Parr Boulevard, Dandini Boulevard, and US 395 NB Ramps
Intersection Signalization

OFFSET AGREEMENT
Offset Agreement # 053009

BETWEEN

THE REGIONAL TRANSPORTATION COMMISION,
A special purpose unit of the Government

And

CITY OF RENO
a Municipal Corporation

And

Dandini Spectrum Holdings LLC
Developer of Record

For

Spectrum-Dandini Mixed-Use Development
Development of Record

North Service Area

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EXHIBITS

OFFSET AGREEMENT

This Offset Agreement ("Offset Agreement") is entered by and between the REGIONAL TRANSPORTATION COMMISSION (hereinafter designated "RTC"), a special purpose unit of Government; CITY OF RENO, a municipal corporation, (hereinafter designated "Local Government"); and DANDINI SPECTRUM HOLDINGS LLC (hereinafter designated "the Developer of Record").

1. **General**

1.1 **Ordinance, Manual and CIP**. The City of Sparks, the City of Reno, Washoe County, and RTC have entered into an Interlocal Cooperative Agreement for the purposes of implementing the Regional Road Impact Fee ("RRIF") Program. The Participating Local Government has passed a Regional Road Impact Fee Ordinance ("Ordinance") to implement the RRIF. RTC and the Participating Local Government have adopted the Regional Road Impact Fees General Administrative Manual, 6th Edition ("Manual"), specifying the provisions and procedures for administration of the RRIF, as well as the Regional Road Impact Fee System Capital Improvement Plan ("CIP") 6th Edition, identifying the regional streets and improvements which shall be constructed in whole or in part with funds generated from the RRIF. The terms and provisions of the Manual and the CIP are incorporated herein by reference as if fully set forth. All capitalized terms not otherwise defined herein shall have the definitions and meanings as used in the Ordinance, Manual and CIP. Amendments approved by the RTC and local governments are incorporated by reference to the same extent as if set forth in full herein.

1.2 **Basis for this Offset Agreement.** The parties intend this Offset Agreement to be an Offset Agreement as provided in Section X of the Manual, to provide for waivers of Regional Road Impact Fees ("RRIF Waiver") in exchange for contributions of Offered Improvements (which may include right-of-way ("ROW") dedication), which may then be used to offset Regional Road Impact Fees which would otherwise be chargeable to the Developer of Record's Development of Record. Section X of the Manual contains specific provisions pertaining to Waivers and is attached hereto and incorporated herein as Exhibit "A".

1.3 **Effective Date of Offset Agreement.** This Offset Agreement shall be binding and effective as of the last date of execution below.

1.4 **Eligibility of Offered Improvements.** The Offered Improvements have been identified by the Local RRIF Administrator as being included in the Exhibit "D" of the CIP, titled North Capital Improvement Plan.

2. **The Development of Record and Offered Improvements.**

2.1 **Description of the Development of Record.** The Development of Record for which the RRIF Waivers shall be issued is known as Spectrum-Dandini Mixed-Use Development. The Developer of Record owns or is the agent for the record owners of the entire Development. A site plan and narrative description of the Development of Record, including the proposed land uses and units of development is attached

hereto as Exhibit "B-1". The legal description of the Development of Record is attached as Exhibit "B-2."

2.2 **Offered Improvements.**

2.2.1 **Description of Offered Improvements.** The Developer of Record has submitted an application shown herein as Exhibit "C" describing the specific Offered Improvements which the Developer of Record proposes to construct and/or dedicate. The Offered Improvements are generally described as signalization of intersection at Parr Boulevard, Dandini Boulevard, and US 395 North Bound Ramps. The RTC RRIF Administrator and Local RRIF Administrator have approved the application, subject to the limitations set forth in the letter of approval incorporated herein as Exhibit "D".

2.2.2 **Completion and Acceptance of Offered Improvements.** Unless extended by written consent of the RTC RRIF Administrator, all Offered Improvements, shall be commenced within 6 months of the date of the date of the Offset Agreement, and completed in substantial conformance with approved plans within two (2) years of the date of the Offset Agreement. This Offset Agreement shall terminate and be of no further force or effect if the Offered Improvements are not commenced within one (1) year of the date of the Offset Agreement. The time for completion may be extended by written consent of the RTC RRIF Administrator and the Local RRIF Administrator one time for not more than one (1) year, upon a written request for extension submitted not less than ninety (90) days prior to expiration of the originally agreed time for completion. Additional extensions of the time for completion shall require an amendment to this Offset Agreement pursuant to Section 4.2. The Offered Improvements shall be accepted by the Local RRIF Administrator and the RTC RRIF Administrator upon correction by the Developer of Record of any identified deficiencies to the satisfaction of the Local RRIF Administrator and the RTC RRIF Administrator. Acceptance of the Offered Improvements by the Local RRIF Administrator and the RTC shall not be unreasonably withheld. Any real property the Developer of Record proposes to offer for dedication pursuant shall be valued pursuant to the provisions of Section X.F.2.c.(2) of the Manual.

2.2.3 **Design and Construction Standards.** All design and construction of the Offered Improvements shall be in accordance with the latest edition of the Standard Specifications as of the date of this agreement for Public Works Construction ("Standard Specifications"), including any addenda, as adopted by the Participating Local Government and modified by the Special Technical Specifications ("STS") as prepared by RTC and contained herein as part of Exhibit "E". Additionally, all design and construction of Offered Improvements shall be in accordance with all policies of the RTC, including the latest version as of the date of this agreement of the following: Policy for the Street and Highway Program, RRIF CIP, and Traffic Noise Mitigation Policy Report, all incorporated herein as if fully set forth. In the case of conflicting standards, the conflict shall be brought to the immediate attention of the RTC RRIF Administrator who

shall, in conjunction with the Local RRIF Administrator, resolve the discrepancy within five (5) working days.

2.2.4 **Quality Assurance/Quality Control (QA/QC).** In making the Offered Improvements, the Developer of Record shall institute a QA/QC Program meeting the requirements of Exhibit "E". The Developer of Record may utilize an alternate QA/QC Program with the approval of the RTC RRIF Administrator and Local RRIF Administrator.

2.2.5 **Warranty.** The Developer of Record shall warrant all materials and workmanship of the Offered Improvements in accordance with the provisions of the latest edition of the Standard Specifications. The Developer of Record is directed in particular to Section 117.00 which is contained herein as Exhibit "F".

3. **RRIF Waivers.**

3.1 **The Developer of Record and Development of Record.** The Developer of Record is the party to whom all RRIF Waivers earned under this Offset Agreement shall be issued. RRIF Waivers earned under this Offset Agreement may not be applied outside of the Development of Record.

3.2 **RRIF Waivers are Personal Assets of The Developer of Record.** The parties agree that all RRIF Waivers received pursuant to this Offset Agreement shall be the personal assets of the Developer of Record.

3.3 **Calculation of RRIF Waiver**. RRIF Waivers will be expressed in dollars upon the final RRIF Waiver determination pursuant to Section 3.5. RRIF Waivers may be utilized to pay Regional Road Impact Fees which would otherwise be due for development within a Development of Record. To the extent RRIF Waivers are utilized for development of units of development and land uses in strict conformance with Exhibits "B-1" and "B-2," RRIF Waivers earned shall be applied as if a Building Permit (or Certificate of Occupancy, whichever applies) were granted for each such unit of development as of the date of this Offset Agreement, notwithstanding that actual construction of such unit of development occurs thereafter. For sake of clarity, it is the parties' intent that Regional Road Impact Fees for all future development within the Development of Record which is conducted in conformity with Exhibits "B-1" and"B-2" shall be "grandfathered in" at the RRIF rates existing as of the date of this Offset Agreement, up to the total amount identified in the Notice of RRIF Waiver. The rates existing as of the date of this Offset Agreement are attached hereto as Schedule 1. To the extent units of development or land uses are changed from the uses depicted in Exhibit "B-1," or the legal description of the Development of Record is modified from the description set forth in Exhibit "B-2", earned RRIF Waivers may be used within the Development of Record for such development, but the RRIF Waivers must be utilized at the then-current Regional Road Impact Fee rate as of the date of issuance of the Building Permit for each unit of development.

3.4 **RRIF Waiver Usage and Transferability.** The usage and transferability of RRIF Waivers earned under this Offset Agreement are as follows:

3.4.1 RRIF Waivers earned under this Offset Agreement may be used to pay for up to 100% of the Regional Road Impact Fees due as the result of development within the Development of Record.

3.4.2 RRIF Waivers earned under this Offset Agreement may be not be used to pay for Regional Road Impact Fees due as a result of development outside of the Development of Record.

3.4.3 RRIF Waivers earned under this Offset Agreement are transferable to a third party, provided that all RRIF Waivers earned under this Offset Agreement may only be used to pay for Regional Road Impact Fees due as a result of development within the Development of Record.

3.5 **Interim RRIF Waivers.** The Developer of Record shall be entitled to apply for and receive Interim RRIF Waivers for satisfactorily completed portions of the Offered Improvements (including Right of Way) according to the schedule at Exhibit "G". This provision shall in no way be construed as constituting acceptance in whole or part of any of the Offered Improvements. To the extent that Offered Improvements are ultimately not accepted, or if the Developer of Record is otherwise in material default under this Offset Agreement, the Developer of Record shall pay the actual Regional Road Impact Fees which would have otherwise been due had the Developer of Record not utilized Interim RRIF Waivers.

3.6 **Final RRIF Waiver Determination.** The final determination of RRIF Waivers shall be calculated by the RTC RRIF Administrator after consultation with the Local RRIF Administrator within thirty (30) calendar days of final acceptance of the Offered Improvements by the RTC RRIF Administrator and the Local RRIF Administrator and submission by the Developer of Record of all documentation required by the RTC RRIF Administrator to make said final determination. The RTC RRIF Administrator shall issue a written instrument identifying the amount of the RRIF Waivers to the Developer of Record within three (3) working days of the earlier to occur of the following:

3.6.1 the date the appeal period of the final determination expires pursuant to Article XII of the RRIF GAM;

3.6.2 the date the Developer of Record waives in writing the appeal period, or;

3.6.3 in the event of an appeal pursuant to Article XII of the RRIF GAM, the date of a final decision on all issues on appeal.

3.7 **Expiration of RRIF Waivers.** RRIF Waivers shall not expire and may be used in perpetuity to pay Regional Road Impact Fees which would otherwise be due as a result of development within the Development of Record.

4. **Miscellaneous** The parties further agree as follows:

4.1 **Governing Law: Venue.** This Offset Agreement is being executed and delivered in Washoe County, Nevada, and is intended to be performed in the State of Nevada, and the laws of Nevada shall govern the validity, construction, enforcement and interpretation of this Offset Agreement. Venue for any legal action arising out of this Offset Agreement shall be in Washoe County, Nevada.

4.2 **Entirety and Amendments.** This Offset Agreement embodies the entire Offset Agreement between the parties and supersedes all prior negotiations, agreements and understandings, if any, relating to the

Property, and may be amended or supplemented only by an instrument in writing executed by the party against whom enforcement is sought, provided that nothing contained in Subsection 4.2 shall be interpreted to change, amend or modify the conditions of the Development of Record approval by the Participating Local Government. No oral statements or representations made before or after the execution of this Offset Agreement regarding the subject matter of this Offset Agreement are binding on any party, nor may any such oral statements or representations be relied on by a party.

4.3 **Invalid Provisions.** If any provision of this Offset Agreement is held to be illegal, invalid, unenforceable under present or future laws, such provision shall be fully severable. The Offset Agreement shall be construed and enforced as if such illegal, invalid or unenforceable provision had never comprised a part of the Offset Agreement. The remaining provisions of the Offset Agreement shall remain in full force and effect and shall not be affected by the illegal, invalid or unenforceable provision or by its severance from this Offset Agreement.

4.4 **Parties Bound and Assignment.** The Offset Agreement shall be binding upon and inure to the benefit of the parties, and their respective heirs, personal representatives, successors and assigns. The Developer of Record may assign RRIF Waivers which have been calculated pursuant to Section 3.6 to a successor developer or developers, provided however, that such RRIF Waivers may only be utilized to offset Regional Road Impact Fees which would otherwise be due as a result of development within the Development of Record.

4.5 **Further Acts.** In addition to the acts recited in this Offset Agreement to be performed, the parties agree to perform, or cause to be performed, any and all further acts as may be reasonably necessary to consummate the obligations contemplated hereby.

4.6 **Headings.** Headings used in this Offset Agreement are used for reference purposes only and do not constitute substantive matter to be considered in construing the terms of this Offset Agreement.

4.7 **Notice.** All notices given pursuant to this Offset Agreement shall be in writing and shall be given by personal delivery, by facsimile transmission, by United States mail or by United States express mail or other established express delivery service (such as Federal Express), postage or delivery charge prepaid, addressed to the appropriate party at the address set forth below:

REGIONAL TRANSPORTATION COMMISSION,
Engineering Department
Attn: Jeff Wilbrecht, P.E.
1105 Terminal Way, Suite 108
Reno, Nevada 89502
Telephone: (775) 335-1872

THE CITY OF RENO
Community Development
Attn: Michael Mischel, P.E.
1 E. First St.

Reno, NV 89501
Telephone: 775-326-6607

Developer of Record
Dandini Spectrum Holdings LLC
Attn: Joe Pelham
7979 E. Tufts Ave, Suite 1125
Denver, CO 80237
Telephone: (775) 219-0297

The persons and address to whom notices are to be given may be changed anytime by any party upon written notice to the other party. All notices given pursuant to this Offset Agreement shall be deemed given upon receipt.

4.8 **Receipt Defined.** For the purposes of this Offset Agreement, the term "receipt" shall mean any of the following: (a) the date of delivery of the notice or other document as shown on the return receipt; (b) the date of actual receipt of the notice or other document; or (c) in the case of refusal to accept delivery or inability to deliver the notice or other document, the earlier of: (i) the date of the attempted delivery or refusal to accept delivery; (ii) the date of the postmark on the return receipt; or (iii) the date of receipt of notice of refusal or notice of non-delivery by the sending party.

4.9 **Due Authorization.** The parties agree that they have the legal authority to enter into this Offset Agreement and the undersigned officer, representative or employee represents that he or she has the authority to execute this agreement on the behalf of the party represented.

4.10 **Indemnification.** Developer of Record shall indemnify, defend and hold harmless the RTC and the Participating Local Government, their offices, officials, employees and volunteers, from any and all costs, liabilities, damages, claims, demands, suits, action, attorneys, fees, or expenses of any kind ("claims") that arise out of, or are in way related, in whole or in part to the negligence or misconduct, or acts or omissions, of the Developer of Record, its officers, agents, employees, members, volunteers, contractors and anyone else for whom it is legally liable, while performing or failing to perform Developer of Record's duties under this Offset Agreement. Said indemnification excludes any claims to the extent caused by the negligence or willful misconduct of the RTC and /or the Participating Local Government. The Developer of Record's obligations set forth in this Section shall expire and terminate as to any claims based on, related to, arising from or in connection with the Offered Improvements' failure to comply with the Standard Specifications on the date of expiration of the applicable warranty period provided in Section 2.2.5 above.

4.11 **Termination of Offset Agreement.** This Offset Agreement may be unilaterally terminated by the RTC RRIF Administrator if twelve (12) consecutive months elapse without reasonable progress being made on the Offered Improvements. In the event of any such termination, Interim RRIF Waivers must be immediately surrendered or repaid in accordance with Section 3.5.

4.12 **Future Development Approvals.** The Participating Local Government agrees that future development approvals for the Development of Record shall not be denied on the basis of the policy level of service being exceeded on the Offered Improvements.

In Witness Whereof, the parties have executed this Offset Agreement on the 23rd day of May, 2023.

REGIONAL TRANSPORTATION COMMISSION
A Special Purpose Unit of Government

By:_____
Bill Thomas, AICP, Executive Director

STATE OF NEVADA

COUNTY OF WASHOE

The above-instrument was acknowledged before me this 23rd day of May, 2023, by Bill Thomas, the Executive Director of the Regional Transportation Commission.

_____
Notary Public

AMBER DRLIK BOWSMITH
Notary Public - State of Nevada
Appointment Recorded in Washoe County
No: 19-3792-02 - Expires July 9, 2023

CITY OF RENO
A Municipal Corporation

By:_____
Hillary Schieve, Mayor

APPROVED AS TO LEGAL FORM:

By:_____
City Attorney

STATE OF NEVADA)
) ss
COUNTY OF WASHOE)

The above-instrument was acknowledged before me this _____day of _____, 2021 by

Hillary Schieve, Mayor of the City of Reno, Nevada.

Attest by City/County Clerk:_____
City Clerk

DEVELOPER OF RECORD

By:_____

Name:_____

Title:_____

STATE OF _____

COUNTY OF _____

The above-instrument was acknowledged before me this _____day of _____, 20____ by

_____.

_____
Notary Public

EXHIBIT "A"
(Section X of the Regional Road Impact
Fees General Administrative Manual, 6th Edition)

X. IMPACT FEE OFFSETS REQUESTED AFTER THE 5th EDITION RRIF GAM/CIP (3/2/2015) UPDATE

A. General

1. RRIF Waivers.

   a. RRIF Waivers are Offset-Eligible Costs equal to or less than impact fees owed for all or a portion of the land uses within a Development of Record.

   b. When RRIF Waivers are approved, impact fees assessed by the Participating Local Government, will be "waived" until the fees waived within the Development of Record cumulatively equal the amount of Offset-Eligible Costs approved, as indicated in the RTC's Notice of RRIF Waiver.

   c. In the event the land uses within the Development of Record are modified greater than 10% of the land uses as identified in the Offset Agreement, RRIF Waivers will be re-evaluated at the then-current RRIF rate. Determination of a RRIF Waiver modification will be based on a comparison of the impact fees owed for the modified land uses, including any completed portions of the development, and the

      impact fees owed as identified in the Offset Agreement. The Local RRIF Administrator will notify the RTC RRIF Administrator of the Development of Record modification. The RTC RRIF Administrator will issue a new Notice of RRIF Waiver with the remaining value of RRIF Waivers expressed in dollars. All remaining RRIF Waivers shall be utilized at the then-current RRIF rate as of the date of issuance of the Building Permit for each unit of development. See Exhibit I.

2. Participating Local Governments may waive impact fees otherwise owed at the time of issuance of a building permit or issuance of the Certificate of Occupancy, as the case may be, if the RTC RRIF Administrator has issued a Notice of RRIF Waiver for the Development of Record within which the building permit is sought.

3. Applications for a RRIF Waiver for the dedication or construction of Offered Improvements must be made to the RTC RRIF Administrator on a form provided by the RTC for such purposes.

4. The RTC RRIF Administrator and the RTC General Counsel are the sole officials authorized to communicate, on behalf of the RTC Board, with a person submitting an application for RRIF Waivers. Representations and communications by other officials, unless expressly authorized by the RTC RRIF Administrator, may not be relied upon for purposes of the regional road impact fee obligations, offered Offset-Eligible

Improvements, or the terms of a proposed Offset Agreement. The Offset Agreement shall supersede all prior written and oral communications, regardless of source.

Any offer to dedicate or construct Offset-Eligible Improvements, pursuant to this section of the Manual and Offset Agreement, may be withdrawn at any time prior to the transfer of legal title.

B. Offset Agreement

1. With respect to improvements commenced on or before November 1, 2018, Offset Agreements must be approved prior to the start of work on any Offset-Eligible Improvement and prior to the issuance of any building permit for which RRIF Waivers are requested. With respect to improvements commenced after November 1, 2018, Offset Agreements must be approved prior to the earliest to occur of: (i) twelve (12) months from commencement of construction of the improvement, (ii) completion of work on any Offset-Eligible Improvement, and (iii) utilization of RRIF Waivers earned as a result of construction of any Offset-Eligible Improvement.

2. The RTC RRIF Administrator will issue a Notice of RRIF Waiver per the terms of a fully executed, final Offset Agreement accepting Offset-Eligible Improvements offered by the Developer of Record.

3. An Interim Notice of RRIF Waiver may be issued during phases of construction or dedication of land that provide reasonable assurance that over-crediting shall not occur

4. To the extent that Offered Improvements are ultimately not accepted, or if the Developer of Record is otherwise in material default under this Offset Agreement, the Developer of Record shall pay the actual Regional Road Impact Fees which would have otherwise been due had the Developer of Record not utilized Interim Waivers.

C. Procedure

1. Upon receipt of a complete Offset application, the RTC RRIF Administrator will distribute the application materials to the RTC General Counsel, other appropriate RTC staff, and the RRIF Administrator for each Participating Local Government in which the offered Offset-Eligible Improvement is located (the “affected Participating Local Government”).

2. The RTC RRIF Administrator will coordinate with the RRIF Administrator for each affected Participating Local Government to insure all comments are received and given consideration prior to final action by the RTC Board of a proposed Offset Agreement.

3. After review by the RTC General Counsel, other appropriate RTC staff, and the RRIF Administrator of the affected Participating Local

Governments, the RTC RRIF Administrator will prepare a staff report and Offset Agreement for consideration by the RTC Board and the Governing Bodies of each Participating Local Government in which the proposed improvements are located.

a. The RTC RRIF Administrator's report and Offset Agreement will establish which improvements offered by the Developer of Record qualify as Offset-Eligible Costs and the appropriate dollar amount and approved land use designations of any resulting RRIF Waivers, according to the provisions of this Manual.

b. Approved Offsets may not exceed the actual Offset-Eligible Costs, as described in Section X.F, below.

c. RRIF Waivers shall be expressed in dollars and by the amounts of Regional Road Impact Fees to be waived in terms of land uses using the Impact Fee Schedule, in effect as of the date of approval for the Offset Agreement.

d. If the RTC RRIF Administrator determines that cost estimates submitted by the Developer of Record are either unreliable or inaccurate, the final determination of the amount of the RRIF Waiver shall be made by the RTC RRIF Administrator based upon

   reasonable engineering criteria, construction costs estimates, property appraisals, or other professionally-accepted means of determining the value of the Offered Improvements.

4. Based on the report of the RTC RRIF Administrator, the provisions of this Manual, the Capital Improvements Plan, available funds for RTC projects, and other relevant factors, the RTC Board and the Governing Bodies of the affected Participating Local Governments will make a final decision whether to accept, reject, or to propose amendments to the Offset Agreement proposed by the Developer of Record, in exchange for RRIF Waivers

5. Once a final decision has been made by the RTC Board and the Governing Bodies of the affected Participating Local Governments, the RTC RRIF Administrator will send by registered mail a copy or copies of the approved Offset Agreement for the final consent and signature of the Developer of Record. The final Agreement will be deemed to have been received by the Developer of Record three (3) days after mailing by the RTC RRIF Administrator.

6. The Developer of Record must sign, date, and return the approved Offset Agreement indicating his or her consent to the terms therein within thirty (30) days of receiving the approved Offset Agreement from the RTC RRIF Administrator. If the RTC RRIF Administrator does not

receive the signed agreement within thirty days, the application for Offsets and offered improvements will be deemed withdrawn.

7. Unless an executed Offset Agreement expressly provides otherwise, i.e. as for provisions for Interim RRIF Waivers, no RRIF Waivers will be made until all Offset-Eligible Improvements have been completed and, if applicable, dedicated to the RTC or Participating Local Government as provided in the Offset Agreement.

8. Land dedications accepted as an Offset-Eligible Improvement must be accompanied by the following documentation prior to issuance of a Notice of RRIF Waiver being issued, as provided below:

    a. The delivery to the appropriate governmental body of an irrevocable offer of dedication, with sufficient funds to pay all costs of transfer of title including recording.

    b. The escrow of taxes for the current year or the payment of said taxes for the year.

    c. The issuance of a title insurance policy subsequent to recording of the deed and escrow of taxes.

9. Unless expressly provided, or otherwise included in an executed Offset

    Agreement, it is the responsibility of the Developer of Record to submit sufficient documentation to the RTC RRIF Administrator to establish that the terms of the Offset Agreement have been met and that RRIF Waivers are to be made.

10. Once the RTC RRIF Administrator has made such a determination, he or she will issue a Notice of RRIF Waiver to the affected Participating Local Governments.

D. Application for RRIF Waivers

1. Generally.

    a. An offer to construct or dedicate Offset-Eligible Improvements may be made by submitting an Application for Impact Fee Offsets to the RTC RRIF Administrator. The application must contain the information and documentation required by this section of the Manual and sufficiently identify and describe the offered CIP improvements, which otherwise would have been built by the RTC with collected Regional Road Impact Fees.

    b. After review and recommendations are made by the RTC RRIF Administrator and the affected Participating Local Government RRIF Administrators, the RTC RRIF Administrator will forward a draft Offset Agreement, application, and staff report to the RTC Board and

the Governing Bodies of the Participating Local Governments for a final decision, in accordance with Section X.C, above.

2. Contents and required documentation of Offset Application. Each application for an Offset Agreement must contain the following:

    a. The name of the Developer of Record offering to make Offset-Eligible Improvements and requesting RRIF Waivers, as provided in this Manual.

    b. The contribution, payment, construction, or land dedication which will constitute the Offered Improvements and the legal description or other adequate description of the project or development, referred to and the Development of Record, to which the Offered Improvements are related.

    c. The name, address, phone number, fax number, email address and a contact person of the Developer of Record for which Offsets are proposed.

    d. The name, Local Government File Number, and three copies of the site plan of the Development of Record for which Offsets are proposed.

    e. List of approved land uses and the estimated impact fees for those uses within the Development of Record for which RRIF Waivers are requested.

    f. Name, address, phone number, fax number, email address and contact person of the Engineer of Record.

    g. The proposed plans and specifications for the specific construction prepared and certified by a duly qualified engineer, registered and licensed in the State of Nevada.

    h. When a Developer of Record offers to dedicate right-of-way contained in the RRIF CIP, he or she shall present:

        (1) Preliminary Title Report.

        (2) Copy of Dedication Map containing proposed dedication.

        (3) Documentation sufficient to establish the applicant's opinion of value of property to be offered for dedication, as provided in Section X.F.2.c.(2).

    i. Sufficient documentation to verify the actual costs of Offered Improvements, in accordance with Section (F)(2), below.

E. Offset Agreement Requirements.

1. No dedication or construction project may be accepted in exchange for RRIF Waiver except pursuant to an executed Offset Agreement between the RTC, the Participating Local Governments and the provider of the dedication or construction, which must include the following:

    a. The projected costs for the proposed Offered Improvements, based on the valuation provisions of Section X.F.2, below, including provisions for verifying costs and facilitating changes in costs or plans.

    b. The time by which the construction of the Offered Improvements shall be paid, completed, or dedicated and any provisions for extensions thereof.

    c. The proposed amount in dollars and land uses of RRIF Waivers to be approved, based on the estimated costs of Offered Improvements.

    d. The terms and conditions that must be met before the RTC RRIF Administrator will issue a Notice of RRIF Waiver to an affected Participating Local Government authorizing the waiver of Regional Road Impact Fees, in accordance with the provisions of this Manual.

    e. The parties' acknowledgement that RRIF Waivers shall be limited for use for the payment of impact fees associated with the Development of Record listed in the Offset Agreement. RRIF Waivers shall not expire.

    f. RRIF Waivers shall be assigned to offset the impact fees within the Development of Record pursuant to the Offset Agreement.

    g. If the designated land uses for the Development of Record identified in the Offset Agreement change, the remaining waivers shall be re-assessed as outlined in the provisions in Section X.A.1.c

    h. A provision requiring that all Offset-Eligible Improvements accepted will be in accordance with RTC requirements and standards.

    i. Any labor, work safety, prevailing wage, or other applicable laws or regulations with which the Developer of Record must comply; and

    j. such other terms and conditions agreed to by the parties.

2. Any changes to an Offset Agreement approved by the RTC Board, other than those addressed in Section X.F.2. below, will require an amendment to the Offset Agreement using the same procedure as its original adoption.

F. Calculation of Offsets.

1. Eligibility.

a. RRIF Waivers may be approved only for Offset-Eligible Costs, as defined in this Manual, which are limited to the costs the RTC otherwise would have incurred for non-Site-Related Improvements in the CIP, also as defined in this Manual. Among the types of roadway improvements not considered Offset-eligible are site-related Improvements, local and/or private streets, improvements which are compensated for by a governmental body.

b. RRIF Waivers may be given only pursuant to a valid Offset Agreement, executed according to the provisions of this Manual.

c. All Offset-Eligible Costs are available for RRIF Waivers only if associated with Offset-Eligible Improvements that meet design standards approved by the RTC, but only to the extent such costs don't exceed the scope of the project as planned by the RTC in the CIP or as described in the applicable Offset Agreement.

2. Valuation.

a. RRIF Waivers approved by the RTC, pursuant to the terms of an executed Offset Agreement, will be based on and may not exceed

verified costs of the dedication or construction of Offset-Eligible Improvements offered by the Developer of Record and accepted by the RTC.

b. The RTC will not approve RRIF Waivers in excess of the Regional Road Impact Fees owed for a Development of Record as of the date of the applicable Offset Agreement.

c. If the actual verified costs are used, the RRIF Waiver shall be calculated as follows:

(1) Construction of Facilities and Provision of Equipment. The RRIF Waiver may not exceed the actual cost of construction or equipment, as evidenced by receipts and other sufficient documentation provided by the developer of the public facility and

verified by the RTC RRIF Administrator. Actual costs shall be based on local information for similar improvements; may include the cost of construction, planning feasibility, alignment studies, plan-line studies, preliminary engineering, relevant geotechnical, environmental and cultural resource studies, permitting, the cost of all lands, property, rights, easements, and franchises acquired, construction financing charges, plans and specifications,

surveys, engineering and legal services, construction inspection and testing, and all other expenses necessary or incident to determining the feasibility or practicability of such construction.

(2) Dedication of Land.

(a) If the land in question is subject to a valid agreement, zoning approval or development approval, which established a valuation or prescribes a method of valuation, the agreement, zoning approval or development approval shall control.

(b) If the dedication is made pursuant to a condition of discretionary zoning or development approval, the value of the land shall be determined as of the date immediately preceding the discretionary development approval. The value shall be based upon the condition of the property and the regulatory zoning in place immediately prior to the discretionary approval

(c) Valuation shall be based on the fair market value of the land upon execution of the Offset Agreement by the Developer of Record or final approval of the proposed Offset Agreement by the RTC Board or Governing Bodies of the affected Participating Local Government, whichever is earlier.

d. All changes in the estimate of Offset-Eligible Costs or to the approved plans and specifications (prior to or after execution of an Offset Agreement), shall require approval of the RTC RRIF Administrator. The applicant shall provide the RTC RRIF Administrator copies of all contracts or agreements made for design services, construction, or engineering during construction within fifteen (15) days after their execution.

EXHIBIT "B"
(Site Plan and Description of Development of Record)
(Must include proposed units of development and land use categories)

March 27, 2023

Dale Keller, PE
RRIF Administrator
Regional Transportation Commission of Washoe County
1105 Terminal Way, Suite 108
Reno, NV 89502

RRIF Offset Agreement Request: Parr/Dandini/US 395 Signalization (Spectrum-Dandini Mixed Use)

Dear Mr. Keller,

Dandini Spectrum Holdings LLC (Developer of Record) hereby formally requests a Regional Road Impact Fee (RRIF) Offset Agreement and RRIF Waivers for the installation of traffic signal systems at the Parr/Dandini/US 395 ramp terminal intersections within the City of Reno.

The need for signalization of the Parr/Dandini Interchange was identified in the *North Valleys Multimodal Transportation Study* as an existing regional need and reconfirmed in the *Traffic Impact Study for Spectrum-Dandini Mixed-Use Development, March 2, 2021* (the subject development traffic study). The traffic study is included as *Attachment A*.

NDOT conducted an Intersection Control Evaluation (ICE) for the Parr/Dandini/US 395 interchange in 2021 as part of the US 395 widening project design and concluded that traffic signals are the preferred alternative for intersection control to address existing and future capacity/operational deficiencies. The ICE study is included as *Attachment B*.

The Parr Boulevard Interchange Improvements project was listed in the 2022-2026 timeframe of the *2040 Regional Transportation Plan* (RTP). The previously programmed Parr Interchange Improvements appear to have been subsequently wrapped into the US 395 Add SB Lane, Aux Lanes, NB & SB (N. McCarran to Golden Valley) project (2021-2025 timeframe) in the *2050 RTP* as the improvements are presumably anticipated to be constructed by NDOT within that larger project.

Absent the Development of Record moving forward prior to the US 395 project slated for construction in 2023, NDOT would construct the signalization improvements as part of the regional improvement program (2050 RTP). The signalization improvements are a well-documented and programmed regional capacity improvement eligible for an RRIF Offset Agreement either via the current overall US 395 project/former Parr Interchange Improvements or as spot intersection improvements per the 6th Edition RRIF General Administrative Manual (GAM). Parr Blvd and Dandini Blvd are classified as Regional Roads.

The subject development was entitled under the 6th Edition RRIF/GAM as City of Reno Special Use Permit LDC21-00040, approved April 8, 2021.

The **Capital Improvements** include:

- Installation of a traffic signal system at the Parr Blvd/US 395 SB ramps intersection
- Installation of a traffic signal system at the Dandini Blvd/US 395 NB ramps intersection
- Signal interconnect system (fiber optic)
- Minor curb, gutter, sidewalk, and pedestrian ramp improvements associated with creating ADA accessible landings and access to pedestrian push buttons
- Signing and striping upgrades
- Minor widening and construction of a westbound right-turn lane on Dandini Blvd at the northbound ramps

The project **Construction Plans and Specifications** have been submitted to NDOT for review and are included as *Attachment C*. Coordination with NDOT Headquarter and District staff has, and will continue to occur, to efficiently mesh the signal systems with the US 395 widening plans currently being designed by NDOT. The project will be constructed under an Occupancy Permit process through NDOT.

The **Developer of Record** is:

Dandini Spectrum Holdings LLC
7979 E. Tufts Ave, Suite 1125
Denver, CO 80237
Phone: (775) 219-0297
Email: joe@swinvest.com
Contact: Joe Pelham

The **Development of Record** is:

Spectrum-Dandini Mixed-Use Development
Local Government File Numbers:
City of Reno SUP: LDC21-00040

The preliminary **Site Plan** for the Development of Record is included as *Attachment D*.

Approved Land Uses for the development and the **Associated Regional Road Impact Fees** based on the applicable impact fee schedule (6th Edition, December 1, 2020, included as *Attachment E*) are as follows:

Multifamily (Apartments) – 420 units @ $3,358.92/unit = 1,410,746.40
Lodging (Hotel) – 120 rooms @ $1,119.64/room = $134,356.80
Eating/Drinking Places (Fast Food Restaurant) – 1.5 ksf @ $7,532.12/1,000 sqft GFA = $11,298.18
Eating/Drinking Places (Sit Down Restaurant) – 3.3 ksf @ $7,532.12/1,000 sqft GFA = $24,856.00
Day Care (Daycare) – 4.5 ksf @ $4,307.82/1,000 sqft GFA = $19,385.19

Total Anticipated Impact Fee = $1,600,642.57

The cost of the traffic signal installations is anticipated to be less than the impact fee amount. If the actual improvement cost ultimately exceeds the impact fee amount, the Waiver amount requested will be limited to the impact fee amount.

The **Engineer of Record** for this offset agreement is:`

Headway Transportation, LLC
5482 Longley Lane, Suite B
Reno, NV 89511
Phone: 775.322.4300
Email: lchilson@headwaytransportation.com
Contact: Loren Chilson, PE

Qualifications of Inspection and Testing Firm

Headway Transportation is a local expert in traffic signal design and inspection as has extensive experience inspecting traffic signal, signing, and striping improvements for RTC administered contracts. There are no special certifications required by the RTC for traffic signal inspection services at this time. Any public improvements requiring sampling, testing, or quality assurance activities will be provided through an ACI and/or NAQTC certified firm. Wood Rodgers is the civil engineer and inspector for all roadway elements.

Inspection Manager/Oversight: Rich Pettinari, PE, Wood Rodgers staff, and NDOT Permit Inspector
Daily Inspector(s): Rich Pettinari, PE (traffic signal), Wood Rodgers staff, and NDOT Permit Inspector

Preliminary Engineering Cost Estimate

The project design has been submitted to NDOT. Signalization costs are consistent and can be reasonably estimated prior to finalization of the plans. The developer's general contractor will request bids from subcontractors when the plans are finalized. The preliminary project estimate is provided below, however, the actual construction bid result will supersede the Engineer's Estimate and all costs will be updated.

Preliminary Cost Estimate - Parr/Dandini/US 395 Traffic Signal Improvements

Item	Description	Estimated Cost	Final Cost
1	Engineering Fees	$130,000.00	
2	Permit Fees	$5,000.00	
3	Construction Contract	$1,300,000.00	
4	Inspection/Testing	$130,000.00	
5	Contingency	$15,000.00	
Total		**$1,580,000**	
Waiver Amount Requested		**$1,580,000.00**	

Traffic Design Report & Project Eligibility

Justification/explanation of the capacity improvements, and verification that the improvements will provide operations within policy level of service for at least 10 years, is provided in the *Traffic Impact Study for Spectrum-Dandini Mixed-Use Development, March 2, 2021, Headway Transportation.*

Project Specifications

All work will be required to comply with the Standard Specifications for Public Works Construction (Orange Book) current edition, consistent with RTC requirements for Public Works projects. The plans specifically require compliance with the City of Reno and NDOT standard details.

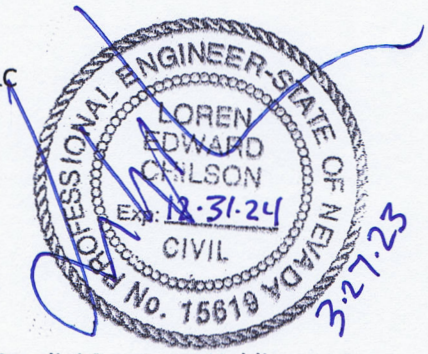
Additionally, NDOT will review the plans and specifications during the permitting process.

Construction Schedule

The signal improvements are anticipated to be constructed in early/mid 2024.

Please do not hesitate to contact us with any questions or requests for additional information. We recognize that full project plans, specifications, and updates to information contained in this application will be necessary to prior to execution of the final RRIF Offset Agreement. Please confirm receipt of this request, agreement of eligibility, and provide any direction for next steps. Thank you in advance for your consideration and cooperation in this multi-agency effort to deliver a much needed improvement.

Sincerely,
HEADWAY TRANSPORTATION, LLC



Loren Chilson, PE
Principal
Engineer of Record on behalf of Dandini Spectrum Holdings LLC

Attachments:

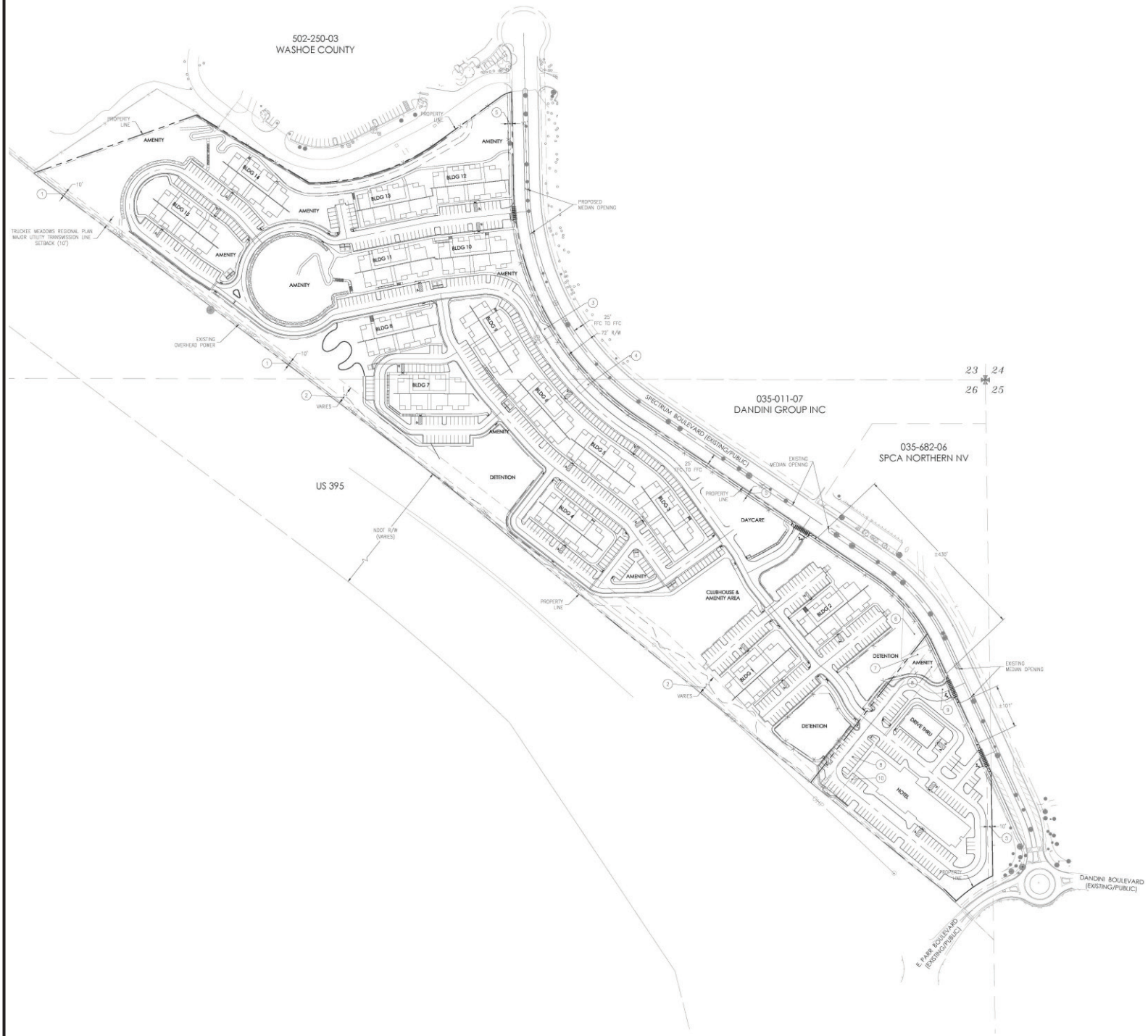
~~A - Traffic Study~~
~~B - ICE Study~~
~~C - Plans and Specifications~~
D - Site Plan
~~E - Impact Fee Schedule~~

HEADWAY TRANSPORTATION

NO SCALE

Figure 1

Spectrum-Dandini Mixed-Use Development
Traffic Impact Study
Study Area



NO SCALE

Figure 2

Spectrum-Dandini Mixed-Use Development
Traffic Impact Study
Site Plan

TRAFFIC IMPACT STUDY

FOR

SPECTRUM-DANDINI MIXED-USE DEVELOPMENT

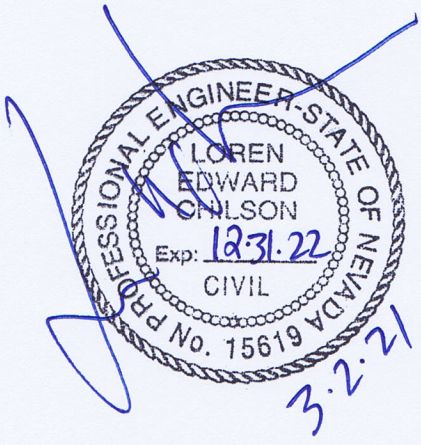
March 2, 2021

PREPARED FOR:

Southwestern Property Group

PREPARED BY:

HEADWAY TRANSPORTATION



Headway Transportation, LLC
5482 Longley Lane, Suite B, Reno, Nevada 89511
775.322.4300
www.HeadwayTransportation.com

EXHIBIT "C"
(Offered Improvements Application/Submittals)

GENERAL NOTES

1. THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH ACCEPTED ENGINEERING PROCEDURES AND GUIDELINES, AND ARE IN SUBSTANTIAL COMPLIANCE WITH APPLICABLE STATUTES, ORDINANCES OR STANDARDS. IN THE EVENT OF CONFLICT BETWEEN ANY PORTION OF THESE PLANS AND STANDARDS, THE STANDARDS SHALL APPLY AND THE ENGINEER SHALL BE CONTACTED IMMEDIATELY.
2. THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; AND THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY, AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE OWNER AND ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATION AND SHORING PROCEDURES AND CONFORM TO THE LATEST O.S.H.A. REQUIREMENTS.
4. THE CONTRACTOR SHALL MAINTAIN AN ON-GOING DUST CONTROL PROGRAM, INCLUDING WATERING OF OPEN AREAS, IN ORDER TO CONFORM WITH THE LATEST STATE AND COUNTY AIR POLLUTION REGULATIONS. THE CONTRACTOR SHALL HAVE A DUST CONTROL PLAN APPROVED BY THE WASHOE COUNTY DISTRICT HEALTH DEPARTMENT AIR POLLUTION CONTROL DIVISION PRIOR TO COMMENCEMENT OF ANY WORK.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DAILY REMOVAL OF ALL CONSTRUCTION MATERIALS SPILLED ON PAVED STREETS.
6. THE CONTRACTOR SHALL PURSUE THE WORK IN A CONTINUOUS AND DILIGENT MANNER, CONFORMING TO ALL THE PERTINENT SAFETY REGULATIONS, TO INSURE A TIMELY COMPLETION OF THE PROJECT.
7. THE CONTRACTOR SHALL NOTIFY ALL ENTITIES INVOLVED (PUBLIC AND PRIVATE) 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.
8. ALL AREAS DISTURBED AND LEFT UNDEVELOPED FOR A PERIOD OF MORE THAN 14 DAYS SHALL BE STABILIZED BY THE APPLICATION OF AN APPROVED DUST PALLATIVE AT THE COST OF THE CONTRACTOR.
9. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN AND/OR COORDINATE WITH THE OWNER AND PAY FOR ALL NECESSARY PERMITS AND FEES REQUIRED FOR CONSTRUCTION. CONTRACTOR TO PROVIDE ALL NECESSARY TRAFFIC CONTROL, MAINTAIN ACCESS TO ALL PARCELS, PROVIDE ALL TEMPORARY AND/OR PERMANENT PATCHING AS REQUIRED BY THE LOCAL ORDINANCES AND POLICY STANDARDS.
10. ALL EXISTING UTILITY LOCATIONS, SIZES, AND DESCRIPTIONS AS SHOWN ON THESE DRAWINGS ARE FROM SURFACE OBSERVATIONS USED IN CONJUNCTION WITH AVAILABLE RECORDS, REFERENCE MAPS, DRAWINGS, AND VERBAL STATEMENTS SUPPLIED BY UTILITY COMPANIES, AND MAY NOT BE WHOLLY ACCURATE OR RELIABLE. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES WHICH MAY BE AFFECTED BY THE WORK TO OBTAIN ASSISTANCE IN THE LOCATION OF EXISTING MAINS AND SERVICE CONNECTIONS. THE CONTRACTOR SHALL ALSO CALL U.S.A. (1-800-642-2444) PRIOR TO BEGINNING WORK.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION SIGNING, BARRICADES AND TRAFFIC DELINEATION TO CONFORM TO THE STATE OF NEVADA, DEPARTMENT OF TRANSPORTATION, "NEVADA WORK ZONE TRAFFIC CONTROL MANUAL".
12. THE WORK IN THIS CONTRACT INCLUDES ALL ONSITE AND OFFSITE WORK SHOWN ON THESE DRAWINGS, DESCRIBED IN THE SPECIFICATIONS, OR REASONABLY IMPLIED.
13. SHOULD ANY PREHISTORIC OR HISTORIC REMAINS/ARTIFACTS BE DISCOVERED DURING SITE DEVELOPMENT, WORK SHALL TEMPORARILY BE HALTED AT THE SPECIFIC SITE AND THE DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES, DIVISION OF HISTORIC PRESERVATION AND ARCHEOLOGY, SHALL BE NOTIFIED TO RECORD AND PHOTOGRAPH THE SITE. THE PERIOD OF TEMPORARY DELAY SHALL BE LIMITED TO A MAXIMUM OF TWO WORKING DAYS FROM THE DATE OF NOTIFICATION.
14. ALL DIMENSIONS AND DISTANCES ARE TO BACK OF CURB, CURB RETURN, FACE OF BUILDING, FACE OF WALL, FLOW LINE, PROPERTY LINE, CENTER OF STRIPING, CENTER LINE OF PIPE, OR END OF IMPROVEMENTS UNLESS OTHERWISE NOTED.
15. THE CONTRACTOR SHALL, AT ALL TIMES DURING CONSTRUCTION, PROTECT FROM DAMAGE EXISTING IMPROVEMENTS ON AND AROUND THE SITE, INCLUDING, BUT NOT LIMITED TO, PAVEMENT, CURB & GUTTER, SIDEWALK, LANDSCAPING, SIGNAGE, STORM & SANITARY SEWERS, AND ALL UTILITIES. THE CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR THE REPAIR OF ANY IMPROVEMENTS (EXISTING OR PROPOSED) DAMAGED THROUGHOUT THE COURSE OF CONSTRUCTION.
16. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN AT ALL TIMES EMERGENCY ACCESS TO THE PROJECT SITE TO THE SATISFACTION OF THE CITY OF RENO FIRE DEPARTMENT.
17. THE CONTRACTOR SHALL, UPON COMPLETION OF THE PROJECT, PREPARE AND SUBMIT TO THE OWNER RECORD DRAWINGS INDICATING BY DIMENSION AND DESCRIPTION ANY FACILITY CONSTRUCTED CONTRARY TO THAT SHOWN ON THESE PLANS.
18. THE CONTRACTOR SHALL SUPPLY SUBMITTALS FOR ALL MATERIALS TO BE USED ON THE PROJECT TO THE DESIGN ENGINEER AND THE ENGINEER OF RECORD FOR APPROVAL PRIOR TO THEIR MANUFACTURE R USE. SUBMITTALS MAY INCLUDE SHOP DRAWINGS, MATERIAL CERTIFICATIONS, SAMPLES, MIX DESIGNS OR OTHER INFORMATION THE ENGINEER REQUIRES TO DETERMINE CONFORMANCE WITH PROJECT PLANS AND SPECIFICATIONS.
19. ALL QUANTITIES SHOWN HEREIN ARE APPROXIMATE AND USED FOR PERMIT AND BOND PURPOSES ONLY. THEY SHALL NOT BE USED IN ANY WAY FOR BIDDING OR CONSTRUCTION. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO CONDUCT QUANTITY TAKE-OFFS FOR BIDDING AND CONSTRUCTION PURPOSES.

GENERAL NOTES (CONTINUED)

20. INSPECTION REQUIREMENTS SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS.
21. CONTRACTOR SHALL REVIEW THE STORM WATER POLLUTION PREVENTION PLANS (SWPPP) AND CONSTRUCT ALL REQUIRED ITEMS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITY. CONTRACTOR TO COORDINATE WITH OWNER/DEVELOPER FOR THE MAINTENANCE AND UPDATING OF REQUIREMENTS PER THE SWPPP.
22. THE CONTRACTOR SHALL ELIMINATE ALL MOSQUITO BREEDING PLACES WITHIN THE GRADED AREAS.
23. SHOULD AN OBVIOUS PROBLEM BE OBSERVED, THE ENGINEER OF RECORD SHALL BE INFORMED IMMEDIATELY, AND THE ENGINEER OF RECORD SHALL REQUIRE CORRECTIVE ACTION.
24. NO CONSTRUCTION EQUIPMENT SHALL BE PARKED OR MATERIAL STORED ON CONCRETE OR ASPHALT SURFACES TO BE MAINTAINED BY THE CITY OF RENO OR NDOT.

GRADING NOTES:

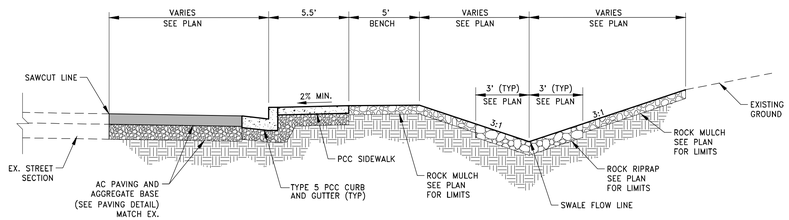
1. ADD 4900 TO ALL FINISHED GRADE ELEVATIONS.
2. FINISH GRADE REPRESENTS THE ELEVATION OF THE FINISHED SURFACE. IF TOP SOIL IS TO BE PLACED, THE CONTRACTOR SHALL ADJUST THE GRADE SHOWN.
3. CONTRACTOR SHALL USE EXTREME CARE WHEN WORKING AROUND EXISTING UTILITIES AND EXISTING ROADS.
4. CONTRACTOR SHALL HAVE APPROVED DUST CONTROL, GRADING PERMITS AND STORM WATER POLLUTION PREVENTION PLAN PRIOR TO STARTING CONSTRUCTION.
5. CONTRACTOR SHALL USE EXTREME CARE IN WORKING IN AREAS OUTSIDE THE PROJECT LIMITS SO AS TO MINIMIZE DISTURBANCE OF EXISTING VEGETATION.
6. CONTRACTOR SHALL COMPLY WITH THE APPROVED STORM WATER DISCHARGE PERMIT BY NEVADA STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND COMPLY WITH THE SWPPP.
7. CONTRACTOR SHALL PROVIDE THE NECESSARY CONSTRUCTION DE-WATERING TO PROPERLY CONSTRUCT THE IMPROVEMENTS.

LEGEND

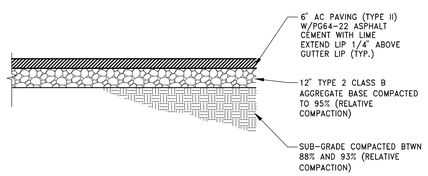
EXISTING	PROPOSED	DESCRIPTION
		DRAIN MANHOLE
		SEWER MANHOLE
12" SD	12" SD	DRAIN LINE AND SIZE
		CATCH BASIN
6" SS	8" SS	SEWER LINE AND SIZE
		CLEAN OUT
0+00 EX.SS	0+00 SS	SEWER SERVICE
8" W	8" W	WATER LINE AND SIZE
8" W	8" W	DUCTILE IRON WATER LINE AND SIZE
8" RW	8" RW	RECLAIMED WATER LINE AND SIZE
		WATER LINE REDUCER
		WATER SERVICE
		RECLAIMED WATER IRRIGATION SERVICE
		WATER GATE VALVE
		FIRE HYDRANT
		AIR RELEASE VALVE
		FLUSH VALVE ASSEMBLY
G T E	G T E	GAS, TELEPHONE OR ELECTRIC
		STREET LIGHT
		30" R1 SIGN (STOP)
		TRAFFIC SIGN AS NOTED
X	X	CHAIN LINK FENCE
X X	X X	CHAIN LINK GATE
		DRIVEWAY
		SIDEWALK RAMP
		PROPERTY LINE
		MONUMENT
		TREE TO BE REMOVED/RELOCATED
25 x 31	31.25	SPOT ELEVATION
2.0 TW 44.6 BW 42.6	2.0 TW 44.6 BW 42.6	WALL HEIGHTS TG=FG ON RETAINED SIDE OF WALL BG=FG ON EXPOSED FACE SIDE OF WALL
	HEIGHT OF WALL	

ABBREVIATIONS

AB	AGGREGATE BASE
AC	ASPHALT CONCRETE PAVEMENT
AVRV	AIR VACUUM RELIEF VALVE
BC	BEGIN CURVE
BM	BENCH MARK
BVC	BEGIN VERTICAL CURVE
BOW	BACK OF WALK
BG	BOTTOM GRADE
CB	CATCH BASIN
℄	CENTER LINE
CONST	CONSTRUCT
CR	CURB RETURN
CT	COURT
DIP	DUCTILE IRON PIPE
SDMH	STORM DRAIN MANHOLE
DR	DRIVE
E	EAST
EC	END CURVE
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
EX	EXISTING
EXIST	EXISTING
EVC	END OF VERTICAL CURVE
FES	FLARED END SECTION
FG	FINISH GRADE ELEVATION
FH	FIRE HYDRANT
FL	FLOW LINE
FLG	FLANGE
FM	FORCE MAIN
FVA	FLUSH VALVE ASSEMBLY
GR	GRATE
GB	GRADE BREAK
GV	GATE VALVE
HP	HIGH POINT
HDPE	HIGH DENSITY POLYETHYLENE
INV	INVERT
JP	JOINT POLE
L	LEFT
LF	LINEAR FEET
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MON	MONUMENT
N	NORTH
PC	POINT OF COMPOUND CURVE
PCC	PORTLAND CEMENT CONCRETE
PI	POINT OF INTERSECTION
PIVC	POINT OF INTERSECTION VERTICAL CURVE
PL	PROPERTY LINE
PP	POWER POLE
R, R=	RADIUS
RCB	REINFORCED CONCRETE BOX
RCP	REINFORCED CONCRETE PIPE
PRC	POINT OF REVERSE CURVATURE
PVC	POINT OF VERTICAL CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENT
RCW	RECLAIMED WATER
R	RIGHT
RW	RIGHT OF WAY
S	SOUTH
SDMH	STORM DRAIN MANHOLE
SE	SANITARY SEWER EASEMENT
SHT	SHEET
STA	STATION
SS	SANITARY SEWER SERVICE
SSMH	SANITARY SEWER MANHOLE
SW	SIDEWALK
T	TANGENT
TBC,TC	TOP BACK OF CURB
TYP	TYPICAL
TP	TELEPHONE POLE
TG	TOP GRADE
W	WEST
WM	WATER MAIN



A C-1 **TYPICAL SECTION**
NOT TO SCALE



1 C-1 **TYPICAL AC PAVING SECTION**
N.T.S.

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
1361 Corporate Boulevard Tel 775.823.4068
Reno, NV 89502 Fax 775.823.4066

NO. | DESCRIPTION | ENGR INIT | DATE

NEVADA

IMPROVEMENT PLANS FOR
U.S. 395/PARR BOULEVARD INTERCHANGE
CIVIL NOTES
CITY OF RENO

03/02/23

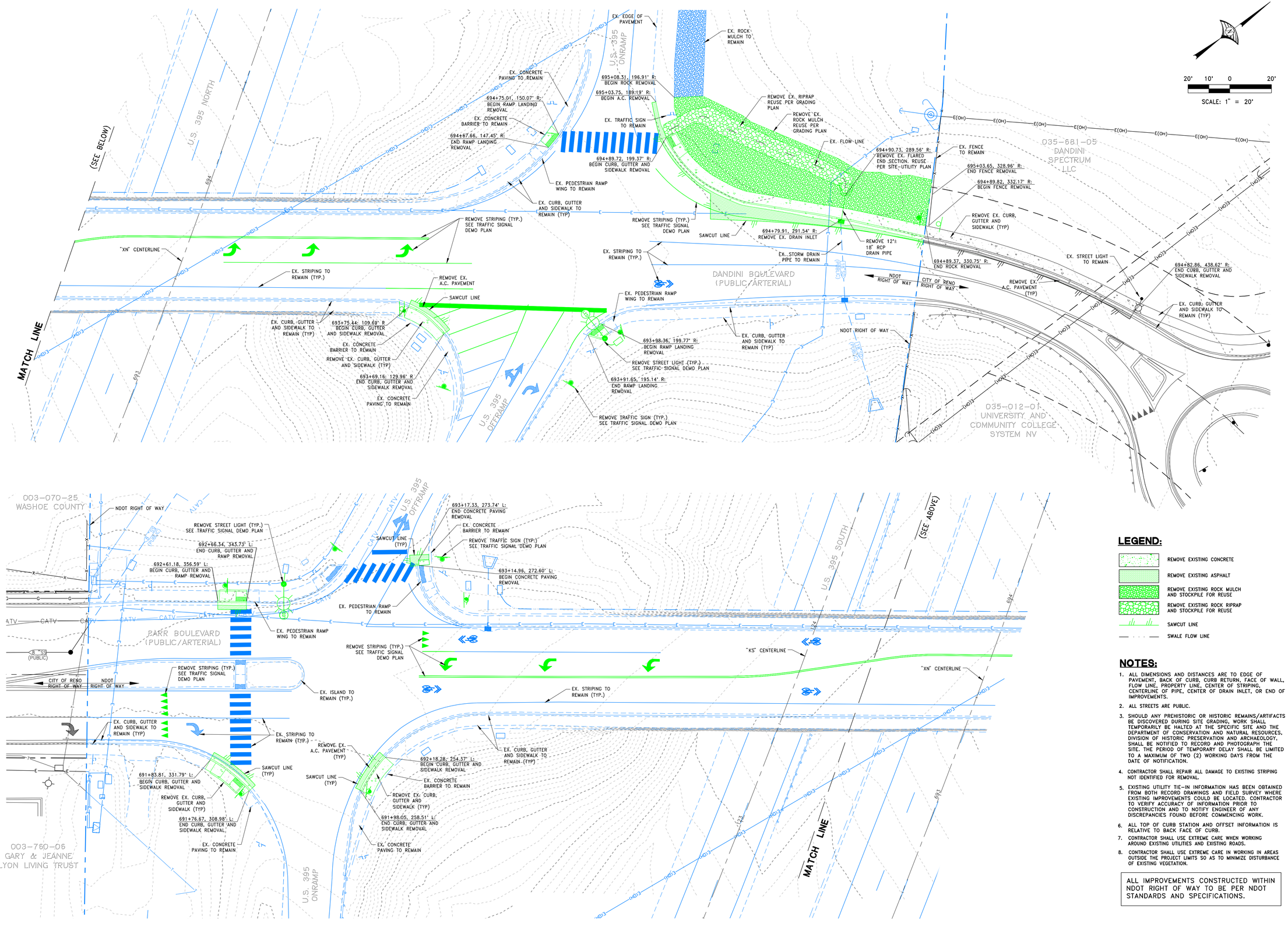
DATE: MARCH, 2023
SCALE: N/A
DRAWN BY: LCS
DESIGNED BY: MWO
CHECKED BY: MWO

PROJECT NO. 3873005

DRAWING C-1

SHT 1 OF 7

J:\Jobs\3873_Dandini_Blvd_Property\Dandini_MFR_Southwestern_Prop_OA\Civil\Dwg\Parr Offsite Int\C01_05_OFF_INTX_NOT.dwg 3/2/2023 10:04 AM Leo Smiley



LEGEND:

- REMOVE EXISTING CONCRETE
- REMOVE EXISTING ASPHALT
- REMOVE EXISTING ROCK MULCH AND STOCKPILE FOR REUSE
- REMOVE EXISTING ROCK RIPRAP AND STOCKPILE FOR REUSE
- SAWCUT LINE
- SWALE FLOW LINE

NOTES:

1. ALL DIMENSIONS AND DISTANCES ARE TO EDGE OF PAVEMENT, BACK OF CURB, CURB RETURN, FACE OF WALL, FLOW LINE, PROPERTY LINE, CENTER OF STRIPING, CENTERLINE OF PIPE, CENTER OF DRAIN INLET, OR END OF IMPROVEMENTS.
2. ALL STREETS ARE PUBLIC.
3. SHOULD ANY PREHISTORIC OR HISTORIC REMAINS/ARTIFACTS BE DISCOVERED DURING SITE GRADING, WORK SHALL TEMPORARILY BE HALTED AT THE SPECIFIC SITE AND THE DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES, DIVISION OF HISTORIC PRESERVATION AND ARCHAEOLOGY, SHALL BE NOTIFIED TO RECORD AND PHOTOGRAPH THE SITE. THE PERIOD OF TEMPORARY DELAY SHALL BE LIMITED TO A MAXIMUM OF TWO (2) WORKING DAYS FROM THE DATE OF NOTIFICATION.
4. CONTRACTOR SHALL REPAIR ALL DAMAGE TO EXISTING STRIPING NOT IDENTIFIED FOR REMOVAL.
5. EXISTING UTILITY TIE-IN INFORMATION HAS BEEN OBTAINED FROM BOTH RECORD DRAWINGS AND FIELD SURVEY WHERE EXISTING IMPROVEMENTS COULD BE LOCATED. CONTRACTOR TO VERIFY ACCURACY OF INFORMATION PRIOR TO CONSTRUCTION AND TO NOTIFY ENGINEER OF ANY DISCREPANCIES FOUND BEFORE COMMENCING WORK.
6. ALL TOP OF CURB STATION AND OFFSET INFORMATION IS RELATIVE TO BACK FACE OF CURB.
7. CONTRACTOR SHALL USE EXTREME CARE WHEN WORKING AROUND EXISTING UTILITIES AND EXISTING ROADS.
8. CONTRACTOR SHALL USE EXTREME CARE IN WORKING IN AREAS OUTSIDE THE PROJECT LIMITS SO AS TO MINIMIZE DISTURBANCE OF EXISTING VEGETATION.

ALL IMPROVEMENTS CONSTRUCTED WITHIN NDOT RIGHT OF WAY TO BE PER NDOT STANDARDS AND SPECIFICATIONS.

NO.	DESCRIPTION	ENGR INIT	DATE

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
1361 Corporate Boulevard Tel 775.823.4068
Reno, NV 89502 Fax 775.823.4066

NEVADA LICENSED ENGINEER MEGAN W. OVERTON Exp. 12/31/2023 CIVIL No. 18689 STATE OF NEVADA
03/02/23

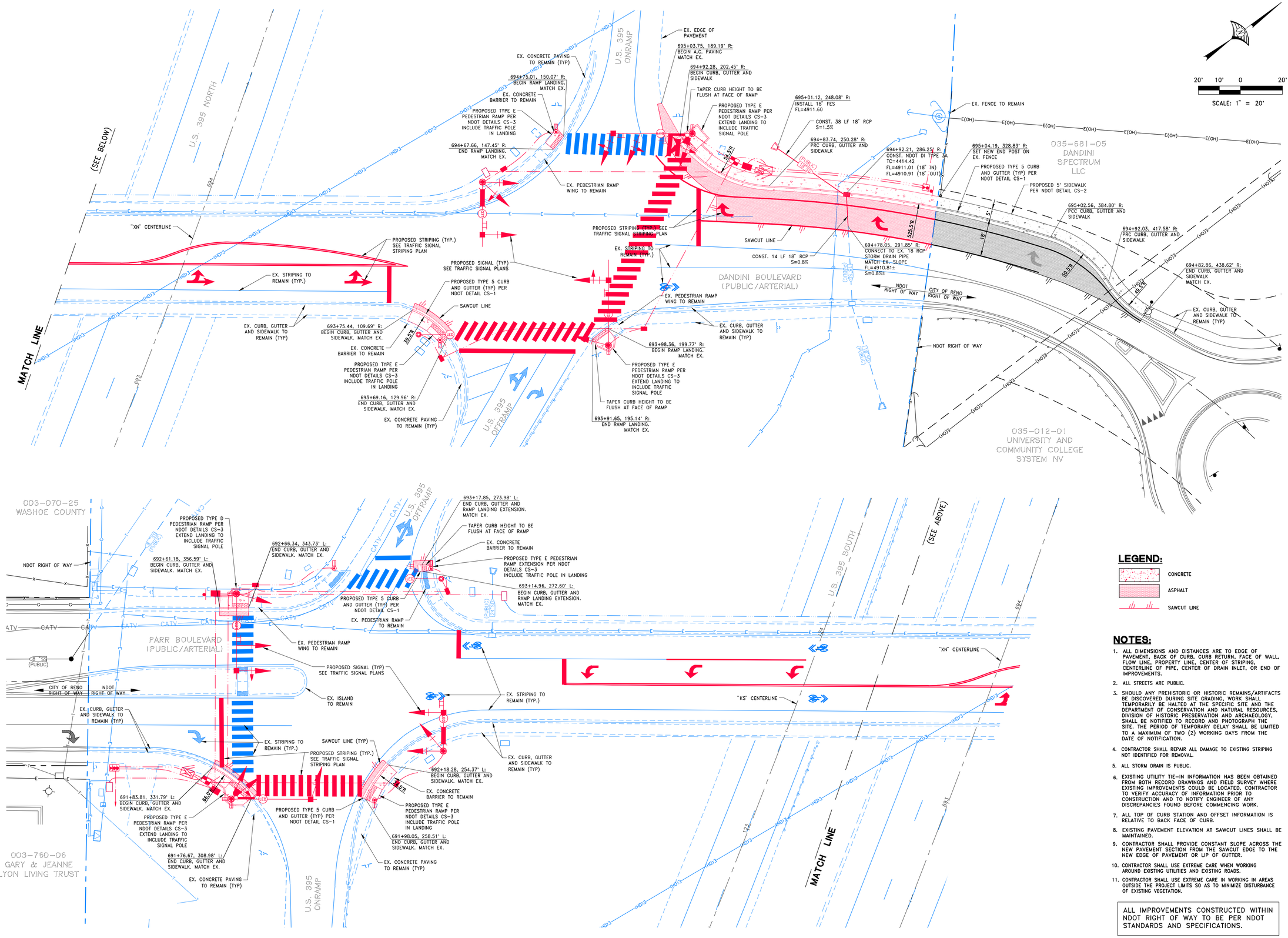
DATE: MARCH, 2023
SCALE: 1"=20'
DRAWN BY: LCS
DESIGNED BY: MWO
CHECKED BY: MWO

IMPROVEMENT PLANS FOR
U.S. 395/PARR BOULEVARD INTERCHANGE
CIVIL DEMOLITION PLAN
CITY OF RENO NEVADA

PROJECT NO. 3873005

DRAWING C-2

SHT 2 OF 7



LEGEND:

- CONCRETE
- ASPHALT
- SAWCUT LINE

NOTES:

1. ALL DIMENSIONS AND DISTANCES ARE TO EDGE OF PAVEMENT, BACK OF CURB, CURB RETURN, FACE OF WALL, FLOW LINE, PROPERTY LINE, CENTER OF STRIPING, CENTERLINE OF PIPE, CENTER OF DRAIN INLET, OR END OF IMPROVEMENTS.
2. ALL STREETS ARE PUBLIC.
3. SHOULD ANY PREHISTORIC OR HISTORIC REMAINS/ARTIFACTS BE DISCOVERED DURING SITE GRADING, WORK SHALL TEMPORARILY BE HALTED AT THE SPECIFIC SITE AND THE DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES, DIVISION OF HISTORIC PRESERVATION AND ARCHAEOLOGY, SHALL BE NOTIFIED TO RECORD AND PHOTOGRAPH THE SITE. THE PERIOD OF TEMPORARY DELAY SHALL BE LIMITED TO A MAXIMUM OF TWO (2) WORKING DAYS FROM THE DATE OF NOTIFICATION.
4. CONTRACTOR SHALL REPAIR ALL DAMAGE TO EXISTING STRIPING NOT IDENTIFIED FOR REMOVAL.
5. ALL STORM DRAIN IS PUBLIC.
6. EXISTING UTILITY TIE-IN INFORMATION HAS BEEN OBTAINED FROM BOTH RECORD DRAWINGS AND FIELD SURVEY WHERE EXISTING IMPROVEMENTS COULD BE LOCATED. CONTRACTOR TO VERIFY ACCURACY OF INFORMATION PRIOR TO CONSTRUCTION AND TO NOTIFY ENGINEER OF ANY DISCREPANCIES FOUND BEFORE COMMENCING WORK.
7. ALL TOP OF CURB STATION AND OFFSET INFORMATION IS RELATIVE TO BACK FACE OF CURB.
8. EXISTING PAVEMENT ELEVATION AT SAWCUT LINES SHALL BE MAINTAINED.
9. CONTRACTOR SHALL PROVIDE CONSTANT SLOPE ACROSS THE NEW PAVEMENT SECTION FROM THE SAWCUT EDGE TO THE NEW EDGE OF PAVEMENT OR LIP OF GUTTER.
10. CONTRACTOR SHALL USE EXTREME CARE WHEN WORKING AROUND EXISTING UTILITIES AND EXISTING ROADS.
11. CONTRACTOR SHALL USE EXTREME CARE IN WORKING IN AREAS OUTSIDE THE PROJECT LIMITS SO AS TO MINIMIZE DISTURBANCE OF EXISTING VEGETATION.

ALL IMPROVEMENTS CONSTRUCTED WITHIN NDOT RIGHT OF WAY TO BE PER NDOT STANDARDS AND SPECIFICATIONS.

NO.	DESCRIPTION	ENGR INIT	DATE

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
1361 Corporate Boulevard Tel 775.823.4068
Reno, NV 89502 Fax 775.823.4066

STATE OF NEVADA
MEGAN W. OVERTON
Exp. 12/31/2023
CIVIL
No. 18669
03/02/23

DATE: MARCH, 2023
SCALE: 1"=20'
DRAWN BY: LCS
DESIGNED BY: MWO
CHECKED BY: MWO

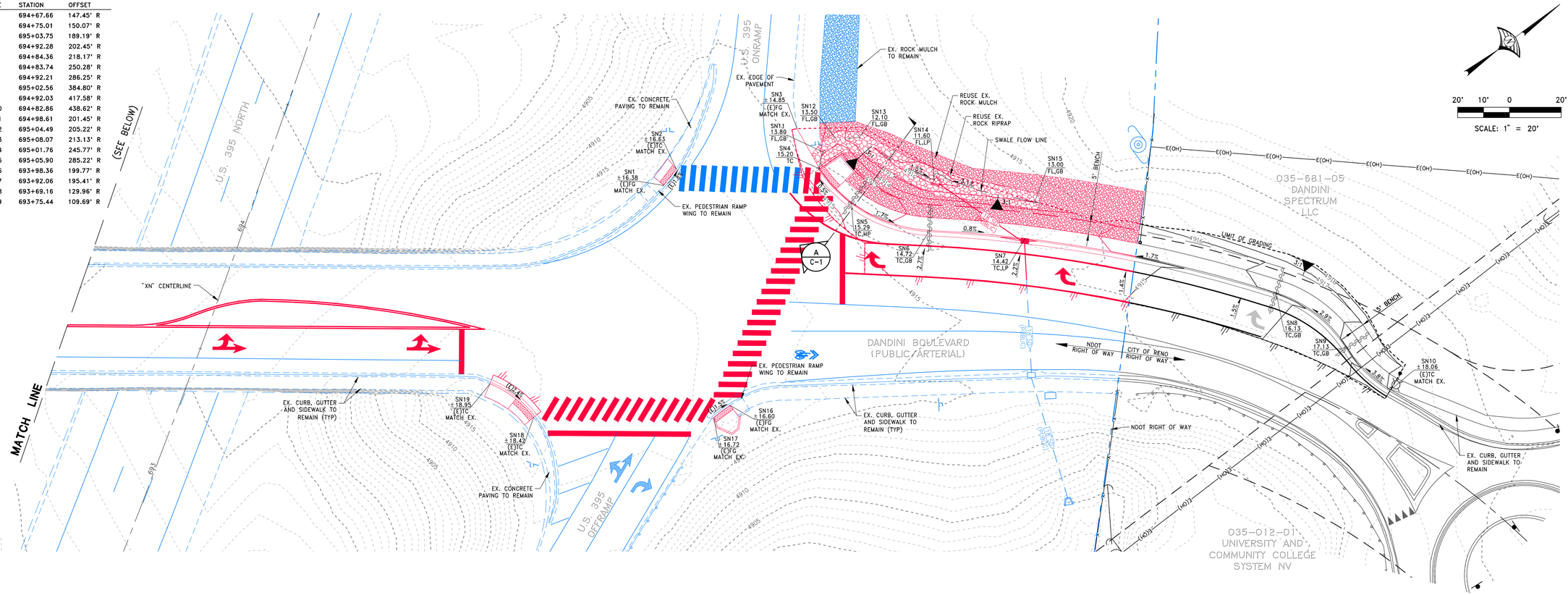
IMPROVEMENT PLANS FOR
U.S. 395/PARR BOULEVARD INTERCHANGE
CIVIL SITE-UTILITY PLAN
CITY OF RENO NEVADA

PROJECT NO. 3873005

DRAWING C-3

SHT 3 OF 7

NOTE	STATION	OFFSET
SN1	694+67.66	147.45' R
SN2	694+75.01	150.07' R
SN3	695+03.75	189.19' R
SN4	694+92.28	202.45' R
SN5	694+84.36	218.17' R
SN6	694+83.74	250.28' R
SN7	694+92.21	286.25' R
SN8	695+02.56	384.80' R
SN9	694+92.03	417.58' R
SN10	694+82.86	438.62' R
SN11	694+98.61	201.45' R
SN12	695+04.49	205.22' R
SN13	695+08.07	213.13' R
SN14	695+01.76	245.77' R
SN15	695+05.90	285.22' R
SN16	693+98.36	199.77' R
SN17	693+92.06	195.41' R
SN18	693+69.16	129.96' R
SN19	693+75.44	109.69' R



NOTE	STATION	OFFSET
SN20	692+61.18	356.59' L
SN21	692+66.34	343.73' L
SN22	693+17.85	273.98' L
SN23	693+14.96	272.60' L
SN24	692+18.28	254.37' L
SN25	691+98.05	258.51' L
SN26	691+76.67	308.98' L
SN27	691+83.81	331.79' L

LEGEND:

- ROCK MULCH
- ROCK RIPRAP
- SAWCUT LINE
- GRADE BREAK
- SWALE FLOW LINE

NOTES:

1. ALL DIMENSIONS AND DISTANCES ARE TO EDGE OF PAVEMENT, BACK OF CURB, CURB RETURN, FACE OF WALL, FLOW LINE, PROPERTY LINE, CENTER OF STRIPING, CENTERLINE OF PIPE, CENTER OF DRAIN INLET, OR END OF IMPROVEMENTS.
2. ALL STREETS ARE PUBLIC.
3. SHOULD ANY PREHISTORIC OR HISTORIC REMAINS/ARTIFACTS BE DISCOVERED DURING SITE GRADING, WORK SHALL TEMPORARILY BE HALTED AT THE SPECIFIC SITE AND THE DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES, DIVISION OF HISTORIC PRESERVATION AND ARCHAEOLOGY, SHALL BE NOTIFIED TO RECORD AND PHOTOGRAPH THE SITE. THE PERIOD OF TEMPORARY DELAY SHALL BE LIMITED TO A MAXIMUM OF TWO (2) WORKING DAYS FROM THE DATE OF NOTIFICATION.
4. CONTRACTOR SHALL REPAIR ALL DAMAGE TO EXISTING STRIPING NOT IDENTIFIED FOR REMOVAL.
5. ALL STORM DRAIN IS PUBLIC.
6. EXISTING UTILITY TIE-IN INFORMATION HAS BEEN OBTAINED FROM BOTH RECORD DRAWINGS AND FIELD SURVEY WHERE EXISTING IMPROVEMENTS COULD BE LOCATED. CONTRACTOR TO VERIFY ACCURACY OF INFORMATION PRIOR TO CONSTRUCTION AND TO NOTIFY ENGINEER OF ANY DISCREPANCIES FOUND BEFORE COMMENCING WORK.
7. ALL TOP OF CURB STATION, OFFSET, AND ELEVATION INFORMATION IS RELATIVE TO BACK FACE OF CURB.
8. EXISTING PAVEMENT ELEVATION AT SAWCUT LINES SHALL BE MAINTAINED.
9. CONTRACTOR SHALL PROVIDE CONSTANT SLOPE ACROSS THE NEW PAVEMENT SECTION FROM THE SAWCUT EDGE TO THE NEW EDGE OF PAVEMENT OR LIP OF GUTTER.
10. ADD 4900 TO FINISH GRADE ELEVATIONS.
11. ALL PROPOSED SLOPES ARE 3:1 OR LESS UNLESS NOTED OTHERWISE.
12. CONTRACTOR SHALL USE EXTREME CARE WHEN WORKING AROUND EXISTING UTILITIES AND EXISTING ROADS.
13. CONTRACTOR SHALL USE EXTREME CARE IN WORKING IN AREAS OUTSIDE THE PROJECT LIMITS SO AS TO MINIMIZE DISTURBANCE OF EXISTING VEGETATION.

ALL IMPROVEMENTS CONSTRUCTED WITHIN NDOT RIGHT OF WAY TO BE PER NDOT STANDARDS AND SPECIFICATIONS.

NO.	DESCRIPTION	ENGR INIT	DATE

WOOD RODGERS
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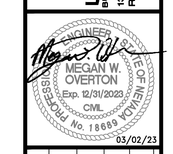
1361 Corporate Boulevard Tel 775.823.4068
Reno, NV 89502 Fax 775.823.4066



03/02/23

DATE: MARCH, 2023
SCALE: 1"=20'
DRAWN BY: LCS
DESIGNED BY: MWO
CHECKED BY: MWO

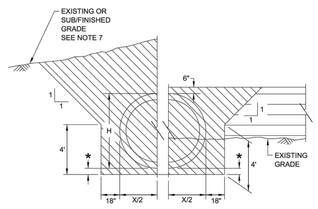
IMPROVEMENT PLANS FOR
U.S. 395/PARR BOULEVARD INTERCHANGE
CIVIL GRADING PLAN
CITY OF RENO NEVADA

PROJECT NO. 3873005

DRAWING C-4

SHT 4 OF 7

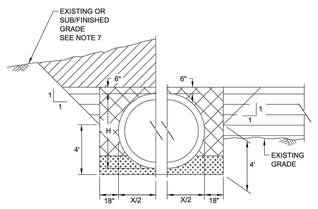
J:\Jobs\3873_Dandini_Blvd_Property\Dandini_MFR_Southwestern_Prop_OA\Civil\Dwg\Parr Offsite Intx\C04_DS_OFF_INTX_G01.dwg 3/13/2023 10:58 AM Megan Overton



IN EXCAVATION IN EMBANKMENT

★ - VARIES PER BEDDING CLASS

EXCAVATION

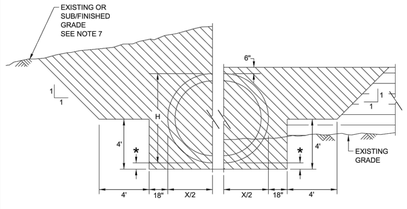


IN EXCAVATION IN EMBANKMENT

BACKFILL

X = DIAMETER FOR CMP
X = SPAN FOR CMAP
X = OUTSIDE DIMENSION FOR RCP OR HDPE

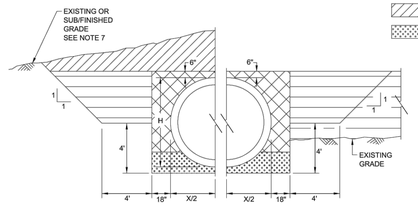
H EQUALS 6' OR LESS



IN EXCAVATION IN EMBANKMENT

★ - VARIES PER BEDDING CLASS

EXCAVATION



IN EXCAVATION IN EMBANKMENT

BACKFILL

X = DIAMETER FOR CMP
X = SPAN FOR CMAP
X = OUTSIDE DIMENSION FOR RCP OR HDPE

H EQUALS GREATER THAN 6'

NOTES:

1. Trenches more than 4-feet deep shall be shored, laid back to at least the angle of repose for existing field conditions, or some other means of protection shall be provided.
2. If hazardous field conditions indicate ground movement may be expected, trenches less than 4-feet deep shall be protected as indicated in note 1.
3. For purposes of payment, structure excavation and backfill quantities are based on these standard drawings minus any duplication in quantities which overlap. If shoring is used, payment will be made for the structure excavation and backfill based on these standard drawings and no additional payment will be made for shoring.
4. Trench excavation and shoring shall conform to current OSHA regulations. Payment will be made based on these standard drawings and there will be no additional compensation for any additional excavation or backfill required for excavations to meet OSHA regulations.
5. Granular backfill shall be placed for a minimum depth of 6-inches above the top of pipe for the width of the trench. Complete the trench backfill with backfill, granular backfill may be used at no additional payment.
6. Provide adequate temporary cover over pipe, to protect pipe from damage during construction.
7. For installations in excavation, the quantities for excavation and backfill shall be calculated and paid from either existing grade or sub/finished grade, whichever is lower.

LEGEND:

- STRUCTURE EXCAVATION
- GRANULAR BACKFILL
- ROADWAY EMBANKMENT
- BACKFILL
- BEDDING SEE DETAIL DS-1

NEVADA DEPARTMENT OF TRANSPORTATION

CHIEF ROAD DESIGN ENGR. SIGNED ORIGINAL ON FILE

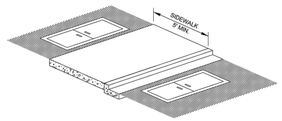
ADOPTED 10/1972

REVISED 10/2015

STRUCTURE EXCAVATION AND BACKFILL FOR PIPES METHOD OF MEASUREMENT

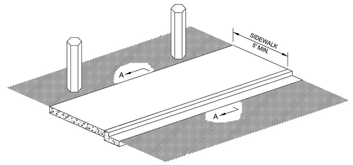
SPEC. # 206,207

DETAIL NUMBER EB-5



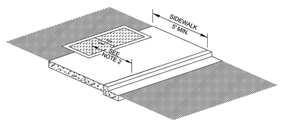
ALWAYS USE IF OBSTRUCTION CAN BE LOCATED COMPLETELY OUT OF SIDEWALK

METHOD 1



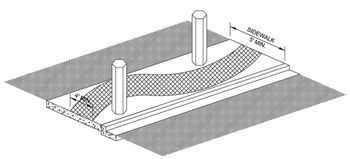
ALWAYS USE IF OBSTRUCTION CAN BE LOCATED COMPLETELY OUT OF SIDEWALK

METHOD 1



USE ONLY IF METHOD 1 CAN NOT BE ACHIEVED

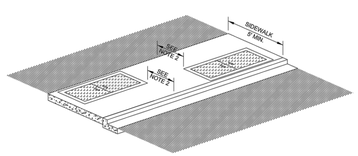
METHOD 2



USE ONLY IF METHOD 1 CAN NOT BE ACHIEVED
SEE NOTE 3

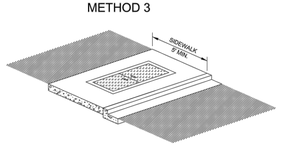
METHOD 2

LOCATING UPRIGHT OBSTRUCTIONS



USE ONLY IF METHOD 2 CAN NOT BE ACHIEVED
SEE NOTE 4

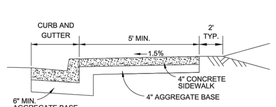
METHOD 3



USE ONLY IF METHOD 3 CAN NOT BE ACHIEVED

METHOD 4

LOCATING FLAT OBSTRUCTIONS



SECTION A-A

NOTES:

1. Concrete shall be class A or AA.
2. Locate flat obstructions to maintain a 4-foot minimum pedestrian access route. If a 4-foot pedestrian access route can not be maintained, use skid resistant covers.
3. Locate upright obstructions to maintain a 4-foot minimum pedestrian access route.
4. If locating flat obstructions per Method 3 and the sidewalk has a buffer zone, then locate the obstructions in the buffer zone.
5. Upright obstructions are not allowed in new sidewalks.
6. If flat obstructions are located within a crosswalk, use slip resistant covers.
7. Dowel two No. 4 tie bars into existing concrete centered vertically, and spaced 1-foot in from each edge at interface between new and existing sidewalk.

LEGEND:

- FLAT OBSTRUCTION SLIP RESISTANT COVER OPTIONAL
- FLAT OBSTRUCTION SLIP RESISTANT COVER REQUIRED
- UPRIGHT OBSTRUCTIONS I.E. UTILITY POLES, SIGN SUPPORTS, FIRE HYDRANT, SIGNAL CABINETS, BUS STOPS, LIGHT POLES, ETC.
- PEDESTRIAN ACCESS ROUTE

NEVADA DEPARTMENT OF TRANSPORTATION

CHIEF ROAD DESIGN ENGR. SIGNED ORIGINAL ON FILE

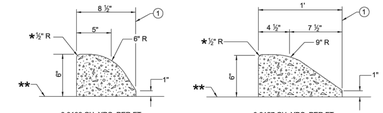
ADOPTED 3/2009

REVISED 10/2015

SIDEWALKS

SPEC. # 613

DETAIL NUMBER CS-2



0.0108 CU. YDS. PER FT.

SECTION TYPE A

0.0127 CU. YDS. PER FT.

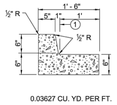
SECTION TYPE B

EPOXY CEMENT MAY BE OMITTED WHEN INSTALLATION IS TEMPORARY
★OMIT ROUNDING WHEN CURBS ARE BACK TO BACK, EPOXY CURB TO PLANTMIX SURFACE
★★P.C.C. OR DENSE GRADED

GLUE DOWN CURBS

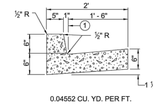
0.05478 CU. YD. PER FT.

SECTION TYPE 1



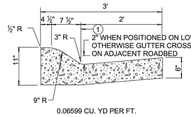
0.03627 CU. YD. PER FT.

SECTION TYPE 4



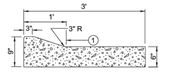
0.04552 CU. YD. PER FT.

SECTION TYPE 5



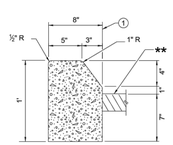
0.06599 CU. YD PER FT.

SECTION TYPE 6



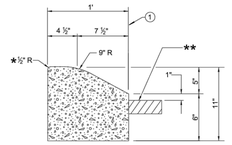
0.0613 CU. YD. PER FT.

SECTION TYPE 7



0.02315 CU. YD. PER FT.

SECTION TYPE 2

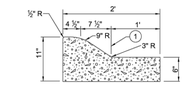


0.02894 CU. YD. PER FT.

SECTION TYPE 3

★OMIT ROUNDING WHEN CURBS ARE BACK TO BACK.
★★P.C.C. OR DENSE GRADED

CURB



0.04747 CU. YD. PER FT.

SECTION TYPE 8

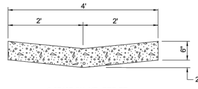
CURB AND GUTTER

NOTES:

1. When distance between back of curb on islands is 4-feet or less, use 4-inches of class A or AA concrete island paving and 2-inches of aggregate base.
2. Concrete shall be class A or AA.
3. Concrete unit volume for information only.

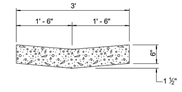
LEGEND:

1 - THIS LINE SHOULD BE USED TO DIMENSION OFFSETS



0.07407 CU. YD. PER FT.

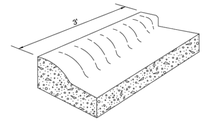
SECTION TYPE 2



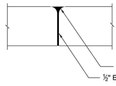
0.0556 CU. YD. PER FT.

SECTION TYPE 1

VALLEY GUTTER



TYPICAL TRANSITION FROM ROLLED CURB TO VERTICAL FACE



ELEVATION
TYPICAL EXPANSION JOINT DETAIL

NEVADA DEPARTMENT OF TRANSPORTATION

CHIEF HYDRAULICS ENGR. SIGNED ORIGINAL ON FILE

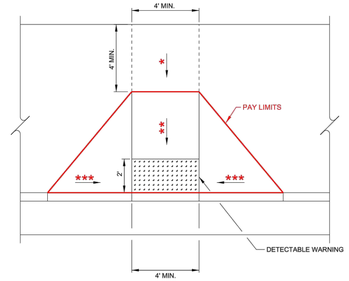
ADOPTED 8/1969

REVISED 10/2015

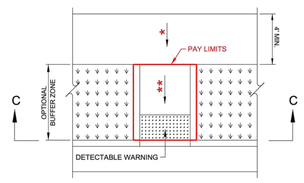
CURB AND GUTTERS

SPEC. # 502,613

DETAIL NUMBER CS-1



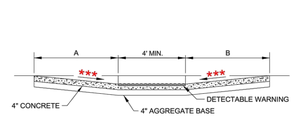
TYPE A RAMP
2 FLARES



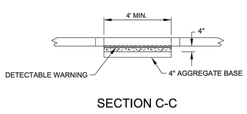
TYPE B RAMP
2 CURBS PERPENDICULAR TO ROADWAY

NOTES:

1. Extend detectable warning the full width of the curb ramp, exclusive of flared sides.
2. Grates for storm drains shall not be placed in the crosswalk or in front of the curb ramp.
3. Transitions from ramps to gutters or roadway surface shall be flush and free of abrupt changes.
4. Plantmix bituminous open-graded surface shall be flush with the edge of the gutter pan.
5. Rough broom texture on curb ramps and wings. Texture shall provide a visual contrast to the sidewalk.
6. For crosswalk markings see detail ST-7.
7. All ramps shall be 8.3% or flatter, or 15-foot maximum length if 8.3% cannot be obtained.
8. Concrete shall be class A or AA.
9. If there are R/W restrictions, the sidewalk width can be reduced to no less than 4-feet with approval of the Assistant Chief Road Design Engineer. If the sidewalk width is less than 5-feet, then 5-feet by 5-feet passing zones are required at 200-foot intervals.
10. No direct payment for neat line saw cut. An additional 1-foot of pavement shall be required. If electing to remove an additional 1-foot, match existing structural section with patch. No adjustment to the plan quantities for removal and patching.
11. Shared use path ramps, excluding the flared sides, shall be as wide as the shared use path.
13. Detectable warnings shall be installed per manufacturers recommendations and conform to PROWAG, R305.1.3, "Contrast".
14. As a reference for measurements A and B, you will be looking from the back of the ramp. B will be on the left, and A will be on the right.



SECTION A-A



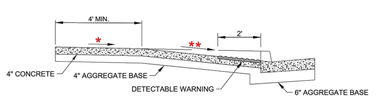
SECTION C-C

LEGEND:

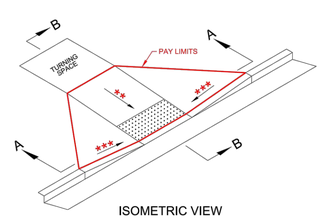
★ - 1.5% OR FLATTER RECOMMENDED FOR DESIGN / FORMWORK (2% MAX.)

★★ - 7.5% OR FLATTER RECOMMENDED FOR DESIGN / FORMWORK (8.3% MAX.)

★★★ - 9.5% OR FLATTER RECOMMENDED FOR DESIGN / FORMWORK (10% MAX.)



SECTION B-B



ISOMETRIC VIEW

NEVADA DEPARTMENT OF TRANSPORTATION

CHIEF ROAD DESIGN ENGR. SIGNED ORIGINAL ON FILE

ADOPTED 7/1969

REVISED 10/2015

CURB RAMPS

SPEC. # 613

DETAIL NUMBER CS-3A

NO.	DESCRIPTION	ENGR INIT	DATE

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
1361 Corporate Boulevard Tel 775.823.4068
Reno, NV 89502 Fax 775.823.4068

03/02/23

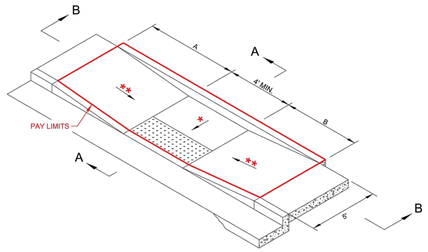
DATE: MARCH, 2023
SCALE: AS SHOWN
DRAWN BY: LCS
DESIGNED BY: MWO
CHECKED BY: MWO

IMPROVEMENT PLANS FOR
U.S. 395/PARR BOULEVARD INTERCHANGE
CIVIL DETAILS
CITY OF RENO NEVADA

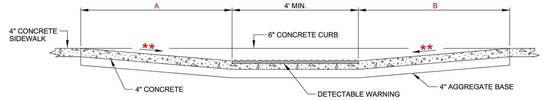
PROJECT NO. 3873005

DRAWING C-5

SHT 5 OF 7



TYPE D RAMP
2 RAMPS



SECTION B-B

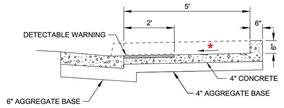
NOTES:

1. For additional notes see detail CS-3A.

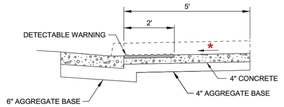
LEGEND:

* - 1.5% OR FLATTER RECOMMENDED FOR DESIGN / FORMWORK (2% MAX.)

** - 7.5% OR FLATTER RECOMMENDED FOR DESIGN / FORMWORK (8.3% MAX.)



SECTION A-A
WITH BACK CURB



SECTION A-A
WITHOUT BACK CURB

NEVADA DEPARTMENT OF TRANSPORTATION

CHIEF ROAD DESIGN ENGR. SIGNED ORIGINAL ON FILE

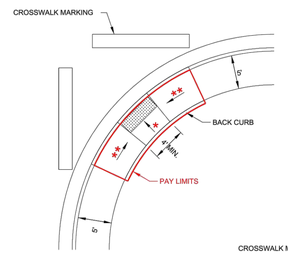
ADOPTED 7/1996

REVISED 10/2015

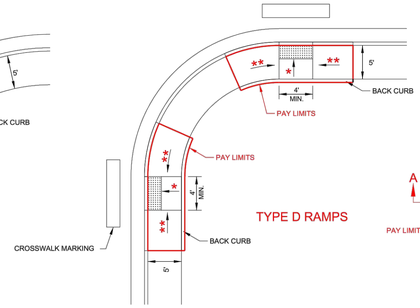
CURB RAMPS

SPEC. # 613

DETAIL NUMBER CS-3C



TYPE D RAMP



TYPE D RAMPS

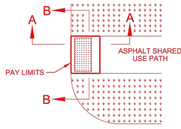
NOTES:

1. For additional notes see detail CS-3A.

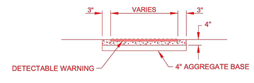
LEGEND:

* - 1.5% OR FLATTER RECOMMENDED FOR DESIGN / FORMWORK (2% MAX.)

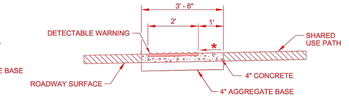
** - 7.5% OR FLATTER RECOMMENDED FOR DESIGN / FORMWORK (8.3% MAX.)



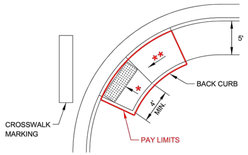
TYPE F MODIFIED RAMP



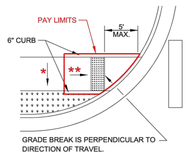
SECTION B-B

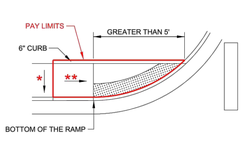


SECTION A-A



TYPE E RAMP
1 RAMP AND 1 CURB





TYPE F RAMP
2 CURBS PARALLEL TO ROADWAY

NEVADA DEPARTMENT OF TRANSPORTATION

CHIEF ROAD DESIGN ENGR. SIGNED ORIGINAL ON FILE

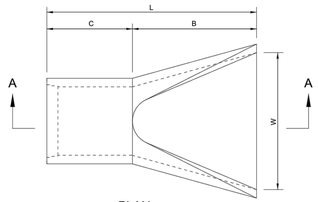
ADOPTED 7/1996

REVISED 10/2015

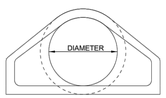
CURB RAMPS

SPEC. # 613

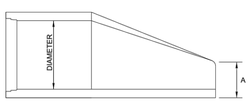
DETAIL NUMBER CS-3D



PLAN



END VIEW



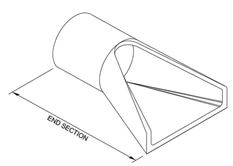
SECTION A-A

NOTES:

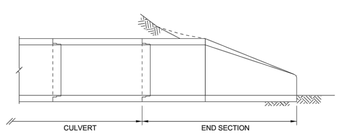
1. Class and type of concrete shall be as specified for reinforced concrete pipe.
2. Structural design of end section shall conform to that of standard reinforced concrete culvert pipe.
3. Length of pipe shown on the design plans does not include connector section, length C.
4. Contact hydraulics Engineer for sizes not listed.
5. Actual dimensions of end sections may vary by manufacturer. Adjust pipe lengths as necessary to accommodate precast end sections used. See details EB-2 and DS-6 for extension beyond fill slope and pipe pay lengths.

DIAMETER	WEIGHT	A	B	C	L	W
18"	670	9"	27"	46"	73"	36"
24"	1300	9 ½"	43 ½"	30"	73 ½"	48"
30"	1850	12"	54"	19 ⅞"	73 ⅜"	60"
36"	3500	15"	63"	34 ⅜"	97"	72"
42"	4930	21"	63"	35"	98"	78"
48"	6700	24"	72"	26"	98"	84"
54"	7150	27"	65"	35"	100"	90"

★FOR REFERENCE ONLY



ISOMETRIC VIEW



CROSS SECTION VIEW
18" TO 54" RCP

NEVADA DEPARTMENT OF TRANSPORTATION

CHIEF HYDRAULICS ENGR. SIGNED ORIGINAL ON FILE

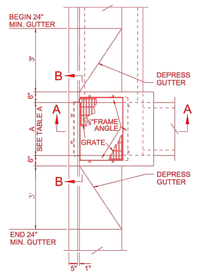
ADOPTED 7/1975

REVISED 10/2015

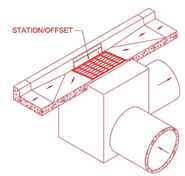
RCP END SECTION - 18" TO 54" RCP

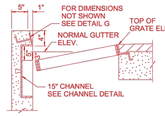
SPEC. # 603

DETAIL NUMBER DS-13

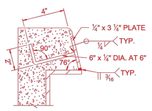


PLAN

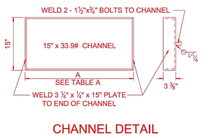




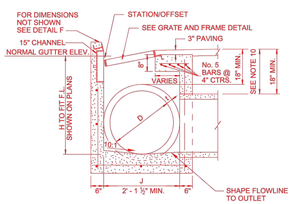
DETAIL F



DETAIL G

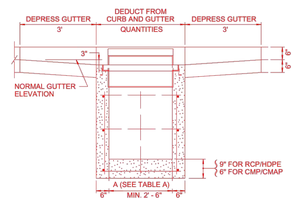


CHANNEL DETAIL



S FOR CMAP
D FOR CMP
D = 6" FOR RCP/HDPE 24" OR LESS
D = 2t FOR RCP/HDPE 30" OR MORE
S = 2t FOR LO-HED RCP

SECTION A-A
(FOR CMAP, CMP, RCP, HDPE AND LO-HED RCP)



S FOR CMAP
D FOR CMP
D = 6" FOR RCP/HDPE 42" OR LESS
D = 2t FOR RCP/HDPE 48" OR MORE
S = 6" FOR LO-HED RCP 29" x 45" OR LESS
S = 2t FOR LO-HED RCP 34" x 53" OR MORE

SECTION B-B
(FOR CMAP, CMP, RCP, HDPE AND LO-HED RCP)

NEVADA DEPARTMENT OF TRANSPORTATION

CHIEF HYDRAULICS ENGR. SIGNED ORIGINAL ON FILE

ADOPTED 7/2019

REVISED

DROP INLET TYPE 3A

SPEC. # 609

DETAIL NUMBER DS-36A

NO.	DESCRIPTION	ENGR INIT	DATE

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
1361 Corporate Boulevard Tel: 775.823.4068
Reno, NV 89502 Fax: 775.823.4066

STATE OF NEVADA
MEGAN W. OVERTON
Exp. 12/31/2023
CIVIL
No. 18689

03/02/23

DATE: MARCH, 2023
SCALE: AS SHOWN
DRAWN BY: LCS
DESIGNED BY: MWO
CHECKED BY: MWO

IMPROVEMENT PLANS FOR
U.S. 395/PARR BOULEVARD INTERCHANGE
CIVIL DETAILS
CITY OF RENO NEVADA

PROJECT NO. 3873005

DRAWING C-6

SHT 6 OF 7

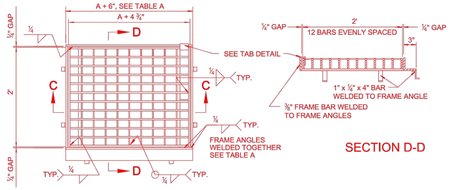
J:\Jobs\3873_Dondlin_Blvd_Property\Dondlin_MFR_Southwestern...Prop_OA\Civil\Dwg\Par Offsite Int\VC06_DS_OFF_INTX_D02.dwg 3/2/2023 10:05 AM Les Smiley

TABLE A - STRUCTURAL STEEL

PIPE SIZE				A	MAIN BARS	FRAME ANGLES	FRAME BAR	GRATE LBS.	FRAME LBS.	CHANNEL AND PLATES, LBS.	TOTAL LBS.
CMAP	CMP	RCP/ HDPE	LO-HED								
29" x 18"	30"	24"	14" x 23"								
OR LESS	OR LESS	OR LESS	OR LESS	2' - 6"	4 ½" x ⅜"	5" x 3" x ⅜"	5" x ⅜"	229	88	93	409
36" x 22"	36"	30"	19" x 30"	3'	4 ½" x ⅜"	5" x 3" x ⅜"	5" x ⅜"	265	96	107	468
43" x 27"	42"	36"	22" x 34"	3' - 6"	4 ½" x ⅜"	5" x 3" x ⅜"	5" x ⅜"	300	104	126	530
	48"	42"	27" x 34"	4'	5 ½" x ⅜"	6" x 3 ½" x ⅜"	6" x ⅜"	409	134	143	685
	54"		29" x 45"	4' - 6"	5 ½" x ⅜"	6" x 3 ½" x ⅜"	6" x ⅜"	451	144	160	755

NOTES:

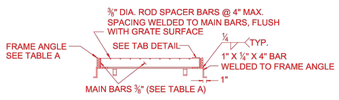
1. All concrete shall be class A or AA.
2. All reinforcing steel shall be tightly wired and embedded 1 ½-inches clear of concrete surface. Except as noted, all reinforcing shall be No. 4 bars with maximum spacing of 12-inches centers, for all values of "H" to the maximum as shown in Table B. If "H" exceeds these maximums, drop inlet will require special design.
3. Exposed edges of concrete shall be chamfered 1-inch.
4. Where pipe intersects drop inlet on a 12° or larger skew increase J to $\frac{J}{\cos \text{ skew } \angle}$, redesign for skews at A.
5. Where pipe intersects drop inlet on a 12° or larger skew increase S to $\frac{S}{\cos \text{ skew } \angle}$, redesign for skews at A.
6. For values of "H" see plans.
7. "H" is the difference in elevation between the out flow pipe and the normal gutter grade line at the curb face.
8. Pipe(s) can be placed in any wall.
9. For drop inlet, configurations with 2 pipes-inflow pipe invert elevation shall be ≥ 0.1-inch above outflow pipe invert elevation.
10. Extreme low cover situations to be reviewed by the Hydraulics Engineer.
11. Slope catch basin floors 10:1 from all directions toward outlet pipe. If basin is used as a junction, shape flow line(s) to outlet pipe, and provide a 10:1 slope to flow line(s).
12. Station/offset distance listed in plans is measured to the face of curb at the gutter flow line.
13. See detail DS-27 for details if connecting to HDPE pipe.



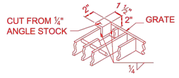
PLAN

SECTION D-D

GRATE AND FRAME DETAIL



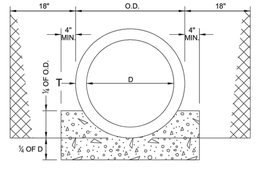
SECTION C-C



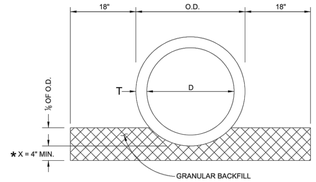
TAB DETAIL

TABLE B

	MAXIMUM H	
CMAP	J OR A	H
29" x 18" OR LESS	30" OR LESS	21'
36" x 22"	36"	18'
43" x 27"	42"	15'
	48"	9'
	54"	7'
	60"	6'
		(WITH No. 4 BARS @ 12" CENTERS)



CLASS A BEDDING (RCP)



CLASS C BEDDING
RCP, CMP, AND HDPE
STANDARD BEDDING

NOTES:

1. Minimum depths as specified on detail EB-1, notes 6 and 8 will prevail when these conditions are encountered.
2. Concrete shall be class A or AA. Additional excavation for class A bedding to be included in the unit bid price per cubic yard of concrete.
3. Class C bedding shall be carefully shaped to fit pipe prior to installation.
4. See detail DS-4 or headwall details for appropriate pipe separation.

RCP

★NORMAL FOUNDATION, X= $\frac{O.D.}{24}$ MIN. NO LESS THAN 4"

IF ROCK FOUNDATION, X= $\frac{O.D.}{24}$ MIN. NO LESS THAN 6"

CMP

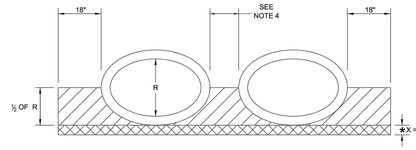
★IF ROCK FOUNDATION, X= ½" PER FOOT OF AVERAGE FILL OVER PIPE, 12" MIN. - 24" MAX.

HDPE

★X= 4" FOR D ≤ 24", X= 6" FOR D ≥ 30".

LEGEND:

- GRANULAR BACKFILL
- CLASS A SLURRY BACKFILL



BEDDING FOR MULTIPLE HE RCP CULVERTS

ALLOWABLE FILL HEIGHT
FOR REINFORCED CONCRETE PIPE

	FILL HEIGHT IN FEET						
	III		IV		V		PIPE CLASS
PIPE SIZE I.D.	A	C	A	C	A	C	BEDDING CLASS
24"	23	17	35	26	53	40	
30"	23	17	35	26	53	40	
36"	23	17	35	26	52	40	
42"	23	17	34	26	52	40	
48"	23	17	34	26	52	40	
54"	22	17	34	26	52	40	
60"	22	17	34	26	51	40	
66"	22	17	33	26	51	39	
72"	22	17	33	25	51	39	
84"	21	16	33	25	50	39	
90"	21	16	33	25	50	39	
96"	21	16	32	25	50	39	
102"	21	16	32	25	49	39	
108"	21	16	32	25	49	39	
114"	20	16	32	25	49	39	
120"	20	16	31	25	49	39	
126"	20	16	31	25	48	39	
132"	20	16	31	25	48	39	
138"	20	16	31	25	48	39	
144"	19	15	30	25	47	39	

	FILL HEIGHT IN FEET		
	III	IV	PIPE CLASS
PIPE SIZE HE RCP	C	C	BEDDING CLASS
19" x 30"	14	22	
24" x 38"	14	22	
29" x 45"	14	22	
34" x 53"	14	22	
38" x 60"	14	22	
43" x 68"	14	22	
48" x 76"	14	22	
53" x 83"	14	22	
58" x 91"	14	22	
68" x 106"	14	22	
72" x 113"	14	22	
77" x 121"	14	22	

NO.	DESCRIPTION	ENGR INIT	DATE

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
1361 Corporate Boulevard
Reno, NV 89502
Tel 775.823.4068
Fax 775.823.4066

03/02/23

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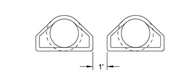
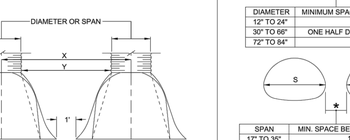


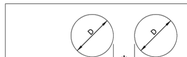
MULTIPLE INSTALLATIONS
WITH END SECTIONS

SEPARATION FOR MULTIPLE INSTALLATIONS WITH END SECTIONS

CMP/HDPE			CMAP			RCP		
DIA.	X	Y	SPAN	X	Y	DIA.	X	Y
-	-	-	21" x 15"	5' - 2"	3' - 5"	18"	4' - 4"	2' - 6"
-	-	-	24" x 18"	5' - 10"	3' - 10"	24"	5' - 5"	3'
-	-	-	28" x 20"	6' - 6"	4' - 2"	30"	6' - 6"	3' - 6"
24"	6' - 8"	4' - 8"	35" x 24"	7' - 8"	4' - 9"	36"	7' - 7"	4'
30"	8'	5' - 6"	42" x 29"	9' - 3"	5' - 9"	42"	8' - 2"	4'
36"	9' - 4"	6' - 4"	49" x 33"	10' - 3"	6' - 2"	48"	8' - 9"	4'
42"	10' - 8"	7' - 2"	57" x 38"	11' - 6"	6' - 9"	54"	8' - 7"	3' - 4"
48"	11' - 6"	7' - 6"	64" x 43"	12' - 6"	7' - 2"	-	-	-
54"	12' - 6"	8'	71" x 47"	13' - 6"	7' - 7"	-	-	-
60"	13' - 6"	8' - 6"	77" x 52"	14' - 6"	8' - 1"	-	-	-
66"	14'	8' - 6"	83" x 57"	15' - 6"	8' - 7"	-	-	-
72"	14' - 6"	8' - 6"	-	-	-	-	-	-
78"	15'	8' - 6"	-	-	-	-	-	-
84"	15' - 6"	8' - 6"	-	-	-	-	-	-



WHEN Y DISTANCE EXCEEDS 5', STRUCTURE EXCAVATION AND BACKFILL QUANTITIES SHALL BE CALCULATED FOR EACH CULVERT



DIAMETER	MINIMUM SPACE BETWEEN PIPES
12" TO 24"	1'
30" TO 66"	ONE HALF DIAMETER OF PIPE
72" TO 84"	3'

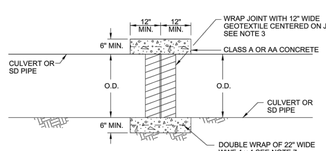
SPAN	MIN. SPACE BETWEEN PIPE ARCHES
17" TO 35"	1'
42" TO 83"	ONE THIRD SPAN OF PIPE ARCH

★WHEN HEADWALLS ARE USED OR ANTICIPATED FOR FUTURE USE, SPACE AS PER HEADWALLS STANDARD

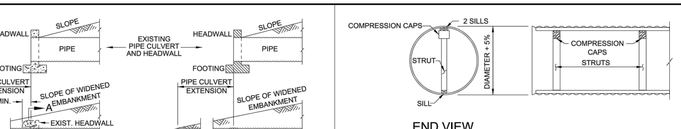
MULTIPLE INSTALLATIONS
WITHOUT HEADWALLS

NOTES:

1. Concrete collar to be used for making repair connections, connect dissimilar pipe materials, extend or connect similar pipe materials where bell and spigot connections are not possible, and where specified.
2. Maintain proper alignment, line, and grade across the joint. Secure pipe sections adequately on each side of joint prior to casting concrete to prevent any inadvertent displacement or misalignment.
3. In lieu of a geotextile wrap, rubber boot adapters, coupling bands, or other special adapters specific to the application and as recommended by the manufacturer may be used to facilitate construction and maintain joint integrity. Use appropriate connection devices if required by the engineer or special provisions to provide a competent or water tight connection. Maintain a minimum of 6-inches of concrete cover on the outside of any special connection devices.
4. For HDPE pipe, use an embedded waterstop gasket on each side of the joint where water tight connections are required and where required by the Engineer.
5. No direct payment for concrete collars or associated connection devices. Payment to be included in the payment for pipe.
6. Where angle bends are specified, miter pipe ends to provide a tight joint connection with a maximum 1-inch gap tolerance.
7. Provide a minimum of 1-inch concrete cover from collar ends and 2-inches minimum clearance from inner to outer surface of concrete collar.



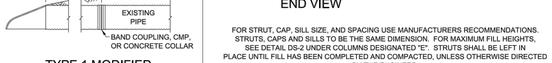
CONCRETE COLLAR



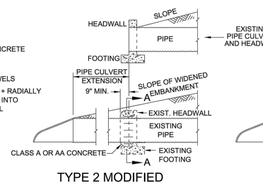
END VIEW

FOR STRUT, CAP, SILL SIZE, AND SPACING USE MANUFACTURERS RECOMMENDATIONS. STRUTS, CAPS AND SILLS TO BE THE SAME DIMENSION. FOR MAXIMUM FILL HEIGHTS, SEE DETAIL DS-2 UNDER COLUMNS DESIGNATED "E". STRUTS SHALL BE LEFT IN PLACE UNTIL FILL HAS BEEN COMPLETED AND COMPACTED, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

FIELD STRUTTING CMP



SECTION A-A



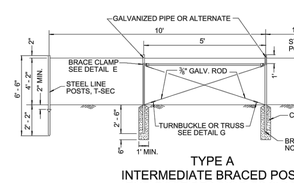
TYPE 2 MODIFIED

TYPE 1 MODIFIED

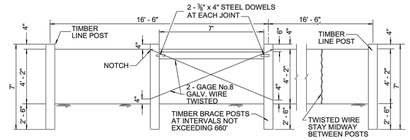
FOR ADDITIONAL INFORMATION SEE DETAIL EB-2
PIPE CULVERT EXTENSION

- LIMITS OF REMOVAL

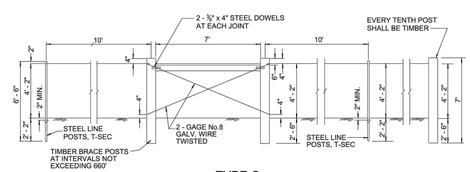
SIZE OF POSTS-STANDARD FENCING								
	CORNER, END AND PULL			LINE		BRACES		
FENCE HEIGHT	ROUND PIPE O.D.	MIN. WT. (LBS./L.F.) CLASS 1	CLASS 2	T - SECTION	MIN. WT. (LBS./L.F.)	ROUND PIPE O.D.	MIN. WT. (LBS/L.F.) CLASS 1	CLASS 2
3' TO 6'	2.375"	3.65	2.64	-	1.30	1.660"	2.27	1.45



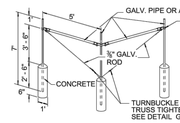
TYPE A
INTERMEDIATE BRACED POST
END POST BRACING SIMILAR



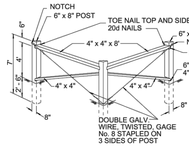
TYPE B
INTERMEDIATE BRACED POST



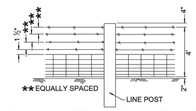
TYPE C
INTERMEDIATE BRACED POST



TYPE A
CORNER BRACE



TIMBER
CORNER BRACE



TYPICAL DETAIL OF WOVEN WIRE AND BARBED WIRE FENCE APPLICABLE TO TYPE A, B, AND C

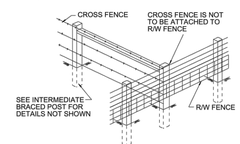
NOTES:

1. Fence posts and materials shall conform to the requirements of standard specifications and supplements.
2. Standard fencing shall consist of galvanized barbed wire, galvanized woven wire, farm fence, or a combination of both on wood or metal posts or combinations of posts.
3. Barbed wire shall be spaced as follows:
   4 wire - bottom wire 15 ½-inches above ground, other spacing 11 ½-inches.
   5 wire - bottom wire 10-inches above ground, other spacing 10-inches.
4. Standard fencing will be designated by type, design of fabric, and/or number of barbed wires. Thus:

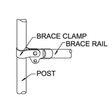
   Type A-832-3B designates metal posts, 32-inch woven farm wire, and 3 barbed wires.

   Type B-4B designates wood posts, 4 barbed wires.

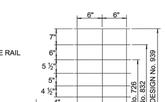
   Type C-726-4B designates combination of wood and metal posts, 26-inch woven farm wire, 4 barbed wires.
5. Concrete shall be class A or AA.
6. Manufacture steel line posts, t-sec, to tolerances and workmanship as provided in AASHTO M281.



TYPICAL EXISTING CROSS FENCE TIE

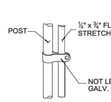


DETAIL E

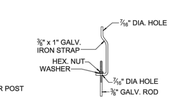


1" TOLERANCE IN SPACING ALLOWED ABOVE BOTTOM SPACE

WOVEN WIRE FABRIC
FARM FENCE



DETAIL F



DETAIL G
TRUSS TIGHTENER

IMPROVEMENT PLANS FOR
U.S. 395/PARR BOULEVARD INTERCHANGE
CIVIL DETAILS
CITY OF RENO NEVADA

PROJECT NO. 3873005

DRAWING C-7

SHT 7 OF 7

TRAFFIC SIGNAL PLANS FOR U.S. 395/PARR BOULEVARD INTERCHANGE

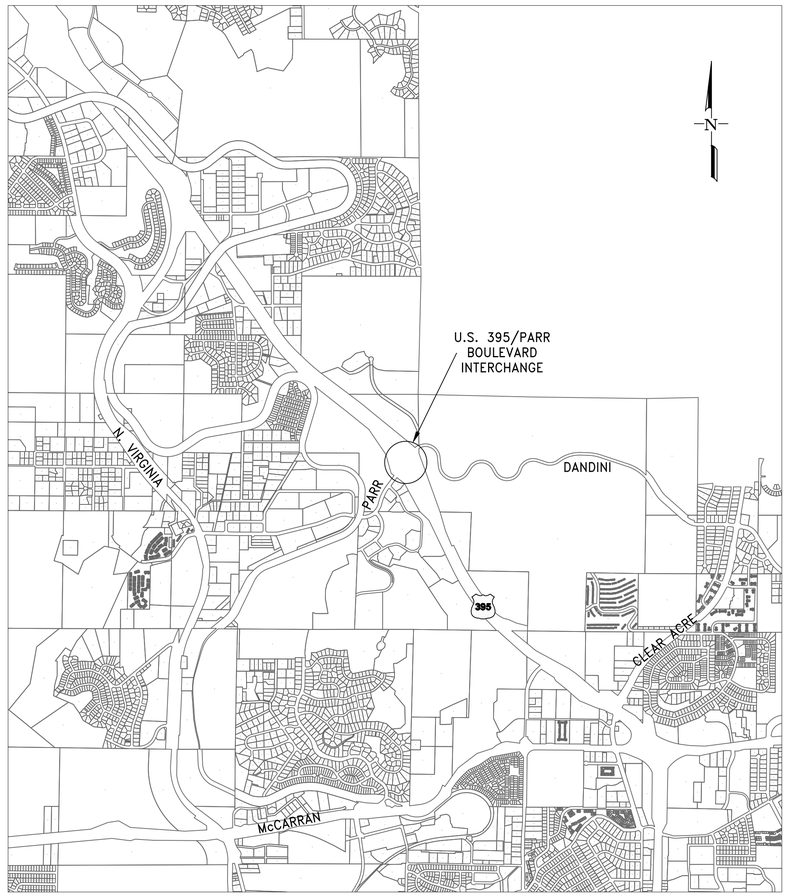
SECTIONS 25 & 26, TOWNSHIP 20N, RANGE 19E, MDB&M

LEGEND:

NEW	EXISTING	
■	□	NO. 7E PULL BOX
■	⊞	NO. 9E PULL BOX
⊠	⊠	TRAFFIC SIGNAL CONTROLLER CABINET
●	○	TRAFFIC SIGNAL OR STREET LIGHT POLE
———	———	CONDUIT
⋈	⋈	METERED SERVICE
◉	◎	POWER SOURCE
◄——	◄——	VEHICLE SIGNAL HEAD
▼	▼	BELL TYPE DETECTION CAMERA

ABBREVIATIONS:

ABB.	MEANING
AWG	AMERICAN WIRE GAUGE
BW	BACK OF WALK
DLC	DETECTOR LEAD IN CABLE
EG	EXISTING GROUND
EP	EDGE OF PAVEMENT
EX.	EXISTING
FFC	FRONT FACE OF CURB
FL	FLOW LINE
FYA	FLASHING YELLOW ARROW
FYG	FLUORESCENT YELLOW GREEN
IISNS	INTERNALLY ILLUMINATED STREET NAME SIGN
IMSA	INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION
LED	LIGHT EMITTING DIODE
MA	MAST ARM
MAX	MAXIMUM
MIN	MINIMUM
MMU	MALFUNCTION MANAGEMENT UNIT
OHP	OVERHEAD POWER
PB	PULLBOX
PCC	PORTLAND CEMENT CONCRETE
POE	POWER OVER ETHERNET
PPB	PEDESTRIAN PUSH BUTTON
SPEC	SPECIFICATION
SW	SIDEWALK
TBD	TO BE DETERMINED
TC	TOP OF CURB
TDC	TOP OF DEPRESSED CURB
TYP	TYPICAL



LOCATION MAP
NTS

SHEET INDEX:

NO.	DESCRIPTION	DATE

DATE: FEBRUARY 2023
SCALE: H: V:
DRAWN BY: MSH
DESIGNED BY: MSH
CHECKED BY: LEC

M. SCOTT HENRY
Exp. 6/30/23
CIVIL
No. 12539
STATE OF NEVADA
PROFESSIONAL ENGINEER
3/13/23

HEADWAY TRANSPORTATION
5482 Longley Lane, Suit B
Reno, NV 89511
(775) 322-4300

TITLE SHEET

PROJECT NO.
21-067

SHEET
1

Underground Service Alert
Call: TOLL FREE
811/800
227-2600
TWO WORKING DAYS BEFORE YOU DIG

C:\Scott\Spectrum Dandini Project\NDOT Submittal\NDOT Submittal Stamped 3-22.dwg 3/13/2023 10:13 AM Scott Henry

GENERAL NOTES:

1. THE PLANS/SPECIFICATIONS STRUCTURE SHALL BE AS FOLLOWS, IN ORDER OF HIERARCHY:

   THE PROJECT PLANS, SPECIFICATIONS, AND DETAILS, 2014 NDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (SILVER BOOK), NDOT STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION, 2020, STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (ORANGE BOOK), 2012 REVISION 8 EDITION, CITY OF RENO "TRAFFIC SIGNAL CONTROLLER CABINET SPECIFICATIONS" (2007).

2. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE NDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (SILVER BOOK), 2014 EDITION, THE NDOT STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION, 2020 EDITION, THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) CURRENT EDITION, THE NATIONAL ELECTRIC CODE (NEC), AND THE NATIONAL ELECTRIC SAFETY CODE (NESC).

3. THE PRECISE LOCATIONS OF UNDERGROUND UTILITIES ARE UNKNOWN, CALL FOR UTILITY LOCATES AT LEAST 48 HOURS PRIOR TO DIGGING AND PROCEED WITH CAUTION.

4. THE CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR AND/OR REPLACE ALL FACILITIES AND FEATURES DAMAGED BY THE CONTRACTOR'S ACTIVITIES, INCLUDING LANDSCAPING AND IRRIGATION SYSTEMS, TO THEIR PRE-CONSTRUCTION CONDITION AS DETERMINED BY THE ENGINEER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DOCUMENT AND NOTIFY THE ENGINEER OF DAMAGED EQUIPMENT AND/OR FACILITIES PRIOR TO BEGINNING WORK.

5. CONCRETE FLATWORK SHALL BE REMOVED AND REPLACED, IN KIND, TO EXISTING JOINT LINES. TRENCHING THROUGH, AND PATCHING OF, SIDEWALK PANEL(S) OR CURB & GUTTER WILL NOT BE PERMITTED.

6. ALL SIGNAL EQUIPMENT, HARDWARE, UNBROKEN PULL BOX LIDS, AND SIGNS REMOVED THROUGH THE COURSE OF WORK SHALL BE DELIVERED TO THE MAINTAINING AGENCY'S CORPORATE YARD.

7. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL INCIDENTAL ITEMS AND PERFORM ALL WORK AS NECESSARY TO COMPLETE FULLY FUNCTIONAL TRAFFIC SIGNAL AND INTERCONNECT SYSTEMS. PAYMENT FOR INCIDENTAL ITEMS SHALL BE INCLUDED WITHIN THE BID ITEMS OUTLINED IN THE OFFICIAL BID SCHEDULE.

8. CONTRACTOR SHALL BE RESPONSIBLE FOR PROCESSING AND OBTAINING ALL SERVICE APPLICATIONS. COORDINATE ALL CONNECTIONS AND DISCONNECTIONS WITH NV ENERGY.

9. AN NDOT PERMIT WILL BE REQUIRED. CONTRACTOR SHALL PROVIDE TEMPORARY TRAFFIC CONTROL PLANS FOR THE PERMIT RELEASE AND COMPLY WITH ALL CONDITIONS OF THE PERMITS, INCLUDING NIGHT WORK REQUIREMENTS AS APPLICABLE.

10. A CITY OF RENO EXCAVATION AND ENCROACHMENT PERMIT (EE PERMIT) IS REQUIRED FOR THE PROJECT. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL FEES WHICH INCLUDE SIGNAL INSPECTION FEES. THE CONTRACTOR SHALL COMPLY WITH ALL CONDITIONS OF THE PERMIT.

CITY OF RENO INTERCONNECT:

FIBER OPTIC INTERCONNECT SYSTEM SPECIFICATIONS

1. FIBER OPTIC CABLE SHALL BE TESTED PRIOR TO INSTALLATION AND CERTIFICATION TO THAT EFFECT SUPPLIED. THE CABLE MAY BE TESTED BY CITY OF RENO PERSONNEL AT THE CONTRACTOR'S EXPENSE, PRIOR TO ACCEPTANCE.

2. ALL FIBER AT CONTROLLER CABINET END SHALL HAVE 50 FEET OF TAIL TO REACH THE FIBER SPLICING TRAILER.

3. ALL FIBER RUNS SHALL HAVE A FIVE (5) FOOT LOOP COILED IN EACH PULL BOX.

4. NO BENDS GREATER THAN SIX TIMES THE FIBER DIAMETER SHALL BE ACCEPTED.

5. ALL CONDUITS SHALL HAVE A PULL STRING INSTALLED FOR FUTURE USE. MINIMUM TENSILE STRENGTH SHALL BE 500 LBS.

6. ANY CONDUIT CONTAINING FIBER ONLY, SHALL HAVE AN ORANGE #14 LOCATE WIRE INSTALLED.

7. THE CONTRACTOR WILL FURNISH AND INSTALL MODEMS, CORNING CABLE SYSTEMS, JUMPERS, MULTIMEDIA OUTLET BOXES, AND FIBER MODULES.

8. THE CONTRACTOR WILL INSTALL ALL FIBER ENDS AND TERMINATE FIBER OPTIC CABLES IN THE CABINET.

9. THE CONTRACTOR WILL TEST AND VERIFY FIBER CONNECTIVITY TO THE CENTRAL COMPUTER SYSTEM.

10. THE CONTRACTOR SHALL FURNISH THE FOLLOWING PER CABINET:

    FIBER CONVERTER:
    COMNET COMMUNICATIONS
    TRANSCEIVER PART #FVT10D1E
    RECEIVER PART #FVR10D1E

    GATOR PATCH (CDCA):
    G620G012LRB-XX-O
    CONTRACTOR TO FIELD MEASURE NEEDED LENGTH (XX)
    SM ST TO LC 2 METER LENGTH FIBER JUMPER, QUANTITY (2 PER CABINET)

    SIXNET FIBER MODEM WITH SFP (1 PER CABINET)

SIGNAL EQUIPMENT SPECIFICATIONS:

1. ALL EQUIPMENT SHALL BE IN ACCORDANCE WITH CITY OF RENO "TRAFFIC SIGNAL CONTROLLER CABINET SPECIFICATIONS" AND CITY OF RENO "TRAFFIC SIGNAL FIBER OPTIC INTERCONNECT SPECIFICATIONS" EXCEPT AS SPECIFICALLY MODIFIED IN THESE PLANS.

2. PROGRAMMING OF CONTROLLERS AND MMUs WILL BE PERFORMED BY CITY OF RENO STAFF ONLY. DELIVER CONTROLLERS AND MMUs TO CITY OF RENO TRAFFIC ENGINEERING AND OPERATIONS AT 1640 EAST COMMERCIAL ROW, RENO NV, AT LEAST TWENTY-ONE DAYS PRIOR TO SIGNAL TURN-ON. CONTACT TIM HENDRICKS AT (775) 657-4568 AT LEAST SEVEN DAYS PRIOR TO DESIRED PICK-UP FOR INSTALLATION.

3. NOTIFY THE CITY OF RENO, KURT DIETRICH (775) 334-3334 AT LEAST 72 HOURS PRIOR TO BEGINNING WORK ON THE SIGNAL SYSTEMS AND PRIOR TO SIGNAL TURN-ONS.

4. SIGNAL TURN-ONS SHALL BE SCHEDULED BETWEEN 5:00 AM AND 4:00 PM ON MONDAY THROUGH THURSDAY. COORDINATE WITH CITY OF RENO SIGNAL TECHNICIANS.

5. ALL SIGNAL EQUIPMENT, HARDWARE, UNBROKEN PULL BOX LIDS, AND SIGNS REMOVED THROUGH THE COURSE OF WORK SHALL BE DELIVERED TO THE CITY OF RENO'S CORPORATE YARD.

6. TRAFFIC SIGNAL CABINET SHALL BE NAZTEC TS2 TYPE 1 OR TYPE 2 SYSTEM READY CABINET WITH R-44 FOUNDATION PER DETAIL ON SHEET TS1.1 ALL NEW CABINETS SHALL HAVE 16 POSITION MAIN PANEL, FLASH TRANSFER RELAY MODULES FOR ALL PORTS, INCLUDE THE "D" PANEL AND "D" CABLE (D-CABLE ONLY REQUIRED FOR TS2 TYPE 1 CABINETS), HAVE ALL PLUG-INS, AND BE WIRED FOR EMERGENCY VEHICLE PREEMPTION (EVP).

7. TRAFFIC SIGNAL CONTROLLER SHALL BE NAZTEC COMMANDER NT2, TYPE 2 NEMA AND NTCIP COMPLIANT CONTROLLER WITH ETHERNET. MALFUNCTION MANAGEMENT UNIT (MMU) SHALL BE: EDI MMU LCD WITH ETHERNET.

8. METERED UNDERGROUND ELECTRICAL SERVICE SHALL BE TESCO CONTROLS MODEL 27-22BBS WITH PIGGY-BACK UPS BATTERY BACKUP SYSTEM OR APPROVED EQUAL. CONSTRUCT SERVICE CABINET FOUNDATION PER DETAIL ON SHEET TS1.1 AND MANUFACTURER'S BOLT PATTERN TEMPLATE. CABINET SHALL BE UL 508 RATED. METERED SERVICES SHALL HAVE OWNING AGENCY LABELS INDICATING CITY OWNERSHIP AND ADDRESS. SYSTEM SHALL HAVE AN EVENT COUNTER AND TIMER. UPS SYSTEM SHALL BE 24 VOLT PROVIDING A MINIMUM OF 2 HOURS OF FLASHING ALL RED. SEE INDIVIDUAL METERED SERVICE EQUIPMENT SCHEDULES FOR FURTHER DETAIL.

9. SERVICE CONDUCTORS FROM METER TO CONTROLLER CABINET SHALL BE (3) #6 AWG THWN-2 OR LARGER. SEE CONDUIT & CONDUCTOR SCHEDULES ON SHEETS TS1.7 AND TS2.0.

10. ALL SIGNAL POLES SHALL CONFORM TO NDOT STANDARD SPECIFICATIONS, INCLUDING BOLT CIRCLE DIMENSIONS, ANCHOR BOLTS, AND FOUNDATION DIMENSIONS.

11. SIGNAL HEAD BRACKETS SHALL HAVE ADEQUATE EXTENSIONS TO ALLOW SIGNAL HEAD ADJUSTMENT/ROTATION FOR DIRECT ALIGNMENT TO THE STOP BAR AT THE VIEWING LANE.

12. THE LOCATION OF NEW SIGNAL HEADS SHALL BE APPROVED BY THE ENGINEER AND OWNING AGENCY. SIGNAL HEAD TENONS SHALL BE FIELD WELDED, BY A CERTIFIED WELDER, AND LOCATED IN THE CENTER OF THE VIEWING LANE, UNLESS APPROVED OTHERWISE.

13. SIGNAL CONDUITS SHALL BE 3" ID MINIMUM. SCHEDULE 40 PVC IS REQUIRED FOR ALL UNDERGROUND RUNS. INSTALL #12 AWG COPPER TRACER WIRE WITH 30-MIL POLYETHYLENE JACKET OR APPROVED EQUAL AND PULL ROPE IN ALL SPARE/EMPTY CONDUITS.

14. SIGNAL CABLE SHALL CONFORM TO IMSA SPEC 19-1 OR 20-1 AND BE COLOR CODED PER SILVER BOOK SECTION 623.02.19. CABLES SHALL BE RUN FROM CONTROLLER TO POLE TERMINAL BLOCK WITHOUT SPLICING. IN-POLE CONDUCTORS PAST THE TERMINAL BLOCK SHALL BE INDIVIDUAL #14 AWG THHN/THWN-2 OR APPROVED EQUAL.

15. ALL CABLES AND WIRING SHALL BE NEATLY LABELED USING A CONSISTENT METHOD AND NAMING CONVENTION TO BE APPROVED BY THE CITY OF RENO.

16. ALL NEW PULL BOXES SHALL BE TRAFFIC RATED WITH LABELED METAL LIDS AND LIDS SHALL BE GROUNDED. SEE PULL BOX DETAIL ON SHEET TS1.3.

17. PULL BOXES SHALL NOT BE INSTALLED IN PEDESTRIAN RAMPS WITHOUT THE ENGINEER'S APPROVAL.

18. THE FINAL LOCATION OF ALL POLES, PULL BOXES, CABINETS, AND CONDUIT RUNS SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. CONDUIT RUNS SHOWN IN THE PLANS ARE SCHEMATIC FOR THE PURPOSE OF PLAN LEGIBILITY.

19. A FACTORY REPRESENTATIVE FROM THE MANUFACTURER OF THE SIGNAL CABINET, CONTROLLER, AND MMU MUST BE PRESENT FOR ALL SIGNAL TURN-ONS.

20. RETROREFLECTIVE MATERIALS FOR ALL SIGNAL POLE MOUNTED SIGNS SHALL BE 3M DIAMOND GRADE (DG3) WITH 3M CLEAR TRANSPARENT OVERLAY #1170 OR APPROVED EQUAL.

21. ALL HARDWARE SHALL HAVE A BLACK FACTORY FINISH.

22. VEHICULAR SIGNAL HEADS SHALL BE 12" DIAMETER LED MODULES WITH TINTED LENSES IN ACCORDANCE WITH ITE VTCSH-LED GUIDELINES. INDICATIONS SHALL INCLUDE "ALLnGAP" TECHNOLOGY. UTILIZE "GELCORE" RX11, "DIALITE" 433 SERIES, OR APPROVED EQUAL.

23. ALL VEHICULAR HEADS SHALL HAVE "TUNNEL" VISORS WITH 4 INCH SLOT AT BOTTOM WITH LOUVERED BACK PLATES. HARDWARE SHALL BE ALUMINUM AND HAVE A BLACK FACTORY FINISH. INSTALL RETROREFLECTIVE STRIPS ON BACKPLATES PRIOR TO INSTALLATION.

24. ALL NEW PEDESTRIAN PUSH BUTTONS SHALL BE 2" DIAMETER. UTILIZE POLARA iNAVIGATOR 2 WIRE AUDIBLE PUSH BUTTON STATION (iN2 PBS) SYSTEM OR APPROVED EQUAL. NEW PUSH BUTTON STATIONS SHALL HAVE 9"X15" SIZE "POINTING FINGER" (R10-3E) SIGNS AND MUST HAVE CORRESPONDING STREET NAME IN BRAILLE OR RAISED PRINT. THE ARROW SHALL POINT IN THE SAME DIRECTION AS THE CROSSING AND THE SIGN SHALL BE ALIGNED WITH THE CROSSWALK.

25. PEDESTRIAN SIGNAL INDICATIONS SHALL BE 16"X18" DIALIGHT OR GELCORE LED OR APPROVED EQUAL WITH COUNTDOWN DISPLAYS.

26. LUMINAIRES SHALL BE CREE STRLWY-3M-HT-08-E-UL-SV-700-40K OR APPROVED EQUAL. PHOTOCELL SHALL BE MOUNTED IN THE METERED SERVICE CABINET.

27. PRE-EMPTION EQUIPMENT SHALL BE GLOBAL TRAFFIC TECHNOLOGIES (GTT) OPTICOM MODEL 721 DETECTORS (3 PER INTERSECTION) AND OPTICOM 138 DETECTOR CABLE, OR APPROVED EQUAL.

28. BELL CAMERAS SHALL BE GRIDSMART GS 2 FISHEYE CAMERA VIDEO DETECTION SYSTEM WITH BICYCLE DETECTION MODULE AND SHALL INCLUDE ALL EQUIPMENT AND MATERIALS NECESSARY FOR A COMPLETELY FUNCTIONAL SYSTEM.

29. DETECTION ZONES, INCLUDING ADVANCE DETECTION (NOT SHOWN ON THE PLANS) SHALL BE SET BY THE CITY OF RENO.

SIGNAGE & STRIPING SPECIFICATIONS:

1. ALL NEW SIGNS SHALL BE 3M DIAMOND GRADE (DG3) WITH 3M CLEAR TRANSPARENT OVERLAY #1170 OR APPROVED EQUAL.

2. UNLESS OTHERWISE SHOWN, SIGNS SHALL BE MOUNTED ON A PERFORATED SQUARE TUBE SIGN SUPPORT POST AT THE LOCATION SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

3. THE SIGN POST LOCATIONS SHOWN ON THESE DRAWINGS ARE APPROXIMATE FOR DEPICTION OF THE SIGN TO BE PLACED. THE CONTRACTOR SHALL ARRANGE A MEETING WITH THE ENGINEER AT THE SITE TO VERIFY FINAL SIGN LOCATIONS AND MOUNTING METHOD PRIOR TO INSTALLATION.

4. ALL MODIFICATIONS TO EXISTING SIGNS AND ALL NEW SIGN INSTALLATIONS SHALL PROVIDE 7' OF VERTICAL CLEARANCE BETWEEN THE GROUND AND BOTTOM OF LOWEST SIGN.

5. ALL SIGNS SHALL BE MADE IN STRICT CONFORMANCE WITH THE MUTCD.

6. SIGN INSTALLATION SHALL BE SECURE AND PERMANENT. ALL MOUNTING HARDWARE SHALL BE PROVIDED BY THE CONTRACTOR.

7. LONGITUDINAL STRIPING SHALL BE WATERBORNE TRAFFIC PAINT. TRANSVERSE STRIPING AND SYMBOLS SHALL BE PREFORMED THERMOPLASTIC. THE LOCATION OF PAVEMENT MARKINGS SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.

NO.	DESCRIPTION	DATE

DATE: FEBRUARY 2023
SCALE: H: V:
DRAWN BY: MSH
DESIGNED BY: MSH
CHECKED BY: LEC

PROFESSIONAL ENGINEER — STATE OF NEVADA — M. SCOTT HENRY — Exp. 6/30/23 — CIVIL — No. 12539 — 3/13/23

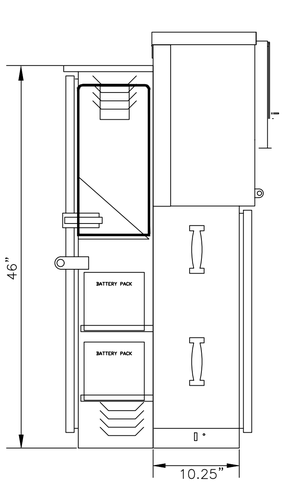
HEADWAY TRANSPORTATION
5482 Longley Lane, Suit B
Reno, NV 89511
(775) 322-4300

TRAFFIC SIGNAL NOTES & EQUIPMENT SPECIFICATIONS

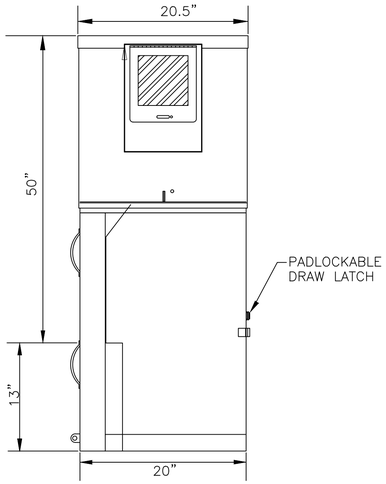
PROJECT NO. 21-067

SHEET TS1.0

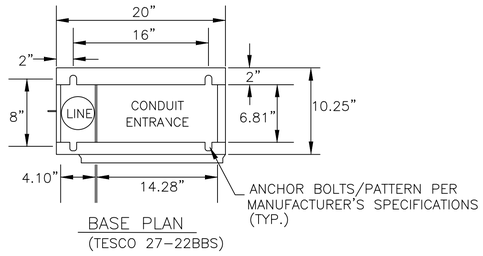
Underground Service Alert — Call: TOLL FREE 811/800 227-2600 — TWO WORKING DAYS BEFORE YOU DIG



SIDE VIEW



FRONT VIEW



BASE PLAN
(TESCO 27-22BBS)

TESCO 27-22BBS - METERED SERVICE PEDESTAL WITH BATTERY BACKUP (TYPE III - AF) DETAIL

FURNISH AND INSTALL CITY OF RENO STANDARD CABINET WITH THE FOLLOWING DIFFERENCES FOR TS2 TYPE 1 FORMAT:

1. TS2 TYPE 1 – 16 LOAD SWITCH BACKPANEL

2. ONE DETECTOR RACK WHICH WOULD INCLUDE:
   - 2.A. 1 BIU
   - 2.B. 16 CHANNELS OF DETECTION
   - 2.C. WIRED FOR 2 CHANNEL DETECTOR CARDS ONLY (NOT 4 CHANNEL)
   - 2.D. PREEMPTION CARD SLOTS WIRED FOR EITHER 2 – 2 CHANNEL PREEMPTION OR 1 – 4 CHANNEL PREEMPTION CARD

3. ALL EXISTING SWITCHES ON POLICE PANELS STAY THE SAME

4. ALL EXISTING SWITCHES ON THE INSIDE DOOR AUX PANEL STAY THE SAME EXCEPT FOR DETECTION TEST SWITCHES

5. LOOP INTERFACE PANEL HAVE TEST SWITCHES
   - 5.A. 16 VEHICLE DETECTOR TEST SWITCHES
   - 5.B. 4 PEDESTRIAN TEST SWITCHES
   - 5.C. 4 PREEMPTION TEST SWITCHES

6. ADD LED LIGHTING INSTEAD OF THE FLUORESCENT LIGHT UNDER THE DOCUMENT DRAWER

7. REMOVE THE INCANDESCENT LIGHT FIXTURE AT THE TOP AND REPLACE IT WITH LED LIGHTING AT THE TOP OF THE CABINET

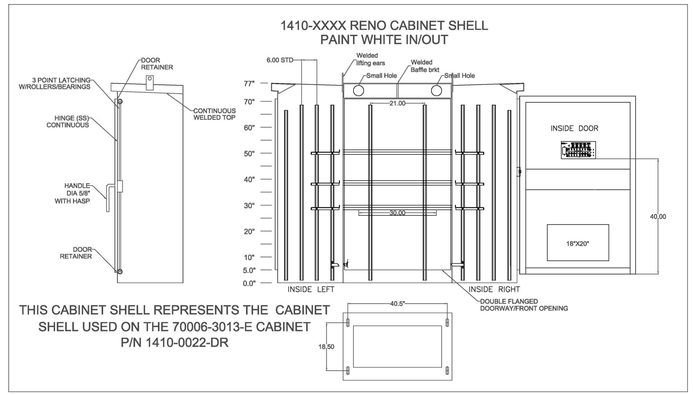
8. REMOVE THE PUNCH DOWN TERMINAL BLOCK

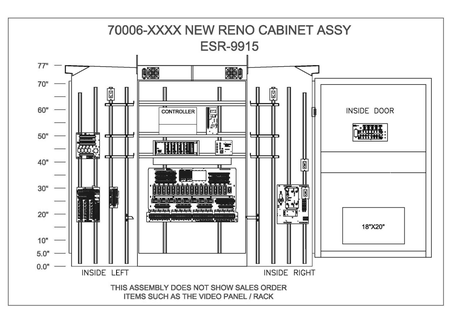
9. TS2 TYPE 2 CONTROLLERS SHALL BE FURNISHED AND INSTALLED SO THE TYPE 1 CABINET NEEDS THE A/C POWER ADAPTER TO CONVERT IT FROM TYPE 1 TO TYPE 2

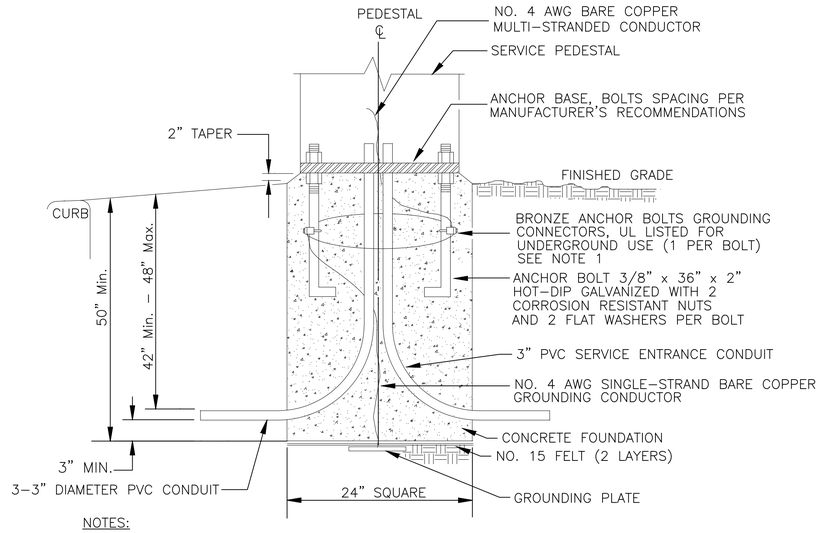
10. CABINET LAYOUT:
    - 10.A. KEEP THE POWER PANEL THE SAME
    - 10.B. KEEP THE SHELF PLACEMENT THE SAME
    - 10.C. KEEP THE HEIGHT OF THE PANEL MOUNTING THE SAME FROM THE FLOOR OF THE CABINET
    - 10.D. KEEP THE SAME FILTER OPENING SIZE
    - 10.E. SAME WHITE INSIDE AND OUT
    - 10.F. SAME HINGE
    - 10.G. SAME CABINET

11. OTHER MODIFICATIONS AS REQUIRED BY THE CITY OF RENO. CONTACT JOHN BAKER, CITY OF RENO, AT (775) 334-1270 TO CONFIRM REQUIREMENTS PRIOR TO ORDERING.

CONTROLLER CABINET SPECIFICATIONS:



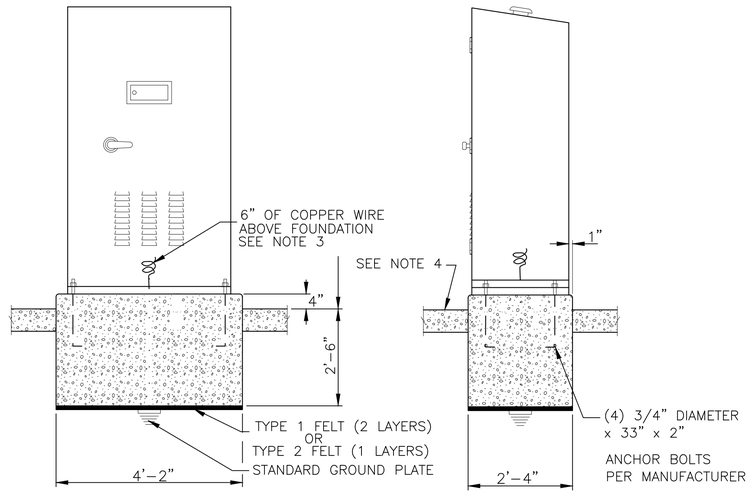




NOTES:

1. BARE COPPER GROUNDING SHALL BE LOOPED AROUND ANCHOR BOLTS ONE TIME AND CONNECTED TO EACH ANCHOR BOLT BEFORE CONTINUING DOWN TO THE GROUNDING PLATE.
2. CABINET COVERS SHALL BE PARALLEL WITH CURB.
3. IN AREAS WHERE ROW PERMITS, THE CONCRETE BASE SHALL BE PLACED AT THE BACK EDGE OF SIDEWALK.
4. CABINET COVERS SHALL OPEN TOWARD THE STREET WHEN CABINET IS LOCATED AT BACK OF WALK. CABINET COVER SHALL OPEN PARALLEL TO THE SIDEWALK FACING THE DIRECTION OF TRAFFIC WHEN LOCATED WITHIN THE SIDEWALK.
5. GROUND PLATE SHALL BE MADE OF NONFERROUS MATERIALS (TYPICALLY BRASS OR COPPER).

SERVICE PEDESTAL FOUNDATION DETAIL



NOTES:

1. ALL CONDUITS SHALL EXTEND ABOVE FOUNDATION A MINIMUM OF 2" AND HAVE BELL ENDS INSTALLED PRIOR TO POURING FOUNDATION. CONDUITS SHALL BE A MINIMUM OF 2" APART.
2. ALL CABINETS SHALL BE PAINTED WHITE ON THE INSIDE AND OUTSIDE (FACTORY FINISHED).
3. 1/2" x 96" GROUND ROD MAY BE SUBSTITUTED IN LIEU OF COPPER WIRE.
4. WHEN NOT PLACED AT BACK OF SIDEWALK, A 4'-2" x 3' x 4" FRONT SLAB SHALL BE CONSTRUCTED IN FRONT OF THE CABINET DOOR. THE FRONT SLAB SHALL BE PLACED ON 3" OF TYPE 2, CLASS B CRUSHED AGGREGATE BASE. THE AGGREGATE BASE SHALL BE COMPACTED TO 95% RELATIVE COMPACTION. THE TOP OF FRONT SLAB SHALL BE 4" BELOW THE TOP OF THE CABINET FOUNDATION AND NOT HAVE A SLOPE GREATER THAN 2.00% IN ANY DIRECTION.

TYPE R-44 CABINET FOUNDATION DETAIL

Underground Service Alert
Call: TOLL FREE
811/800
227-2600
TWO WORKING DAYS BEFORE YOU DIG

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M. SCOTT HENRY
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5482 Longley Lane, Suit B
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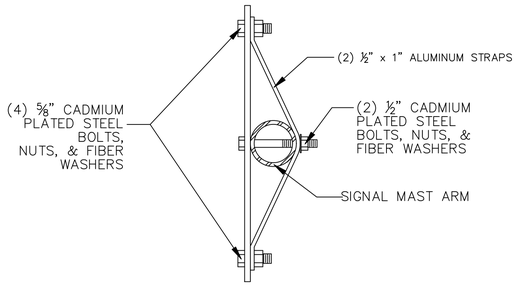
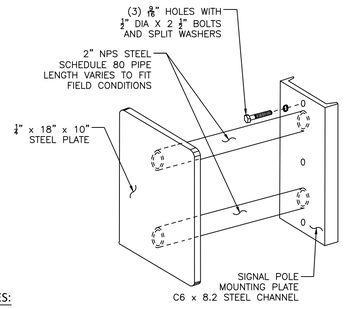
DETAILS

PROJECT NO.
21-067

SHEET
TS1.1



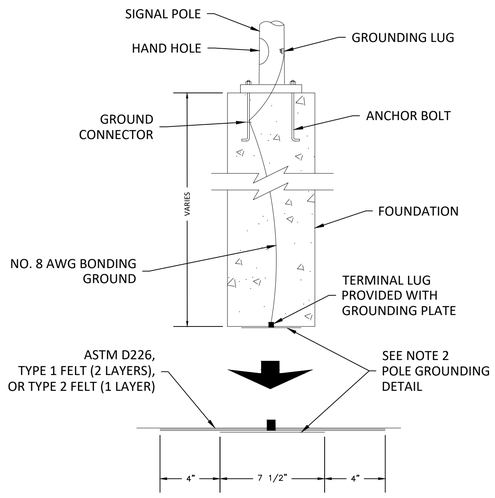
MAST ARM SIGN MOUNTING DETAIL



NOTES:

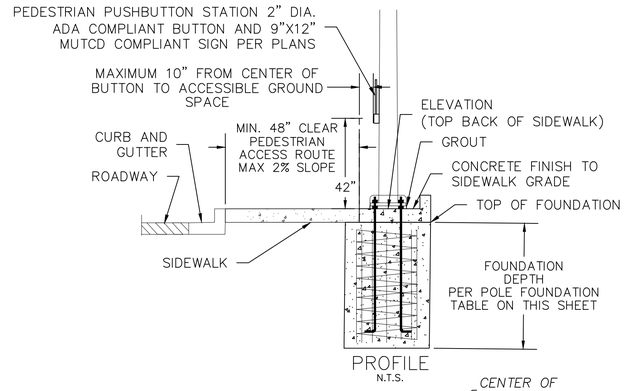
1. ½ INCH RADIUS ON ALL CORNERS. SMOOTH AND NEATLY ROUND EXPOSED EDGES TO A ⅛" RADIUS.
2. ALL MATERIAL SHALL CONFORM TO THE NDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
3. 1 ½ INCH NPS STEEL PIPE USE SCHEDULE 40 AND 2 INCH NPS STEEL PIPE USE SCHEDULE 80. 2-INCH NPS IS ONLY USED WITH THE ADJUSTABLE EXTENDER.
4. DRILL AND TAP HOLES 20TPI INTO SIGNAL POLE.
5. ATTACH PUSH BUTTON TO MOUNTING PLATE PER MANUFACTURER'S RECOMMENDATIONS.
6. DRILL ½ INCH HOLES IN MOUNTING PLATES AT LOWER EXTENSION PIPE FOR CONDUCTORS. SMOOTH EDGES TO PREVENT DAMAGE TO CONDUCTOR INSULATION.
7. GALVANIZED FINISH ON STANDARD POLES OR FLAT BLACK POWDER COAT WHEN LOCATED ON BLACK OR DECORATIVE POLES.

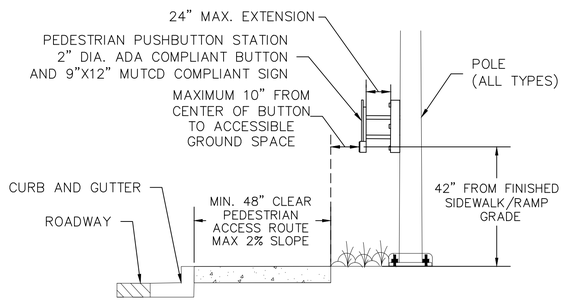
PEDESTRIAN PUSH BUTTON EXTENSION



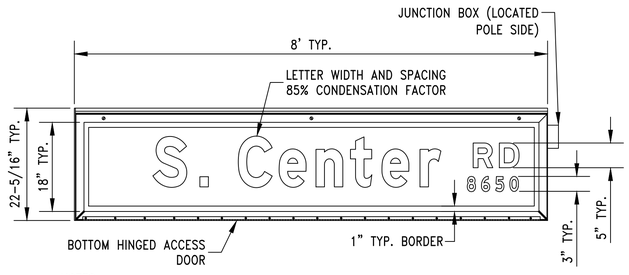
1. CONNECT BONDING WIRE TO THE REINFORCING STEEL CAGE NEAR THE MIDPOINT OF THE FOUNDATION OR ANCHOR BOLTS.
2. GROUND PLATE SHALL BE MADE OF NONFERROUS MATERIAL, BRASS OR COPPER. GROUNDING PLATE GROUNDING RESISTANCE SHALL NOT EXCEED NEC. ADD ADDITIONAL GROUNDING AS NEEDED. SUPPLY FINAL GROUNDING TEST RESULTS TO ENGINEER.

POLE GROUNDING DETAIL





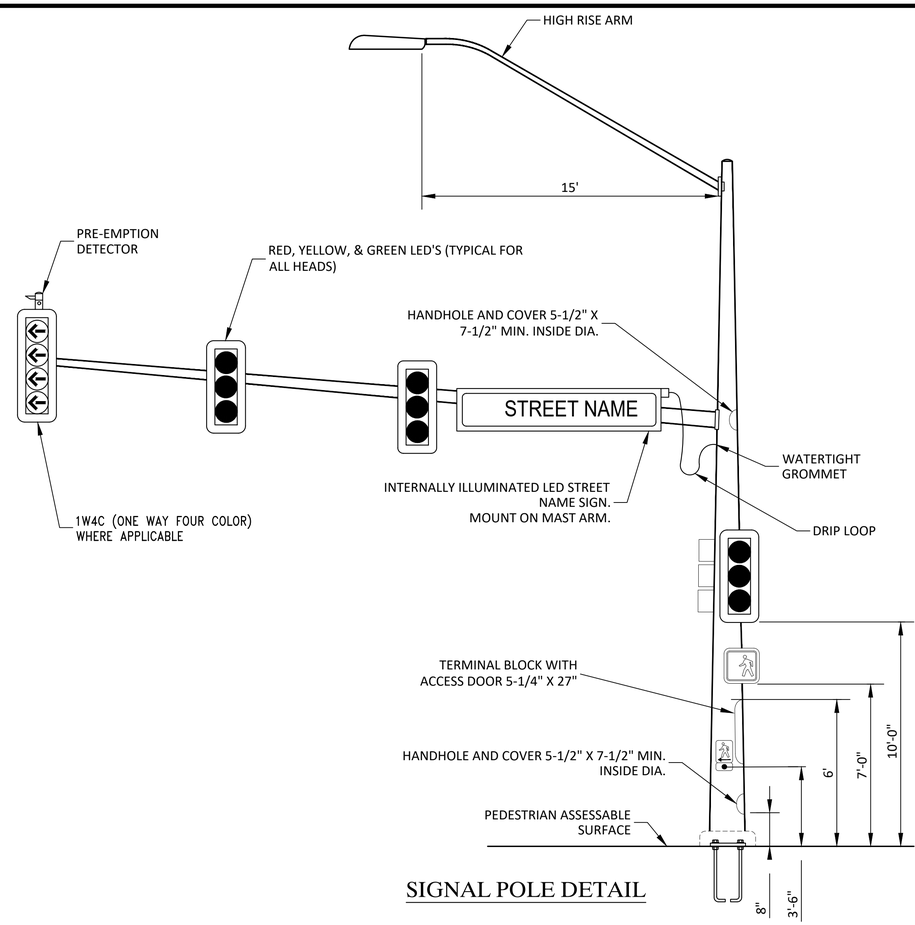
POLE BASE AT SIDEWALK



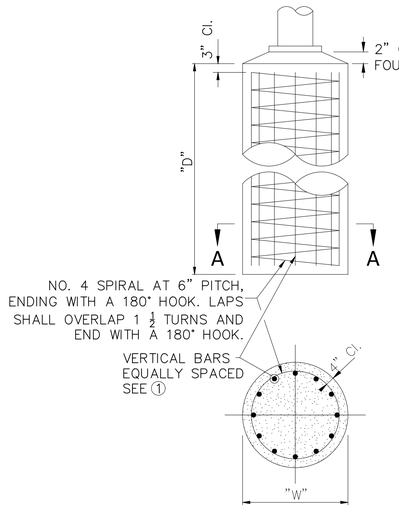
NOTES:

1. SEE IISNS SCHEDULES FOR LEGENDS. ALL STREET NAME SIGNS SHALL BE 8 FOOT SINGLE FACED WITH CASE SENSITIVE LETTERING.
2. SIGNS SHALL BE WIRED USING 16/3 SOOW OR SJOOW CABLE.

INTERNALLY ILLUMINATED STREET NAME SIGN DETAIL



SIGNAL POLE DETAIL



POLE TYPE	MAST ARM LENGTH	**"D"	**"W" 1	ANCHOR BOLTS (4 EACH)
PPB POST	N/A	1'-6"	1'-6"	3/8"x 12"x 2"
1A & 1B	N/A	3'	2'	3/4"x 18"x 4"
7	ALL	5'	2'-6"	*1"x 36"x 4"
14	ALL	5'	2'-6"	*1"x 36"x 4"
30 AND 35	≤ 45'	12'	3'	1 3/4"x 60"x 6"
30A AND 35A	≤ 60'	12'	3'	2"x 66"x 6"
30B AND 35B	≤ 85'	20'	4'	2 1/4"x 72"

** UNLESS OTHERWISE SHOWN ON PLANS.
* NOT APPLICABLE WHEN MOUNTED ON STRUCTURES.
① WHEN "W" = 2'-0" USE 4-NO. 5 BARS EQUALLY SPACED.
WHEN "W" =2'-6" USE 8-NO.5 BARS EQUALLY SPACED.
WHEN "W" =3'-0" USE 12-NO.7 BARS EQUALLY SPACED.
WHEN "W" =4'-0" USE 16-NO.9 BARS EQUALLY SPACED.

NOTE: EXCAVATIONS FOR POLE FOUNDATIONS MUST HAVE FIRM, COMPACT, STABLE WALLS AND SHALL NOT HAVE A DIAMETER MORE THAN TWO (2) FEET LARGER THAN THE PLAN SPECIFIED FOUNDATION DIAMETER FOR THE FULL FOUNDATION DEPTH. CONTRACTOR SHALL UTILIZE A DRILLING PROCESS AND EQUIPMENT THAT CONTAINS THE POLE FOUNDATION TO THE SPECIFIED SIZE. DRILLING OPTIONS MAY INCLUDE THE USE OF NDOT FLOWABLE FILL (ONE SACK SLURRY OR SIMILAR) FOLLOWED BY REDRILLING THE FLOWABLE FILL, DRILLING WITH ADDITIVES THAT STABILIZE THE WALLS OR OTHER DRILLING TOOLS/TECHNIQUES AS APPROVED BY THE ENGINEER. NO ADDITIONAL PAYMENT WILL BE MADE FOR SPECIAL DRILLING TECHNIQUES OR PROCESSES.

POLE FOUNDATION DETAIL

NO.	DESCRIPTION	DATE

DATE: FEBRUARY 2023
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M. SCOTT HENRY
PROFESSIONAL ENGINEER STATE OF NEVADA
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HEADWAY TRANSPORTATION
5482 Longley Lane, Suit B
Reno, NV 89511
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DETAILS

PROJECT NO. 21-067

SHEET TS1.2

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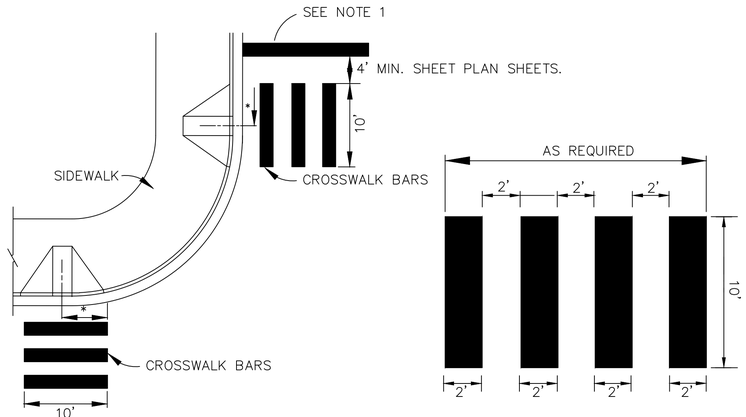
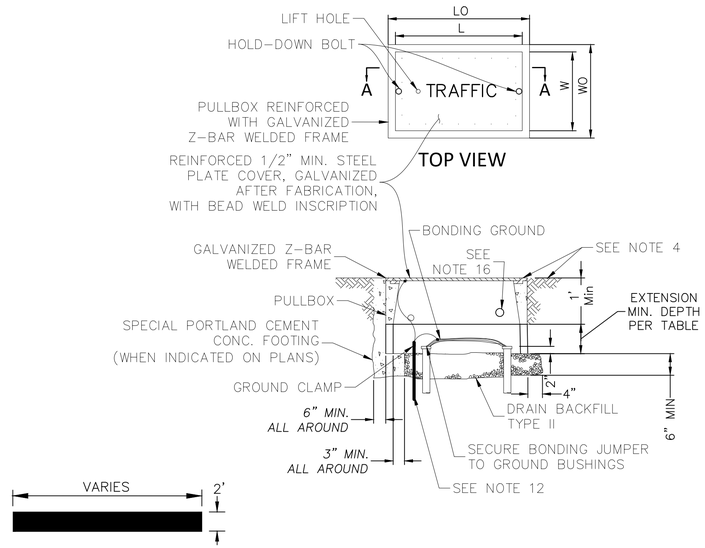


NOTES:
1. PLACE STOP BAR AS SHOWN ON PLANS.
2. FIRST ARROW SHALL BE PLACED 8 FEET PRIOR TO THE STOP BAR.
3. *CENTER OF CURB RAMP TO BE CENTER OF CROSSWALK.

CONTINENTAL STYLE CROSSWALK DETAIL



STOP BAR DETAIL

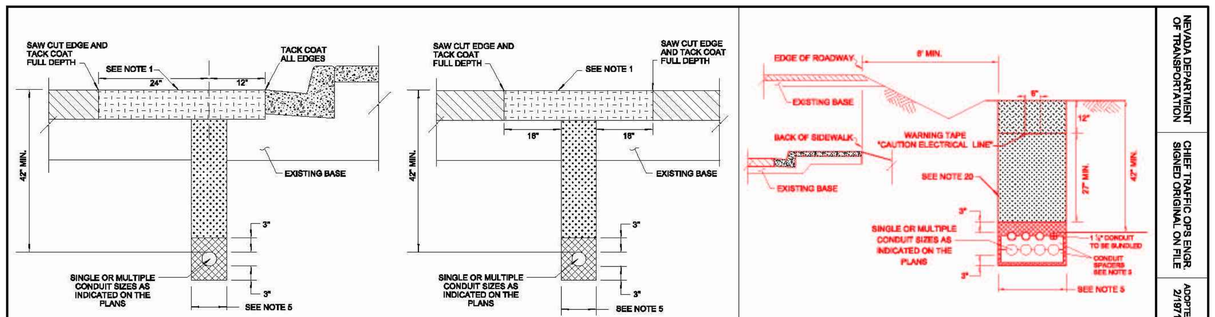
SECTION A-A
PULLBOX
No. 3 1/2, No. 5, No. 7 & No. 9

PULLBOX MINIMUM DIMENSION TABLE							
PULLBOX	CONCRETE BOX			STEEL COVER			EXTENSION
	LO	WO	Height	L	W	Edge Taper	Height
No. 3 1/2	19"±	12"±	12"±	14 1/2"±	8 3/4"±	None	12"
No. 5	25"±	15"±	12"±	20 1/2"±	10 1/2"±	None	12"
No. 7	35"±	22"±	12"±	30"±	17"±	None	12"
No. 9	52"±	35"±	24"±	47 3/4"±	30"±	None	12"

NOTES FOR PULL BOXES:

1. ALL PULL BOXES SHALL BE TRAFFIC RATED UNLESS SPECIFICALLY STATED OTHERWISE IN PLANS. ALL TRAFFIC RATED PULL BOXES SHALL BE HS-20 LOADING RATING PER AASHTO STANDARDS.
2. ALL PULL BOXES SHALL HAVE SLIP RESISTANT COVERS. STEEL COVERS SHALL HAVE EMBOSSED NON-SKID PATTERN AND BE SLIP-RESISTANT.
3. STEEL REINFORCING SHALL BE PER MANUFACTURERS REQUIREMENTS.
4. TOP OF PULL BOXES SHALL BE FLUSH WITH SURROUNDING GRADE OR TOP OF ADJACENT CURB, EXCEPT THAT IN UNPAVED AREAS WHERE PULL BOX IS NOT IMMEDIATELY ADJACENT TO AND PROTECTED BY A CONCRETE FOUNDATION, POLE OR OTHER CONSTRUCTION, THE BOX SHALL BE PLACE WITH ITS TOP 1-INCH ABOVE SURROUNDING GRADE. WHERE PRACTICABLE, PULL BOXES SHOWN IN THE VICINITY OF CURBS SHALL BE PLACED ADJACENT TO THE BACK OF CURB, AND PULL BOXES SHOWN ADJACENT TO STANDARDS SHALL BE PLACED ON SIDE OF FOUNDATION FACING AWAY FROM TRAFFIC, UNLESS OTHERWISE NOTED. WHEN PULL BOX IS INSTALLED IN SIDEWALK AREA, THE DEPTH OF THE PULL BOX SHALL BE ADJUSTED SO THAT THE TOP OF THE PULL BOX IS FLUSH WITH THE TOP OF THE SIDEWALK.
5. THE NOMINAL DIMENSIONS OF THE OPENING IN WHICH THE COVER SETS SHALL BE THE SAME AS THE COVER DIMENSIONS EXCEPT THE LENGTH AND WIDTH DIMENSIONS SHALL BE 1/8-INCH GREATER.
6. ALL COVERS AND BOXES SHALL BE INTERCHANGEABLE WITH NEVADA STANDARD MALE AND FEMALE GAGES. WHEN INTERCHANGED WITH A STANDARD MALE OR FEMALE GAGE, THE TOP SURFACES SHALL BE FLUSH WITHIN 1/8-INCH. TOP OUTSIDE EDGE OF ALL CONCRETE COVERS AND PULL BOXES SHALL HAVE A 1/4-INCH MINIMUM RADIUS.
7. PULL BOX SHALL NOT BE INSTALLED WITHIN THE BOUNDARIES OF NEW OR EXISTING CURB RAMPS.
8. PULL BOXES FOR ELECTROLIERS AND SIGNAL STANDARDS SHALL BE LOCATED AT THE SAME STATION (+ 5-FOOT) AS THE ADJACENT ELECTROLIER OR SIGNAL STANDARD. PULL BOXES SHALL BE PLACED ADJACENT TO BACK OF CURB OR EDGE OF SHOULDER EXCEPT WHERE THIS IS IMPRACTICAL, A BOX MAY BE PLACED IN ANOTHER SUITABLE PROTECTED AND ACCESSIBLE LOCATION.
9. IN AREAS WHERE THE POSSIBILITY OF MATERIAL ERODING FROM AROUND THE PULL BOX EXISTS, THE PULL BOX SHALL BE PLACED IN DRAIN BACKFILL TYPE II – (2-FOOT DEPTH ON EACH SIDE AND 1-FOOT DEPTH), AS DIRECTED BY THE ENGINEER.
10. USE MODIFIED PULL BOXES ONLY WHEN INDICATED ON THE PLANS.
11. INSTALL CONDUIT PLUG ON EACH UNUSED CONDUIT OR INNERDUCT.
12. GROUND ROD – ALL METAL PULL BOX LIDS SHALL BE GROUNDED. INSTALL A STRANDED NO. 4 (GREEN, 7-STRAND) THW WIRE, 7-FEET IN LENGTH, FROM THE LID TO THE BONDING GROUND. FASTEN THE NO. 4 CONDUCTOR TO THE LID BY CAD WELDING. ALL PULL BOXES SHALL RECEIVE A GROUND ROD.
13. ALL CONDUITS SHALL HAVE A MINIMUM OF 6-INCH CLEARANCE FROM THE TOP OF THE CONDUIT TO THE COVER. SEAL ALL CONDUIT ENDS WITH A DUCT SEALING COMPOUND.
14. MODIFIED PULL BOX NO. 3 1/2, NO. 5, NO. 7, AND NO. 9 INCLUDE PULL BOX PLUS AT LEAST ONE EXTENSION.
15. GROUNDING RESISTANCE SHALL NOT EXCEED NEC. ADD ADDITIONAL GROUNDING AS NEEDED. SUPPLY FINAL GROUNDING TEST RESULTS TO THE ENGINEER.
16. THE CONTRACTOR SHALL INSTALL ELECTRONIC MARKER SYSTEM IN ALL BURIED PULL BOXES. INSTALL A RED (POWER INDUSTRY) MARKER FOR POWER PULL BOXES AND BLACK/ORANGE (CABLE TV AND COMMUNICATIONS) FOR ITS PULL BOXES.

PULL BOX DETAIL

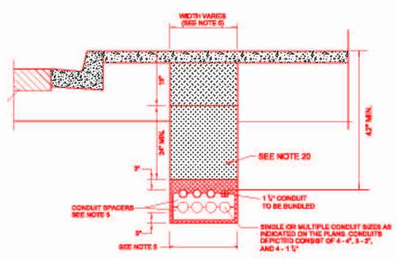


TRENCHING IN PAVEMENT

TRENCHING IN NATIVE SOIL (CLASS A SLURRY)

LEGEND:
- EXISTING PAVEMENT
- SAND BEDDING (SEE NOTE 14)
- BACKFILL
- LIMITS OF REMOVAL & REPAIR OF PAVEMENT
- CLASS A SLURRY CEMENT BACKFILL

NOTES:
1. Remove existing pavement and replace with new approved material of same type. Match existing structural section (including open grade) and existing pavement depth but not less than 8-inches, and seal new surface as directed by the Engineer.
2. Recompact existing base material around trench to meet compaction requirements for that material type and location.
3. New asphalt and concrete pavement material shall be approved by the Engineer and obtained from an approved source.
4. Unless otherwise provided for in the base and surface summaries new pavement material and trenching shall not be paid for directly but included in the price for the conduit.
5. Total trench width shall be 8-inches wider than the outside edges of conduit(s) installed (3-inches each side). Use conduit spacers to separate multiple conduits in trench by at least 1-inch. Place spacers at intervals of 5-feet maximum. Conduits shall be centered in trench.
6. For trenching in a non-NDOT-owned facility, use the owner's standards for trenching, compaction, and patching.
7. Longitudinal trenching in shoulder: If shoulder is 4-foot wide or less, remove all surface material from edge of oil to shoulder stripe and replace.
8. Engineer may for good cause, require wider patch sections or otherwise alter the requirements.
9. If saw cut is within 2-feet of an existing pavement edge or existing patch, remove existing pavement to that edge and replace entire section.
10. If sawcut edges for trench fall within a wheel path, sawcut shall be extended to, and removal made to edge of the travel lane. Optionally the entire travel lane can be rotomilled to a depth of 2-inches and overlayed with 2-inches of bituminous plantmix as directed by the Engineer.
11. Contractor shall be responsible for replacement of loop detectors, adjustments of utilities and survey monuments to grade and installation of temporary pavement markings.
12. Permanent resurfacing shall not be placed on trenches backfilled with concrete slurry for a minimum of 7 days after placement of the concrete slurry or similar material. Provide temporary cover or backfill as directed by the Engineer.
13. Use of rock wheel trenching machines or similar equipment may be permitted within paved areas or within 1-foot of the edge of paving, as directed by the Engineer.
14. Sand bedding shall conform to gradation requirements in Subsection 706.03.03.
15. If installing underground electrical facilities or supplies, refer to NAC 408.447 and 408.453.
16. Slurry backfill in accordance with Section 207 if within the roadside slope or ditches.
17. Conduit couplings shall be staggered.
18. Detectable pull tape shall be installed inside all conduits.
19. Return disturbed area to match existing grade.
20. Native backfill acceptable when specified on plans or approved in writing by the Engineer. Native backfill shall not contain rocks larger than 3-inches.



TRENCH BELOW SIDEWALK

CONDUIT TRENCH DETAIL (NDOT)

NEVADA DEPARTMENT OF TRANSPORTATION

CHIEF TRAFFIC OPS ENGR. SIGNED ORIGINAL ON FILE

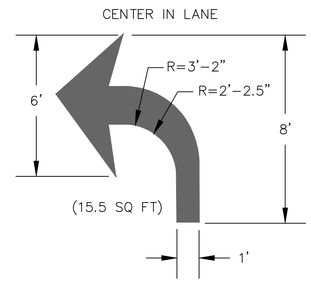
ADOPTED 2/1971

REVISED 7/2019

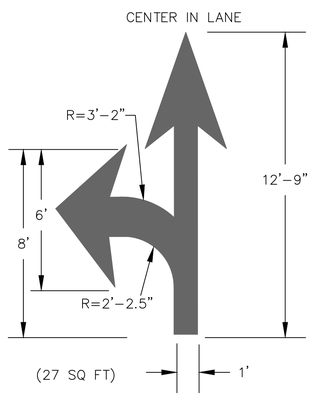
TRAFFIC CONDUIT TRENCHING DETAIL

SPEC. # 823

DETAIL NUMBER TG-5



TURN ARROW DETAIL



LEFT/STRAIGHT ARROW DETAIL

NO.	DESCRIPTION	DATE

DATE: FEBRUARY 2023
SCALE: H: V:
DRAWN BY: MSH
DESIGNED BY: MSH
CHECKED BY: LEC

M. SCOTT HENRY
Exp. 6/30/23
CIVIL
No. 12539
STATE OF NEVADA
PROFESSIONAL ENGINEER
3/13/23

HEADWAY TRANSPORTATION
5482 Longley Lane, Suit B
Reno, NV 89511
(775) 322-4300

DETAILS

PROJECT NO. 21-067

SHEET TS1.3

Underground Service Alert
Call: TOLL FREE
811/800
227-2600
TWO WORKING DAYS BEFORE YOU DIG

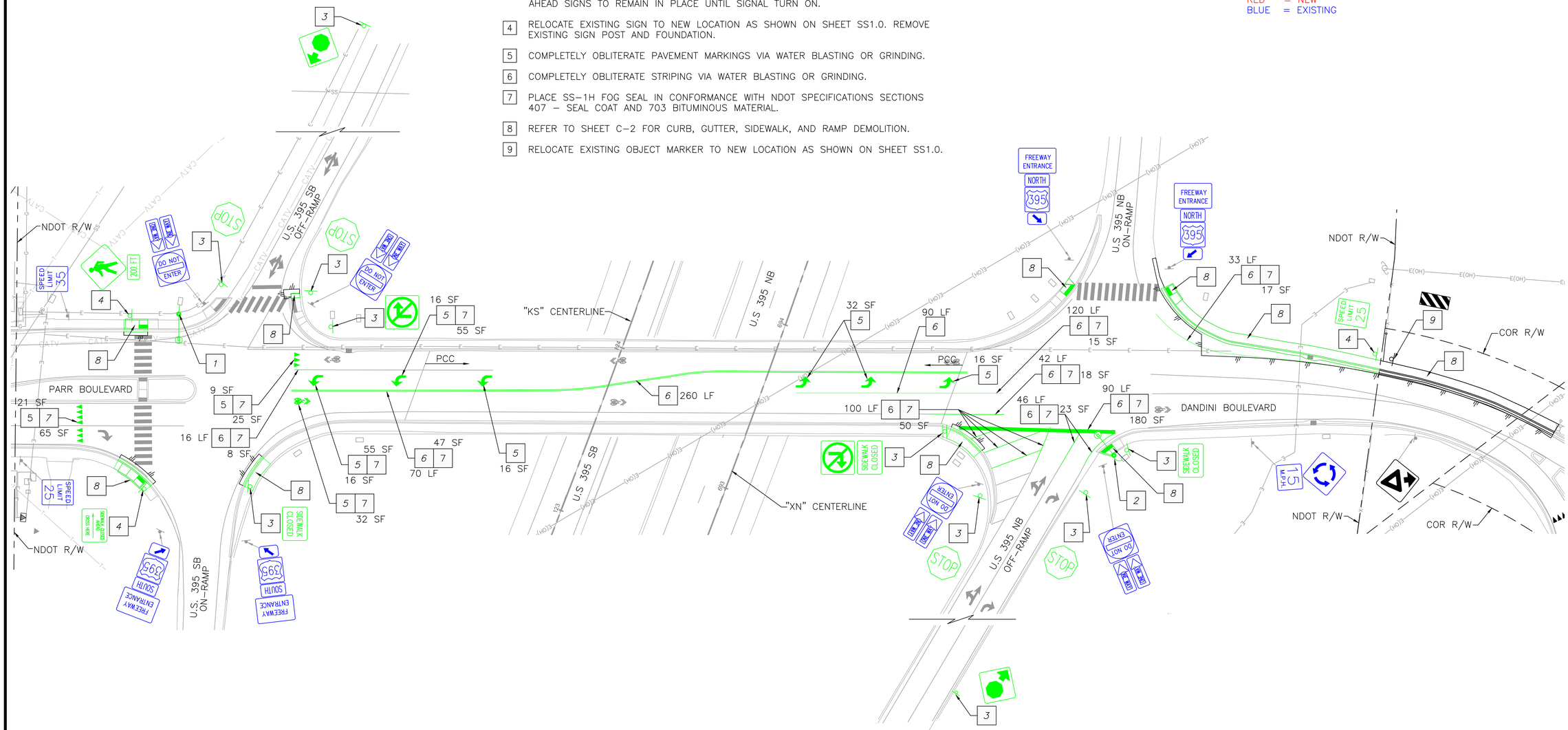
C:\Scott\Spectrum Dandini Project\NDOT Submittal\NDOT Submittal Stamped 3-23.dwg 3/13/2023 10:14 AM Scott Henry

CONSTRUCTION NOTES (THIS SHEET ONLY) :

1. RELOCATE EXISTING STREET LIGHT POLE TO NEW LOCATION AS SHOWN ON SHEET TS1.6 (POLE E). REMOVE POLE FOUNDATION. REMOVE EXISTING CONDUIT AND CONDUCTORS BETWEEN POLE AND PULL BOX.
2. RELOCATE EXISTING STREET LIGHT POLE TO NEW LOCATION AS SHOWN ON SHEET TS1.9 (POLE D). REMOVE POLE FOUNDATION. REMOVE EXISTING CONDUIT AND CONDUCTORS BETWEEN POLE AND PULL BOX.
3. REMOVE SIGN, POST AND FOUNDATION. SALVAGE SIGN, POST, AND HARDWARE TO NDOT. CONTRACTOR TO COORDINATE WITH NDOT STAFF. STOP SIGNS AND STOP AHEAD SIGNS TO REMAIN IN PLACE UNTIL SIGNAL TURN ON.
4. RELOCATE EXISTING SIGN TO NEW LOCATION AS SHOWN ON SHEET SS1.0. REMOVE EXISTING SIGN POST AND FOUNDATION.
5. COMPLETELY OBLITERATE PAVEMENT MARKINGS VIA WATER BLASTING OR GRINDING.
6. COMPLETELY OBLITERATE STRIPING VIA WATER BLASTING OR GRINDING.
7. PLACE SS-1H FOG SEAL IN CONFORMANCE WITH NDOT SPECIFICATIONS SECTIONS 407 – SEAL COAT AND 703 BITUMINOUS MATERIAL.
8. REFER TO SHEET C-2 FOR CURB, GUTTER, SIDEWALK, AND RAMP DEMOLITION.
9. RELOCATE EXISTING OBJECT MARKER TO NEW LOCATION AS SHOWN ON SHEET SS1.0.

30 0 30 60
1" = 30' GRAPHIC SCALE

NOTE: GREEN = REMOVE/ABANDON/RELOCATE
RED = NEW
BLUE = EXISTING



NO.	DESCRIPTION	DATE

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PROFESSIONAL ENGINEER
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HEADWAY TRANSPORTATION
5482 Longley Lane, Suit B
Reno, NV 89511
(775) 322-4300

DEMOLITION PLAN

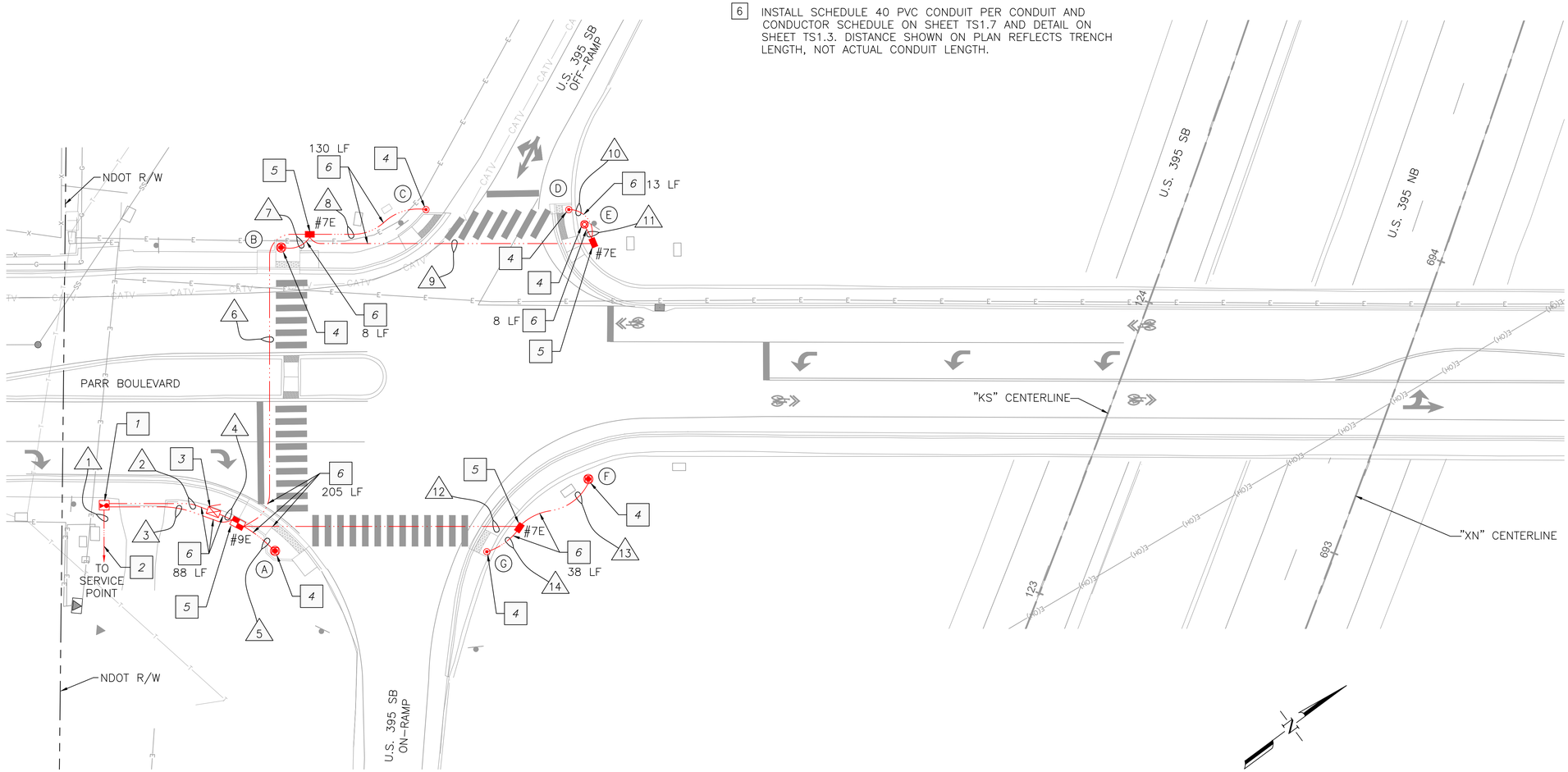
PROJECT NO. 21-067

SHEET TS1.4

Underground Service Alert
Call: TOLL FREE 811/800 227-2600
TWO WORKING DAYS BEFORE YOU DIG

CONSTRUCTION NOTES (THIS SHEET ONLY) :

1. CONSTRUCT METERED SERVICE FOUNDATION PER DETAIL ON SHEET TS1.1 AND METERED SERVICE EQUIPMENT SCHEDULE ON SHEET TS1.7.
2. FURNISH AND INSTALL 3" SCHEDULE 40 PVC CONDUIT PER NV ENERGY TYPICAL TRENCH DETAIL TE0030U.
3. CONSTRUCT TYPE R-44 CABINET FOUNDATION PER DETAIL ON SHEET TS1.1.
4. CONSTRUCT SIGNAL POLE FOUNDATION PER POLE SCHEDULE ON SHEET TS1.7 AND DETAILS ON SHEET TS1.2.
5. FURNISH AND INSTALL NEW TRAFFIC RATED PULL BOX PER DETAIL ON SHEET TS1.3.
6. INSTALL SCHEDULE 40 PVC CONDUIT PER CONDUIT AND CONDUCTOR SCHEDULE ON SHEET TS1.7 AND DETAIL ON SHEET TS1.3. DISTANCE SHOWN ON PLAN REFLECTS TRENCH LENGTH, NOT ACTUAL CONDUIT LENGTH.



NOTE: GREEN = REMOVE/ABANDON/RELOCATE
RED = NEW
BLUE = EXISTING

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3/13/23

HEADWAY TRANSPORTATION
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Reno, NV 89511
(775) 322-4300

US 395 SOUTHBOUND RAMP INTERSECTION CONDUIT PLAN

PROJECT NO. 21-067

SHEET TS1.5

Underground Service Alert
Call: TOLL FREE
811/800
227-2600
TWO WORKING DAYS BEFORE YOU DIG

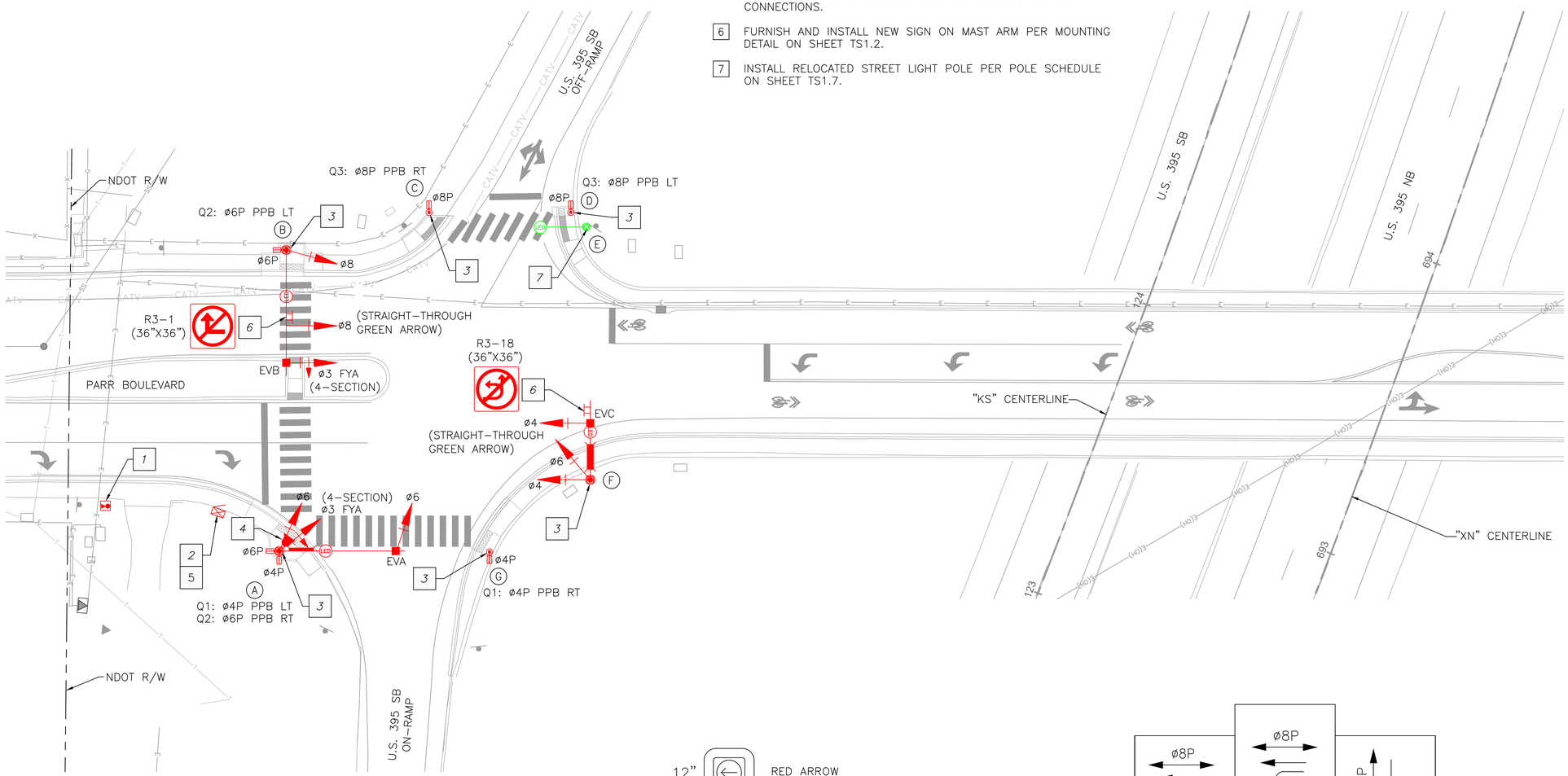
C:\Scott\Spectrum Dondini Project\NDOT Submittal\NDOT Submittal Stamped 3-23.dwg 3/13/2023 10:15 AM Scott Henry

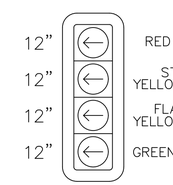
CONSTRUCTION NOTES (THIS SHEET ONLY) :

1. FURNISH AND INSTALL 100A METERED SERVICE WITH BATTERY BACKUP PER DETAIL ON SHEET TS1.1.
2. FURNISH AND INSTALL NEW CONTROLLER AND CABINET ASSEMBLY PER DETAIL ON SHEET TS1.1. MAKE ALL CONNECTIONS.
3. FURNISH AND INSTALL NEW SIGNAL POLE PER POLE SCHEDULE ON SHEET TS1.7 AND DETAILS ON SHEET TS1.2.
4. FURNISH AND INSTALL BELL CAMERA ON LUMINAIRE ARM AND CABLE TO CONTROLLER. MAKE ALL CONNECTIONS.
5. FURNISH AND INSTALL PROCESSOR FOR BELL CAMERA SYSTEM IN CABINET PER MANUFACTURER SPECIFICATIONS. MAKE ALL CONNECTIONS.
6. FURNISH AND INSTALL NEW SIGN ON MAST ARM PER MOUNTING DETAIL ON SHEET TS1.2.
7. INSTALL RELOCATED STREET LIGHT POLE PER POLE SCHEDULE ON SHEET TS1.7.

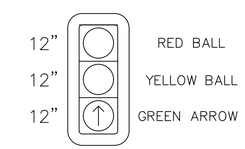
20 0 20 40
1" = 20' GRAPHIC SCALE

NOTE: GREEN = REMOVE/ABANDON/RELOCATE
RED = NEW
BLUE = EXISTING

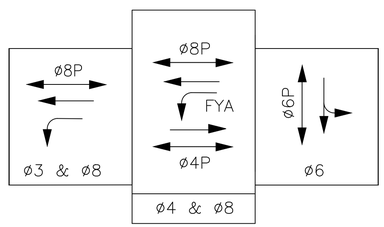




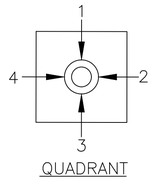
4-SECTION FLASHING YELLOW ARROW HEAD



STRAIGHT-THROUGH GREEN ARROW HEAD



PROPOSED PHASE DIAGRAM
FLASHING OPERATION: ALL RED



QUADRANT

NO.	DESCRIPTION	DATE

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M. SCOTT HENRY
Exp. 6/30/23
CIVIL
No. 12539
STATE OF NEVADA
PROFESSIONAL ENGINEER
3/13/23

HEADWAY TRANSPORTATION
5482 Longley Lane, Suit B
Reno, NV 89511
(775) 322-4300

US 395 SOUTHBOUND RAMP INTERSECTION EQUIPMENT PLAN

PROJECT NO. 21-067

SHEET TS1.6

Underground Service Alert
Call: TOLL FREE 811/800 227-2600
TWO WORKING DAYS BEFORE YOU DIG

CONDUIT AND CONDUCTOR SCHEDULE

RUN NO. (#)	FROM	TO	CONDUIT SIZE	GROUND	SIGNAL CABLE		LUMINAIRE & IISNS	SERVICE	EVP	BELL CAMERA CABLE	COMMENTS
				8 AWG	25+1 CON 14 AWG	10+1 CON 14 AWG	10 AWG	6 AWG			
1	SERVICE POINT	METERED SERVICE	3"	CONDUCTORS PROVIDED BY NV ENERGY							
2	METERED SERVICE	CONTROLLER CABINET	3"					3			
3	METERED SERVICE	#9E HOMERUN PB	3"				4				
4	CONTROLLER CABINET	#9E HOMERUN PB	(4) 3"	1	3	3			3	1	
5	#9E HOMERUN PB	POLE A	(2) 3"	1	1		2		1	1	
6	#9E HOMERUN PB	#7E PB FOR POLE B	(2) 3"	1	1	2	2		1		
7	#7E PB FOR POLE B	POLE B	(2) 3"	1	1		2		1		
8	#7E PB FOR POLE B	POLE C	3"	1		1					
9	#7E PB FOR POLE B	#7E PB FOR POLE D/E	(2) 3"	1		1	2				
10	#7E PB FOR POLE D/E	POLE D	3"	1		1					
11	#7E PB FOR POLE D/E	POLE E	3"	1			2				
12	#9E HOMERUN PB	#7E PB FOR POLE F/G	(2) 3"	1	1	1	2		1		
13	#7E PB FOR POLE F/G	POLE F	(2) 3"	1	1		2		1		
14	#7E PB FOR POLE F/G	POLE G	3"	1		1					

METERED SERVICE EQUIPMENT SCHEDULE

SERVICE LOCATION	PARR/US 395 SB
OWNERSHIP	CITY OF RENO
VOLTAGE	120V
MAIN BREAKER	100A, 240V, 2P
PHASE	SINGLE
SIGNAL BREAKER	30A, 120V, 1P
LIGHTING BREAKER	20A, 120V, 1P
GFI RECEPTACLE	15A, 120V, 1P
CONTROL	15A, 1P, SWITCH
LIGHTING CONTACTOR	35A–2PNO, MERC

IISNS SCHEDULE

POLE	STREET NAME
A	Parr Blvd → ← Dandini Blvd
F	US 395 S → (FACING WEST)
F	← US 395 S (FACING EAST)

ALL IISNS TO BE SINGLE SIDED.

POLE SCHEDULE

POLE NO.	POLE TYPE	SIGNAL ARM QUAD	SIGNAL ARM LENGTH	LUM. ARM QUAD	LUM. ARM LENGTH	SIGNALS – VEHICLE TYPE	SIGNALS – VEHICLE MOUNT	SIGNALS – VEHICLE QUAD	SIGNALS – PED. MOUNT	SIGNALS – PED. QUAD	PED BUTTON QUAD	PED BUTTON ARROW	COMMENTS
A	35	2	40'	2	15'	1W3C	M–2	MA	WS–2	4	1	LT	INSTALL EVD ON TOP OF SIGNAL HEAD
						1W3C/1W4C	B–2a(S)	4			2	RT	INSTALL IISNS ON MAST ARM
													INSTALL BELL CAMERA ON LUMINAIRE ARM
B	35	3	40'	3	15'	1W4C	M–2	MA	WS–1	1	2	LT	1W3C (M–2) SIGNAL SHALL HAVE THRU GREEN ARROW
						1W3C	M–2	MA					INSTALL EVD ON TOP OF SIGNAL HEAD
						1W3C	B–1	1					INSTALL NO RIGHT–TURN SIGN ON MAST ARM
C	1B	–	–	–	–	–	–	–	WT–1	TOP	3	RT	
D	1B	–	–	–	–	–	–	–	WT–1	TOP	3	LT	
E	7	–	–	4	15'	–	–	–	–	–	–	–	RELOCATED FROM THE NORTHWEST CORNER
													CONSTRUCT NEW TYPE 7 FOUNDATION
F	35	1	25'	1	15'				–	–	–	–	1W3C (M–2) SIGNAL SHALL HAVE THRU GREEN ARROW
						1W3C	M2	MA					INSTALL EVD ON TOP OF SIGNAL HEAD
						2W3C	B–2a	3					INSTALL IISNS ON MAST ARM
													INSTALL NO LEFT/U–TURN SIGN ON MAST ARM
G	1B	–	–	–	–	–	–	–	WT–1	TOP	1	RT	

NOTE: GREEN = REMOVE/ABANDON/RELOCATE
RED = NEW
BLUE = EXISTING

PULL BOX LOCATIONS

PULL BOX	STATION	OFFSET
#9E HOMERUN PB	"XN" 691+77	332' LT
#7E PB FOR POLE B	"XN" 692+78	345' LT
#7E PB FOR POLE D/E	"XN" 693+07	258' LT
#7E PB FOR POLE F/G	"XN" 692+11	247' LT

EQUIPMENT LOCATIONS

EQUIPMENT	STATION	OFFSET
METERED SERVICE	"XN" 691+65	375' LT
CONTROLLER CABINET	"XN" 691+82	342' LT
POLE A	"XN" 691+73	318' LT
POLE B	"XN" 692+71	351' LT
POLE C	"XN" 693+01	312' LT
POLE D	"XN" 693+18	270' LT
POLE E	"XN" 693+15	263' LT
POLE F	"XN" 692+36	233' LT
POLE G	"XN" 692+02	255' LT

NO.	DESCRIPTION	DATE

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M. SCOTT HENRY
PROFESSIONAL ENGINEER
STATE OF NEVADA
No. 12539
Exp. 6/30/23
CIVIL
3/13/23

HEADWAY TRANSPORTATION
5482 Longley Lane, Suit B
Reno, NV 89511
(775) 322-4300

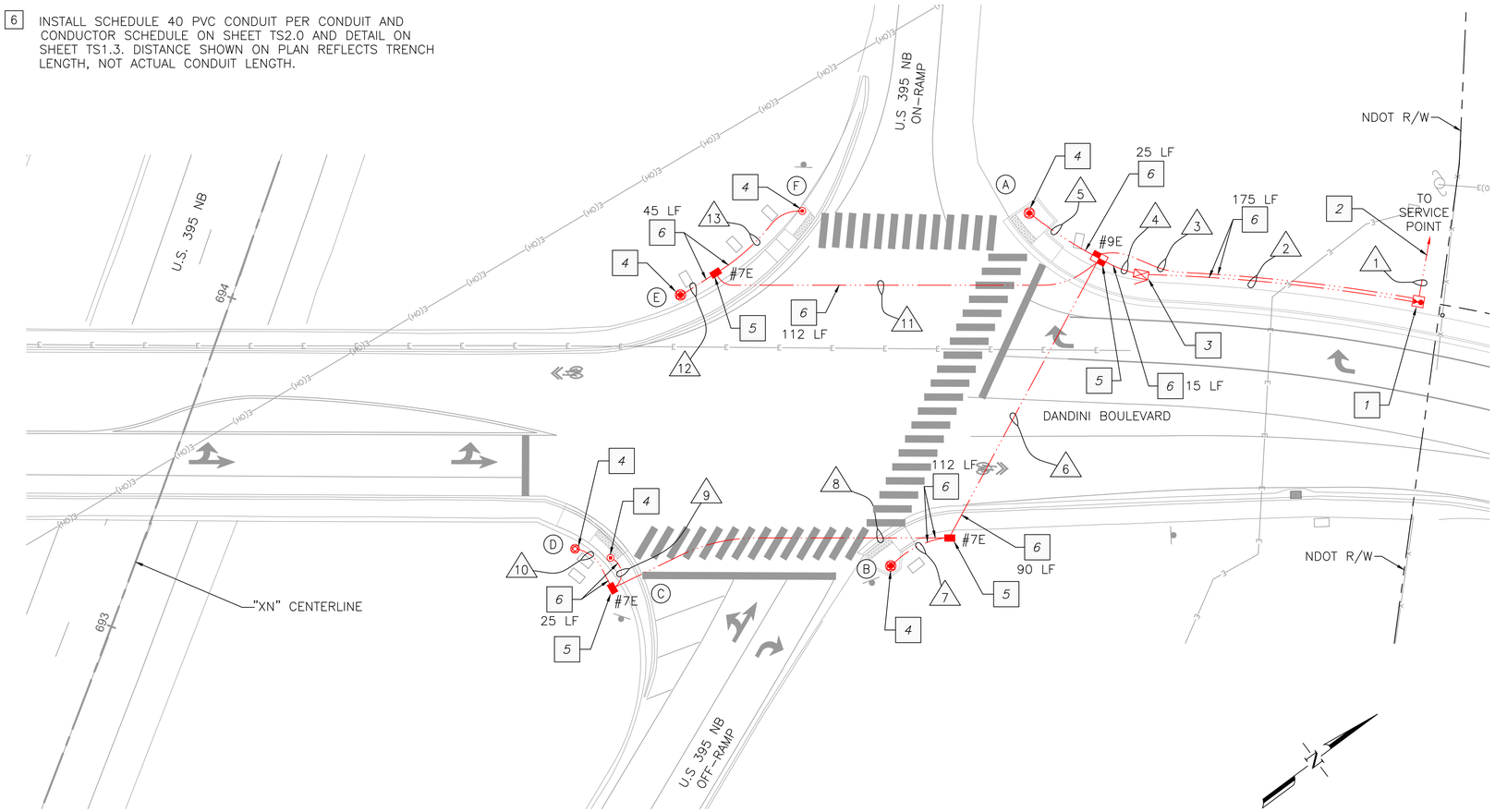
US 395 SOUTHBOUND RAMP INTERSECTION SCHEDULES

PROJECT NO. 21-067

SHEET TS1.7

CONSTRUCTION NOTES (THIS SHEET ONLY) :

1. CONSTRUCT METERED SERVICE FOUNDATION PER DETAIL ON SHEET TS1.1 AND METERED SERVICE EQUIPMENT SCHEDULE ON SHEET TS2.0.
2. FURNISH AND INSTALL 3" SCHEDULE 40 PVC CONDUIT PER NV ENERGY TYPICAL TRENCH DETAIL TE0030U.
3. CONSTRUCT TYPE R-44 CABINET FOUNDATION PER DETAIL ON SHEET TS1.1.
4. CONSTRUCT SIGNAL POLE FOUNDATION PER POLE SCHEDULE ON SHEET TS2.0 AND DETAILS ON SHEET TS1.2.
5. FURNISH AND INSTALL NEW TRAFFIC RATED PULL BOX PER DETAIL ON SHEET TS1.3.
6. INSTALL SCHEDULE 40 PVC CONDUIT PER CONDUIT AND CONDUCTOR SCHEDULE ON SHEET TS2.0 AND DETAIL ON SHEET TS1.3. DISTANCE SHOWN ON PLAN REFLECTS TRENCH LENGTH, NOT ACTUAL CONDUIT LENGTH.



NOTE: GREEN = REMOVE/ABANDON/RELOCATE
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STATE OF NEVADA
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CIVIL
No. 12539
3/13/23

HEADWAY TRANSPORTATION
5482 Longley Lane, Suit B
Reno, NV 89511
(775) 322-4300

US 395 NORTHBOUND RAMP INTERSECTION CONDUIT PLAN

PROJECT NO. 21-067

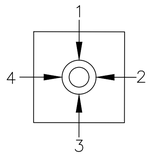
SHEET TS1.8

Underground Service Alert
Call: TOLL FREE 811/800 227-2600
TWO WORKING DAYS BEFORE YOU DIG

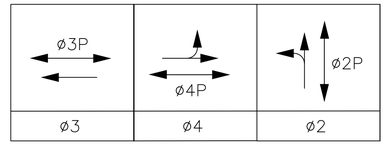
C:\Scott\Spectrum Dandini Project\NDOT Submittals\NDOT Submittal Stamped 3-23.dwg 3/13/2023 10:16 AM Scott Henry

CONSTRUCTION NOTES (THIS SHEET ONLY) :

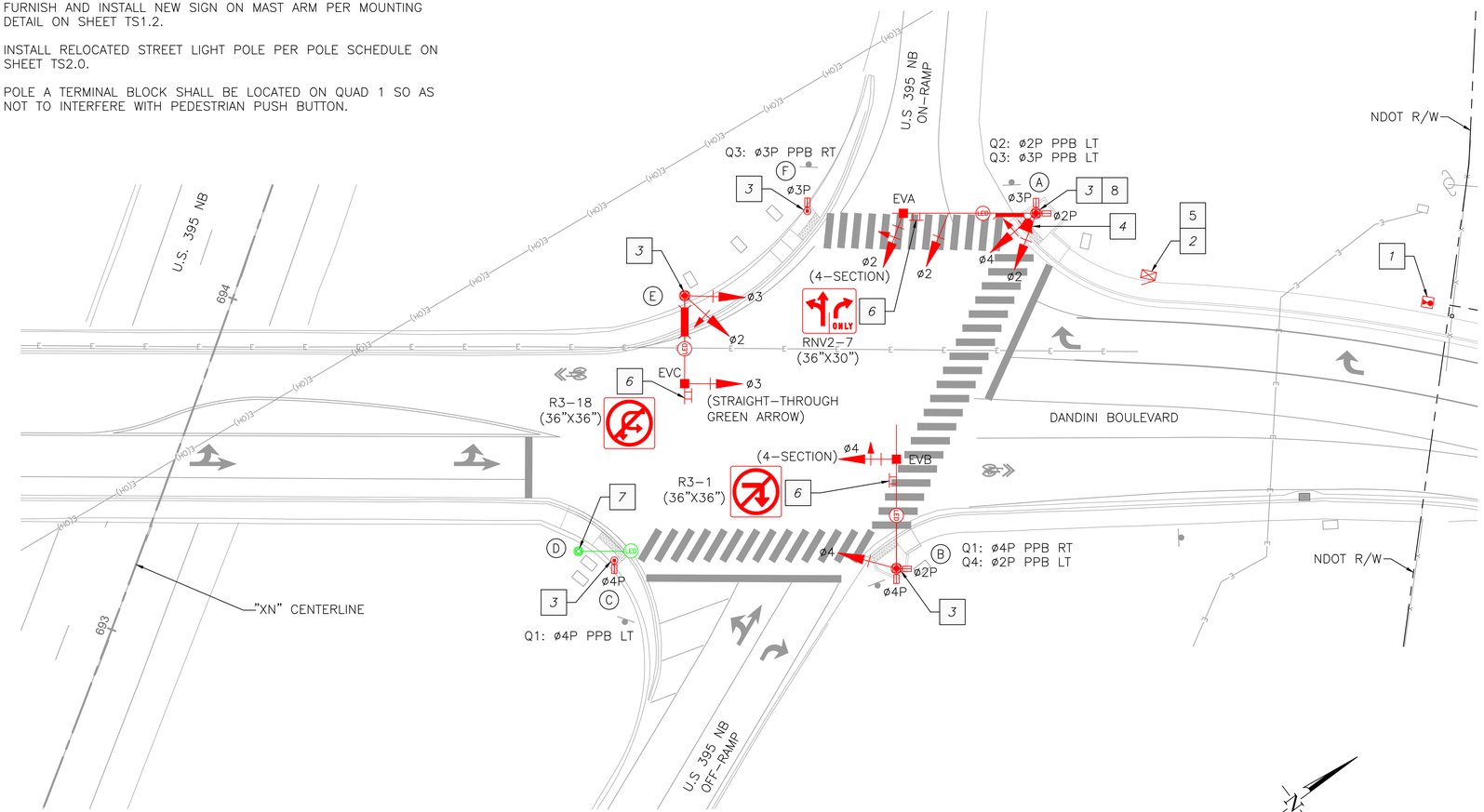
1. FURNISH AND INSTALL 100A METERED SERVICE WITH BATTERY BACKUP PER DETAIL ON SHEET TS1.1.
2. FURNISH AND INSTALL NEW CONTROLLER AND CABINET ASSEMBLY PER DETAIL ON SHEET TS1.1. MAKE ALL CONNECTIONS.
3. FURNISH AND INSTALL NEW SIGNAL POLE PER POLE SCHEDULE ON SHEET TS2.0 AND DETAILS ON SHEET TS1.2.
4. FURNISH AND INSTALL BELL CAMERA ON LUMINAIRE ARM AND CABLE TO CONTROLLER. MAKE ALL CONNECTIONS.
5. FURNISH AND INSTALL PROCESSOR FOR BELL CAMERA SYSTEM IN CABINET PER MANUFACTURER SPECIFICATIONS. MAKE ALL CONNECTIONS.
6. FURNISH AND INSTALL NEW SIGN ON MAST ARM PER MOUNTING DETAIL ON SHEET TS1.2.
7. INSTALL RELOCATED STREET LIGHT POLE PER POLE SCHEDULE ON SHEET TS2.0.
8. POLE A TERMINAL BLOCK SHALL BE LOCATED ON QUAD 1 SO AS NOT TO INTERFERE WITH PEDESTRIAN PUSH BUTTON.

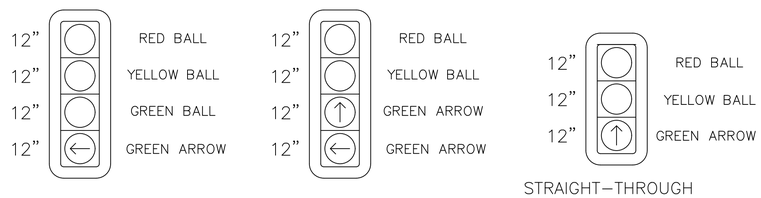


QUADRANT



PROPOSED PHASE DIAGRAM
FLASHING OPERATION: ALL RED

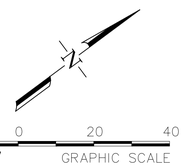




4-SECTION HEAD
(POLE A)

4-SECTION HEAD
(POLE B)

STRAIGHT-THROUGH
GREEN ARROW HEAD
(POLE E)



NOTE: GREEN = REMOVE/ABANDON/RELOCATE
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US 395 NORTHBOUND RAMP INTERSECTION EQUIPMENT PLAN

PROJECT NO.
21-067

SHEET
TS1.9

CONDUIT AND CONDUCTOR SCHEDULE

RUN NO. #	FROM	TO	CONDUIT SIZE	GROUND	SIGNAL CABLE		LUMINAIRE & IISNS	SERVICE	EVP	BELL CAMERA CABLE	COMMENTS
				8 AWG	25+1 CON 14 AWG	10+1 CON 14 AWG	10 AWG	6 AWG			
1	SERVICE POINT	METERED SERVICE	3"	CONDUCTORS PROVIDED BY NV ENERGY							
2	METERED SERVICE	CONTROLLER CABINET	3"					3			
3	METERED SERVICE	#9E HOMERUN PB	3"				4				
4	CONTROLLER CABINET	#9E HOMERUN PB	(4) 3"	1	3	2			3	1	
5	#9E HOMERUN PB	POLE A	(2) 3"	1	1		2		1	1	
6	#9E HOMERUN PB	#7E PB FOR POLE B	(2) 3"	1	1	1	2		1		
7	#7E PB FOR POLE B	POLE B	(2) 3"	1	1		2		1		
8	#7E PB FOR POLE B	#7E PB FOR POLE C/D	(2) 3"	1		1	2				
9	#7E PB FOR POLE C/D	POLE C	3"	1		1					
10	#7E PB FOR POLE C/D	POLE D	3"	1			2				
11	#9E HOMERUN PB	#7E PB FOR POLE E/F	(2) 3"	1	1	1	2		1		
12	#7E PB FOR POLE E/F	POLE E	(2) 3"	1	1		2		1		
13	#7E PB FOR POLE E/F	POLE F	3"	1		1					

METERED SERVICE EQUIPMENT SCHEDULE

SERVICE LOCATION	DANDINI/US 395 NB
OWNERSHIP	CITY OF RENO
VOLTAGE	120V
MAIN BREAKER	100A, 240V, 2P
PHASE	SINGLE
SIGNAL BREAKER	30A, 120V, 1P
LIGHTING BREAKER	20A, 120V, 1P
GFI RECEPTACLE	15A, 120V, 1P
CONTROL	15A, 1P, SWITCH
LIGHTING CONTACTOR	35A-2PNO, MERC

IISNS SCHEDULE

POLE	STREET NAME
A	← Parr Blvd Dandini Blvd →
E	US 395 N → (FACING EAST)
E	← US 395 N (FACING WEST)

ALL IISNS TO BE SINGLE SIDED.

POLE SCHEDULE

POLE NO.	POLE TYPE	SIGNAL ARM QUAD	SIGNAL ARM LENGTH	LUM. ARM QUAD	LUM. ARM LENGTH	SIGNALS – VEHICLE TYPE	SIGNALS – VEHICLE MOUNT	SIGNALS – VEHICLE QUAD	SIGNALS – PED. MOUNT	SIGNALS – PED. QUAD	PED BUTTON QUAD	PED BUTTON ARROW	COMMENTS
A	35	4	40'	4	15'	1W4C	M-2	MA	WS-2	2	2 3	LT LT	INSTALL EVD ON TOP OF SIGNAL HEAD
						1W3C	M-2	MA					INSTALL IISNS & LANE USE SIGN ON MAST ARM
						2W3C	B-2a	2					INSTALL BELL CAMERA ON LUMINAIRE ARM
B	35	1	40'	1	15'	1W4C	M-2	MA	WS-2	3	1 4	RT LT	INSTALL EVD ON TOP OF SIGNAL HEAD
						1W3C	B-1	3					INSTALL NO RIGHT TURN SIGN ON MAST ARM
													1W4C SIGNAL SHALL HAVE THRU GREEN ARROW
C	1B	–	–	–	–	–	–	–	WT-1	TOP	1	LT	
D	7	–	–	2	15'	–	–	–	–	–	–	–	RELOCATED FROM SOUTHEAST CORNER
													CONSTRUCT NEW TYPE 7 FOUNDATION
E	35	3	30'	3	15'				–	–	–	–	1W3C SIGNAL SHALL HAVE THRU GREEN ARROW
						1W3C	M-2	MA					INSTALL EVD ON TOP OF SIGNAL HEAD
						2W3C	B-2a	1					INSTALL IISNS ON MAST ARM
													INSTALL NO LEFT TURN/U-TURN SIGN ON MAST ARM
F	1B	–	–	–	–	–	–	–	WT-1	TOP	3	RT	

NOTE: GREEN = REMOVE/ABANDON/RELOCATE
RED = NEW
BLUE = EXISTING

PULL BOX LOCATIONS

PULL BOX	STATION	OFFSET
#9E HOMERUN PB	"XN" 694+89	231' RT
#7E PB FOR POLE B	"XN" 694+04	216' RT
#7E PB FOR POLE C/D	"XN" 693+60	131' RT
#7E PB FOR POLE E/F	"XN" 694+51	128' RT

EQUIPMENT LOCATIONS

EQUIPMENT	STATION	OFFSET
METERED SERVICE	"XN" 695+06	321' RT
CONTROLLER CABINET	"XN" 694+88	244' RT
POLE A	"XN" 694+95	208' RT
POLE B	"XN" 693+91	203' RT
POLE C	"XN" 693+67	127' RT
POLE D	"XN" 693+66	117' RT
POLE E	"XN" 694+43	121' RT
POLE F	"XN" 694+76	146' RT

NO.	DESCRIPTION	DATE

DATE: FEBRUARY 2023
SCALE: H: V:
DRAWN BY: MSH
DESIGNED BY: MSH
CHECKED BY: LEC

M. SCOTT HENRY
PROFESSIONAL ENGINEER
STATE OF NEVADA
No. 12539
Exp. 6/30/23
CIVIL
3/13/23

HEADWAY TRANSPORTATION
5482 Longley Lane, Suit B
Reno, NV 89511
(775) 322-4300

US 395 NORTHBOUND RAMP INTERSECTION SCHEDULES

PROJECT NO. 21-067

SHEET TS2.0

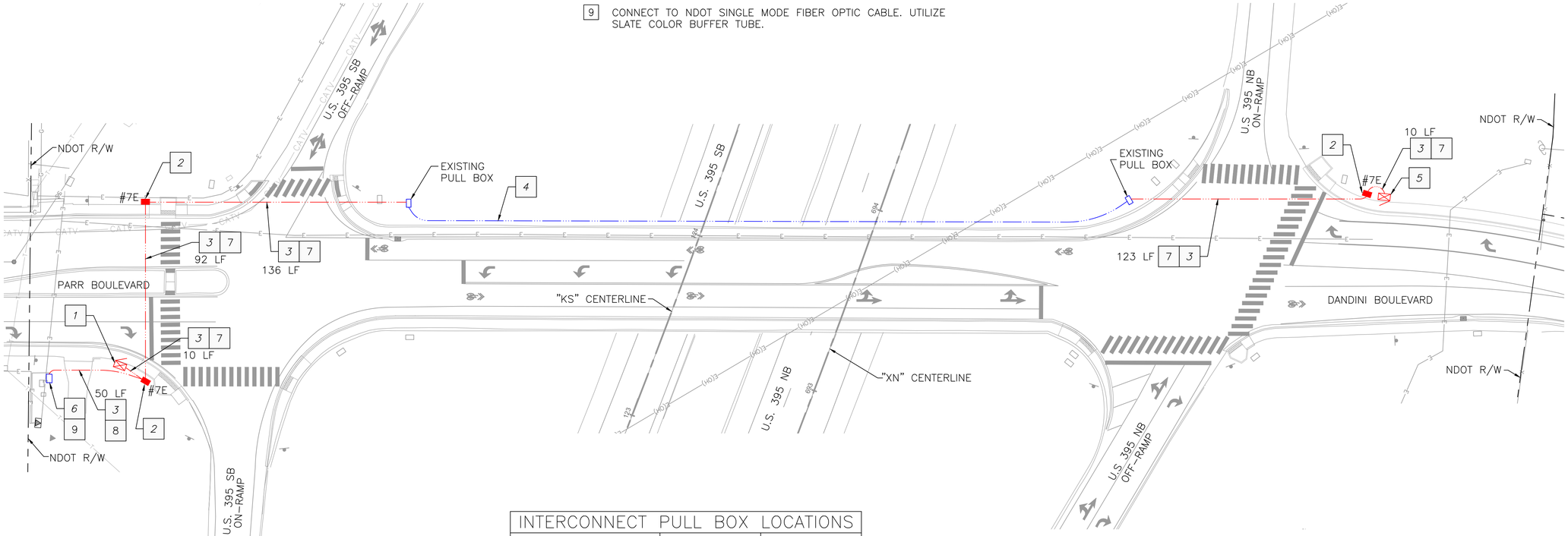
Underground Service Alert
Call: TOLL FREE 811/800 227-2600
TWO WORKING DAYS BEFORE YOU DIG

CONSTRUCTION NOTES (THIS SHEET ONLY) :

1. NEW CONTROLLER CABINET PER SHEET TS1.6.
2. INSTALL NEW TRAFFIC RATED PULL BOX PER DETAIL ON SHEET TS1.3.
3. INSTALL 3" SCHEDULE 40 PVC INTERCONNECT CONDUIT. SEE DETAIL ON SHEET TS1.3.
4. FURNISH AND INSTALL CDCA CABLE IN EXISTING CONDUIT INSTALLED IN BRIDGE RAIL.
5. NEW CONTROLLER CABINET PER SHEET TS1.9.
6. EXISTING FIBER VAULT. SPLICE CDCA CABLES IN SPLICE ENCLOSURE.
7. FURNISH AND INSTALL CDCA FIBER OPTIC CABLE.
8. FURNISH AND INSTALL (2) CDCA FIBER OPTIC CABLES (ONE TO EACH CONTROLLER).
9. CONNECT TO NDOT SINGLE MODE FIBER OPTIC CABLE. UTILIZE SLATE COLOR BUFFER TUBE.

30 0 30 60
1" = 30' GRAPHIC SCALE

NOTE: GREEN = REMOVE/ABANDON/RELOCATE
RED = NEW
BLUE = EXISTING



INTERCONNECT PULL BOX LOCATIONS		
PULL BOX	STATION	OFFSET
FIBER VAULT	"XN" 691+55	374' LT
#7E PB SW CORNER	"XN" 691+79	327' LT
#7E PB NW CORNER	"XN" 692+67	360' LT
EXISTING PULL BOX	"XN" 693+18	232' LT
EXISTING PULL BOX	"XN" 694+47	121' RT
#7E PB NE CORNER	"XN" 694+88	238' RT

NOTE :

CONTRACTOR TO COORDINATE WITH NDOT AND FIELD VERIFY EXISTING SPLICES AND FIBER USES TO THE SOUTH AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS PRIOR TO BEGINNING WORK.

NO.	DESCRIPTION	DATE

DATE: FEBRUARY 2023
SCALE: H: V:
DRAWN BY: MSH
DESIGNED BY: MSH
CHECKED BY: LEC

M. SCOTT HENRY
PROFESSIONAL ENGINEER
STATE OF NEVADA
No. 12539
Exp. 6/30/23
CIVIL
3/13/23

HEADWAY TRANSPORTATION
5482 Longley Lane, Suit B
Reno, NV 89511
(775) 322-4300

INTERCONNECT PLAN

PROJECT NO. 21-067

SHEET IC1.0

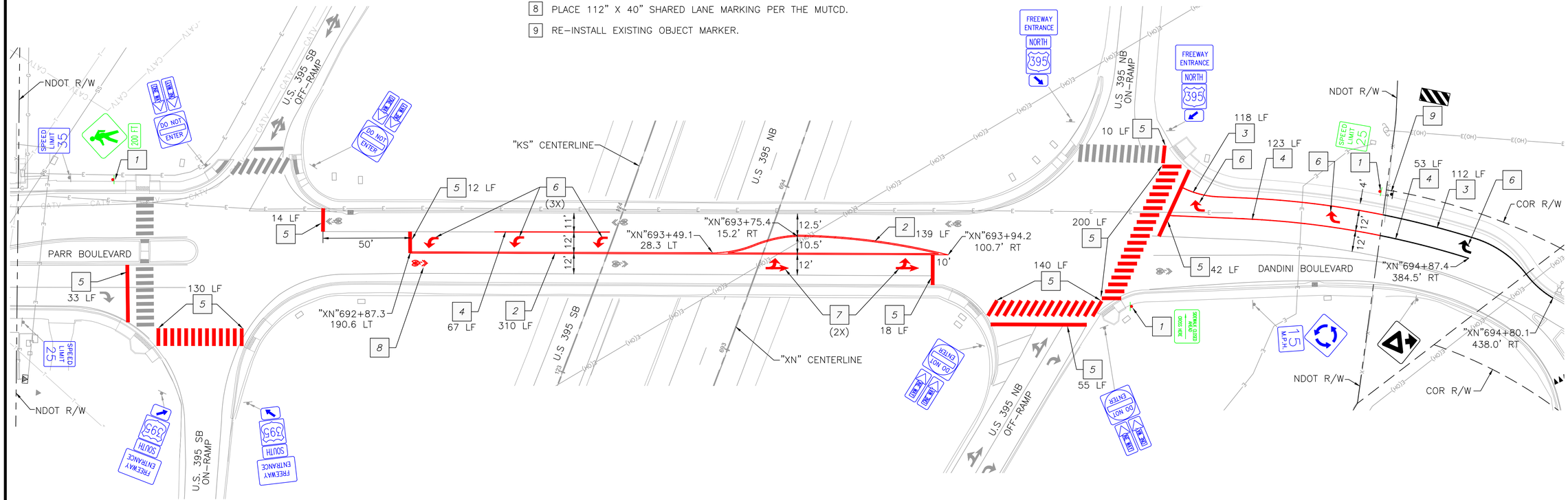
Underground Service Alert
Call: TOLL FREE 811/800 227-2600
TWO WORKING DAYS BEFORE YOU DIG

CONSTRUCTION NOTES (THIS SHEET ONLY):

1. INSTALL EXISTING SIGN ON A NEW 2.5" SQUARE POST AND FOUNDATION PER NDOT DETAIL TRS-11.
2. PLACE 4" SOLID DOUBLE YELLOW PAINT STRIPE
3. PLACE 6" SOLID WHITE PAINT STRIPE
4. PLACE 8" SOLID WHITE PAINT STRIPE.
5. PLACE 24" SOLID WHITE THERMOPLASTIC STRIPE.
6. PLACE 8' WHITE THERMOPLASTIC TURN ARROW.
7. PLACE 12'-9" WHITE THERMOPLASTIC LEFT/STRAIGHT ARROW.
8. PLACE 112" X 40" SHARED LANE MARKING PER THE MUTCD.
9. RE-INSTALL EXISTING OBJECT MARKER.

30 0 30 60
1" = 30' GRAPHIC SCALE

NOTE: GREEN = REMOVE/ABANDON/RELOCATE
RED = NEW
BLUE = EXISTING



NO.	DESCRIPTION	DATE

DATE: FEBRUARY 2023
SCALE: H: V:
DRAWN BY: MSH
DESIGNED BY: MSH
CHECKED BY: LEC

M. SCOTT HENRY
Exp. 6/30/23
CIVIL
No. 12539
STATE OF NEVADA
PROFESSIONAL ENGINEER
3/13/23

HEADWAY TRANSPORTATION
5482 Longley Lane, Suit B
Reno, NV 89511
(775) 322-4300

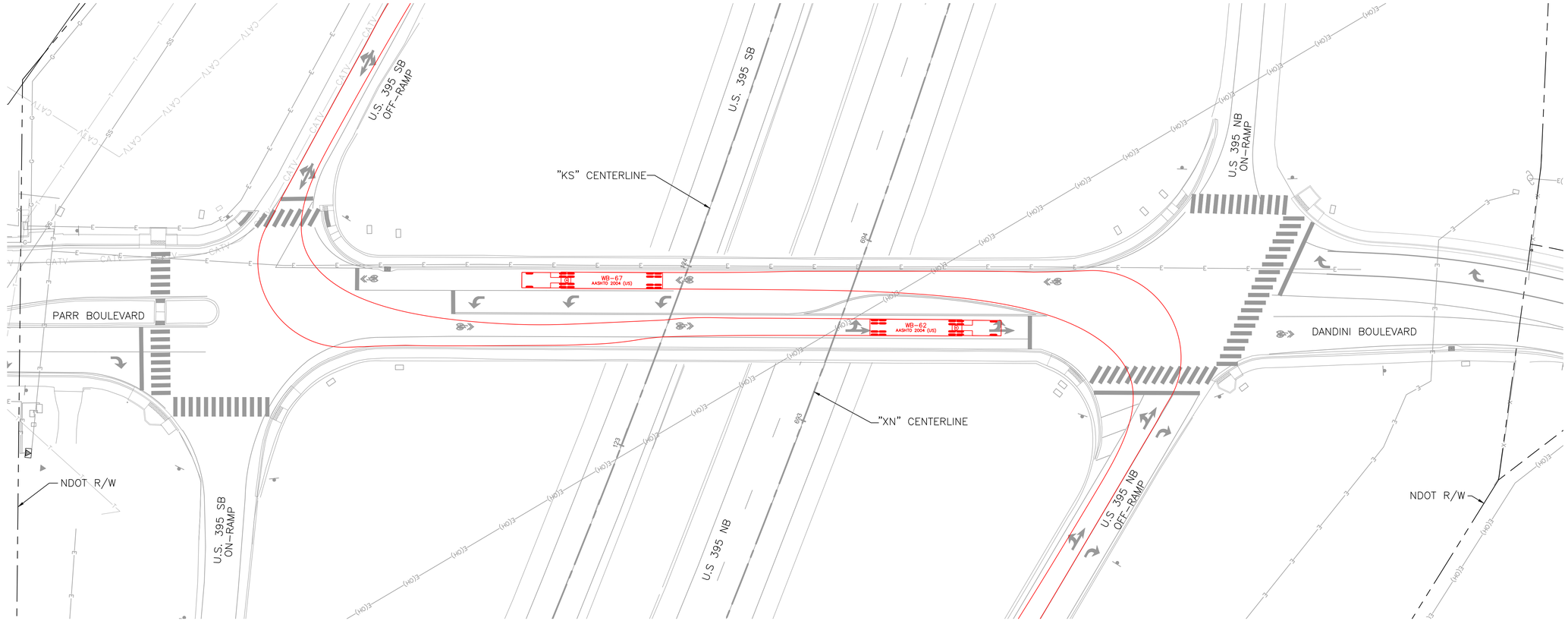
SIGNING & STRIPING PLAN

PROJECT NO.
21-067

SHEET
SS1.0

Underground Service Alert
Call: TOLL FREE
811/800
227-2600
TWO WORKING DAYS BEFORE YOU DIG

C:\Scott\Spectrum Dandini Project\NDOT Submittal\NDOT Submittal Stamped 3-23.dwg 3/13/2023 10:18 AM Scott Henry



30 0 30 60
1" = 30' GRAPHIC SCALE

NOTE: GREEN = REMOVE/ABANDON/RELOCATE
RED = NEW
BLUE = EXISTING

NO.	DESCRIPTION	DATE

DATE: FEBRUARY 2023
SCALE: H: V:
DRAWN BY: MSH
DESIGNED BY: MSH
CHECKED BY: LEC

M. SCOTT HENRY
Exp. 6/30/23
CIVIL
No. 12539
STATE OF NEVADA
PROFESSIONAL ENGINEER
3/13/23

HEADWAY TRANSPORTATION
5482 Longley Lane, Suit B
Reno, NV 89511
(775) 322-4300

TRUCK TURNING PATHS

PROJECT NO.
21-067

DRAWING
TT1.0

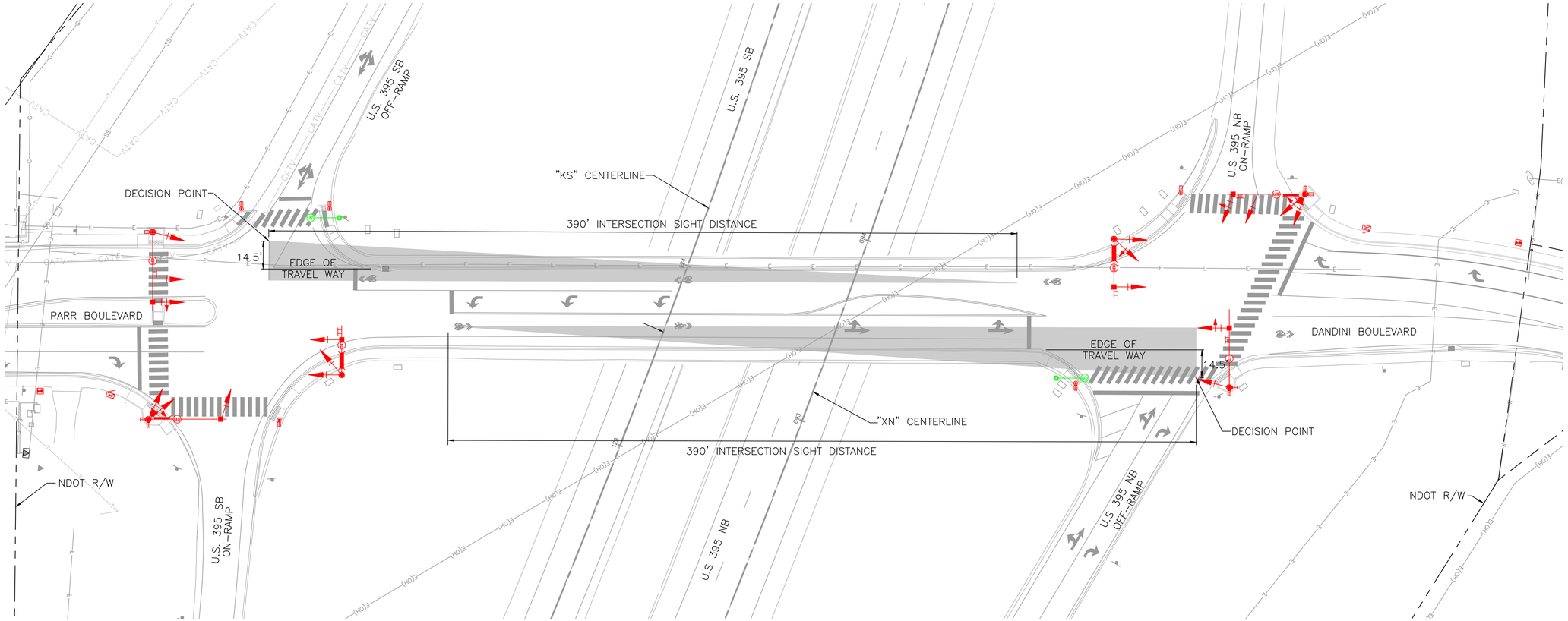
Underground Service Alert
Call: TOLL FREE
811/800
227-2600
TWO WORKING DAYS BEFORE YOU DIG

NOTES (THIS SHEET ONLY):

1. INTERSECTION SIGHT DISTANCE IS BASED ON A COMBINATION TRUCK TURNING RIGHT FROM STOP PER AASHTO.
2. 390 FEET OF INTERSECTION SIGHT DISTANCE IS REQUIRED BASED ON THE 25 MPH POSTED SPEED LIMIT.
3. DECISION POINT (DRIVERS' EYE) IS 14.5 FEET FROM EDGE OF TRAVEL WAY.

30 0 30 60
1" = 30' GRAPHIC SCALE

NOTE: GREEN = REMOVE/ABANDON/RELOCATE
RED = NEW
BLUE = EXISTING



NO.	DESCRIPTION	DATE

DATE: FEBRUARY 2023
SCALE: H: V:
DRAWN BY: MSH
DESIGNED BY: MSH
CHECKED BY: LEC

M. SCOTT HENRY
Exp. 6/30/23
CIVIL
No. 12539
PROFESSIONAL ENGINEER
STATE OF NEVADA
3/13/23

HEADWAY TRANSPORTATION
5482 Longley Lane, Suit B
Reno, NV 89511
(775) 322-4300

SIGHT TRIANGLES

PROJECT NO.
21-067

DRAWING
ST1.0

Underground Service Alert
Call: TOLL FREE
811/800
227-2600
TWO WORKING DAYS BEFORE YOU DIG

EXHIBIT “D”
(Letter of Approval)

REGIONAL TRANSPORTATION COMMISSION
Metropolitan Planning • Public Transportation & Operations • Engineering & Construction
Metropolitan Planning Organization of Washoe County, Nevada

April 10, 2023

Joe Pelham; joe@swinvest.com *(Sent via Email)*
Dandini Spectrum Holdings LLC
7979 E. Tufts Ave, Suite 1125
Denver, CO 80237

Subject: **Letter of Approval for Regional Road Impact Fee Waivers**

Dear Mr. Pelham:

The Regional Road Impact Fee (RRIF) Administrators for the RTC and the City of Reno have reviewed and approved your application to receive RRIF waivers for the installation of the traffic signal systems at the Parr/Dandini/US 395 ramp terminal intersections. A RRIF Offset Agreement for this work is being prepared and will be forwarded to the RTC Board and the City of Reno with a recommendation for approval. Upon approval and execution of the Offset Agreement by these bodies, the agreement will be forwarded to the Developer of Record for signature.

Please feel free to contact Jeff Wilbrecht, RTC Engineering Manager, at (775) 335-1872 should you have any questions regarding this subject.

Sincerely,

REGIONAL TRANSPORTATION COMMISSION
RRIF ADMINISTRATOR

DocuSigned by:
34A1800C54C142F...
Dale Keller, P.E.
Engineering Director

CITY OF RENO
RRIF ADMINISTRATOR

DocuSigned by:
03A53ADC51CD415...
Michael Mischel, P.E.
City of Reno RRIF Administrator

DRK/JW

cc: Loren Chilson, Headway Transportation

File: RRIF Offset Agreement #513009

EXHIBIT "E"
(The Developer of Record QA/QC Program
And
RTC Special Technical Specifications
For
Regional Road Impact Fee Projects)

SPECIAL TECHNICAL SPECIFICATIONS

1.01 INSPECTION AND TESTING

Quality Assurance testing and inspection will be provided by the Agency. Quality Control shall be the Contractor's responsibility. All samples shall be furnished by the Contractor without cost to the Regional Transportation Commission of Washoe County (hereinafter designated "RTC" and/or "Agency"). The Agency may waive sampling and testing if adequate information, properly certified, is available to indicate that materials comply with the terms of specifications. Any retests due to faulty workmanship or materials shall be paid for by the Contractor.

All materials furnished and work performed, shall be done in accordance with the "Standard Specifications for Public Works Construction" (hereinafter designated "Standard Specifications") sponsored and distributed by RTC, Churchill County, Carson City, the Cities of Reno and Sparks, the City of Yerington, and Washoe County, including addenda through February 29,2012, except as modified within the "Special Technical Specifications" for XYZ (hereinafter designated "STS"); and in accordance with the "Standard Details for Public Works Construction" (hereinafter designated "Standard Details"), including updates through December 29, 2011, except as modified by the drawings for XYZ.

1.01A ASPHALT CEMENT

1. Sampling - During hot mix operations for all paving days, the Design Engineer's designated representative shall obtain samples of all asphalt cement binders used to produce the bituminous mixture(s). During the pre-construction meeting the contractor shall provide the contact information for the certified plant representative that will be responsible for taking the asphalt cement samples. The Design Engineer's designated representative shall contact the plant representative in advance of each paving day and coordinate the sampling in accordance with the plantmix production schedule. Asphalt cement samples shall be taken at the injection point for each "lot" (500 ton) of plantmix bituminous pavement. Plant personnel sampling bituminous material are required to be qualified in the WAQTC Asphalt Module or NAQTC Specialized Test AASHTO T40 (Sampling Bituminous Material). All sampling shall be witnessed by the Design Engineer's representative. The plant representative shall properly label each sample which shall then be signed by both representatives.

2. Testing – Unless otherwise directed by the RTC Project Manager, the Design Engineer shall procure the testing of one of the samples from each paving day for compliance with Section 201 – "Bituminous Material" of the Standard Specifications at a laboratory certified to perform all required testing components.

3. **The sample to be tested shall be properly handled and sent to the State of Nevada Department of Transportation Materials Testing Laboratory, 1263 South Stewart Street in Carson City, Nevada.** The test result shall represent the binder material contained in all plantmix bituminous paving lots for the corresponding paving day. The remaining daily samples shall be stored at the Design Engineer's designated laboratory throughout the duration of the Contractor's warranty period.

4. Acceptance – Asphalt binder not conforming to Table 201.02-IV (PG64-28NV) of the Standard Specifications, Section 201 – "Bituminous Material" shall be assessed demerits in accordance with the following table:

TEST	LIMIT WITH TOLERANCE	REJECTION LIMIT	DEMERITS
Tests on Original Asphalt Cement			
Rotational viscosity (Pa.s)	3.21 Max.	3.50 Max.	21
Flash point, (°C)	222 Min.	163 Min.	21
Ductility (cm)	50 Min.	29 Min.	21
Toughness (Inch-lbs)	110 Min.	57 Min.	21
Tenacity (Inch-lbs)	75 Min.	22 Min.	21
Sieve Test (%)	1	10	21
Dynamic Shear (kPA)	0.90 Min.	0.75 Min.	21

Tests on Residue from Rolling Thin Film Oven			
Ductility (cm)	25 Min.	4 Min.	21
Dynamic Shear (kPA)	1.98 Min.	1.65 Min.	21
Average Mass Change (%)	1.00 Max.	1.01 Max.	31
Tests on Residue from Pressure Aging Vessel			
Dynamic Shear (kPA)	5500 Max.	6250 Max.	21
Stiffness Modulus (MPA)	330 Max.	375 Max.	21
Slope, m-value	0.290 Min.	0.245 Min.	21

Notes:

1. Demerits, up to the amount shown, shall be assessed for each test result that exceeds the "Limit with Tolerance."
2. The number of demerits assessed for each test result shall be calculated based on prorating the total demerits over the range from "Limit with Tolerance" to the "Rejection Limit."
3. The demerit/increment shall be multiplied by the difference between the noncompliant test result and the "Limit with Tolerance."
4. Demerit values for each test result will be rounded down to the nearest whole number.

The parties of the contract agree that damage will be sustained by the Agency in the event that the asphalt binder does not conform to the requirements of the specifications. In addition it is agreed that it is extremely difficult to quantify the actual damage the agency will sustain. Demerits will be used to determine mitigation that may include any necessary measures up to, and including, the assessment of liquidated damages or removal and replacement of the deficient material. The assessment of liquidated damages and the corresponding deduct from monies owed the contractor shall be in accordance with the schedule and corresponding notes below.

Total Number of Demerits	**Liquidated Damage Dollar per Ton[1, 2]**
1 – 2	10
3 – 5	20
6 – 9	30
10 – 14	50
15 – 20	100
21 - 30[3]	75% of the cost of the asphalt binder
31 - 40[3]	100% of the cost of the asphalt binder
41 or more[3,4]	100% + additional damages to be determined

Notes:

1. Liquidated damages will be assessed against the quantity (Tonnage) of asphalt binder used in the plantmix bituminous pavement represented by the sample tested.
2. The tons of asphalt binder shall be determined by multiplying the average of asphalt contents (by dry weight of aggregate) from all affected lots by the total tons of bituminous mixture placed.
3. Remove and replace material shown to have 21 or more demerits. Material removed shall not be paid for and all costs associated with removal shall be at the contractor's expense. Testing and inspection of replaced materials shall be as directed by the RTC Project Manager and all associated costs shall be at the contractor's expense. At the RTC Project Manager's option, materials having 21 or more demerits may be left in place and liquidated damages assessed at the percentage of asphalt binder cost shown. The cost of the asphalt binder used for assessing

liquidated damages shall be $675 per ton.

4. Liquidated damages as determined by the RTC Project Manager may be in excess of the cost of the asphalt binder.

Additional samples may be tested at the Contractor's request and expense and following approval of the RTC Project Manager. Liquidated damages assessed due to deficient asphalt binder material may be in addition to any mitigation measures or penalties that may be determined by other sections of the specifications.

1.01B BITUMINOUS PLANTMIX

Subsection 336.03.04 - "Bituminous Mixtures" of the Standard Specifications, is herewith amended as follows:

1. On page 336.00-6, add the following to the fourth paragraph at the bottom half of the page regarding cores and cut samples:

   Measure single core or cut sample in accordance with ASTM D3549, latest version, to the nearest 0.05" and report to the nearest 0.05" per the following examples:

Individual Measurements		
Using Apparatus Capable of 2 Decimal Places	Using Apparatus Capable of 1/16 Inch	Reported Thickness After Rounding
2.23" to 2.27"	2-4/16" = 2.250"	2.25"
2.28: to 2.32"	2-5/16" = 2.313"	2.30"
2.33" to 2.37"	---	2.35"
2.38" to 2.42"	2-6/16" = 2.375"	2.40"
2.43" to 2.47"	2-7/16" = 2.438"	2.45"
2.48" to 2.52"	2-8/16" = 2.500"	2.50"

   For purpose of acceptance and mitigation, the average of the rounded thickness measurements of the 3 cores or cut samples for each lot shall be reported to the nearest 0.1". A number ending in 0.05" shall be rounded up. For example, both 2.35" and 2.40" are rounded to 2.4".

2. On page 336.00-7, delete the fourth paragraph and replace as follows:

   One fresh, hot sample of the bituminous mixture (HMA) for each "lot" shall be tested for conformance with the mix design test properties as required by STS 1.14A BITUMINOUS PLANTMIX, and in accordance with ASTM D2041, as qualified in the Standard Specifications.

   Fresh, hot samples are defined as the samples obtained during construction, transported to the laboratory, molded and compacted on the same day. Reheating is allowed only for restoring heat lost, if any, during transport to the laboratory

and sample preparation. Refer to Note under item 4 below (STS 1.01B BITUMINOUS PLANTMIX - Item 4, "Preparing Field Sample") regarding limitations on test results from reheated archived samples.

3. On page 336.00-7 under Subsection 336.03.04.01 - "Sampling" of the Standard Specifications, add the following sentence to the first paragraph:

   When samples are obtained by two testing laboratories, the samples shall be split from a single sample or taken at the same time and at locations immediately adjacent to each other.

4. On page 336.00-7 under Subsection 336.03.04.02 - "Preparing Field Sample", of the Standard Specifications, delete the second and third paragraphs and replace as follows:

   If the temperature of the HMA is below the approved mix design's compaction temperature, the temperature of the HMA shall be recorded and the sample shall be reheated to the approved mix design's compaction temperature. Heating samples should be done by placing the sample in a covered container in an oven for a maximum of one hour or placing the sample in a mixing bowl on top of a hot plate or propane stove, for a maximum of 10 minutes, and continuously mixed until compaction temperature has been reached. Samples shall be discarded if burned during reheating.

   Note: Samples well below the compaction temperature may require additional heating time. Reheating of samples beyond the maximums specified is not desirable. In such instances, new samples should be taken in the field, if possible. If this is not possible and samples must be reheated beyond the specified maximums, the test results from reheated archived samples shall not be used for direct comparison with results from tests on hot, fresh samples but only for relative comparisons.

1.02 REMOVAL OF EXISTING IMPROVEMENTS

This section covers the construction methods involved in removing existing improvements.

Existing Portland cement concrete (PCC) improvements shall be removed to neatly sawed edges with sawcuts made to a minimum depth of 1½ inches. No section to be replaced shall be smaller than 30 inches in length. Curb and gutter shall be sawed to depth of 1½ inches on a neat line at right angles to the curb face.

Removal of the curb and gutter shall include all existing composite material from back of curb to 12-inches in front of the lip of the gutter. The contractor shall be required to achieve a vertical, neat line in a location appropriate for the method of curb and gutter placement chosen. The Contractor shall match the existing top of curb and maintain the uniform flow line of the gutter. If a uniform flow line does not exist, the Contractor shall establish a uniform flow line as directed by the Design Engineer.

Bituminous pavement shall be removed to clean straight lines by sawcutting where the removal of existing improvements does not include the total amount of paving encountered. Where bituminous pavement adjoins a trench, the edges adjacent to the trench shall be trimmed to neat straight lines at least

9 inches wider than the trench on each side before resurfacing to insure that all areas to be resurfaced are accessible to the rollers used to compact the subgrade or paving materials. Where new pavement is to adjoin existing bituminous or concrete pavements, the existing pavement shall be sawcut or bladecut straight.

It shall be the Contractor's responsibility to protect the integrity of the edge of pavement adjacent to the removal section.

The Contractor shall remove all existing improvements to the required depth by a method that does not damage the subgrade. Pneumatic wheel construction equipment, including, but not limited to, trucks, loaders, excavators and scrapers, will not be allowed on the exposed subgrade within the roadway section. Should the Contractor fail to utilize necessary caution to protect the subgrade or allow pneumatic wheel construction equipment on the subgrade within the roadway section after the existing surface has been removed; all overexcavation and deep stabilization shall be at the Contractor's expense.

The Contractor shall take all necessary precautions to protect existing landscaping, which may be disturbed during the execution of the work. All restoration work shall be in accordance with the applicable provisions of Section 333 – "Landscaping" of the Standard Specifications, or as specified herein.

Where lawn or landscape with topsoil has been disturbed, contaminated, or removed, the Contractor shall replace the topsoil with an imported, high quality garden topsoil to a minimum depth of 3 inches; with minimal compaction. Areas of concern may include, but are not limited to, landscaping adjacent to sidewalks, curbs and gutters, driveways, and alleys. The topsoil shall conform to Section 200.08 – "Topsoil" of the Standard Specifications.

Existing improvements; adjacent property; utilities and other facilities; and trees and plants that are not to be removed shall be protected from injury or damage resulting from the Contractor's operations.

The Contractor shall notify the U.S. Postal Service to coordinate all mailbox relocation.

Any existing improvements, including, but not limited to, retaining walls, adjacent property, utilities, sprinkler systems, signs, other facilities or appurtenances, trees and plants, which are damaged or displaced as a result of the Contractor's operation shall be replaced or restored to the original position and condition prevailing prior to start of operations at the Contractor's own expense unless otherwise directed by the RTC Project Manager or Design Engineer. In addition, removal of existing improvements shall be done in accordance with the provisions of Section 300.04 - "Protection of Utilities and Underground Facilities" of the Standard Specifications.

1.07 TRENCH EXCAVATION

Subsection 305.02 - "Maximum Length of Open Trench" of the Standard Specifications, is herewith amended as follows:

1. Add the following paragraph:

   Unless otherwise directed by the Design Engineer and approved by the Agency, there shall be no unprotected open trench remaining at the end of the working day. At the end of the working day, any open trench shall be protected by plating or other means approved by the Design Engineer and the Agency.

1.12 PORTLAND CEMENT CONCRETE

1.12A COMPOSITION OF MIXTURES

The Contractor shall submit in writing for approval a mix design conforming to the requirements of Subsection 337.01 - "General" of Section 337 – "Composition of Mixtures" of the Standard Specifications. All Portland Cement Concrete, unless otherwise indicated, shall have a coarse aggregate gradation conforming to Size No. 67 in Subsection 200.05.03 - "Coarse Aggregates" of the Standard Specifications. Cement shall be Type II.

If the Contractor submits a written request to use Size No. 57 in lieu of Size No. 67, and if the Agency approves this request, then air entrainment shall be adjusted to conform to ACI requirements for severe conditions.

1.12B SIDEWALK, CURB AND GUTTER

Concrete used for curbs, gutters, sidewalks, pedestrian ramps, and driveway aprons shall conform to the requirements of Subsection 337.10.01.01 – "Portland Cement Concrete Exposed to Freeze-Thaw Cycles" of the Standard Specifications and shall be reinforced with collated, fibrillated polypropylene fibers conforming to the requirements of Subsection 202.02.02.04 – "Polypropylene Fibers" of the Standard Specifications, at 1.5 pounds per cubic yard of concrete.

Subsection 312.10.02 - "Sidewalk Surface" of the Standard Specifications is herewith amended as follows:

1. Add the following paragraphs:

   a) When a 10-foot straightedge is placed on the sidewalk, curb, or gutter, the surface shall not vary more than ¼ inch from the edge of the straightedge, except at grade changes.

   b) Curbs at pedestrian ramps shall **not** be placed monolithically with pedestrian ramps.

1.12C THRUST BLOCKS

Portland Cement Concrete used for thrust blocks shall have a minimum compressive strength of 3000 psi when tested at 28 days and have a 1 to 4 inch slump.

Thrust blocks shall be installed such that they bear against the pipe fitting on one side and against the undisturbed earth on the other side. The Contractor shall provide anchor blocks and support blocks on vertical bends.

Thrust block concrete shall not obstruct the removal of bolts from fittings. Concrete shall be prevented from adhering to the fittings. Either a liquid bond breaker shall be applied to the fitting, or an impervious membrane shall be used.

1.12D RETAINING WALLS

Concrete used for retaining walls shall conform to the requirements of Subsection 337.10.01.01 – "Portland Cement Concrete Exposed to Freeze-Thaw Cycles" of the Standard Specifications.

1.12E PAVING

1.12F UTILITY ADJUSTMENTS

Concrete used for utility adjustments shall conform to the requirements of Subsection 337.10.01.01 – "Portland Cement Concrete Exposed to Freeze-Thaw Cycles" of the Standard Specifications and shall be reinforced with collated, fibrillated polypropylene fibers conforming to the requirements of Subsection 202.02.02.04 – "Polypropylene Fibers" of the Standard Specifications, at 1.5 pounds per cubic yard of concrete.

The concrete used for utility adjustments shall be protected until a minimum compressive strength of 3,000 psi is attained. The RTC Project Manager shall approve the method of protection

1.13 DETECTABLE SURFACE WARNING TILES

1. The detectable surface warning tiles shall consist of precast tiles with a minimum size of 2' x 2', color dark red. Approved products include: CASTinTACT, TEKWAY DOME-TILES, ARMOR CAST WET SET TILES, and ARCIS WET SET TILES. Detectable surface warning tiles shall be constructed per manufacturer's installation guidelines and conform to ADAAG standards.

2. Proposed Substitution products are to be submitted for approval in accordance with provision 22 of the Instruction To Bidders, page ITB-4, within these documents. In order to be considered, submittal packages for alternate truncated concrete dome materials must be prepared and submitted in accordance with the requirements of STS 1.13 DETECTABLE SURFACE WARNING TILES.

3. The Contractor shall check the prefabricated panels upon delivery to verify that the proper material has been received. The panels shall be inspected by the Contractor to be free of flaws or damage occurring during manufacturing, shipping, or handling.

4. The prefabricated panels shall be installed in accordance with the Reno Standard Details and the manufacturer's recommendations.

6. Submittals shall include the following:

    a) The product data sheet and certification from the Manufacturer that the prefabricated detectable surface warning tile panels supplied meets the requirements of STS 1.13 DETECTABLE SURFACE WARNING TILES; and

    b) The manufacturer's installation instructions and general recommendations.

1.14 BITUMINOUS PLANTMIX

Bituminous Plantmix shall conform to the requirements of Section 320 - "Plantmix Bituminous Pavement" of the Standard Specifications, except as modified herein.

The Contractor shall submit in writing for approval a job mix formula conforming to Subsection 320.02 – "Composition of Mixtures" of the Standard Specifications. Type 2 aggregate conforming to Subsection 200.02.03 – "Plantmix and Roadmix Aggregate" shall be used unless otherwise specified. Preparation of the aggregates shall be in accordance with the Marination Method described in Subsection 401.03.08 – "Preparation of Aggregates", of the Nevada Department of Transportation Standard Specifications for Road and Bridge Construction.

Unless otherwise approved by the Agency, Asphalt Cement shall be PG64-28NV for the full depth for all paving on this project. Asphalt binders shall conform to the requirements of Section 201 - "Bituminous Material" of the Standard Specifications.

1.14A COMPOSITION OF MIXTURES

Subsection 320.02.01 - "Job Control Grading Band" of the Standard Specifications, is herewith amended as follows:

1. Amend the gradation and asphalt cement content table as follows:

	Maximum Tolerance
Aggregate passing No. 4 and larger sieves	±7 percent
Aggregate passing No. 8 to 100 sieves	±4 percent
Aggregate passing No. 200 sieve	±2 percent
Asphalt content	-0.2% to +0.7% of total weight of mix

2. Delete the third paragraph of Subsection 337.04.01 – "Composition of Mixtures" of the Standard Specifications and replace as follows:

   The optimum asphalt cement content shall be determined to 0.1 percent, by total weight of mix and dry weight of aggregate, in accordance with the Asphalt Institute's Manual Series No. 2 (MS-2) with a target value of 3% Air Voids for light traffic conditions (design Equivalent Single Axle Load (ESAL) < 10^4) and 4% Air Voids for medium and heavy traffic conditions (design ESAL > 10^4). The Contractor shall use a 75-blow Marshall mix design for all streets on this project, except a 50-blow Marshall mix design for *medium/light traffic conditions shall be used on the following streets: *. The mix design and project control samples shall conform to MS-2 Table 5.2 - Marshall Mix Design Criteria as modified in STS Table 1.14A-1.

STS Table 1.14A-1: Modified MS-2 Table 5.2 - Marshall Mix Design Criteria

	Light Traffic[2] Surface & Base		**Medium Traffic[2] Surface & Base**		**Heavy Traffic[2] Surface & Base**	
Marshall Method Mix Criteria[1]						
Compaction, Number of Blows, Each End of Specimen	50*		50		75	
Stability (pounds)	1,200 Min.*		1,200 Min.		1,800 Min.	
Flow (0.01 inches)	8 Min.	16 Max.*	8 Min.	16 Max.(8)	8 Min.	14 Max.(8)
Air Voids (percent)	2 Min.*	4 Max.*	3 Min.	5 Max.	3 Min.	5 Max.
Voids in Mineral Aggregate (percent)	See STS Table 1.14A-2 : MS-2 Table 5.3					
Voids Filled With Asphalt (percent)	70	80	65	78	65	75

Notes:

1. All criteria, not just stability value alone, must be considered in designing an asphalt paving mix. Hot mix asphalt bases that do not meet these criteria when tested at 140 ^{o}F are satisfactory if they meet the criteria when tested at 100 ^{o}F and are placed 4 inches or more below the surface.
2. Traffic classifications
   Light Traffic conditions resulting in a Design ESAL < 10^4
   Medium Traffic conditions resulting in a Design ESAL between 10^4 and 10^6
   Heavy Traffic conditions resulting in a Design ESAL > 10^6
3. Laboratory compaction efforts should closely approach the maximum density obtained in the pavement under traffic.
4. The Flow value refers to the point where the load begins to decrease.
5. The portion of asphalt cement lost by absorption into the aggregate particles must be allowed for when calculating percent air voids.
6. Percent air voids are calculated at the target value.
7. Percent voids in the mineral aggregate are to be calculated on the basis of the ASTM bulk specific gravity for the aggregate.
8. Upon approval of Agency, flow may exceed the maximum value when polymer modified binders are used.

* Indicates modified value from MS-2 Table 5.2.

STS Table 1.14A-2: MS-2 Table 5.3 - Minimum Percent Voids in Mineral Aggregate (VMA)

	Voids Filled in Mineral Aggregate (percent), Min.		
Nominal Maximum Particle Size (inches)[1, 2]	Design Air Voids (percent)[3]		
	3.0	4.0	5.0
No. 16	21.5	22.5	23.5
No. 8	19.0	20.0	21.0
No. 4	16.0	17.0	18.0
3/8	14.0	15.0	16.0
1/2	13.0	14.0	15.0
3/4	12.0	13.0	14.0
1	11.0	12.0	13.0
1-1/2	10.0	11.0	12.0
2	9.5	10.5	11.5
2-1/2	9.0	10.0	11.0

Notes:

1. Standard Specifications for Wire Cloth Sieves for Testing Purposes.
2. The nominal maximum particle size is one size larger than the first sieve to retain more than 10 percent.
3. Interpolate minimum voids in the mineral aggregate (VMA) for design air void values between those listed.

1.14B PAVING

I SPREADING AND FINISHING

Subsections 320.03 - "Construction" and 320.05 - "Spreading and Finishing" of the Standard Specifications, are herewith amended as follows:

1. Add the following subsection:

320.03.03.01 Automatic Controls. Pavers placing the final lift of the plantmix bituminous pavement for any uniform roadway section shall be equipped with an automatic control system capable of operating in conjunction with either a ski type device of not less than 30 feet in length or a taut wire set to grade. Automatic controllers are required on each side of the paver for the final lift of the plantmix bituminous pavement.

Where a paver is matching longitudinal joints, a joint matcher ski running on automatic controls is required.

The Contractor shall furnish all equipment required and shall install all stakes and wire required for the wire system.

2. Add to the introductory paragraph of Subsection 320.05 - "Spreading and Finishing" of the Standard Specifications as follows:

   Refer to STS 1.14Bi SPREADING AND FINISHING - Item 1, designated as Subsection 320.03.03.01 - "Automatic Controls" of the Standard Specifications, for automatic controls requirement for bituminous pavers.

3. Add to the fourth paragraph of Subsection 320.05 - "Spreading and Finishing" of the Standard Specifications as follows:

   In other areas where mechanical spreading and finishing equipment is used, loose plantmix material shall not be broadcast across the mat to repair surface irregularities. Instead, the irregular surface material shall be removed and replaced with mix, which shall be placed gently on the surface and large aggregate raked off the surface and removed before rolling. At joints, bituminous material at the edges of pavement shall be pushed back off the adjoining pavement, and the edge "pinch" rolled to provide a tight, flush joint. Loose aggregate at the edges of the pavement mat shall not be pushed across the mat with the rake and rolled into the mat, but instead will be raked off the mat and removed before rolling.

4. Add the following paragraphs after the second paragraph in Subsection 320.05.02 - "Joints":

   *The Contractor shall minimize the number of transverse joints in the final lift of pavement in any particular roadway segment.

   "Hot" joints are joints where adjacent paving lifts are placed during the same work shift, when previously placed pavement is relatively "hot". Joints constructed otherwise are considered "Cold" joints.

   All TOP LIFT longitudinal joints shall be "Hot" joints unless otherwise approved or directed by the Agency or Design Engineer.

   All "Cold" longitudinal joints directly below the TOP LIFT (final course of bituminous dense-grade pavement) shall be sawcut back a minimum of six (6) inches horizontally and to full depth of the lift, but not to exceed the depth of the lift.

   For all sawcut joints, TOP LIFT or otherwise, a tack coat of asphaltic emulsion shall be applied to the contact surface prior to placement of the abutting lift.

   The RTC reserves the right to sample cores directly at pavement joints to determine if workmanship (good in-place densities and absence of excessive voids and segregation) is acceptable within the joints.

II ACCEPTANCE

Subsection 320.06 - "Acceptance" of the Standard Specifications, is herewith amended as follows:

1. Delete the introductory paragraph and replace as follows:

   Plantmix bituminous pavement shall be accepted on the basis of surface tolerance, density, thickness, surface texture, conformance with the tolerances of the job mix formula, and the Marshall properties required in this subsection and in accordance with the testing requirements of Section 336 - "Inspection and Testing" of the Standard Specifications and as modified in STS 1.01 INSPECTION AND TESTING.

2. Delete the second paragraph of Subsection 320.06.01 - "Surface Tolerances" of the Standard Specifications and replace as follows:

   Surface tolerances shall be evaluated, as specified in the Bid Item, by either method as described in STS 1.14BII ACCEPTANCE - Items 3 or 4, designated as Subsection 320.06.01.01 - "Profilograph Method" and Subsection 320.06.01.02 - "12-foot Straight Edge Method," respectively.

3.

4. Add the following subsection:

320.06.01.02 12-foot Straight Edge Method.

a) A 12 feet long straight edge shall be used. When measured longitudinally (profile), the straight edge shall be laid on the finished surface and parallel with the centerline of the roadway. For transverse (cross section) measurements, the straight edge shall be laid in a direction transverse to the centerline and extending from edge to edge of a 12 foot traffic lane.

   The RTC may use a profilograph to locate pavement surfaces which display unacceptable surface tolerance. Profilograph measurement shall be in accordance with STS 1.14BII ACCEPTANCE - Item 3 (a), designated as a portion of Subsection 320.06.01.01 - "Profilograph Method." Once identified, the conformance criterion will remain as specified below in Item 4 (b), designated as a portion of Subsection 320.06.01.02 - "12-foot Straight Edge Method," that is, not subject to the conformance criterion listed for the profilograph method.

b) The longitudinally (profile) surface shall not vary more than 1/8 inch from the lower edge of the straightedge. The transverse (cross section) slope of the finished surface shall be uniform to a degree such that no depressions greater than 1/4 inch are present. The finished grade of the asphalt surface shall vary no more than 5/8 inch from design finished grade in both profile and cross section.

Grinding shall be done in accordance with STS 1.14BIII MITIGATION - Item 3, designated as Subsection 320.07.01.01 - "Grinding for Conformance of Surface Tolerances."

5. Delete Subsection 320.06.03 - "Thickness" of the Standard Specifications and replace as follows:

320.06.03 Thickness. Cut samples taken in accordance with Section 336.03.04 - "Asphalt Concrete" of the Standard Specifications and as modified in STS 1.01 INSPECTION AND TESTING shall be used to determine conformance with thickness specifications. The average thickness of cores shall be at least equal to the specified minimum thickness of the asphalt concrete pavement with no single core less than ½ inch thinner than the specified minimum thickness. Both average and single core thickness shall be compared to the specified thickness to the nearest 0.1 inch.

6. Add the following subsection:

320.06.04 Surface Texture. The finished texture of wearing course paving constructed using dense graded bituminous plantmix shall be dense and uniform in appearance, displaying a homogeneous distribution of fine and coarse aggregate with no apparent surface voids.

7. Add the following subsection:

320.06.05 Job Mix Formula and Marshall Properties. Bituminous plantmix will be tested for compliance with the job mix formula and Marshall properties on a "lot" basis. A lot is as defined in Subsection 320.06.02 - "Density"of the Standard Specifications. Each lot will be tested for job mix formula and Marshall properties compliance.

Each lot of compacted pavement will be accepted, with respect to job mix formula and Marshall properties, when test results on fresh, hot samples conform to the requirements set forth in Subsection 320.02 - "Composition of Materials" and as modified in STS 1.14 BITUMINOUS PLANTMIX, including but not limited to, Marshall air voids, stability, flow, asphalt content, and aggregate gradation. Testing shall be in accordance with Subsection 336.03.04 - "Asphalt Concrete" of the Standard Specifications and as modified in STS 1.01 INSPECTION AND TESTING.

III MITIGATION

Subsections 320.07 - "Mitigation of Unacceptable Asphalt Concrete Pavement" and 320.09 - "Basis of Payment" of the Standard Specifications, are herewith amended as follows:

1. Add an introductory paragraph and a second paragraph for Subsection 320.07 - "Mitigation of Unacceptable Asphalt Concrete Pavement" of the Standard Specifications as follows:

320.07 MITIGATION OF UNACCEPTABLE ASPHALT CONCRETE PAVEMENT. The objective of mitigation is to assure the final pavement will meet the design service life of the roadway. Those portions of the constructed work which do not comply with contract specifications, as determined in accordance with Subsection 320.06 - "Acceptance" of the Standard Specifications and as modified in STS 1.14BIII ACCEPTANCE, shall be mitigated in such a manner that the performance, service life, and maintainability expectations of the originally specified project will be achieved. Payment penalties in lieu of mitigation shall be considered as a last resort and utilized only in those cases where mitigation to achieve the expected performance, service life, and maintainability is deemed by the Agency to be not possible or practical. Most paving projects affected will exhibit a variety in the type and magnitude of deficiencies that will result in a variety of mitigation approaches which may include combinations of various physical mitigation measures and payment penalties. The Agency, at its option, will decide the appropriate mitigation measures with input from the Design Engineer, testing laboratory, and Contractor.

In the event pavement mitigation is necessary to correct deficiencies, the RTC may direct the Contractor to perform some or all pavement mitigation after normal business hours, at night, and/or on weekends, to minimize impacts sustained by the public, at the Contractor's own expense.

2. Amend Subsection 320.07.01 - "Unacceptable Surface Tolerance" of the Standard Specifications as follows:

320.07.01 Unacceptable Surface Tolerances. Unacceptable surface tolerance shall be corrected by either overlaying or grinding as directed by the Agency or Engineer. Grinding shall be done in accordance with STS 1.14BIII MITIGATION - Item 3, designated as Subsection 320.07.01.01 - "Grinding for Conformance of Surface Tolerances."

Apply fog or slurry seal to ground areas after the surface tolerance specifications have been met. The Agency shall determine the type of sealant to be used.

In areas to be corrected with an overlay, grinding, followed by tack coat, may be necessary to provide a minimum 1½ inch overlay and butt joints where matching existing pavements.

3. Add the following subsection:

320.07.01.01 Grinding for Conformance of Surface Tolerances. The grinding machine for correcting pavement surface tolerances shall be power driven, self-propelled and specifically designed to remove, profile, smooth, and texture hot mix asphalt. The Contractor shall use a grinding machine with a wheel base of not less than 12 feet, equipped with a rotating powered mandrel drum studded with diamond blades with a cutting head not less than 3 feet wide. The grinding machine shall be equipped with an effective means for controlling dust and other particulate matter.

Do not cause strain or damage to the underlying surface of the pavement with the

grinding machine. Do not use grinding and texturing equipment that causes ravels, aggregate fractures, spalls, or disturbance of joints.

The Contractor shall perform grinding in a longitudinal direction. A satisfactorily grind will produce a uniform textured surface over the surface areas designated for grinding.

The surface of the ground pavement shall have parallel corduroy-type texture consisting of grooves between 1/12- inch and 1/8-inch wide. The peaks of the ridges shall be approximately 1/16-inch higher than the bottom of the grooves with approximately 52 to 58 evenly spaced grooves per foot.

The Contractor shall perform additional grinding as necessary to extend the ground area laterally to the nearest lane line or edge of pavement and longitudinally to lines normal to the pavement centerline.

The Contractor shall correct areas that cannot not be brought into specified surface tolerances by abrasive grinding by both removal and replacement, or by placing an overlay of hot mix asphalt. The Contractor shall obtain approval of the exact method of correction.

Fog or slurry seal shall be applied to ground areas after the surface tolerance specifications have been met. The Agency shall determine the type of sealant to be used.

4. Delete Subsections 320.07.02 - “Unacceptable Density” and Table 1 in Subsection 320.09 - “Basis of Payment” of the Standard Specifications and replace as follows:

320.07.02 Guideline for In-place Density/Air Voids. The RTC and the Design Engineer will consider STS Table 1.14BIII-1 or 1.14BIII-2 "Asphalt Deficiency Mitigation Matrix for In-place Density/Air Voids", as applicable for the design traffic conditions, input from the Contractor, and sound engineering analysis and judgment before requiring mitigation (i.e. removal and replacement, increased thickness, or surface treatment) and/or payment deduction (if mitigation is not practical or possible) for plantmix bituminous pavement which deviates from specification requirements. Since the matrix does not include all factors and site conditions which may affect the overall performance of the pavement, the RTC may, upon consideration of the specific circumstances, increase, reduce or waive mitigation and/or payment reduction, or combine portions of mitigation and payment reduction.

If the RTC makes a preliminary determination that mitigation, and/or payment deduction is necessary on the basis of In-place Density/Air Voids, the Contractor may submit a written request to RTC for retests. The retests shall be in accordance with Section 336 - “Inspection and Testing” of the Standard Specifications and as modified in STS 1.01 INSPECTION AND TESTING. The retests may be performed by the Agency's quality assurance laboratory or by any other approved, independent testing laboratory (the Contractor shall request the laboratory in writing for RTC approval).

Retests shall be undertaken at the Contractor's own expense. If the results of any retests are significantly different from initial testing, a "referee" test will be performed by an independent testing lab, which is mutually acceptable to the RTC and the Contractor. The RTC may waive the "referee" test if after consulting with the Design Engineer it is determined that the "referee" test is unnecessary. Fifty percent of the cost of "referee" tests shall be paid by the RTC and 50 percent shall be paid by the Contractor. The RTC may elect to make full payment and deduct the Contractor's 50 percent from progress or final payment to Contractor. The RTC will make a final determination regarding mitigation and/or payment reduction based upon the preponderance of test results and other factors.

5. Delete subsection 320.07.03 Unacceptable Thickness and replace as follows:

320.07.03 Unacceptable Thickness. Insufficient thickness not meeting the requirements of subsection 320.06.03 – "Acceptance – Thickness" – shall be mitigated as follows:

Thickness	Mitigation
4" - 3.76"	20% pay deduct for top lift paving
3.75" – 3.51"	50% pay deduct for top lift paving
≤ 3.5"	Remove top lift & replace or add a 1.5" Type 3 overlay

For mitigation purposes in this subsection, the thickness will be the average of all cores taken, and the cost of the top lift paving is $0.60 per square foot per one inch of thickness.

The overlay mitigation option is allowable only at where there is no curb and gutter. Grinding may be necessary to eliminate the problems associated with raising of finish grade as determined by the governing Agency or Engineer, but in all cases, the perimeter of the corrective overlay shall be placed as a flush butt-joint formed by grinding of existing pavement abutting the overlay.

6. Add the following subsection:

320.07.04 Unacceptable Surface Texture. Unacceptable surface texture shall be mitigated as directed by the Agency. Required mitigation may include any necessary measures up to, and including, removal and replacement of the deficient material. If correction of surface texture results in a visually non-uniform pavement surface, the Contractor may be required to restore the pavement surface to a uniform visual appearance as directed by the Agency. Such measures shall be done at the Contractor's own expense.

7. Add the following subsection:

320.07.05 Guideline for Job Mix Formula and Marshall Properties. If the compacted pavement is not in compliance with the job mix formula and all Marshall properties, mitigation shall be as directed by the Agency. Due to the complexity of the deficiency matrix, it is impossible to have a mitigation table

which covers all possible combinations of the deficiencies and all factors and site conditions which may affect the overall performance of the pavement; therefore, the RTC shall evaluate the deficiency on a case by case basis and may require any necessary measures ranging from payment deductions to removal and replacement of the deficient materials, or any combination of the mitigation measures.

The RTC may consider test results from the Contractor's quality control laboratory if submitted, provided that the sampling and testing are performed, using split samples with the Agency's quality assurance laboratory, in accordance with Section 336 - "Inspection and Testing" of the Standard Specifications and as modified in STS 1.01 INSPECTION AND TESTING.

STS Table 1.14BIII-1
Asphalt Deficiency Mitigation Matrix for In-place Density/Air Voids
Light Traffic Conditions *(see Note 4)*

The objective of the mitigations listed on the table below is to assure the final pavement will meet the design service life of the roadway. Reductions in payment do not achieve that goal and should be considered only if mitigation is not possible or practical. The mitigation table is an attempt to provide uniformity and fairness to the evaluation process of substandard pavements. Most paving projects affected will exhibit a variety in the type and magnitude of deficiencies that will result in a variety of mitigation approaches. The appropriate mitigation requires sound engineering analysis and judgment. The Agency will, at its option, decide the appropriate mitigation measures with input from the Design Engineer, testing laboratory, and the Contractor.

	Marshall Compaction % (Note 5)	In Place Air Voids % (Rice) (Note 6)	Increase Thickness (Notes 7&8)		Surface Seal (Note 8)			Remove Replace	Payment (Note 8)		
			1"	1-1/2"	Sand Seal	Slurry Seal	Sand Blotter		100%	90%	50%
WEARING	≥ 96	<2					X (A)			X(A)	X
		≥2 & ≤ 7							X		
		>7 & ≤ 10			X	X				X	
		> 10		X	X(A)	X(B)		X			X(A, B)
	< 96 & ≥ 93	≥ 4 & ≤ 7								X	
		>7 & ≤ 10		X							X
		> 10		X(A)				X			X(A)
	< 93							X			
NON-WEARING	≥ 96	<2								X	X
		≥2 &≤ 7							X		
		>7 & ≤ 10								X	
		> 10	X								X
	<96 & ≥ 93	≥4 & ≤ 7								X	
		>7 & 10	X								X
		> 10		X				X			X(A)
	< 93							X			

Notes:

1. Each 'X' represents a recommended mitigation remedy. Several X's for a single deficiency indicate alternate methods of remediation unless noted otherwise. Individual judgment must be exercised by the RTC Project Manager on each specific project.
2. Each 'X' labeled either (A) or (B) represents a combination of mitigation remedies listed as group (A) or group (B).
3. See STS 1.14BIII MITIGATION - Item 6, designated as Subsection 320.07.05 - "Guideline for Job Mix Formula and Marshall Properties," for mitigation required when the compacted pavement is not in compliance with the job mix design and/or Marshall properties.
4. Traffic classifications:
   Light Traffic conditions resulting in a Design ESAL $<10^4$
   Medium Traffic conditions resulting in a Design ESAL between 10^4 and 10^6
   Heavy Traffic conditions resulting in a Design ESAL $>10^6$
   For light traffic conditions, see Asphalt Deficiency Mitigation Matrix for Light Traffic Conditions.
5. The average Marshall Compaction for the lot shall be rounded to the nearest 1 percent in accordance with the procedure described in Section 336 - "Inspection and Testing," of the Standard Specifications, Subsection 336.03.04 - "Asphalt Concrete".
6. Three significant figures shall be used throughout the calculations for in-place air voids. Individual results shall be reported to the nearest 0.1 percent. All rounding shall be in accordance with the procedure described in Section 336 - "Inspection and Testing" of the Standard Specifications, Subsection 336.03.04 - "Asphalt Concrete"
7. Increase total pavement thickness by the indicated amount using approved mix.
8. Mitigation may not be limited to the matrix shown on this table if the pavement is also deficient in other areas.

STS Table 1.14BIII-2
Asphalt Deficiency Mitigation Matrix for In-place Density/Air Voids
Medium & Heavy Traffic Conditions *(see Note 4)*

The objective of the mitigations listed on the table below is to assure the final pavement will meet the design service life of the roadway. Reductions in payment do not achieve that goal and should be considered only if mitigation is not possible or practical. The mitigation table is an attempt to provide uniformity and fairness to the evaluation process of substandard pavements. Most paving projects affected will exhibit a variety in the type and magnitude of deficiencies that will result in a variety of mitigation approaches. The appropriate mitigation requires sound engineering analysis and judgment. The Agency will, at its option, decide the appropriate mitigation measures with input from the Design Engineer, testing laboratory and the Contractor.

	Marshall Compaction % (Note 5)	In Place Air Voids % (Rice) (Note 6)	Increase Thickness (Notes 7&8)	Surface Seal (Note 8)			Remove Replace	Payment (Note 8)		
			+1½"	Sand Seal	Slurry Seal	Chip Seal		100%	90%	50%
WEARING	≥ 96	<3					X		X	X
		≥3 & ≤ 8						X		
		>8 & ≤ 11		X	X	X			X	
		> 11	X				X			
	< 96 & ≥ 93	≥ 4 & ≤ 8	X				X		X	
		>8 & ≤ 11	X(A)			X(B)	X		X(A)	X(B)
		> 11	X(A)				X			X(A)
	< 93						X			
NON-WEARING	≥ 96	<3					X		X	X
		≥3 & ≤ 8						X		
		>8 & ≤ 11							X	
		> 11	X				X			X
	<96 & ≥ 93	≥4 & ≤ 8							X	
		>8 & ≤ 11	X							X
		> 11	X(A)				X			X(A)
	< 93						X			

Notes:

1. Each 'X' represents a recommended mitigation remedy. Several X's for a single deficiency indicate alternate methods of remediation unless noted otherwise. Individual judgment must be exercised by the Engineer on each specific project.
2. Each 'X' labeled either (A) or (B) represents a combination of mitigation remedies listed as group (A) or group (B).
3. See STS 1.14BIII MITIGATION - Item 6, designated as Subsection 320.07.05 - "Guideline for Job Mix Formula and Marshall Properties," for mitigation required when the compacted pavement is not in compliance with the job mix design and/or Marshall properties.
5. Traffic classifications:
   Light Traffic conditions resulting in a Design ESAL $<10^4$
   Medium Traffic conditions resulting in a Design ESAL between 10^4 and 10^6
   Heavy Traffic conditions resulting in a Design ESAL $>10^6$
   For light traffic conditions, see Asphalt Deficiency Mitigation Matrix for Light Traffic Conditions.
5. The average Marshall Compaction for the lot shall be rounded to the nearest 1 percent in accordance with the procedure described in Section 336 - "Inspection and Testing," of the Standard Specifications, Subsection 336.03.04 - "Asphalt Concrete".
6. Three significant figures shall be used throughout the calculations for in-place air voids. Individual results shall be reported to the nearest 0.1 percent. All rounding shall be in accordance with the procedure described in Section 336 - "Inspection and Testing" of the Standard Specifications, Subsection 336.03.04 - "Asphalt Concrete".
7. Increase total pavement thickness by the indicated amount using approved mix.
8. Mitigation may not be limited to the matrix shown on this table if the pavement is also deficient in other areas.

IV SPECIAL PAVING CONSIDERATIONS

The Contractor shall submit, at the time of traffic control submittal, a paving plan superimposed onto the striping plan to illustrate locations of paving joints in relation to striping. The paving joints in the final lift shall be located within 6" from lane stripes, unless otherwise authorized in writing by the Engineer.

Where directed by the Engineer, the Contractor shall spread blotter sand on the surface of final-lift pavement to reduce the driveway or intersection closure time and protect the pavement surface at high traffic or critical locations.

V TACK COAT

Subsection 316.03.04 - "Application of Bituminous Materials" of the Standard Specifications, is herewith amended as follows:

Unless otherwise directed by the Design Engineer, cleaning and the application of a tack coat shall be provided between all paving courses that are not constructed in the same shift. Tack coat shall consist of asphalt emulsion, Type SS-1h, conforming to the requirements of Section 201 – "Bituminous Materials" of the Standard Specifications to the cleaned, cured surface, unless otherwise directed by the Design Engineer. The tack coat shall be applied in sufficient quantity to provide a continuous membrane over the cement modified material. No more tack shall be applied than can be covered in the same shift. Place the covering course over tack that is clean, free of tracking and adequately set.

VI LONGITUDINAL JOINTS

This specification is developed in an effort to obtain longer pavement life by adding emphasis on longitudinal joint quality. This portion of the STS will apply for the sole purpose of assessing the bonus/penalty of this specification. The longitudinal joint result will not tie to the acceptance of the pavement. This portion of the STS, however, does not eliminate any requirement as listed in all other sections of the STS.

Bonus or Penalty for longitudinal joint applies only when the mat for the associated paving "lots" are acceptable according to STS 1.14BII Acceptance.

1. Testing and reporting will be performed by the quality assurance laboratory (i.e. RTC's consultant). Testing will be done on the TOP LIFT[1] only for both HOT & COLD longitudinal joints for each joint segment. Longitudinal joint segment is defined as every 1,000 feet of longitudinal joint and any remainder that is 800 feet or longer. Testing for the longitudinal joints include Thin Lift Nuclear Test and Core Test as described in the following paragraphs.

2. Thin Lift Nuclear Test (Nuclear Gauge Test) shall be performed as follows:

    a) Frequency & Location – Nuclear gauge readings shall be taken every 200 feet on BOTH sides of a longitudinal joint segment directly across from each other, beginning at a random location within the first 200 feet as determined by the Design Engineer.

[1] TOP LIFT is defined as the final course of bituminous dense-grade pavement.

b) Timing – To avoid additional traffic control needed for the testing operation, nuclear gauge readings shall be taken shortly following the completion of the longitudinal joint construction.

c) Equipment – Testing shall be performed using a gauge specifically designed for asphalt testing such as a Troxler 4640B or Troxler 3450, or approved equivalent. It is not necessary that the nuclear gauge be calibrated to the mix. However, the same nuclear gauge should be used for the same longitudinal joint segment.

d) Testing – One 1-minute test is to be performed at each test location. The nuclear density testing shall be performed with the long axis of the nuclear density gauge parallel to the joint and with the nearest edge of the nuclear gauge no closer than 3 inches from the joint and no further than 4.5 inches from the joint. The footprint of the gauge shall be marked with keel or other product that clearly defines the test locations. All testing shall be performed in the same direction (i.e. up or down station).

e) Re-Test – When the test result, t_n, differs more than 4 pounds per cubic foot (pcf) from the previous test, t_{n-1}, a re-test at the previous test location is required to assure that the previous test is not in error. Both test results shall be recorded. If the re-test is within 4 pcf of the original previous test result, use the original previous test result. Otherwise, keep record of the results t_n and t_{n-1} but do not use them for any further calculations. Instead, recalibrate the thin lift nuclear gauge, resume testing beginning at the t_{n-1} location, and use the new test results.

3. Core Test will be performed as follows:

a) Frequency & Location – In addition to the coring required for the mat, one core test shall be performed for every longitudinal joint segment, location of which shall be determined as below:

i. Mean Joint Density (MJD) is the average of the readings of the Nuclear Gauge Test on each side of a longitudinal joint segment. The core is to be taken on the side with the lower MJD. If the MJD on both sides are equal, core on the side which was paved first.

ii. The core shall also be at a location where a Nuclear Gauge Test was performed and reasonably close to a core location for the mat. The core shall be centered inside of the previously marked footprint of the Nuclear Gauge Test. In no case shall the near edge of the core be closer than 3 inches from the joint.

iii. If coring is to occur at a location with pavement markings made of 3M tape or thermoplastic tape, adjust the core location up or down station as appropriate up to a distance of 20 feet maximum. Otherwise, remove necessary portions of the pavement markings before coring.

b) Timing – Coring at the joint shall be at the same time of coring at the mat.

c) Equipment – Same equipment as the standard core test for the mat.

d) Testing – Test procedures will be the same as the standard core test (in-place density/air voids) for the mat in accordance with STS 1.01 INSPECTION AND TESTING. Use the hot sample properties from the corresponding lot, based on the core location (i.e. stationing and which side of the joint), for calculating core test results.

e) Re-Test – Re-testing will only be allowed at the sole discretion of the RTC. If allowed, re-testing shall be at the sole cost of the Contractor and performed by a qualified third party laboratory that meets RTC's criteria for testing. The location of the additional core(s) shall be in within 5 feet up or down station from the original core and the sampling shall be witness by the Design Engineer.

4. When applicable, the bonus and penalty is calculated as follows:

$$\text{Bonus/Penalty} = \frac{\sum F_i}{N} \times A \times T \times U$$

Where

F = Factor for individual longitudinal joint segment based on joint core results per STS Table 1.14BVI-1 or 1.14BVI-2 as applicable.
N = Total number of longitudinal joint segments.
A = Total pavement area of all longitudinal joint segments (SF).
T = Thickness of the TOP LIFT (inch).
U = Unit cost of the TOP LIFT ($/inch-SF).

For the purpose of determining Bonus/Penalty for this project, U shall be $*/in-SF.

STS Table 1.14BVI-1
Longitudinal Joint Segment Bonus/Penalty Factor
Light Traffic Conditions (see Note 1)

Joint Core Results In-Place Air Voids % (Rice) (see Note 2)	Factor F_i
< 2	0%
≥ 2 & ≤ 7	+5%
> 7 & ≤ 10	0%
> 10 & ≤ 14	-5%
> 14	-50%

STS Table 1.14BVI-2
Longitudinal Joint Segment Bonus/Penalty Factor
Medium & Heavy Traffic Conditions (see Note 1)

Joint Core Results In-Place Air Voids % (Rice) (see Note 2)	Factor F_i
< 3	0%
≥ 3 & ≤ 8	+5%
> 8 & ≤ 11	0%
> 11 & ≤ 14	-5%
> 14	-50%

Notes:
1. Traffic classifications
Light Traffic conditions resulting in a Design ESAL < 10^4
Medium Traffic conditions resulting in a design ESAL between 10^4 & 10^6

Heavy Traffic conditions resulting in a Design ESAL > 10^6

2. Three significant figures shall be used throughout the calculations for in-place air voids. Individual results shall be reported to the nearest 0.1 percent. All rounding shall be in accordance with the procedure described in Section 336 – "Inspection and Test" (Subsection 336.03.04 – "Asphalt Concrete").

5. Reporting – Field data associated with longitudinal joint testing shall be submitted to the RTC within a week of the testing. The report for the longitudinal joint testing shall be submitted to the RTC within two weeks upon completion of paving for the completed section tested. If top lift paving for the entire project are to be completed within two weeks, submit the report to the RTC within two weeks upon completion of paving for the entire project. The report shall include a Paving Plan and a Longitudinal Joint Summary Sheet as described below.

a) The Paving Plan shall be overlaid on the Striping Plans with stationing shown. It should include, for the top lift only, the longitudinal joint locations with identification number (ID), limits of each paving path, direction of paving, and the paving lot number at the core location. The paving plan can be of as small a scale as practical.

b) The template for the Longitudinal Joint Summary Sheet is available from the RTC website (www.rtcwashoe.com) under Streets & Highways, St & Hwy Resources. It shall be filled in with the following details:

i. The Longitudinal Joint Segment ID, joint type (hot lap, cold sawcut, etc.), station, side of joint (left/right in the up-station direction or north/south/west/east), individual density values measured, MJD (5 values for 1,000-foot joint segments and 4 for 800-foot joint segments) on each side of each joint segment, joint core test location, paving lot number at the core location, core Marshall Density, Rice Maximum Density, In-Place Air Voids, and the individual Longitudinal Joint Segment Bonus/Penalty Factors, F_i.

ii. The calculation for Longitudinal Joint Bonus/Penalty for the project shall be shown at the end of the sheet.

iii. For reference purpose, any re-test shall be noted to clearly identify the re-test, the unused test results, and the test result that was used in calculating the MJD.

1.14C PERMANENT PATCHING

Permanent patching material shall be Type 3 PG64-22 bituminous plantmix, utilizing a 50 blow per side Marshall mix design with target air voids of 3%, and shall conform to the Standard Specifications. Permanent bituminous plantmix patches shall be a minimum depth of 4 inches on 6 inches of aggregate base or match existing section with bituminous plantmix depth up to 12 inches.

If, at any time, during a period of 1 year dating from the date of final acceptance of the project, there is any settlement of the permanent patches requiring repairs to be made, the Owner may notify the Contractor to immediately make such repairs as may be deemed necessary at the Contractor's own expense.

1.16 SLURRY SEAL

Slurry seal shall conform to the requirements of Section 318 - "Slurry Seal" of the Standard Specifications, except as modified herein.

The Contractor shall submit in writing for approval a job mix formula conforming to the requirements of Subsection 318.02 – "Composition of Mixtures" of the Standard Specifications. Type * aggregate conforming to the requirements of Subsection 200.02.06 – "Slurry Seal and Micro Surfacing Aggregate" shall be used unless otherwise specified. Asphalt emulsions shall conform to the requirements of Section 201 - "Bituminous Material" of the Standard Specifications.

Subsection 318.02 – "Materials" of the Standard Specifications, is herewith amended as follows:

1. Add the following to Subsection 318.06.01 – "Limitations":

    a) The slurry seal shall not be applied when precipitation is imminent or occurring.

2. Delete Subsection 318.07.02 – "Tack Coat" in its entirety.

3. Add the following to Subsection 318.08.01 – "General":

    a) All workers shall have sufficient experience to perform properly the work assigned to them. The Contractor shall have an experienced crew on each spreader and any other equipment.

    b) At least 48 hours shall elapse between top lift paving and application of a bituminous seal coat.

    c) Immediately before commencing the slurry seal operations, all metal utility covers (including survey monuments) shall be protected by thoroughly covering the surface with an appropriate adhesive and oiled or plastic paper. No adhesive material shall be permitted to cover, seal or fill the joint between the frame and cover of the structure. Covers are to be uncovered and cleaned of slurry material by the end of the same day.

    d) Hand tools shall be available in order to remove spillage. Ridges or bumps in the finished surface shall not be permitted. The mixture shall be uniform and homogeneous after spreading on the surface and shall not show separation of the emulsion and aggregate after setting.

    e) Adequate means shall be provided to protect the slurry seal from damage from traffic until such time that the mixture has cured sufficiently so that the slurry seal will not adhere to, or be picked up by the tires of vehicles.

1.18 PAVEMENT MARKINGS

1.18A PAINTED PAVEMENT MARKINGS

Permanent painted (traffic paint or epoxy paint) pavement markings shall be in accordance with Section 632 of the latest edition of "Standard Specifications for Road and Bridge Construction" published by NDOT.

1.18A TRAFFIC PAINT

All application methods and products shall conform to Sections 632 – "Permanent Painted Pavement Markings" and 730 – "Traffic Beads", and Subsections 729.02.01 – "General", 729.02.02 – "Packaging", and 729.03.05 – "Rapid Dry Waterborne Paint Material" of the NDOT Standard Specifications for Road and Bridge Construction for Type II traffic paint, with the following exception:

1. Add the following:

   At least 48 hours shall elapse between application of a bituminous seal coat and permanent pavement marking.

   All traffic paint shall have a minimum of 2 coats (full width of stripe) per application of the designated material placed unless otherwise directed by the RTC Project Manager or the Design Engineer's representative.

1.18B PAVEMENT MARKING FILM

Permanent pavement marking film (pavement marking tape or thermoplastic) shall be in accordance with Section 634 – "Pavement Marking Film", of the NDOT Standard Specifications for Road and Bridge Construction.

1.18C RAISED MARKERS

1. Hydrant markers.

   A reflective, blue street marker shall be provided to identify all fire hydrant locations. The marker shall be omnidirectional type. The marker shall be visible on approach to the fire hydrant. The marker shall be placed in accordance with Reno Fire Department Policy Appendix UFC-AP904.3.1, page AP-6.

   Adhesives for raised markers shall conform to Subsection 633.02.04 - "Adhesives for Pavement Markers" of the NDOT Standard Specifications for Road and Bridge Construction.

   Installation of raised markers shall conform to Subsection 633.03.01 - "Pavement Marker Installation" of the NDOT Standard Specifications for Road and Bridge Construction.

1.22 TRAFFIC SIGNS

1.22A MATERIALS

Traffic signs shall be 3M Diamond Grade (DG) 3 or 3M high intensity sheeting with a clear transparent overlay 3M 1170 or approved equal.

Street name signs shall be 3M DG3, Series 4000 or approved equal with green transparent Scotchlite Electrocut Film #1177C or approved equal. White letter and border sheeting shall be retro reflective ASTM IX 3M Diamond Grade or approved equal.

1.23 TRAFFIC SIGNALS

1.23A LOOP DETECTORS

* The * requires the Contractor to lay-out traffic signal loop detectors in accordance with * standards and details. After the loop lay-out is marking in the field, the Contractor shall call * at * for loop lay-out inspection and approval.

* The Contractor shall call * at * for traffic signal loop lay-out.
All traffic signal loop detectors shall be installed prior to the placement of the final "top" lift[2] of the plantmix bituminous pavement material. Placement of slurry seal or micro-surface does not negate this requirement.

1.23B TEMPORARY TRAFFIC SIGNAL MODIFICATIONS DURING CONSTRUCTION

The Contractor shall coordinate with and secure approval from * (*) of * for any use of or changes to operation of existing traffic signal equipment during construction. The Contractor shall comply with * requirements without additional cost to the RTC.

1.24 UTILITY ADJUSTMENT

1.24A VERIFICATION OF DEPTH

Location of underground facilities shown on the plans are approximate and were not determined by field investigation. It shall be the responsibility of the Contractor to locate all existing utility structures, whether shown or not, and to notify all utility companies to verify in the field the location of their installations prior to construction. The Contractor shall protect all utility structures from damage. The expense of repair or replacement shall be borne by the Contractor (however, this in no way precludes the Contractor from recovering, from the utility company, costs to repair existing utilities which do not conform with standard specifications or details). The Contractor shall request field marking of existing utilities at least 48 hours in advance of beginning construction by calling Underground Service Alert at (800) 227-2600.

At existing underground traffic signal conduit crossings and at locations where new underground facilities cross existing facilities, the Contractor shall expose the existing facility and verify that sufficient horizontal and vertical clearance exists for the street improvements to be constructed in substantial compliance with the plans. At existing underground traffic signal conduit crossings, the Contractor shall field verify the depth of existing facilities before commencing any construction. At locations where new underground facilities are to be connected to existing facilities, the Contractor shall expose the existing facility and verify that the connection can be made as shown on the plans before commencing any construction. Any conflicts shall be brought to the Engineer's attention as soon as they are discovered.

Utility depth verification requirements will be considered incidental to *, bid item *.

[2] TOP LIFT is defined as the final course of bituminous dense-grade pavement.

1.24B UTILITY MANHOLE AND VAULT ADJUSTMENT

Add to Subsection 323.05 - "Utility Manholes and Vaults" of the Standard Specifications as follows:

1. "Before lowering manholes and vaults, the Contractor shall take inventory of the utilities to be adjusted. The Contractor shall record the exact location and type of utility by labeling the assembly with numbers at locations visible for verification. The labeling shall include utility site, collar, and lid to ensure proper match of hardware when utility adjustment is completed at the conclusion of the project."

   The Contractor shall submit the utility inventory list to the Engineer and utility companies upon completion of utility lowering activity. The Contractor shall also keep a copy of the utility location inventory list on the project work site at all times for emergency shutoff purposes. The Contractor may post the list on the backside of the RTC Project Information sign.

1.24C MANHOLE PROTECTION PLAN

The Contractor shall be responsible for the protection of all manholes and valves during all phases of construction, including but not limited to, lowering and raising covers, and grouting of them. The Contractor shall verify all manholes and valves are clear of debris at the beginning of the project and notify the utility companies if otherwise.

A "Manhole Protection Plan" shall be submitted and approved by the Engineer prior to any manhole adjustments. The plan shall clearly identify how the contractor will protect ANY debris from entering the system and a detail of how the Contractor is prepared for emergency overflows. To the minimum, the plan shall include the name, phone number, and contact of the company the contractor will use in case of an emergency. Prior to performing any adjustments or grouting, the Engineer shall observe and verify the Contractor is in compliance with the "Manhole Protection Plan".

1.25 SURVEY MONUMENTS

Survey monuments shall be removed prior to construction. Survey monuments shall be located and punched by a Nevada registered professional land surveyor and replaced after completion of improvements.

1.26 CERTIFICATES OF COMPLIANCE

The Certificate of Compliance shall be signed by the manufacturer of the material or the manufacturer of assembled materials and shall state that the materials involved conform in all respects with the requirements of the specifications for this project. A Certificate of Compliance shall be furnished with each lot of material delivered to the work and the lot so certified shall be clearly identified in the certificate.

Materials Requiring Certificate of Compliance

1. Asphalt Cement
4. Cement
5. Concrete Curing Compound
6. Signs
7. Pavement Markings
8. Personnel certification for installation of retroreflective preformed pavement markings

EXHIBIT "F"
(Standard Specifications for Public Works Construction
Section 117.00
"Material and Workmanship – Warranty of Corrections")

EXHIBIT F

MATERIAL AND WORKMANSHIP - WARRANTY OF CORRECTIONS

Corrections ordered in accordance with General Provision 117.00, "Material and Workmanship" for items discovered in the year following final acceptance of the project shall be warranted for a one (1) year period following acceptance by the RTC of the correction. Should the correction itself prove defective, the Contractor shall be obliged to make further correction. The warranty period on the correction shall continue to be extended for one (1) year following acceptance by the RTC of the initial or any subsequent corrective actions.

EXHIBIT "G"
RRIF RATES AS OF DATE OF OFFSET AGREEMENT

REGIONAL ROAD IMPACT FEE SCHEDULE

Land Use		North Service Area		South Service Area	
Residential	**Unit**	**VMT**	**Dollars ($328.34/VMT)**	**VMT**	**Dollars ($320.63/VMT)**
Single-Family	Dwelling	15.03	$4934.95	14.22	$4,559.36
Multi-Family	Dwelling	10.23	$3,358.92	9.68	$3,103.70
Industrial					
General Light Industrial	1,000 GFA	5.05	$1,658.12	4.78	$1,532.61
Manufacturing	1,000 GFA	4.00	$1,313.36	3.79	$1,215.19
Warehouse	1,000 GFA	1.77	$581.16	1.68	$538.66
Mini-Warehouse	1,000 GFA	1.54	$505.64	1.46	$468.12
Commercial/Retail					
Commercial/Retail	1,000 GFA	22.94	$7,532.12	21.71	$6,960.88
Eating/Drinking Places	1,000 GFA	22.94	$7,532.12	21.71	$6,960.88
Casino/Gaming	1,000 GFA	46.90	$15,399.15	44.37	$14,226.35
Office and Other Services					
Schools	1,000 GFA	13.12	$4,307.82	12.41	$3,979.02
Day Care	1,000 GFA	13.12	$4,307.82	12.41	$3,979.02
Lodging	Room	3.41	$1,119.64	3.23	$1,035.63
Hospital	1,000 GFA	10.92	$3,585.47	10.33	$3,312.11
Nursing Home	1,000 GFA	6.76	$2,219.58	6.40	$2,052.03
Medical Office	1,000 GFA	35.44	$11,636.37	33.53	$10,750.72
Office and Other Services	1,000 GFA	9.92	$3,257.13	9.39	$3,010.72
Regional Recreational Facility	Acre	2.32	$761.75	2.20	$705.39

Regional Road Impact Fee (RRIF)

6th Edition Year 1 Indexing

Effective 12/01/2020

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