

SPECIAL PROVISIONS

2550 East US 6 Railroad Utility Crossings - 2006

1. Definitions.

1.01. City. The city of Spanish Fork.

1.02. Contractor. The Contractor shall be the company, with appropriate state licenses, contracted with by Spanish Fork City by the competitive bid process to construct this project.

1.03. Engineer. The Spanish Fork City engineer or his/her designee.

1.04. Sub-Contractors. A person or company hired by the Contractor to perform construction for the City, having appropriate state licenses to perform said work.

2. Pressure Pipe Mains (Items 1 through 4). These items shall include the pipe, fittings, appurtenances, excavation and all labor, equipment and material required to place and test the proposed mains according to the plans and specifications, detail drawings, City standards and manufacturer's specifications. These items shall also include all labor, equipment and material required to place the bedding, engineered fill, untreated base course and pavement according to the plans, detail drawings, City standards and manufacturer's specifications for the pipe.

2.01. Ductile Iron Pipe. All ductile iron pipe shall be Class 350 poly-wrapped according to City standards. Each joint shall have 3 cad welds installed according to manufacturer's specifications for corrosive soils.

2.02. Excavation. These items include the removal and disposal of all existing material required to cut pavement and excavate trenches. These items shall also include pot holing and locating existing structures and utilities as revealed by a bluestake. All pipe shall have a minimum of 6 inches of separation from structures or utilities. Contractor shall be responsible to plan grade to provide this separation before laying pipe.

No change orders or payment will be made for mains that must be looped because the Contractor failed to properly locate and account for existing structures and utilities which are either visible or bluestaked. Contractor must schedule the City to mark the final alignment of the mains 2 business days before excavating.

The plans show the proposed utilities crossing a phone cable at the north end of the proposed casing. The Contractor shall pothole this phone cable at the

beginning of the project and schedule with the utility relocation if necessary. The City shall pay relocation costs assessed by phone utility only. All Contractor costs to do this shall be included in the cost of the pressure pipe mains.

2.03. Ductile Iron Pressure Pipe Main into Existing Casings (Items 2 & 4).

The pipe installed into the existing casing under Highway 6 as shown in the plans shall be installed and sanded according to the specifications for carrier pipe in steel casings included in the special provision for Steel Casings. All costs to do this shall be included in these line items for Ductile Iron Main.

2.04. Appurtenances. These items shall also include mechanical restraints and locator tape as specified in the City standards. Mechanical restraining shall be required at all fittings according to City standards for mechanical restraints. The elbows at the northeast end of the proposed casings and the plugs at the north end of the project shall have both mechanical restraints and concrete thrust blocks. The restrained pipe lengths (“L” according to City standards) and the bearing area for the concrete thrust blocks shall be as follows:

Fitting	“L”	Bearing Area	Minimum Distance to Stable Bearing Earth
20” D.I. Elbow	40 feet	17.5 square feet	3 feet
16” D.I. Elbow	40 feet	10 square feet	2 feet
20” D.I. Plug	80 feet	30 square feet	3 feet
16” D.I. Plug	100 feet	25 square feet	3 feet

2.05. Inspections. All trenches, fittings and restraints must be inspected by the City before backfilled. See the Inspection and Testing special condition.

2.06. Payment. Payment shall be made for each lineal foot of main placed.

3. SDR 11 HDPE Conduit (Items 5 through 10). These items shall include the conduit, appurtenances and all labor, equipment and material required to bed and place conduit according to the plans and specifications, detail drawings, City standards and manufacturer’s specifications. These items shall also include all fittings, protective tape for metal conduit, pull strings, plugs, locator tape and spacer brackets placed every 20 feet as specified in the City standards. Conduit must be free from kinks, crushing and obstructions.

3.01. Conduit into Existing Casings (Items 2 & 4). The pipe installed into the existing casing under Highway 6 as shown in the plans shall be installed according to the specifications for carrier pipe in steel casings included in the special provision for Steel Casings. All costs to do this shall be included in these line items for SDR 11 HDPE Conduit.

3.02. Trench and Casing. Trench excavation, backfill, trench repair and casings shall be paid for in separate line items.

3.03. Inspections. All trenches, fittings and boxes must be inspected by Spanish Fork City before backfilled. See the Inspection and Testing special condition for inspection and testing information.

3.04. Payment. Payment shall be made for each lineal foot of conduit placed.

4. Electrical and Communication Conduit Trench (Item 11). This item shall include all labor, equipment and material required to excavate and backfill trench for the electrical and communication conduit according to City standards. Only engineered fill shall be used as backfill above the pipe zone. All pavement shall be repaired with 3 inches of asphalt pavement over 8 inches of untreated base course.

4.01. Payment. Payment shall be made for each lineal foot of trench excavated and repaired.

5. Cut Existing Casings (Items 12 through 14). These items shall include all labor, equipment and material required to cut the existing casings according to the plans and specifications.

5.01. Payment. Payment shall be made in lump sum for cutting each casing.

6. Steel Casings (Items 15 through 17). These items shall include the casing and all labor, equipment and material required to jack and bore the casing according to the plans and specifications, detail drawings and City standards. Only methods that are accepted by Union Pacific Railroad Company may be used to install casing. This work shall include excavation of bore pits, backfill, furnishing and installing steel casing, boring and jacking and all other work and material necessary to install the casing pipe. The contractor shall be solely responsible for safety, accuracy and adequacy of its construction method and procedures, and for all cost and damages from their failure or inaccuracies.

6.01. Material. The casings shall be welded steel pipe conforming to ASTM Designation A-139, Grade A with a 5/16 or 1/2 inch wall thickness as indicated in the bid schedule.

6.02. Bore Pits. These items shall also include all labor, equipment and material required to excavate and backfill bore pits required to place casing. All excavation and backfill shall meet City standards for engineered fill and its placement. Bore pits must be inspected by the City before backfilled. See the Inspection and Testing special condition.

6.03. Permits and Flagging. All construction operations shall be subject to the approval of the railroad whose facility is being crossed. The City will secure and pay for permits from the railroad company to work within the right-of-way. The Contractor shall provide and pay for all insurance requirements and the services

of all Union Pacific watchmen and flagmen required by the railroad company for the whole project. These costs shall be included with these items to install the casings.

6.04. Notification. The Contractor shall notify the railroad company at least two weeks in advance of commencing work within the right-of-way.

6.05. Construction Methods. The steel pipe casing shall be jacked under the railroad tracks, highway or Interstate using methods submitted to the Engineer for review by the Engineer. Spanish Fork City has contracted with Terracon Engineering to do a soils investigation with soil samples taken as indicated in the plans. This report will be available for review at the City offices on or before December 21, 2005. Circular pipe joints shall be field welded as the jacking process progresses. The pipe interior shall be completely excavated and cleaned prior to installation of the carrier pipe.

All required approach trenches or working pits shall be excavated and shored according to City standards. Provisions shall be made for a drain sump in one corner of the working pit to allow for the accumulation and pumping of seepage water, if ground water is encountered.

6.06. Line and Grade. Casings shall be installed accurately to the line and grade shown of the Drawings. Casings shall be installed to grade with sufficient accuracy to permit installation of the carrier pipe to the design grade shown on the Drawings or to the cover depth required. Instrument checks of the line and grade shall be made by the Contractor at intervals sufficient to maintain the casing on line and grade.

6.07. Carrier Pipe Installation through Casings. The carrier pipe shall be installed to the grade shown on the Drawings. Casing insulators or chocks shall be fastened to the carrier pipe as per the manufacturer's recommendations. For ductile iron pipe or PVC pipe, insulators shall be installed within one foot on each side of the bell and one in the center of the joint when 18' or 20' long joints are used.

Metal components of the insulators or chocks shall be manufactured from 14 Ga. Steel, hot rolled and pickled and plastic coated or Type 304 (18-8) stainless steel. The liner shall be polyvinyl chloride or Neoprene Rubber with antioxidant and antizonant properties for extended service life. Runners shall be glass reinforced plastic or UHMW polyethylene. Runners shall have high abrasion resistance and a low friction coefficient. Following installation of the carrier pipe the annular space between the inside of the casing and the outside of the carrier pipe shall be blown full of sand. The sanding operation shall be carried out such that sand is placed in the center of the casing first and the annular space filled as the placing pipe is withdrawn. The Contractor shall not be allowed to wash sand in from the end of the casing.

6.08. Jacking Operations. Before starting excavation the contractor shall submit drawings of jacking pit bracing, casing (or conduit) and jacking head proposed to be used.

Unless otherwise specified, the methods and equipment used in jacking casing or conduit shall be optional with the contractor, provided that the proposed method is approved by the Engineer. Such approval, however, shall in no way relieve the contractor of the responsibility for making a satisfactory installation meeting the criteria set forth herein. Only workers experienced in jacking operations shall be used in performing the work.

The leading section of conduit shall be equipped with a jacking head securely anchored thereto to prevent any wobble or variation in alignment during the jacking operation.

The driving ends of the conduit shall be properly protected against spalling and other damage, and intermediate joints shall be similarly protected by the installation of sufficient bearing shims to properly distribute the jacking stresses. Any section of conduit showing signs of failure shall be removed and replaced with a new section of pre-cast conduit, or with a cast-in-place section, which is adequate to carry the loads imposed upon it.

Excavation shall not be made in excess of the outer dimensions of the conduit being jacked unless approved by the Engineer. Every effort shall be made to avoid any loss of earth outside the jacking head. Excavated material shall be removed from the conduit as excavation progresses, and no accumulation of such material within the conduit will be permitted.

Once the jacking operation has commenced, it shall be continued uninterrupted around the clock until the conduit has been jacked between the specified limits.

Upon completion of the jacking operations, all voids around the outside face of the conduit shall be filled by grouting.

Grouting equipment and material shall be on the job site before jacking operations and drilling of the grout holes are completed in order that grouting around the jacketed conduit may be started immediately after the jacking operations have finished. Grout holes shall be placed every 6 feet of length of boring casing and should appreciable loss of ground occur during the jacking operation, the voids shall be backpacked promptly to the extent practicable with soil cement consisting of a slightly moistened mixture of 1 part cement to 5 parts granular material. Where the soil is not suitable for this purpose, the contractor shall import suitable material at its expense. The soil cement shall be thoroughly mixed and rammed into place as soon as possible after the loss of ground.

6.09. Jacking Steel Casing. The joints of sections of casing to be jacked shall be welded with a continuous circumferential weld. It shall be the contractor's responsibility to provide street transfer across the joints which is capable of resisting the jacking forces involved.

Backfill shall be gunite sand, gunite concrete or pressure concrete, except where specified otherwise in the plans or in the special provisions. Pressure concrete shall not be placed until the mix design, placement method and equipment have been approved by the Engineer.

If the pressure concrete mix cannot be readily pumped or placed by the placing equipment, additional water may be added, provided the water-cement ratio of the approved mix design is not exceeded.

Where gunite sand backfill is used, the pipe shall be laid on a concrete sub-base or on gravel bedding where shown on the plans or approved by the Engineer. Where gunite concrete or pressure concrete backfill is to be used, the pipe shall be laid on a sub-base of pipe bedding concrete to be approved by the Engineer before installation.

In addition to submitting details of the jacking pit bracing, casing and jacking head, the contractor shall submit to the Engineer for approval details of the following in advance of the proposed jacking operation: concrete support blocks, bracing to prevent pipe shifting or flotation, and pressure concrete mix design, placement method, and equipment.

Please note that there is only 28 feet of clearance from the railroad casings horizontally back to the highway casings.

6.10. Tolerances. Casings shall be jacked true to line and grade and the contractor shall modify the jacking operation to correct any deviation. Unless otherwise shown on the plans or indicated in the special provisions, when a pilot tunnel is required to be constructed in connection with the contractor will be permitted a tolerance from exact grade or alignment of 1-inch per 100-feet (.83 mm per m).

6.11. Payment. Payment shall be made for each lineal foot of casing placed up to the length of casing bid. No additional payment will be made for casing placed that is longer than specified in the plans unless required by the Engineer.

7. 30x30x20 inch Prefabricated CMC CML Steel Tee (Item 18). This item shall include the tee, butt straps and all labor, equipment and material required to place the tee according to the plans and specifications, detail drawings, City standards and manufacturer's specifications. This item shall also include a concrete thrust block with a 30 square foot bearing area and a minimum of 3 feet to solid bearing earth.

7.01. Tie In. Contractor shall be responsible to find the exact location of water main before planning out tie in alignment. Tie in must be scheduled with UDOT and the City 10 days in advance. Water may only be shut off for the tie in for 5 days.

7.02. Payment. Payment shall be made by lump sum for the valve and fittings installed.

8. Water Main Valves (Items 19 and 20). These items shall include the valve, valve box, sleeve and all labor, equipment and material required to place valve according to the plans and specifications, detail drawings, City standards and manufacturer's specifications.

8.01. Concrete Collars. Concrete collars shall not be installed as part of this project.

8.02. Inspections. All valves must be inspected by Spanish Fork City before backfilled. See Inspection and Testing special provision.

8.03. Payment. Payment shall be made for each valve placed.

9. Fire Hydrant (Item 21). This item shall include the hydrant, 6 inch gate type foot valve, 6 inch C900 PVC pipe to the main and tee onto the main and all labor, equipment and material required to place them according to the plans and specifications, detail drawings, City standards and manufacturer's specifications.

9.01. Mechanical Restraints. Mechanical type restraints installed to City standards shall be required at all joints.

9.02. Inspections. Hydrants, valves and pipe must be inspected by the City before backfilled.

9.03. Payment. Payment shall be made for each hydrant placed.

10. Sectionalizers and Pedestals (Items 22 and 23). These items shall include the sectionalizer, pedestal, ground sleeves and all labor, equipment and material required to install them according to plans and specifications, detail drawings, City standards and manufacturer's specifications.

10.01. Dog House Type Communication Pedestal. This pedestal shall be a City standard large pedestal Channel part #SPH14326C3B1L01.

10.02. Payment. Payment shall be made for each sectionalizer or pedestal placed.

11. Locate and Plug Existing 2 inch Service Lateral (Item 24). This item shall include all labor, equipment and material required to locate and plug the existing 2 inch service lateral according to the plans and specifications, detail drawings, city Standards and manufacturer's specifications. Lateral shall be disconnected and plugged at the water main.

11.01. Payment. Payment shall be made for each service lateral located and plugged.

12. 2 inch Saddle and Corporation Stop (Item 25). This item shall include the saddle and corporation stop and all labor, equipment and material required to install them according to the plans and specifications, detail drawings, City standards and manufacturer's specifications .

12.01. Payment. Payment shall be made for each saddle and corporation stop assembly installed.

13. 2 inch Polyethylene Water Service Line (Item 26). This item shall include the polyethylene pipe and all labor, equipment and material required to connect to the corporation stop and place the service line according to the plans and specifications, detail drawings, City standards and manufacturer's specifications.

13.01. Inspections. Service lines must be inspected by City before backfilled.

13.02. Payment. Payment shall be made for each lineal foot of 2 inch service line placed.

14. 2 inch Stop and Waste Valve (Item 27). This item shall include the stop and waste valve and all labor, equipment and material required to install valve according to the plans and specifications, detail drawings, City standards and manufacturer's specifications. A 2 foot square gravel envelope shall be placed around valve.

14.01. Payment. Payment shall be made for each saddle and corporation stop assembly placed.

15. Restoration of Surface Improvements. All surface improvements disrupted as a course of construction shall be restored to the original type of surface condition. This includes landscaping, pavement sections, gravel shoulders and concrete. All restoration work shall be done according to the City standards.

15.01. Existing Conditions. The Contractor shall be responsible to visually inspect all existing surface improvements and include the restoration of these improvements in each individual line item which would disrupt the improvements in the course of construction.

15.02. Landscaping. All landscaping shall be restored to the original type of landscaping with new material. Sod shall be used to restore grass areas.

15.03. Pavement Sections. Saw-cutting or milling pavement and all other requirements of the City standards shall be included in the cost of the individual items. Three inches of bituminous surface course shall be placed back in paved areas. Trenches shall be paved back at the end of each week.

15.04. Gravel Shoulders. Gravel shoulders shall be restored with a minimum of 8 inches of untreated base course compacted to the City standards.

15.05. Concrete. All concrete shall be restored to match existing concrete. All forms must be inspected by Spanish Fork City before concrete may be poured.

15.06. Payment. There will be no payment for the restoration of surface improvements. The cost for the restoration of surface improvements shall be included in the cost for each individual item causing the disruption of the surface improvements. The Contractor shall be responsible to visually inspect all existing surface improvements that will need to be restored during construction before bidding and include the cost of their restoration in their bids.

16. Construction Schedule and Traffic Control. A construction schedule and traffic control plan for the construction shall be submitted to and approved by the City and UDOT. All traffic control shall meet the requirements of the MUTCD. The contractor shall be responsible to obtain and pay for the UDOT permit.

16.01. Road and Access Closures. Road closures will be allowed only during working hours. Streets must remain passable at all times, with an all weather surface. Accesses to private property must be a primary concern. Accesses may not be closed for longer than 2 hours. Roads must remain passable at all times unless otherwise approved by the Engineer. Proper signage, consistent with the MUTCD, will be required throughout the project. One business day's notice will be required for all road and access closures. Those who should be notified are 1) Spanish Fork Police, Fire, and Ambulance; 2) Spanish Fork City; and 3) affected property owners.

16.02. Construction Schedule. The City anticipates having the permits from Union Pacific to begin construction by the end of the year. If these permits are delayed the City may at no additional cost delay construction up to 45 days. After 45 days the Contractor may request that the project be re-bid. Construction must be completed 90 days after the contract is awarded or the railroad permits are obtained whichever comes later. Rain and weather related delays will extend the required completion time for the project.

16.03. Railroad Notification. Union Pacific Railroad shall be notified 10 business days before excavation in Union Pacific right of way. Contact Terrel Anderson, Union Pacific Projects Coordinator, at (801) 212-3939.

16.04. Payment. There will be no payment for the construction schedule and traffic control. The cost for scheduling the construction and conducting traffic control shall be included in the cost for each individual item.

17. Plans. Plans represent the Cities' best estimation of the existence and location of current utilities. The final location of each item shall be marked in the field by bluestake prior to cutting the pavement to install any item. Contractor shall be responsible to locate before laying pipe all existing utilities bluestaked whether shown on the plans or not. A set of plans, specifications, and detail drawings must be on site with each contractor crew or sub-contractor crew when any work is being done on the project.

18. Survey.

18.01 Notice. Contractor must give 2 business days notice when surveys are needed.

18.02 Protection of Survey. Contractor is responsible for the protection of any survey on the project. Survey which is interfered with will be replaced by Spanish Fork City at an expense to the contractor of \$50.00 (fifty dollars) a hub or rebar.

19. Payment. Payments will be made on the 10th of each month for the work done in the previous month. The contractor must follow-up to ensure that everything is being done properly to receive payment.

19.01. Submittals. On the 20th of each month, the contractor must ensure a pay request form is received from Spanish Fork City. This form will show how much of each item the city has paid for to date. The contractor will then fill out the amount of work done since the last pay request.

19.02. Immediate Action Requests. The City will issue immediate action requests to the Contractor during the course of the project. Requests that originated with citizen complaints or deficiencies in construction shall be completed before payments may be released.

19.03. Pay Requests Due. The completed pay request will be due into the engineering office of Spanish Fork City by the 25th of each month. Spanish Fork City will then check the pay request and edit it to what reasonably has been done.

19.04. Retainage. There will not be any retainage held on payments. However, once 85% of the work on a project is completed only one more pay request will

be processed for that project. This last pay request will be processed upon completion of the final inspection check list.

19.05. Final Inspection. When the contractor feels a project is completed, an appointment for a final inspection will be requested by the contractor with the engineering secretary (801) 798-5000 extension 22. At this final inspection, a punch list will be made and a copy given to the contractor. The contractor must finish the punch list by the given completion date of the project or liquidated damages will be charged.

When the punch list is finished the contractor shall set an appointment with the Public Works Inspector through the engineering secretary. The inspector will then measure up every item with the contractor and a final pay request will be filled out and signed by both the contractor and Spanish Fork. The contractor will then be evaluated and the retainage for the project released.

20. Inspection and Testing. All work must meet requirements set forth in the plans and specifications, detail drawings and City standards. All work shall be inspected before backfilled. Inspections of items before they are buried will also include the City GPS crew surveying the exact location of each item.

20.01. Density Testing. Spanish Fork City will contract with a certified lab or engineering firm to test for compaction of all road base, sub-base, trench backfill and asphalt installed. Density tests will be taken on the road-base under every 50 feet on sidewalk, curb and gutter, and curb wall and every 100 feet in trenches and in the road. At least one test must be done on each separate area of compacted material. No pipe or concrete work shall be paid for until certification of compaction of the base and backfill material under or around these items is obtained. No pipe shall be paid for until all required tests on the pipe are passed.

20.02. Concrete Testing. Spanish Fork City will contract with a certified lab or engineering firm to test concrete. Certification of slump, air entrainment and cylinder strength shall be obtained for every 50 cubic yards of concrete placed or each separate pour. No concrete work shall be paid for until these certifications are submitted to Spanish Fork City.

20.03. Notification. Contractor must call the City or testing lab for required inspections and tests 1 business day before test is ready to be done.

21. Change Orders. Work on all change orders shall not commence until a signed change order form is in place unless an emergency occurs endangering people's lives. If extra work is done without a change order in place then the work will not extend the contractor's completion deadline and payment amounts, if any, will be determined by Spanish Fork City.

Change orders will not be required for minor line item changes made by Spanish Fork City and the contractor in the field. A minor line item change is a change that will increase the cost of the project by less than 500 dollars.

22. Line Items. Spanish Fork reserves the right to eliminate any or all items from the scope of this project. This will be done with a change order set in place before the work on the item is commenced by the contractor.

23. Work Hours. Working hours shall be Monday through Thursday 7 AM to 7 PM in residential areas unless otherwise specified. Spanish Fork City must be notified two business days before working on a holiday, Friday or weekend or weekday before 7 AM or after 7 PM. Flashing light and alarm type backup alarms shall be used after dark.

24. Work Zone. The work zone will be kept in an orderly manner and cleaned daily. The work zone will be watered and or swept as needed to control dust.

25. Pre-Construction Meeting. A pre-construction meeting will be held with the contractor and all sub-contractors and the City prior to commencement of work on this project. At this meeting a time will be set for a weekly progress meeting which will be held to discuss the progress of the project. Contractor will make an appointment with the engineering secretary for this meeting.

26. Standards. All materials shall be installed to manufacturer specifications and the City standards unless otherwise specified in the plans and specifications or detail drawings. Any item not discussed in this document will be determined by the City standards or the City Engineer or his/her designee.

27. Water Shut-offs. Contractor will notify in writing the City and all affected residents and business' about water shut-offs 2 business days prior to shut-off and designate time of shut-off and duration. Shutoffs may not exceed 6 hours in length or be between the hours of 5 pm and 10 pm or 6 am and 9 am unless otherwise specified. The only time a resident is expected to be shut off of water is when the 2 inch service line is tied in.

28. Pre-Construction Video. At the pre-construction meeting the Contractor will submit a video of the existing condition of the project site area. This video will be used to resolve disputes over damaged property. Any property damage not shown on this video that the City determines could be the fault of the Contractor shall be repaired at the Contractor's expense. Video shall have shots of concrete and landscaping in the project area at a close enough range to show cracks and existing damage.

29. Contractor Qualifications and Experience. Bids will only be awarded to the lowest responsible bidder as specified in the Utah State Code. The contractor's qualifications and experience forms included in this bid book shall be completely filled out and submitted with bid. Failure to do so may be basis to reject the bid. The City reserves the right to determine a non-responsible bidder based upon these forms or any other research conducted by the city.

30. Pre-Bid Meeting. A pre-bid meeting will be scheduled for December 20, 2005 at 3:00 PM MST at the City offices.