

Request for Proposal (RFP)

Bid No: 18-02-1775VJ

Addendum No. 2

Date: March 15, 2018

To: All Proposers

Subject: Addendum No. 2
Consisting of Twenty-Three (23) Pages

RFP No.: 18-02-1775VJ

Project Name: N27(2-2)(2-3)(4-2)_N7(2-3)(1)_N105(1)1,2&4

Owner: Navajo Division of Transportation

Proposer shall make note of and/or incorporate all changes listed below into the requested Request for Proposal (RFP):

1. On Page 7 of the RFP, PART II , PROPOSAL FORMAT, the first bullet has been revised (highlighted in red and underlined) as follows:

The proposal shall not exceed 20 single-sided pages (maximum 8-1/2" x 11') with a minimum of 10 pt. type. **If Proposer chooses to utilize 11" x 17" size sheets, this shall count as 2 pages.** Submissions exceeding the 20 page limit will be considered non-responsive and will be un-rated. All pages in the proposal, including photos, charts, graphs, exhibits, letter of interest, etc. are counted toward the 20 pages. **The following items do not count towards the 20 page proposal limit and shall be placed in an appendix to the proposal:**

- **SF 1442 – Solicitation, Offer and Award**
- **SF 24 - Bid Bond/Guarantee**
- **SF 28 - Affidavit of Individual Surety**
- **Affidavit of Non-Collusion**
- **Proof of Certificate of Insurance**
- **Statement from bonding agency**
- **Statement from Insurance Carrier**
- **Proof of Navajo Nation Certification**
- **Acknowledgment of Addendums**

2. On Page 9 of the RFP, PART III, B. QUALIFICATIONS AND CAPABILITY, Subsection g., second and third bullet, has been revised (highlighted in red and underlined) as follows:

- Performance Bond. **The successful** Contractor shall provide to the Navajo Nation a Performance Bond as required in Article 11.1 of the Navajo Nation Supplemental General Conditions, Exhibit B, as attached under the EJCDC Construction Contract

Request for Proposal (RFP)

Bid No: 18-02-1775VJ

Addendum No. 2

Documents. **For the Proposal, provide affidavit from surety indicating Contractor's ability to provide said bond.**

- Payment Bond. **The successful** Contractor shall provide to the Navajo Nation a Payment Bond as required in Article 11.2 of the Navajo Nation Supplemental General Conditions, Exhibit B, as attached under the EJCDC Construction Contract Documents. **For the Proposal, provide affidavit from surety indicating Contractor's ability to provide said bond.**

3. On Page 9 of the RFP, PART III, C. EXPERIENCE WITH SIMILAR WORK, first paragraph has been revised (highlighted in red and underlined) as follows:

Prospective Respondent shall demonstrate experience and quality of service rendered on road construction projects with similar scope, size and characteristics, especially if completed on the Navajo Nation, other Indian Reservations and rural communities. List and describe in detail at least three (3) completed projects which establish the Prospective Respondent and Team members' experience with relevant transportation projects of similar size and scope completed in the last **ten** years. Provide the following information for each completed project:

4. On Page 12 of the RFP, Attachments, 1) Bid Schedule; and Other Documents, 2) Contract Book, Exhibit D, the Bid Schedule has been revised and are attached to Addendum 2.
5. On Page 12 of the RFP, Other Documents, 1) Plans (N27 North and N27 South), the N27 North (PROJECT N27(2-3)1,2&4, N27(4-2)2&4, N105(1)2&4, & N7(1)4 N7(2-3)2&4) Plan Sheets 1, 5, 7, 9 & 12 have been revised and are attached to Addendum 2.
6. On Page 12 of the RFP, Other Documents, 2) Contract Book, Exhibit E, the following required Contract forms have been revised and are attached to Addendum 2:
 - SF 24 - Bid Bond/Guarantee
 - SF 28 - Affidavit of Individual Surety
 - SF 25 – Performance Bond
 - SF 25A – Payment Bond
 - SF 1442 – Solicitation, Offer and Award (Updated due date to 3/29/18)

NOTE: The SF 25 – Performance Bond and SF25A – Payment Bond do not have to be completed and submitted for the proposal. The successful contractor will be required to complete these two bond forms. All that is required for the Proposal response is the surety letter(s) providing proof of the Contractor's fiscal ability to obtain these bonds.

Request for Proposal (RFP)

Bid No: 18-02-1775VJ

Addendum No. 2

7. On Page 12 of the RFP, Other Documents, 2) Contract Book, Exhibit F - Supplemental Specifications, Section 561 has been added.
8. The Navajo Division of Transportation has received the following questions regarding this RFP and thereby issues the following responses:

Questions Submitted for RFP	Responses Provided
<p>I was wondering if it's possible to get a Planholder's List for the above-mentioned RFP. I'd like to bid our trucking services to those who are bidding as prime contractors.</p> <p>Is it possible to obtain the sign in list for Pre – Bid meeting for this project?</p> <p>Please provide a copy of the interested bidders list from the mandatory pre Bid at Nazlini chapter.</p> <p>Is there a bidders list available so that we can reach out to the contractors who are planning to bid this project?</p> <p>I have reviewed the website: http://www.navajodot.org/RFP.aspx, looking for the Sign In Sheet for the Mandatory Pre-Proposal Conference held on 02/22/2018, the Sign In Sheet has not been posted. Would it be possible for you to send me a copy of the Sign In Sheet?</p>	<p>There is no plan holders list.</p> <p>NDOT provided the mandatory pre-bid meeting sign-in sheets as part of Addendum #1, pages 7 - 13.</p> <p>http://www.navajodot.org/uploads/files/SKM_C654e18022816400.pdf</p>
<p>Page 7, Proposal Format:</p> <p>The proposal is limited to 20 pages inclusive of all documents. The letter of interest (1), Resumes (5), Bid Bond/Guarantee (1), Project Descriptions (3), Gantt Chart (1), Equipment list (1), Proof of Certificate of Insurance (1), Statement from bonding agency (1), Statement from Insurance Carrier (1), and proof of Navajo Nation Certification (1) will utilize a total of 16 pages. This will only leave 4 remaining pages for all of the narrative response to the RFP.</p>	<p>NDOT has reviewed the request and the following items will be allowed to not count towards the 20-page limit. The following items from the requested list can be placed in an appendix to the Proposal.</p> <ul style="list-style-type: none">• Bid Bond/Guarantee• Proof of Certificate of Insurance• Statement from bonding agency• Statement from Insurance Carrier• Proof of Navajo Nation Certification

Request for Proposal (RFP)

Bid No: 18-02-1775VJ

Addendum No. 2

<p>We request that the following documents are not included in the 20 page limit:</p> <ul style="list-style-type: none">• Letter of interest• Resumes• Bid Bond/Guarantee• Project Descriptions• Proof of Certificate of Insurance• Statement from bonding agency• Statement from Insurance Carrier• Proof of Navajo Nation Certification <p>The following forms are included with the price proposal documents, should these forms be included with the price proposal in a separate sealed envelope or with the written proposal. If they are required with the written proposal instead of the sealed price proposal, it is our understanding these forms will not be counted towards the 20 page limit.</p> <ul style="list-style-type: none">• Exhibit E “Required Contract Forms” including SF 1442 and addendum acknowledgement• Bid Bond Forms SF 24 1-2 (and power of attorney by surety)• Affidavit of Non-Collusion	<p><u>The following paragraph on page 7 (in Part II) is revised as follows:</u></p> <p>The proposal shall not exceed 20 single-sided pages (maximum 8-1/2” x 11’) with a minimum of 10 pt. type. If Proposer chooses to utilize 11” x 17” size sheets, this shall count as 2 pages. Submissions exceeding the 20 page limit will be considered non-responsive and will be unrated. All pages in the proposal, including photos, charts, graphs, exhibits, letter of interest, etc. are counted toward the 20 pages. The following items do not count towards the 20 page proposal limit and shall be placed in an appendix to the proposal.</p> <ul style="list-style-type: none">• SF 1442 – Solicitation, Offer and Award• SF 24 - Bid Bond/Guarantee• SF 28 - Affidavit of Individual Surety• Affidavit of Non-Collusion• Proof of Certificate of Insurance• Statement from bonding agency• Statement from Insurance Carrier• Proof of Navajo Nation Certification• Acknowledgment of Addendums
<p>Page 7, Proposal Format</p> <p>Please consider allowing the use of 11x17 pages for graphics, tables, organization charts, schedules, and other information requiring more space, provided that each 11x17 page used shall count as 2 pages.</p>	<p>NDOT will allow the use of 11” x 17” pages in the proposal. They will count as 2 pages.</p>
<p>The timeframe for prior project experience is 5 years. In the past 5 years there has been limited contracts on the Navajo Nation that would meet this criteria. However, in the last 10 years, there has been a significant amount of comparable work within the Nation. We request that you extend the eligible years from 5 to 10 in order to capture the</p>	<p><u>The following paragraph on page 9 (in Part III) is revised as follows:</u></p> <p>C. EXPERIENCE WITH SIMILAR WORK:</p> <p>Prospective Respondent shall demonstrate experience and quality of service rendered on road construction projects with similar</p>

Request for Proposal (RFP)

Bid No: 18-02-1775VJ

Addendum No. 2

significant pool of relevant Navajo Nation projects. Please clarify.	scope, size and characteristics, especially if completed on the Navajo Nation, other Indian Reservations and rural communities. List and describe in detail at least three (3) completed projects which establish the Prospective Respondent and Team members' experience with relevant transportation projects of similar size and scope completed in the last ten years. Provide the following information for each completed project:
Part III, B. Qualifications and Capability, d. Key Individuals Please define the term Key Subcontractors used for construction services on this project in terms of providing supporting resumes and two references for each position.	Key Subcontractors = Subcontractors that are completing any major work categories (earthwork, drainage, paving, signing/stripping, fencing, erosion control, traffic control, etc.) or total costs for their services add up to at least 5% of the total bid amount.

Questions Submitted for Plans	Responses Provided
Please provide an electronic copy of the earthwork analysis for takeoff and pricing comparisons for the RFP Bid No. 18-02-1775VJ N-27 North and South. We can utilize the following file types for takeoff purposes. Land.xml files, .txt files, .dwg files, Raw survey data Or the in station comparisons created by the engineering company (excel spreadsheets)	NDOT provided roadway cross-section drawings on the NDOT website for contractor download and use. http://www.navajodot.org/RFP.aspx
Can you verify the quantity for bid item 60101-0000 (Minor Concrete Class A(AE))? The bid schedule has 569m ³ . On sheet 9, there are tables for bid item 60101-1000 Minor Concrete. Is there a mistake on those tables shown on sheet 9?	The total quantity for both projects is 320.6 cm and is measured and paid for to the nearest tenth of a cm; so the bid schedule should reflect one significant figure past the decimal. The quantity table on sheet 7, N27 North is incorrect. The quantity of 119.8 cm on N27 south and 200.8 cm for N27 North are the correct quantities. The quantities on sheet 9 are correct except for the truck apron quantity

Request for Proposal (RFP)

Bid No: 18-02-1775VJ

Addendum No. 2

Should they be labeled 60101-0000?	<p>which is under bid item 60101-1000 measured by the (sm).</p> <p>The overall quantity table, Sheet 7, North Leg shows the bid item correctly. It is 60101-0000 and the bid schedule should show the same. Also on Sheet 56, 57, 59 & 60 the bid item numbers are correct. Bid Item 60101-1000 is minor concrete for the truck apron work. So only the error is on the table of sheet 9 for the truck apron that should not have been in this table but separate. The correct quantity for the table on Sheet 9 is 133.6 cm.</p>
Can you point out the locations on the drawings for the type IV-1 spillway for the concrete curb? The bid schedule shows 4 each, but I cannot find them on the drawings or a detail. The only spillway shown on the drawings are the Type 3.	<p>There are no Type IV spillways because we eliminated them at the bridge and went with riprap spillways. This bid item needs to be removed from the bid schedule.</p> <p>See corrected Bid Schedule form attached to Addendum 2.</p>
Can you clarify three each of bid item 61502-1000, Drive pad concrete? Is this part of constructing the new driveways? If so, what is the thickness of the driveway? A detail would be appreciated.	<p>There are three driveways at the roundabout which is the location and the details for it is on Sheet 75 "wing Type Driveway".</p>
Can you verify the quantity and unit measure for bid item 60101-1000 (Concrete, Truck Apron, Class A(AE) rough broom finish on PCCP brown colored with Chevron (38 each) symbol)?	<p>The measurement is correct by the square meter and it is 259.11 square meter. The quantity on sheet 7 is incorrect. Only the chevron signs have the Navajo red color and the rest is brown color concrete.</p>
Detail "B" on sheet 49 of 105 states an area of 259.11 m2 for the truck apron. On sheet 9 of 105, the area for the outside edge (Truck Apron) shows 258.62 m2. For this bid item, does this include minor concrete and do we need to include cost for the PCCP formed Chevron color in dark red?	<p>The quantity on Sheet 9 is incorrect. The correct quantity is 259.11 square meter and should be reflected in the bid schedule. The forming and colors of the minor concrete need to be included in the unit price and total price for this bid item by the square meter.</p>

Request for Proposal (RFP)

Bid No: 18-02-1775VJ

Addendum No. 2

In reference to page 36 of 105 in the plans for project N27(2-3)1,2&4, N27(4-2)2&4; can an acceptable lane width be provided for the temporary detours? Will the existing asphalt be able to be allowed to remain or will it need to be replaced with the proposed minimum structural section?	<p>An acceptable lane width for the detour would be eleven (11) feet.</p> <p>It is up to the Contractor to develop a Temporary Traffic Control Plan (TTCP) and submit it for review and approval prior to implementation. Any of the suggested detour roads/streets that the Contractor proposes to use will need to be an all-weather surface and the Contractor must maintain it until it is no longer needed. The surface does not necessarily have to be paved.</p>																				
Please verify the quantity for the 602 bid items. The P&P sheets do not match the bid schedule on multiple items.	<p>The Plan & Profile (P&P) sheets are correct unless the bidder can be more specific as to sheet number or drainage structure station.</p> <p>Keep in mind that the quantities shown on the bid schedule and plans should match, but they are just estimates. The Contractor gets paid for the actual quantities installed and accepted by the Government.</p>																				
Please verify the quantity for the 61903 items. The P&P sheets do not match the bid schedule quantities.	<p>The total quantity on both sets of design plans is as follows:</p> <table><tr><td></td><td>North</td><td>South</td><td>Total</td></tr><tr><td>61903-0310</td><td>19</td><td>5</td><td>24</td></tr><tr><td>61903-0710</td><td>6</td><td>5</td><td>11</td></tr><tr><td>61903-1010</td><td>1</td><td>0</td><td>1</td></tr><tr><td>61903-1210</td><td>1</td><td>0</td><td>1</td></tr></table> <p>The bid schedule should reflect these quantities.</p>		North	South	Total	61903-0310	19	5	24	61903-0710	6	5	11	61903-1010	1	0	1	61903-1210	1	0	1
	North	South	Total																		
61903-0310	19	5	24																		
61903-0710	6	5	11																		
61903-1010	1	0	1																		
61903-1210	1	0	1																		

Questions Submitted for Contract Book	Responses Provided
Please confirm the contract Standard Specification is FP-2003 or FP-2014.	The contract Standard Specification is FP-2003.
Per the RFP a bid bond is required by the Special Contract Requirement Clause NN-228-1, under Clause NN-228-1 the bid guarantee is on NN-24, Bid Bond form. (see	<p>Please see the attached revised forms.</p> <ul style="list-style-type: none"> • SF 24 - Bid Bond/Guarantee • SF 28 - Affidavit of Individual Surety • SF 25 – Performance Bond

Request for Proposal (RFP)

Bid No: 18-02-1775VJ

Addendum No. 2

Exhibit E for forms), the Bid Bond form under Exhibit E shows the Obligation is to the United States of America not the Navajo Nation, is there another Bid Form that needs to be used?	<ul style="list-style-type: none">• SF 25A – Payment Bond• SF 1442 – Solicitation, Offer and Award<ul style="list-style-type: none">○ (Updated due date to 3/29/18)
We will be bidding on the N27 Nazlini project. I saw a scale for weight limits and it took me awhile to figure it out. The way I see it is the trucks hauling on the highway to project sight cannot be over 76,800 lbs. I think it would be well if it was stated more clearly in and addendum. That the weight limit for hauling on NDOT / BIA roads is 76,8000 lbs. If it was stated then no now can say I didn't see it or could figure it out. If I am wrong please let me know. I do know that one trucker said he could haul 80,000 lbs all day. Could you please clarify the weight limit?	The weight limits is 38.4 tons = 76,800 lbs. (English) or 34.8 ton (metric) distributed across all axles.
The Load Restriction section of the contract states that a permit may be applied for from the Regional Road Maintenance Engineer for exceeding the load restrictions imposed on all BIA and Navajo Routes. How long does the application process take? Please provide the contact information for the County and BIA/NDOT Road Maintenance Engineers? If permit is not accepted for any circumstance the maximum load per the spec allowed is 76,787 lbs. Please verify.	<p>The weight limits is 38.4 tons = 76,800 lbs. (English) or 34.8 ton (metric) distributed across all axles. Anything over these amounts will require a permit from the owners of the roadways used. It will take up to 2 weeks to review and respond to the permit request.</p> <p>BIA – Harold Riley - (505) 863-8281</p> <p>Apache County - Patrick Sandoval – District I Manager – (928) 674-5664</p>
<p>In reference to Supplemental Specification 153.02 regarding the Quality Control Manager (QCM)</p> <p>Can the QCM be an employee of the same company that provides the QC materials testing lab, inspectors, testers and Record Keeper? Or is this position meant to be independent of the QC firm?</p>	The QCM cannot be an employee of the same company that provides the QC materials testing lab, etc. The Government will designate who the QCM is and will be paid directly by the Government. This position is independent of the QC firm.

Request for Proposal (RFP)

Bid No: 18-02-1775VJ

Addendum No. 2

<p>Does Bid item 15301-0020 Contractor Quality Control include the Quality Control Manager (QCM) and the duties of the QCM? Or is the position of QCM meant to be a separate bid item and completely independent of the Quality Control line item?</p> <p>Can the Record Keeper perform other QC duties?</p> <p>Can the Record Keeper be an employee of the QC firm?</p>	<p>Bid item 15301-0020 Contractor Quality Control does not include the QCM. There is no bid item for the QCM as the Government is paying for the QCM directly on their own (see previous answer).</p> <p>Yes</p> <p>Yes</p>
<p>Does Bid Item 15301-0020 Contractor Quality Control include the onsite Materials Testing Laboratory and all equipment? Or is this facility and equipment meant to be a separate bid item?</p>	<p>No. Please refer to Exhibit C, Special Contract Requirement #10 Furnishing of a Contractor Field Testing Laboratory.</p> <p><i>“The laboratory, utilities (including all associated monthly costs), accessories, and all equipment required by the contract requirements including furnishing of a laboratory site shall be included in the unit price bid for mobilization...”</i></p>
<p>In reference to section 203.03 in the Navajo Nation Supplemental General Conditions, where is salvageable material to be stockpiled?</p>	<p>See General Note 20 on Sheet 5 of the North plans and Sheet 19 of the South Leg plans.</p> <p>Salvageable culverts shall be delivered to the BIA South Maintenance Storage Yard in Chinle, which is located approximately at N27 Station 60+570 LT.</p>
<p>In reference to section 301 in the Navajo Nation Supplemental General Conditions, will blending the virgin material with salvaged materials (AB and Millings) from the existing roadways be allowed?</p>	<p>Please refer to the SEQUENCE OF PAVEMENT RECONSTRUCTION notes on Sheet 3 of 105 of the N27 North plans and Sheet 2 of 71 of the N27 South Plans concerning this question.</p>
<p>In reference to section 402.03(a) in the Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, will recycled asphalt pavement use be allowed on this project?</p>	<p>See previous response above. Only existing asphalt and base from this project will be used as Cold Recycled Aggregate Base Course.</p>

Request for Proposal (RFP)

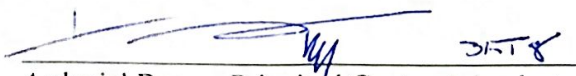
Bid No: 18-02-1775VJ

Addendum No. 2

Will provisions be made for permanent material price increases throughout the duration of this project? Specifically paving oils and fuel. Most suppliers will only guarantee pricing for a 30 days.	No, the contract does not allow for adjustments in unit prices due to market conditions. Refer to Exhibit F - Supplemental Specification Section 109.06.
For subgrade approval prior to ABC placement can the government provide a time frame for approving the survey data prior to the placement of the ABC?	The time needed to review and provide a response to the final x-section survey data before ABC placement depends on the accuracy of the data. If the data is prepared and submitted as explained in the supplemental specification for Section 152, then it takes less than a week to respond. This survey data is used to calculate the final earthwork for the project so it has to be very accurate and prepared as explained in Section 152 and Section 109.02.
On sheet B2 of 105 for the epoxy injection/mortar patching, it refers to Section 561 of the Supplemental however in the FP-03, section 561 states "Reserved". Please clarify.	Please refer to the attached supplemental specification Section 561.

END OF ADDENDUM NO. 2

Thank you for your interest!


Ardaniel Begay, Principal Contract Analyst
Project Contact Person



BID SCHEDULE
NAVAJO NATION DIVISION OF TRANSPORTATION

PROJECT: N27(2-2)(2-3)(4-2)/N7(2-3)(1)/N105(1)1,2&4
LENGTH: 17.47 km

Date: March 15, 2018

ITEM	DESCRIPTION	Quantity	Units	Unit Bid Price	Total Price
10901-0000	Extra & Miscellaneous Work Under Section 109.02(m)	All Required	Lump Sum	\$450,000.00	\$450,000.00
15101-0000	Mobilization	All Required	Lump Sum	\$	\$
15201-0000	Construction survey and staking	All Required	Lump Sum	\$	\$
15301-0020	Contractor Quality Control	15,000.0	Man Hr	\$	\$
15701-0000	Temporary Erosion Control	All Required	Lump Sum	\$	\$
15708-1000	Temporary Straw Mulching	38.6	ha	\$	\$
20102-0000	Clearing and Grubbing	All Required	Lump Sum	\$	\$
20304-1000	Removal of Structures & Obstructions	All Required	Lump Sum	\$	\$
20401-0000	Roadway Excavation	414,467.0	m3	\$	\$
20403-0000	Unclassified Borrow	65,466.0	m3	\$	\$
20425-2000	Furrow Ditches	600.0	m	\$	\$
20443-1000	Earthen dike & berms, type A	580.0	m	\$	\$
20443-2000	Earthen dike & berms, type B	440.0	m	\$	\$
20601-0000	Development of Water Supply	80.3	M-Liter	\$	\$
21101-2000	Roadway obliteration, method 2	61,700.0	m2	\$	\$
21301-4000	Subgrade Stabilization with RoadBond EN-1, 152mm depth	101,420.0	m2	\$	\$
25101-2000	Placed Riprap, Class 2	2,690.1	m3	\$	\$
25101-3000	Placed Riprap, Class 3	70.5	m3	\$	\$
25112-2000	Wire enclosed Riprap, Class 2	1,955.6	m3	\$	\$
25302-1000	Gabions, Aluminized Coated, Class 2	477.0	m3	\$	\$
25327-1000	CC20; Articulated Concrete Revetment Mat, 64mm depth	500.0	m2	\$	\$
25327-1020	CC45; Articulated Concrete Revetment Mat, 140mm depth	5,001.0	m2	\$	\$
30101-2000	Untreated Aggregate Base, Grade "Special"	115,204.0	t	\$	\$
40201-0500	Hot Asphaltic Concrete Pavement, Class B, Grade "B"	31,263.7	t	\$	\$
40502-0800	Asphalt Cement, Grade PG 58-28	1,877.2	t	\$	\$
40802-0902	Cold Recycled Asphalt Base Course, various Thickness	8,862.9	t	\$	\$
41101-5000	Asphalt Prime Coat, Penetrating Emulsified Prime- PEP	242.2	t	\$	\$
41201-1000	Asphalt Tack Coat, Grade SS-1	39.2	t	\$	\$
41301-0000	Asphalt Milling, 356 mm depth	11,687.2	t	\$	\$
55201-0200	Structural Concrete Class A(AE)	32.0	m3	\$	\$

ITEM	DESCRIPTION	Quantity	Units	Unit Bid Price	Total Price
55207-0000	Repair Concrete, Epoxy Injection and Patching	All Required	Lump Sum	\$	\$
55210-0000	Seal Concrete surface	366.0	m2	\$	\$
55401-2000	Epoxy Coated, Reinforcing Steel, grade 420	2,928.0	kg	\$	\$
60101-0000	Minor Concrete Class A(AE)	320.9	m3	\$	\$
60101-1000	Concrete, Truck Apron, Class A(AE) rough broom finish on PCCP brown colored with Chevron (38 each) symbol.	259.1	m2	\$	\$
60201-0810	610 mm Corrugated Steel Pipe Culvert- Aluminized	592.3	m	\$	\$
60201-0910	762 mm Corrugated Steel Pipe Culvert- Aluminized	159.2	m	\$	\$
60201-1010	914 mm Corrugated Steel Pipe Culvert- Aluminized	548.1	m	\$	\$
60201-1110	1067 mm Corrugated Steel Pipe Culvert- Aluminized	72.5	m	\$	\$
60201-1310	1372 mm Corrugated Steel Pipe Culvert- Aluminized	114.6	m	\$	\$
60201-1810	2134 mm Corrugated Steel Pipe Culvert- Aluminized	97.5	m	\$	\$
60202-0510	711mm x 508mm Corrugated Steel Pipe Arch- Aluminized	178.2	m	\$	\$
60202-0610	889mm x 610mm Corrugated Steel Pipe Arch- Aluminized	506.0	m	\$	\$
60202-0710	1067mm x 737mm Corrugated Steel Pipe Arch- Aluminized	184.1	m	\$	\$
60202-0810	1245mm x 838mm Corrugated Steel Pipe Arch- Aluminized	367.0	m	\$	\$
60202-0910	1448mm x 965mm Corrugated Steel Pipe Arch- Aluminized	651.2	m	\$	\$
60202-1010	1626mm x 1092mm Corrugated Steel Pipe Arch- Aluminized	59.2	m	\$	\$
60202-1110	1803mm x 1194mm Corrugated Steel Pipe Arch- Aluminized	598.8	m	\$	\$
60202-1210	1953mm x 1321mm Corrugated Steel Pipe Arch- Aluminized	71.3	m	\$	\$
60202-5010	2235mm x 1372mm Reinforced Concrete Pipe-Arch	242.1	m	\$	\$
60210-0810	End Section for 610 mm Pipe Culvert- Aluminized	60	Each	\$	\$
60210-0910	End Section for 762 mm Pipe Culvert- Aluminized	13	Each	\$	\$
60210-1010	End Section for 914 mm Pipe Culvert- Aluminized	24	Each	\$	\$
60210-1110	End Section for 1067 mm Pipe Culvert- Aluminized	3	Each	\$	\$
60210-1310	End Section for 1372 mm Pipe Culvert- Aluminized	4	Each	\$	\$
60211-0910	End Section for 711mm x 508mm CSPA - Aluminized	20	Each	\$	\$
60211-1010	End Section for 889mm x 610mm CSPA - Aluminized	23	Each	\$	\$
60211-1110	End Section for 1067mm x 737mm CSPA - Aluminized	11	Each	\$	\$
60211-1210	End Section for 1245mm x 838mm CSPA - Aluminized	14	Each	\$	\$
60211-1310	End Section for 1448mm x 965mm CSPA - Aluminized	25	Each	\$	\$
60211-1510	End Section for 1803mm x 1194mm CSPA - Aluminized	12	Each	\$	\$
60211-1610	End Section for 1956mm x 1321mm CSPA - Aluminized	3	Each	\$	\$
60212-5010	Elbow, 2235mm x 1372mm Reinforced Concrete Pipe-Arch	8	Each	\$	\$

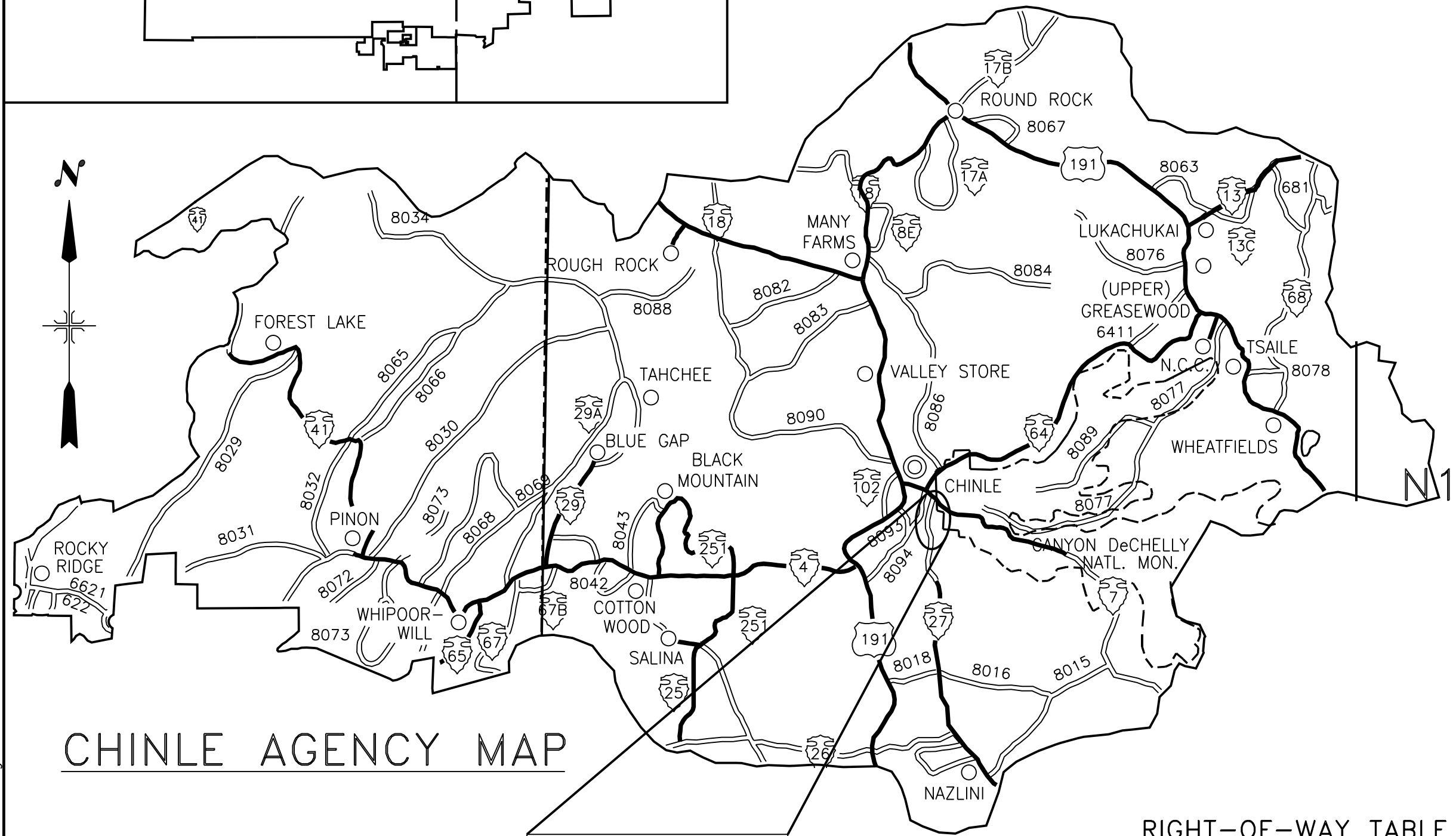
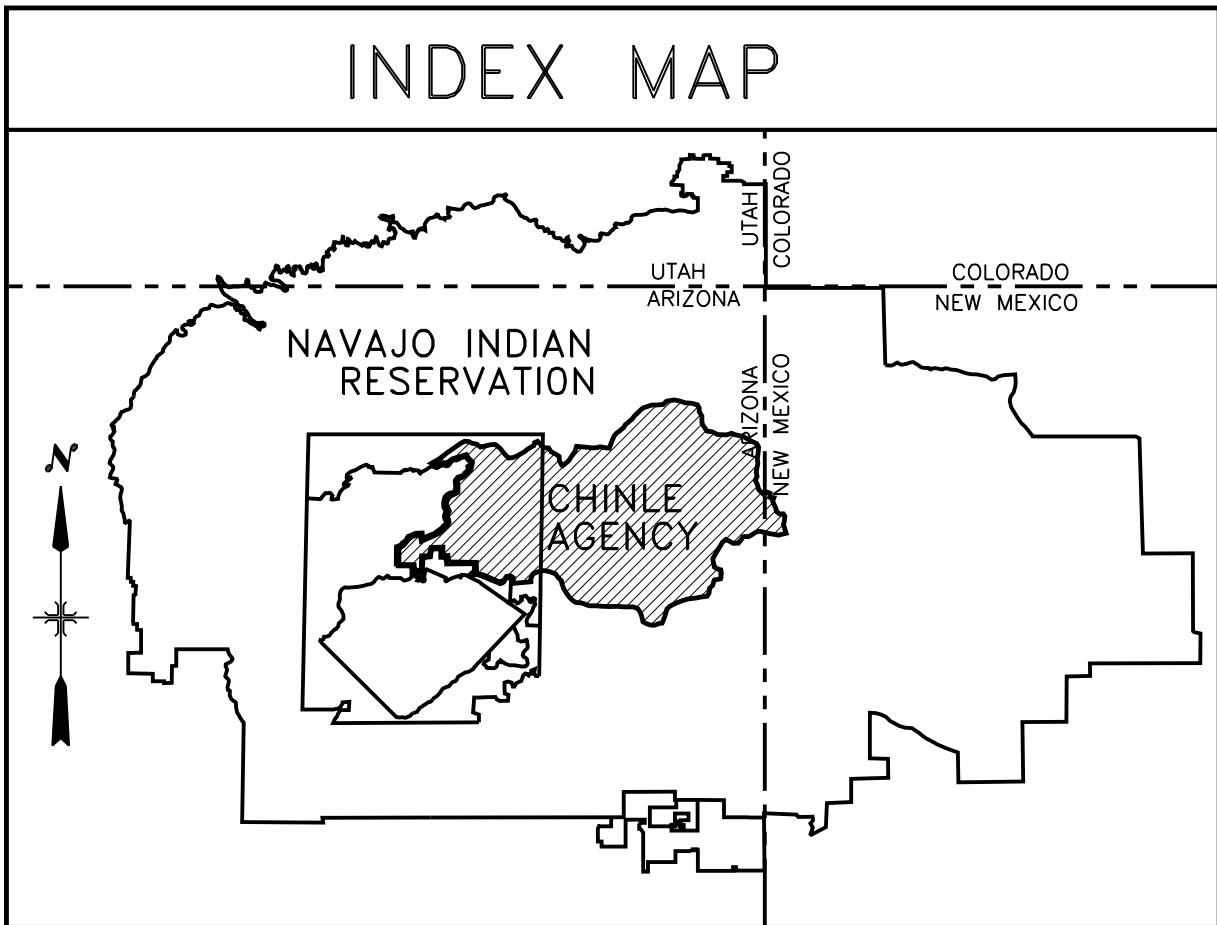
ITEM	DESCRIPTION	Quantity	Units	Unit Bid Price	Total Price
60222-2000	2.44m span x 2.44m rise precastCBC, 2-barrel w/wingwalls & concrete apron	34.1	m	\$	\$
60222-3250	3048mm span x 3048mm rise single barrel precast CBC	29.0	m	\$	\$
60224-2000	2.44m span x 2.44m rise precastCBC, 4-barrel w/wingwalls & concrete apron	31.7	m	\$	\$
60401-0000	Manhole Installation	2	Each	\$	\$
60701-1000	Removing, Cleaning, Stockpiling CSPC	538.8	m	\$	\$
60812-0300	Concrete Spillway, Type 3	29	Each	\$	\$
60902-1000	Curb & gutter, concrete, 305mm depth	2,933.0	m	\$	\$
61501-0100	Sidewalk, concrete, 1.22m width	3,350.3	m2	\$	\$
61502-1000	Drive pad, concrete	3	Each	\$	\$
61505-1000	Handicap ramp, concrete w/ Tactile ADA PAD	33	Each	\$	\$
61701-5000	Guardrail System, SGR04b, Type PDE02 w/ SKT-350 end treatment	691.0	m	\$	\$
61707-0000	Structure Transition Railing	31.0	m	\$	\$
61801-0000	Concrete jersey barrier	146.6	m	\$	\$
61901-1000	Fence, 5-strand barbed wire	33,562.7	m	\$	\$
61902-0910	Type 1 gate for 4.5m wide turnout	1	Each	\$	\$
61902-1300	Type 1 gate (4200 mm)	2	Each	\$	\$
61902-2310	Type 2 gate	1	Each	\$	\$
61903-0310	Cattle guard, 2 unit 4900 mm with gate	24	Each	\$	\$
61903-0710	Cattle guard, 3 unit 7190 mm with gate	11	Each	\$	\$
61903-1010	Cattle guard, 4 unit 9480 mm with gate	1	Each	\$	\$
61903-1210	Cattle guard, 5 unit 11770 mm with gate	1	Each	\$	\$
61921-1000	Remove and reset fence	1,698.8	m	\$	\$
62101-0000	Right-of-way monument	103	Each	\$	\$
62102-0000	Reference Marker	103	Each	\$	\$
62510-1000	Seeding, Dry Method	38.6	ha	\$	\$
62901-1100	Rolled erosion control product, Type IV	12,267.0	m2	\$	\$
63302-2001	Sign Installation, 1 Post - 38mm x 38mm square steel tube	4.3	m2	\$	\$
63302-2002	Sign Installation, 1 Post - 44mm x 44mm square steel tube	36.2	m2	\$	\$
63302-2003	Sign Installation, 1 Post - 50mm x 50mm square steel tube	16.1	m2	\$	\$
63302-2006	Sign Installation, 2 Post - 50mm x 50mm square steel tube	28.9	m2	\$	\$
63302-2007	Sign Installation, 2 Post - 57mm x 57mm square steel tube	17.1	m2	\$	\$
63308-2000	Object Marker, type 2, 38mm x 38mm steel square tube	130	Each	\$	\$
63308-3010	Object Marker, type 3, 38mm x 38mm steel square tube	4	Each	\$	\$

ITEM	DESCRIPTION	Quantity	Units	Unit Bid Price	Total Price
63308-3020	Object Marker, type 3, 51mm x 51mm steel square tube	4	Each	\$	\$
63309-0030	Delineator, type "1a", 38mm x 38mm steel square tube	28	Each	\$	\$
63309-0040	Delineator, type "1b", 38mm x 38mm steel square tube	89	Each	\$	\$
63318-1020	Milepost marker, 38mm x 38mm steel square tube	22	Each	\$	\$
63401-1510	Pavement Markings, Type "H", Solid Yellow, 102mm	14,648.0	m	\$	\$
63401-1520	Pavement Markings, Type "H", Solid White, 102mm	32,009.5	m	\$	\$
63401-1610	Pavement Markings, Type "H", Broken Yellow, 102mm	18,783.3	m	\$	\$
63401-1620	Pavement Markings, Type "H", Broken White, 102mm	7,403.1	m	\$	\$
63401-1621	Pavement Markings, Type "H", Broken White, 203mm	82.0	m	\$	\$
63401-1622	Pavement Markings, Type "H", Broken White, 457mm	36.3	m	\$	\$
63405-2900	Pavement Markings, Type "H", turn arrow	53	Each	\$	\$
63405-2950	Pavement Markings, Type "H", straight arrow	4	Each	\$	\$
63405-3000	Pavement Markings, Type "H", straight/turn arrow combinati	12	Each	\$	\$
63405-3050	Pavement Markings, Type "H", "ONLY" word message	6	Each	\$	\$
63405-3260	Pavement Markings, Type "H", "STOP" bar, solid white	31	Each	\$	\$
63405-3280	Pavement Markings, Type "H", zebra crosswalk, solid white	10	Each	\$	\$
63405-3290	Pavement Markings, Type "H", Diagonal striping, solid yellow	4	Each	\$	\$
63502-3000	Raised Pavement Markers, type MS200 "solarmarkers" Yellow Flashing with shaft	96	Each	\$	\$
63501-0000	Temporary Traffic Control	All Required	Lump Sum	\$	\$
63502-3000	Temporary traffic control, Raised Pavement Marker	11,321	Each	\$	\$
63509-1000	Flagger	15,178.0	Man Hr	\$	\$
63600-1100	Pedestrian Crossing LED Programable Flashing Beacon, Solar Powered	2.0	Each	\$	\$
63612-1300	Luminaire, Solar led street light with 9.14m pole	5	Each	\$	\$
63621-1000	Utility box, pullbox	1	Each	\$	\$
Subtotal:				\$	
Navajo Nation Tax (5%):				\$	
Total Bid Price:				\$	

SCOPE-OF-WORK

The proposed work consists of furnishing all labor, material, equipment and incidentals necessary for construction of 17.47 km of constructing grade, drainage, aggregate base course, hot asphaltic concrete pavement and miscellaneous construction in accordance with the specification and design drawings for this Project. The quantities listed for each item is estimated and the Unit Price is applicable to each as given in the Bid Schedule above. The final pay quantity measurements shall be rounded to the significant figures given in this bid schedule for the final pay estimate. Payment for work performed on Items furnished will be made in accordance with Sub-Section 109.05, Scope of Payments of FP-03. **The Unit Bid Price must include all overhead, profit, and bonding.**

I:\DESIGN\Users\DESIGN3\CURRENT PROJECTS\N35_Chinle\N27(2-3)\DESIGN DATA_072413\CADD Drawings - North\01_N27 TitleSht rev 081517.dgn

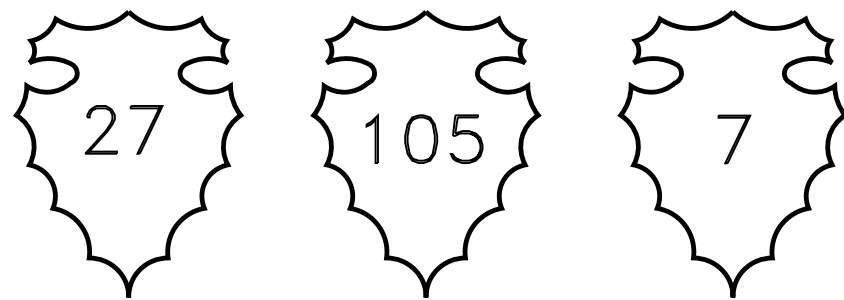


UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF INDIAN AFFAIRS

NAVAJO REGION D.O.T.

ROUTES



PROJECT N27(2-3)1,2&4, N27(4-2)2&4,
N105(1)2&4, & N7(1)4 N7(2-3)2&4 w/Roundabout
GRADE, DRAIN & AGGREGATE BASE COURSE,
BRIDGE, HOT ASPHALTIC CONCRETE PAVEMENT
AND MISCELLANEOUS CONSTRUCTION
N7(1) PAVEMENT MARKING ONLY
8.46 km ID. NO. N35275

APPROVED
By Harold J Riley-PE at 3:24 pm, Mar 13, 2018

SHEET No.	DESCRIPTION
1	Cover Sheet
2-4	Typical Cross Section Details
5	General Notes
6	Horizontal & Vertical Geometry Data Tables
7-11	Estimated Quantity Table
12	Drainage Structure Quantity Table
13	Gasket Hbnd Details
14	Drainage Structure End Section Details
15-23	N27(2-3) Plan & Profile Sheets
24-27	N27(4-2) Plan & Profile Sheets
28	N27(4-2) Sub-Surface Drainage Plan & Profile Sheet
29	Plan & Profile Sheets
30	Plan & Profile Sheets
31-33	Plan & Profile Sheets
34	Temporary Traffic Control Details
35	Suggested Temporary Traffic Control Details
36	Suggested Temporary Community Detour Details
37-39	Permanent & Temporary Sign Details
40-44	Pavement Marking Details
45-46	Permanet Sign Post & Hardware Details
46	Permanet Sign Post & Hardware Details
47	N7 & N27 Roundabout Grading Plan
48	Splitter Island Layout Details
49	Roundabout Typical X-Sections, Layout, And Dome Details
50	N7 Roundabout-Solar Street Lighting & Electrical Plan
51	N7 Roundabout-Solar Led Lighting Layout Plan
52	Solar Led Street Lighting
53	N7 Roundabout-Solar Led Lighting Details
54	N7 Roundabout Alignment Plan Layout
55	Reinforced Concrete Pipe Arch: Sub-Surface Drainage
56-57	Reinforced Concrete Pipe Arch Headwall Details
61-62	Pre-Cast Concrete Box Culvert Layout Detail
63-70	Pre-Cast Concrete Box Culvert Detail
71-72	Concrete Barrier Details
73	Sta. 58+632 Plan & Profile Sheet
74	Concrete Spillway Details
75	Curb, Gutter & Sidewalk Details
76	Standard Pipe Installation Details
77	Wire Enclosed Riprap Downdrain At Bridge Location
78	Placed Riprap Apron Details
79	Placed Riprap Check Dam Details
80-81	Stormwater Pollution And Erosion/Sediment Control Details
82-83	SGR04 Standard Guardrail Detail
84-85	Guardrail End Treatment Skt-350
86	Guardrail Transition & Thrie Beam Details
87	Standard Fencing Details
88	Standard Pre-Cast Cattleguard Details
89	Standard Cattleguard Wing Brace Details
90	Standard Mile Post & Square Steel Post Details
91	Right-Of-Way Monuments & Markers Details
92-93	Standard Delineators & Object Markers Details
94	Manhole Installation Details
95-98	N7(1) Striping & Signing Details
99	Pedestrian Crossing Flashing Beacon Details
100	N27(2-3) & N105(1) Pipe Cross Section
B1-B5	N27(2-3) Bridge Plans

LEGEND

STATE LINE	-----
RESERVATION LINE	-----
COUNTY LINE	-----
TOWNSHIP or RANGE LINE	-----
SECTION LINE	-----
NATIONAL FOREST LINE	-----
HIGHWAY RIGHT-OF-WAY LINE	-----
UNFENCED PROPERTY	-----
SECTION CORNER AND 1/4 CORNER	-----
POWER LINE AND POLES	-----
TELEPHONE LINE AND POLES	-----
POLE GUY AND ANCHOR	-----
TRAFFIC SIGN	-----
GUARD RAIL	-----
DELINEATORS	-----
CHEVRON SIGN	-----
BARBED WIRE FENCE	-----
WOVEN WIRE FENCE	-----
CATTLE GUARD	-----
CULVERTS	-----
CONCRETE BOX CULVERTS	-----
GROUND LINE - EARTH	-----
GROUND LINE - ROCK	-----
EXISTING ROAD	-----
SIDE ROAD TURNOUT	-----
TREES and SHRUBS	-----
CHANNEL or DITCH	-----
EARTHEN DIKE and BERM	-----
RIPRAP	-----
DWELLING	-----
RIGHT-OF-WAY MONUMENT	-----
TELEPHONE PEDESTAL	-----
IRRIGATION DITCH	-----
FURROW DITCH	-----
EROSION CONTROL TYPE IV FABRIC	-----
OBLITERATION OF EXISTING ROAD	-----

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF INDIAN AFFAIRS NAVAJO REGIONAL OFFICE * DIVISION OF TRANSPORTATION	
RECOMMENDED APPROVAL	APPROVAL
AGENCY ROAD ENGINEER DATE 9/5/17	Acting REGIONAL DIRECTOR DATE 9-7-17
DIVISION MANAGER DATE 8/29/17	
PLANNING & DESIGN BRANCH CHIEF DATE	

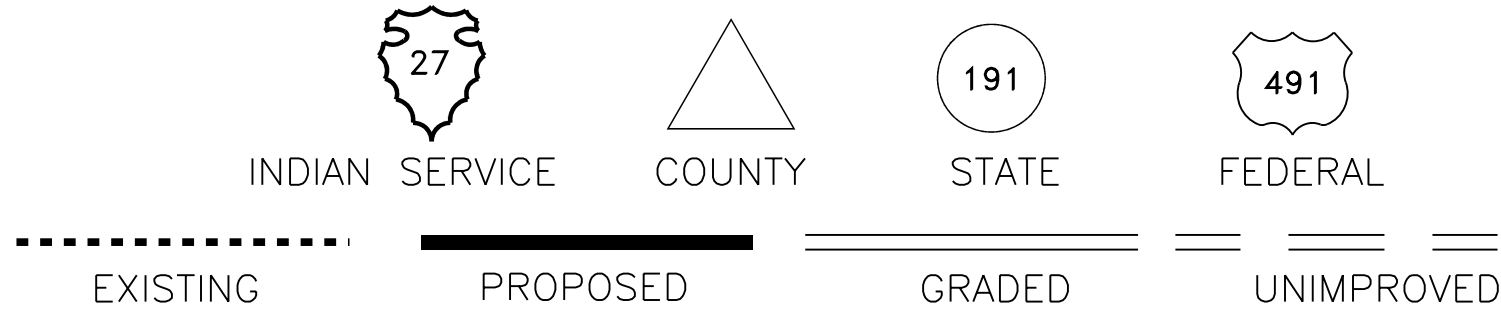
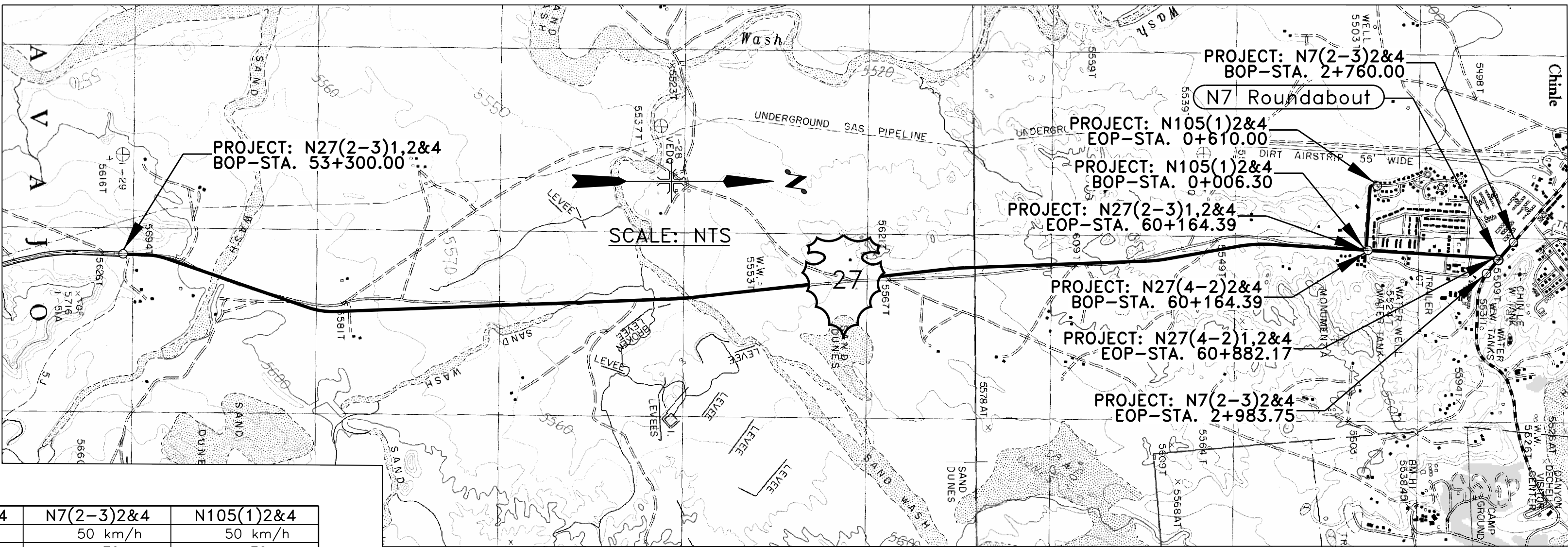
ALIGNMENT TABLE			
PROJECT: N27(2-3)1,2&4			
LOCATION	STATION	LENGTH (m)	LENGTH (km)
BOP	53+300.000	526.198	0.526
BRIDGE: BOP	53+826.198		
		39.283	0.039
BRIDGE: EOP	53+865.481		
		6,298.905	6.299
EOP	60+164.386		
Sub-Total:		6,864.386	6.864

PROJECT: N27(4-2)2&4			
LOCATION	STATION	LENGTH (m)	LENGTH (km)
BOP	60+164.386	681.614	0.682
EOP	60+846.00		
Sub-Total:		681.614	0.682

PROJECT: N105(1)2&4			
LOCATION	STATION	LENGTH (m)	LENGTH (km)
BOP	0+006.30		
		603.700	0.604
EOP	0+610.00		
Sub-Total:		603.700	0.604

PROJECT: N7(2-3)2&4			
LOCATION	STATION	LENGTH (m)	LENGTH (km)
BOP/APPROACH-W	2+747.899		
		96.236	0.096
POI/APPROACH-W	2+844.135		
RAB-BEGIN	0+000.00		
		160.221	0.160
RAB-END	0+160.221		
POI/APPROACH-E	2+904.135		
		67.517	0.068
EOP/APPROACH-E	2+971.652		
Sub-Total:		323.974	0.324
GRAND TOTAL:		8,473.674	8.474

DESIGN DATA:	N27(2-3)1,2&4	N27(4-2)2&4	N7(2-3)2&4	N105(1)2&4
DESIGN SPEED	100 km/h	50 km/h	50 km/h	50 km/h
MINIMUM RADIUS	394 m	79 m	79 m	79 m
MAXIMUM GRADIENT (%)	5%	5%	7%	7%
MINIMUM STOPPING SIGHT DISTANCE	185 m	65 m	65 m	65 m
MINIMUM PASSING SIGHT DISTANCE	320 m	160 m	160 m	160 m
CURRENT AVERAGE DAILY TRAFFIC-ADT (2014)	746 vpd	2851 vpd	6956 vpd	832 vpd
FUTURE AVERAGE DAILY TRAFFIC-ADT (2034)	1109 vpd	4236 vpd	10336 vpd	1261 vpd
DESIGN HOURLY VOLUME (2034)	175 vph	177 vph	461 vph	115 vph
PERCENT OF TRUCKS (%)	2%	3%	3%	1%
MAXIMUM SUPERELEVATION (e max)	8.0%	6.0%	6.0%	6.0%



i:\DESIGN\Users\DESIGN3\CURRENT PROJECTS\N35_Chinle\N27(2-3)\DESIGN DATA_072413\CADD Drawings - North\Sht 05 N27 GenNotes REV 031318.dgn

GENERAL NOTE

1. ALL WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS AND BRIDGES ON FEDERAL HIGHWAY PROJECTS (FP-03) AND THE SUPPLEMENTAL SPECIFICATIONS FOR THIS PROJECT UNDER THE METRIC UNITS OF MEASURE.
2. ALL PERMANENT AND TEMPORARY ROADSIDE SIGNS, AND PAVEMENT MARKINGS SHALL BE PLACED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS (LATEST EDITION) AND IN ACCORDANCE WITH THE DETAILS ON THESE PLANS. PLACEMENT OF "STOP" BAR, PERMANENT TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL BE FIELD ADJUSTED AS DIRECTED BY THE OFFICIAL'S REPRESENTATIVE (COR), AT NO ADDITIONAL COST TO THE GOVERNMENT.
3. THE TEMPORARY TRAFFIC CONTROL DETAILS SHOWN REFLECTS GENERAL REQUIREMENTS FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR PREPARING AND SUBMITTING A TRAFFIC CONTROL PLAN IN ACCORDANCE WITH THESE DETAILS, TAKING INTO ACCOUNT THE CONTRACTOR'S CONSTRUCTION SEQUENCING PLAN, MUTCD, AND THE SUPPLEMENTAL SPECIFICATIONS FOR SECTION 635--TEMPORARY TRAFFIC CONTROL.
4. THE DESIGN FEATURES INCLUDING HORIZONTAL AND VERTICAL ALIGNMENTS, TYPICAL SECTIONS, AND OTHER DESIGN DETAILS SHOWN SHALL NOT BE ALTERED OR MODIFIED IN ANYWAY DURING CONSTRUCTION WITHOUT THE EXPRESSED WRITTEN DIRECTION AND WRITTEN APPROVAL OF THE NAVAJO REGION OFFICE--DIVISION OF TRANSPORTATION (NRDOT) DIVISION MANAGER THROUGH THE CONTRACTING OFFICIAL (CO), UNLESS OTHERWISE NOTED IN THESE PLANS OR SPECIFICATIONS. DRAINAGE STRUCTURES AND TURNOUTS SHALL BE INSTALLED AS SHOWN WITH ONLY MINOR CORRECTIONS IN LOCATION, SKEW, AND/OR INVERT ELEVATIONS AS NEEDED TO FIT FIELD CONDITIONS. TURNOUTS MAY NOT BE SHIFTED MORE THAN 5.0 METERS FROM THE LOCATIONS SHOWN ON THE PLANS WITHOUT THE WRITTEN APPROVAL OF THE OWNER THROUGH THE CO.
5. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY AND EXPENSE FOR DISPOSAL OF TRASH AND/OR CONSTRUCTION DEBRIS IN ACCORDANCE WITH SECTIONS 107 AND 203 OF THEFP-03 AS WELL AS ANY AND ALL PERMIT REQUIREMENTS. THIS WORK SHALL BE INCIDENTAL OBLIGATIONS OF THE CONTRACTOR.
6. THE BIDDER SHALL READ AND MAKE CAREFUL EXAMINATION OF THE PLANS, SPECIFICATIONS, QUANTITIES, MATERIAL, SURVEYING REQUIREMENTS, AND VISIT THE SITE OF THE PROPOSED CONSTRUCTION TO BECOME FAMILIAR WITH THE SITE CONDITIONS AND LIMITATIONS BEFORE MAKING A PROPOSAL. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY AND ALL ERRORS RESULTING FROM THE FAILURE TO MAKE SUCH AN EXAMINATION. INFORMATION DERIVED FROM MAPS, PLANS, SPECIFICATIONS, PROFILES, DRAWINGS OR THE ENGINEER, SHALL NOT RELIEVE THE CONTRACTOR FROM ANY RISK OR FROM FULFILLING THE TERMS OF THE CONTRACT. THERE ARE SEVERAL AREAS WITH LIMITED WORKING ROOM WITHIN THE PROJECT RIGHT-OF-WAY, AND/OR WITHIN THE RIGHT-OF-WAY. THESE AREAS SHALL BE INCLUDED IN THE PROJECT RIGHT-OF-WAY, THAT WILL REQUIRE SPECIAL CONSTRUCTION PROCEDURES.
7. THE CONTRACTOR IS REQUIRED TO SUBMIT A REVISED PIPE LIST TO THE COR, BASED ON THE FIELD STAKING IN THE DESIGN SECTION 152 OF THE CONTRACT SUPPLEMENTAL SPECIFICATION. THE APPROVAL OF ANY AND ALL REVISED PIPE LISTS WITH ACCOMPANYING DRAWINGS IS RENDERED AS A SERVICE ONLY AND IS NOT CONSIDERED A GUARANTEE OF MEASUREMENTS, QUANTITIES, INSTALLATION PROCEDURES, AND/OR DIMENSIONS, NOR SHALL BE CONSIDERED AS RELIEVING THE CONTRACTOR FROM COMPLYING WITH THE CONTRACT SPECIFICATIONS AND DESIGN PLANS. THE CONTRACTOR IS HEREBY NOTIFIED THAT UNDER NO CIRCUMSTANCE SHALL ANY DRAINAGE STRUCTURE(S) BE INSTALLED BELOW THE NATURAL FLOW LINE OF THE WASH, CHANNEL, ARROYO, OR DITCH LINE.
8. NO WORK SHALL BE PERFORMED OR GROUND DISTURBED OUTSIDE OF THE DESIGNATED CONSTRUCTION LIMITS IN ACCORDANCE WITH SECTION 107 OF THE FP-03 WITHOUT WRITTEN APPROVAL BY THE OWNER THROUGH THE COR/COTR. UNLESS OTHERWISE SHOWN AND LABELED ON THESE PLANS AS "CONSTRUCTION ZONE" IN NO CASE SHALL ANY WORK BE PERFORMED OUTSIDE THE DESIGNATED RIGHTS-OF-WAY LIMITS WITHOUT WRITTEN APPROVAL FROM THE OWNER, UNLESS OTHERWISE SHOWN AND CALLED OUT ON THESE PLANS AS "CONSTRUCTION ZONE". THE CONSTRUCTION LIMITS SHALL BE AT POINT EARTHWORK LIMIT PLUS 3.0 METERS, NOT TO EXCEED THE RIGHT-OF-WAY LIMITS.
9. THE DETAILS SHOWN ON THE STORM WATER POLLUTION AND EROSION/SEDIMENT CONTROL DETAILS ARE GENERAL REQUIREMENTS TO BE USED BY THE CONTRACTOR IN PREPARING A STORM WATER POLLUTION PREVENTION PLAN ALONG WITH THE REQUIREMENTS IN SECTION 157 OF THE SUPPLEMENTAL SPECIFICATION AND SPECIAL CONTRACT REQUIREMENTS. THE SWPPP IS ONLY REQUIRED AT THE DRAINAGE PIPE REPLACEMENT/ INSTALLATION LOCATIONS AND AREAS WHERE THE WATER OF THE UNITED STATES CAN BECOME CONTAMINATED. THE CONTRACTOR IS REQUIRED TO SUBMIT COURTESY COPY OF THE APPROVED SWPPP TO THE NAVAJO NATION WATER QUALITY EPA OFFICE.
10. THE QUANTITIES SHOWN ARE FOR ESTIMATING PURPOSES ONLY AND TO COMPARE AND CANVAS BIDS. ACTUAL PAY QUANTITIES WILL BE DETERMINED IN THE FIELD FOR AUTHORIZED CHANGES THAT AFFECT THE QUANTITIES.
11. ALL TURNOUT/DRIVEWAYS, AS CALLED FOR ON THESE PLANS, SHALL EITHER BE CONSTRUCTED, REBUILT, RESHAPED AND/OR REMOVED UP TO THE RIGHT-OF-WAY LIMITS. ALL TURNOUTS SHALL BE PAVED TO THE CATTLEGUARD, THEN FROM THE BACK OF CATTLEGUARD TO THE R/W LINE, PLACE AGGREGATE BASE FOR ALL 4.5 METERS WIDE TURNOUTS; PLACE AGGREGATE AND HOT ASPHALTIC CONCRETE FOR TURNOUTS WIDER THAN 4.5 METERS TO MATCH THE STRUCTURAL SECTION. REQUIRED GRADING, BACKFILL, AND EARTH COMPACTION OUTSIDE OF THE RIGHT-OF-WAY, TO CONNECT NEW TURNOUTS TO THE EXISTING ROADWAY/DRIVEWAY (AS SHOWN ON THE PLANS OR AS DIRECTED BY THE AOTR SHALL BE INCIDENTAL TO BID ITEM 20401-0000. ANY REQUIRED AGGREGATE BASE AND/OR ASPHALT MATERIAL SHALL BE PAID FOR UNDER THE APPROPRIATE BID ITEMS FOR THIS WORK AS SHOWN IN THE BID SCHEDULE.
12. THE CONTRACTOR SHALL BE REQUIRED TO OBLITERATE ALL EXISTING ABANDONED TURNOUTS AND ROADWAY WITHIN THE RIGHT-OF-WAY LIMITS, AND ANY EXISTING TURNOUTS/ROADWAY OUTSIDE OF THE RIGHT-OF-WAY THAT ARE DESIGNATED ON THE PLANS FOR OBLITERATION. OBLITERATION SHALL BE AS PER FP-03, METHOD 2. SCARIFICATION SHALL BE TO A DEPTH OF 300 MILLIMETERS. THE SCARIFIED SURFACE SHALL BE LEFT ROUGH, WITH 100 MILLIMETERS TO 300 MILLIMETERS HIGH RIDGES PERPENDICULAR TO THE EXISTING ROAD CENTERLINE. ROADWAY OBLITERATION INCLUDES GRADING DRAINAGE CHANNELS ACROSS THE OLD ROADBED, TO RE-ESTABLISH NATURAL DRAINAGE CHANNELS AND/OR TO OPEN CHANNELS FOR THE NEWLY INSTALLED (IN NEW ROADWAY) DRAINAGE STRUCTURES. THIS WORK TO BE INCLUDED IN THE BID ITEM 21102-2000. PERMANENT SEEDING AND STRAW MULCHING SHALL BE APPLIED TO ALL OBLITERATION AREAS, WITHIN THE CONSTRUCTION LIMITS. SEEDING AND MULCHING TO BE PAID UNDER ITEM 15708-1000 AND 62510-1000.
13. THE CONTRACTOR SHALL BE REQUIRED TO OBLITERATE ALL EXISTING ABANDONED TURNOUTS AND ROADWAYS WITHIN THE WORKING LIMITS AND/OR AS SHOWN IN THE PLANS. FP-03, SECTION 211, METHOD 2, SHALL BE USED FOR THE OBLITERATION METHOD. ALL OBLITERATION WORK SHALL BE APPROVED BY THE COR AND CONSIDERED INCIDENTAL TO BID ITEM 21102-1000. AT ABANDONED TURNOUTS SPECIFIED ON THE PLANS TO BE BLOCKED, A TYPE "A" EARTHEN DITCH DIKE SHALL BE CONSTRUCTED ACROSS THE TURNOUT AS DIRECTED BY THE COR/COTR. THE DIKES SHALL BE 1.0 METER IN HEIGHT AND PAID FOR UNDER BID ITEM 20403-2000. ANY OBLITERATED AREAS SHALL BE MULCHED AS PER SPECIFICATIONS AND PAID FOR UNDER BID ITEM 15708-1000 AND 62510-1000.
14. STRUCTURAL EXCAVATION AND BEDDING/BACKFILL OF ALL DRAINAGE STRUCTURES (CULVERTS AND CONCRETE HEAD/WING WALLS) SHALL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF STRUCTURES. BEDDING AND BACKFILL MATERIAL SHALL MEET ALL REQUIREMENTS OF FP-03, SECTIONS 209 AND 704. APPROVED EXCESS EXCAVATION MATERIAL MAY BE USED TO REBUILD TURNOUTS, EARTHEN DITCH BLOCKS, AND/OR PLACED ALONG ROADWAYS AS EMBANKMENT IN AREAS ADJACENT TO THE REMOVAL AND AS DIRECTED BY THE COR/COTR.
15. ALL FURROW AND DRAINAGE DITCHES SHALL BE STAKED AND GRADED TO DRAIN UP TO THE RIGHT-OF-WAY LIMITS. EARTHEN DITCH BLOCKS, DIKES AND DITCHES SHALL BE CONSTRUCTED AS SHOWN ON THESE PLANS AND/OR ADDED AT LOCATIONS DESIGNATED BY THE COR. ALL DITCH BLOCKS, DIKES AND FURROW DITCHES SHALL BE PAID FOR UNDER THE APPROPRIATE BID ITEMS FOR THIS WORK AS SHOWN IN THE BID SCHEDULE. AT ALL DRAINAGE PIPE REPLACEMENTS, INSTALLATIONS, EXTENSIONS, AND IN-PLACE PIPE CLEANING LOCATIONS, THE CONTRACTOR SHALL CLEAN, REGRADE, AND RESHAPE THE INLET AND OUTLET CHANNELS TO THE RIGHT-OF-WAY LINE AS DIRECTED BY THE COR. THIS WORK SHALL BE INCIDENTAL TO BID ITEMS FOR SECTIONS 602, 603, AND/OR 607.

GENERAL NOTE (Continued)

16. IMMEDIATELY PRIOR TO PLACING EMBANKMENT, AGGREGATE BASE AND/OR RECYCLED MATERIAL, THE TOP 152 MILLIMETERS OF THE ORIGINAL GROUND, OR FINISHED SUBGRADE (INCLUDING TURNOUTS) SHALL BE CHECKED FOR COMPACTION AND GRADE. IF COMPACTION DOES NOT MEET THE MINIMUM SPECIFIED COMPACTION AND TOLERANCE REQUIREMENTS, THE ORIGINAL GROUND AND/OR SUBGRADE SHALL BE RE-WATERED AND/OR SCARIFIED AS NEEDED AND RE-COMPACTED TO THE REQUIRED DENSITY AND TOLERANCE, AT THE CONTRACTOR'S EXPENSE. IN NO CASE SHALL ANY EMBANKMENT OR SURFACING MATERIAL BE PLACED ON FROZEN, MUDDY OR UNSTABLE NATURAL GROUND. THIS WORK SHALL BE CONSIDERED AN INCIDENTAL OBLIGATION OF THE CONTRACTOR.
17. THE EARTHWORK TABLE SHOWN ON SHEET 10 IS TO ASSIST THE CONTRACTOR IN ESTABLISHING A BID UNDER THE EARTHWORK ITEMS SHOWN IN THE BID SCHEDULE. ANY BORROW MATERIAL CALLED FOR ON THE PLANS SHALL BE TAKEN FROM CONTRACTOR IDENTIFIED SOURCES OUTSIDE THE RIGHT-OF-WAY LIMITS. IT IS THE SOLE RESPONSIBILITY AND EXPENSE OF THE CONTRACTOR TO PROVIDE ANY NECESSARY BORROW MATERIAL FOR THIS PROJECT INCLUDING ALL NECESSARY PERMITS, ANY EXCAVATION, BORROW, AND EMBANKMENT MATERIAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEMS 20401-0000.
18. AT ALL TOP EDGES OF CUT SLOPES 3.0 METER OR HIGHER THAN THE DITCH FLOWLINE, THE CONTRACTOR SHALL REMOVE ALL LOOSE AND UNSTABLE ROCK OR ROCK THAT AS DETERMINED BY THE COR, MAY BECOME LOOSE WITHIN 5.0 METER OF THE TOP CUT SLOPE. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO BID ITEM 20401-0000, AND NO ADDITIONAL PAYMENT WILL BE MADE.
19. THE LOCATION OF UTILITIES AS SHOWN IN THESE PLANS ARE APPROXIMATE AND ARE ONLY TO ASSIST THE CONTRACTOR IN COMPLETING THE WORK. THE CONTRACTOR SHALL CONTACT ALL UTILITY OWNERS PRIOR TO STARTING ANY CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL CONTACT THE NAVAJO TRIBAL UTILITY AUTHORITY (NTUA) AT (928) 729-5721 AND FRONTIER COMMUNICATION COMPANY AT (928) 871-3748, PRIOR TO STARTING ANY CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITIES AND THEIR LOCATIONS WITH THE UTILITY OWNERS PRIOR TO STARTING ANY UTILITIES. DAMAGED DUE TO NEGLIGENCE OF THE CONTRACTOR SHALL BE RESTORED TO CODE REQUIREMENTS AT THE CONTRACTOR'S EXPENSE.
20. THE CONTRACTOR SHALL REMOVE, CLEAN, AND STOCKPILE ALL SALVAGEABLE EXISTING CULVERTS, GUARDRAIL, CATTLE GUARDS, FENCING MATERIALS, ETC, AS CALLED FOR ON THESE PLANS AND/OR SECTIONS 203 AND 607 IN A DESIGNATED LOCATION ADJACENT TO THE REMOVAL LOCATION BUT OUTSIDE OF THE RIGHT-OF-WAY. THE COR/COTR SHALL OFFER THIS SALVAGEABLE MATERIALS TO THE COMMUNITY MEMBERS AND/OR PROPERTY OWNERS. IF THEY ACCEPT, THE MATERIALS MUST BE PICKED UP THAT SAME DAY. ANY PIPE MATERIALS DETERMINED TO BE UNSEABLE BY THE COR/COTR OR UNACCEPTABLE BY THE LAND OWNER/ COMMUNITY MEMBERS SHALL BE DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH SECTIONS 107 AND 203. THE SALVAGE WORK SHALL BE INCLUDED IN THE APPROPRIATE UNIT PRICE BID ITEMS FOR SECTIONS 203 AND/OR 607. SALVAGEABLE CULTIVETS SHALL BE PICKED UP BY THE GOVERNMENT MAINTENANCE PERSONNEL FOR USE ON OTHER ROAD MAINTENANCE NEEDS.
21. THE ROADWAY TYPICAL SECTION SHOWN IS THE BASIC TEMPLATE TO WHICH THE PROJECT IS TO BE STAKED AND BUILT. HOWEVER, THERE WILL BE LOCATIONS WHERE, DUE TO EXISTING GROUND CONDITIONS, TURNOUTS, CULVERTS OR OTHER STRUCTURES, ETC. TYPICAL SLOPE OR TYPICAL SLOPE IS NOT FEASIBLE. IN THIS CASE, THE OWNER, THROUGH THE COR/COTR, SHALL BE CONSULTED FOR CHANGES IN THE TYPICAL SECTIONS, DESIGN SLOPES, AND/OR OTHER ADJUSTMENTS BEFORE PROCEEDING WITH THE WORK UNLESS NOTED OTHERWISE ON THE PLANS. THE FINAL CONSTRUCTED ROAD SECTION SHALL BE BASED ON THE GOVERNMENT FURNISHED STARTUP REPORT AS ADJUSTED TO FIT FIELD CONDITIONS. THE CONTRACTOR SHALL STAY WITHIN THE LIMITS OF CONSTRUCTION, UNLESS OTHERWISE APPROVED. IN NO CASE SHALL THE CUT AND FILL BACK SLOPES BE BUILT STEEPER THAN THE MAXIMUM ALLOWED IN THE ROADWAY TYPICAL SECTION SHOWN.
22. THE CONTRACTOR SHALL SAW CUT (FULL DEPTH) THE EXISTING ASPHALT PAVEMENT WHERE NEW ASPHALT IS TO BE TIED INTO THE OLD ASPHALT PAVEMENT AT THE LOCATIONS NOTED ON THE PLANS. THE CONTRACTOR SHALL MATCH THE NEW ASPHALTIC CONCRETE PAVEMENT SURFACE TO EXISTING PAVEMENT SECTION AT TIE-IN POINTS AND TO PROVIDE FOR A SMOOTH TRANSITION AS DIRECTED BY THE COR. ALL SAWED PAVEMENT EDGES TO RECEIVE ASPHALT TACK COAT. THIS WORK SHALL BE INCIDENTAL TO BID ITEM 40201-0500 AS SHOWN IN THE BID SCHEDULE.
23. ANY EXISTING OR NEW ROADSIDE FEATURES OR OTHER IMPROVEMENTS NEGLIGENTLY DAMAGED BY THE CONTRACTOR, DURING CONSTRUCTION, SHALL BE RESTORED/REPLACED IN EQUAL OR BETTER CONDITION AT THE CONTRACTOR'S EXPENSE.
24. REMOVAL AND RE-ATTACHMENT OF FENCING REQUIRED TO COMPLETE SPECIFIED WORK AT DRAINAGE STRUCTURES, CATTLE GUARDS, GATES, TURNOUTS, RIPRAP, ETC, SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEMS RELATED TO THE WORK REQUIRING SAID FENCE REMOVAL/RE-ATTACHMENT, FENCING REPAIRS, TEMPORARY FENCING AND/OR REMOVAL AND RE-ATTACHMENT OF FENCING, SHALL BE COMPLETED IN THE SAME WORK DAY SO AS NOT TO ALLOW LIVESTOCK ONTO THE PROJECT. IF WIRE TENSION IS LOST IN THE EXISTING FENCE, THE CONTRACTOR SHALL RE-TIGHTEN THE FENCE AS DIRECTED BY THE COR.
25. THE CONTRACTOR SHALL REMOVE BIA ROUTE N27 EXISTING ROADSIDE SIGNS THAT INTERFERE WITH ROAD CONSTRUCTION AND/OR CONTRADICT THE CONTRACTOR'S TEMPORARY TRAFFIC CONTROL PLAN, AT THE START OF THE CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE COR AT LEAST THREE (3) WORKING DAYS IN ADVANCE. SOVIET, GRADE, AND EARTH COMPACTION, ETC, SHALL BE SALVAGED AND TAKEN TO THE CHINLE AGENCY MAINTENANCE YARD. SIGNS NEEDED FOR SAFETY/INFORMATION SHALL BE TEMPORARILY RESET AS DIRECTED BY THE COR/COTR. ALL REMAINING SIGNS ALONG THE EXISTING N27 ROADWAY, NOT SPECIFICALLY DESIGNATED ON THE PLANS TO REMAIN, SHALL BE REMOVED. THIS WORK SHALL BE CONSIDERED AN INCIDENTAL OBLIGATION OF THE CONTRACTOR.
26. GRADE AND SHAPE THE SHOULDERS AND DITCHES (AS DIRECTED BY COR) FROM THE SUBGRADE HINGE POINTS TO AND INCLUDING THE EXISTING DITCH LINE AREAS FOR THE CONSTRUCTION OF RIPRAP DITCH LININGS, SLOPE PROTECTION, AND RUNDOWNS. THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE RIPRAP ITEMS SHOWN IN THE BID SCHEDULE.
27. AT MAJOR DRAINAGE STRUCTURES AND LIVESTOCK PASS LOCATIONS, THE CONTRACTOR SHALL EITHER TIE THE WING ROW FENCES TO STRUCTURES IN ACCORDANCE WITH THE DETAILS ON SHEET 81 OF 95 OR INSTALL FENCE OVER THE STRUCTURE AT THE CLEAR RECOVERY ZONE AS NOTED ON THE PLANS. IF NO CORNER FENCE POST/BRACE/STRAIN EXISTS AT TIE-IN TO RIGHT-OF-WAY FENCE, THE CONTRACTOR SHALL INSTALL A STRAIN POST ASSEMBLY AS PER PLAN SHEET 87 OF 100. ANY EXISTING CATTLE PASS CLOSURES ARE TO BE REMOVED. THIS WORK TO BE INCIDENTAL TO BID ITEM 61901-1000 AND NO ADDITIONAL PAYMENT SHALL BE MADE.
28. ALL RIGHT-OF-WAY REFERENCE MARKERS SHALL BE LABELED IN THE METRIC UNITS OF MEASURE. ALL EXISTING AND NEW BRASS CAPS SHALL BE STAMPED WITH BOTH ALIGNMENT STATIONING AND ELEVATIONS IN METRIC, UNLESS OTHERWISE NOTED UNDER SECTION 152 OF THE SUPPLEMENTAL SPECIFICATIONS. ANY EXISTING R/W MONUMENTS AND BRASS CAPS MISSING SHALL BE RE-SURVEYED IN TO THEIR ORIGINAL POSITION AND LABELED AND STAMPED ACCORDINGLY. ALL EXISTING REFERENCE MARKERS SHALL BE SAND BLASTED, CLEAN, AND REPAINTED WITH ENGLISH STATIONS ON ONE SIDE AND METRIC STATIONS ON THE OTHER. ANY MISSING OR DAMAGED MARKERS SHALL BE RE-SURVEYED AND REPLACED. THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEMS 62101-0000 AND 62102-0000.
29. THERE MAY BE A NUMBER OF ARCHAEOLOGICAL SITE MITIGATIONS THAT ARE NOTED ON THE PLANS. THE CONTRACTOR SHALL NOTIFY THE NAVAJO NATION DEPARTMENT OF TRANSPORTATION (NRDOT) PROJECTS MANAGEMENT OFFICE (905) 371-8394 AS REQUIRED PRIOR TO STARTING CONSTRUCTION ACTIVITIES IN THESE LOCATIONS. SEE THE SPECIAL CONTRACT REQUIREMENT SECTION OF THE CONTRACT FOR ADDITIONAL INFORMATION, AND REQUIREMENTS. THE CONTRACTOR SHALL PLACE TEMPORARY FLEXIBLE SAFETY FENCE AROUND THE ARCHAEOLOGY SITE(S) AS NOTED ON THE PLANS. THE FENCING SHALL BE SQUARE LINK (ORANGE COLOR) PLASTIC TYPE MADE OF HI-DENSITY HDPE, AS PER SECTION 710.11 OF FP-03. TEMPORARY ARCHAEOLOGY FENCING SHALL BE CONSIDERED INCIDENTAL OBLIGATIONS OF THE CONTRACTOR IF A SPECIFIC BID ITEM IS NOT SHOWN IN THE BID SCHEDULE.

GENERAL NOTE (Continued)

30. AS-BUILT'S PLAN AND PROFILE SHEETS (OF PROJECT N27(2-4), N27(2-3), & N27(2-3)) SHALL BE PROVIDED AND LABELED UPON WRITTEN REQUEST TO THE CO FOR PURPOSES OF VERIFYING EXISTING FEATURES TO BE REMOVED OR ADJUSTED AS CALLED FOR IN THESE PLANS. HOWEVER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR SURVEYING AND CHECKING THE NEW ROADWAY (HORIZONTAL AND VERTICAL) CENTERLINE ALIGNMENT TO INSURE THE NEW ROADWAY ALIGNMENT IS ALIGNED WITH IN THE ROW LIMITS FROM BOP TO EOP. REGRADE AND RESHAPE THE EXISTING ROADSIDE DITCHES AS NEEDED TO MATCH THE NEW DITCH LINES. THE CONTRACTOR IS ADVISED THAT MUCH OF THE INFORMATION FOUND ON THE AS-BUILT PLANS HAS BEEN REVISED/ UPDATED/CORRECTED FOR THE CURRENT PROJECT. THE AS-BUILT PLANS ARE PROVIDED FOR BACKGROUND INFORMATION ONLY. THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEMS 15201-0000, 20401-0000, AND 40201-0500.
31. THE GEO-TECHNICAL REPORT FOR THIS PROJECT SHALL BE PROVIDED UPON WRITTEN REQUEST FROM THE CONTRACTOR THRU THE CO.
32. ROADWAY END AREA AND PIPE CROSS SECTION DRAWINGS WILL BE PROVIDED IN EITHER HARD COPY OR ELECTRONIC FORMAT UPON WRITTEN REQUEST FROM THE CONTRACTOR THRU THE CO.
33. ANY EXISTING MAIL BOXES, ADVERTISING BILLBOARDS, OR HOUSE ADDRESS SIGNS CALLED OUT ON THESE PLANS OR FOUND TO BE LOCATED ALONG THE ROADWAY PRISM SHALL BE REMOVED AND RE-INSTALLED OUTSIDE OF THE RIGHT-OF-WAY LIMIT OR AS DIRECTED BY THE AOTR. THE CONTRACTOR SHALL NOTIFY THE CHAPTER OFFICIALS AND ATTEMPT TO CONTACT ALL AFFECTED RESIDENTS TEN (10) WORKING DAYS PRIOR TO RESETTING MAIL BOX (ES). THIS WORK SHALL BE INCIDENTAL TO BID ITEM 20304-1000.
34. AT BRIDGE N537, GUARDRAIL REPLACEMENT WORK INCLUDES REPLACEMENT OF THE BRIDGE APPROACH GUARDRAIL AND BRIDGE TRANSITION GUARDRAIL. DETAILS FOR BOTH OF THESE GUARDRAIL TYPES ARE INCLUDED IN THESE PLANS. THE CONTRACTOR SHALL NOT REMOVE THE EXISTING APPROACH AND/OR TRANSITION GUARDRAILS UNTIL COR/COTR APPROVED PROVISIONS ARE IN-PLACE TO INSTALL PERMANENT OR TEMPORARY GUARDRAILS.
35. AT THE COMPLETION OF THE CONSTRUCTION, THE CONTRACTOR SHALL INSPECT THE INTERIOR OF ALL NEWLY INSTALLED CULVERTS, CATTLEGUARDS, AND/OR OTHER EXISTING DRAINAGE STRUCTURES. THESE STRUCTURES SHALL BE MAINTAINED IN A CLEAN CONDITION, FREE OF SILT AND OTHER DEBRIS UNTIL FINAL ACCEPTANCE OF THE PROJECT. THIS WORK SHALL BE CONSIDERED AN INCIDENTAL OBLIGATIONS OF THE CONTRACTOR UNDER THE APPROPRIATE BID ITEMS, FOR SECTIONS 602, 603, 607, AND 619.
36. THERE ARE NUMBER OF LOCATIONS WHERE RIPRAP, CHANNEL FLOWLINE GRADING, TURNOUTS, ETC., WILL REQUIRE WORK AND IMPROVEMENTS PLACED THROUGH AND BEYOND THE RIGHT-OF-WAY FENCING LOCATIONS. IN THESE LOCATIONS, THE RIGHT-OF-WAY FENCING SHALL BE ADJUSTED (I.E. POST SPACING, VERTICAL ALIGNMENT, POST INSTALLATIONS THROUGH RIPRAP, RIGHT-OF-WAY MONUMENT/MARKER ADJUSTMENTS, ETC.) AS DIRECTED BY THE COR/COTR. THIS WORK TO BE INCIDENTAL TO BID ITEMS 61901-1000, 62101-0000, AND 62102-0000, AND NO ADDITIONAL PAYMENT WILL BE MADE.
37. IT IS EXPECTED A REVISED/ FINAL RIGHTS-OF-WAY GRANT OF EASEMENT BE DEVELOPED DURING THE CONSTRUCTION OF THE N27 PROJECT. THE CONTRACTOR SHALL NOT SURVEY FOR OR INSTALL R.O.W. MONUMENTS AND MARKERS OR FENCINGS UNTIL EXPRESSLY APPROVED BY THE OWNER THROUGH THE COR/COTR. FENCING SHALL BE PLACED AT ALL ARCHAEOLOGICAL SITES IF SPECIFIED ON THE PLANS PRIOR TO ANY WORK IN THE AREA.
38. THE FINISHED SUBGRADE SOIL CLASSIFICATION AND PI'S WILL BE DETERMINED PRIOR TO SUBGRADE TREATMENT WITH ROADBOND EN-1. THE FINAL LOCATIONS (BY STATION) FOR SUBGRADE TREATMENT WILL BE DETERMINED BY THE COTR AND PROVIDED TO THE CONTRACTOR BEFORE THE WORK CAN PROCEED.

REVISED
3:25 pm, Mar 13, 2018

REGION	STATE	RESERVATION	ROUTE	PROJECT NO.	SHEET	TOTAL SHEETS
NAVAJO	ARIZONA	NAVAJO	N27	N27(2-3)1,2&4	5	105
			N27	N27(4-2)2&4		
			N7	N7(2-3)2&4		
			N105	N105(1)2&4		

NTUA NATURAL GAS DISTRIBUTION
CONSTRUCTION REQUIREMENTS
(SEE SHT 30 OF 105):

1. CONTRACTOR TO PROVIDE MINIMUM 90 DAYS NOTICE TO NTUA PRIOR TO NTUA COMMENCING WITH UTILITY RELOCATIONS. NOTICE SHALL BE MADE VIA LETTER TO THE . NATURAL GAS MANAGER ADDRESSED AS FOLLOW:
NTUA
ATTN: NATURAL GAS MANAGER
POST OFFICE BOX 170
FORT DEFIANCE, ARIZONA 86504
2. MINIMUM 30 DAYS NOTICE IS REQUIRED FOR ANY PROPOSED DESIGN CHANGES BY GOVERNMENT THAT MAY IMPACT THE GASLINE. NTUA SHALL APPROVE OF SUCH CHANGES IN WRITING.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INCLUDING TRAFFIC CONTROL FOR WORK OVER THE GASLINES IN THEIR TRAFFIC CONTROL PLAN. THE TRAFFIC CONTROL PLAN SHALL BE SUBMITTED TO NTUA AND THE GOVERNMENT FOR REVIEW AND APPROVAL PRIOR TO ANY CONSTRUCTION.
4. ALL CONSTRUCTION OVER AN NEAR THE GASLINES SHALL COMPLY WITH THE APPLICABLE SECTIONS OF NTUA'S *TECHNICAL SPECIFICATIONS FOR WORKMANSHIP AND MATERIALS FOR NATURAL GAS FACILITIES (2004)*.
5. FUEL GAS PIPING SHALL BE IN ACCORDANCE WITH THE MOST RECENT VERSION OF THE UNIFORM PLUMBING CODE (2015) AS APPLICABLE AND THE *UNIFORM MECHANICAL CODE (2015)*.
6. CONTRACTOR SHALL CONTACT THE NTUA NATURAL GAS DEPARTMENT AT (928) 729-6275 REGARDING NTUA SCHEDULING, ENGINEERING, CONSTRUCTION, AND PROJECT MANAGEMENT FOR THE GASLINE ADJUSTMENTS.
7. CONTRACTOR SHALL CALL 811 AND NTUA CHINLE DISTRICT OFFICE BEFORE ANY DIGGING OR PLACEMENT OF EMBANKMENT MATERIALS (MINIMUM 72 HOUR NOTICE REQUIRED). LOCATION/STAKING OF THE GASLINES SHALL BE COMPLETED PRIOR TO DIGGING.
8. DIGGING IN VICINITY OF ANY EXISTING NTUA NATURAL GAS FACILITIES SHALL BE MONITORED BY NTUA WITH A MINIMUM OF 72 HOUR NOTICE REQUIRED.
9. STOP WORK IF EXPOSURE, CONTACT, OR DAMAGE OF NTUA GASLINE FACILITIES OCCURS. NTUA SHALL INSPECT FACILITIES, PROVIDE INSTRUCTION, AND NOTICE TO PROCEED WITH CONSTRUCTION WORK IN THE AREA.
- 10.NTUA CONSTRUCTION MATERIALS AND EQUIPMENT TO BE STORED ON SITE. LOCATION TO BE COORDINATED WITH GOVERNMENT AND CONTRACTOR.
- 11.NTUA NATURAL GAS LINES REQUIRE EASEMENTS OF 30 FEET (9.14 m), 15 FEET (4.57 m) ON EACH SIDE FROM THE CENTER OF THE PIPELINE.
- 12.NO BUILDING, STRUCTURE, SLAB, PARKING LOT OR OTHER FIXED EQUIPMENT OR FACILITIES SHALL BE CONSTRUCTED OVER NTUAS UTILITIES WITHOUT FIRST GETTING THE CONSENT OF NTUA'S NATURAL GAS MANAGER IN WRITING.
- 13.A NATURAL GAS PIPEL NE CROSSING AN ARROYO OR WASH SHALL HAVE A MINIMUM BURY DEPTH OF 5 FEET (1.524 m).
- 14.A NATURAL GAS PIPELINE CROSS ING OR UNDER AN UNPAVED ROAD SHALL HAVE A MINIMUM BURY DEPTH OF 5 FEET (1.524 m). GOVERNMENT SHALL MONITOR DEPTH AND MAINTAIN COVER.
- 15.IN THE EVENT WHERE THE EXISTING UNDERGROUND NATURAL GASLINE IS IN CONFLICT WITH A PERMANENT STRUCTURE (I.E. WITHIN 5') THE NTUA NATURAL GAS DEPARTMENT SHALL APPROVE SUCH CONSTRUCTION BEFORE ANY CONSTRUCTION OVER THE EXISTING NATURAL GASLINE IS STARTED.
- 16.FOR TEMPORARY ROADS THE BURIED NATURAL GASLINE SHOULD BE CROSSED CAREFULLY, AND ONLY WHEN THE NTUA REPRESENTATIVE IS ON SITE AND ABLE TO OBSERVE THE WORK. THE CROSSING SHOULD BE AS NEAR TO PERPENDICULAR (NINETY 90 DEGREES) AS MUCH AS POSSIBLE AND HAVE A MINIMUM COVER OF 3 FEET (0.914 m) OVER THE TOP OF THE GASLINE.
- 17.WHEN CUTTING DITCH GRADES ABOVE THE BURIED NATURAL GASLINE IS NOT PERMISSIBLE UNLESS THE LINE HAS THE MINIMUM COVER DEPTH AND PROTECTION AS REQUIRED.
- 18.ALL NTUA UTILITIES SHALL BE PROTECTED IN PLACE UNLESS OTHERWISE SPECIFIED IN THE DESIGN PLANS. NTUA SHALL INSPECT PROTECTION IN PLACE AND APPROVE ANY INSTALLATION PRIOR TO SUBJECTING FACILITIES TO LOADING, SUCH AS CONSTRUCTION EQUIPMENT AND VEHICLE TRAFFIC.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
NAVAJO REGIONAL OFFICE * DIVISION OF TRANSPORTATION


GENERAL NOTES

DRAWN BY: NRDOTDATE: 12/19/2013

DESIGNED BY: NRDOTDATE: 12/19/2013

REVISED: 3/13/18BY: H RILEY

Sht 05 N27 GenNotes REV 031318.dgn



i:\DESIGN\Users\DESIGN3\CURRENT PROJECTS\N35_China\N27(2-3)\DESIGN DATA_072413\CADD Drawings - North\Sht 07 N27 QtyTbIs_1 rev 081417.dgn

ESTIMATED QUANTITIES: N27(2-3), N27(4-2), N7(2-3), N105(1) & N7(1)

										REGION	STATE	RESERVATION	ROUTE	PROJECT NO.	SHEET	TOTAL SHEETS	
										REGION	STATE	NAVAJO	N27	N27(2-3)1,2&4	7	105	
													N27	N27(4-2)2&4			
													N7	N7(2-3)2&4			
										N105	N105(1)2&4						

ESTIMATED QUANTITIES: N27(2-3), N27(4-2), N7(2-3), N105(1) & N7(1)

ITEM	DESCRIPTION	N27(2-3)/Bridge Qty	N27(4-2) Qty	N7(2-3) Qty	N105(1) Qty	N7(1) Qty	Total Qty	Units
10901-0000	Extra & Miscellaneous Work Under Section 109.02(m)	All Required	All Required	All Required	All Required	All Required	All Required	Lump Sum
15101-0000	Mobilization	All Required	All Required	All Required	All Required	All Required	All Required	Lump Sum
15201-0000	Construction survey and staking	All Required	All Required	All Required	All Required	All Required	All Required	Lump Sum
15301-0020	Contractor Quality Control	5,800.00	200.00	200.00	100.00	100.00	6,400.00	Man Hr
15701-0000	Temporary Erosion Control	All Required	All Required	All Required	All Required		All Required	Lump Sum
15708-1000	Temporary Straw Mulching	16.64	0.33	0.20	0.44		17.61	ha
20102-0000	Clearing and Grubbing	All Required	All Required	All Required	All Required		All Required	Lump Sum
20304-1000	Removal of Structures & Obstructions	All Required	All Required	All Required	All Required		All Required	Lump Sum
20401-0000	Roadway Excavation	192,036.00	2,069.00	302.00	4,202.00		198,609.00	m³
20425-2000	Furrow Ditches	300.00					300.00	m
20443-1000	Earthen dike & berms, type A	100.00					100.00	m
20443-2000	Earthen dike & berms, type B	50.00					50.00	m
20601-0000	Development of Water Supply	29.96	3.03	3.05	2.21		38.25	M-Liter
21101-2000	Roadway obliteration, method 2	38,500.00					38,500.00	m²
21301-4000	Subgrade Stabilization with RoadBand EN-1, 152mm depth	75,556.00					75,556.00	m²
25101-2000	Placed Riprap, Class 2	216.74	99.49	24.88	16.59		357.70	m³
25101-3000	Placed Riprap, Class 3	70.53					70.53	m³
25112-2000	Wire enclosed Riprap, Class 2	1,123.45		0.00	27.46		1,150.91	m³
25327-1000	CC20; Articulated Concrete Revetment Mat, 64mm depth				500.00		500.00	m²
25327-1020	CC45; Articulated Concrete Revetment Mat, 140mm depth		5,001.00				5,001.00	m²
30101-2000	Untreated Aggregate Base, Grade "Special"	47,479.00	3,782.00	2,031.00	2,575.00		55,867.00	t
40201-0500	Hot Asphaltic Concrete Pavement, Class B, Grade "B"	12,069.68	2,041.00	1,224.00	1,245.00		16,579.68	t
40502-0800	Asphalt Cement, Grade PG 58-28	724.18	123.00	74.00	75.00		996.18	t
40802-0902	Cold Recycled Asphalt Base Course, various Thickness		4,460.41	2,302.48	2,099.98		8,862.87	t
41101-5000	Asphalt Prime Coat, Penetrating Emulsified Prime- PEP	100.02	11.79	5.64	9.70		127.15	t
41201-1000	Asphalt Tack Coat, Grade SS-1	15.63	1.98	0.95	1.59		20.15	t
41301-0000	Asphalt Milling, 203 mm depth for N105(1) and 356 mm depth for N27(4-2) & N7(2-3)		5,807.32	3,275.70	2,604.20		11,687.22	m²
55201-0200	Structural Concrete Class A(AE)	32.00					32.00	m³
55207-0000	Repair Concrete, Epoxy Injection and Patching	All Required					All Required	Lump Sum
55210-0000	Seal Concrete surface	366.00					366.00	m²
55401-2000	Epoxy Coated, Reinforcing Steel, grade 420	2,928.00					2,928.00	kg
60101-0000	Minor Concrete Class A(AE)	16.1	22.9	133.6	28.3		200.9	m³
60101-1000	Concrete, Truck Apron, Class A(AE) rough broom finish PCCP brown colored with Red Chevron PCCP (43 each) symbols			259.11			259.11	m²
60201-0810	610 mm Corrugated Steel Pipe Culvert- Aluminized	289.26					289.26	m
60201-0910	762 mm Corrugated Steel Pipe Culvert- Aluminized	40.84					40.84	m
60201-1010	914 mm Corrugated Steel Pipe Culvert- Aluminized	17.07					17.07	m
60201-1810	2134 mm Corrugated Steel Pipe Culvert- Aluminized	97.54					97.54	m
60202-0510	711mm x 508mm Corrugated Steel Pipe Arch- Aluminized		147.72	30.48			178.20	m
60202-0610	889mm x 610mm Corrugated Steel Pipe Arch- Aluminized	146.30					146.30	m
60202-0710	1067mm x 737mm Corrugated Steel Pipe Arch- Aluminized	99.98					99.98	m
60202-0910	1448mm x 965mm Corrugated Steel Pipe Arch- Aluminized	54.86					54.86	m
60202-1010	1626mm x 1092mm Corrugated Steel Pipe Arch- Aluminized	59.21					59.21	m
60202-1110	1803mm x 1194mm Corrugated Steel Pipe Arch- Aluminized				54.84		54.84	m
60202-5010	2235mm x 1372mm Reinforced Concrete Pipe-Arch		242.12				242.12	m
60210-0810	End Section for 610 mm Pipe Culvert- Aluminized	41					41	Each
60210-0910	End Section for 762 mm Pipe Culvert- Aluminized	8					8	Each
60210-1010	End Section for 914 mm Pipe Culvert- Aluminized	4					4	Each
60211-0910	End Section for 711mm x 508mm CSPA - Aluminized		16	4			20	Each
60211-1010	End Section for 889mm x 610mm CSPA - Aluminized	6					6	Each
60211-1110	End Section for 1067mm x 737mm CSPA - Aluminized	8					8	Each
60211-1310	End Section for 1448mm x 965mm CSPA - Aluminized	2					2	Each
60212-5010	Elbow, 2235mm x 1372mm Reinforced Concrete Pipe-Arch		8				8	Each
60222-2000	2.44m span x 2.44m rise precastCBC, 2-barrel w/wingwalls & concrete apron	34.140					34.14	m
60224-2000	2.44m span x 2.44m rise precastCBC, 4-barrel w/wingwalls & concrete apron	31.700					31.70	m
60401-0000	Manhole Installation			2			2	Each
60701-1000	Removing, Cleaning, Stockpiling CSPC	73.98	267.73	66.68	24.42		432.81	m
60812-0300	Concrete Spillway, Type 3		14	9	6		29	Each
60812-0400	Concrete Spillway, Type IV-1, for concrete curb	4					4	Each
60902-1000	Curb & gutter, concrete, 305mm depth		1,470.62	575.70	752.12	134.56	2,933.00	m
61501-0100	Sidewalk, concrete, 1.22m width		1,668.83	610.18	913.29	157.95	3,350.25	m²
61502-1000	Drive pad, concrete			3			3	Each
61505-1000	Handicap ramp, concrete w/ Tactile ADA PAD		19	4	8	2	33	Each
61701-5000	Guardrail System, SGR04b, Type PDE02 w/ SKT-350 end treatment	547.02					547.02	m
61707-0000	Structure Transition Railing	31.00					31.00	m
61801-0000	Concrete jersey barrier	97.58					97.58	m
61901-1000	Fence, 5-strand barbed wire	14,024.16			579.52		14,603.68	m
61903-0310	Cattle guard, 4900 mm with gate	19					19	Each
61903-0710	Cattle guard, 7190 mm with gate	5			1		6	Each
61903-1010	Cattle guard, 9480 mm with gate			1			1	Each
61903-1210	Cattle guard, 11770 mm with gate				1		1	Each
61921-1000	Remove and reset fence		1,300.43	65.37	333.01		1,698.81	m
62101-0000	Right-of-way monument	43	12	12			67	Each
62102-0000	Reference Marker	43	12	12			67	Each
62510-1000	Seeding, Dry Method	16.64	0.33	0.20	0.44		17.61	ha
62901-1100	Rolled erosion control product, Type IV	10,768.00					10,768.00	m²
63302-2001	Sign Installation, 1 Post - 38mm x 38mm square steel tube		0.35		3.63		3.98	m²
63302-2002	Sign Installation, 1 Post - 44mm x 44mm square steel tube	16.01	5.71	0.93	7.15	0.92	30.72	m²
63302-2003	Sign Installation, 1 Post - 50mm x 50mm square steel tube		4.48				4.48	m²
63302-2006	Sign Installation, 2 Post - 50mm x 50mm square steel tube	1.55	13.13	10.27	0.84		25.79	m²
63302-2007	Sign Installation, 2 Post - 57mm x 57mm square steel tube		2.74	3.07	1.60		15.09	m²
63308-2000	Object Marker, type 2, 38mm x 38mm steel square tube	16					16	Each
63308-3010	Object Marker, type 3, 38mm x 38mm steel square tube	4					4	Each
63309-0030	Delineator, type "1a", 38mm x 38mm steel square tube	8					8	Each
63309-0040	Delineator, type "1b", 38mm x 38mm steel square tube	50					50	Each
63318-1020	Milepost marker, 38mm x 38mm steel square tube	10					10	Each
63401-1510	Pavement Markings, Type "H", Solid Yellow, 102mm	2,028.33	1,329.67	304.90	1,301.24	7,143.85	12,107.99	m
63401-1520	Pavement Markings, Type "H", Solid White, 102mm	13,172.24		128.18	545.40	149.66	13,995.48	m
63401-1610	Pavement Markings, Type "H", Broken Yellow, 102mm	7,257.00	1,314.55		478.98	1,122.79	10,173.32	m
63401-1620	Pavement Markings, Type "H", Broken White, 102mm			180.28		7,222.82	7,403.10	m
63401-1621	Pavement Markings, Type "H", Broken White, 203mm			82.03			82.03	m
63401-1622	Pavement Markings, Type "H", Broken White, 457mm			36.27			36.27	m
63405-2900	Pavement Markings, Type "H", turn arrow				8	22	53	Each
63405-2950	Pavement Markings, Type "H", straight arrow	3	20	4			4	Each
63405-3000	Pavement Markings, Type "H", straight/turn arrow combination	4		8			12	Each
63405-3050	Pavement Markings, Type "H", "ONLY" word message	1			2	3	6	Each
63405-3260	Pavement Markings, Type "H", "STOP" bar, solid white	6	9	2	4	10	31	Each
63405-3280	Pavement Markings, Type "H", zebra crosswalk, solid white		1	2		7	10	Each
63405-3290	Pavement Markings, Type "H", Diagonal striping, solid yellow	2			2		4	Each
63502-3000	Raised Pavement Markers, type MS200 "solarmarkers" Yellow Flashing with shaft			96			96	Each
63501-0000	Temporary Traffic Control	All Required	All Required	All Required	All Required	All Required	All Required	Lump Sum
63502-3000	Temporary traffic control, Raised Pavement Marker	3,051	303	144	268	3,555	7,321	Each
63509-1000	Flagger	6,020.00	160.00	120.00	120.00	80.00	6,500.00	Man Hr
63600-1100	Pedestrian Crossing LED Programable Flashing Beacon, Solar Powered					2	2	Each
63612-1300	Luminaire, Solar led street light with 9.14m pole			5			5	Each
63621-1000	Utility box, pullbox			1			1	Each

REVISED

3:25 pm, Mar 13, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
NAVAJO REGIONAL OFFICE * DIVISION OF TRANSPORTATION

ESTIMATED QUANTITY
TABLES-SHEET 1

DRAWN BY: NRDOT DATE: 3/21/2014
DESIGNED BY: NRDOT DATE: 3/21/2014

I:\DESIGN\Users\DESIGN3\CURRENT PROJECTS\N35_China\N27(2-3)\DESIGN DATA_072413\CADD Drawings - North\Sht 09 N27 QtyTbIs_3 REV 081417.dgn

PROJECTS: N27(4-2)2&4, N105(1)2&4 & N7(2-3)2&4

REGION	STATE	RESERVATION	ROUTE	PROJECT NO.	SHEET	TOTAL SHEETS
NAVAJO	ARIZONA	NAVAJO	N27	N27(2-3)2&4	9	105
			N27	N27(4-2)2&4		
			N7	N7(2-3)2&4		
			N105	N105(1)2&4		

N27(4-2)2&4-Street

BID ITEM: 60902-1000 CURB & GUTTER, 300 mm Depth

LEFT SIDE						
Start Station	Location		End Station	Location	* Length (m)	Section
60+164.386	10.10 m Lt.	to	60+263.350	14.40 m Lt.	104.676	1
60+270.056	14.40 m Lt.	to	60+364.466	14.40 m Lt.	103.727	2
60+371.171	14.40 m Lt.	to	60+450.782	14.40 m Lt.	88.928	3
60+462.974	14.40 m Lt.	to	60+699.958	30.00 m Lt.	261.9	4
60+708.492	30.00 m Lt.	to	60+846.000	8.58 m Lt.	158.022	5
RIGHT SIDE						
60+157.227	5.40 m Rt.	to	60+166.227	14.40 m Rt.	13.66	6
60+175.227	14.40 m Rt.	to	60+372.488	14.40 m Rt.	206.58	7
60+381.488	14.40 m Rt.	to	60+453.977	14.40 m Rt.	81.81	8
60+462.977	14.40 m Rt.	to	60+546.500	14.40 m Rt.	92.84	9
60+553.500	14.40 m Rt.	to	60+712.845	20.00 m Rt.	174.26	10
60+719.845	20.00 m Rt.	to	60+846.000	14.27 m Rt.	138.88	11
Sub-Total:					1425.27	
SPLITTER ISLAND ROLL CURB & GUTTER					Perimeter	Island
60+828.95	CL	to	60+837.95	CL	22.62	N27-C
60+841.01	CL	to	60+847.20	CL	22.73	N27-C
Sub-Total:					45.35	
Grand-Total:					1470.62	

* NOTE: Length Measured About CL of Curb & Gutter

N27(4-2)2&4-Street

BID ITEM: 61501-0100 SIDEWALK, CONCRETE

LEFT SIDE								
Start Station	Loc (m)		End Station	Loc (m)	Length (m)	Width (m)	Area (m ²)	Section
60+164.829	10.51 m Lt.	to	60+262.740	14.40 m Lt.	102.43	1.22	124.96	1
60+270.665	14.40 m Lt.	to	60+363.856	14.40 m Lt.	100.79	1.22	122.96	2
60+371.781	14.40 m Lt.	to	60+450.173	14.40 m Lt.	86.00	1.22	104.92	3
60+463.584	14.40 m Lt.	to	60+699.348	30.00 m Lt.	258.86	1.22	315.81	4
60+709.102	30.00 m Lt.	to	60+845.775	9.15 m Lt.	156.14	1.22	190.49	5
RIGHT SIDE								
60+175.836	14.40 m Rt.	to	60+371.878	14.40 m Rt.	203.57	1.22	248.36	6
60+382.097	14.40 m Rt.	to	60+453.368	14.40 m Rt.	78.88	1.22	96.24	7
60+463.587	14.40 m Rt.	to	60+545.890	14.40 m Rt.	89.91	1.22	109.69	8
60+554.110	14.40 m Rt.	to	60+712.235	20.00 m Rt.	171.28	1.22	208.96	9
60+720.455	20.00 m Rt.	to	60+845.488	14.60 m Rt.	136.44	1.22	166.45	10
Total:							1688.83	

N27(4-2)2&4-Roundabout/Splitter Island

BID ITEM: 60101-1000 MINOR CONCRETE, CLASS A(AE)

SPLITTER ISLAND-South Approach (N7-C)							
Start Station	Loc		End Station	Loc	Area (m ²)	Island	Vol. (m ³)
60+828.95	CL	to	60+837.95	CL	25.10	N27-C	2.56
60+841.01	CL	to	60+847.20	CL	29.12	N27-C	2.97
Grand-Total:					54.22		5.53

N105(1)2&4

BID ITEM: 60902-1000 CURB & GUTTER, 300mm Depth

LEFT SIDE					
Start Station	Loc (m)		End Station	Loc (m)	Section
0+006.44	-20.50	To	0+271.50	-14.40	1
0+278.50	-14.40	To	0+366.00	-5.40	2
Sub-Total:					371.50
RIGHT SIDE					
0+006.44	20.50	To	0+138.50	14.40	3
0+145.50	14.50	To	0+348.02	14.40	4
0+355.02	14.50	To	0+366.00	5.40	5
Sub-Total:					375.76
Grand-Total:					747.26

N105(1)2&4

BID ITEM: 61501-0100 SIDEWALK, CONCRETE

LEFT SIDE							
Start Station	Loc (m)		End Station	Loc (m)	Length (m)	Width (m)	Area (m ²)
0+007.05	-20.50	To	0+270.89	-14.40	276.94	1.22	337.87
0+279.11	-14.40	To	0+366.00	-6.01	91.68	1.22	111.85
Sub-Total:					368.62		449.72
RIGHT SIDE							
0+007.05	20.50	To	0+137.89	14.40	144.92	1.22	176.80
0+146.11	14.40	To	0+347.41	14.40	210.88	1.22	257.27
0+355.63	14.40	To	0+366.00	6.01	15.16	1.22	18.50
Sub-Total:					370.96		452.57
Grand-Total:					739.58		902.29

N7(1)4

ITEM: 60902-1000 CURB & GUTTER, 300mm Depth

LEFT SIDE					
Start Station	Loc (m)		End Station	Loc (m)	Section
0+244.76	-22.86	To	0+253.76	-10.30	1
0+253.76	-10.30	To	0+296.94	-10.30	2
0+296.94	-10.30	To	0+305.94	-22.86	3
Sub-Total:					78.56
RIGHT SIDE					
0+250.00	10.30	To	0+284.40	10.30	1
0+284.41	10.30	To	0+300.42	22.86	2
Sub-Total:					56.00
Grand-Total:					134.56

N7(1)4

ITEM: 61501-0100 SIDEWALK, CONCRETE

LEFT SIDE								
Start Station	Loc (m)		End Station	Loc (m)	Length (m)	Width (m)	Area (m ²)	Section
0+245.37	-22.86	To	0+305.33	-22.86	74.73	1.22	91.17	1
Sub-Total:					74.73		91.17	
RIGHT SIDE								
0+250.00	22.86	To	0+299.90	22.86	54.74	1.22	66.78	3
Sub-Total:							66.78	
Grand-Total:							157.95	

N7(2-3)2&4-Roundabout

BID ITEM: 60902-1000 CURB & GUTTER, 300 mm Depth

LEFT SIDE						
Start Station	Loc (m)		End Station	Loc (m)	Length (m)	Section
2+747.90	-7.20	to	2+971.78	-7.20	236.65	1
Sub-Total:					236.65	
RIGHT SIDE						
2+747.90	7.20	to	2+894.24	48.54	159.65	2
----	----		=60+285.31 (N27)	=5.40 (N27)	----	----
2+906.38	46.66	to	2+971.77	7.20	106.00	3
=60+819.46 (N27)	=5.40 (N27)		----	----	----	----
Sub-Total:					265.65	
SPLITTER ISLAND-Roll Curb & Gutter					Perimeter (m)	Splitter Is.
2+828.22	CL	to	2+835.11	CL	16.22	N7-A
2+838.14	CL	to	2+844.14	CL	20.86	N7-A
2+904.13	CL	to	2+910.14	CL	20.17	N7-B
2+913.14	CL	to	2+920.05	CL	16.15	N7-B
Sub-Total:					73.40	
Grand-Total:					575.70	

N7(2-3)2&4-Roundabout

BID ITEM: 61501-0100 SIDEWALK, CONCRETE

LEFT SIDE								
Start Station	Loc (m)		End Station	Loc (m)	Length (m)	Width (m)	Area (m ²)	Section
2+747.90	-7.81	to	2+971.78	-7.81	236.76	1.22	288.85	1
Sub-Total:					236.76		288.85	
RIGHT SIDE								
2+747.90	7.81	to	2+893.75	48.91	159.08	1.22	194.08	2
----	----		=60+825.31 (N27)	=6.01 (N27)	----	----	----	----
2+906.86	46.29	to	2+971.77	7.81	104.31	1.22	127.26	3
=60+819.46 (N27)	=6.01(N27)		----	----	----	----	----	
Sub-Total:					263.39		321.34	
Grand-Total:					500.15		610.18	

N7(2-3)2&4-Roundabout/Splitter Island/Center Island

BID ITEM: 60101-1000 MINOR CONCRETE, CLASS A(AE)

SPLITTER ISLAND - West (N7-A) & East (N7-B) Approaches							
Start Station	Loc (m)		End Station	thickness (m)	Area (m ²)	Perimeter (m)	Vol. (m3)
2+828.22	CL	to	2+835.14	0.102	10.14	14.71	1.03
2+838.14	CL	to	2+844.14	0.102	24.71	19.48	2.52
2+904.13	CL	to	2+910.14	0.102	23.07	18.79	2.35
2+913.14	CL	to	2+920.05	0.102	9.98	14.64	1.02
Sub-Total:					67.90	67.62	6.93
CENTER ISLAND - Interior (Dome)							
2+856.22	CL	to	2+892.05	0.102	1007.94	112.55	102.81
Sub-Total:					1007.94	112.55	102.81
CENTER ISLAND - Outside Edge (Truck Apron)							
Start Station	Loc (m)		End Station	thickness (m)	Area (m ²)	Perimeter (m)	Vol. (m3)
2+853.75	CL	to	2+894.52	0.102	259.11	128.11	26.43
Sub-Total:					259.11	128.11	26.43
CENTER ISLAND - Conc. Barrier Wall							
Start Station	Loc (m)		End Station		Sectional Area	Longitudinal	Vol. (m ³)
2+856.05	CL	to	2+892.22		0.210	113.63	23.86
Sub-Total:					0.210	113.63	23.86
Grand-Total:							133.60

40802-0902 COLD RECYCLE ASPHALT BASE COURSE VARIOUS mm THICKNESS

Project	STATION	TO STATION	WIDTH (m)	LENGTH (m)	Thickness (mm)	AREA (m ²)	Unit Wt. (kg/m ³)	t	REMARKS
N105(1)	0+006.30	To 0+400.00	10.80	393.70	140	4,251.96	2,164.00	1,288.17	
N105(1)	0+400.00	To 0+610.00	12.76	210.00	140	2,679.60	2,164.00	811.81	
N7(2-3) West of Roundabout	+747.90	To +844.14	14.40	96.24	280	1,385.86	2,164.00	839.72	
N7(2-3) Roundabout	0+000.00	To 0+160.22	9.00	160.22	280	1,441.98	2,164.00	873.72	
N7(2-3) East of Roundabout	2+904.14	To 2+971.65	14.40	67.51	280	972.14	2,164.00	589.04	
N27(4-2)	60+164.39	To 60+846.00	10.80	681.61	280	7,361.39	2,164.00	4,460.41	
Total							18,092.93	8,862.88	

I:\DESIGN\Users\DESIGN3\CURRENT PROJECTS\N35_Chinle\N27(2-3)\DESIGN DATA_072413\CADD Drawings - North\Sht 12 N27 PipeStruct rev 081417.dgn

REGION	STATE	RESERVATION	ROUTE	PROJECT NO.	SHEET	TOTAL SHEETS
REGION	STATE	RESERVATION	N27	N27(2-3)1,2&4	12	105
			N27	N27(4-2)2&4		
			N7	N7(2-3)2&4		
			N105	N105(1)2&4		

ESTIMATED DRAINAGE STRUCTURE QUANTITY		CIRCULAR				PIPE ARCH						CIRCULAR END SECTION			PIPE ARCH END SECTION			PCRCBC	PCRCBC			
		60201-0810	60201-0910	60201-1010	60201-1810	60202-0510	60202-0610	60202-0710	60202-0910	60202-1010	60202-1110	60210-0810	60210-0910	60210-1010	60211-0910	60211-1010	60211-1110	60211-1310	60222-2000	60224-2000		
		68 x 13 mm CSPC 2.77 mm Thickness	762 mm CSPC 68 x 13 mm Corr. 2.77 mm Thickness	914 mm CSPC 68 x 13 mm Corr. 2.77 mm Thickness	2134 mm CSPC Pipe Culvert 2.77 mm Thickness	711 mm S x 508 mm R CSPC 68 x 13 mm Thickness	889 mm S x 508 mm R CSPC 68 x 13 mm Thickness	1097 mm S x 610 mm R CSPC 68 x 13 mm Corr. 2.77 mm Thickness	1448 mm S x 965 mm R CSPC 68 x 13 mm Corr. 2.77 mm Thickness	1626 mm S x 1092 mm R CSPC 68 x 13 mm Corr. 2.77 mm Thickness	1805 mm S x 1194 mm R CSPC 68 x 13 mm Corr. 2.77 mm Thickness	End Section 610 mm CSPC 2.77 mm Thickness	End Section 762 mm CSPC 2.77 mm Thickness	End Section 914 m CSPC 2.77 mm Thickness	End Section 1097 mm S x 508 mm R CSPC 2.77 mm Thickness	End Section 1448 mm S x 965 mm R CSPC 2.77 mm Thickness	End Section 1805 mm S x 1194 mm R CSPC 2.77 mm Thickness	2400 mm x 2400 mm Precast Box Culvert	4-Borel 2400 mm x 2400 mm Precast Box Culvert			
Station	N27(2-3)1,2&4-Recommended Structure	Skew No.	m	m	m	m	m	m	m	m	m	Each	Each	Each	Each	Each	Each	Each	m	m		
53+340.00	2-610 mm x 10.363 m CSPC Under T.O. Rt. With End Section at Inlet & Outlet	90.0	20.726									4										
53+510.00	2-762 mm x 10.363 m CSPC Under T.O. Rt. With End Section at Inlet & Outlet			20.726									4									
53+585.00	2-914 mm x 8.535 m CSPC Under T.O. Lt. With End Section at Inlet & Outlet				17.070									4								
53+709.00	2-762 mm x 10.056 m CSPC Under T.O. Rt. With End Section at Inlet & Outlet			20.112																		
53+938.00	1-610 mm x 17.069 m CSPC Under T.O. Rt. With End Section at Inlet & Outlet	90.0	17.069									2										
53+955.00	1-610 mm x 17.069 m CSPC Under T.O. Lt. With End Section at Inlet & Outlet	90.0	17.069									2										
54+120.00	1-610 mm x 16.459 m CSPC Under T.O. Rt. With End Section at Inlet & Outlet	90.0	16.459									2										
54+582.00	1-610 mm x 14.630 m CSPC Under T.O. Lt. With End Section at Inlet & Outlet	90.0	14.630									2										
54+582.00	1-610 mm x 14.630 m CSPC Under T.O. Rt. With End Section at Inlet & Outlet	90.0	14.630									2										
54+890.00	1-610 mm x 9.144 m CSPC Under T.O. Lt. With End Section at Inlet & Outlet	90.0	9.144									2										
55+371.00	1-610 mm x 14.630 m CSPC Under T.O. Lt. With End Section at Inlet & Outlet	90.0	14.630									2										
55+673.00	1-610 mm x 8.534 m CSPC Under T.O. Lt. With End Section at Inlet & Outlet	90.0	8.534									2										
55+809.00	2-Barrel 2400 mm Span x 2400 mm Rise x 34.138 m Precast Reinforced Concrete Box Culvert	135.0																	34.138			
56+140.00	1-610 mm x 28.651 m CSPC With End Section at Inlet & Outlet	90.0	28.651									2										
56+247.00	2-2134 mm x 48.768 m CSPC With Concrete Slope Paving At Inlet	70.0			97.536																	
56+454.50	4-Barrel 2400 mm Span x 2400 mm Rise x 31.700 m Precast Reinforced Concrete Box Culvert	60.0																		31.700		
56+713.00	1-610 mm x 16.160 m CSPC Under T.O. Lt. With End Section at Inlet & Outlet	90.0	16.160									1										
56+836.00	1-610 mm x 18.288 m CSPC Under T.O. Lt. With End Section at Inlet & Outlet	90.0	18.288									2										
57+153.00	1-610 mm x 8.534 m CSPC Under T.O. Lt. With End Section at Inlet & Outlet	90.0	8.534									2										
57+438.00	1-610 mm x 13.411 m CSPC Under T.O. Lt. With End Section at Inlet & Outlet	90.0	13.411									2										
58+283.00	1-610 mm x 17.678 m CSPC Under T.O. Rt. With End Section at Inlet & Outlet	90.0	17.678									2										
58+940.00	2-889 mm S x 610 mm R x 24.994 m CSPA With End Section at Each Inlet	120.0						49.988				1				2						
59+010.00	1-889 mm S x 610 mm R x 23.774 m CSPA With End Section at Inlet	120.0						23.774				1				1						
59+073.00	1-610 mm x 29.870 m CSPC With End Section at Inlet	137.0	29.870									1										
59+188.00	2-889 mm S x 610 mm R x 21.336 m CSPA With End Section at Each Inlet	105.0						42.672				1				2						
59+520.00	1-610 mm x 11.582 m CSPC Under T.O. Lt. With End Section at Inlet & Outlet	90.0	11.582									2										
59+747.00	2-1448 S mm x 965 mm R x 27.432 m CSPA With End Section at Inlet	120.0								54.864								2				
59+928.00	2-1626 mm S x 1092 mm R x 14.021 m CSPA Under T.O. Lt. in FBD w/ Concrete Headall at Inlet & Outlet	90.0								28.042												
59+957.50	1-889 mm S x 610 mm R x 29.870 m CSPA With End Section at Inlet	120.0						29.870								1						
60+058.00	2-1626 mm S x 1092 mm R x 15.582 m CSPA Under T.O. Lt. in FBD w/ Concrete Headall at Inlet & Outlet	90.0								31.164		2				2						
60+058.00	1-610 mm x 12.190 m CSPC Under T.O. Rt. w/ End Sections at Inlet & Outlet	90.0	12.190									2										
60+110.00	4-1067 mm S x 737 mm R x 24.994 m CSPA With End Section at Each Inlet	90.0							99.976								8					
SUB-TOTAL:			289.255	40.838	17.070	97.536			146.304	99.976	54.864	59.206		41	8	4	2	6	8	2	34.138	31.700
Station	N27(4-2)2&4-Recommended Structure	Skew No.	m	m	m	m	m	m	m	m	m	Each	Each	Each	Each	Each	Each	Each	m	m		
60+266.89	1-711 mm S x 508 mm R x 17.069 m CSPA Under T.O. Lt. With End Section at Inlet & Outlet						17.069									2						
60+367.97	1-711 mm S x 508 mm R x 17.069 m CSPA Under T.O. Lt. With End Section at Inlet & Outlet						17.069									2						
60+376.99	1-711 mm S x 508 mm R x 19.507 m CSPA Under T.O. Rt. With End Section at Inlet & Outlet						19.507									2						
60+457.01	1-711 mm S x 508 mm R x 21.946 m CSPA Under T.O. Lt. With End Section at Inlet & Outlet						21.946									2						
60+458.23	1-711 mm S x 508 mm R x 19.507 m CSPA Under T.O. Rt. With End Section at Inlet & Outlet						19.507									2						
60+550.00	1-711 mm S x 508 mm R x 17.069 m CSPA Under T.O. Rt. With End Section at Inlet & Outlet						17.069									2						
60+704.23	1-711 mm S x 508 mm R x 18.482 m CSPA Under T.O. Lt. With End Section at Inlet & Outlet						18.482									2						
60+716.35	1-711 mm S x 508 mm R x 17.069 m CSPA Under T.O. Rt. With End Section at Inlet & Outlet						17.069									2						
SUB-TOTAL:							147.718									16						
Station	N7(2-3)2&4-Recommended Structure	Skew No.	m	m	m	m	m	m	m	m	m	Each	Each	Each	Each	Each	Each	Each	m	m		
2+791.17	1-711 mm S x 508 mm R x 14.02 m CSPA Under Driveway Lt. With End Section at Inlet & Outlet						14.020									2						
2+800.57	1-711 mm S x 508 mm R x 16.459 m CSPA Under Driveway Rt. With End Section at Inlet & Outlet						16.459									2						
SUB-TOTAL:							30.479															
Station	N105(1)2&4-Recommended Structure	Skew No.	m	m	m	m	m	m	m	m	m	Each	Each	Each	Each	Each	Each	Each	m	m		
0+275.00	3-1803mm S x 1194mm x 18.28 m CSPA T/O Lt., 0+030.71 Lt. Lateral/Concrete Headwall Inlet/Outlet											54.840										
SUB-TOTAL:												54.840										
GRAND-TOTAL:			289.255	40.838	17.070	97.536	178.197	146.304	99.976	54.864	59.206	54.840	41	8	4	22	6	8	2	34.138	31.700	

N27(4-2)2&4: Sta. 60+733.35 to 60+839.66

Sub-Surface Drainage Structures

ITEM 60202-5010: REINFORCED CONC. PIPE ARCH,
2235 mm Span x 1372 mm Rise

ITEM 60212-5010: REINFORCED CONC. PIPE ARCH, ELBOWS

RCPA #1 (along pipe centerline)				
POINT#	to	POINT#	LENGTH (m)	# of ELBOW (ea.)
1	to	38	7.90	1
38	to	39	8.12	1
39	to	40	88.97	1
40	to	41	11.72	1
41	to	42	4.34	--
TOTAL:			121.06	4
RCPA #2 (along pipe centerline)				
POINT#	to	POINT#	LENGTH (m)	# of ELBOW (ea.)
43	to	44	7.90	1
44	to	45	8.12	1
45	to	46	88.97	1
46	to	47	11.72	1
47	to	48	4.34	--
TOTAL:			121.06	4
GRAND-TOTAL:			242.13	8

See Sheet 28 Of 105 For Details

SEE SHEET 13 &14 of 105 FOR END SECTIONS
GENERAL NOTES, DETAILS, & TABLES

REVISED
3:26 pm, Mar 13, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
NAVAJO REGIONAL OFFICE * DIVISION OF TRANSPORTATION

DRAINAGE STRUCTURE
QUANTITY TABLES-SHEET 1

DRAWN BY: NRDOT DATE:8/14/2017

DESIGNED BY: NRDOT DATE:8/14/2017

REVISED: 3/13/2018 BY: Leroy.Toledo

Sht 12 N27 PipeStruct rev 081417.dgn



SOLICITATION, OFFER, AND AWARD (Construction, Alteration, or Repair)	1. SOLICITATION NUMBER	2. TYPE OF SOLICITATION <input type="checkbox"/> SEALED BID (IFB) <input type="checkbox"/> NEGOTIATED (RFP)	3. DATE ISSUED	PAGE OF PAGES

IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.

4. CONTRACT NUMBER	5. REQUISITION/PURCHASE REQUEST NUMBER	6. PROJECT NUMBER
7. ISSUED BY	CODE	8. ADDRESS OFFER TO
9. FOR INFORMATION CALL:	a. NAME	b. TELEPHONE NUMBER (Include area code) (NO COLLECT CALLS)

SOLICITATION

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid and "bidder".

10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS (*Title, identifying number, date*)

11. The contractor shall begin performance within _____ calendar days and complete it within _____ calendar days after receiving <input type="checkbox"/> award, <input type="checkbox"/> notice to proceed. This performance period is <input type="checkbox"/> mandatory <input type="checkbox"/> negotiable. (See _____).	
12a. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? (If "YES", indicate within how many calendar days after award in Item 12b.) <input type="checkbox"/> YES <input type="checkbox"/> NO	12b. CALENDAR DAYS

13. ADDITIONAL SOLICITATION REQUIREMENTS:

- a. Sealed offers in original and _____ copies to perform the work required are due at the place specified in Item 8 by _____ (**hour**) local time _____ (date). If this is a sealed bid solicitation, offers will be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.
- b. An offer guarantee ☐ is, ☐ is not required.
- c. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference.
- d. Offers providing less than _____ calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.

OFFER (Must be fully completed by offeror)

14. NAME AND ADDRESS OF OFFEROR (Include ZIP Code)		15. TELEPHONE NUMBER (Include area code)
		16. REMITTANCE ADDRESS (Include only if different than Item 14.)
CODE	FACILITY CODE	

17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing within _____ calendar days after the date offers are due. (Insert any number equal to or greater than the minimum requirement stated in Item 13d. Failure to insert any number means the offeror accepts the minimum in Item 13d.)

AMOUNTS



18. The offeror agrees to furnish any required performance and payment bonds.

19. ACKNOWLEDGMENT OF AMENDMENTS

(The offeror acknowledges receipt of amendments to the solicitation -- give number and date of each)

AMENDMENT NUMBER										
DATE.										

20a. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print)	20b. SIGNATURE	20c. OFFER DATE
--	----------------	-----------------

AWARD (To be completed by Government)

21. ITEMS ACCEPTED:

22. AMOUNT	23. ACCOUNTING AND APPROPRIATION DATA
24. SUBMIT INVOICES TO ADDRESS SHOWN IN (4 copies unless otherwise specified)	25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO <input type="checkbox"/> 10 U.S.C. 2304(c) () <input type="checkbox"/> 41 U.S.C. 3304(a) ()
26. ADMINISTERED BY	27. PAYMENT WILL BE MADE BY

CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE

<input type="checkbox"/> 28. NEGOTIATED AGREEMENT (Contractor is required to sign this document and return _____ copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all work requirements identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications incorporated by reference in or attached to this contract.	<input type="checkbox"/> 29. AWARD (Contractor is not required to sign this document.) Your offer on this solicitation is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.
30a. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN (Type or print)	31a. NAME OF CONTRACTING OFFICER (Type or print)
30b. SIGNATURE	31b. UNITED STATES OF AMERICA
30c. DATE	31c. DATE
	BY

BID BOND <i>(See instructions on reverse)</i>	DATE BOND EXECUTED <i>(Must not be later than bid opening date)</i>	OMB Control Number: 9000-0045 Expiration Date: 7/31/2019
Paperwork Reduction Act Statement - This information collection meets the requirements of 44 USC § 3507, as amended by section 2 of the Paperwork Reduction Act of 1995. You do not need to answer these questions unless we display a valid Office of Management and Budget (OMB) control number. The OMB control number for this collection is 9000-0045. We estimate that it will take 25 minutes to read the instructions, gather the facts, and answer the questions. Send only comments relating to our time estimate, including suggestions for reducing this burden, or any other aspects of this collection of information to: General Services Administration, Regulatory Secretariat Division (M1V1CB), 1800 F Street, NW, Washington, DC 20405.		
PRINCIPAL <i>(Legal name and business address)</i>	TYPE OF ORGANIZATION <i>("X" one)</i> <input type="checkbox"/> INDIVIDUAL <input type="checkbox"/> PARTNERSHIP <input type="checkbox"/> JOINT VENTURE <input type="checkbox"/> CORPORATION <input type="checkbox"/> OTHER <i>(Specify)</i>	
SURETY(IES) <i>(Name and business address)</i>		
STATE OF INCORPORATION		

PENAL SUM OF BOND					BID IDENTIFICATION	
PERCENT OF BID PRICE	AMOUNT NOT TO EXCEED				BID DATE	INVITATION NUMBER
	MILLION(S)	THOUSAND(S)	HUNDRED(S)	CENTS	FOR <i>(Construction, Supplies or Services)</i>	

OBLIGATION:

We, the Principal and Surety(ies) are firmly bound to the **Navajo Nation** (hereinafter called the Government) in the above penal sum. For payment of the penal sum, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally. However, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us. For all other purposes, each Surety binds itself, jointly and severally with the Principal, for the payment of the sum shown opposite the name of the Surety. If no limit of liability is indicated, the limit of liability is the full amount of the penal sum.

CONDITIONS:

The Principal has submitted the bid identified above.

THEREFORE:

The above obligation is void if the Principal - (a) upon acceptance by the Government of the bid identified above, within the period specified therein for acceptance (sixty (60) days if no period is specified), executes the further contractual documents and gives the bond(s) required by the terms of the bid as accepted within the time specified (ten (10) days if no period is specified) after receipt of the forms by the principal; or (b) in the event of failure to execute such further contractual documents and give such bonds, pays the Government for any cost of procuring the work which exceeds the amount of the bid.

Each Surety executing this instrument agrees that its obligation is not impaired by any extension(s) of the time for acceptance of the bid that the Principal may grant to the Government. Notice to the surety(ies) of extension(s) is waived. However, waiver of the notice applies only to extensions aggregating not more than sixty (60) calendar days in addition to the period originally allowed for acceptance of the bid.

WITNESS:

The Principal and Surety(ies) executed this bid bond and affixed their seals on the above date.

PRINCIPAL						
SIGNATURE(S)	1.	2.	3.	Corporate Seal		
	(Seal)	(Seal)	(Seal)			
NAME(S) & TITLE(S) <i>(Typed)</i>	1.	2.	3.			
INDIVIDUAL SURETY(IES)						
SIGNATURE(S)	1.	2.				
	(Seal)	(Seal)				
NAME(S) <i>(Typed)</i>	1.	2.				
CORPORATE SURETY(IES)						
SURETY A	NAME & ADDRESS			STATE OF INCORPORATION	LIABILITY LIMIT (\$)	Corporate Seal
	SIGNATURE(S)	1.	2.			
	NAME(S) & TITLE(S) <i>(Typed)</i>	1.	2.			

SURETY B	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT (\$)	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		
SURETY C	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT (\$)	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		
SURETY D	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT (\$)	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		
SURETY E	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT (\$)	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		
SURETY F	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT (\$)	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		
SURETY G	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT (\$)	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		

INSTRUCTIONS

1. This form is authorized for use when a bid guaranty is required. Any deviation from this form will require the written approval of the Administrator of General Services.
2. Insert the full legal name and business address of the Principal in the space designated "Principal" on the face of the form. An authorized person shall sign the bond. Any person signing in a representative capacity (e.g., an attorney-in-fact) must furnish evidence of authority if that representative is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved.
3. The bond may express penal sum as a percentage of the bid price. In these cases, the bond may state a maximum dollar limitation (e.g., 20% of the bid price but the amount not to exceed _____ dollars).
4. (a) Corporations executing the bond as sureties must appear on the Department of the Treasury's list of approved sureties and must act within the limitations listed therein. The value put into the LIABILITY LIMIT block is the penal sum (i.e., the face value) of the bond, unless a co-surety arrangement is proposed.

(b) When multiple corporate sureties are involved, their names and addresses shall appear in the spaces (Surety A, Surety B, etc.) headed "CORPORATE SURETY(IES)." In the space designated "SURETY(IES)" on the face of the form, insert only the letter identifier corresponding to each of the sureties. Moreover, when co-surety arrangements exist, the parties may allocate their respective limitations of liability under the bond, provided that the sum total of their liability equals 100% of the bond penal sum.

(c) When individual sureties are involved, a completed Affidavit of Individual Surety (Standard Form 28) for each individual surety, shall accompany the bond. The Government may require the surety to furnish additional substantiating information concerning its financial capability.
5. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the word "Corporate Seal"; and shall affix an adhesive seal if executed in Maine, New Hampshire, or any other jurisdiction requiring adhesive seals.
6. Type the name and title of each person signing this bond in the space provided.
7. In its application to negotiated contracts, the terms "bid" and "bidder" shall include "proposal" and "offeror."

PERFORMANCE BOND <i>(See instructions on reverse)</i>	DATE BOND EXECUTED <i>(Must be same or later than date of contract)</i>	OMB Control Number: 9000-0045 Expiration Date: 7/31/2019
---	---	---

Paperwork Reduction Act Statement - This information collection meets the requirements of 44 USC § 3507, as amended by section 2 of the Paperwork Reduction Act of 1995. You do not need to answer these questions unless we display a valid Office of Management and Budget (OMB) control number. The OMB control number for this collection is 9000-0045. We estimate that it will take 60 minutes to read the instructions, gather the facts, and answer the questions. Send only comments relating to our time estimate, including suggestions for reducing this burden, or any other aspects of this collection of information to: General Services Administration, Regulatory Secretariat Division (M1V1CB), 1800 F Street, NW, Washington, DC 20405.

PRINCIPAL <i>(Legal name and business address)</i>	TYPE OF ORGANIZATION <i>("X" one)</i>			
	<input type="checkbox"/> INDIVIDUAL <input type="checkbox"/> PARTNERSHIP <input type="checkbox"/> JOINT VENTURE <input type="checkbox"/> CORPORATION <input type="checkbox"/> OTHER <i>(Specify)</i>			
	STATE OF INCORPORATION			
SURETY(IES) <i>(Name(s) and business address(es))</i>	PENAL SUM OF BOND			
	MILLION(S)	THOUSAND(S)	HUNDRED(S)	CENTS
	CONTRACT DATE		CONTRACT NUMBER	

OBLIGATION:

We, the Principal and Surety(ies), are firmly bound to the **Navajo Nation** (hereinafter called the Government) in the above penal sum. For payment of the penal sum, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally. However, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us. For all other purposes, each Surety binds itself, jointly and severally with the Principal, for the payment of the sum shown opposite the name of the Surety. If no limit of liability is indicated, the limit of liability is the full amount of the penal sum.

CONDITIONS:

The Principal has entered into the contract identified above.

THEREFORE:

The above obligation is void if the Principal-

(a)(1) Performs and fulfills all the understanding, covenants, terms, conditions, and agreements of the contract during the original term of the contract and any extensions thereof that are granted by the Government, with or without notice of the Surety(ies) and during the life of any guaranty required under the contract, and

(2) Performs and fulfills all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of the contract that hereafter are made. Notice of those modifications to the Surety(ies) are waived.

(b) Pays to the Government the full amount of the taxes imposed by the Government, if the said contract is subject to 41 USC Chapter 31, Subchapter III, Bonds, which are collected, deducted, or withheld from wages paid by the Principal in carrying out the construction contract with respect to which this bond is furnished.


WITNESS:

The Principal and Surety(ies) executed this performance bond and affixed their seals on the above date.

PRINCIPAL							
SIGNATURE(S)	1.	2.	3.	Corporate Seal			
	(Seal)	(Seal)	(Seal)				
NAME(S) & TITLE(S) <i>(Typed)</i>	1.	2.	3.				
INDIVIDUAL SURETY(IES)							
SIGNATURE(S)	1.	2.					
	(Seal)	(Seal)					
NAME(S) <i>(Typed)</i>	1.	2.					
CORPORATE SURETY(IES)							
SURETY A	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT (\$)	Corporate Seal		
	SIGNATURE(S)	1.	2.				
		NAME(S) & TITLE(S) <i>(Typed)</i>	1.	2.			

CORPORATE SURETY(IES) (Continued)

SURETY B	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT (\$)	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		
SURETY C	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT (\$)	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		
SURETY D	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT (\$)	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		
SURETY E	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT (\$)	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		
SURETY F	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT (\$)	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		
SURETY G	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT (\$)	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		

BOND PREMIUM 	RATE PER THOUSAND (\$)	TOTAL (\$)

INSTRUCTIONS

- This form is authorized for use in connection with Government contracts. Any deviation from this form will require the written approval of the Administrator of General Services.
- Insert the full legal name and business address of the Principal in the space designated "Principal" on the face of the form. An authorized person shall sign the bond. Any person signing in a representative capacity (e.g., an attorney-in-fact) must furnish evidence of authority if that representative is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved.
- (a) Corporations executing the bond as sureties must appear on the Department of the Treasury's list of approved sureties and must act within the limitations listed therein. The value put into the LIABILITY LIMIT block is the penal sum (i.e., the face value) of bonds, unless a co-surety arrangement is proposed.

(b) When multiple corporate sureties are involved, their names and addresses shall appear in the spaces (Surety A, Surety B, etc.) headed "CORPORATE SURETY(IES)." In the space designated "SURETY(IES)" on the face of the form, insert only the letter identifier corresponding to each of the sureties. Moreover, when co-surety arrangements exist, the parties may allocate their respective limitations of liability under the bonds, provided that the sum total of their liability equals 100% of the bond penal sum.

(c) When individual sureties are involved, a completed Affidavit of Individual Surety (Standard Form 28) for each individual surety shall accompany the bond. The government may require the surety to furnish additional substantiating information concerning its financial capability.
- Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the words "Corporate Seal", and shall affix an adhesive seal if executed in Maine, New Hampshire, or any other jurisdiction requiring adhesive seals.
- Type the name and title of each person signing this bond in the space provided.

PAYMENT BOND <i>(See instructions on reverse)</i>	DATE BOND EXECUTED <i>(Must be same or later than date of contract)</i>	OMB Control Number: 9000-0045 Expiration Date: 7/31/2019
---	---	---

Paperwork Reduction Act Statement - This information collection meets the requirements of 44 USC § 3507, as amended by section 2 of the Paperwork Reduction Act of 1995. You do not need to answer these questions unless we display a valid Office of Management and Budget (OMB) control number. The OMB control number for this collection is 9000-0045. We estimate that it will take 60 minutes to read the instructions, gather the facts, and answer the questions. Send only comments relating to our time estimate, including suggestions for reducing this burden, or any other aspects of this collection of information to: General Services Administration, Regulatory Secretariat Division (M1V1CB), 1800 F Street, NW, Washington, DC 20405.

PRINCIPAL <i>(Legal name and business address)</i>	TYPE OF ORGANIZATION ("X" one) <input type="checkbox"/> INDIVIDUAL <input type="checkbox"/> PARTNERSHIP <input type="checkbox"/> JOINT VENTURE <input type="checkbox"/> CORPORATION <input type="checkbox"/> OTHER <i>(Specify)</i>
	STATE OF INCORPORATION

SURETY(IES) <i>(Name(s) and business address(es))</i>	PENAL SUM OF BOND			
	MILLION(S)	THOUSAND(S)	HUNDRED(S)	CENTS
	CONTRACT DATE		CONTRACT NUMBER	

OBLIGATION:

We, the Principal and Surety(ies), are firmly bound to the **Navajo Nation** (hereinafter called the Government) in the above penal sum. For payment of the penal sum, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally. However, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us. For all other purposes, each Surety binds itself, jointly and severally with the Principal, for the payment of the sum shown opposite the name of the Surety. If no limit is indicated, the limit of liability is the full amount of the penal sum.

CONDITIONS:

The above obligation is void if the Principal promptly makes payment to all persons having a direct relationship with the Principal or a subcontractor of the Principal for furnishing labor, material or both in the prosecution of the work provided for in the contract identified above, and any authorized modifications of the contract that subsequently are made. Notice of those modifications to the Surety(ies) are waived.

WITNESS:

The Principal and Surety(ies) executed this payment bond and affixed their seals on the above date.

PRINCIPAL				
SIGNATURE(S)	1.	2.	3.	Corporate Seal
	(Seal)	(Seal)	(Seal)	
NAME(S) & TITLE(S) <i>(Typed)</i>	1.	2.	3.	

INDIVIDUAL SURETY(IES)		
SIGNATURE(S)	1.	2.
	(Seal)	(Seal)
NAME(S) <i>(Typed)</i>	1.	2.

CORPORATE SURETY(IES)				
SURETY A	NAME & ADDRESS	STATE OF INCORPORATION	LIABILITY LIMIT \$	Corporate Seal
	SIGNATURE(S)	1.		
	NAME(S) & TITLE(S) <i>(Typed)</i>	2.		

CORPORATE SURETY(IES) (Continued)

SURETY B	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT \$	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		
SURETY C	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT \$	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		
SURETY D	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT \$	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		
SURETY E	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT \$	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		
SURETY F	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT \$	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		
SURETY G	NAME & ADDRESS		STATE OF INCORPORATION	LIABILITY LIMIT \$	Corporate Seal
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		

INSTRUCTIONS

1. This form, for the protection of persons supplying labor and material, is used when a payment bond is required under 40 USC Chapter 31, Subchapter III, Bonds. Any deviation from this form will require the written approval of the Administrator of General Services.
2. Insert the full legal name and business address of the Principal in the space designated "Principal" on the face of the form. An authorized person shall sign the bond. Any person signing in a representative capacity (e.g., an attorney-in-fact) must furnish evidence of authority if that representative is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved.
3. (a) Corporations executing the bond as sureties must appear on the Department of the Treasury's list of approved sureties and must act within the limitations listed therein. The value put into the LIABILITY LIMIT block is the penal sum (i.e., the face value) of the bond, unless a co-surety arrangement is proposed.

(b) When multiple corporate sureties are involved, their names and addresses shall appear in the spaces (Surety A, Surety B, etc.) headed "CORPORATE SURETY(IES)." In the space designated "SURETY(IES)" on the face of the form, insert only the letter identifier corresponding to each of the sureties. Moreover, when co-surety arrangements exist, the parties may allocate their respective limitations of liability under the bonds, provided that the sum total of their liability equals 100% of the bond penal sum.

(c) When individual sureties are involved, a completed Affidavit of Individual Surety (Standard Form 28) for each individual surety shall accompany the bond. The Government may require the surety to furnish additional substantiating information concerning its financial capability.
4. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the words "Corporate Seal", and shall affix an adhesive seal if executed in Maine, New Hampshire, or any other jurisdiction requiring adhesive seals.
5. Type the name and title of each person signing this bond in the space provided.

AFFIDAVIT OF INDIVIDUAL SURETY*(See instructions on reverse)***OMB Control Number: 9000-0001****Expiration Date: 1/31/2018**

Public reporting burden for this collection of information is estimated to average 0.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Regulatory Secretariat (M1V1CB), Office of Acquisition Policy, GSA, Washington, DC 20405.

STATE OF	SS.
COUNTY OF	

I, the undersigned, being duly sworn, depose and say that I am: (1) the surety to the attached bond(s); (2) a citizen of the United States; and of full age and legally competent. I also depose and say that, concerning any stocks or bonds included in the assets listed below, that there are no restrictions on the resale of these securities pursuant to the registration provisions of Section 5 of the Securities Act of 1933. I recognize that statements contained herein concern a matter within the jurisdiction of an agency of the **Navajo Nation** and the making of a false, fictitious or fraudulent statement may render the maker subject to prosecution under Title 18, United States Code Sections 1001 and 494. This affidavit is made to induce the **Navajo Nation** to accept me as surety on the attached bond.

1. NAME (First, Middle, Last) (Type or Print)	2. HOME ADDRESS (Number, Street, City, State, ZIP Code)
3. TYPE AND DURATION OF OCCUPATION	4. NAME AND ADDRESS OF EMPLOYER (If Self-employed, so State)
5. NAME AND ADDRESS OF INDIVIDUAL SURETY BROKER USED (Number, Street, City, State, ZIP Code)	6. TELEPHONE NUMBER HOME - BUSINESS -

7. THE FOLLOWING IS A TRUE REPRESENTATION OF THE ASSETS I HAVE PLEDGED TO THE **Navajo Nation** IN SUPPORT OF THE ATTACHED BOND:
(a) Real estate (Include a legal description, street address and other identifying description; the market value; attach supporting certified documents including recorded lien; evidence of title and the current tax assessment of the property. For market value approach, also provide a current appraisal.)

(b) Assets other than real estate (describe the assets, the details of the escrow account, and attach certified evidence thereof).

8. IDENTIFY ALL MORTGAGES, LIENS, JUDGEMENTS, OR ANY OTHER ENCUMBRANCES INVOLVING SUBJECT ASSETS INCLUDING REAL ESTATE TAXES DUE AND PAYABLE.

9. IDENTIFY ALL BONDS, INCLUDING BID GUARANTEES, FOR WHICH THE SUBJECT ASSETS HAVE BEEN PLEDGED WITHIN 3 YEARS PRIOR TO THE DATE OF EXECUTION OF THIS AFFIDAVIT.

DOCUMENTATION OF THE PLEDGED ASSET MUST BE ATTACHED.

10. SIGNATURE	11. BOND AND CONTRACT TO WHICH THIS AFFIDAVIT RELATES (Where Appropriate)
---------------	---

12. SUBSCRIBED AND SWORN TO BEFORE ME AS FOLLOWS:

a. DATE OATH ADMINISTERED			b. CITY AND STATE (Or other jurisdiction)		Official Seal
MONTH	DAY	YEAR			
c. NAME AND TITLE OF OFFICIAL ADMINISTERING OATH (Type or print)			d. SIGNATURE	e. MY COMMISSION EXPIRES	

INSTRUCTIONS

1. Individual sureties on bonds executed in connection with Government contracts must complete and submit this form with the bond. (See 48 CFR 28.203, 53.228(e).) The surety must have the completed form notarized.
2. No corporation, partnership, or other unincorporated association or firm, as such, is acceptable as an individual surety. Likewise, members of a partnership are not acceptable as sureties on bonds that a partnership or an association, or any co-partner or member thereof, is the principal obligor. However, stockholders of corporate principals are acceptable provided (a) their qualifications are independent of their stockholdings or financial interest therein, and (b) that the fact is expressed in the affidavit of justification. An individual surety will not include any financial interest in assets connected with the principal on the bond that this affidavit supports.
3. United States citizenship is a requirement for individual sureties for contracts and bonds when the contract is awarded in the United States. However, when the Contracting Officer is located in an outlying area or a foreign country, the individual surety is only required to be a permanent resident of the area or country in which the contracting officer is located.
4. All signatures of the affidavit submitted must be originals. Affidavits bearing reproduced signatures are not acceptable. An authorized person must sign the bond. Any person signing in a representative capacity (e.g., an attorney-in-fact) must furnish evidence of authority if that representative is not a member of a firm, partnership, or joint venture, or an officer of the corporation involved.

Section 561. —STRUCTURAL CONCRETE INJECTION AND CRACK REPAIR

Add the following requirements to Section 561 of the FP-03:

Description

561.01 This work consists of repairing cracks in concrete structures by injecting epoxy into the cracks.

Material

561.02 Conform to the following Subsection:

Epoxy resin adhesives 725.21

Polymer concrete and mortar 725.22

Construction Requirements

561.03 Crack Preparation. Notify the CO at least 14 days before beginning work. The COR/COTR will identify work areas and mark the cracks to be repaired.

Submit the following for approval 14 days before beginning work:

- (a) Personnel qualifications;
- (b) The manufacturer's recommended material; and
- (c) Describe the material to be used including the properties of each material and the specifications to which the material comply.
- (d) An injection procedure for performing the work.

Remove dirt, laitance, and other debris from the exterior and interior of the crack. Apply a temporary surface seal material to the face of the crack. Use a surface seal material with sufficient strength and adhesion to confine the injected epoxy resin adhesive until cured.

Provide openings (entry ports) in the surface seal along the crack. Make the distance between entry ports at least the thickness of the concrete member being repaired.

561.04 Injection Procedure. Maintain the epoxy resin adhesive component mix ratio within 5 percent by volume as prescribed by the manufacturer. Do not use solvents to thin the epoxy.

Use positive inline displacement type equipment to meter, mix, and inject the epoxy at pressures not to exceed 200 pounds per square inch (1380 kilopascals). Begin injecting epoxy at the lowest entry port. Continue the injection at the first port until epoxy flows from the next highest port. Plug the first port and inject epoxy into the second port until epoxy flows from the next highest port. Continue this sequence until the entire crack is filled.

Perform the following tests for each injection unit at the beginning and at the end of each day the unit is used.

(a) Ratio check test. Disconnect the mixing head of the injection equipment. Pump the two adhesive components through a ratio check device having two independent valved nozzles capable of controlling the flow rate and back pressure by opening or closing the valves. Use a pressure gauge capable of sensing back pressure behind each valve. Adjust the discharge pressure to 200 pounds per square inch (1380 kilopascals) for both epoxy components. Simultaneously discharge both epoxy components into separate calibrated containers. Compare the discharged quantities to determine the mix ratio.

After the test is completed at 200 pounds per square inch (1380 kilopascals) discharge pressure, repeat the procedures for 0 pounds per square inch (0 kilopascals) discharge pressure.

(b) Pressure check test. Disconnect the mixing head of the injection equipment. Attach the two adhesive component delivery lines to a pressure check device having two independent valved nozzles capable of controlling the flow rate and pressure by opening or closing the valves. Use a pressure gauge capable of sensing the pressure build-up behind each valve. Close the valves on the pressure-check device and operate the equipment until the gauge pressure on each line reads 200 pounds per square inch (1380 kilopascals). Stop the pumps and check that the gauge pressure does not drop below 190 pounds per square inch (1310 kilopascals) within 3 minutes.

(c) Records. Maintain and make available to the COR complete and accurate records of the ratio and pressure check tests before and after use of the injection equipment. Additional ratio and pressure check tests may be required.

561.05 Coring. Take one 2-inch (50-millimeter) diameter test core according to AASHTO T 24 for every 50 feet (15 meters) of repaired crack at designated locations. The crack repair is acceptable when the epoxy bonding has penetrated at least 90 percent of the crack volume within the core sample.

When a test core is unacceptable, redo that 50-foot (15-meter) crack segment or the segment that the core represents and resample. Repeat this procedure until acceptable crack repair is achieved.

561.06 Finishing. Remove the surface seal and fill sample core holes with polymer concrete and mortar. Finish the face of the crack, the entry ports, and the core holes flush with the adjacent surface and finish the surface to match the adjacent concrete.

561.07 Traffic Control. Provide traffic control beginning with the application of epoxy paste surface seal. Continue providing traffic control for 6 hours after completion of the crack injection work or until the injected epoxy resin adhesive has reached a compressive strength of at least 1,450 pounds per square inch (10 megapascals), whichever is less.

Provide traffic control to slow traffic to a maximum speed of 15 miles (25 kilometers) per hour.

For bridge deck repairs, stage traffic so that the edge of the nearest travel lane is no closer than the center of the adjacent girder, unless specified in the contract.

561.08 Acceptance. See Table 561-1 for sampling, testing, and acceptance requirements.

Material for structural concrete injection and crack repair will be evaluated under Subsections 106.02 and 106.03. Structural concrete injection and crack repair work will be evaluated under Subsections 106.02 and 106.04.

Measurement

561.09 Measure the Section 561 pay items listed in the bid schedule according to Subsection 109.02.

Payment

561.10 The accepted quantities will be paid at the contract price per unit of measurement for the Section 561 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Table 561-1
Sampling, Testing, and Acceptance Requirements

Material or Product (Subsection)	Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specification	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Epoxy resin adhesive	Process control (153.03)	Ratio check (Mix)	—	Subsection 561.04(a)	Daily before starting work and after ending work	Injection unit	No	Subsection 561.04(c)
		Pressure check	—	Subsection 561.04(b)	"	"	"	"
Epoxy resin adhesive	Measured and tested for conformance (106.04)	Penetration of material into crack	—	Subsection 561.05	1 core for every 50 feet (15 meters) of repaired crack length	In-place after epoxy resin injection completed	No	Upon completion of test