CITY OF GRAND JUNCTION
DEPARTMENT OF PUBLIC WORKS AND UTILITIES
ENGINEERING DIVISION

BID DOCUMENTS

FOR

G Road – Phase II Improvements Project

(207 – F003927)

IFB-4093-15-DH

August, 2015 Book No. ___

CITY OF GRAND JUNCTION
DEPARTMENT OF PUBLIC WORKS AND UTILITIES
ENGINEERING DIVISION

BID DOCUMENTS
FOR
G Road – Phase II Improvements Project

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BID INFORMATION

INVITATION TO BID

The City of Grand Junction will receive sealed bids at the Office of the City Clerk at City Hall, 250 North Fifth Street, Grand Junction, Colorado, 81501, prior to 2:00 p.m. on Tuesday, September 1, 2015 for the *G Road – Phase II Improvements Project*. All bids will be opened and read aloud at the City Auditorium immediately following the submittal deadline. The project generally consists of 359 LF of 54-inch RCP, 828 LF of 60-inch RCP, 3 storm inlets, 6 storm sewer manholes, 2,233 SY of asphalt paving, 198 SY of concrete pavement, 407 LF of curb and gutter, and various related elements including asphalt planning, pipe removal, pavement striping, resetting of structures and traffic control.

Contractors submitting bids over $50,000 must be prequalified in accordance with the City's "Rules and Procedures for Prequalification of Contractors." Application forms for prequalification are available at the Administration Office of the Department of Public Works and Planning (970-256-4126) or on the Public Works & Planning/Engineering page at www.gjcity.org. Prequalification applications must be submitted two weeks prior to bid opening date. Bids received from non-prequalified contractors will not be opened.

The July 2010 edition of the "City Standard Contract Documents for Capital Improvements Construction", Plans, Specifications and other Bid Documents are available for review or download on the Public Works & Planning/Engineering page at www.gjcity.org. Electronic copies may be obtained on a CD format at the Department of Public Works and Planning at City Hall.

For technical information, please contact Lee Cooper, Project Engineer at the Department of Public Works and Utilities (970-256-4155).

For contractual information, please contact Duane Hoff, Buyer (970-244-1545).

A pre-bid meeting will be held at 10:00 a.m. on August 25, 2015, in the City Hall Auditorium. Attendance at the meeting is mandatory.

The City Clerk's Office will stamp the date and mark the time received on all bids. Bids not received prior to the date and time indicated on the Invitation to Bid will not be considered. The City is not responsible for delays occasioned by the U.S. Postal Service, the internal mail delivery system of the City, or any other means of delivery employed by the Bidder.

Each Bid shall be submitted on a form furnished by the City and must be accompanied by a certified check, cashier's check or Bid Bond in an amount not less than 5% of the amount of the Bid and made payable to the City of Grand Junction, Colorado. The successful Bidder will be required to furnish a Performance Bond and a Labor and Material Payment Bond, both in the amount of 100% of the total Contract amount, in conformity with the requirements of the Contract Documents and on forms provided by the City. Reference

CITY OF GRAND JUNCTION, COLORADO

_____

Duane Hoff, Buyer

Published: The Daily Sentinel – August 16th and 23rd

CITY OF GRAND JUNCTION
DEPARTMENT OF PUBLIC WORKS AND PLANNING
ENGINEERING DIVISION

INSTRUCTIONS TO BIDDERS

The following instructions are given for the purpose of guiding Bidders in properly preparing their bids and constitute a part of the *Contract Documents* and shall be strictly complied with.

1. Definitions and Terms. See Article I, Section 3 of the General Contract Conditions in the *Standard Contract Documents for Capital Improvements Construction*.

2. Copies of *Bid Documents*. Complete sets of the *Bid Documents* are available for download on the City's website at http://www.gjcity.org/Purchasing_Information.aspx.

   Complete sets of *Bid Documents* shall be used in preparing Bids; neither City nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of *Bid Documents*.

   City and Engineer in making copies of *Bid Documents* available on the above terms do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

3. Prequalification of Bidders: Contractors submitting bids over $50,000 must be prequalified in accordance with the City's "Rules and Procedures for Prequalification of Contractors." Application forms for prequalification are available at the Administration Office of the Department of Public Works and Utilities. Contractors who are currently prequalified with the Colorado Department of Transportation (CDOT) will meet the requirements for prequalification by the City, unless the City has information or basis to the contrary. Application forms for Contractor prequalification are available at the Administration Office of the Department of Public Works and Utilities, City Hall, 250 North 5th Street, Grand Junction, CO, 81501 or on the City's website at http://www.gjcity.org/Purchasing_Information.aspx .

4. Liquidated Damages for Failure to Enter Into Contract. Should the Successful Bidder fail or refuse to enter into the Contract within ten Calendar Days from the issuance of the Notice of Award, the City shall be entitled to collect the amount of such Bidder's Bid Guaranty as Liquidated Damages, not as a penalty but in consideration of the mutual release by the City and the Successful Bidder of all claims arising from the City's issuance of the Notice of Award and the Successful Bidder's failure to enter into the Contract and the costs to award the Contract to any other Bidder, to readvertise, or otherwise dispose of the Work as the City may determine best serves its interest.

5. Time of Completion. Time is of the essence with respect to the time of completion of the Project and any other milestones or deadline which are part of the Contract. It will be necessary for each Bidder to satisfy the City of its ability to complete the Work within the Contract Time set forth in the Contract Documents.

6. Examination of Contract Documents and Site. Before submitting a Bid, each Bidder shall:

   a. Examine the *Contract Documents* thoroughly;

   b. Visit the site to familiarize itself with local conditions that may in any manner affect cost, progress, or performance of the Work;

   c. Become familiar with federal, state, and local laws, ordinances, rules, and regulations that may in any manner affect cost, progress or performance of the Work;

   d. Study and carefully correlate Bidder's observations with the *Contract Documents*, and;

   e. Notify the Engineer of all conflicts, errors, ambiguities or discrepancies in or among the *Contract Documents*

   On request, the City will provide each Bidder access to the site to conduct such investigations and tests as each Bidder deems necessary for submission of a Bid. It shall be the Bidder's responsibility to make or obtain any additional examinations, investigations, explorations, tests and studies and obtain any additional information and data which pertain to the physical conditions (including without limitation, surface, subsurface and underground utilities) at or contiguous to the site or otherwise which may affect cost, progress or performance of the work and which the Bidder deems necessary to determine its Bid for performing the work in accordance with the time, price and other terms and conditions of the Contract Documents. Location of any excavation or boring made by Bidder shall be subject to prior approval of City and applicable agencies. Bidder shall fill all holes, restore all pavements to match the existing structural section and shall clean up and restore the site to its former condition upon completion of such exploration. The City reserves the right to require the Bidder to execute an access agreement with the City prior to accessing the site.

   The lands upon which the Work is to be performed, rights of way, and access thereto, and other lands designated for use by Contractor in performing the Work, are identified on the Drawings.

   Information and data reflected in the *Contract Documents* with respect to underground utilities at or contiguous to the site are based upon information and data furnished to the City and the Engineer by the owners of such underground utilities or others, and the City does not assume responsibility for the accuracy or completeness thereof, unless it is expressly provided otherwise in the *Contract Documents*.

By submission of a Bid, the Bidder shall be conclusively presumed to represent that the Bidder has complied with every requirement of these Instructions to Bidders, that the *Contract Documents* are not ambiguous and are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance of the Work.

7. Interpretations. All questions about the meaning or intent of the *Contract Documents* shall be submitted to the Purchasing Supervisor in writing.

   Written comments or questions must be received by the Purchasing Supervisor at least forty-eight (48) hours (excluding Saturdays, Sundays, and Holidays) prior to the time set for Bid Opening.

   If questions received by the Engineer are deemed to be sufficiently significant and received sufficiently in advance of the Bid opening, an Addendum to the *Bid Documents* may be issued. Otherwise, a written copy of the question and decision or interpretation will be posted in the Engineer's office. It shall be the responsibility of each Bidder to make itself aware of all such posted questions and decisions or interpretations and, by submitting a Bid, each Bidder shall be conclusively be deemed to have such knowledge. After Bid Opening, all Bidders must abide by the decision of the Engineer as to all such decisions or interpretations. Bidders may not rely upon oral interpretations of the meaning of the plans, specifications or other bid documents and any oral or other interpretations or clarifications will be without legal force or effect.

8. Quantities of Work. Materials or quantities stated as unit price items in the Bid are supplied only to give an indication of the general scope of the Work. The City does not expressly or by implication agree that the actual amount of Work or material will correspond therewith, and reserves the right after award to increase or decrease the quantity of any unit item of the Work without a change in the unit price except as set forth in Article VIII, Section 70 of the *General Contract Conditions*. The City also reserves the right to make changes in the Work (including the right to delete any bid item in its entirety or add additional bid items) as set forth in Article VIII, Sections 69 through 71 of the *General Contract Conditions*.

9. Substitutions. The materials, products and equipment described in the *Bid Documents* shall be regarded as establishing a standard of required performance, function, dimension, appearance, or quality to be met by any proposed substitution. No substitution will be considered prior to receipt of Bids unless the Bidder submits a written request for approval to the Engineer at least ten (10) days prior to the date for receipt of Bids. Such requests for approval shall include the name of the material or equipment for which substitution is sought and a complete description of the proposed substitution including drawings, performance and test data, and other information necessary for evaluation, including samples if requested. The Bidder shall set forth changes in other materials, equipment, or other portions of the Work including changes of the work of other contracts, which incorporation of the proposed substitution would require to be included. The Engineer’s decision of approval or disapproval of a proposed substitution shall be final. If the Engineer approves a proposed substitution before receipt of Bids, such approval will be set forth in an Addendum. Bidders shall not rely upon approvals made in any other manner.

10. Bid Guaranty. Each Bid shall as a guaranty of good faith on the part of the Bidder be accompanied by a Bid Guaranty consisting of: a certified or cashier's check drawn on an approved national bank or trust company in the State of Colorado, and made payable without condition to the City; or a Bid Bond in the form set forth in the *Bid Documents* executed by an approved corporate surety in favor of the City. The amount of the Bid Guaranty shall not be less than 5% of the total Bid amount.

Once the City issues a Notice of Award, the apparent Successful Bidder has ten (10) Calendar Days to enter into a Contract in the form prescribed and to furnish the required Performance and Payment Bonds. Failure to do so will result in forfeiture of the Bid Guaranty to the City as Liquidated Damages.

Bid Guaranties for all except the three lowest qualified Bids shall be returned within five (5) Working Days of Bid Opening. When the Successful Bidder files satisfactory Performance and Payment Bonds and Certificates of Insurance, the Bid Guaranties of the three lowest Bidders shall be returned.

Each bidder shall guaranty its total bid price for a period of sixty-five (65) Calendar Days from the date of the bid opening. Except for forfeiture due to reasons discussed above, Bid Guaranties of all Bidders shall be returned to them within sixty-five (65) Calendar Days from the date of Bid Opening.

11. Bid Form. The Bid Form, provided by the City, must be completed in ink or by typewriter.

The Bidder shall specify a unit price in figures for each pay item for which a quantity is given and shall provide the products (in numbers) of the respective unit prices and quantities in the Extended Amount column. The total Bid price shall be equal to the sum of all extended amount prices. When an item in the Bid Schedule provides a choice to be made by the Bidder, Bidder's choice shall be indicated in accordance with the specifications for that particular item and thereafter no further choice shall be permitted.

Where the unit of a pay item is lump sum, the lump sum amount shall be shown in the "extended amount" column and included in the summation of the total Bid.

All blank spaces in the Bid Form must be properly filled out.

Bids by corporations must be executed in the corporate name by the president or vice president or other corporate office accompanied by evidence of authority to sign. The corporate seal must be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.

Bids by partnerships must be executed in the partnership name and signed by a partner whose title must appear under the signature and the official address of the partnership must be shown below the signature.

All names must be typed or printed below the signature.

The Bid shall contain an acknowledgement of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.

The address to which communications regarding the Bid are to be directed must be shown.

12. Irregular Bids. A Bid will be considered irregular and may be rejected for the following reasons:

    a. Submission of the Bid on forms other than those supplied by the City;

    b. Alteration, interlineation, erasure, or partial detachment of any part of the forms which are supplied herein;

    c. Inclusion of unauthorized additions conditional or alternate Bids or irregularities of any kind which may tend to make the Bid incomplete, indefinite, or ambiguous as to its meaning;

    d. Failure to acknowledge receipt of any or all issued Addenda;

    e. Failure to provide a unit price or a lump sum price, as appropriate, for each pay item listed except in the case of authorized alternative pay items;

    f. Failure to list the names of Subcontractors used in the Bid preparation as required in the Bid Form;

    g. Submission of a Bid that in the opinion of the City Purchasing Manager is unbalanced so that each item does not reasonably carry its own proportion of cost or which contains inadequate or unreasonable prices for any item;

    h. Tying of the Bid with any other bid or contract; and

    i. Failure to calculate Bid prices as described herein.

13. Submission of Bids. The completed Bid Form and Bid Guaranty shall be submitted at the time and place indicated in the Invitation to Bid and must be in a ten-inch by thirteen-inch opaque sealed envelope marked SEALED BID with the project title and the name and address of the Bidder.

14. Modification and Withdrawal of Bids Before Opening. Bids may be modified or withdrawn by an appropriate document duly executed and delivered to the place where Bids are to be submitted at any time prior to Bid Opening.

15. Opening of Bids. Bids will be opened and read aloud at the time and place stated in the Invitation to Bid. All Bidders, their representatives, and other interested parties are encouraged to attend the Bid Opening.

Within five (5) Working Days after Bid Opening, all Bids will be tabulated and copies sent to all Bidders. The bid tabulation sheet(s) will be available to the public.

16. Disqualification of Bidders. A Bid will not be accepted from, nor shall a Contract be awarded to, any person, firm, or corporation that is in arrears to the City, upon debt or contract, or that has defaulted, as surety or otherwise, upon any obligation to the City, or that is deemed irresponsible or unreliable.

Bidders may be required to submit satisfactory evidence that they are responsible, have a practical knowledge of the project bid upon and that they have the necessary financial and other resources to complete the proposed Work.

Either of the following reasons, without limitation, shall be considered sufficient to disqualify a Bidder and Bid:

a. More than one Bid is submitted for the same Work from an individual, firm, or corporation under the same or different name; and

b. Evidence of collusion among Bidders. Any participant in such collusion shall not receive recognition as a Bidder for any future work of the City until such participant has been reinstated as a qualified bidder.

17. Withdrawal of Bids After Opening. No Bid may be withdrawn by any bidder for sixty-five (65) Calendar Days after the Bid Opening.

18. Evaluation of Bids and Bidders. The City reserves the right to:
- reject any and all Bids,
- waive any and all informalities,
- negotiate final terms with the Successful Bidder, and
- disregard any and all nonconforming, nonresponsive or conditional Bids.

Discrepancies between words and figures will be resolved in favor of words. Discrepancies between Unit Prices and Extended Prices will be resolved in favor of the Unit Prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. The corrected extensions and totals will be shown in the tabulation of Bids.

The City may consider the qualifications and experience of Subcontractors and other persons and organizations (including those who are to furnish the principal items of material or equipment) proposed for those portions of the work as to which the identity of Subcontractors and other persons and organizations must be submitted. Operating costs, maintenance considerations performance data, and guarantees of materials and equipment may also be considered by the City.

The City will conduct such investigations as deemed necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications and financial ability of the Bidders, proposed Subcontractors and other persons and organizations to do the Work in accordance with the *Contract Documents* to the City's satisfaction within the Contract Time.

The Bidder shall furnish the City all information and data requested by the City to determine the ability of the Bidder to perform the Work. The City reserves the right to reject the Bid if the evidence submitted by, or investigation of such Bidder fails to satisfy the City that such Bidder is properly qualified to carry out the obligations of the Contract and to complete the Work contemplated therein.

By submitting a Bid, each Bidder authorizes the City to perform such investigation of the Bidder as the City deems necessary to establish the responsibility, qualifications and financial ability of the Bidder and, by its signature thereon, authorizes the City to obtain reference information concerning the Bidder and releases the party providing such information and the City from any and all liability to the Bidder as a result of such reference information so provided.

The City reserves the right to reject the Bid of any Bidder who does not pass any evaluation to the City's satisfaction.

If the Contract is to be awarded, it will be awarded to the Bidder who, by evaluation, the City determines will best meet the City's interests.

The City reserves the right to accept or reject the Work contained in any of the Bid Schedules or alternates, either in whole or in part.

19. Award of Contract. Unless otherwise indicated, a single award will be made for all the bid items in an individual bid schedule. In the event that the Work is contained in more than one Bid Schedule, the City may award Schedules individually or in combination. In the case of two Bid Schedules which are alternative to each other, only one of such alternative Schedules will be awarded. Within forty-five (45) Calendar Days of Bid Opening, the City will issue a Notice of Award to the Successful Bidder which will be accompanied by four (4) unsigned copies of the Contract and the Performance and Payment Bond forms. Within ten (10) Calendar Days thereafter, the Successful Bidder shall sign and deliver four (4) copies of the Contract, Performance Bond, Payment Bond and Certificates of Insurance to the City. Within ten (10) Calendar Days thereafter, the City will deliver two (2) fully executed counterparts of the Contract to the Contractor. No contract shall exist between the Successful Bidder and the City and the Successful Bidder shall have no rights at law or in equity until the Contract has been duly executed by the City.

The Successful Bidder's failure to sign and submit a Contract and other documents set forth in this Paragraph within the prescribed time shall be just cause of annulment of the award, and forfeiture of the Bid Guaranty. The award of Contract may then be made to the next qualified Bidder in the same manner as previously prescribed.

20. Insurance. The Contractor shall secure and maintain such insurance policies as will provide the coverage and contain other provisions specified in the General Contract Conditions, or as modified in the Special Contract Conditions.

The Contractor shall file four (1) copy of the policies or Certificates of Insurance acceptable to the City with the Purchasing Supervisor within ten (10) Calendar Days after issuance of the Notice of Award. These Certificates of Insurance shall contain a provision that coverage afforded under the policies shall not be canceled unless at least thirty (30) Calendar Days prior written notice has been given to the City.

21. Sales and Use Taxes. The Contractor and all Subcontractors are required to obtain exemption certificates from the Colorado Department of Revenue for sales and use taxes in accordance with the provisions of the General Contract Conditions. Bids shall reflect this method of accounting for sales and use taxes on materials, fixtures and equipment.

22. Affirmative Action. In executing a Contract with the City, the Contractor agrees to comply with Affirmative Action and Equal Employment Opportunity regulations presented in the General Contract Conditions.

23. Preconstruction Meeting. Prior to the commencement of construction activities, a preconstruction meeting shall be held which shall include the Contractor, representatives of the City, utility companies and others effected by or involved in the project. Attendance by the Contractor is mandatory.

24. Pre-Bid Meeting. See the Special Conditions for details of pre-bid meeting (if any).

BID FORMS

CITY OF GRAND JUNCTION
DEPARTMENT OF PUBLIC WORKS AND UTILITIES
ENGINEERING DIVISION

BID FORM
FOR
G Road – Phase II Improvements Project

TO: The City of Grand Junction
Department of Public Works and Utilities
250 North Fifth Street
Grand Junction, Colorado 81501-2668

The undersigned Bidder, having thoroughly examined the Construction Drawings, Specifications, and other Bid Documents; having investigated the location of, and conditions affecting the proposed work, and being acquainted with and fully understanding the extent and character of the Work covered by this Bid; and all other factors and conditions affecting or which may be affected by the Work:

HEREBY PROPOSES and agrees, if this Bid is accepted, to enter into a Contract with the City on the form included in the *Contract Documents* and to furnish all required materials, tools, equipment, and plant; to perform all necessary labor and superintendence; and to undertake and complete the Work or approved portions thereof, in full accordance with and in conformity with the Construction Drawings, Specifications, and all other Contract Documents hereto attached or by reference made a part hereof, and for the following prices.

Bid Schedule: G Road - Phase II Improvements Project

Item No.	CDOT, City Ref.	Description	Quantity	Units	Unit Price	Total Price
1	201	Clearing and Grubbing	1.	Lump Sum	$ _____	$ _____
2	201	Clearing and Grubbing (3-ft deep to remove tree roots on southside of G Road)	1.	Lump Sum	$ _____	$ _____
3	202	Removal of Asphalt Mat (Full-Depth)	323.	Sq. Yd.	$ _____	$ _____
4	202	Removal of Asphalt Mat (Planing) (2-ft wide x 2-Inch deep)	353.	Sq. Yd.	$ _____	$ _____
5	202	Removal of Pavement Marking	1.	Lump Sum	$ _____	$ _____
6	202	Removal of Curb and Gutter	110.	Lin. Ft.	$ _____	$ _____
7	202	Removal of Pipe (Various Sizes)	506.	Lin. Ft.	$ _____	$ _____
8	202	Removal of End Section (54" RCP) (Return to City Shops)	1.	Each	$ _____	$ _____
9	210	Reset Ground Sign	5.	Each	$ _____	$ _____
10	102.10/ 108.2	10" Storm Drain Pipe (PVC Sewer Pipe) (Includes Type A Bedding and Haunching Material and Backfill of Trench with Native Materials meeting 103.16 Earth Backfill Material)	10.	Lin. Ft.	$ _____	$ _____
11	102.10/ 108.2	12" Storm Drain Pipe (PVC Sewer Pipe) (Includes Type A Bedding and Haunching Material and Backfill of Trench with Native Materials meeting 103.16 Earth Backfill Material)	45.	Lin. Ft.	$ _____	$ _____
12	102.10/ 108.2	18" Storm Drain Pipe (Class II RCP) (Includes Type A Bedding and Haunching Material and Backfill of Trench with Native Materials meeting 103.16 Earth Backfill Material)	76.	Lin. Ft.	$ _____	$ _____

Bid Schedule: G Road - Phase II Improvements Project

Item No.	CDOT, City Ref.	Description	Quantity	Units	Unit Price	Total Price
13	102.10/ 108.2	36" Storm Drain Pipe (Class II RCP) (Includes Type B Bedding and Haunching Material and Backfill of Trench with Native Materials meeting 103.16 Earth Backfill Material) (DO NOT USE GASKETS ON PIPE JOINTS EXCEPT WHERE SPECIFIED)	40.	Lin. Ft.	$ _____	$ _____
14	102.10/ 108.2	54" Storm Drain Pipe (Class II RCP) (Includes Type B Bedding and Haunching Material and Backfill of Trench with Native Materials meeting 103.16 Earth Backfill Material) (DO NOT USE GASKETS ON PIPE JOINTS EXCEPT WHERE SPECIFIED)	359.	Lin. Ft.	$ _____	$ _____
15	102.10/ 108.2	60" Storm Drain Pipe (Class II RCP) (Includes Type B Bedding and Haunching Material and Backfill of Trench with Native Materials meeting 103.16 Earth Backfill Material) (DO NOT USE GASKETS ON PIPE JOINTS EXCEPT WHERE SPECIFIED)	828.	Lin. Ft.	$ _____	$ _____
16	102.11/ 108.2	Connect Existing Pipe to Manhole (Various Size Pipe)	7.	Each	$ _____	$ _____
17	108.2	Water Main (8") (C-900 PVC, DR-18) (Includes cost of connection to existing waterline / valve / fitting)	50.	Lin. Ft.	$ _____	$ _____
18	108.2	Imported Trench Backfill (Class 3) (Includes haul and disposal of unsuitable excavated material) (Assumed Unit Weight = 133 lbs/ft^3)	11,000.	Ton	$ _____	$ _____
19	108.2	36" Culvert End Section (Flared RCP)	1.	Each	$ _____	$ _____
20	108.2	60" Culvert End Section (Flared RCP)	1.	Each	$ _____	$ _____
21	108.3	Elbow (8" x 45 deg)	4.	Each	$ _____	$ _____
22	108.5	CDOT 54" dia. Manhole T-Base	1.	Each	$ _____	$ _____
23	108.5	CDOT 60" dia. Manhole T-Base	4.	Each	$ _____	$ _____
24	108.5	CDOT 5' x 8' Special Manhole Box	1.	Each	$ _____	$ _____

Bid Schedule: G Road - Phase II Improvements Project

Item No.	CDOT, City Ref.	Description	Quantity	Units	Unit Price	Total Price
25	108.5	Manhole Barrel Section (D>5') (48" I.D.)	25.	Lin. Ft.	$ _____	$ _____
26	108.6	Single Storm Drain Inlet (Vertical Curb)	1.	Each	$ _____	$ _____
27	108.6	Small Area Inlet w/ Concrete Collar	1.	Each	$ _____	$ _____
28	108.6	Small Area Inlet	1.	Each	$ _____	$ _____
29	108.6	Inlet Box Riser Section (D>5')	6.	Lin. Ft.	$ _____	$ _____
30	108.7	Granular Stabilization Material (Type B) (Crushed Rock) (2-ft Thick) (Includes haul and disposal of unsuitable excavated material) (Assumed material unit weight = 133 lbs/ft^3)	1,200.	Ton	$ _____	$ _____
31	203	Unclassified Excavation (For Roadway Construction) (Stockpile useable material for reuse as trench backfill material or for fill slopes) (Depth varies from 0 to 27 inches)	1,800.	Cu. Yd.	$ _____	$ _____
32	208	Concrete Washout Structure	1.	Each	$ _____	$ _____
33	208	Storm Drain Inlet Protection (CDOT Type II)	3.	Each	$ _____	$ _____
34	208	Sweeping (Sediment Removal)	50.	Hours	$ _____	$ _____
35	208	Temporary Earth Berms	1,200.	Lin. Ft.	$ _____	$ _____
36	209	Dust Abatement	30.	Day	$ _____	$ _____
37	210	Adjust Manhole Rim to Finish Grade	1.	Each	$ _____	$ _____
38	210	Adjust Valve Boxes to Finish Grade	6.	Each	$ _____	$ _____
39	212	Seeding (Native)	0.25	Acre	$ _____	$ _____
40	213	Mulching (Hydraulic)	0.25	Acre	$ _____	$ _____
41	213	Mulch Tackifier	25.	Pound	$ _____	$ _____
42	304	Aggregate Base Course (Class 6) (6" Thick)	2,930.	Sq. Yd.	$ _____	$ _____

Bid Schedule: G Road - Phase II Improvements Project

Item No.	CDOT, City Ref.	Description	Quantity	Units	Unit Price	Total Price
43	304	Aggregate Base Course (Class 3) (15" Thick)	2,930.	Sq. Yd.	$ _____	$ _____
44	304	Aggregate Base Course (Class 6) (4" Thick) (Roadway Shoulders)	420.	Sq. Yd.	$ _____	$ _____
45	306	Reconditioning (12" deep)	3,300.	Sq. Yd.	$ _____	$ _____
46	401	Hot Mix Asphalt (6" Thick) (Grading SX) (PG 64-22) (3 Lifts)	2,202.	Sq. Yd.	$ _____	$ _____
47	401	Hot Mix Asphalt (4" Thick) (Grading SX) (PG 64-22) (2 Lifts)	31.	Sq. Yd.	$ _____	$ _____
48	401	Hot Mix Asphalt (2" Thick) (T-Top) (Grading SX) (PG 64-22)	353.	Sq. Yd.	$ _____	$ _____
49	412	Concrete Pavement (8") (Class P) (Includes Steel Reinforcement, #4 bar @ 12" O.C. Eachway)	198.	Sq. Yd.	$ _____	$ _____
50	420	Geotextile (Separator) (Class 2) (Mirafi 140N or Engineer Approved Equal)	4,800.	Sq. Yd.	$ _____	$ _____
51	506	Geogrid Reinforcement (Tensar BX-1200 or Engineer Approved Equal)	1,400.	Sq. Yd.	$ _____	$ _____
52	608.06	Concrete Curb (CDOT Type 2, Section B, 6" wide)	100.	Lin. Ft.	$ _____	$ _____
53	608.06	Concrete Sidewalk (4" Thick) (Includes 6" Thick of Class 6 ABC)	128.	Sq. Yd.	$ _____	$ _____
54	608.06	Concrete Curb and Gutter (2' wide)	410.	Lin. Ft.	$ _____	$ _____
55	608.06	Concrete Curb Ramp	6.	Sq. Yd.	$ _____	$ _____
56	608.06	Detectable Warning (wet set)	64.	Sq. Ft.	$ _____	$ _____
57	608.06	Concrete Drainage Pan (6' wide)	24.	Sq. Yd.	$ _____	$ _____
58	608.06	Concrete Corner Fillet	53.	Sq. Yd.	$ _____	$ _____
59	613	1 Inch Electrical Conduit (Plastic) (Includes 90-degree sweep elbows and pull string)	120.	Lin. Ft.	$ _____	$ _____
60	620	Portable Sanitary Facility	1.	Each	$ _____	$ _____

Bid Schedule: G Road - Phase II Improvements Project

Item No.	CDOT, City Ref.	Description	Quantity	Units	Unit Price	Total Price
61	625	Construction Surveying	1.	Lump Sum	$ _____	$ _____
62	626	Mobilization	1.	Lump Sum	$ _____	$ _____
63	627	Epoxy Pavement Marking (Double Yellow Striping, 4" wide) (Dashed and/or Solid)	3,120.	Lin. Ft.	$ _____	$ _____
64	627	Epoxy Pavement Marking (White Edge Striping, 4" wide, Solid)	2,610.	Lin. Ft.	$ _____	$ _____
65	627	Epoxy Pavement Marking (White Channel Line, 8" wide, Solid)	120.	Lin. Ft.	$ _____	$ _____
66	627	Preformed Thermoplastic Pavement Marking (X-walk)	160.	Sq. Ft.	$ _____	$ _____
67	627	Preformed Thermoplastic Pavement Marking (Turn Arrows)	4.	Each	$ _____	$ _____
68	630	Traffic Control Plan	1.	Lump Sum	$ _____	$ _____
69	630	Traffic Control (Complete in Place)	1.	Lump Sum	$ _____	$ _____
70	630	Flaggers	80.	Hours	$ _____	$ _____
71	UU	Bypass Pumping	1.	Lump Sum	$ _____	$ _____
MCR		Minor Contract Revisions	- - -	- - -	- - -	$ 50,000.00

Bid Amount: **$** _____

Bid Amount:

_____ **dollars**

Contractor Name: _____

Contractor Address: _____

Contractor Phone #: _____

The undersigned Bidder hereby agrees to execute the Contract in conformity with this Bid, to have ready and furnish the required Payment and Performance Bonds, executed by a Surety acceptable to the City and provide Certificates of Insurance evidencing the coverage and provisions set forth in Contract within ten (10) Calendar Days of the City's issuance of a Notice of Award.

The _____, a corporation of the State of _____, is hereby proposed as Surety on said Performance and Payment Bonds. If such Surety is not approved by the City, another and satisfactory Surety will be proposed.

Enclosed herewith is a Bid Guaranty as defined in the attached Instructions to Bidders in the amount of _____which Bid Guaranty the undersigned Bidder agrees to be paid to and become the property of the City, as Liquidated Damages and not as a penalty should the Bid be accepted, the Contract Notice of Award issued, and should the Bidder fail or refuse for any reason to enter into the Contract in the form prescribed. The Bidder shall furnish the required Bonds and Insurance Certificates within ten (10) Calendar Days of issuance of the Notice of Award.

The following persons, firms or corporations are interested as joint ventures, partners or otherwise with the undersigned Bidder in this proposal:

Name: _____

Address: _____

Name: _____

Address: _____

If there are no such persons, firms or corporations, please so state in the following space. _____

_____

The undersigned Bidder proposes to subcontract the following portion of Work:

Name & address of Sub-Contractor	Description of work to be performed	% of Contract

The undersigned Bidder acknowledges the right of the City to reject any and all Bids submitted and to waive informalities and irregularities therein in the City's sole discretion.

By submission of the Bid, each Bidder certifies, and in the case of a joint Bid each party thereto certifies as to his own organization, that this Bid has been arrived at independently, without collusion, consultation, communication, or agreement as to any matter relating to this Bid with any other Bidder or with any competitor.

The Work shall be completed within the Contract Time as specified in the Special Conditions.

Bidder hereby acknowledges receipt of Addenda Numbers: ___, ___, ___, ___.

By submission of a Bid, the Bidder shall be conclusively presumed to represent that the Bidder has complied with every requirement of the "Instructions to Bidders".

Bidder, by his signature hereon, hereby authorizes the obtaining of reference information containing the Bidder's qualifications, experience and general ability to perform the work and hereby releases the party providing such information and the City from any and all liability to Bidder as the result of such reference information being provided. Bidder further waives any right to receive copies of information so provided to the City.

Bidder agrees to perform all Work described in the Contract Documents for the unit prices or the lump sum as shown on the Bid Form, and acknowledges that the quantities shown on the Bid Schedule are approximate only and are intended principally to serve as guides for the purpose of comparing and evaluating Bids.

It is further agreed that any quantities of work to be performed at unit prices and material to be furnished may be increased or decreased as may be considered necessary in the opinion of the City, to complete the Work fully as planned and contemplated, and that all quantities of Work, whether increased or decreased, are to be performed at the unit prices set forth in the Bid, except as otherwise provided for in the Contract Documents.

It is further agreed that any lump sum prices may be increased to cover additional work ordered by the City, but not shown on the Plans or required by the Specifications, in accordance with the provisions of the Contract Documents. Similarly, they may be decrease to cover deletions of work so ordered.

By submitting a Bid, the Bidder acknowledges that the bid process is solely intended to serve the public interest in achieving the highest quality of services and goods at the lowest price, and that no right, interest or expectation shall inure to the benefit of the Bidder as the result of any reliance or participation in the process.

The undersigned Bidder further grants to the City the right to award this Contract on the basis of any possible combination of base bids and alternate(s) (if any) that best suit the City's needs.

Dated this _____ day of _____, 20___.

Bidder: _____

Address: _____

_____

Signature: _____

Name printed: _____

Title: _____

If a corporation:

State of incorporation: _____

Attest: _____ (seal)

BID BOND

KNOW ALL MEN BY THESE PRESENTS,

that we, _____ (___ an individual, ___ a partnership, ___ a corporation incorporated in the State of _____) as Principal, and _____ (incorporated in the State of _____) as Surety, are held and firmly bound unto the City of Grand Junction, Colorado, (hereinafter called "City") in the penal sum of _____ _____ dollars ($ _____), lawful money of the United States, for the payment of which sum we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that WHEREAS the Principal has submitted the accompanying Bid dated _____for construction of _____ _____ (the Project) for the City and

WHEREAS, the City has required as a condition for receiving said Bid that the Principal deposit with the City either a cashier's check or a certified check equivalent to not less than five percent of the amount of said Bid or in lieu thereof furnish a Bid Bond for said amount conditioned that in event of a failure to execute the proposed Contract for such construction and to provide the required Performance and Payment Bonds and Insurance Certificates if the Contract be awarded to the Bidder, that said sum be paid immediately to the City as Liquidated Damages and not as a penalty for the Principal's failure to perform.

NOW, THEREFORE, if the Principal shall, within the period specified therefore, on the attached prescribed forms presented to the Bidder for signature, enter into a written Contract with the City in accordance with said Bid as accepted, and give Performance and Payment Bonds with good and sufficient Surety, or Sureties, as may be required upon the forms prescribed by the City, for the faithful performance and the proper fulfillment of said Contract, provide Certificates of Insurance as required by said Contract, and provide all other information and documentation required by the Contract Documents, then this obligation shall be void and of no effect, otherwise to remain in full force and effect. In the event suit is brought upon this bond by the City and the City prevails, the principal and surety shall pay all costs incurred by the City in such suit, including reasonable attorneys' fees and costs to be fixed by the Court.

IN WITNESS WHEREOF, the above bound parties have executed this instrument under their several seals the name and corporate seal of each corporate party being hereto affixed and duly signed by its undersigned representative pursuant to authority of its governing board.

Dated this _____ day of _____, 20___.

Principal: _____

Address: _____

_____

Signed: _____ (seal)

Title: _____

Surety: _____

Address: _____

_____

Signed: _____ (seal)

Title: _____

INSTRUCTIONS FOR COMPLETING BID BOND

1. The full legal name and residence of each individual executing this Bond as Principal must be inserted in the first paragraph.

2. If the Principal is a partnership, the full name of the partnership and all individuals must be inserted in the first paragraph which must recite that individuals are partners composing the partnership, and all partners must execute the Bond as individuals.

3. The State of incorporation of each corporate Principal or Surety to the Bond must be inserted in the first paragraph and the Bond must be executed under the corporate seal of said party attested by its secretary or other appropriate officer.

4. Attach a copy of the power-of-attorney for the Surety's agent.

SPECIAL CONDITIONS

CITY OF GRAND JUNCTION
DEPARTMENT OF PUBLIC WORKS AND UTILITIES
ENGINEERING DIVISION

G Road – Phase II Improvements Project

SPECIAL CONDITIONS

The performance of the Work for this Project shall conform to the General Contract conditions presented in the City of Grand Junction's *Standard Contract Documents for Capital Improvements Construction,* July 2010, except as specifically modified or supplemented herein or on the Construction Drawings.

SC-1 **Project Description:** The project generally consists of 359 LF of 54-inch RCP, 828 LF of 60-inch RCP, 3 storm inlets, 6 storm sewer manholes, 2,233 SY of asphalt paving, 198 SY of concrete pavement, 407 LF of curb and gutter, and various related elements including asphalt planning, pipe removal, pavement striping, resetting of structures and traffic control.

SC-2 **Project Engineer:** The Project Engineer for the Project is Lee Cooper, who can be reached at (970) 256-4155. All notices, letters, submittals, and other communications directed to the City shall be addressed and mailed or delivered to:

City of Grand Junction
Department of Public Works and Utilities
Attn: Lee Cooper, Project Engineer
250 North Fifth Street
Grand Junction, CO 81501

SC-3 **Pre-Bid Meeting:**
A pre-bid meeting will be held at 10:00 a.m. on August 25, 2015, in the City Hall Auditorium. Attendance at the meeting is mandatory.

SC-4 **Affirmative Action:** The Contractor is not required to submit a written Affirmative Action Program for the Project.

SC-5 **Time of Completion:** The scheduled time of Completion for the Project is **58 Calendar Days** from the starting date specified in the Notice to Proceed.

Completion is achieved when site clean-up and all punch list items (resulting from the final inspection) have been completed. Completion shall have the meaning set forth in Article I, Section 3 (Definitions and Terms) of the General Contract Conditions.

The anticipated schedule for the Project is as follows:

Advertise for Bids:	Sunday, August 16, and August 23
Pre-Bid Meeting:	Tuesday, August 25
Inquiry Deadline	Wednesday, August 26
Addendum Posted	Thursday, August 27
Bid Opening:	Tuesday, September 1
City Council approval:	Wednesday, September 16
Notice of Award:	Thursday, September 17
Contractor delivers Contract, Bond and Insurance Cert.	Wednesday, September 11
Preconstruction meeting:	Thursday, September 24
Begin work:	Monday, September 28
Final Completion:	Tuesday, November 24

- City observed holidays during construction period:

Veteran's Day	Wednesday, November 11

SC-6 Liquidated Damages:

If the Contractor does not achieve Final Completion by the required date, whether by neglect, refusal or any other reason, the parties agree and stipulate that the Contractor shall pay liquidated damages to the City for each such day that final completion is late. As provided elsewhere, this provision does not apply for delays caused by the City. The date for Final Completion may be extended in writing by the Owner.

The Contractor agrees that as a part of the consideration for the City's awarding of this Contract liquidated damages in the daily amount of **$500.00** is reasonable and necessary to pay for the actual damages resulting from such delay. The parties agree that the real costs and injury to the City for such delay include hard to quantify items such as: additional engineering, inspection and oversight by the City and its agents; additional contract administration; inability to apply the efforts of those employees to the other work of the City; perceived inefficiency of the City; citizens having to deal with the construction and the Work, rather than having the benefit of a completed Work, on time; inconvenience to the public; loss of reputation and community standing for the City during times when such things are very important and very difficult to maintain.

The Contractor must complete the Work and achieve final completion included under the Bid Schedule in the number of consecutive calendar days after the City gives is written Notice to Proceed. When the Contractor considers the entire Work ready for its intended use, Contractor shall certify in writing that the Work is substantially complete. In addition to the Work being substantially complete, Final Completion date is the date by which the Contractor shall have fully completed all clean-up, and all items that were identified by the City in the inspection for final completion. Unless otherwise stated in the Special Conditions, for purposes of this liquidated damages clause, the Work shall not be finished and the Contract time shall continue to accrue until the City gives its written Final Acceptance.

If the Contractor shall fail to pay said liquidated damages promptly upon demand thereof after having failed to achieve Final Completion on time, the City shall first look to any retainage or other funds from which to pay said liquidated damages; if retainage or other liquid funds are not available to pay said liquidated damages amounts, the Surety on the Contractor's Performance Bond and Payment Bond shall pay such liquidated damages. In addition, the City may withhold all, or any part of, such liquidated damages from any payment otherwise due the Contractor.

Liquidated damages as provided do not include any sums to reimburse the City for extra costs which the City may become obligated to pay on other contracts which were delayed or extended because of the Contractor's failure to complete the Work within the Contract Time. Should the City incur additional costs because of delays or extensions to other contracts resulting from the Contractor's failure of timely performance, the Contractor agrees to pay these costs that the City incurs because of the Contractor's delay, and these payments are separate from and in addition to any liquidated damages.

The Contractor agrees that the City may use its own forces or hire other parties to obtain Substantial or Final Completion of the work if the time of completion has elapsed and the Contractor is not diligently pursuing completion. In addition to the Liquidated Damages provided for, the Contractor agrees to reimburse the City for all expenses thus incurred.

SC-7 **Working Days and Hours:** The working days and hours shall be as stated in the General Contract Conditions, Section VI, or as mutually agreed upon in the preconstruction meeting.

SC-8 **Permits:** The following permits are required for the Project and will be obtained by the City at no cost to the Contractor:

- *None*

The following permits are required for the Project and shall be obtained and paid for by the Contractor, with the costs included in the total bid price for the Project:

- Colorado Department of Public Health and Environment Dewatering Permit. (If necessary due to presence of ground water) For more information, contact the Colorado Department of Public Health and Environment: www.cdphe.state.co.us/wq/PermitsUnit/wqcdpmt.html Approximately 7 to 10 days is required for processing of the permit application. The Contractor should begin preparing the permit application immediately upon notice of award.

SC-9 **Insurance Limits:** The minimum insurance limits for the Project are as stated in the General Contract Conditions, Section IV. The City of Grand Junction shall be listed as additionally insured on the insurance policy.

SC-10 **City Furnished Materials:** The City will furnish the following materials for the Project:

- Electronic files needed for construction surveying
- Pedestrian Cross-Walk Signs and any additional roadway signs needed prior to opening road to traffic.

SC-11 **Project Sign:** Project signs, if any, will be furnished and installed by the City.

SC-12 **Authorized Representatives of the City:** Those authorized to represent the City shall include engineers and inspectors employed by the City.

SC-13 **Uranium Mill Tailings:** It is anticipated that radioactive mill tailings will not be encountered on this Project.

SC-14 **Fugitive Petroleum or Other Contamination:** It is anticipated that soil contamination from fugitive petroleum or other contaminants will not be encountered with the Project.

SC-15 **Traffic Control:** The Contractor shall provide and maintain traffic control in accordance with the approved Traffic Control Plan and the *Manual on Uniform Traffic Control Devices (MUTCD)*. The traffic control plan shall be presented to the Project Engineer at or prior to the pre-construction meeting for review and approval. The following requirements and limitations shall apply to the traffic control:

1. Closure of G Road during construction is permitted. The Contractor shall provide to the Project Engineer for approval the proposed sections of G Road that the Contractor proposes to close to through traffic. The Project Engineer proposes that G Road be closed to through traffic in two phases. Section #1 closure can be from roadway station 6+00 to station 11+25. Section #2 closure can be from roadway station 11+25 to station 20+50.

2. The Contractor shall provide access to the Medical Office Complex at all times during construction.

3. The Contractor shall provide access to 23 ½ Road at all times during construction.

4. The Contractor shall allow and provide for access to the property at 2350 G Road at all times during construction, unless the Contractor has written approval from the property owner to allow for the closure of the access.

SC-16 **Existing Property Pins and Survey Monuments**: This project was designed by Austin Civil Group with surveying performed by Rolland Consulting Engineers. Survey monuments have been shown on the construction drawings where found in the field. The Contractor shall be responsible for locating and protecting survey monuments. Additionally, the Contractor shall be responsible for locating, protecting and resetting property pins when and where necessary. The cost of locating, protecting, referencing and resetting of property pins is incidental to the Construction Surveying pay item.

SC-17 **Stormwater and Dewatering Management:**

Street sweeping shall be periodically completed in the traffic lanes where excavated material was stockpiled, in the roadway gutters, and any other parts of the roadway where material from the construction site has been tracked by vehicles.

All vehicle and equipment maintenance and fueling shall be performed in a designated area within the construction area that will not interfere with roadway traffic operations unless traffic control is provided. The fueling area shall exhibit Best Management Practices in order to minimize and/or eliminate the potential of fuel spillage. Any spillage of fuel onto the ground shall be immediately cleaned up and any contaminated soil disposed of properly at the Mesa County Landfill. Documentation of spills, leaks and overflows that result in the discharge of pollutants, including logging and reporting of the spill is required to the Water Quality Control Division at their toll-free 24-hour environmental emergency spill reporting line – 1-877-518-5608.

Concrete trucks will be required to wash out in a concrete washout structure supplied by the Contractor or the concrete truck shall wait to washout back at the concrete batching facility. The Contractor will be responsible for maintaining the washout structure. The washout structure shall be cleaned out and/or replaced when the washout pool reaches 50% of total capacity. The concrete washout structure needs to be dynamic and durable in its ability to be moved with the progress of construction.

The Contractor shall clear the site of all trash and litter daily. Portable toilets will be maintained (cleaned and emptied) by a local supplier.

SC-18 **Asphalt Removal and Asphalt Milling:**

Asphalt pavement removal identified as "Planing" shall be removed per the City's Standard Detail GU-03 using the "T" Top method with asphalt removed by milling (planning). The pavement joints/edges from the milling process shall be located either at the edge and/or the center of the traffic lane. No pavement joint/edge shall fall in the location of vehicle wheel paths. Where full-depth asphalt removal is specified, the Contractor may choose to remove using a cut and excavate method or full-depth milling (planning). Asphalt removed via milling (planning) may be re-used on the Project as Class 3 aggregate sub-base. Asphalt removed via milling (planning) that is not re-used on the project shall be delivered to City Shops, 333 West Avenue, Grand Junction.

SC-19 **Discrepancy between Bid Schedule and Construction Notes:** In the event of a discrepancy between a Pay Item description in the Bid Schedule and the description for the same Pay Item in the drawings/construction notes; the language in the Bid Schedule shall govern or supersede that found elsewhere.

SC-20 **Existing Utilities and Structures:** The location of existing utilities and structures shown on the Plans are approximate. It is the responsibility of the Contractor to locate and protect all structures and utilities in accordance with General Contract Condition Section 37. The Contractor shall coordinate with the utility companies any necessary relocation of utilities and schedule work accordingly.

SC-21 **Incidental Items:** Any item of work not specifically identified or paid for directly, but which is necessary for the satisfactory completion of any paid items of work, will be considered as incidental to those items, and will be included in the cost of those items.

SC-22 **Payment for Damage to Private Property Beyond Easement Limits/ROW Limits:** Easement and Rights of Way (ROW) lines are indicated on the Construction Drawings. Any and all damage to improvements outside of easements and rights of way shall be repaired at the Contractor's expense. All easement and rights of way lines defining demarcation between allowed work areas and private property not accessible to the Contractor shall be surveyed and marked with flags/stakes to clearly highlight the work zone. Cost for demarcation of ROW and easement lines shall be incidental to the Construction Surveying pay item.

Areas within ROW and easement lines that are not revegetated but are disturbed during construction by vehicle traffic, stockpiling of materials or other construction activities shall be returned to their original condition. Cost for restoration of original conditions to these areas shall be incidental to the cost of the project.

SC-23 **Bypass Pumping:** Bypass pumping of water conveyed in the Canning Factory ditch and the ditch east of 23 ½ Rd. and north of G Rd. is provided for in the Bid Schedule. Any other bypass pumping the Contractor chooses to set up or implement shall be incidental to the project. For all bypass pumping, the Contractor shall be responsible for estimating flows and providing sufficient pumping capacity to handle all flows, including increased flows resulting from storm events. The Contractor is advised that flows vary widely throughout the day and throughout the week. Bypass pumping plans, including spill-containment plans, are required for all bypass pumping that is included in the Bid Schedule or used at the Contractor's discretion.

SC-245 **Excess Material:** All excess materials shall be disposed in accordance with General Contract Condition 50. Cost of disposal of excess material shall be incidental to the Imported Backfill and Granular Stabilization pay items. Material generated from onsite excavation (for roadway or pipe installation) that is suitable for use as trench backfill shall be stockpiled and reused onsite as trench backfill. Onsite-derived trench backfill material shall be used for backfilling storm drain pipe prior to use of any imported trench backfill material and shall be placed immediately following installation of haunching material over the entire length of newly installed storm drain pipe, until the supply of site-derived material is exhausted. Imported trench backfill (pit run) will then be placed above the site-derived material to complete backfilling and ditch filling above the pipe. This will be done so as to minimize import of trench backfill and to provide for imported trench backfill material forming the uppermost zone of material placed above the pipe and in the upper portion of the ditch.

SC-25 **Subsurface Conditions and Trench Stabilization:** Trench wall support shall be required when installing all new pipeline and structures (manholes) included in this project. The Contractor shall provide trench boxes, sheet piles and bracing, or other approved methods of supporting trench walls and excavations such that the width of

the trench or excavation is a minimum of 3 feet greater than the outside diameter of the pipe and a maximum of 4 feet greater than the outside diameter of the pipe. Surface disturbance width for all manholes shall be 4 feet greater than the horizontal dimension of the structure.

Subsurface conditions in the lower portion of the existing ditch and beneath the current ditch flowline will be wet, soft and unstable. The Contractor is responsible for implementing a construction method that will allow careful excavation of unstable soils for the placement of grid, fabric, stabilization rock, bedding rock and pipe. Benching of the excavation side slopes is not permitted; trench-shoring shall be used to stabilize trench walls as noted in the previous paragraph. All costs associated with excavation and shoring shall be included in the cost of the storm drain pipe installation.

SC-26 **Schedule of Submittals:** The Contractor shall submit for review by the Engineer a Schedule of Submittals based on the submittal requirements of the various elements of work included in the Project. The submittal schedule shall be submitted for review within one week of the start of construction. The schedule of submittals is presented in the following Table:

Submittal Types: Shop Drawing (SD), Material Certification (MC), Mix Design (MD), Test Results (TR), Permit (P)

Description	Submittal Type	Date Received	Date Returned	Date Resubmitted	Date Accepted
STREET CONSTRUCTION					
Hot Mix Asphalt (Grading SX, PG 64-22)	MD, TR				
Aggregate Base Course(Class 3 and Class 6): Gradation, Proctor Curve	TR				
Concrete (Class D & Class P)	MD, TR				
Geotextile	MC				
Geogrid	MC				
Reinforcing Steel	SD, MC				
UTILITY (STORM DRAIN LINE) CONSTRUCTION					
Pipe – Type: Concrete	MC,MD,ASTM TR				
Pipe Bedding & Haunch Mat'l, Type A, Gradation	TR				
Trench-Bottom Granular Stabilization (Type B) Gradation	TR				
Pipe Backfill Gradation, Proctor curve, plasticity index (PI)	TR				
Manholes, Inlets Manholes, Inlets (cont.)	SD, MC,MD,ASTM TR (shop drawings required for reinforcement)				
Manhole Ring and cover	MC				
Grate & frame	MC				
Pipe to manhole/main/inlet connection/Tees	SD (Tee connection inlet requires design stamped by licensed				

	P.E.				

EROSION CONTROL / STORMWATER MANAGEMENT

Inlet protection	MC				
Concrete Washout Facility	SD				

PERMITS, PLANS, OTHER

Traffic Control Plan	Plan				
Dewatering Permit	P				

SPECIAL PROVISIONS

CITY OF GRAND JUNCTION
DEPARTMENT OF PUBLIC WORKS AND UTILITIES
ENGINEERING DIVISION

G Road – Phase II Improvements Project

SPECIAL PROVISIONS

GENERAL:

The descriptions of the pay items listed in the Bid Schedule for this Project may not agree with those listed in the Standard Specifications. Payment for all Work performed, as required in the Contract Documents, will be in accordance with the items and units listed in the Bid Schedule.

STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION:

The ***City of Grand Junction Standard Specifications for Road and Bridge Construction*** are hereby modified or supplemented for this Project by the following modifications to ***The Standard Specifications for Road and Bridge Construction***, State Department of Highways, Division of Highways, State of Colorado:

SP-1 SECTION 203 –EXCAVATION AND EMBANKMENT

Add the following to subsection 203.02 (a) Unclassified excavation:

Excavation for construction of new road surface, including excavation for pavement, Class 6 aggregate base and Class 3 aggregate sub-base shall be performed prior to installation of the pipe such that suitable excavated material is available for use as trench backfill. At access points, excavation can be scheduled as chosen by the Contractor to maintain useable access points for 23 ½ Road.

Unclassified excavation shall be paid for at the established contract price. The quantity to be paid shall not be measured separately in field but shall be the plan quantity specified in the Bid Schedule.

Add the following to subsection 203.14:

Material generated from onsite excavation for roadway construction that is suitable for use as trench backfill shall be used for such and shall not be paid for separately.

SP-2 SECTION 601 – STRUCTURAL CONCRETE

Section 601 of the Standard Specifications is hereby revised for this project as follows:

This CDOT Specification has been added to this Project:

The Contractor shall furnish a batch ticket (delivery ticket) with each load for all concrete. Concrete delivered without a batch ticket containing complete information as specified shall be rejected. The Contractor shall collect and complete the batch ticket at the placement site and deliver all batch tickets to the Engineer or his representative at the end of each day. The Engineer or his representative shall have access to the batch tickets at any time during the placement. The following information shall be provided on each ticket:

1. Suppliers name and date
2. Truck number
3. Project name and location
4. Concrete class and designation number
5. Cubic yards batched
6. Type brand and amount of each admixture
7. Type, brand, and amount of cement and fly ash
8. Weights of fine and course aggregates
9. Moisture of fine and course aggregates
10. Gallons of batch water

The contractor shall add the following information to the batch ticket at time of placement:

1. Gallons of water added by the truck operator.
2. Number of revolutions of the drum for mixing
3. Discharge time

Add the following to Subsection 601.02:

Concrete shall conform to the requirements specified for CDOT Class D Concrete, with a maximum water:cement ratio of 0.44.

Add the following to Subsection 601.04:

601.04 Sulfate Resistance. The Contractor shall provide protection against sulfate attack on concrete structures (RCP, manholes, inlets, curb and gutter, drainage pans, and concrete intersection corners) by providing concrete structures manufactured as per sulfate exposure severities defined in Table 601-4 and the following concrete mix specifications. The Severity of exposure Class shall be Class 2 unless stated otherwise on the plans. A higher level of requirements may be used for a lower level of exposure.

If the Contractor can provide a test report that shows another class of exposure exists at a

structure location, then the Engineer may accept a concrete mix for that location that meets the corresponding sulfate protection requirements in addition to other requirements shown in this section.

Table 601-4
REQUIREMENTS TO PROTECT AGAINST DAMAGE TO CONCRETE BY SULFATE ATTACK FROM EXTERNAL SOURCES OF SULFATE

Severity of potential exposure	Water-soluble sulfate (SO_4), percent, dry soil	Sulfate (SO_4) in water, ppm	Water cement ratio, maximum	Cementitious material requirements
Class 0	0.00 to 0.10	0 to 150	0.50	Class 0
Class 1	0.11 to 0.20	151 to 1500	0.50	Class 1
Class 2	0.21 to 2.00	1501 to 10,000	0.45	Class 2
Class 3	2.01 or greater	10,001 or greater	0.40	Class 3

Cementitious material requirements are as follows:

Class 0 requirements shall be one of the following:
(1) ASTM C 150 Type I, II or V
(2) ASTM C 595 Type IP
(3) ASTM C 1157 Type GU
(4) ASTM C 150 Type III cement if it is allowed, as in Class E concrete

Class 1 requirements for sulfate resistance shall be one of the following:
(1) ASTM C 150 Type II or V; Class C fly ash shall not be allowed in the concrete mix
(2) ASTM C 595 Type IP(MS)
(3) ASTM C 1157 Type MS
(4) When ASTM C 150 Type III cement is allowed, as in Class E concrete, it shall have no more than 8 percent C_3A. Class C fly ash shall not be allowed in the concrete mix

Class 2 requirements for sulfate resistance shall be one of the following:
(1) ASTM C 150 Type V with a minimum of a 20 percent substitution of Class F fly ash by weight
(2) ASTM C 150 Type II or III with no more than 0.040 percent expansion at 14 days when tested in accordance with ASTM C 452 with a minimum of a 20 percent substitution of Class F fly ash by weight
(3) ASTM C 1157 Type HS
(4) A blend of portland cement meeting ASTM C 150 Type II or III with a minimum of 20 percent Class F fly ash by weight, where the blend has less than 0.05 percent expansion at 6 months or 0.10 percent expansion at 12 months when tested according to ASTM C 1012.

Class 3 requirements for sulfate resistance shall be one of the following:

(1) A blend of portland cement meeting ASTM C 150 Type II, III, or V with a minimum of a 20 percent substitution of Class F fly ash by weight , where the blend has less than 0.10 percent expansion at 18 months when tested according to ASTM C 1012.
(2) ASTM C 1157 Type HS having less than 0.10 percent expansion at 18 months when tested according to ASTM C 1012.

SP-3 SECTION 608 – CURBS, GUTTERS, SIDEWALKS, AND BIKEWAYS

Section 608 of the Standard Specifications is hereby revised for this project as follows:

Subsections 608.06, Basis of Payment shall include the following:

> The Contract Unit Price for the various concrete items shall be full compensation for all equipment, labor, materials, and incidentals required for the complete installation. Incidental items include forming, furnishing and placement, curing and protection of the concrete; reinforcing steel, and joint filler, as specified in the Standard Contract Documents.

STANDARD SPECIFICATIONS FOR CONSTRUCTION OF WATER LINES, SANITARY SEWERS, STORM DRAINS, UNDERDRAINS AND IRRIGATION SYSTEMS

The City of Grand Junction ***Standard Specifications for Construction of Water Lines, Sanitary Sewers, Storm Drains, Underdrains and Irrigation Systems*** are hereby modified for this Project as follows:

SP-4 SECTION UU-108 – Measurement and Payment

Section UU-108.2 shall be modified as follows:

Payment for installation of storm drain pipe and related structures (manholes and inlets) shall include the cost of reusing suitable material generated from onsite excavation for construction of new road sections. All excavation for construction of new road sections (except that required to maintain access to the MOB construction site and the private residence north of G Rd. at 23 ½ Rd.) shall be completed prior to backfilling of new storm conduit. Onsite-generated material shall be used for initial backfill along the entire length of new storm drain conduit, such that imported backfill required to complete backfilling and the north fill slope will form the uppermost prism of material above the pipe and within the filled ditch. This backfilling sequence shall be adhered to so as to provide maximum structural integrity to road sections built above the existing ditch bank.

Appendix A

G Road Pavement Section Alternatives Report by Huddleston-Berry Engineering & Testing, LLC

Huddleston-Berry
Engineering & Testing, LLC

640 White Avenue
Grand Junction, CO 81501
Phone: 970-255-8005
Fax: 970-255-6818
HuddlestonBerry@bresnan.net
www.HBET-GJ.com

July 18, 2013
Project#00208 - 0048

City of Grand Junction
Engineering Department
250 North 5th Street
Grand Junction, CO 81501

Attention: Mr. Dave Donohue

Subject: Pavement Section Alternatives
G Road
Grand Junction, Colorado

Dear Mr. Donohue,

At your request, Huddleston-Berry Engineering and Testing, LLC (HBET) conducted a geotechnical investigation for the proposed G Road improvements in Grand Junction, Colorado. The purpose of our investigation was to evaluate the subsurface conditions at the site with regard to developing pavement section alternatives for G Road in the project area.

Subsurface Investigation

The subsurface investigation included four borings along G Road in the project area as shown on Figure 1 – Site Plan. The borings were drilled to a depth of 10.0 feet below the existing grade. Typed boring logs are included in Appendix A.

As indicated in the attached logs, the subsurface conditions along G Road were slightly variable. However, the borings generally encountered 4.0 to 6.0-inches of asphalt pavement above granular base course to depths of between 0.75 and 1.5 feet. The base course was underlain by brown to gray to orange to black, moist to wet, very soft to stiff silty clay to the bottoms of the borings. Groundwater was only encountered in B-1 and B-4 at the time of the investigation at depths of 8.0 and 5.0 feet, respectively.

Laboratory Testing

Laboratory testing was conducted on samples of the native soils collected in the borings. The testing included grain-size analysis, Atterberg limits determination, natural moisture content and density determination, swell/consolidation, maximum dry density/optimum moisture (Proctor) determination, and California Bearing Ratio (CBR). The laboratory testing results are included in Appendix B.

The laboratory testing results indicate that the native clay soils are slightly plastic. In addition, the soils were shown to be slightly collapsible at their existing density with up to approximately 1.4% collapse measured in the laboratory. However, the CBR results indicate that the native clay soils may be slightly expansive when compacted and introduced to excess moisture.

New Pavements

As discussed previously, the pavement subgrade materials consist primarily of silty clay soils. The design California Bearing Ratio (CBR) of the native soils was determined in the laboratory to be less than 2.0. Therefore, the minimum recommended Resilient Modulus of 3,000 psi was used for the pavement design.

Flexible Pavements

The City of Grand Junction provided ESAL calculations to HBET indicating a flexible pavement design value of 2,862,442 ESAL's. Based upon the subgrade conditions and anticipated traffic loading, pavement section alternatives were developed in accordance with the *Guideline for the Design and Use of Asphalt Pavements for Colorado Roadways* by the Colorado Asphalt Pavement Association and CDOT *Pavement Design Manual*. The following minimum new pavement section alternatives are recommended:

ESAL's = 2,862,442, Structural Number = 4.95

ALTERNATIVE	PAVEMENT SECTION (Inches)				
	Hot-Mix Asphalt Pavement	CDOT Class 6 Base Course	CDOT Class 3 Subbase Course	Rigid Pavement	TOTAL
Full Depth HMA	12.0				12.0
A	6.0	17.0			23.0
B	7.0	14.0			21.0
C	6.0	6.0	15.0		27.0

The recommended pavement section alternatives above can be thinned by utilizing geogrid reinforcement within the pavement section. The reduced thickness pavement section alternatives are summarized in the following tables.

ESAL's = 2,862,442, Structural Number = 4.95

ALTERNATIVE	PAVEMENT SECTION (INCHES)				
	Hot-Mix Asphalt Pavement	CDOT Class 6 Base Course	CDOT Class 3 Subbase Course	Geogrid Location	TOTAL
A	6.0	10.0		Below Base	16.0
B	7.0	8.0		Below Base	15.0
C	6.0	6.0	9.0	Below Base	21.0

Geogrid used in the pavement section should consist of Tensar TX5, or equivalent.

Rigid Pavements

ESAL's = 3,806,220

ALTERNATIVE	PAVEMENT SECTION (Inches)		
	Concrete Pavement	CDOT Class 6 Base Course	TOTAL
A	9.0	6.0	15.0

Existing Pavements

Based upon the results of the subsurface investigation, the pavement section along the roadway varied. In the western portion of the project area, B-1 through B-3 encountered 5 to 6-inches of asphalt above 12 to 13-inches of base course. However, in the eastern portion of the project area, B-4 encountered only 4-inches of asphalt above 5-inches of base course.

Considering the general consistency in B-1 through B-3, HBET evaluated an existing pavement section consisting of 5-inches of asphalt above 13-inches of base course. This corresponds to a pavement Structural Number of 3.50. For a Structural Number of 3.50 and subgrade Resilient Modulus of 3,000 psi, the existing pavement section is adequate for an ESAL value of approximately 250,000. In order to accommodate the design traffic loading, an overlay of 4.0-inches of asphalt would be required.

For the eastern portion of the site, the existing pavement section of 4-inches of asphalt above 5-inches of base course corresponds to a pavement Structural Number of 2.20. For a Structural Number of 2.20 and subgrade Resilient Modulus of 3,000 psi, the existing pavement section is adequate for an ESAL value of less than 50,000. In order to accommodate the design traffic loading, an overlay of 7.0-inches of asphalt would be required.

General Pavement Recommendations

Prior to new pavement placement, areas to be paved should be stripped of all topsoil, fill, or other unsuitable materials. It is recommended that the subgrade soils be scarified to a depth of 12-inches; moisture conditioned, and recompacted to a minimum of 95% of the standard Proctor maximum dry density, within ±2% of optimum moisture content as determined by AASHTO T-99.

Aggregate base course and subbase course should be placed in maximum 9-inch loose lifts, moisture conditioned, and compacted to a minimum of 95% and 93% of the maximum dry density, respectively, at -2% to +3% of optimum moisture content as determined by AASHTO T-180. In addition to density testing, base course should be proofrolled to verify subgrade stability.

It is recommended that Hot-Mix Asphaltic (HMA) pavement conform to CDOT grading SX or S specifications and consist of an approved 75 gyration Superpave method mix design. HMA pavement should be compacted to between 92% and 96% of the maximum theoretical density. An end point stress of 50 psi should be used. It is recommended that rigid pavements consist of CDOT Class P concrete or alternative approved by the Engineer. In addition, pavements should conform to local specifications.

The long-term performance of the pavements is dependent on positive drainage away from the pavements. Ditches, culverts, and inlet structures in the vicinity of paved areas must be maintained to prevent ponding of water on the pavement.

General

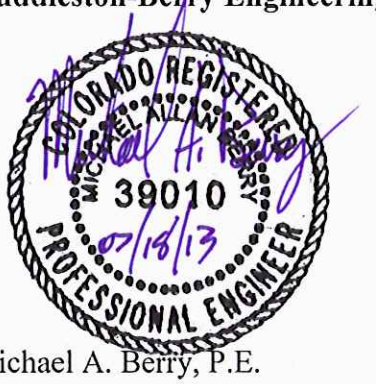
The recommendations included above are based upon the results of the subsurface investigation and on our local experience. These conclusions and recommendations are valid only for the proposed construction.

Huddleston-Berry Engineering & Testing, LLC

As discussed previously, the subsurface conditions at the site were slightly variable. However, the precise nature and extent of subsurface variability may not become evident until construction. Therefore, it is recommended that a representative of HBET be retained to provide engineering oversight and construction materials testing services during the construction. This is to verify compliance with the recommendations included in this report or permit identification of significant variations in the subsurface conditions which may require modification of the recommendations.

We are pleased to be of service to your project. Please contact us if you have any questions or comments regarding the contents of this report.

Respectfully Submitted:
Huddleston-Berry Engineering and Testing, LLC



Michael A. Berry, P.E.
Vice President of Engineering

FIGURES

Site Plan

FIGURE 1
Site Plan

N

0 0.1 0.2 Miles

Printed: 7/18/2013

1 inch = 358 feet

CITY OF Grand Junction COLORADO
GEOGRAPHIC INFORMATION SYSTEM

APPENDIX A
Typed Boring Logs

Huddleston-Berry Engineering & Testing, LLC
640 White Avenue, Unit B
Grand Junction, CO 81501
970-255-8005
970-255-6818

BORING NUMBER B-1

CLIENT City of GJ
PROJECT NAME G Road Improvements
PROJECT NUMBER 00208-0048
PROJECT LOCATION Grand Junction, CO
DATE STARTED 7/9/13 COMPLETED 7/9/13
GROUND ELEVATION ____ HOLE SIZE 4"
DRILLING CONTRACTOR S. McCracken
GROUND WATER LEVELS:
DRILLING METHOD Simco 2000 Truck Rig
▽ AT TIME OF DRILLING 8.0 ft
LOGGED BY AS CHECKED BY MAB
▼ AT END OF DRILLING 8.0 ft
NOTES
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0.0		ASPHALT										
		Sandy GRAVEL (BASE COURSE), brown, dry to moist, dense										
		Silty CLAY (cl-ml), with sand lenses, brown, moist to wet, very soft to medium stiff, abundant sulfates										
2.5			SS 1	88	2-2-2-4 (4)			18				89
5.0												
			SS 2	75	0-0-1-1 (1)							
7.5		▼										
			SS 3	46	0-1-0-0 (1)			27				
10.0		Bottom of hole at 10.0 feet.										

Huddleston-Berry Engineering & Testing, LLC
640 White Avenue, Unit B
Grand Junction, CO 81501
970-255-8005
970-255-6818

BORING NUMBER B-2

CLIENT City of GJ
PROJECT NAME G Road Improvements
PROJECT NUMBER 00208-0048
PROJECT LOCATION Grand Junction, CO
DATE STARTED 7/9/13 COMPLETED 7/9/13
GROUND ELEVATION ____ HOLE SIZE 4"
DRILLING CONTRACTOR S. McCracken
GROUND WATER LEVELS:
DRILLING METHOD Simco 2000 Truck Rig
AT TIME OF DRILLING dry
LOGGED BY AS CHECKED BY MAB
AT END OF DRILLING dry
NOTES
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0.0		ASPHALT										
		Sandy GRAVEL (BASE COURSE), dark brown, dry, medium dense										
		Silty CLAY (cl-ml), with sand lenses, brown to gray, moist to very moist, medium stiff to stiff, abundant sulfates										
2.5			MC 1	94	5-4-5 (9)		101	15				
5.0			SS 1	79	2-2-2-3 (4)							
7.5			SS 2	67	2-2-2-2 (4)			24				
10.0		Bottom of hole at 10.0 feet.										

GEOTECH BH COLUMNS 00208-0048 G RD IMPROVEMENTS.GPJ GINT US LAB.GDT 7/18/13

Huddleston-Berry Engineering & Testing, LLC
640 White Avenue, Unit B
Grand Junction, CO 81501
970-255-8005
970-255-6818

BORING NUMBER B-3

CLIENT City of GJ
PROJECT NAME G Road Improvements
PROJECT NUMBER 00208-0048
PROJECT LOCATION Grand Junction, CO
DATE STARTED 7/9/13 COMPLETED 7/9/13
GROUND ELEVATION ___ HOLE SIZE 4"
DRILLING CONTRACTOR S. McCracken
GROUND WATER LEVELS:
DRILLING METHOD Simco 2000 Truck Rig
AT TIME OF DRILLING dry
LOGGED BY AS CHECKED BY MAB
AT END OF DRILLING dry
NOTES
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0.0		ASPHALT										
		Sandy GRAVEL (BASE COURSE), brown, dry to moist, medium dense										
		Silty CLAY (CL-ML), with sand lenses, brown, moist to very moist, soft to stiff, abundant sulfates										
		SS1: Lab Classified										
2.5			SS 1	92	5-6-5-6 (11)			15	24	17	7	89
5.0												
			SS 2	75	0-1-1-1 (2)			25				
7.5			SS 3	88	1-1-1-2 (2)							
10.0		Bottom of hole at 10.0 feet.										

Huddleston-Berry Engineering & Testing, LLC
640 White Avenue, Unit B
Grand Junction, CO 81501
970-255-8005
970-255-6818

BORING NUMBER B-4

CLIENT City of GJ
PROJECT NAME G Road Improvements
PROJECT NUMBER 00208-0048
PROJECT LOCATION Grand Junction, CO
DATE STARTED 7/9/13 COMPLETED 7/9/13
GROUND ELEVATION ____ HOLE SIZE 4"
DRILLING CONTRACTOR S. McCracken
GROUND WATER LEVELS:
DRILLING METHOD Simco 2000 Truck Rig
▽ AT TIME OF DRILLING 5.0 ft
LOGGED BY AS CHECKED BY MAB
▼ AT END OF DRILLING 5.0 ft
NOTES
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0.0		ASPHALT										
		Sandy GRAVEL (BASE COURSE), brown, moist, loose										
		Silty CLAY (cl-ml), with sand lenses, brown, gray, orange and black, moist to wet, very soft to soft, abundant sulfates, odoriferous										
2.5			SS 1	88	1-2-2-2 (4)							
5.0			SS 2	100	1-1-0-2 (1)							
7.5			SS 3	100	0-0-0-1 (0)			29				
10.0		Bottom of hole at 10.0 feet.										

GEOTECH BH COLUMNS 00208-0048 G RD IMPROVEMENTS.GPJ GINT US LAB.GDT 7/18/13

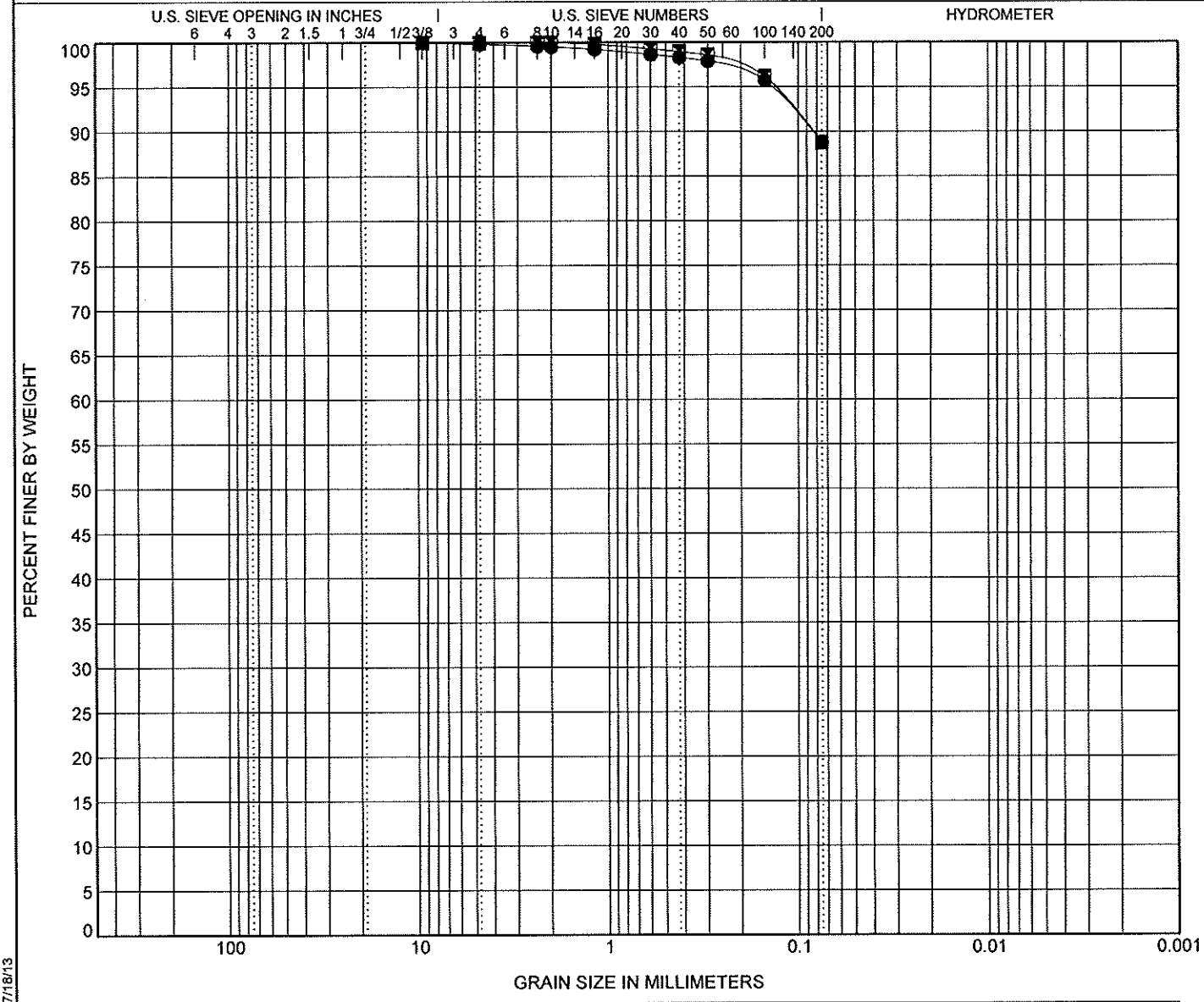
APPENDIX B
Laboratory Testing Results

Huddleston-Berry Engineering & Testing, LLC
640 White Avenue, Unit B
Grand Junction, CO 81501
970-255-8005
970-255-6818

GRAIN SIZE DISTRIBUTION

CLIENT City of GJ **PROJECT NAME** G Road Improvements

PROJECT NUMBER 00208-0048 **PROJECT LOCATION** Grand Junction, CO



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	Classification	LL	PL	PI	Cc	Cu
● B-1, SS1 7/9/2013						
⊠ B-3, SS1 7/9/2013	SILTY CLAY(CL-ML)	24	17	7		

Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B-1, SS1 7/9/2013	9.5				0.2	11.0	88.8	
⊠ B-3, SS1 7/9/2013	9.5				0.0	11.2	88.8	

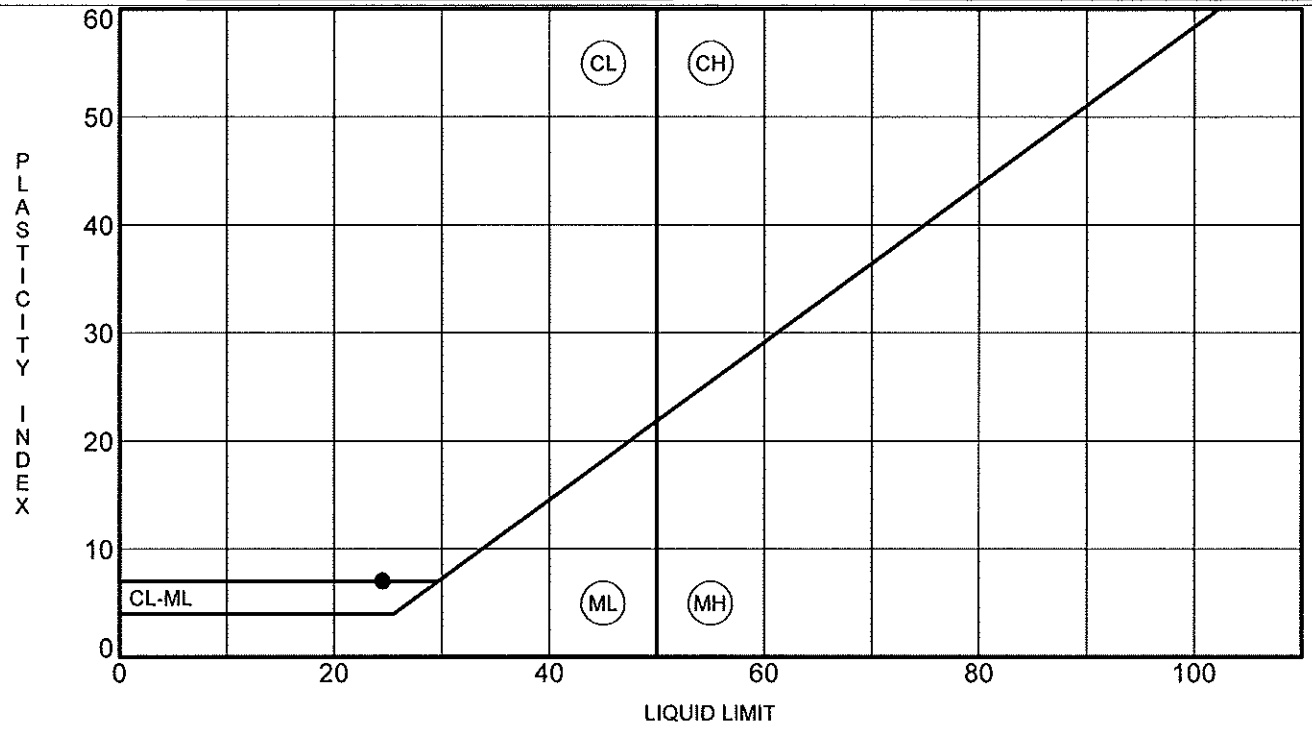
GRAIN SIZE 00208-0048 G RD IMPROVEMENTS.GPJ GINT US LAB.GDT 7/18/13

Huddleston-Berry Engineering & Testing, LLC
640 White Avenue, Unit B
Grand Junction, CO 81501
970-255-8005
970-255-6818

ATTERBERG LIMITS' RESULTS

CLIENT City of GJ **PROJECT NAME** G Road Improvements

PROJECT NUMBER 00208-0048 **PROJECT LOCATION** Grand Junction, CO



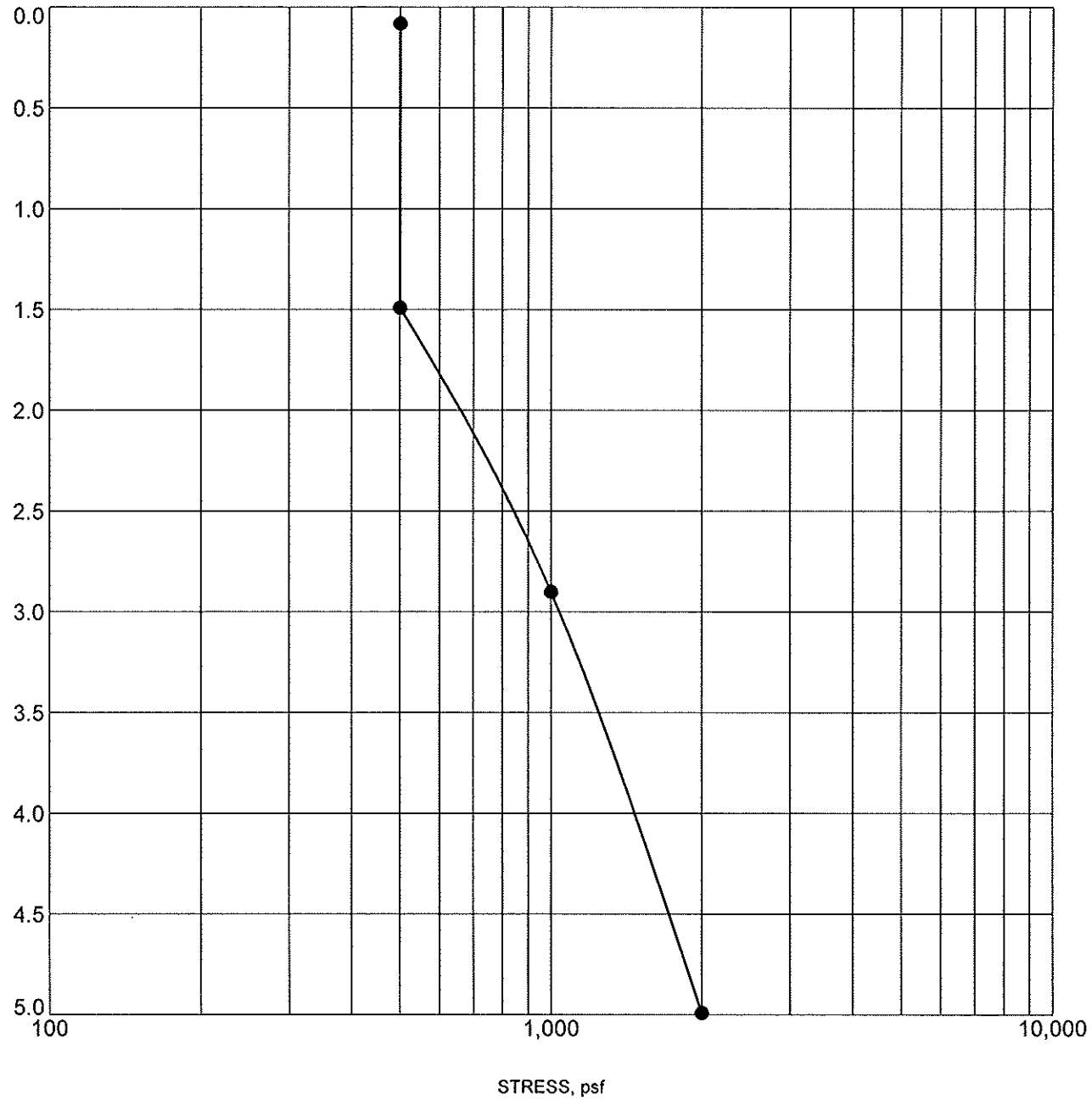
	Specimen Identification		LL	PL	PI	#200	Classification
●	B-3, SS1	7/9/2013	24	17	7	89	SILTY CLAY(CL-ML)

Huddleston-Berry Engineering & Testing, LLC
640 White Avenue, Unit B
Grand Junction, CO 81501
970-255-8005
970-255-6818

CONSOLIDATION TEST

CLIENT City of GJ **PROJECT NAME** G Road Improvements

PROJECT NUMBER 00208-0048 **PROJECT LOCATION** Grand Junction, CO



Specimen Identification		Classification	γ_d	MC%
● B-2	2.0		100	15

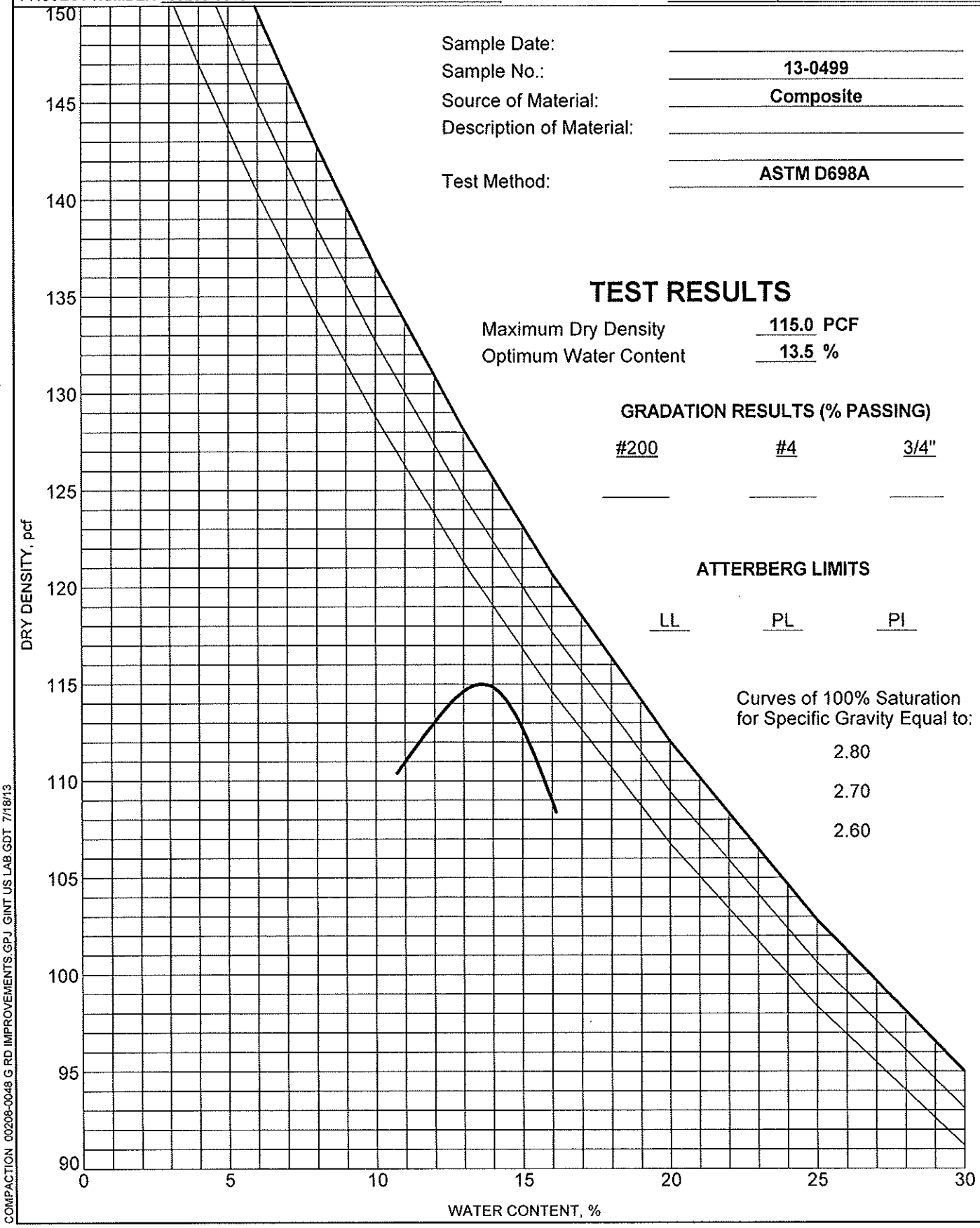
CONSOL STRAIN 00208-0048 G RD IMPROVEMENTS.GPJ GINT US LAB.GDT 7/18/13

Huddleston-Berry Engineering & Testing, LLC
640 White Avenue, Unit B
Grand Junction, CO 81501
970-255-8005
970-255-6818

MOISTURE-DENSITY RELATIONSHIP

CLIENT City of GJ **PROJECT NAME** G Road Improvements

PROJECT NUMBER 00208-0048 **PROJECT LOCATION** Grand Junction, CO



Sample Date: _____

Sample No.: 13-0499

Source of Material: Composite

Description of Material: _____

Test Method: ASTM D698A

TEST RESULTS

Maximum Dry Density 115.0 PCF

Optimum Water Content 13.5 %

GRADATION RESULTS (% PASSING)

#200	#4	3/4"

ATTERBERG LIMITS

LL	PL	PI

Curves of 100% Saturation for Specific Gravity Equal to:

2.80

2.70

2.60

COMPACTION 00208-0048 G RD IMPROVEMENTS.GPJ GINT US LAB.GDT 7/18/13

Huddleston-Berry
Engineering & Testing, LLC

CALIFORNIA BEARING RATIO
ASTM D1883

Project No.:	00208-0048		**Authorized By:**	Client	**Date:** 07/09/13
Project Name:	G Road Improvements		**Sampled By:**	AS	**Date:** 07/09/13
Client Name:	City of Grand Junction		**Submitted By:**	AS	**Date:** 07/09/13
Sample Number:	13-0499	**Location:** Composite	**Reviewed By:**	MAB	**Date:** 07/18/13

Compaction Metho ASTM D698, Method A

Maximum Dry Density (pcf): 115.0

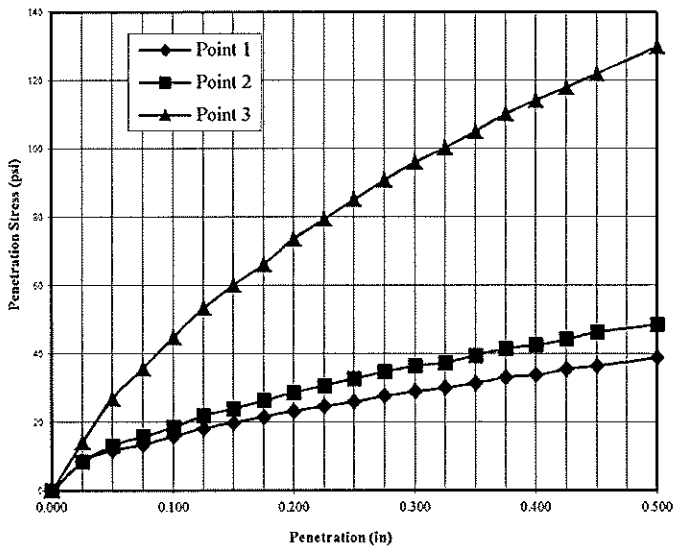
Opt. Moisture Content (%): 13.5

Sample Condition: Soaked

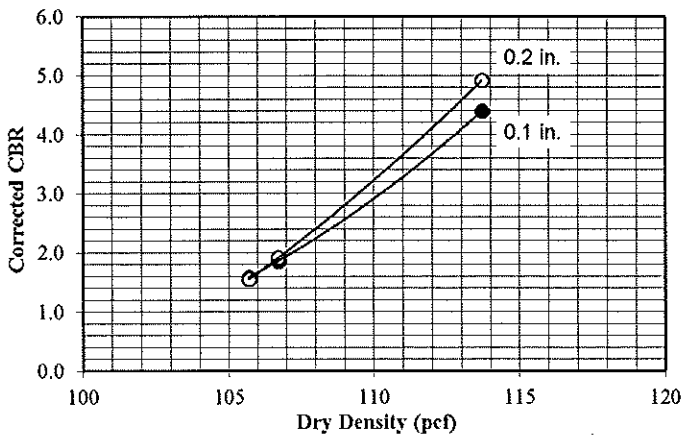
Remarks:

		Sample Data		
		Point 1	Point 2	Point 3
Blows per Compacted Lift:		15	25	56
Surcharge Weight (lbs):		10.0	10.0	10.0
Dry Density Before Soak (pcf):		105.7	106.7	113.7
Dry Density After Soak (pcf):		104.3	105.1	112.4
Moisture Content (%)	Bottom Pre-Test	12.9	12.3	12.0
	Top Pre-Test	12.8	12.1	11.9
	Top 1" After Test	20.2	19.2	17.0
	Average After Soak:	18.8	18.6	15.7
Percent Swell After Soak:		1.3	1.5	1.2

Load Pentration Curve(s)



Dry Density vs CBR



Penetration Data								
Point 1			Point 2			Point 3		
Dist. (in)	Load (lbs)	Stress (psi)	Dist. (in)	Load (lbs)	Stress (psi)	Dist. (in)	Load (lbs)	Stress (psi)
0.000	0	0	0.000	0	0	0.000	0	0
0.025	25	8	0.025	25	8	0.025	42	14
0.050	35	12	0.050	39	13	0.050	80	27
0.075	40	14	0.075	47	16	0.075	106	36
0.100	47	16	0.100	55	19	0.100	133	45
0.125	54	18	0.125	65	22	0.125	158	53
0.150	59	20	0.150	71	24	0.150	178	60
0.175	64	22	0.175	78	26	0.175	196	66
0.200	69	23	0.200	85	29	0.200	218	74
0.225	73	25	0.225	91	31	0.225	235	80
0.250	77	26	0.250	97	33	0.250	252	85
0.275	82	28	0.275	103	35	0.275	269	91
0.300	86	29	0.300	108	37	0.300	284	96
0.325	89	30	0.325	111	38	0.325	297	100
0.350	93	31	0.350	117	40	0.350	311	105
0.375	98	33	0.375	123	42	0.375	326	110
0.400	100	34	0.400	126	43	0.400	338	114
0.425	105	36	0.425	131	44	0.425	349	118
0.450	108	37	0.450	137	46	0.450	361	122
0.500	115	39	0.500	144	49	0.500	384	130

Corrected CBR @ 0.1"		
1.6	1.9	4.4
Corrected CBR @ 0.2"		
1.6	1.9	4.9

Penetration Distance Correction (in)		
0.000	0.000	0.000

Figure: ____

G ROAD – PHASE II IMPROVEMENTS
STREET WIDENING AND
STORM SEWER

MAY 20, 2015

PROJECT LOCATION

VICINITY MAP
NTS

NO.	TITLE
C-1	COVER
C-2	STANDARD ABBREVIATIONS, LEGEND & SYMBOLS
C-3	GENERAL NOTES AND SUMMARY OF APPROXIMATE QUANTITIES
C-4	RIGHT OF WAY ACQUISITION PLAN
C-5	DEMOLITION PLAN
C-6	OVERALL SITE PLAN WITH SURVEY CONTROL
C-7	STORM LINE-1 PLAN & PROFILE
C-8	STORM LINE-1 PLAN & PROFILE
C-9	STORM LINE-1 PLAN & PROFILE
C-10	STORM LINES-2 THRU 4 PLAN & PROFILE
C-11	STORM DETAILS
C-12	G ROAD – PHASE II STA: 6+00 TO STA: 10+50 PLAN & PROFILE
C-13	G ROAD – PHASE II STA: 10+50 TO STA: 15+00 PLAN & PROFILE
C-14	G ROAD – PHASE II STA: 15+00 TO END AND DRIVEWAY DETAIL
C-15	23 ½ ROAD SO. PLAN & PROFILE & INTERSECTION DETAIL
C-16	BUS TURN-OUT GRADING AND STORM PLAN AND PROFILE
C-17	SECTIONS STA: 6+00 TO 11+50
C-18	SECTIONS STA: 12+00 TO 16+50
C-19	STRIPING PLAN

UTILITIES AND AGENCIES

CITY OF GRAND JUNCTION SANITARY SEWER	BRET GUILLORY	244-1590
UTE WATER	JIM DAUGHETY	242-7491
GRAND VALLEY DRAINAGE DISTRICT	KEVIN WILLIAMS	242-4343
GRAND VALLEY IRRIGATION	PHIL BERTRAND	242-2762
CITY OF GRAND JUNCTION PUBLIC WORKS	LEE COOPER	256-4155
XCEL ENERGY	JOHN SALAZAR	244-2681
CENTURY LINK	CHRIS JOHNSON	244-4333
CHARTER	JEFF VALDEZ	263-2314

COLORADO REGISTERED 28972 PROFESSIONAL ENGINEER
5/18/15

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

SCALE VERIFICATION
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET
ADJUST SCALES ACCORDINGLY

REVISIONS

NO.	DESCRIPTION	DATE	BY

A • C • G
AUSTIN CIVIL GROUP, INC
Land Planning • Civil Engineering • Development Services
123 N. 7th Street, Suite 300 ■ Grand Junction, Colorado 81501
(970) 242-7540

G ROAD – PHASE II
description COVER
prepared for CITY OF GRAND JUNCTION

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
LMS	LMS	MRA	MRA

JOB NUMBER: 1024.0004
DATE: 04/20/15
SCALE: NTS
SHEET NO: C-1

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ABBREVIATIONS

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS
ABC	AGGREGATE BASE COURSE
AC	ASBESTOS CEMENT
AP	ANGLE POINT
ASB	ANCHORED STRAW BALES
ASP	ALUMINIZED STEEL PIPE
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS
AWWA	AMERICAN WATER WORKS ASSOCIATION
BC	BACK OF CURB
BF	BUTTERFLY VALVE
BOW	BACK OF WALK
BCR	BEGIN CURB RETURN
BOT	BOTTOM
BSWMP	BETTER STORM WATER MANAGEMENT PRACTICES
CH	CHORD
CAP	CORRUGATED ALUMINUM PIPE
CDOT	COLORADO DEPARTMENT OF TRANSPORTATION
CI	CAST IRON
C,G,& SW	CURB, GUTTER & SIDEWALK
℄	CENTER LINE
CL	CLEAR
CMP	CORRUGATED METAL PIPE
CO	CLEAN OUT
COMB	COMBINATION (AS IN STORM SEWER AND SANITARY SEWER)
CONC	CONCRETE
CSM	CITY SURVEY MONUMENT
CSP	CORRUGATED STEEL PIPE
CU	COPPER
DI	DUCTILE IRON
DWY	DRIVEWAY
E	ELECTRIC
ECR	END CURB RETURN
EG	EDGE OF GUTTER
EL	ELEVATION
EP	EDGE OF PAVEMENT
EX	EXISTING
FB	FULL BODY
FC	FACE OF CURB
FG	FINISHED GRADE
℄	FLOW LINE
FL	FLANGE
FM	FORCE MAIN
FO	FIBER OPTICS
FS	FAR SIDE
FTG	FOOTING
G	GAS
GB	GRADE BREAK
GM	GAS METER
GV	GATE VALVE
HBP	HOT BITUMINOUS PAVEMENT
HDPE	HIGH DENSITY POLYETHYLENE
INV	INVERT
IRR	IRRIGATION
L	LENGTH OF ARC
LC	LONG CHORD
LF	LINEAR FEET
LL	LONG ARC
LS	SHORT ARC
LT	LEFT
MB	MAILBOX
MCSM	MESA COUNTY SURVEY MONUMENT
MH	MANHOLE
MJ	MECHANICAL JOINT
MW	MILL WRAP
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NOP	NO ONE PERSON
NRCP	NON-REINFORCED CONCRETE PIPE
NS	NEAR SIDE
NTS	NOT TO SCALE
OHP	OVERHEAD POWER
OHT	OVERHEAD TELEPHONE
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PE	POLYETHYLENE
PERF	PERFORATED
PI	POINT OF INTERSECTION
PIP	PLASTIC IRRIGATION PIPE
POC	POINT ON CURVE
POT	POINT ON TANGENT
PR	PROPOSED
PRC	POINT OF REVERSE CURVATURE
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
REQ'D	REQUIRED
RG	RESTRAINED GLANDS
RL	LONG RADIUS
ROW	RIGHT OF WAY
RP	RADIUS POINT
RR	RAIL ROAD
RS	SHORT RADIUS
RT	RIGHT
S	SLOPE
SAN	SANITARY
SC	SHORT CHORD
SCD	STANDARD CONTRACT DOCUMENTS
SCH	SCHEDULE
SF	SILT FENCE
SL	SECTION LINE
SSRB	STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION
SSUU	STANDARD SPECIFICATIONS FOR CONSTRUCTION OF UNDERGROUND UTILITIES
STA	STATION
STL	STEEL
STM	STORM
T	TELEPHONE
TAN	LENGTH OF TANGENT
TC	TOP OF CURB
TH	TEST HOLE
TV	TELEVISION
(TYP)	TYPICAL
UU	UNDERGROUND UTILITIES
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VPC	VERTICAL POINT OF CURVATURE
VPCC	VERTICAL POINT OF COMPOUND CURVATURE
VPRC	VERTICAL POINT OF REVERSE CURVATURE
VPI	VERTICAL POINT OF INTERSECTION
VPT	VERTICAL POINT OF TANGENCY
W	WATER
△	DELTA ANGLE

LEGEND

BSWMP DRAINAGE BASIN BOUNDARY

BSWMP ANCHORED STRAW BALES — ASB ASB ASB ASB ASB ASB ASB

BSWMP SILT FENCE — SF SF SF SF SF SF SF

BUILDING

CONCRETE CURB AND GUTTER — 2' CURB AND GUTTER

CONCRETE CURB,GUTTER, & SIDEWALK — 7' C, G, & SW

CONCRETE DITCH — CONCRETE

CONCRETE SIDEWALK — 4' SW

CULVERT — 18" RCP

EARTH DITCH — EARTH EARTH EARTH

EDGE OF GRAVEL

EDGE OF PAVEMENT

FENCE (BARBED WIRE)

FENCE (CHAIN LINK)

FENCE (IRON)

FENCE (PLASTIC)

FENCE (TEMPORARY CONSTRUCTION)

FENCE (WOOD)

FENCE (WOVEN WIRE)

GUARD RAIL

HATCHING: INDICATES EXISTING ASPHALT

HATCHING: INDICATES PROPOSED ASPHALT

HATCHING: INDICATES EXISTING CONCRETE

HATCHING: INDICATES PROPOSED CONCRETE

HATCHING: INDICATES STAGING AREA — ~STAGING AREA~

LINE (CENTER OF IMPROVEMENTS) — CENTERLINE

LINE (CITY LIMITS) — CITY LIMITS

LINE (CONTROL) — CONTROL LINE

LINE (EASEMENT)

LINE (MONUMENT/SECTION) — MONUMENT/SECTION LINE

LINE (PROPERTY)

LINE (RIGHT OF WAY)

MATCH LINE — MATCH LINE STA: 0+00

PIPE (IRRIGATION) — 4" IRR

PIPE (SIPHON) — 4" SIPHON

PROPOSED CONCRETE CURB AND GUTTER

PROPOSED CONCRETE CURB,GUTTER,& SIDEWALK

PROPOSED CONCRETE SIDEWALK

PROPOSED "WET" UTILITIES (CONSTRUCTION NOTE WILL INDICATE TYPE, SIZE, AND MATERIAL OF NEW MAIN) — 8" PVC SANITARY SEWER

ALL PROPOSED FEATURES NOT SHOWN IN LEGEND WILL BE SHOWN THE SAME AS THEIR EXISTING COUNTERPART, BUT INDICATED BY BOLDER LINETYPE

RAIL ROAD

RETAINING WALL — 1' RETAINING WALL

STRIPING (CONTINUOUS WHITE) — WHITE

STRIPING (DASHED WHITE) — WHITE

STRIPING (CONTINUOUS YELLOW) — YELLOW

STRIPING (DASHED YELLOW) — YELLOW

TOP OF SLOPE

CONTOUR LINES (SHOWN BETWEEN TOP & TOE) — 4580

TOE OF SLOPE — 4570

TRAFFIC DETECTOR LOOP

UTILITY LINE (ABANDON) (THIS CASE A WATER LINE) — W (ABANDONED) 8" W

UTILITY LINE (CABLE TV) — TV TV

UTILITY LINE (ELECTRIC) — E E

UTILITY LINE (FIBER OPTIC) — FO QWEST FO

UTILITY LINE (GAS) — G 1 1/4" MW G

UTILITY LINE (HIGH VOLTAGE OVERHEAD POWER) — HVOHP

UTILITY LINE (OVERHEAD POWER) — OHP

UTILITY LINE (OVERHEAD TELEPHONE) — OHT

UTILITY LINE (SANITARY SEWER) — 8" SAN

UTILITY LINE (SANITARY SEWER FORCE MAIN) — 8" FM

UTILITY LINE (SANITARY SEWER SERVICE) — SS

UTILITY LINE (STORM SEWER) — 8" STM

UTILITY LINE (STORM SEWER, PERFORATED) — 6" PERF

UTILITY LINE (STORM/SANITARY SEWER SEWER COMBINATION) — 18" COMB

UTILITY LINE (TELEPHONE) — T T

UTILITY LINE (WATER) — W W W W W W

SYMBOLS

BENCH MARK — A

CATCH BASIN

CLEAN OUT — SSCO

CURB STOP

FIRE HYDRANT

GUY WIRE ANCHOR

HEADGATE

IRRIGATION PUMP — P

MAILBOX — MB

MANHOLE (ELECTRIC) — E

MANHOLE (GAS) — G

MANHOLE (SANITARY/STORM)

MANHOLE (TELEPHONE) — T

MANHOLE (TV) — TV

MANHOLE (WATER) — W

METER (GAS) — GM

METER (WATER)

PEDESTAL (TELEPHONE)

PEDESTAL (TV) — TV

PROPERTY PIN

PULL BOX

REDUCER FITTING

SIGN OR POST (SIGN TYPE NOTED) — STOP

SPRINKLER HEAD

STREET LIGHT

SURVEY MONUMENT (CITY) — CSM

SURVEY MONUMENT (TYPE NOTED) — MCSM

TEST HOLE — TH #1

TRAFFIC PAINT MARKING

TRAFFIC SIGNAL POLE AND MAST ARM

UTILITY POLE

VALVE (GAS) — GV

VALVE (IRRIGATION) — IRR

VALVE (WATER) — WV

VEGETATION (HEDGE OR BUSH)

VEGETATION (TREE STUMP)

VEGETATION (TREE) (CALIPER SIZE NOTED) — 6"

WATER HYDRANT — WH

WEIR

YARD LIGHT

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G ROAD – PHASE II

description: STANDARD ABBREVIATIONS, LEGEND AND SYMBOLS

prepared for: CITY OF GRAND JUNCTION

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GENERAL CONSTRUCTION NOTES

1. Locations of existing utilities shown on these plans are approximate only. Contractor is to contact affected utility for specific locations before digging.

2. The Contractor shall notify the engineer if unanticipated conditions area encountered during completion of the work which require modifications to the contract drawings. The engineer can be reached at 970-242-7540.

3. Contractor shall give 48-hour notice to all authorized inspectors, superintendents, or person in charge of public and private utilities affected by his operations prior commencement of work. Contractor shall assure himself that all construction permits are current.

4. Contractor shall confine his construction operations to the right-of-way, easements, and lots, as shown on plans and plat. Any damage to private facilities outside these limits shall be repaired by the Contractor at no expense to the Owner.

5. All construction, related work, materials, performance and quality of work provided shall conform to the requirements of the City of Grand Junction Standard Specifications for Capital Improvements Construction and the applicable sections of the most current edition of the Division of Highways, State of Colorado Standard Specifications for Road and Bridge Construction, Colorado Standard Plans, Division of Highways M & S Standards.

6. Contractor shall familiarize himself with the geotechnical testing requirements of the City of Grand Junction. The results of the required types of tests and numbers of passing tests shall be furnished to the Engineer for verification before final acceptance by the Owner will be granted. All failing tests shall be brought to the immediate attention of the Engineer and retests shall be performed until passing results are obtained. All utility lines, including service lines falling shall be tested.

7. All earthwork operations shall be completed in accordance with the recommendations and requirements of the geotechnical report prepared by Huddleston Berry Titled: Pavement Section Alternatives G Road – Grand Junction, Colorado", dated July 18,2013.

8. Only materials on which a proctor test can be performed and accurate nuclear density tests can be run are approved for utility trench back fill unless otherwise approved by the Engineer.

9. The contractor shall provide red-lined as-constructed drawings prepared by a licensed Colorado Surveyor for storm sewer alignment and vertical grade verification prior to placement of any roadbase material.

10. The contractor shall provide red-lined as-constructed drawings prepared by a licensed Colorado Surveyor for concrete curb/gutter alignment and vertical grade verification prior to placement of any asphalt pavement.

11. In the event of a descrepancy between the construction notes contained herein and the notes and details in the City of Grand Junction Standard Contract Documents for Capital Improvements Construction manual, the City's manual shall control.

12. The contractor shall provide traffic control plans for the City's approval prior to completing any work in the right-of-way.

13. Contractor to protect existing utilities and appurtenances. Manholes, drainage inlets, utility lines, etc., damaged, covered, or filled with dirt or debris by the Contractor shall be cleaned and repaired at no expense to the Owner.

15. All concrete pavement in the bus stop areas subject to vehicle traffic shall be 8-inches thick, CDOT Class P and include #4 rebar at 12-inches on center, unless otherwise noted.

14. All concrete shall have a minimum of 6" Class VI ABC, unless otherwise noted.

15, Dowel bars shall be placed at all concrete construction or cold joint locations.

16. Curb, gutter, and drainage pans are to have expansion joints at each change in horizontal alignment of curb and gutter, but in no case at a greater distance apart than 100 feet. Locate dummy grooved joints between expansion joints at intervals not exceeding 10 feet. Where length of pour precludes 10 foot intervals, the end sections may be less then 10 feet but not less than 5 feet.

17. All handicap ramps shall be cast-iron truncated dome type unless otherwise approved by the Engineer.

18. Earth backfill material shall be non-expansive, free from muck, large rocks, frozen lumps, ashes, trash, vegetation and other debris.

PAVING CONSTRUCTION NOTES

1. All road widths and radii are to flow line or edge of pavement unless noted otherwise. Any "spot" design elevations are to flow line of curb and gutter unless otherwise noted.

2. Prior to pavement placement, the pavement prism should be stripped of all unsuitable materials. The subgrade soils shall be scarified to a depth of 12-inches, moisture conditioned, and recompacted to a minimum of 95% of the standard Proctor maximum dry density, within ±2% of optimum moisture as determined by AASHTO T-99.

3. All existing asphalt pavement areas where new pavement will be placed shall be milled a minimum of 2" deep for a 2-ft width, unless otherwise noted.

4. Asphalt pavement mix shall be Grade SX, PG 64-22, 75 gyration unless otherwise noted.

5. Asphalt pavement section shall be 6-inch HMA (3 lifts of 2-inches) over 6-inch CDOT Class VI over 15-inches of Class III / Pit Run material.

WATER LINE CONSTRUCTION

1. The contractor may need to relocate an 8-inch water main where it crosses the storm sewer near 23-1/2 Road.

2. All water line and water service construction shall be constructed in accordance with the Ute Water District Standards and Specifications.

3. Contractor shall notify the Ute Water Conservancy 24 hours prior to the beginning of construction of any water line related work.

4. Minimum cover required over top of new waterlines is 4'-6".

5. All water mains to be DR-18 PVC, conforming to AWWA C-900.

6. Ductile Iron fittings to conform to AWWA C-110.

7. All materials labor and equipment required for testing and disinfection of water lines shall be furnished by Contractor. Disinfection of water lines shall conform to AWWA C-651-86 or latest revision thereof.

8. All pipe bends/angle points, both horizontal and vertical, as called for on the plans are to be thrust blocked per Ute Water Conservancy District details and Technical Specifications.

9. All Ute Water Mains are to be bedded per City of Grand Junction Standards.

STORM SEWER CONSTRUCTION NOTES

1. All storm sewer line construction shall be in accordance with the City of Grand Junction Standards and Specifications.

2. All Reinforced Concrete storm sewer pipe shall conform to ASTM Standard Specifications, C-76, Class III unless otherwise noted.

3. All High Density Polyethylene (HDPE) pipe and fittings shall be watertight ADS N-12 WT or equal and shall conform to the following:
12 inch to 36 inch shall meet ASSHTO M294
42 inch to 48 inch shall meet ASSHTO MP6

4. Storm / Irrigation waste ditch lines 24-inches and smaller placed in the Canning Factory Drain and/or 23-1/2 Road Drain shall be Class III reinforced concrete pipe installed without pipe gaskets, unless otherwise noted.

5. Storm sewer pipe used for the Canning Factory & 23-1/2 Road Drains shall include 2-ft of 1-1/2" rock stabilization below the pipe and continue to a minimum of 6-inches above the top of the pipe. A Class A geofabric wrap along the bottom, south, and top of 1-1/2" rock bedding.

6. Class III Pit Run trench backfill material shall be used in all storm sewer locations located under asphalt pavement or concrete.

FUGITIVE DUST CONTROL PLAN

1. Before clearing/grubbing areas within the project, the surface is to be pre-wet to control dust.

2. Any stockpiles of stripping materials are to be periodically sprayed with water or a crusting agent to stabilize potentially wind blown material.

3. Haul road both into and around the site are to be sprayed as needed to suppress dust.

4. Trucks hauling import fill are to be tarped to aid in the control of airborne dust.

SUMMARY OF APPROXIMATE QUANTITIES

Item #	Item Description	Unit	Quantity
REMOVAL / DEMO			
1	Full-Depth Removal of Asphalt Mat	SY	323
2	2-inch Deep X 2-ft Wide Asphalt Milling	SY	353
3	Pavement Grinding to Remove Existing Striping	LS	1
4	Remove Existing Curb and Gutter	LF	110
5	Remove 30" Pipe	LF	447
6	Remove Misc. Pipe 8", 18"	LF	59
7	Remove 54" Flared End Section – Return To City Shops	EA	1
8	Clear and Grub. Includes all vegetation and non-earthen materials.	LS	1
9	3' Deep Clear and Grub of Tree Roots At South side of G Road	LS	1
10	Remove / Reset Signs	EA	5
UTILITIES			
11	Lower 8" Ute Water Main at 23-1/2 Road (Sta 4+00) , including all fittings, restraints,thrust blocks, flushing, chlorination and testing	EA	1
12	8-inch Storm Sewer Pipe Connection - Sta 5+57.50	EA	1
13	10-inch Storm Sewer Pipe, including bedding, backfill, and compaction	LF	39
14	12-inch Storm Sewer Pipe, including bedding, backfill, and compaction	LF	6
15	18-inch Storm Sewer Pipe, including bedding, backfill, and compaction	LF	76
16	36-inch RCP Storm Sewer Pipe, including bedding, backfill, and compaction	LF	40
17	54-inch RCP Storm Sewer Pipe, including bedding, geotextile, pit-run backfill, and compaction	LF	359
18	60-inch RCP Storm Sewer Pipe, including bedding, geotextile, Pit Run backfill, and compaction	LF	76
19	60-inch RCP Storm Sewer Pipe, including bedding, geotextile, suitable backfill, and compaction	LF	752
20	36" RCP Flared End Section	EA	1
21	60" RCP Flared End Section	EA	1
22	CDOT 54" T-Base Manhole & Connection	EA	1
23	CDOT 60" T-Base Manhole & Connection	EA	4
24	CDOT 5x8 Special Box Manhole	EA	1
25	Small Area Inlet	EA	2
26	Single Curb Inlet	EA	1
27	Trench/Manhole Stabilization – Remove/Dispose of 2-ft unsuitable and replace with 2-ft 1-1/2" Rock	SY	300
28	Bypass pumping	LS	1
29	Adjust Valve Boxes To Finished Grade	EA	6
30	Adjust Manhole	EA	1
31	1-inch Electrical Conduit under G Road, including 90 degree sweeps at each end and pull string	LF	120
CONCRETE			
32	Standard concrete curb and gutter (2' Wide)	LF	407
33	25-ft Concrete Intersection Area at Sta 16+00, Including V-Pan, Fillets, and Curbs	SY	82
34	8" Thk. Class P Concrete with #4 Bar @ 12" On Center Each Way Reinforcement, including 6" Curb	SY	198
35	4" Thk. Concrete including 6" Class VI ACB	SY	113
36	Concrete Handicap Ramp and Cast Iron Detectable Mat	EA	6

STREETS			
37	Earthwork -Cut/Fill with Compaction	LS	1
38	Reconditioning Subgrade Under Roadways & Concrete	SY	3299
39	Geogrid (Tensar BX1200)for Stabilization	SY	200
40	15" Thk, Class III / Pit Run (Roadways and Bus Areas)	SY	2810
41	6" Thk Class VI ABC (Roadway, Curb/Gutter, Bus Areas)	SY	2810
42	6" Class VI Shoulders	SY	418
43	6" Thk Hot Bituminous Pavement, three lifts, Grading SX, PG 64-22	SY	2118
44	4" Thk Asphalt Trench Repair w/ 15" Pit Run and 10" Class VI ABC Base (Pipe Sta 11+50)	SY	31
45	6" Thk Asphalt Trench Repair w/ 6" Class VI ABC Base - (Street Sta 12+00)	SY	42
46	6" Thk Asphalt Trench Repair w/ 6" Class VI ABC Base - (Street Sta 19+75)	SY	42
47	Adjust Manhole	EA	
48	4" Double Yellow Striping (Dashed and/or solid)	LF	3120
	4" White Edge Striping	LF	2610
49	8" White Channel Line	LF	120
50	Thermoplastic Turn Arrows	EA	4
51	Thermoplastic Crosswalk Striping	SF	160
52	Pedestrian Crosswalk Signs	EA	4
53	Seeding (hydroseeding/hydromulch application) of disturbed soils in ROW and Easement Areas	ACRES	0.25
GENERAL CONDITIONS			
54	Dust Abatement	LS	1
55	Portable sanitary facility	LS	1
56	Construction Surveying	LS	1
57	Mobilization	LS	1
58	2 Each Message Board Notification for 7 days Prior To Construction	LS	1
59	Traffic Control Plan	LS	1
60	Traffic Control (complete in place).	LS	1
61	Storm Water Management	LS	1

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REVISIONS

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Land Planning • Civil Engineering • Development Services
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(970) 242-7540

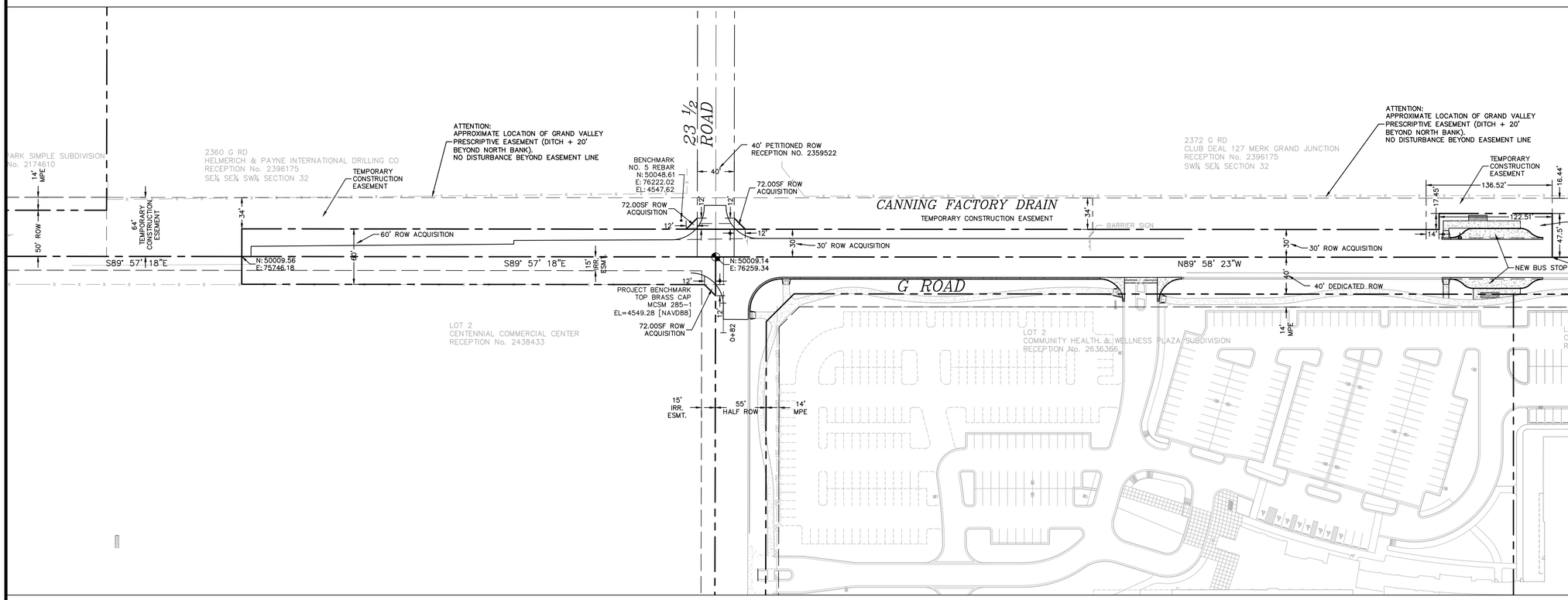
G ROAD – PHASE II

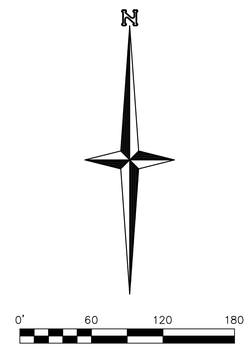
description
GENERAL NOTES AND QUANTITIES

prepared for
CITY OF GRAND JUNCTION

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
LMS	LMS	MRA	MRA

JOB NUMBER: 1024.0004
DATE: 04/20/15
SCALE: NTS
SHEET NO: C-3





CITY OF GRAND JUNCTION ENGINEERING

APPROVED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE.

BY: _____ DATE: _____

ACCEPTED AS CONSTRUCTED

BY: _____ DATE: _____

"All details, construction, inspections, and testing shall conform to the City of Grand Junction Standard Contract Documents for Capital Improvements Construction. Contractor shall have a copy of the accepted plans and current City of Grand Junction Standard Documents for Capital Improvements Construction on site and available at all times."

COLORADO REGISTERED
20778
5/8/15
PROFESSIONAL ENGINEER

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G ROAD – PHASE II

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RIGHT OF WAY ACQUISITION PLAN

prepared for
CITY OF GRAND JUNCTION

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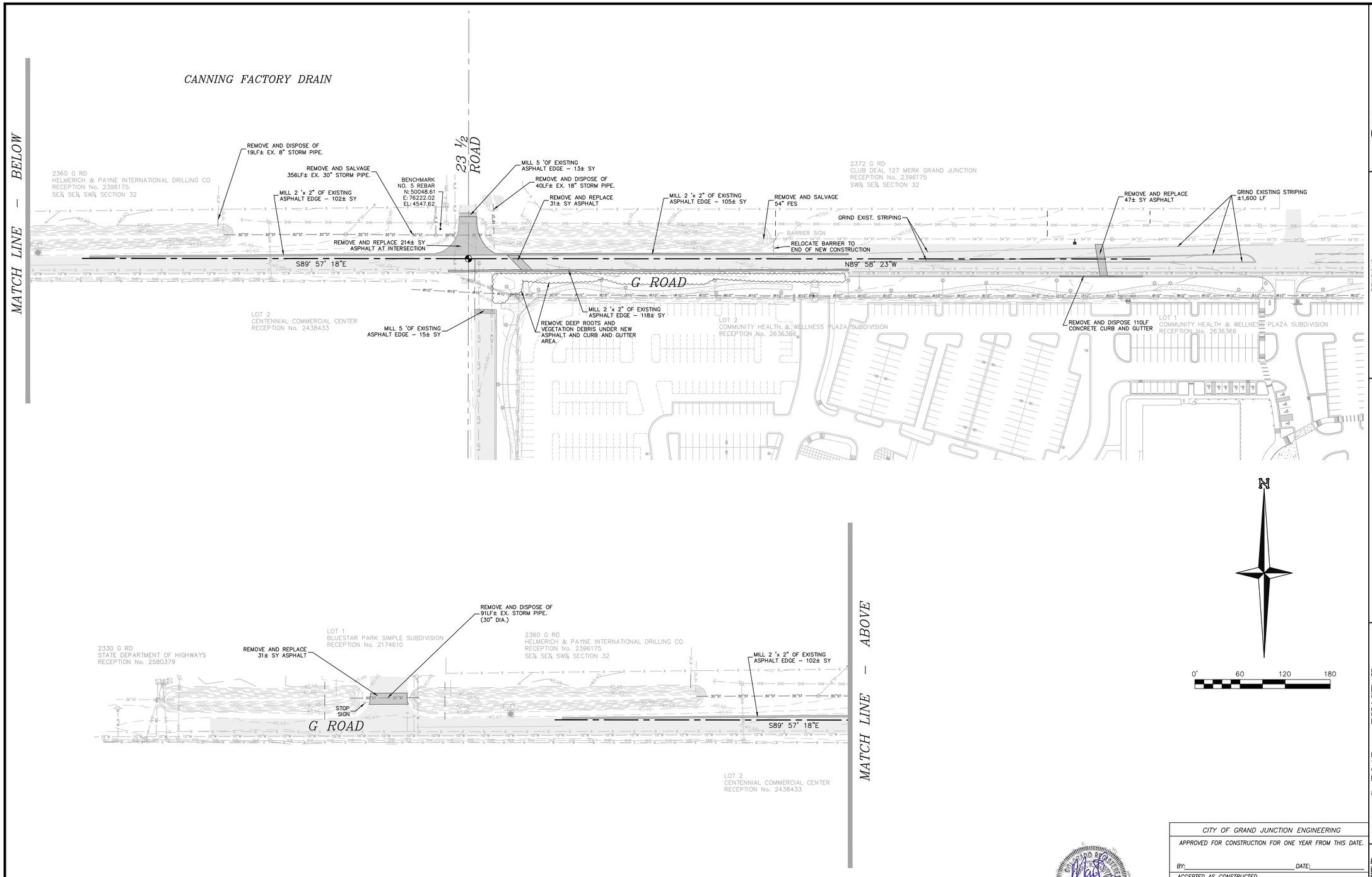

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G ROAD – PHASE II
description
DEMOLITION PLAN
prepared for
CITY OF GRAND JUNCTION

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
LMS	LMS	MRA	MRA

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DATE: 04/20/15
SCALE: 1"= 60'
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COLORADO REGISTERED 20779 PROFESSIONAL ENGINEER 5/8/15

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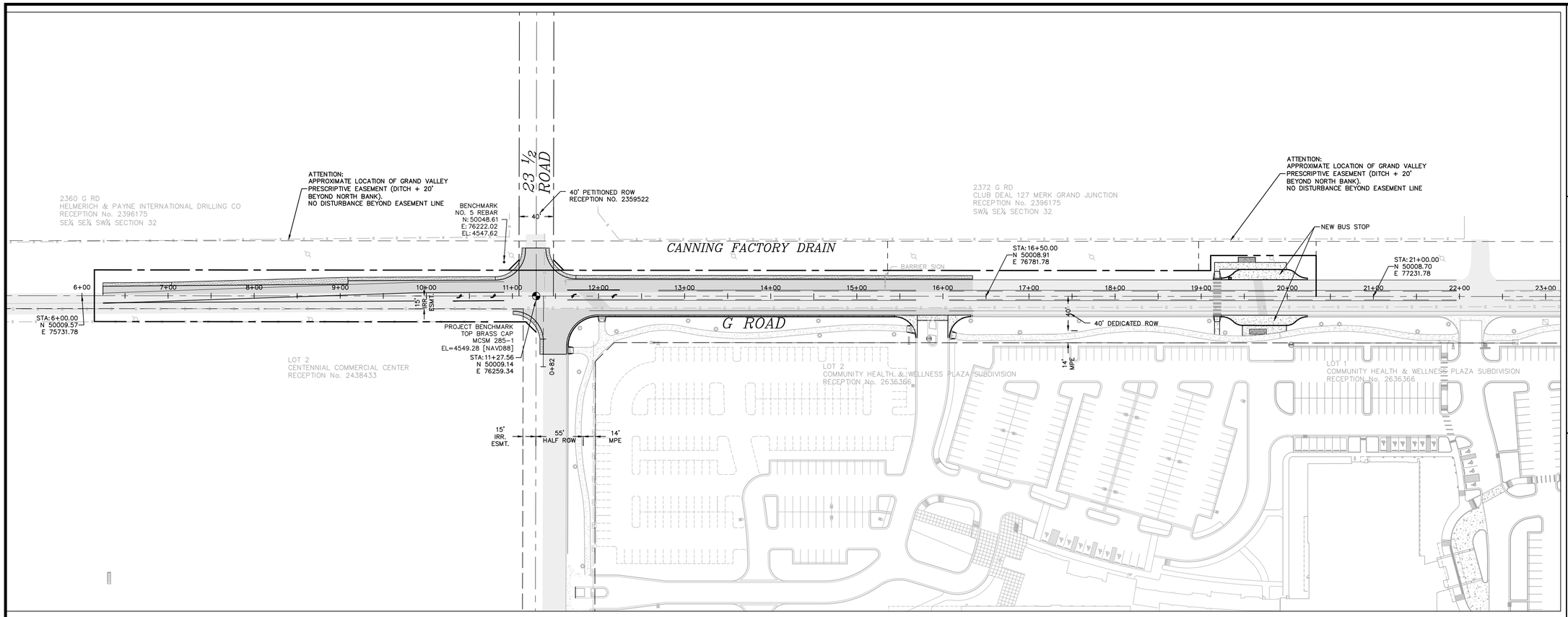

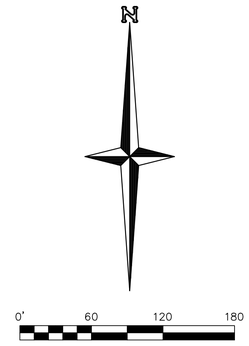

CITY OF GRAND JUNCTION ENGINEERING

APPROVED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE.

BY: _____ DATE: _____

ACCEPTED AS CONSTRUCTED

BY: _____ DATE: _____

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Land Planning ▪ Civil Engineering ▪ Development Services
123 N. 7th Street, Suite 300 ▪ Grand Junction, Colorado 81501
(970) 242-7540

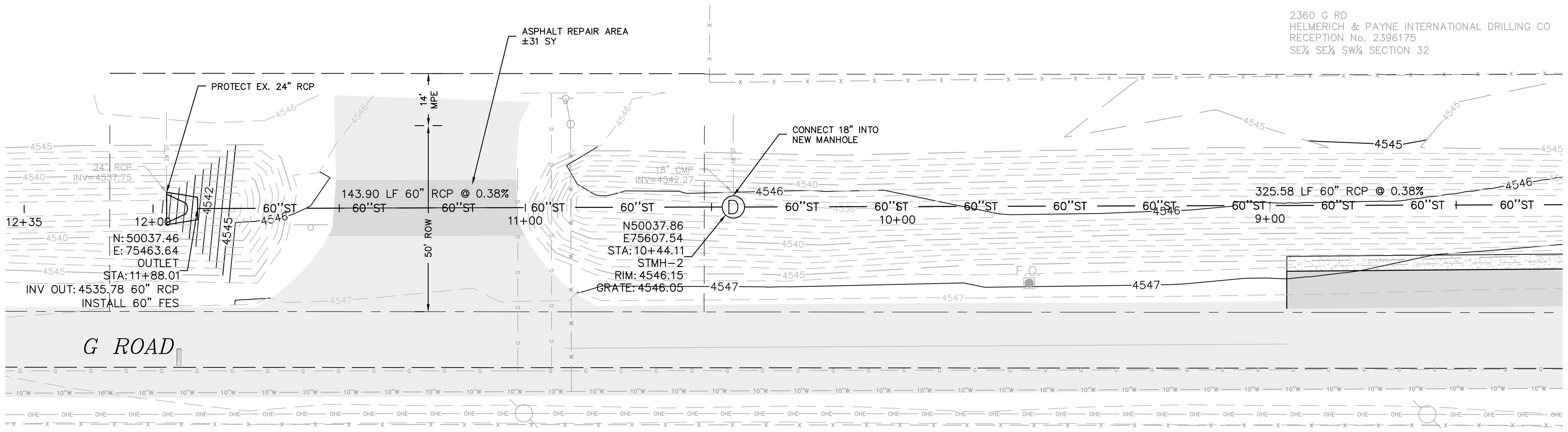
G ROAD – PHASE II

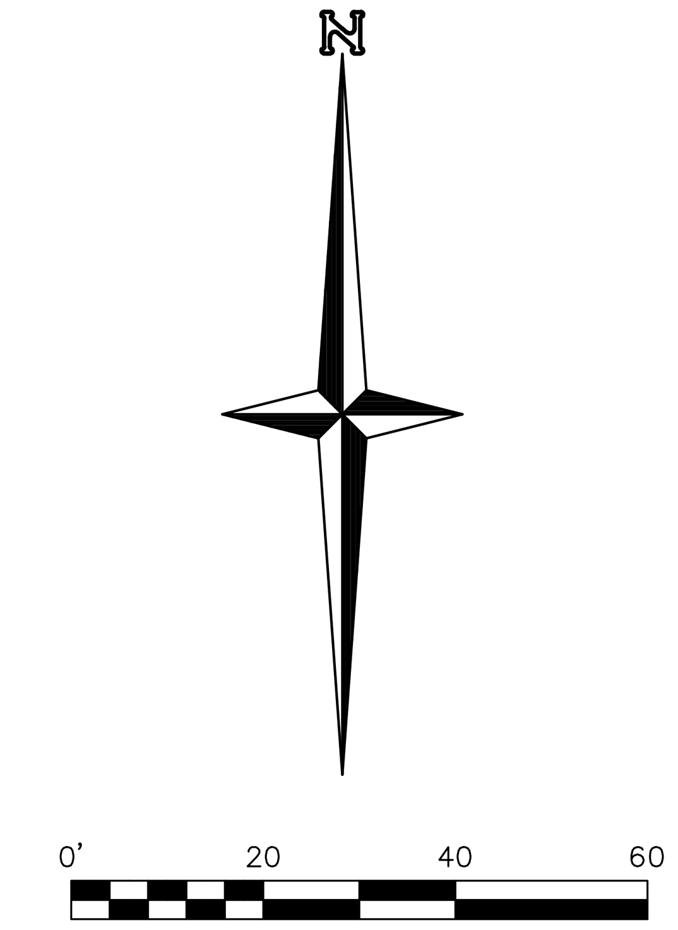
description
OVERALL SITE PLAN
AND SURVEY CONTROL

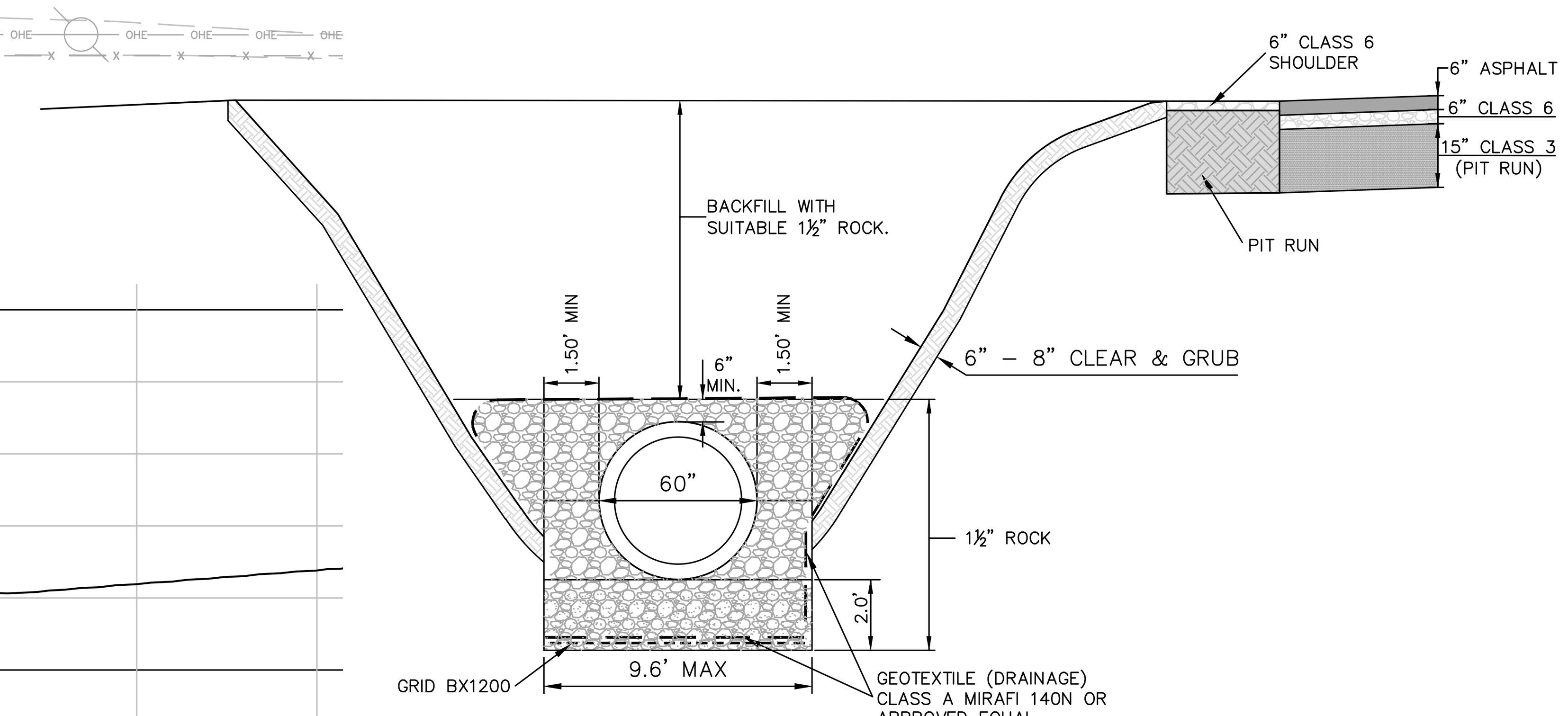
prepared for
CITY OF GRAND JUNCTION

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
LWS	LWS	MRA	MRA

JOB NUMBER: 1024.0004
DATE: 04/20/15
SCALE: 1"= 60'
SHEET NO: C-6

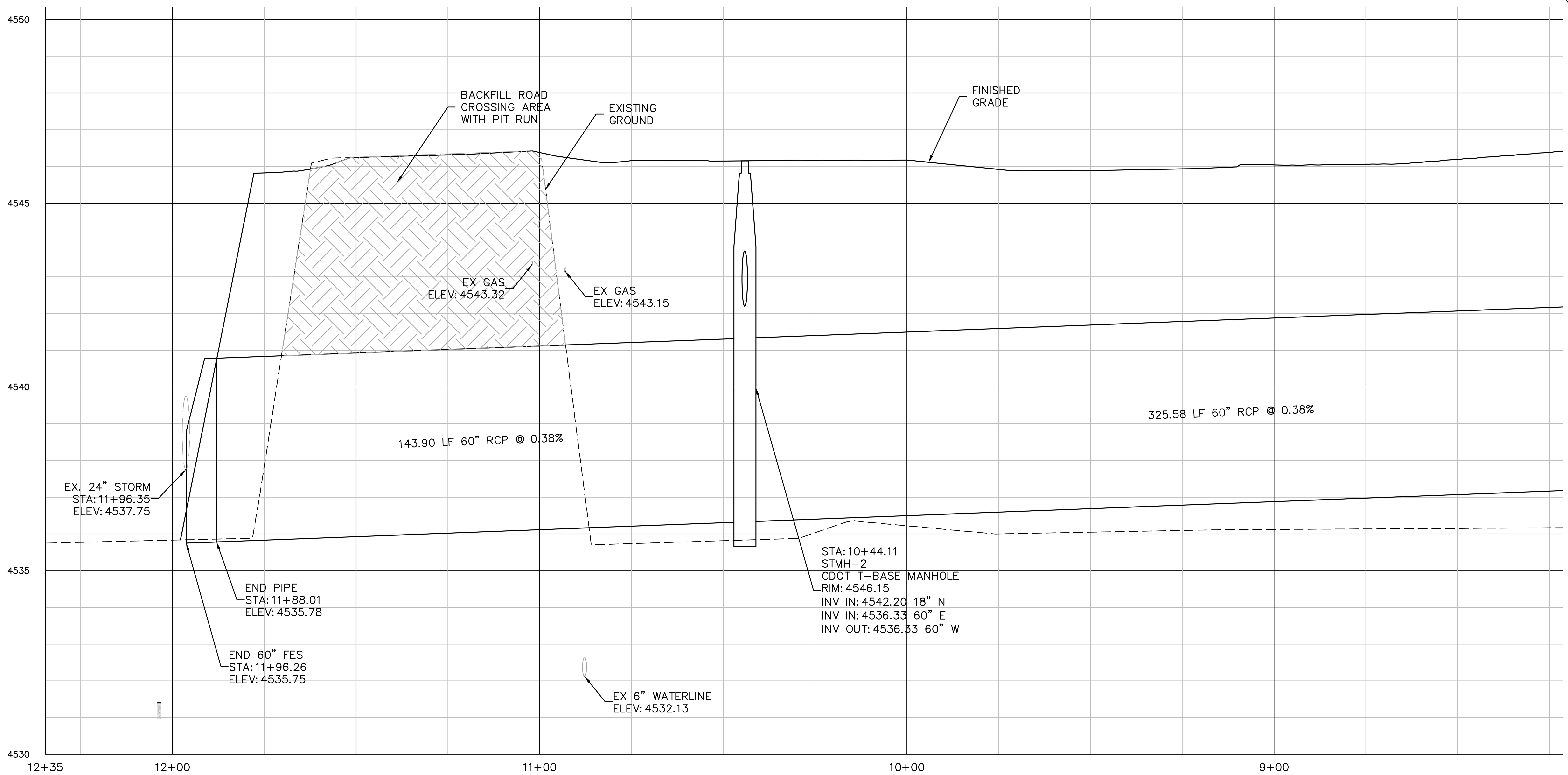






TYPICAL SECTION
60" STORM DRAIN INSTALLATION
STA: 4+35 TO STA: 11+00
11+63 TO END

STA: 11+00 TO STA: 11+63
TO BE BACKFILL WITH PIT RUN



STORM LINE–1
HORIZONTAL: 1"=20', VERTICAL: 1"=2'

GRAND VALLEY DRAINAGE DISTRICT	
APPROVED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE.	
BY:________	DATE:________
ACCEPTED AS CONSTRUCTED	
BY:________	DATE:________
CITY OF GRAND JUNCTION ENGINEERING	
APPROVED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE.	
BY:________	DATE:________
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COLORADO REGISTERED PROFESSIONAL ENGINEER 5/8/15

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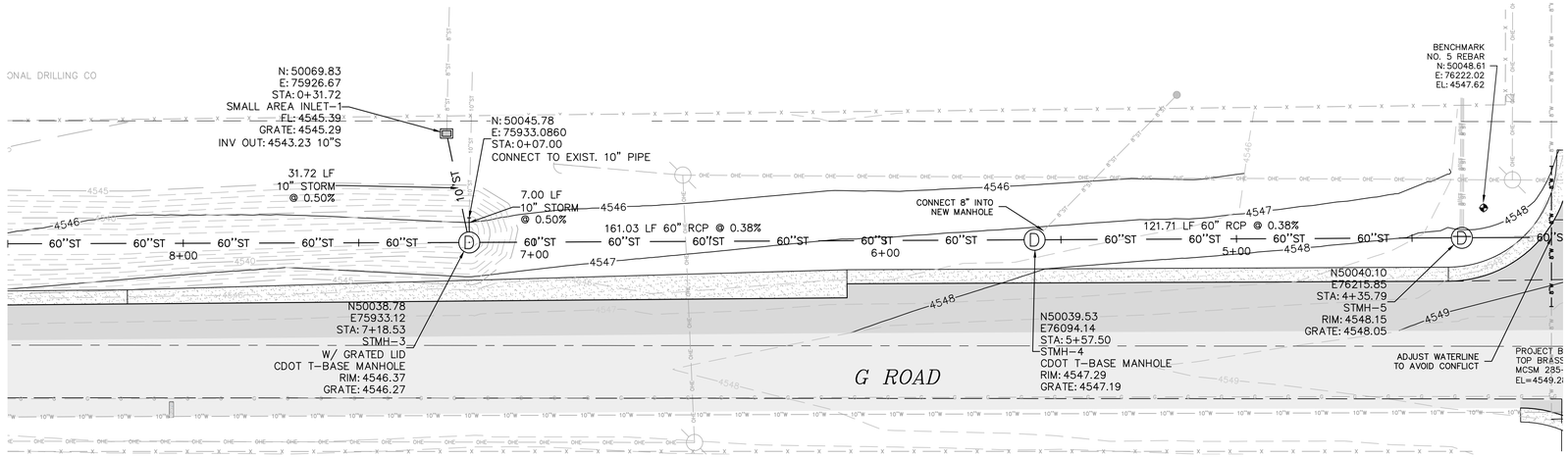
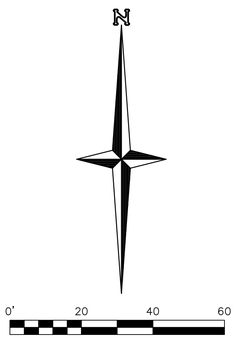
(970) 242-7540

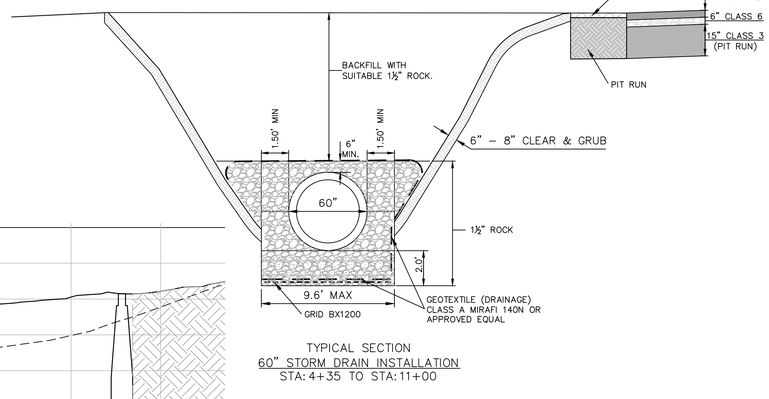
G ROAD
description
STORM SEWER LINE-1
PLAN AND PROFILE
prepared for
CITY OF GRAND JUNCTION

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
LMS	LMS	MRA	MRA

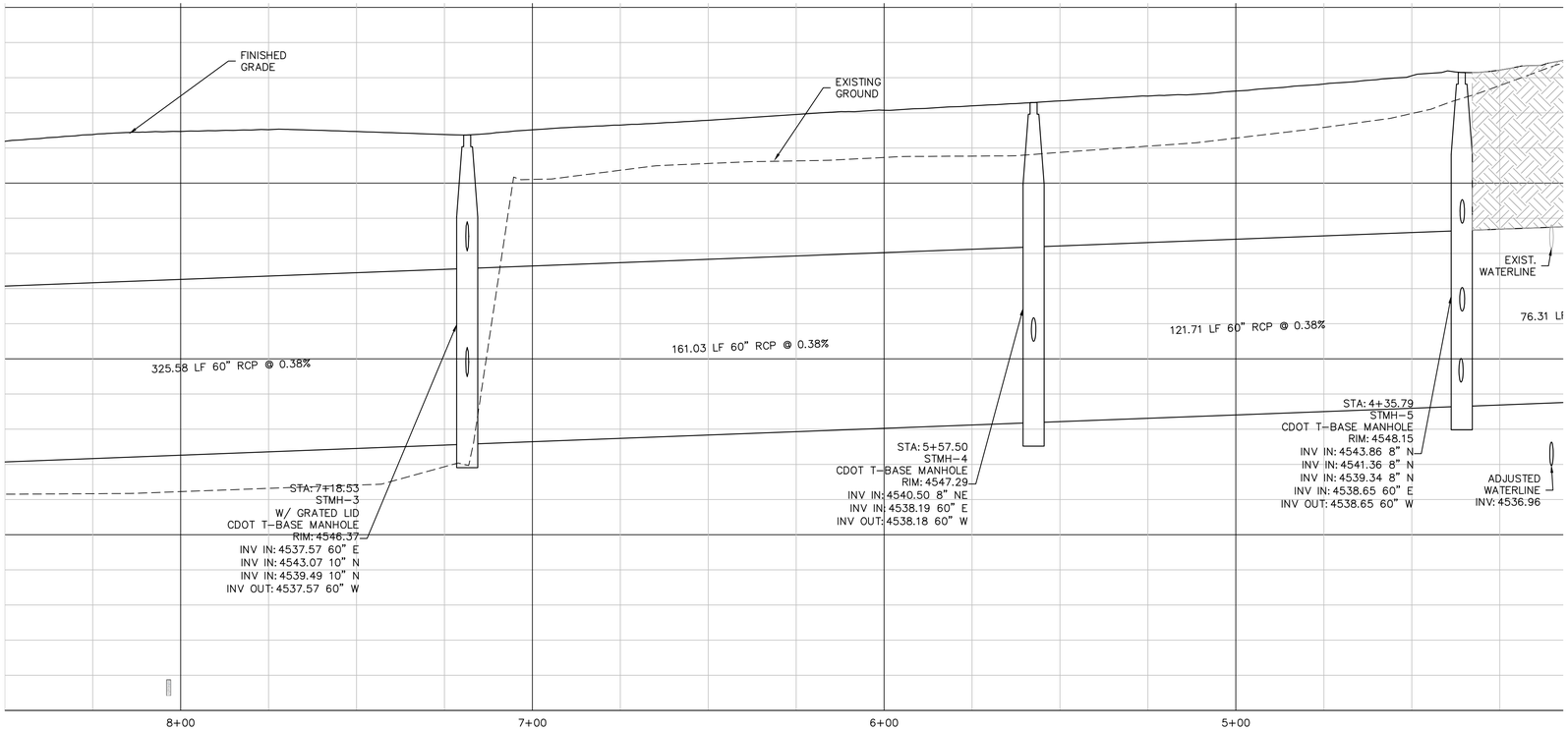
JOB NUMBER: 1024.0004
DATE: 04/20/15
SCALE: 1"= 20'
SHEET NO: C-7







TYPICAL SECTION
60" STORM DRAIN INSTALLATION
STA: 4+35 TO STA: 11+00



STORM LINE-1
HORIZONTAL: 1"=20', VERTICAL: 1"=2'

COLORADO REGISTERED
LANCE M. SMITH
26778
PROFESSIONAL ENGINEER
5/18/15

GRAND VALLEY DRAINAGE DISTRICT
APPROVED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE.
BY: _____ DATE: _____
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BY: _____ DATE: _____
CITY OF GRAND JUNCTION ENGINEERING
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G ROAD
description
STORM SEWER LINE-1
PLAN AND PROFILE
prepared for
CITY OF GRAND JUNCTION

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LMS	LMS	MRA	MRA

JOB NUMBER: 1024.0004
DATE: 04/20/15
SCALE: 1"= 20'
SHEET NO: C-8

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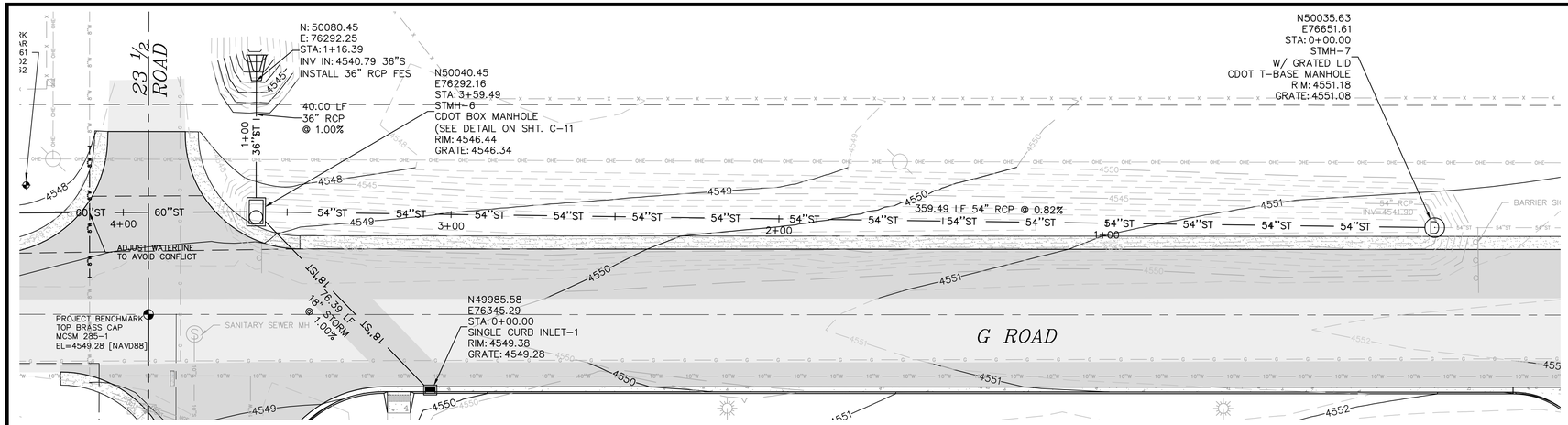
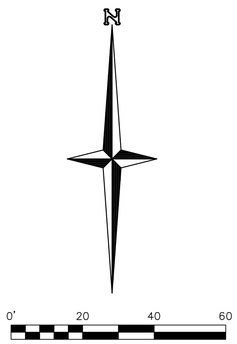
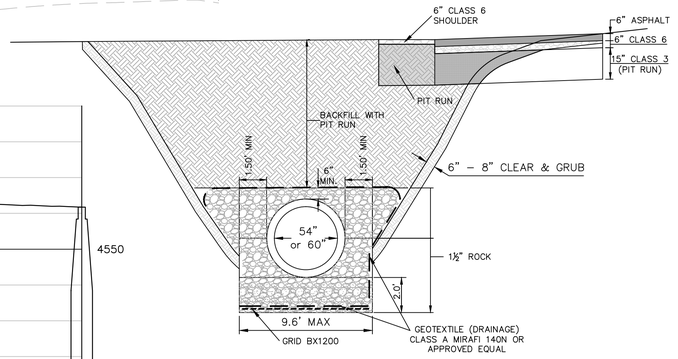
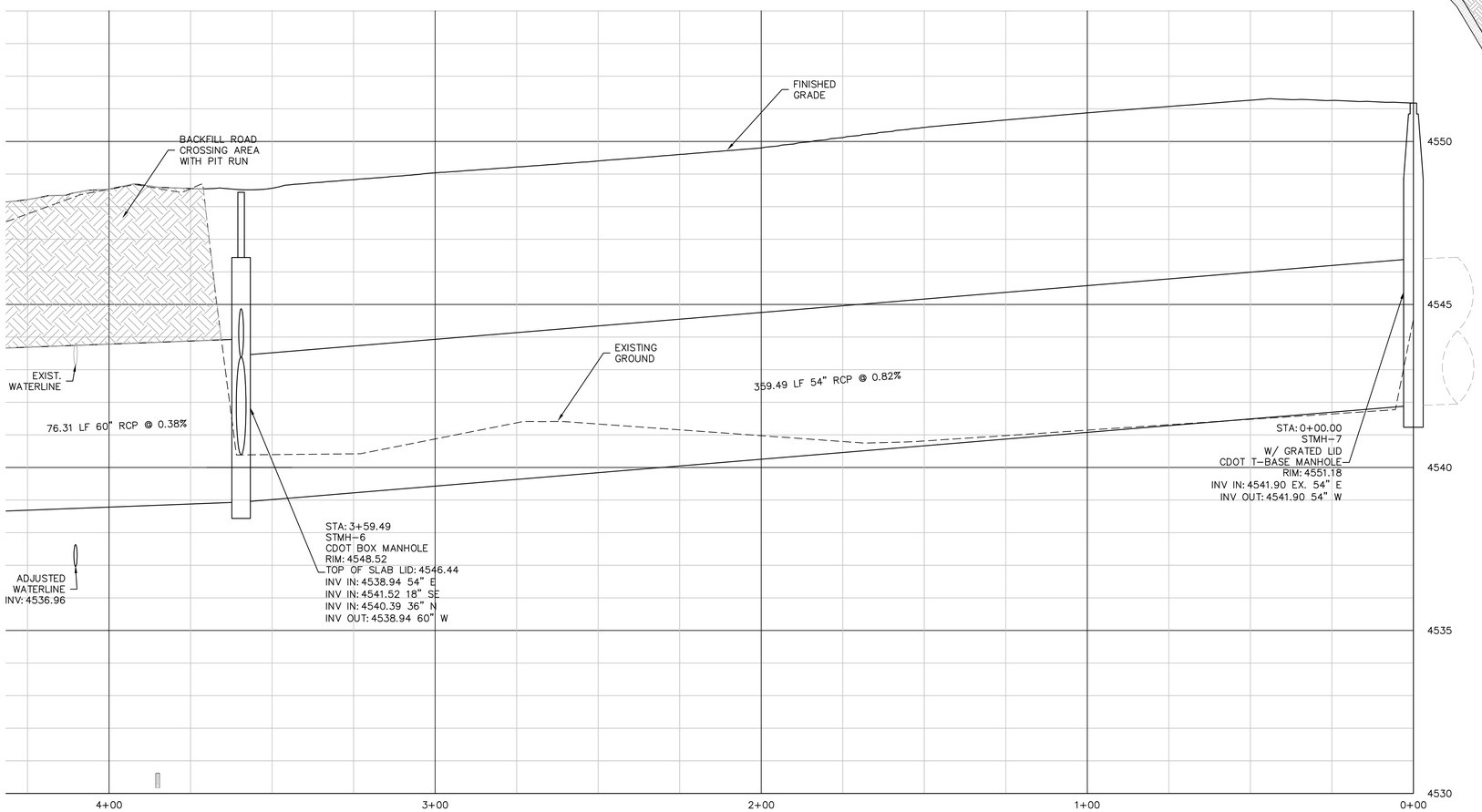






TYPICAL SECTION
60" & 54" STORM DRAIN INSTALLATION
STA: 0+00 TO 4+35



STORM LINE-1
HORIZONTAL: 1"=20', VERTICAL: 1"=2'

GRAND VALLEY DRAINAGE DISTRICT
APPROVED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE.
BY: _____ DATE: _____
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BY: _____ DATE: _____
CITY OF GRAND JUNCTION ENGINEERING
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BY: _____ DATE: _____
ACCEPTED AS CONSTRUCTED
BY: _____ DATE: _____

STATE OF COLORADO REGISTERED 20778 PROFESSIONAL ENGINEER
5/8/15

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description
STORM SEWER LINE-1
PLAN AND PROFILE
prepared for
CITY OF GRAND JUNCTION

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JOB NUMBER: 1024.0004
DATE: 04/20/15
SCALE: 1"= 20'
SHEET NO: C-9

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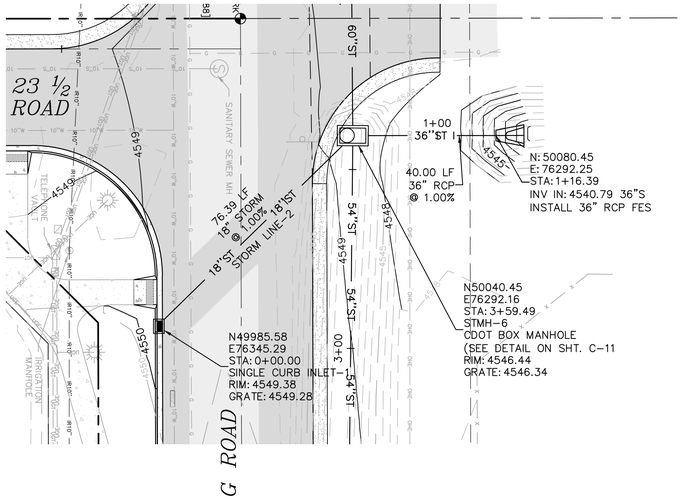

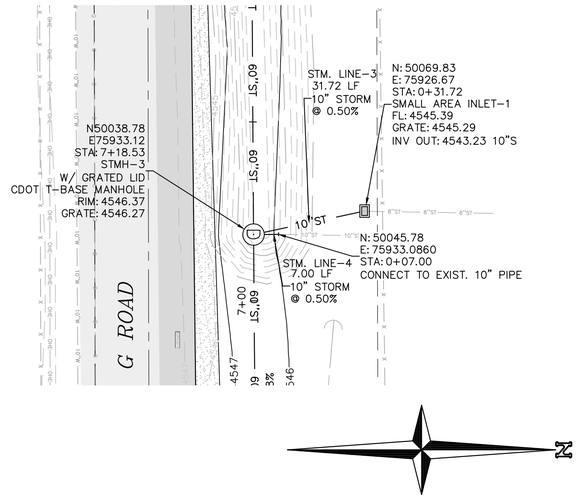

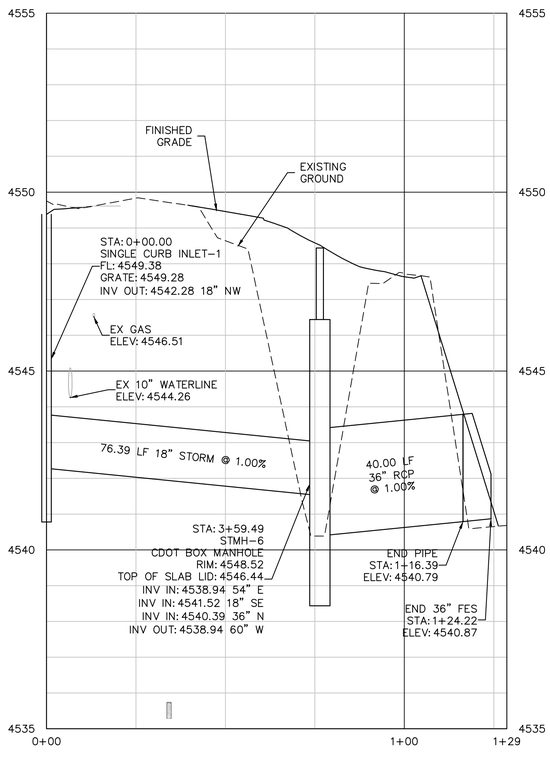

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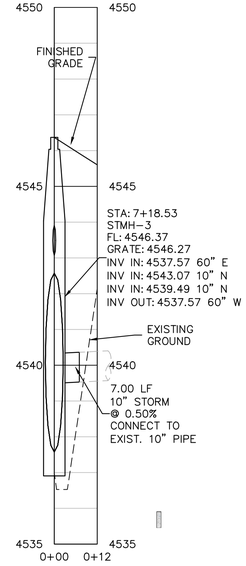
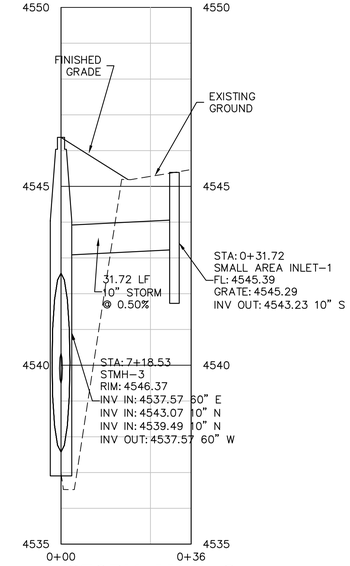
HORIZONTAL: 1"=20', VERTICAL: 1"=2'



STORM LINE-4
HORIZONTAL: 1"=20'
VERTICAL: 1"=2'



STORM LINE-3
HORIZONTAL: 1"=20'
VERTICAL: 1"=2'

GRAND VALLEY DRAINAGE DISTRICT	CITY OF GRAND JUNCTION ENGINEERING
APPROVED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE.	APPROVED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE.
BY:_____ DATE:_____	BY:_____ DATE:_____
ACCEPTED AS CONSTRUCTED	ACCEPTED AS CONSTRUCTED
BY:_____ DATE:_____	BY:_____ DATE:_____

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G ROAD
description
STORM SEWER LINES-2 THRU 4
PLAN AND PROFILE

prepared for
CITY OF GRAND JUNCTION

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JOB NUMBER: 1024.0004
DATE: 04/20/15
SCALE: 1"= 20'
SHEET NO: C-10

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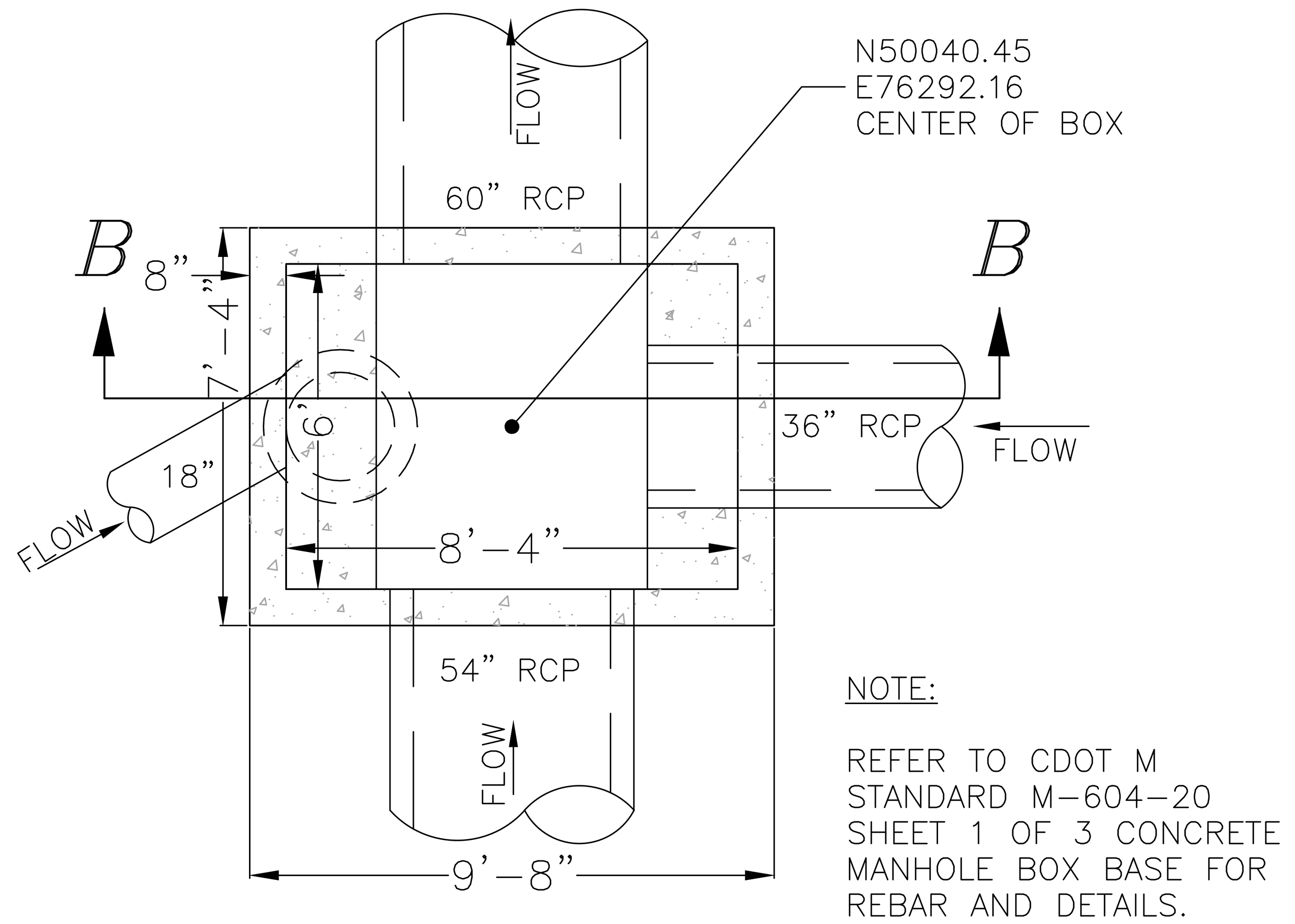
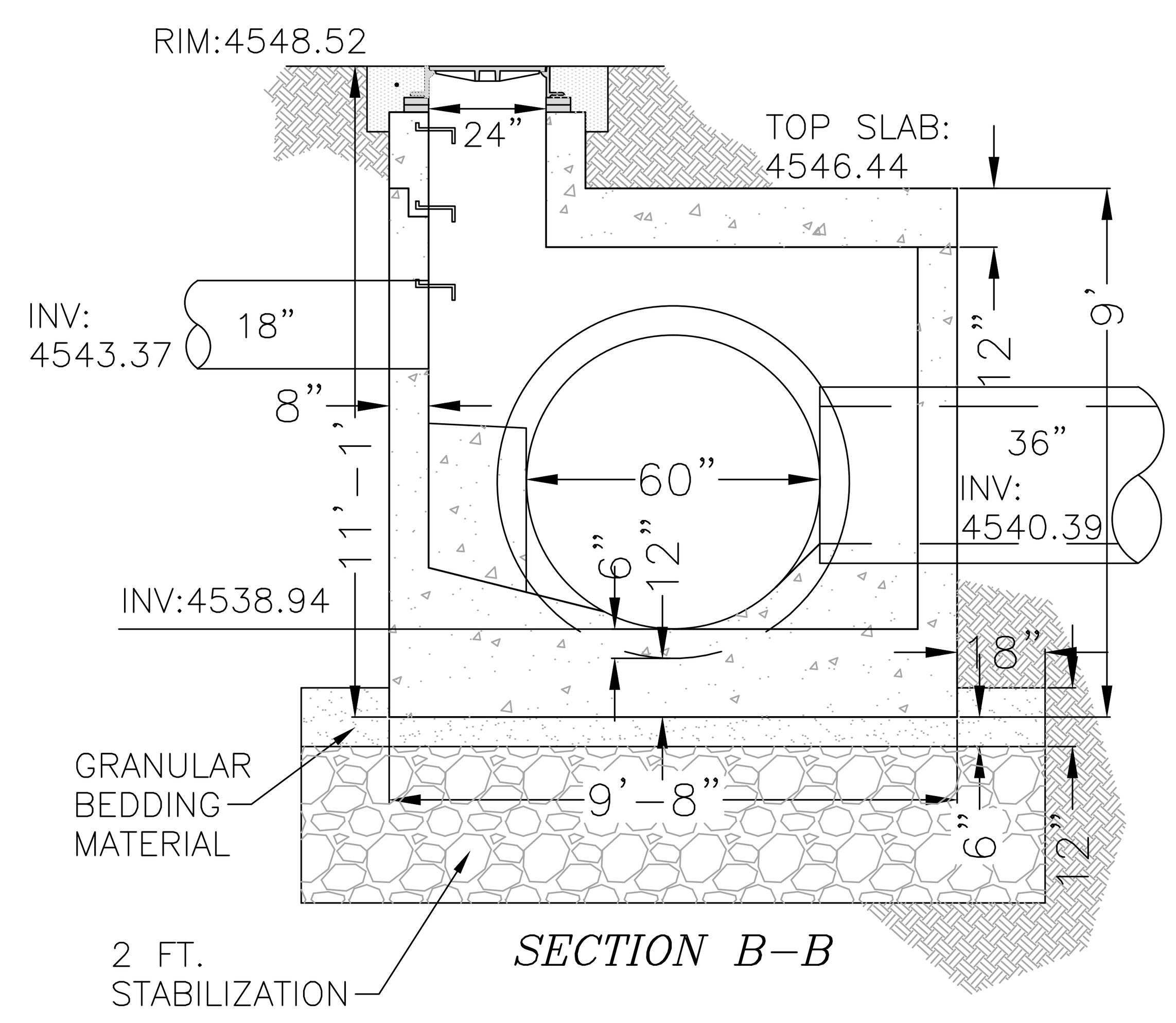


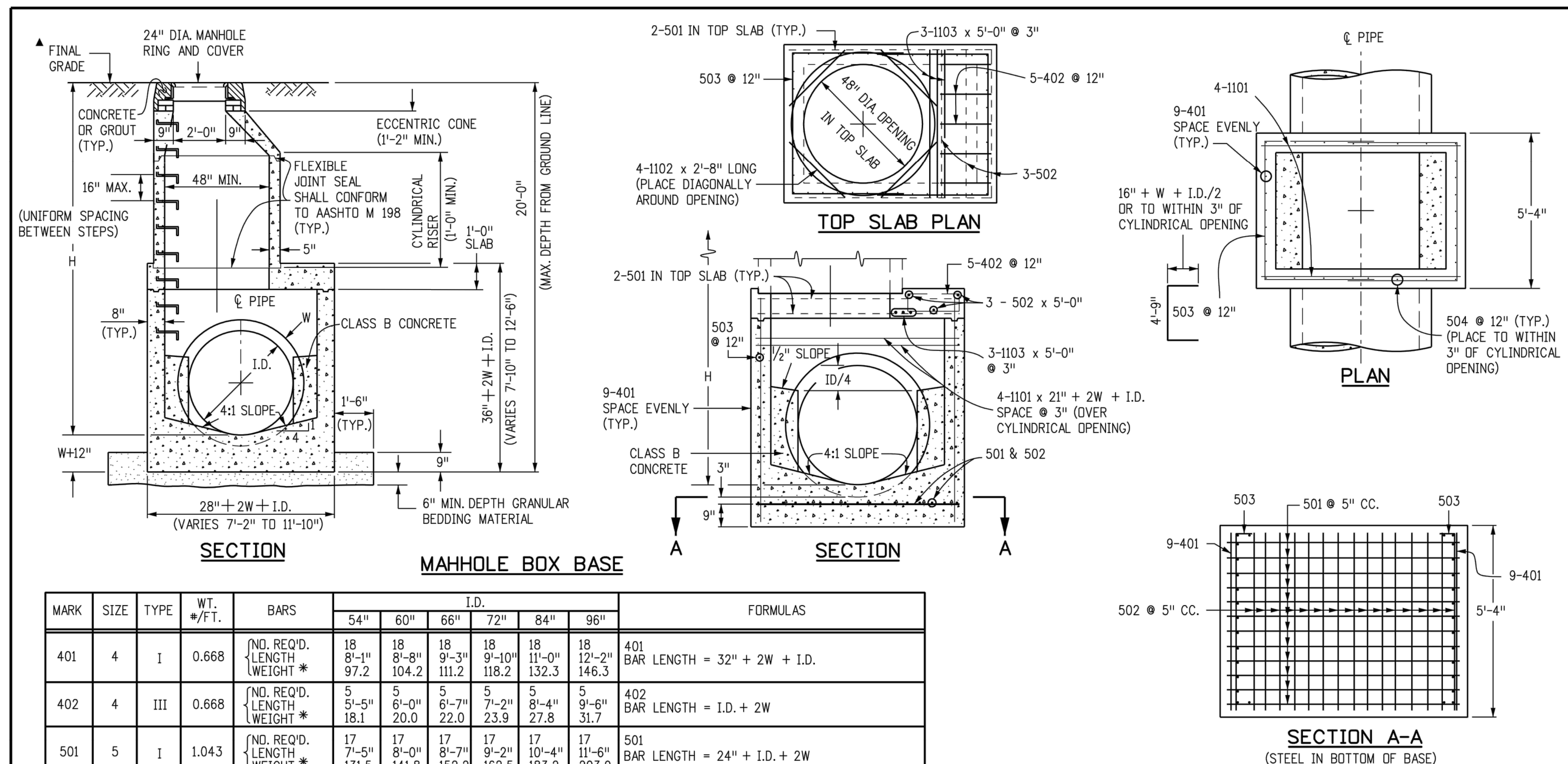


SECTION B-B

NOTE:

REFER TO CDOT M STANDARD M-604-20 SHEET 1 OF 3 CONCRETE MANHOLE BOX BASE FOR REBAR AND DETAILS. (ATTACHED BELOW)

CDOT SPECIAL BOX MANHOLE DETAIL



GENERAL NOTES

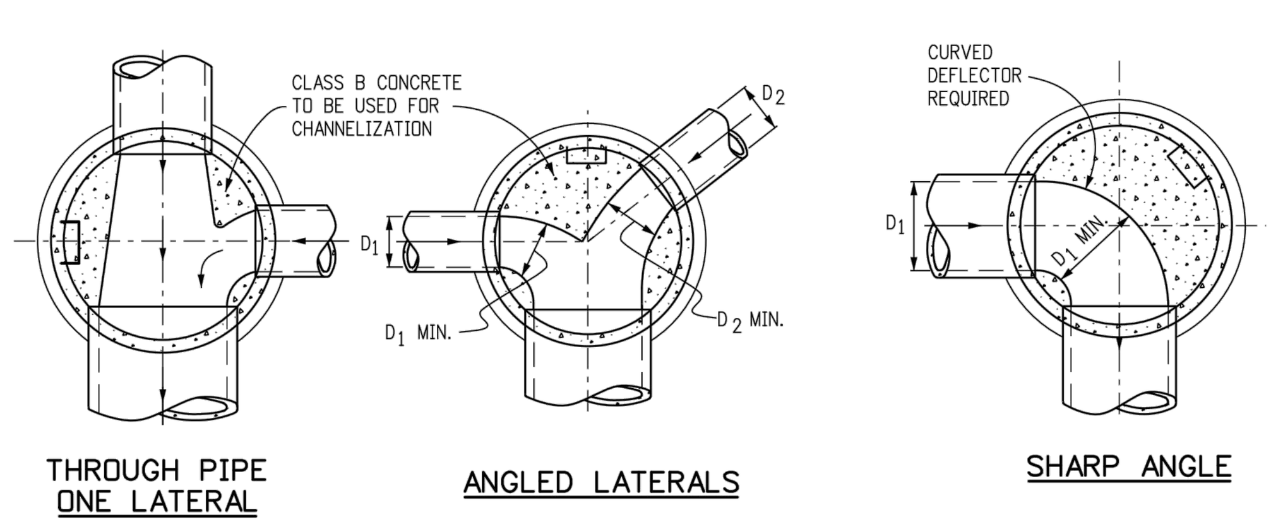
1. SINCE ALL PIPE ENTRIES INTO THE BASE ARE VARIABLE, THE DIMENSIONS SHOWN ARE TYPICAL. ACTUAL DIMENSIONS AND QUANTITIES FOR CONCRETE AND REINFORCEMENT SHALL BE AS REQUIRED IN THE WORK.
2. THE PRECAST FLAT TOP MAY BE USED ON ANY MANHOLE. THE ECCENTRIC CONE MAY BE USED WHEN THE MANHOLE "H" HEIGHT IS AT 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. = $3 + \left(\frac{24+I.D.+2W}{@\ 5"}+1\right)$
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. = $2\left(\frac{13+I.D.+2W}{@\ 12"}+1\right)$ BAR LENGTH = 4'-9"+2(16+W+I.D./2)
504	5	I	1.043	NO. REQ'D. LENGTH WEIGHT *	12 8'-1" 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. = $2\left(\frac{2W+I.D.-4}{@\ 12"}+1\right)$ BAR LENGTH = 32"+2W+I.D.
1101	11	I	5.313	NO. REQ'D. LENGTH WEIGHT *	4 7'-2" 152.3	4 7'-9" 164.7	4 8'-4" 177.1	4 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 56.7 2'-8"	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					6.0	6.6	7.3	8.0	9.5	11.1	

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

QUANTITIES FOR CONCRETE MANHOLE BOX BASE



TYPICAL CHANNELIZATION DETAILS

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Last Modification Date: 07/04/12	Initials: LTA	(R-X)
Full Path: www.coloradodot.info/business/designsupport		(R-X)
Drawing File Name: M06040200103.dgn		(R-X)
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English		(R-X)

Sheet Revisions	
Date:	Comments

Colorado Department of Transportation
4201 East Arkansas Avenue
Denver, Colorado 80222
Phone: (303) 757-9083
Fax: (303) 757-9820
Project Development Branch DD/LTA

MANHOLES

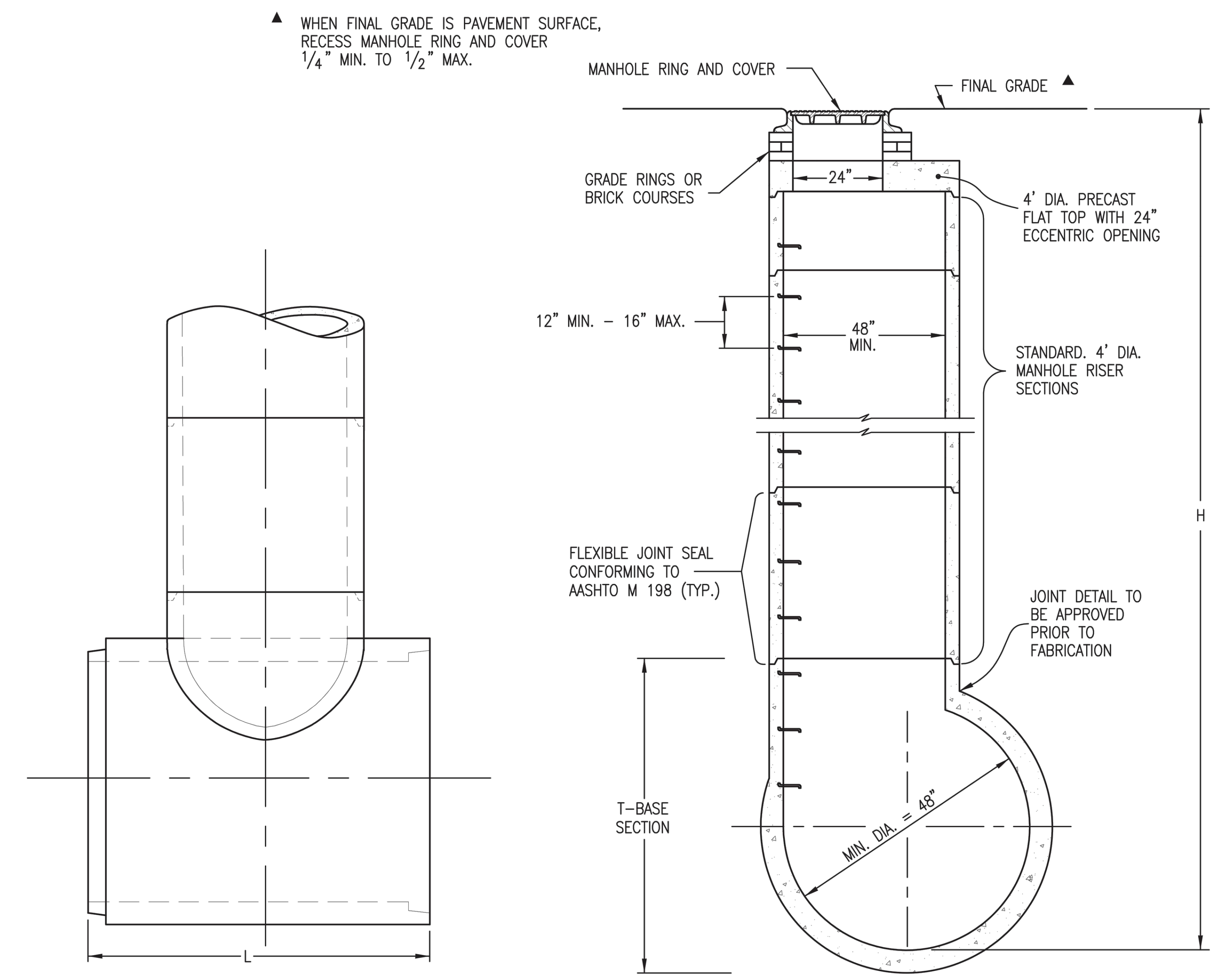
Issued By: Project Development Branch July 4, 2012

STANDARD PLAN NO.
M-604-20
Sheet No. 1 of 3

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.

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



CIRCULAR RIGID PIPE (LONGITUDINAL SECTION)

CIRCULAR RIGID PIPE (TRANSVERSE SECTION)

MANHOLE T-BASE

Know what's below. Call before you dig.

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123 N. 7th Street, Suite 300 ▪ Grand Junction, Colorado 81501
(970) 242-7540

G ROAD
description
G ROAD DETAILS
prepared for
CITY OF GRAND JUNCTION

5/8/15

CITY OF GRAND JUNCTION ENGINEERING

APPROVED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE.

BY:________________ DATE:__________

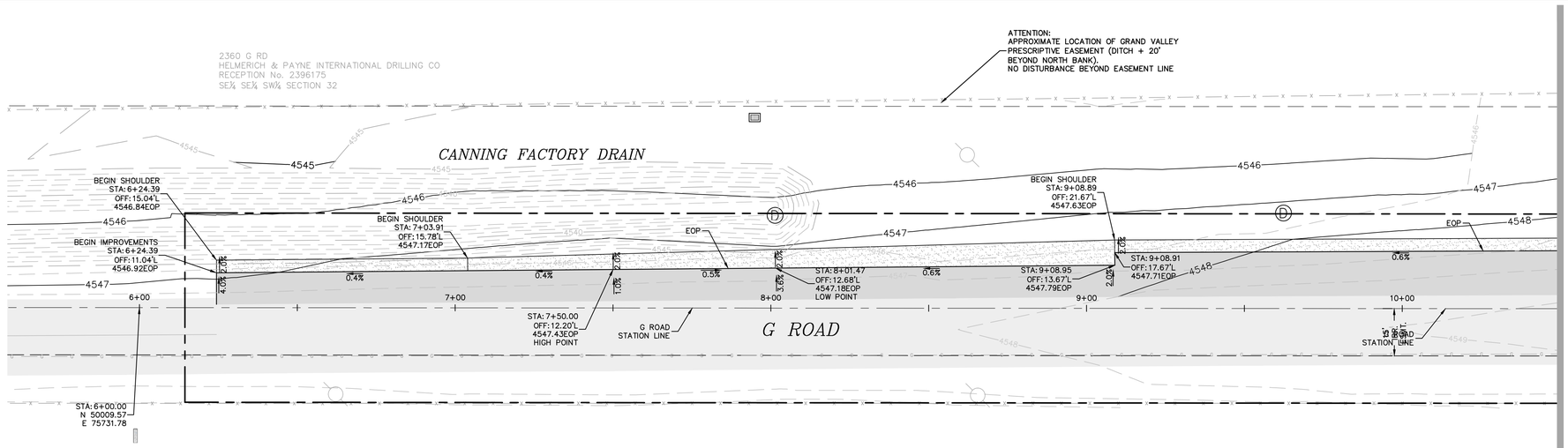
ACCEPTED AS CONSTRUCTED

BY:________________ DATE:__________

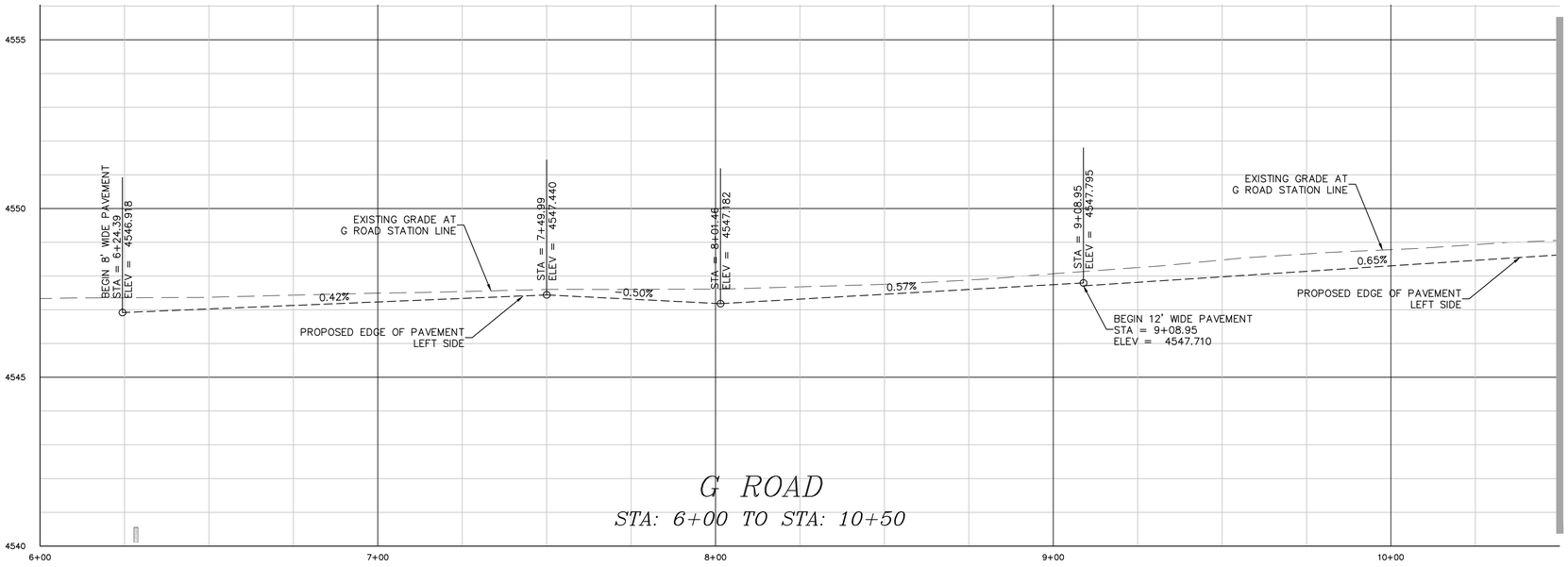
"All details, construction, inspections, and testing shall conform to the City of Grand Junction Standard Contract Documents for Capital Improvements Construction. Contractor shall have a copy of the accepted plans and current City of Grand Junction Standard Documents for Capital Improvements Construction on site and available at all times."

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
LMS	LMS	MRA	MRA

JOB NUMBER: 1024.0004
DATE: 04/20/15
SCALE: 1"= 20'
SHEET NO: C-11

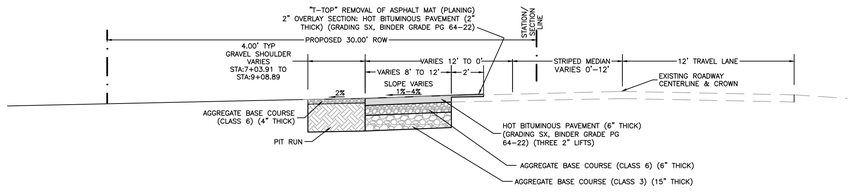


MATCH LINE – STA: 10+50

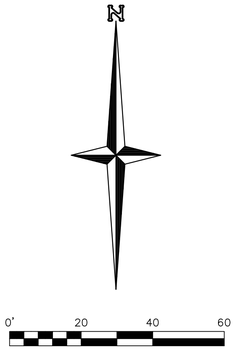


G ROAD

STA: 6+00 TO STA: 10+50



TYPICAL G ROAD SECTION: STA.6+24.39- STA.10+80.19



BENCHMARK
TOP BRASS CAP
MCSM 285-1
ELEV: 4549.28 [NAVD88]

CONTOUR INTERVAL:
EXISTING GROUND: 1'
FINISH GRADE: 1'

EXISTING GROUND 4580
FINISH GRADE 4580

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

SCALE VERIFICATION
BAR IS ONE INCH ON ORIGINAL DRAWING
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NO.	DESCRIPTION	REVISIONS	DATE	BY

A · C · G
AUSTIN CIVIL GROUP, INC
Land Planning ▪ Civil Engineering ▪ Development Services
123 N. 7th Street, Suite 300▪ Grand Junction, Colorado 81501
(970) 242-7540

G ROAD – PHASE II

description
G ROAD PLAN AND PROFILE
STA: 6+00 TO STA: 10.50

prepared for
CITY OF GRAND JUNCTION

COLORADO REGISTERED 28773 PROFESSIONAL ENGINEER 5/8/15

CITY OF GRAND JUNCTION ENGINEERING

APPROVED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE.

BY:_____ DATE:_____

ACCEPTED AS CONSTRUCTED

BY:_____ DATE:_____

"All details, construction, inspections, and testing shall conform to the City of Grand Junction Standard Contract Documents for Capital Improvements Construction. Contractor shall have a copy of the accepted plans and current City of Grand Junction Standard Documents for Capital Improvements Construction on site and available at all times."

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
LWS	LWS	MRA	MRA

JOB NUMBER: 1024.0004
DATE: 04/20/15
SCALE: 1"= 20'
SHEET NO: C-12

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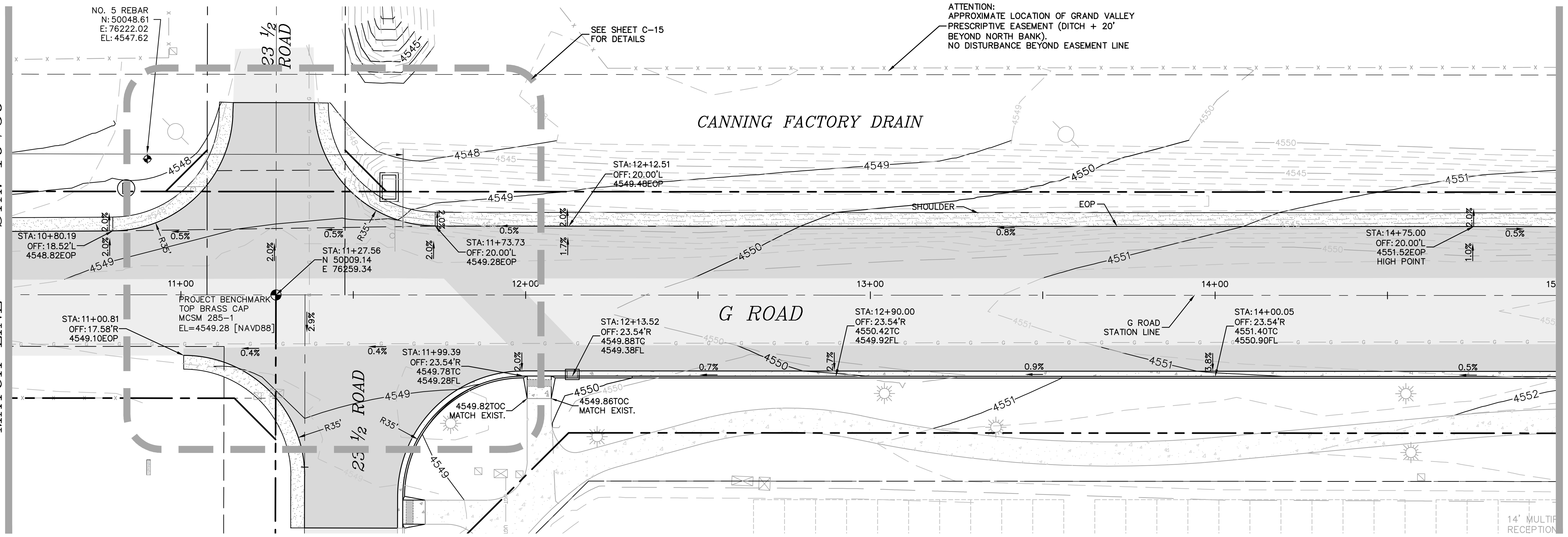
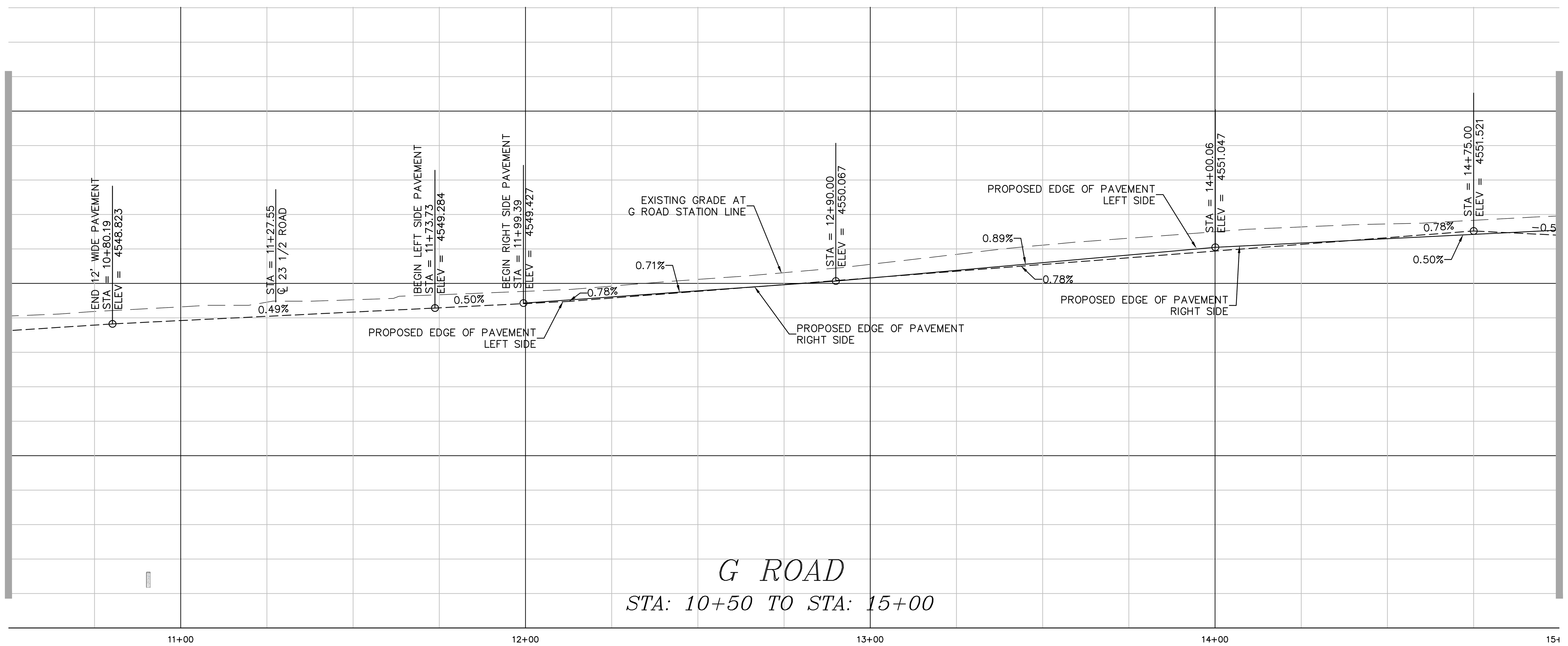
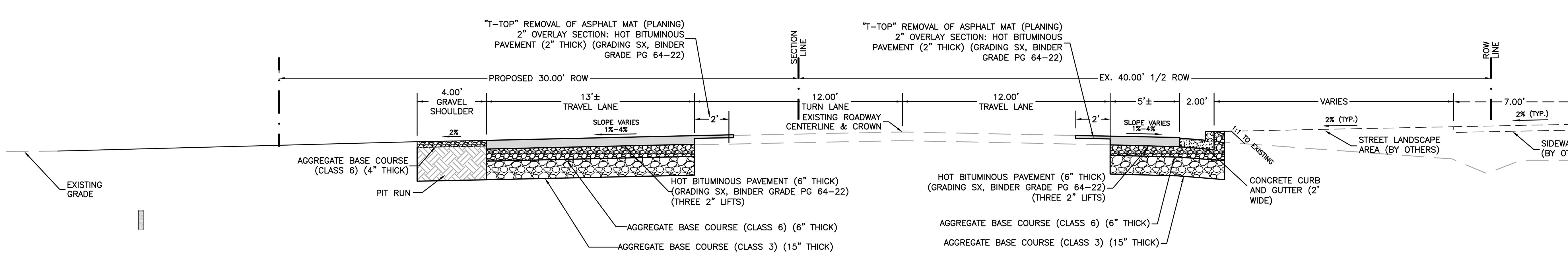


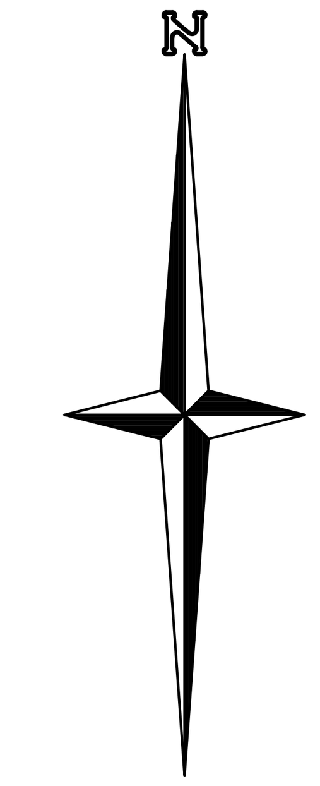


G ROAD

STA: 10+50 TO STA: 15+00



TYPICAL G ROAD SECTION: STA.11+73.73 - STA.16+34.46



0' 20 40 60

BENCHMARK
TOP BRASS CAP
MCSM 285-1
ELEV: 4549.28 [NAVD88]

CONTOUR INTERVAL:
EXISTING GROUND: 1'
FINISH GRADE: 1'

EXISTING GROUND 4580
FINISH GRADE 4580

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

SCALE VERIFICATION
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REVISIONS

NO.	DESCRIPTION	DATE	BY

A · C · G
AUSTIN CIVIL GROUP, INC
Land Planning • Civil Engineering • Development Services
123 N. 7th Street, Suite 300 • Grand Junction, Colorado 81501
(970) 242-7540

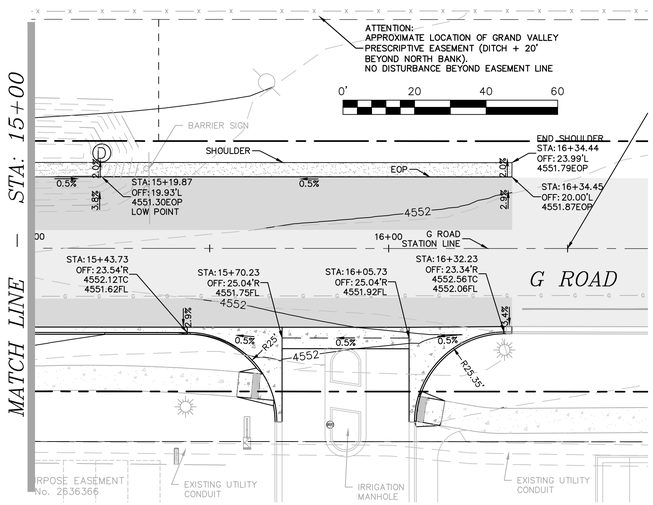
G ROAD – PHASE II
description
G ROAD PLAN AND PROFILE
STA:10+50 TO STA: 15+00
prepared for
CITY OF GRAND JUNCTION

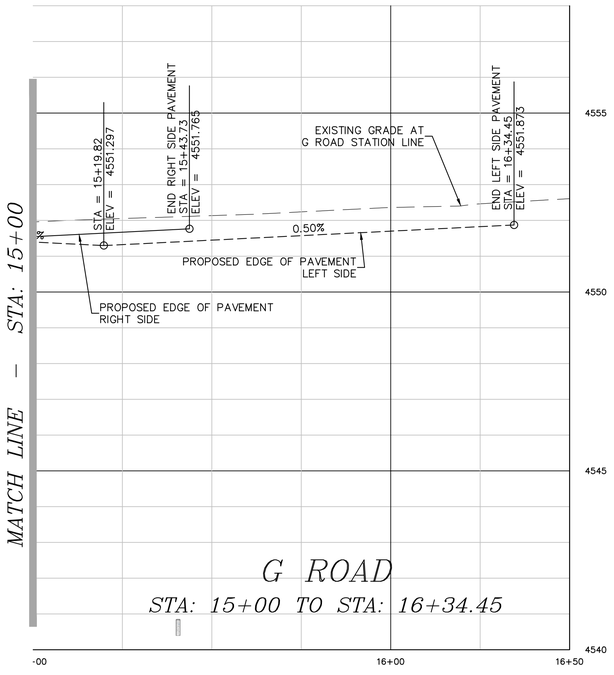
COLORADO REGISTERED PROFESSIONAL ENGINEER 5/8/15

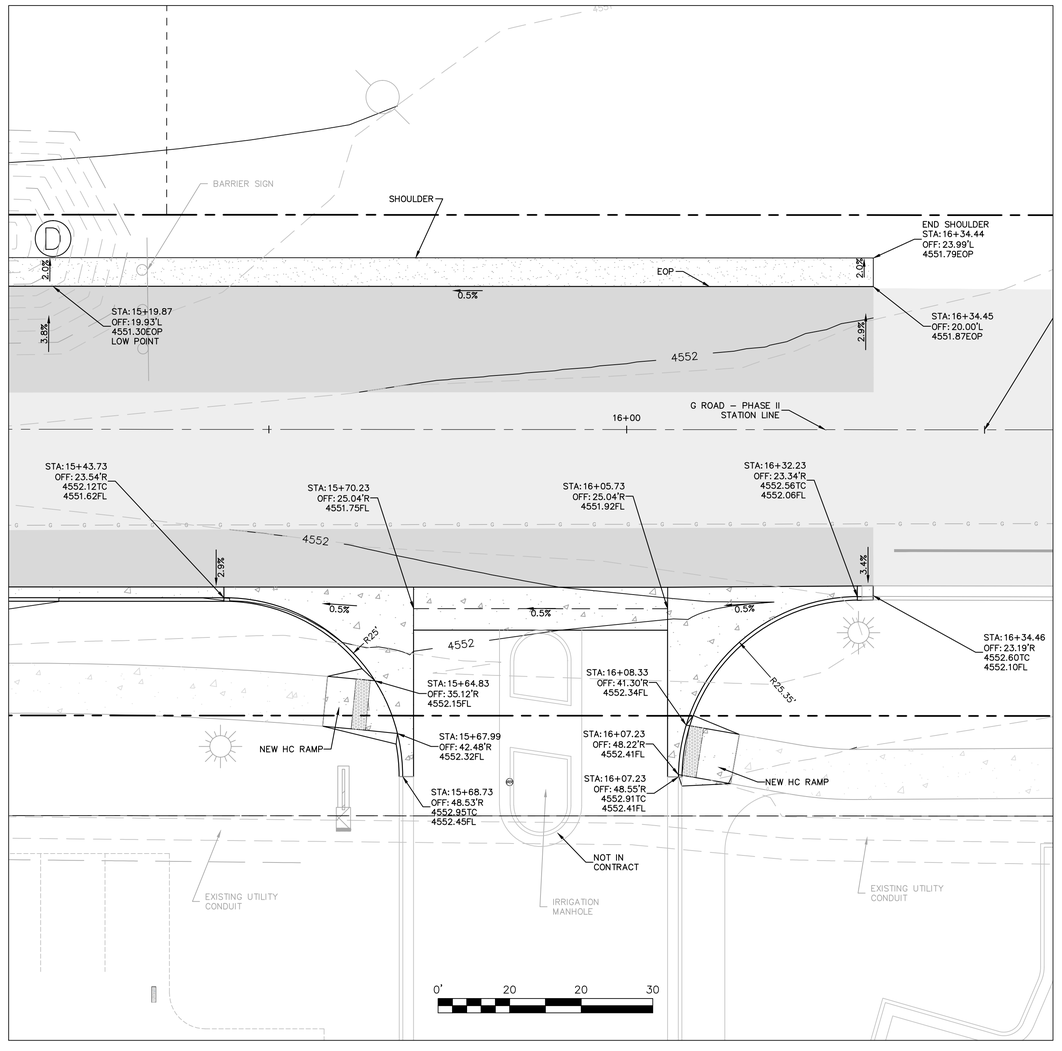
CITY OF GRAND JUNCTION ENGINEERING
APPROVED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE.
BY:______ DATE:______
ACCEPTED AS CONSTRUCTED
BY:______ DATE:______

"All details, construction, inspections, and testing shall conform to the City of Grand Junction Standard Contract Documents for Capital Improvements Construction. Contractor shall have a copy of the accepted plans and current City of Grand Junction Standard Documents for Capital Improvements Construction on site and available at all times."

DRAWN BY: LMS
DESIGNED BY: LMS
CHECKED BY: MRA
APPROVED BY: MRA
JOB NUMBER: 1024.0004
DATE: 04/20/15
SCALE: 1"= 20'
SHEET NO: C-13





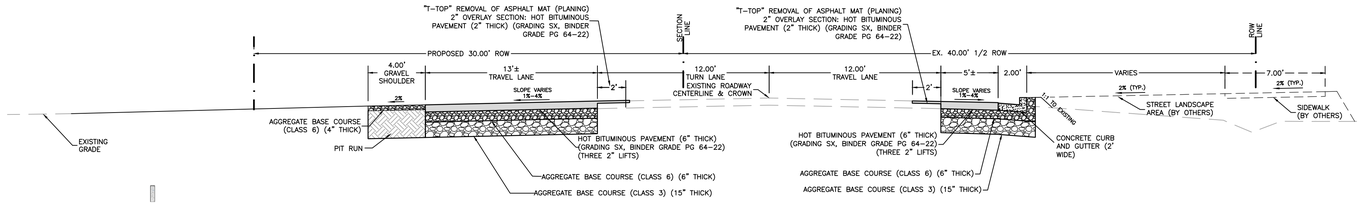


N

BENCHMARK
TOP BRASS CAP
MCSM 285–1
ELEV: 4549.28 [NAVD88]

CONTOUR INTERVAL:
EXISTING GROUND: 1'
FINISH GRADE: 1'

EXISTING GROUND 4580
FINISH GRADE 4580



TYPICAL G ROAD SECTION: STA.11+73.73 - STA.16+34.46

COLORADO REGISTERED PROFESSIONAL ENGINEER 28775 5/18/15

CITY OF GRAND JUNCTION ENGINEERING

APPROVED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE.

BY: _____ *DATE:* _____

ACCEPTED AS CONSTRUCTED

BY: _____ *DATE:* _____

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(970) 242-7540

G ROAD – PHASE II

description
G ROAD STA:15+00 TO STA: 16+34.45
25 1/2 ROAD STA: 0+00 TO END
PLAN AND PROFILE

prepared for
CITY OF GRAND JUNCTION

DRAWN BY:	LMS
DESIGNED BY:	LMS
CHECKED BY:	MRA
APPROVED BY:	MRA
JOB NUMBER:	1024.0004
DATE:	04/20/15
SCALE:	AS SHOWN
SHEET NO:	C-14

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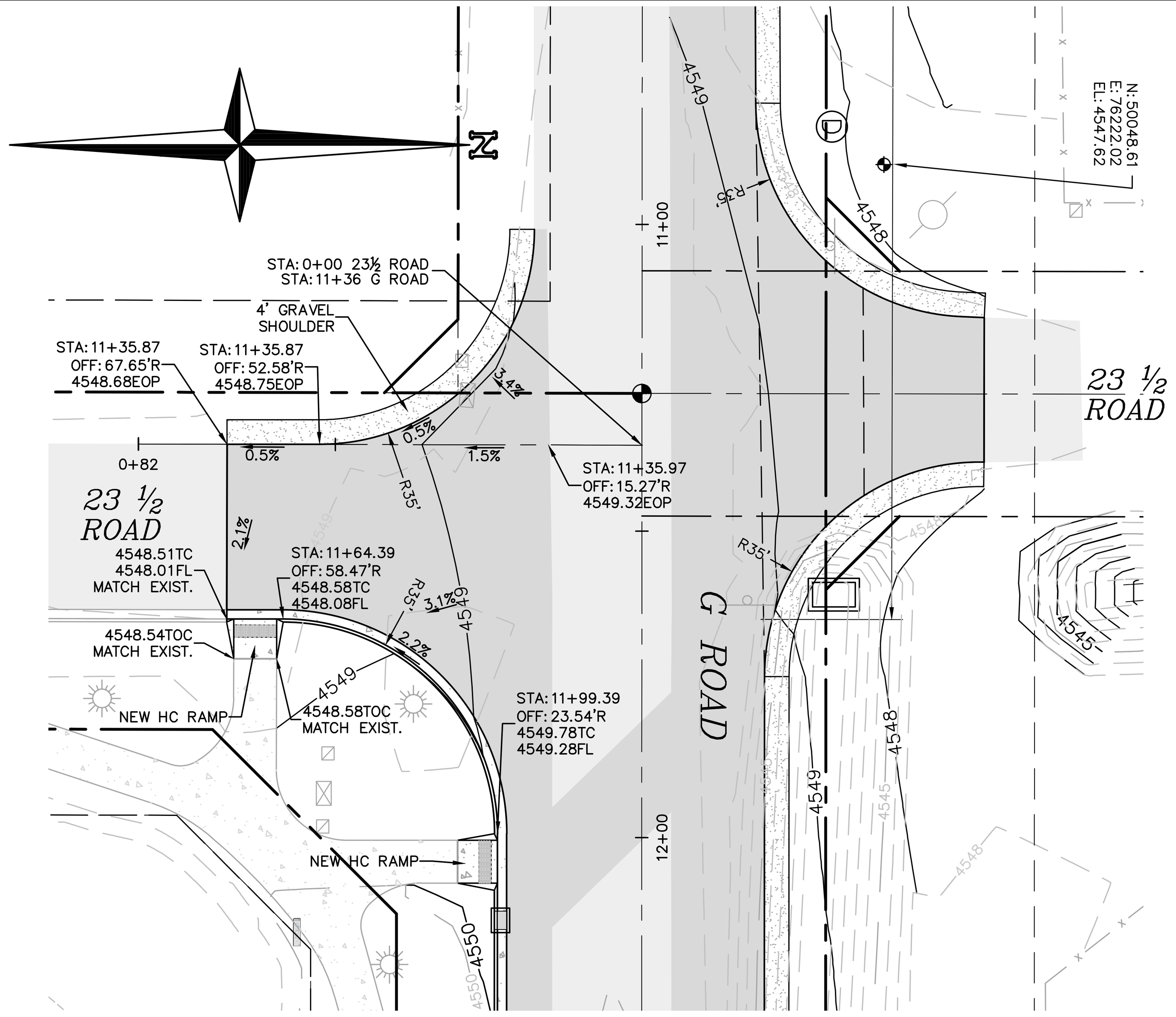
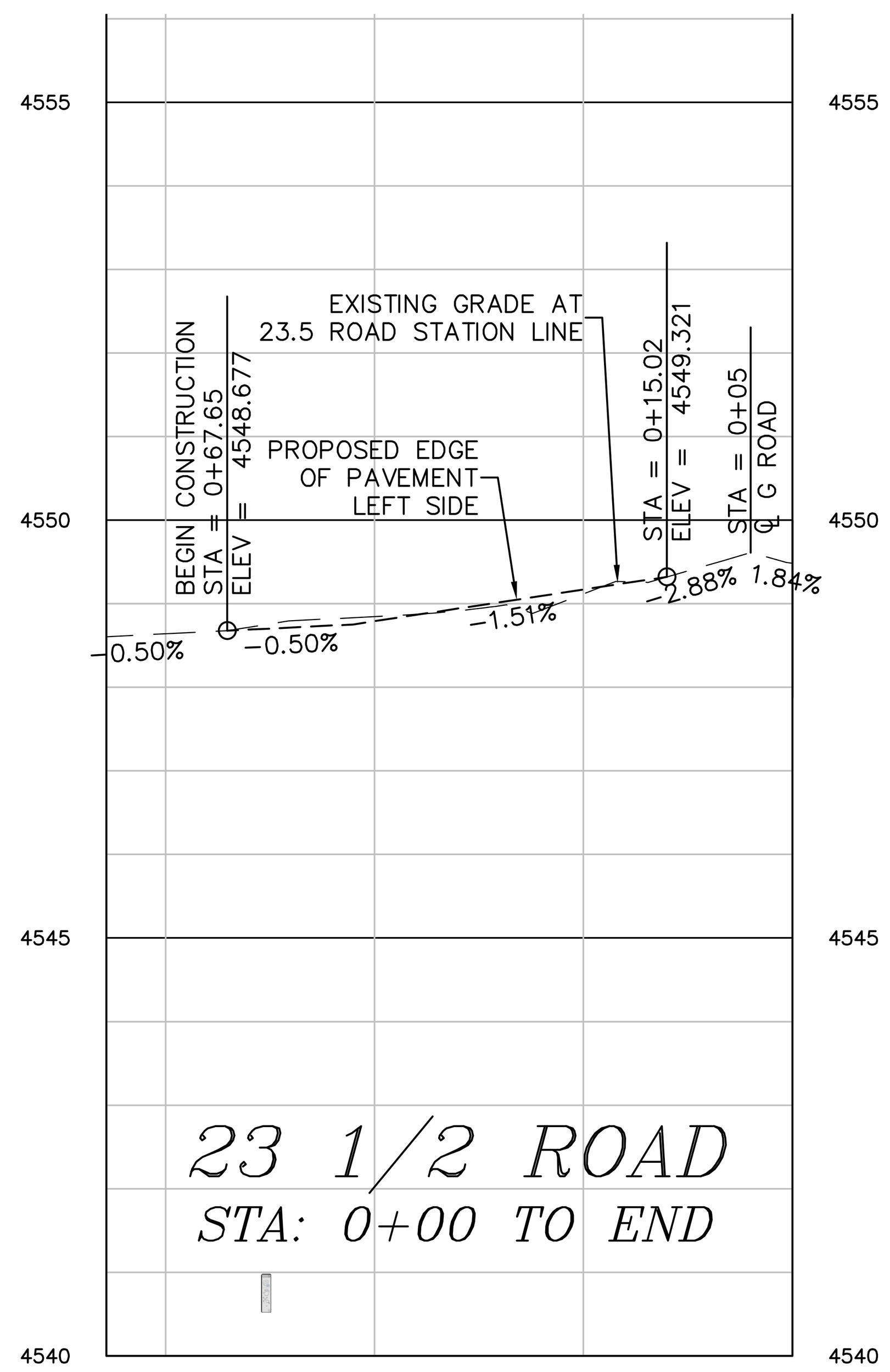


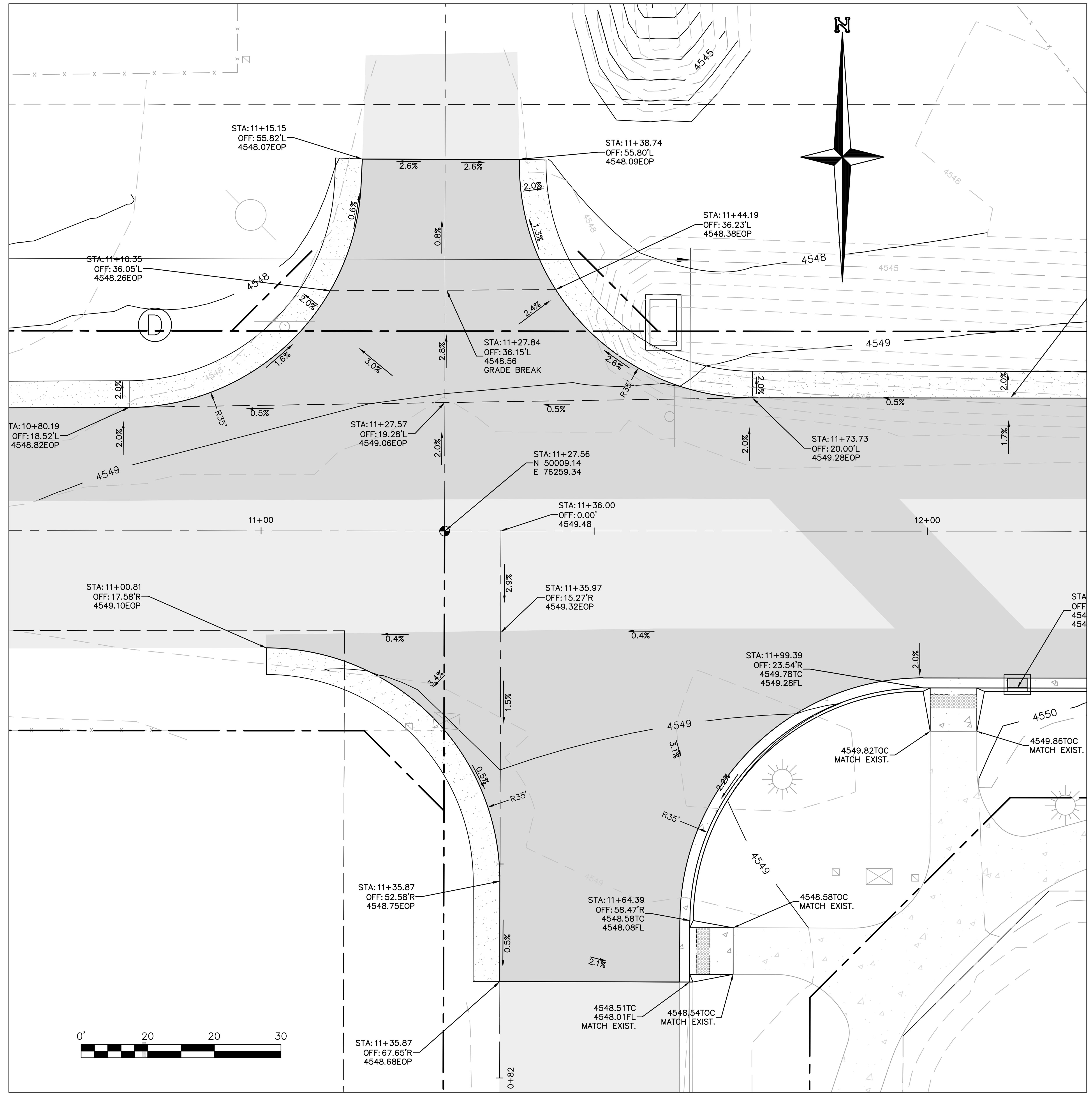
0' 20 40 60



BENCHMARK
TOP BRASS CAP
MCSM 285-1
ELEV: 4549.28 [NAVD88]

CONTOUR INTERVAL:
EXISTING GROUND: 1'
FINISH GRADE: 1'

EXISTING GROUND 4580
FINISH GRADE 4580



G ROAD
23 ½ ROAD INTERSECTION DETAIL

CITY OF GRAND JUNCTION ENGINEERING
APPROVED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE.
BY:________________ DATE:________
ACCEPTED AS CONSTRUCTED
BY:________________ DATE:________

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COLORADO REGISTERED PROFESSIONAL ENGINEER 29778 5/8/15

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REVISIONS

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Land Planning • Civil Engineering • Development Services
123 N. 7th Street, Suite 300 • Grand Junction, Colorado 81501
(970) 242-7540

G ROAD – PHASE II
description
23 1/2 ROAD STA: 0+00 TO END PLAN AND PROFILE
prepared for
CITY OF GRAND JUNCTION

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
LMS	LMS	MRA	MRA

JOB NUMBER: 1024.0004
DATE: 04/20/15
SCALE: AS SHOWN
SHEET NO: C-15

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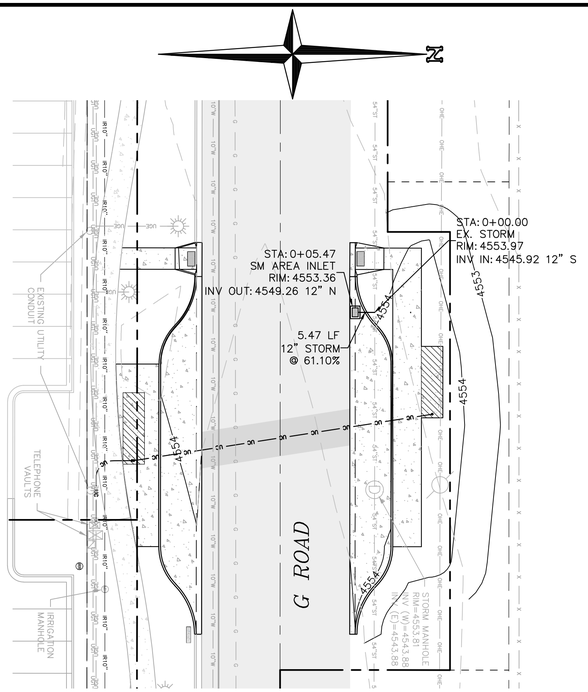
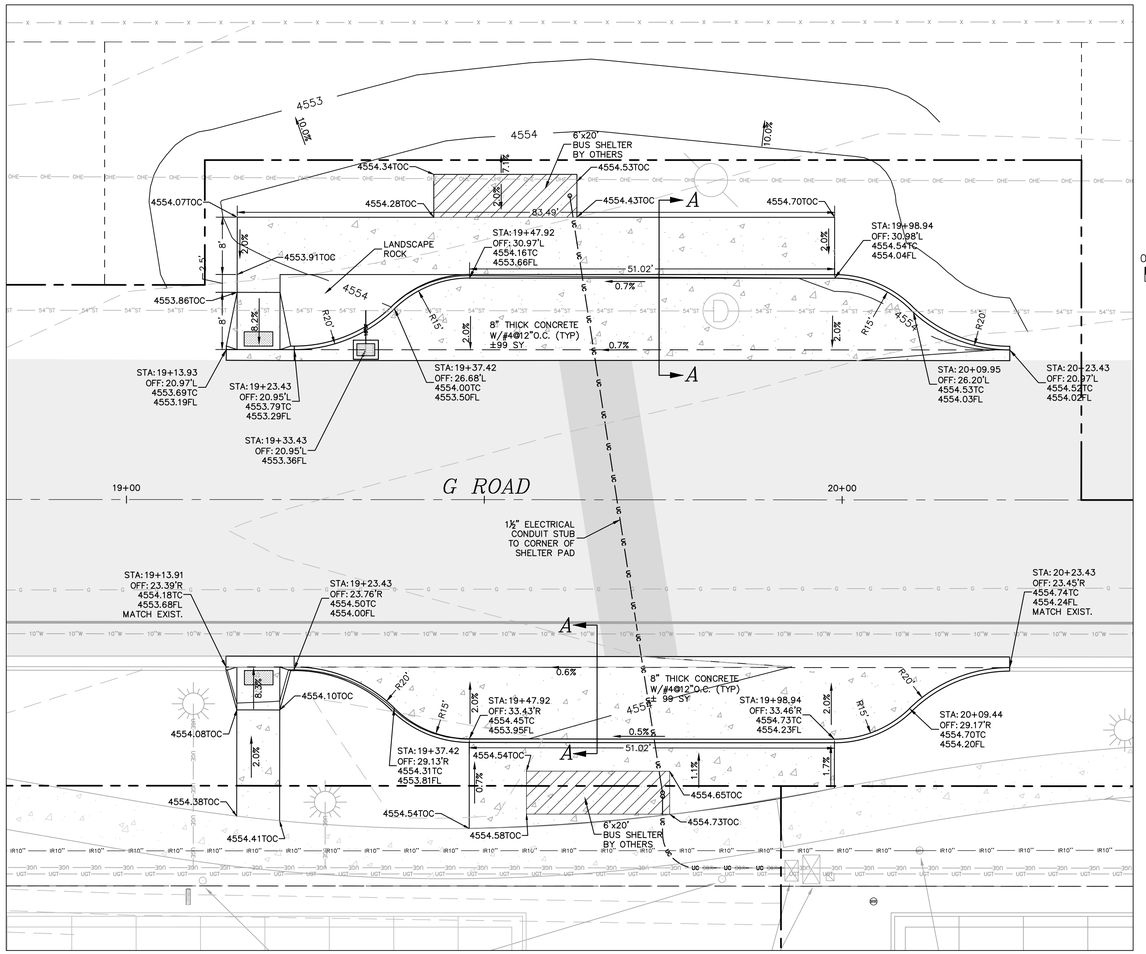


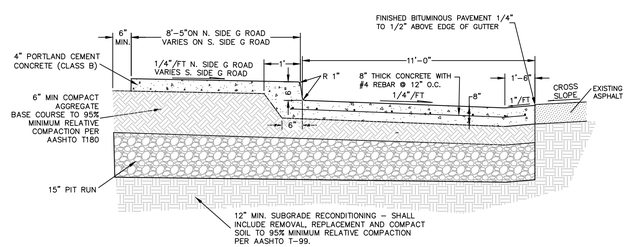
STORM LINE–5

HORIZONTAL: 1"=20', VERTICAL: 1"=2'



G ROAD

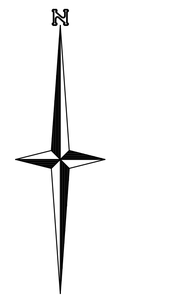
BUS TURN–OUT



SECTION A-A

BUS TURN-OUT TYPICAL SECTION

NOT TO SCALE



BENCHMARK

TOP BRASS CAP
MCSM 285–1
ELEV: 4549.28 [NAVD88]

CONTOUR INTERVAL:
EXISTING GROUND: 1'
FINISH GRADE: 1'

EXISTING GROUND 4580
FINISH GRADE 4580

CITY OF GRAND JUNCTION ENGINEERING

APPROVED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE.

BY:_____ DATE:_____

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NO.	DESCRIPTION	DATE	BY
	REVISIONS		

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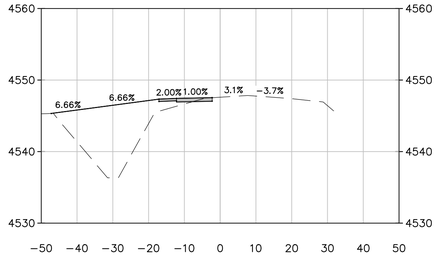
AUSTIN CIVIL GROUP, INC
Land Planning • Civil Engineering • Development Services
123 N. 7th Street, Suite 300 • Grand Junction, Colorado 81501
(970) 242-7540

G ROAD
description
G ROAD
BUS TURN–OUT
STORM LINE 5 PLAN & PROFILE
proposed for
CITY OF GRAND JUNCTION

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
LMS	LMS	MRA	MRA

JOB NUMBER: 1024.0004
DATE: 04/20/15
SCALE: 1"= 10'
SHEET NO: C-16



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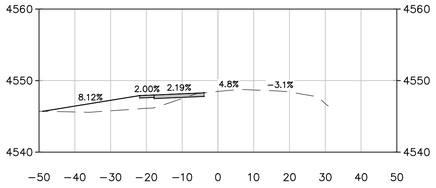

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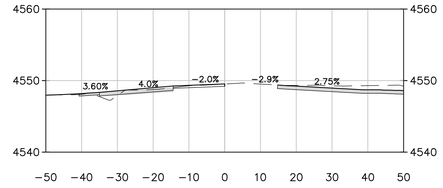

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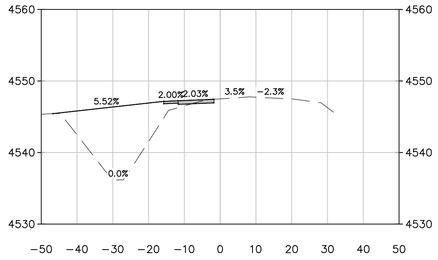

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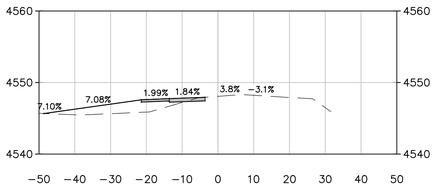

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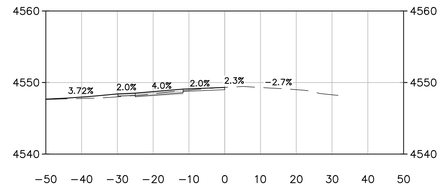

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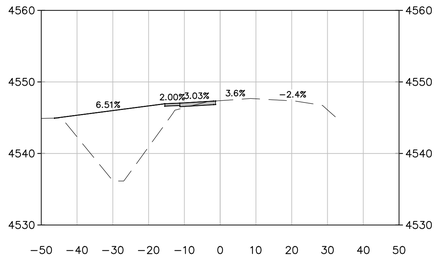

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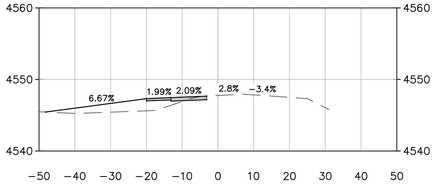

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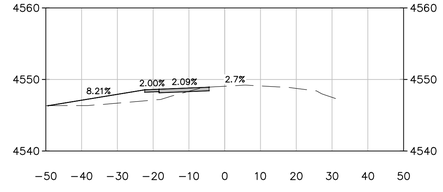

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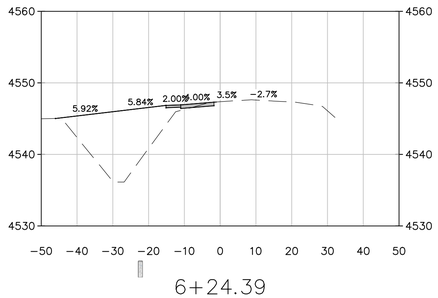

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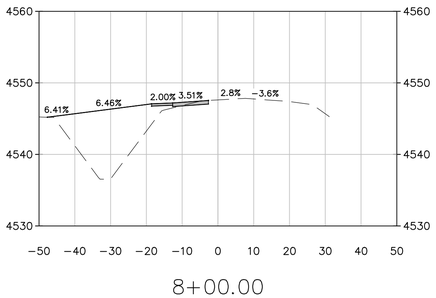

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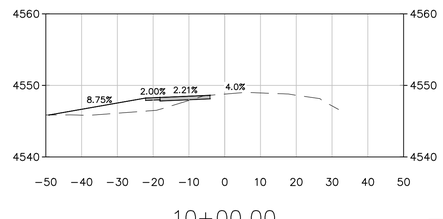
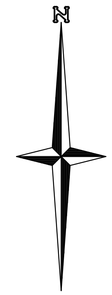


10+00.00

G ROAD

STA: 6+00 TO STA: 11+50



CITY OF GRAND JUNCTION ENGINEERING

APPROVED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE.

BY: _____ DATE: _____

ACCEPTED AS CONSTRUCTED

BY: _____ DATE: _____

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SCALE VERIFICATION
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IF NOT ONE INCH ON THIS SHEET
ADJUST SCALES ACCORDINGLY

NO.	DESCRIPTION	DATE	BY
	REVISIONS		

A • C • G
AUSTIN CIVIL GROUP, INC
Land Planning • Civil Engineering • Development Services
123 N. 7th Street, Suite 300 • Grand Junction, Colorado 81501
(970) 242-7540

G ROAD
description
STREET SECTIONS
STA: 6+00 TO STA: 11+50
prepared for
CITY OF GRAND JUNCTION

DRAWN BY:	LMS
DESIGNED BY:	LMS
CHECKED BY:	MRA
APPROVED BY:	MRA
JOB NUMBER:	1024.0004
DATE:	04/20/15
SCALE:	1"= 20'
SHEET NO:	C-17

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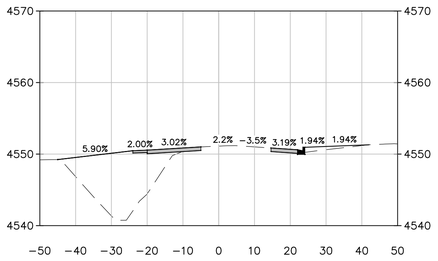
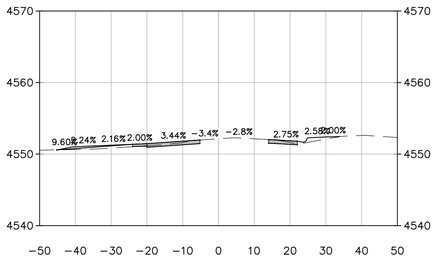


13+50.00



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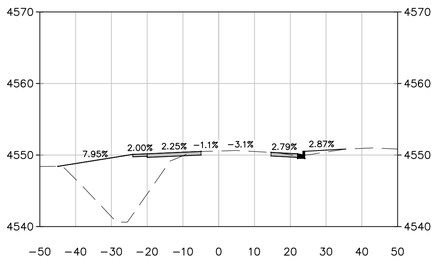

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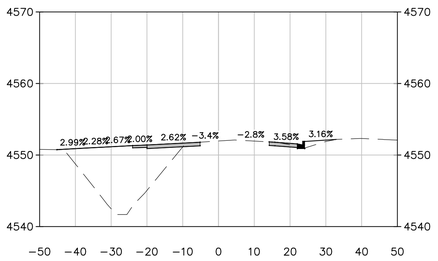

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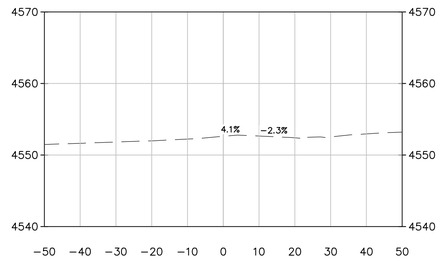

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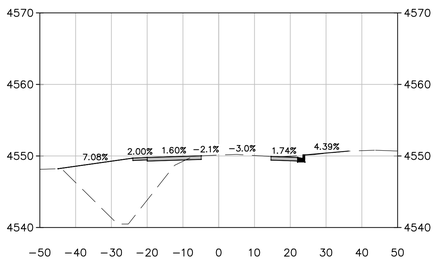

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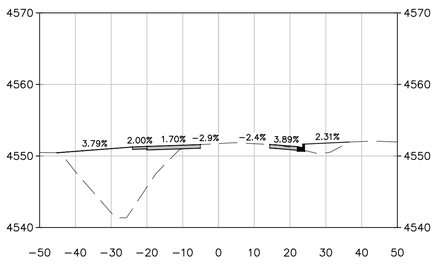

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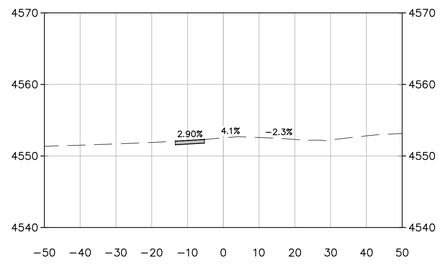

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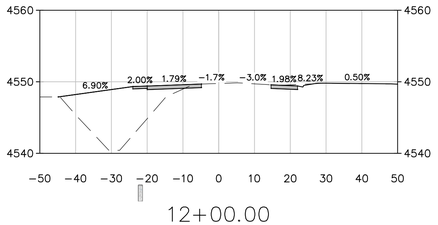

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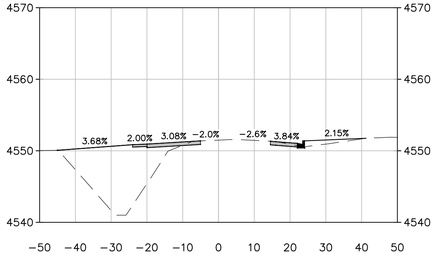

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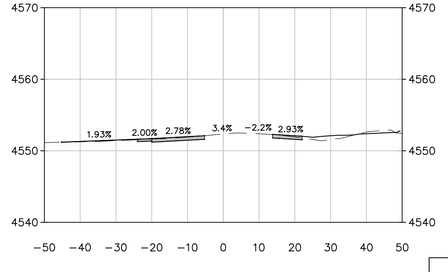
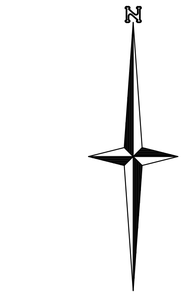


16+00.00

G ROAD

STA: 12+00 TO STA: 16+50



CITY OF GRAND JUNCTION ENGINEERING

APPROVED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE.

BY:_____ DATE:_____

ACCEPTED AS CONSTRUCTED

BY:_____ DATE:_____

"All details, construction, inspections, and testing shall conform to the City of Grand Junction Standard Contract Documents for Capital Improvements Construction. Contractor shall have a copy of the accepted plans and current City of Grand Junction Standard Documents for Capital Improvements Construction on site and available at all times."

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

SCALE VERIFICATION
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NO.	DESCRIPTION	DATE	BY

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AUSTIN CIVIL GROUP, INC
Land Planning • Civil Engineering • Development Services
123 N. 7th Street, Suite 300 • Grand Junction, Colorado 81501
(970) 242-7540

G ROAD
description
STREET SECTIONS
STA: 12+00 TO STA: 16+50
prepared for
CITY OF GRAND JUNCTION

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
LMS	LMS	MRA	MRA

JOB NUMBER: 1024.0004
DATE: 04/20/15
SCALE: 1"= 20'
SHEET NO: C-18

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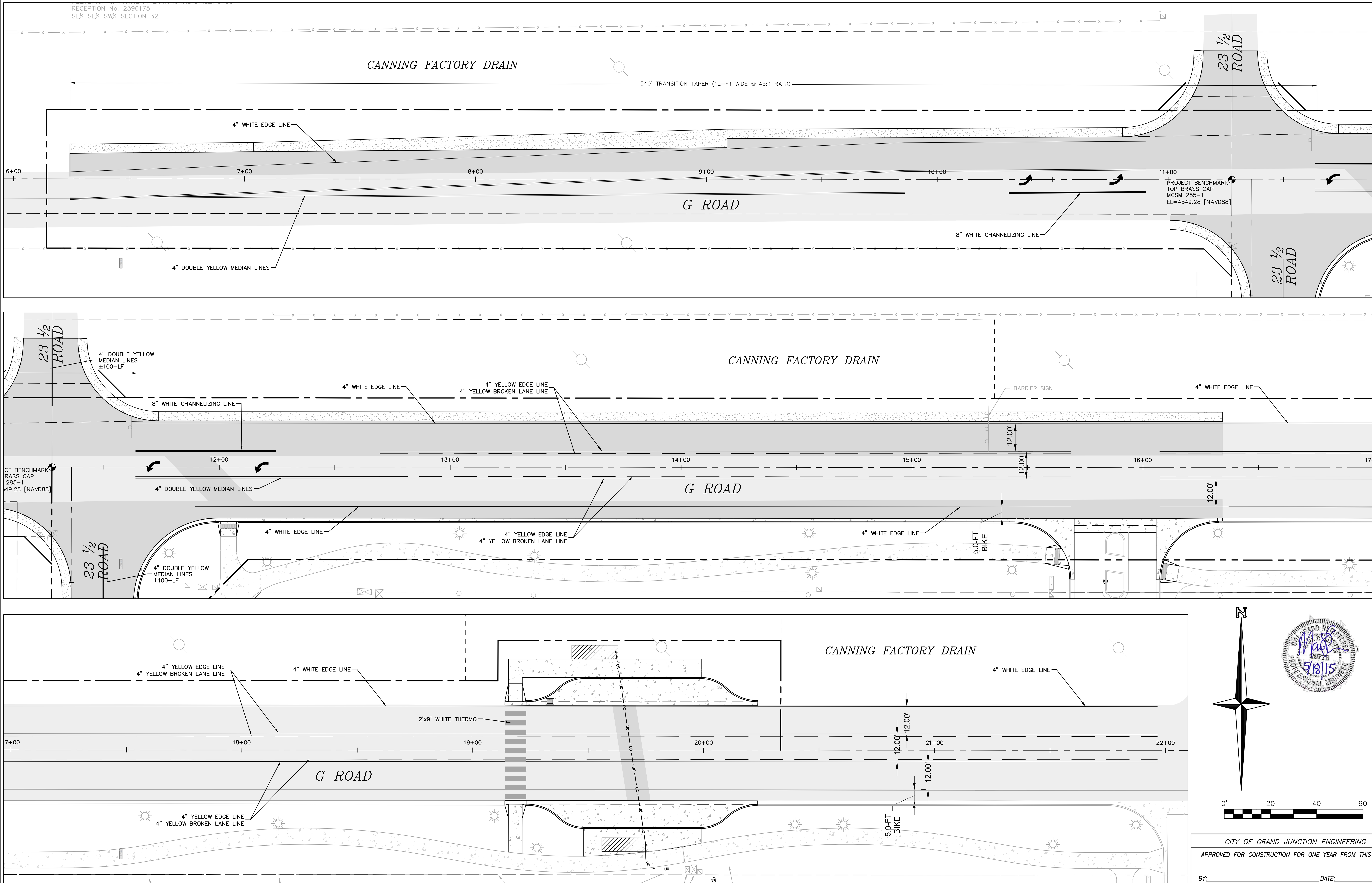

COLORADO REGISTERED PROFESSIONAL ENGINEER 29773 — 5/18/15

CITY OF GRAND JUNCTION ENGINEERING
APPROVED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE.
BY:______________ DATE:__________
ACCEPTED AS CONSTRUCTED
BY:______________ DATE:__________

"All details, construction, inspections, and testing shall conform to the City of Grand Junction Standard Contract Documents for Capital Improvements Construction. Contractor shall have a copy of the accepted plans and current City of Grand Junction Standard Documents for Capital Improvements Construction on site and available at all times."

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Land Planning ▪ Civil Engineering ▪ Development Services
123 N. 7th Street, Suite 300▪ Grand Junction, Colorado 81501
(970) 242-7540

G ROAD
description
G ROAD STRIPING PLAN
prepared for
CITY OF GRAND JUNCTION

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
LMS	LMS	MRA	MRA

JOB NUMBER: 1024.0004
DATE: 04/20/15
SCALE: 1"= 20'
SHEET NO: C-19

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