the CWB and the work zone to accommodate barrier deflection. When a 5' clear area is not attainable, consideration shall be given to anchoring the CWB to the pavement surface.
- b. Temporary CWB shall be provided with reflective barrier delineators as indicated in NMDOT standard drawing 606-21-1/1.

**18. CRASH ATTENUATORS:** The crash cushion attenuators shall be designed as per the District Traffic Engineer's recommendations. The District may elect to either utilize the pre-construction posted speed, or the 85% speed in the layout of the crash cushion attenuators within the work zone.

**19. DROP OFF POLICY:** In the areas of pavement operations or other activities within the traveled way and adjacent to the existing traveled lane, the contractor shall assure that no pavement drop-offs are left exposed during non-working hours. The contractor shall initiate corrective means as per "the New Mexico Department of Transportation Pavement Drop-off Guideline" to achieve a minimum 6:1 slope between traveled lanes and a minimum 3:1 slope adjacent to the existing traveled lane with two 11foot driving lanes as shown in the detail below. (AD241)



- 20. Lane Closures:** The Contractor/TCP firm shall not place a lane closure taper along a horizontal curve. The taper shall be placed in advance of the horizontal curve so that it is visible to all oncoming traffic. On crest vertical curves, the Contractor/TCP firm shall place lane closures in advance of, or at the beginning of the curve to enhance visibility of the lane closure to oncoming traffic.
- 21. Sequential Arrow Display:** Placement of the sequential arrow shall be at or near the beginning of the lane closure taper. In areas of insufficient pavement width, the sequential arrow may be placed within the taper, but not to exceed 1/2 the taper length. In all cases, the sequential arrow shall be placed behind the channelization devices. The shoulder shall be closed in advance of the merging taper to direct vehicular traffic to remain within the traveled way. (MUTCD 6F.61)
- 22. ADDITIONAL SIGNS:** "BUMP", "LOOSE GRAVEL", "LANE DROP-OFF SIGN" sign placement: The contractor shall place W8-1 sign ("BUMP" - B/FO), W8-7 sign ("LOOSE GRAVEL" - B/FO) and/or W8-17 signs ("SHOULDER DROP-OFF" - B/FO) in advance of bridge approaches or other locations during cold milling and overlay operations as needed or as directed by the project manager.
- 23. CLEAR ZONE:** All stationary objects within clear zone shall be properly shielded and outlined with drums mounted with Type "A" warning lights. Use of vertically mounted retro-reflective material in lieu of a Type A warning light is strictly prohibited.
  - a. Equipment, materials, or vehicles stored within Right -of-way (ROW) shall be outside of clear zone (based on existing posted speed).
  - b. Equipment, material or vehicles stored within clear zone shall be properly shielded.
  - c. Materials, work activities, equipment, and vehicles shall not be stored within the established buffer space of the project work zone.
  - d. All construction equipment, vehicles and materials shall remain behind traffic control devices.
- 24. TRAFFIC CONTROL MANAGEMENT:** The contractor or the traffic Control Subcontractor shall provide a Traffic Control Supervisor on site during working hours for response within 1 hour to traffic control issues/concerns.

**25. INCIDENT MANAGEMENT:** Contractor is required to comply with requirements of FHWA CFR 630 Subpart J for Work Zone Safety and Mobility which shall include an Incident Management Plan to be utilized for the entire duration of the project. The Incident Management Plan shall contain a method to address traffic flow through the work zone during incidents. The Incident Management Plan must be reviewed and approved by the District Traffic Engineer. The plan shall contain the following as a minimum:

- a. Contacts for the contractor, local enforcement, safety agencies, municipal agencies, public information officer and NMDOT
- b. Steps to be followed during incidents
- c. Method of recording and reporting incidents

**26. LIST OF INCIDENTALS - No Additional Payment Associated**

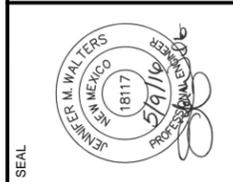
LIST OF INCIDENTALS for Temporary Traffic Control A. MAINTENANCE OF TEMPORARY PAVEMENT MARKINGS FOR PROJECT DURATION

LIST OF INCIDENTALS for Temporary Traffic Control	
A.	MAINTENANCE OF TEMPORARY PAVEMENT MARKINGS FOR PROJECT DURATION

NO.	DATE	REV. BY	DESCRIPTION

PROJECT NO:	1560020600
DESIGNED BY:	JMW
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	01/05/2016
SHEET TITLE	TRAFFIC CONTROL II
SHEET NO:	TC-502

CITY OF RIO RANCHO  
INDUSTRIAL PARK  
SEWER SYSTEM  
IMPROVEMENTS



**WILSON & COMPANY**  
2600 THE AMERICAN RD. SE SUITE 100  
RIO RANCHO, NM 87124  
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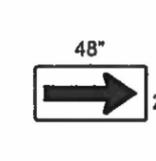
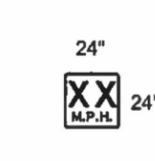
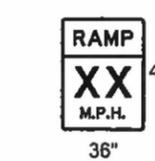
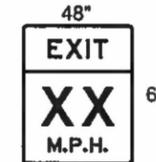
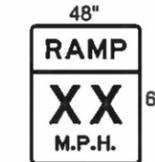
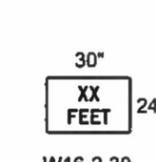
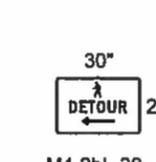
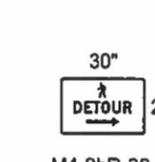
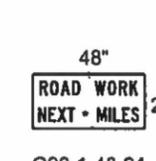
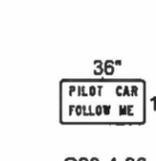
**SIGN FACE DETAILS**

**FOR CONSTRUCTION / MAINTENANCE**

1. SIGNS SHALL MEET SPECIFICATIONS IN THE STANDARD HIGHWAY SIGNS MANUAL AND CURRENT EDITION OF THE MUTCD.
2. SEE CURRENT EDITION OF MUTCD FOR ADDITIONAL SIGNS.
3. ALL SIGNS SHALL COMPLY WITH SHEETING REQUIREMENTS AS SPECIFIED IN STANDARD DRAWING 702-01-3/3.
4. SIGN SIZES MAY BE ADJUSTED PER MUTCD RECOMMENDATIONS.

**WARNING SIGNS:**

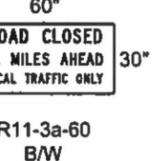
ALL WARNING SIGNS ARE BLACK/FLUORESCENT ORANGE UNLESS OTHERWISE SPECIFIED.

 W1-2L-48	 W1-2R-48	 W1-4L-48	 W1-4R-48	 W1-4bR-48	 W1-4bL-48
 W1-4cR-48	 W1-4cL-48	 W1-6R-48	 W1-6L-48	 W3-4-48	 W3-5-48
 W4-2R-48	 W4-2L-48	 W5-1-48	 W6-3-48	 W8-1-48	 W8-3-48
 W8-7-48	 W11-1-48	 W11-2-48	 W13-1-24-XX	 W13-2-36-XX	 W13-3-36-XX
 W13-2-48-XX	 W13-3-48-XX	 W16-2-30	 W20-7a-48	 M4-9bL-30	 M4-9bR-30
 M4-9R-30	 M4-9L-30	 G20-1-48-24	 G20-2-48	 G20-4-36	

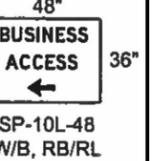
\* THESE SIGNS REQUIRE APPROPRIATE DISTANCE INDICATION  
(1/2 MILE, 1 MILE, 1500 FT., 750 FT., 500 FT., 350 FT.)

 W8-6-48-XX	 W20-1-48-XX	 W20-2-48-XX	 W20-4-48-XX
 W20-5L-48-XX	 W20-5R-48-XX	 W21-5d-48-XX	 W24-NM-17-48-XX

**REGULATORY SIGNS:**

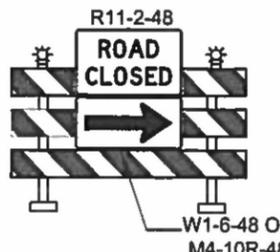
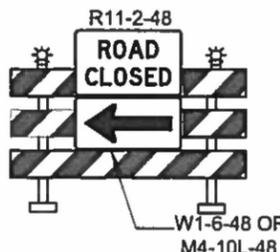
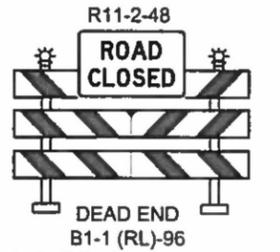
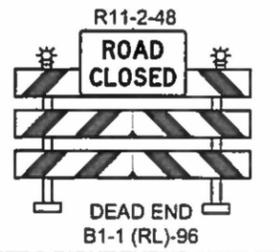
 R1-1-36 W/R, RL-RB	 R1-2-36 W/R	 R2-1-36-XX B/W	 R2-1-48-XX B/W
 R11-NM-2-48 B/W	 R11-2-48 B/W	 R11-3a-60 B/W	 R11-4-60 B/W

**SPECIAL SIGNS:**

 SP-10R-48 W/B, RB/RL	 SP-10L-48 W/B, RB/RL
--	--

**8 FT. TYPE III BARRICADES**

BARRICADE SYMBOL

 R11-2-48 ROAD CLOSED W1-6-48 OR M4-10R-48	 R11-2-48 ROAD CLOSED W1-6-48 OR M4-10L-48
 R11-2-48 ROAD CLOSED DEAD END B1-1 (RL)-96 (NO TURNS AVAILABLE)	 R11-2-48 ROAD CLOSED DEAD END B1-1 (RL)-96 (LEFT & RIGHT TURNS AVAILABLE)

NO.	DATE	REV. BY	DESCRIPTION
REVISIONS (OR CHANGE NOTICES)			
NEW MEXICO DEPARTMENT OF TRANSPORTATION STANDARD DRAWING			
CONSTRUCTION & MAINTENANCE SIGN FACE DETAILS			
APPROVED: <i>A. Ghin</i> 11/3/15			PROJECT NO: 1560020600
DESIGNED BY: _____			DESIGNED BY: JMW
DRAWN BY: _____			DRAWN BY: CRU
CHECKED BY: _____			CHECKED BY: BJA
DATE: 01/05/2016			DATE: 01/05/2016
SHEET TITLE: TRAFFIC CONTROL III			SHEET TITLE: TRAFFIC CONTROL III
SHEET NO: 702-01-3/5			SHEET NO: TC-503

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2600 THE AMERICAN RD. SE SUITE 100  
RIO RANCHO, NM 87124  
PHONE: 505-898-8021  
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www.wilsonco.com

CONSULTANTS



SEAL

PROJECT NAME  
CITY OF RIO RANCHO  
INDUSTRIAL PARK  
SEWER SYSTEM  
IMPROVEMENTS

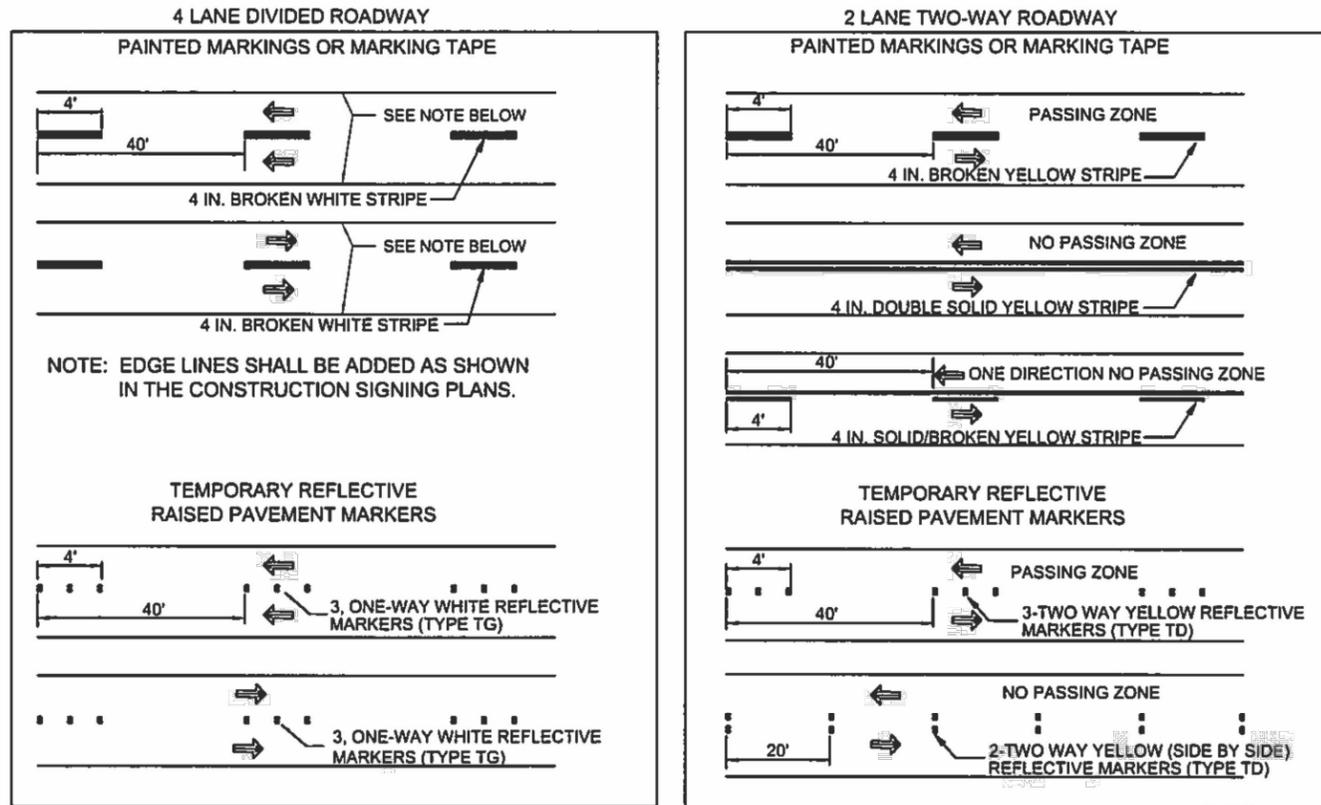
NO.	DATE	REV. BY	DESCRIPTION



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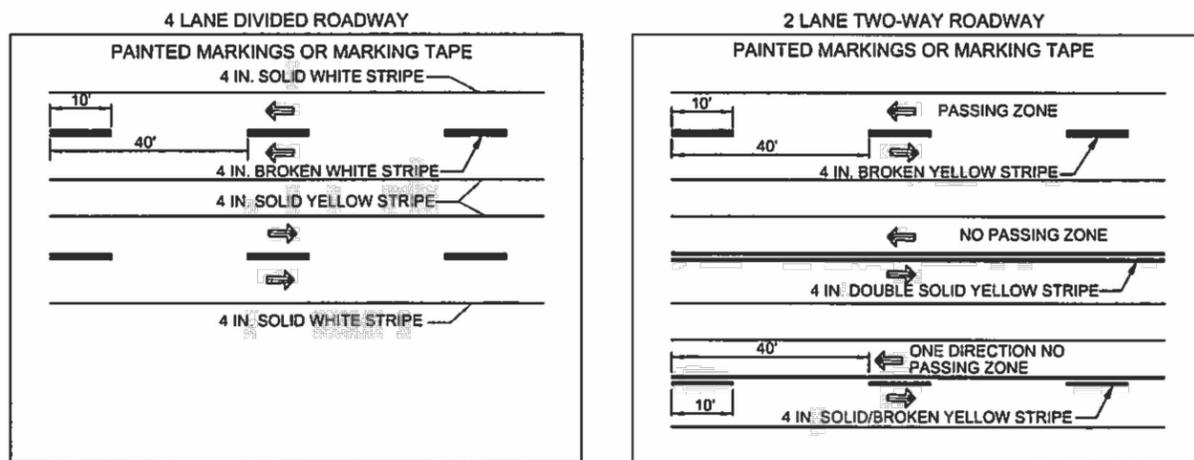
**FIGURE 1**

SHORT TERM WORK ZONE INTERIM MARKINGS (IN PLACE FOR LESS THAN 14 CALENDAR DAYS) (MINIMUM OF 2 COATS OR AS DIRECTED BY THE PROJECT MANAGER)



**FIGURE 1A**

STANDARD WORK ZONE INTERIM MARKINGS (IN PLACE FOR 14 CALENDAR DAYS OR MORE) (MINIMUM OF 2 COATS OR AS DIRECTED BY THE PROJECT MANAGER)



**GENERAL NOTES**

**WORK ZONE INTERIM MARKINGS:**

- The contractor shall place reflectorized painted markings on each lane line on each intermediate lift of surfacing or milled surface at the end of the daily surfacing or milling operation. These markings shall be placed in accordance with Figure 1 or Figure 1 A on this sheet, or as directed by the Project Manager.
- In the event the painted markings cannot be placed as described above, the contractor shall, with the approval of the project manager, place marking tape or temporary reflective raised pavement markers. The contractor will be responsible for maintaining the temporary raised pavement markers when requested by the project manager, District Traffic Engineer or their designees. Maintenance of the tabs will be considered incidental to the completion of the project.
- The contractor shall place removable marking tape or temporary reflective raised pavement markers after placement of the final lift of surfacing if permanent markings are not placed during the same working day. These markings shall be placed in accordance with Figure 1 or Figure 1 A on this sheet, or as directed by the project manager.
- On roadways with severe curvature, broken-line interim markings with half-cycle lengths and a minimum of two foot (2') stripes or a group of two temporary reflective pavement markings spaced 2 feet apart may be used where passing is allowed. Interim edge lines or channelization lines for delineation may be used as needed or as directed by the project manager. Passing/no passing zone signing to supplement interim markings for delineation may be used as needed or as directed by the project manager. All interim markings shall be placed in accordance with the current edition of the MUTCD.
- Shoulder and gore area delineation will be required on each intermediate lift of surfacing or milled surface at the end of the day's pavement operation. Payment for marking tape or temporary pavement markings will be paid for under the unit priced of reflectorized painted markings, unless otherwise specified within the contract or Traffic Control Notes. Contractor may substitute edge line pavement marking with traffic control devices such as drums or vertical panels for a maximum 13 day period.

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 RIO RANCHO, NM 87124  
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CONSULTANTS



SEAL

**CITY OF RIO RANCHO**  
**INDUSTRIAL PARK**  
**SEWER SYSTEM**  
**IMPROVEMENTS**

PROJECT NAME

NO.	DATE	REV. BY	DESCRIPTION
REVISIONS ( OR CHANGE NOTICES )			
PROJECT NO: 1560020600			
DESIGNED BY: JMW			
DRAWN BY: CRU			
CHECKED BY: BJA			
DATE: 01/05/2016			
SHEET TITLE			TRAFFIC CONTROL V
SHEET NO:			TC-505

NEW MEXICO DEPARTMENT OF TRANSPORTATION STANDARD DRAWING	
APPROVED <i>[Signature]</i> DESIGN ENGINEER	DATE 1/3/15
DESIGNED BY _____	DRAWN BY _____
702-01-5/5	