Designer Note: The subject special provision is intended for use on resurfacing contracts or contracts with bridge repair. This is to be used in lieu of using normal pavement repair procedures on these structural slabs. No details are required on the plans other than showing estimated locations of approach slab repair in a plan view similar to that being done with bridge deck repairs. If the contract includes other bridge repairs then the appropriate pay items should appear on the bridge's total bill of material in addition to the summary of quantities.

The Bureau of Bridges and Structures will monitor implementation through the plan review process.

APPROACH SLAB REPAIR

Effective: March 13, 1997

Description. This work shall consist of bituminous surface removal, when required, the removal and disposal of all loose and deteriorated concrete and the replacement with new concrete to the original top of approach slab. The work shall be done according to the applicable requirements of Sections 501, 503 and 1020 of the Standard Specifications and this Special Provision.

Approach slab repairs will be classified as follows:

(a) Partial-Depth. Partial-depth repairs shall consist of removing the loose and unsound approach slab concrete, disposing of the concrete removed and replacing with new concrete. The removal may be performed by chipping with power driven hand tools or by hydro-equipment. The depth shall be measured from the original concrete surface, at least 20 mm (3/4 inch) but not more than 140 mm (5 1/2 inches) unless otherwise specified on the plans.

(b) Full-Depth. Full-depth repairs shall consist of removing concrete full-depth of the slab, disposing of the concrete removed, and replacing with new concrete to the original approach slab surface. The removal may be performed with power driven hand tools or by hydro-equipment.

Materials. All materials shall comply with the requirements of Sections 503 and 1020 of the Standard Specifications.

Concrete for partial and full-depth repairs shall be proportioned and mixed according to the applicable portions of Section 1020 of the Standard Specifications except as follows:

No calcium chloride will be permitted in the mix.

	Per Bag of Cement		Per Cu. M (Cu. Yd.) of Cement	
	kg.	(lbs.)	kg.	(lbs.)
Portland Cement	43	(94)	436	(735)
Fine Aggregate*	77	(170)	787	(1,326)
Coarse Aggregate*	80	(175)	810	(1,365)
Water*	19	(42)	193	(325)
	18.5 L	(4.9 gals.)	194 L	(39.2 gals.)
Air Entrainment	6 to 9%		6 to 9%	

*Based on saturated surface-dry aggregate with a specific gravity of 2.65. The mix will be adjusted by the Engineer to compensate for aggregate specific gravity and moisture. Coarse aggregate shall be gradation CA 13, CA 14 or CA 16, subject to approval of the mix design. Fine aggregate shall be gradation FA 1 or FA 2.

Grout. The grout for bonding new concrete to old concrete shall be proportioned with equal parts by mass (weight) of Portland cement and sand, mixed with sufficient water to form a slurry. The grout may be ready-mixed or mixed at the job site. The bonding grout shall have a consistency allowing it to be scrubbed onto the prepared surface with a stiff brush or broom leaving a thin, uniform coating that will not run or puddle in low spots.

Equipment: The equipment used shall be subject to the approval of the Engineer and shall meet the following requirements:

(a) Surface Preparation Equipment. Surface preparation and concrete removal equipment shall comply with the applicable portions of Section 1100 of the Standard Specifications and the following:

(1) Sawing Equipment. Sawing equipment shall be a concrete saw capable of sawing concrete to the specified depth.

(2) Blast Cleaning Equipment. The blast cleaning may be performed by wet sandblasting, high-pressure water blasting, abrasive blasting, or other methods approved by the Engineer. Blast cleaning equipment shall be capable of removing rust and old concrete from exposed reinforcement bars. Oil traps will be required.

(3) Power-Driven Hand Tools. Power-driven hand tools will be permitted including jackhammers lighter than the nominal 20 kg. (45 pound) class. Chipping hammers heavier than a nominal 6.8 kg. (15 pound) class shall not be used for removing concrete from below any reinforcing bar for partial depth repairs or final removal at the boundary of full-depth repairs. Jackhammers or chipping hammers shall not be operated at an angle in excess of 45 degrees measured from the surface of the slab.

(4) Hydro-Scarification Systems. The hydro-scarification equipment shall consist of filtering and pumping units operating with a remote-controlled robotic device. The equipment may use river, stream or lake water. Operation of the equipment shall be performed and supervised by qualified personnel certified by the equipment manufacturer. Evidence of certification shall be presented to the Engineer. The equipment shall be capable of removing concrete to the specified depth and removing rust and concrete particles from exposed reinforcing bars. Hydro-scarification equipment shall be calibrated before being used and shall operate at a minimum of 124 MPa (18,000 psi).

(b) Concrete Equipment: Equipment for proportioning and mixing the concrete shall comply with the applicable requirements of Section 1103 of the Standard Specifications.

(c) Placing and Finishing Equipment: Placing and finishing equipment shall be according to Article 503.17 of the Standard Specifications. Adequate hand tools will be permitted for placing and consolidating concrete in the patch areas and for finishing small patches.

Construction Requirements:

(a) Bituminous Surface Removal.

The bituminous concrete surface course shall be removed and disposed of according to applicable portions of Articles 440.03 and 440.06 of the Standard Specifications. If the overlay contains asbestos fibers, removal shall be according to the Special Provision for "Asbestos Waterproofing Membrane or Asbestos Bituminous Concrete Surface Removal". Removal of the bituminous surface by the use of radiant or direct heat will not be permitted.

(b) Surface Preparation:

All loose, disintegrated and unsound concrete shall be removed from portions of the approach slab shown on the plans or as designated by the Engineer. The Engineer will determine the limits of removal as the work progresses.

If the Contractor elects to use hydro-scarification equipment, he/she shall be responsible for collecting and properly disposing of the runoff water generated. Runoff water will not be allowed to constitute a hazard on adjacent or underlying roadways, waterways, drainage areas or railroads nor be allowed to erode existing slopes.

The Contractor shall take care not to damage reinforcement bars or expansion joints which are to remain in place. Any damage to reinforcement bars or expansion joints shall be corrected at the Contractor's expense. All loose reinforcement bars, as determined by the Engineer, shall be retied at the Contractor's expense.

(1) Partial-Depth. Areas to be repaired will be determined and marked by the Engineer. A concrete saw shall be used to provide vertical edges approximately 20 mm (3/4 inch) deep around the perimeter of the area to be patched when an overlay is not specified. Where high steel is present, the depth may be reduced as directed by the Engineer. A saw cut will not be required on those boundaries along the face of the curb, parapet or joint or when sharp vertical edges are provided by hydro-scarification. The saw cut may be omitted if the deck is to receive an overlay.

The loose and unsound concrete shall be removed by chipping, with power driven hand tools or by hydro-equipment. All exposed reinforcing bars and newly exposed concrete shall be thoroughly blast cleaned. Where, in the judgment of the Engineer, the bond between existing concrete and reinforcement steel within the patch area has been destroyed, the concrete adjacent to the bar shall be removed to a depth that will permit new concrete to bond to the entire periphery of the exposed bar. A minimum of 25 mm (1-inch) clearance will be required. The Engineer may require enlarging a designated removal area should inspection indicate deterioration beyond the limits previously designated. In this event, a new saw cut shall be made around the extended area before additional removal is begun. The removal area shall not be enlarged solely to correct debonded reinforcement or deficient lap lengths.

(2) Full-Depth. Concrete shall be removed as determined by the Engineer within all areas designated for full-depth repair and in all designated areas of partial depth repair in which unsound concrete is found to extend below a depth of 140 mm (5 1/2 inches) unless otherwise specified on the plans. Full depth removal shall be performed according to Article 501.03 of the Standard Specifications. A concrete saw shall be used to provide vertical edges approximately 20 mm (3/4 inch) deep around the perimeter of the area to be patched when an overlay is not specified. A saw cut will not be required on those boundaries along the face of the curb, parapet or joint or when sharp vertical edges are provided by hydro-scarification. The saw cut may be omitted if the deck is to receive an overlay.

All voids under full depth repair areas shall be filled with a suitable material that meets the approval of the Engineer.

(3) Reinforcement Treatment. Care shall be exercised during concrete removal to protect the reinforcement bars from damage. Any damage to the reinforcement bars to remain in place shall be repaired or replaced to the satisfaction of the Engineer at the Contractor's expense. All existing reinforcement bars shall remain in place except as herein provided for corroded bars. Tying of loose bars will be required. Any existing reinforcement bars which have a loss of more than 25% of their cross section through corrosion shall be replaced in kind with new steel as directed by the Engineer. No welding of bars will be permitted and new bars shall be lapped a minimum of 32 bar diameters to existing bars. An approved “squeeze type” mechanical bar splicer capable of developing in tension at least 125 percent of the yield strength of the existing bar shall be used when it is not feasible to provide the minimum bar lap.

(4) Cleaning. Immediately after completion of the concrete removal and reinforcement repairs, the repair areas shall be cleaned of dust and debris. Once the initial cleaning is completed, the repair areas shall be thoroughly blast cleaned to a roughened appearance free from all foreign matter. Particular attention shall be given to removal of concrete fines. Any method of cleaning which does not consistently produce satisfactory results shall be discontinued and replaced by an acceptable method. All debris, including water, resulting from the blast cleaning shall be confined and shall be immediately and thoroughly removed from all areas of accumulation. If concrete placement does not follow immediately after the final cleaning, the area shall be carefully protected with well-anchored polyethylene sheeting.

Exposed reinforcement bars shall be free of dirt, detrimental scale, paint, oil, or other foreign substances which may reduce bond with the concrete. A tight non-scaling coating of rust is not considered objectionable. Loose, scaling rust shall be removed by rubbing with burlap, wire brushing, blast cleaning or other methods approved by the Engineer.

(c) Placement & Finishing of Concrete Repair:

(1) Grout Placement. After the repair areas have been cleaned and immediately prior to concrete placement, the grout shall be applied to a dampened surface. A thin layer of grout shall be thoroughly scrubbed into the deck surface. All vertical as well as horizontal surfaces shall receive a thorough, even coating. The rate of grout placement shall be limited so the brushed grout does not dry out before it is covered with concrete. Grout that has become dry and chalky shall be blast cleaned and replaced at the Contractor's expense. No concrete shall be placed over dry grout.

(2) Concrete Placement.

The concrete shall be placed and compacted according to Article 503.07 of the Standard Specifications and as herein specified.

All concrete shall be vibrated internally with hand-held vibrators. When an overlay system is not specified, the patches shall be finished according to Article 503.17 of the Standard Specifications, followed by a light brooming.

(d) Curing.

Concrete patches shall be cured by the Wetted Burlap Method as per Article 1020.13 of the Standard Specifications. The curing period shall be 72 hours followed by a 72-hour minimum drying period before scarifying or surfacing.

(e) Opening to Traffic.

No traffic or construction equipment will be permitted on the repairs until after the specified cure period and the concrete has obtained a minimum compressive strength of 27.6 MPa (4,000 psi) or flexural strength of 4.65 MPa (675 psi) unless permitted by the Engineer.

Method of Measurement. When specified, bituminous surface removal and full or partial depth repairs will be measured for payment and computed in square meters (square yards).

Basis of Payment. The bituminous concrete surface removal will be paid for at the contract unit price per Square Meter (Square Yard) for BITUMINOUS CONCRETE REMOVAL (DECK). Areas removed and replaced up to and including a depth of 140 mm (5 1/2-inch) or as specified will be paid for at the contract unit price per Square Meter (Square Yard) for APPROACH SLAB REPAIR (PARTIAL). Areas requiring removal greater than a depth of 140 mm (5 1/2-inch) shall be removed and replaced full depth and will be paid for at the contract unit price per Square Meter (Square Yard) for APPROACH SLAB REPAIR (FULL DEPTH).

When corroded reinforcement bars are encountered in the performance of this work and replacement is required, the Contractor will be paid according to Article 109.04 of the Standard Specifications.

No payment will be allowed for removal and replacement of reinforcement bars damaged by the Contractor in the performance of his/her work or for any increases in dimensions needed to provide splices for these replacement bars.

Removal and disposal of asbestos waterproofing and/or asbestos bituminous concrete will be paid for as specified in the Special Provision for ASBESTOS WATERPROOFING MEMBRANE OR ASBESTOS BITUMINOUS CONCRETE SURFACE REMOVAL.

STATE OF ILLINOIS

SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction, adopted January 1, 2022 (revised January 1, 2026)", the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways", and the "Manual of Test Procedures for Materials" in effect on the date of invitation for bids, and the "Supplemental Specifications and Recurring Special Provisions" indicated on the Check Sheet included herein, and the "Recommended Standards for Water Works", (Ten State Standards), latest edition, which apply to and govern the construction of FAS 1388 (IL 8), Project STP - T4VQ(465),Section Z[1V-RS-5;D-15D-R, Peoria County,Contract No. 68J88 and in case of conflict with any part, or parts, of said Specifications, the said Special Provisions shall take precedence and shall govern.

LOCATION OF PROJECT

This project is located on Illinois Route IL 8 (W Southport Rd) from 0.7 mi E of Taylor Road to I-474

DESCRIPTION OF PROJECT

Improvements include Design Overlay,Pipe Culvert lining, Rem & Rep of Guardrail, Pavement markings & other related collateral work on IL 8 between W South port rd from 0.7 Ml E of Taylor rd to 1-474.

10500 105.00

Designer Note: This special is for use on overlay projects where there will not be adequate IDOT staff to mark the stationing on lathe until the surface course will be placed and stations can be stamped in the pavement. The pay item corresponding to this is XZ013798, Construction Station Layout.

CONSTRUCTION STATION LAYOUT

Effective: July 30, 2010

This work shall consist of all labor, materials, and equipment necessary to temporarily stake, maintain, and remove the roadway stationing for all mainline and ramp pavements to be overlaid within the project limits.

Prior to any cold milling or other operations that will destroy the existing stationing stamped in the existing pavement, the Contractor shall have the stationing temporarily marked beyond the edge of shoulder or as directed by the Engineer. Unless otherwise allowed, the stationing shall be legibly written on wooden lathe marked with a ribbon and driven into the ground at 200′ (100 meter) intervals. On 2, 3, and 5 lane pavements, the stationing shall be marked on the right edge of pavement in the direction of increasing stationing. On ramp pavements, the stationing shall be marked along the baseline. On multi-lane divided roadways, the stationing shall be marked along the outside edge of shoulder in both directions. The stationing to be used shall be as shown on the plans. The beginning and ending station and location shall be confirmed with the Engineer prior to staking. Once the surface course has been stamped, the lathe shall be removed and disposed of in accordance with the Standard Specifications.

This work will be paid for at the contract unit price per Lump Sum for CONSTRUCTION STATION LAYOUT and no other compensation will be allowed.

Designer Note: Use on projects with complicated or large amounts of layout work to be performed by the Contractor. Consider using District Special 105.02 and 105.03 also. Make sure to check Recurring Special #9. Discuss with Construction.

CONSTRUCTION LAYOUT RESPONSIBILITY

Effective April 26, 2015 Revised: January 1, 2022

This special provision is included in addition to Check Sheet #9 of the Recurring Special Provisions, Special Provision for Construction Layout Stakes, to clearly define the responsibility of the Contractor for construction layout.

As the Contractor is generating the survey layout model, all roadway elements shall be verified to fit within the final proposed slopes and right-of-way. If the Contractor determines a portion of the plans is incorrect or a portion does not agree with another portion, they shall contact the Engineer to have the problem resolved and additional work, if any, agreed upon. The Contractor shall not proceed until authority is received from the Engineer and problems are resolved. The Engineer shall contact the District Studies and Plans Section if need be.

The Contractor shall set all horizontal control points at the end of construction and provide cross ties in a hardback survey book to the Engineer.

The Contractor shall also set and provide the Engineer with a list of final benchmarks in a hardback survey book at the end of construction for future control.

No additional compensation will be allowed for complying with this Special Provision, but all costs shall be included in the contract Lump Sum price for CONSTRUCTION LAYOUT.

Designer Note: Consider using on large projects requiring a lot of staking. Discuss with Construction and consider using District Special 105.01 and 105.03.

CONSTRUCTION LAYOUT UTILIZING GPS EQUIPMENT

Effective: April 26, 2015
Revised: January 1, 2022

If the Contractor opts to utilize GPS equipment for Construction Layout, the Contractor shall be required to complete the following in addition to the requirements of Check Sheet #9 of the Recurring Special Provisions and as directed by the Engineer.

1. Submit 3D drawings or show the Engineer the digital terrain model (or proof of some type) that the Contractor has generated all proposed information correctly for all parts of the job (Mainline, ramps, side roads, entrances, etc.) before starting any grading, structures, or paving work. This does not relieve the Contractor of responsibility of any possible errors made in the modeling.
2. The Contractor shall also submit a QC/QA written plan that they will be following to provide quality control on the actual layout and quality assurance checks of the layout during and after being completed. This will be required to be submitted at the beginning of construction and shall meet the approval of the Engineer.
3. Stationing lathes shall be placed and maintained along the right-of-ways lines, centerline of the median, and agreed offset from other baselines such as interchange ramps and side roads, throughout the duration of the contract.

No additional compensation will be allowed for complying with this special provision, but all costs shall be included in the contract Lump Sum price for CONSTRUCTION LAYOUT.

Designer Note: Consider using on large projects requiring a lot of staking. Discuss with Construction and consider using District Specials 105.01 and 105.02.

CONSTRUCTION LAYOUT EQUIPMENT

Effective: April 26, 2015 Revised: November 6, 2015

General. The Contractor shall furnish articles of survey equipment to be used by the Department for independent monitoring and verification of construction layout stakes, reference points, and any other horizontal and vertical control set by the Contractor. All equipment will be for the exclusive use of the Department throughout the duration of the contract and will be returned to the Contractor at the end of the contract.

Equipment. The equipment to be furnished by the Contractor shall consist of one precision GNSS rover and a secondary GPS handheld controller. The precision GNSS rover must meet or exceed the capabilities of, and be compatible with the Contractor's equipment and meet the approval of the Engineer. The second GPS handheld controller shall also meet or exceed the capabilities of, and be compatible with the Contractor's equipment and meet the approval of the Engineer. The equipment provided shall include all software, data and any additional equipment (base station, repeaters, etc.) necessary to find any point on the project in station, offset and elevation with precision. The project data included in the equipment will be consistent with the data used by the Contractor for layout and grading. Any data revisions or software updates to the Contractor's equipment will also be applied to the Department's equipment by the Contractor.

The Contractor will be responsible for providing training for three members of the Department's staff on use of the equipment and software.

Basis of Payment. This work will not be measured separately, but shall be included in the contract Lump Sum price for CONSTRUCTION LAYOUT.

Designer Note: Intended for use where utility pipelines, structures, other underground facilities are abandoned/need to be removed during construction. Discuss usage with Project Support and your Project Engineer. Include plan information on utility locations to be abandoned and label all abandoned utilities.

REMOVAL OF ABANDONED UNDERGROUND UTILITIES

Effective January 15, 1996 Revised November 21, 1996

This work shall be completed in accordance with Article 105.07 of the Standard Specifications and the items outlined herein:

The cost of removal of abandoned or to be abandoned underground utilities shown on the plans are the responsibility of the owner. The Contractor shall make arrangements with the utility owner for removal and payment. The utility owner is listed in the plans under Status of Utilities.

Prior to removal of the abandoned facility, the owner shall be notified so that representatives can be present during the removal operation.

If an unknown abandoned utility is encountered, the Contractor will be paid for any removal required by the Engineer as extra work in accordance with Article 109.04 of the Standard Specifications.

Designer Note: **This special provision is for use on Local Roads projects only.** Projects prepared by Program Development shall continue to use the Status of Utilities supplied by the Utilities Section and placed in the front of the plans.

STATUS OF UTILITIES/UTILITIES TO BE ADJUSTED

Effective: January 21, 2005
Revised: January 1, 2022

The following utilities are located within the project limits. For relocations, the utility companies have provided the estimated dates.

Name, Contact, Address And Phone Number of Utility	Type	Location	Relocation Needed	Estimated Date Relocation Completed

The above represents the best information of the Department and is only included for the convenience of the bidder. The applicable provisions of Recurring Special Provisions LRS1, LRS6 and Articles 105.07, 107.20 and 108.02 of the Standard Specifications for Road and Bridge Construction shall apply.

The estimated utility relocation dates should be part of the progress schedule submitted by the Contractor. If any utility adjustments or relocations have not been completed by the above dates specified and when required by the Contractor's operations after these dates, the Contractor should notify the Engineer in writing. A request for an extension of time will be considered to the extent the Contractor's critical path schedule is affected.

Designer Note: Use in all contracts with potential utility involvement.

UTILITIES – LOCATIONS/INFORMATION ON PLANS

Effective: November 8, 2013

The locations of existing water mains, gas mains, sewers, electric power lines, telephone lines, and other utilities as shown on the plans are based on field investigation and locations provided by the utility companies, but they are not guaranteed. Unless elevations are shown, all utility locations shown on the cross sections are based on the approximate depth supplied by the utility company. It shall be the Contractor's responsibility to ascertain their exact location from the utility companies and by field inspection.

Designer Note: Insert into all projects involving a railroad including overpass or underpass construction and overlay projects requiring Railroad Protective Liability Insurance.

REQUIREMENTS WHEN WORKING WITH THE RAILROAD

Effective: April 1, 2016 Revised: April 1, 2022

Special attention is brought to Section 100 of the "*Standard Specifications for Road and Bridge Construction"* regarding working with the Railroad and the authority of the Railroad Engineer as defined. The Contractor shall make themselves aware of all the rules and regulations the railroad may have regarding, but not limited to, working restrictions, safety training, safety procedures and flagger scheduling and call-off requirements. The Contractor shall also submit, to the Railroad, copies, for review and approval, any work plans that may directly impact the Railroad facilities. This submittal shall happen concurrently when submitting to the Department.

Responsibility for flagger costs shall be in accordance with Article 107.12 of the Standard Specifications. The cost to comply with any other requirements the Railroad may have in order to perform work on this project shall be considered included in the cost of the contract items and no additional compensation will be allowed.

Designer Note: Use on projects requiring work over the Illinois River that may impact the use of the river below the structure. This special provision may require revision on a project-by-project basis depending on the Coast Guard's response to the final plans.

PROTECTION OF THE ILLINOIS RIVER

Effective: August 1, 2022 Revised: October 1, 2022

This work shall consist of preventing debris, equipment, tools, or any other construction-related materials from falling into the Illinois River. This work shall also include closing spans, except the main span over the navigation channel, to all river traffic.

Protective Shield is required in the main span of the bridge. The Contractor shall propose a system and/or method of construction to prevent any materials from falling into the river in the other spans of the bridge. The Contractor shall submit a written plan for the system and/or method of construction to the Engineer for approval.

The Contractor shall close spans outside the main span to all river traffic in a manner approved by the U.S. Coast Guard. The Contractor may leave the spans open to river traffic, if the Contractor elects to use protective shield in these spans at the Contractor's expense.

This work shall be included in the Plan of Operations (see special provision titled, (Maintenance of Navigation) for Coast Guard review. Coast Guard contact Person: Peter Sambor, M.P.A., USCG Bridge Management Specialist, 1222 Spruce Street, Suite 2.102D, St. Louis, MO 63103; Telephone number: (314) 269-2380.

This work will not be paid for separately, but It shall be considered included in the cost of the various structure-related pay items in the plans.

Protective Shield installed at the locations noted in the plans will be paid for separately.

Designer Note: There is a fill-in for the title of correspondence going to the Coast Guard the designer will fill in. Use on Projects over the Illinois River. This special provision may require revision on a project-by-project basis depending on the Coast Guard's response to the final plans. The manned vessel requirement is at the Department's discretion. It is not a Coast Guard requirement.

MAINTENANCE OF NAVIGATION

Effective: August 1, 2022 Revised: October 1, 2022

This work shall consist of setting up work procedures, methods of protection, and scheduling work so as to maintain navigation during construction to the satisfaction of the United States Coast Guard (USCG) and the Engineer.

The Contractor shall submit four (4) weeks prior to start of work, a "PLAN of OPERATIONS" that will be forwarded to the USCG by the Engineer. The "PLAN of OPERATIONS" shall be reviewed and approved by the USCG before work associated with their jurisdiction begins.

The PLAN OF OPERATIONS (the PLAN) shall outline all of the operations affecting the waterway, including but not limited to, Contractor activities to facilitate bridge rehabilitation, which may include replacing or repairing existing structural and non-structural items, cleaning and painting of the existing superstructure, repair of the existing substructure elements, installation of scour countermeasures, and navigation lighting work. The use of falsework, other obstructions or other temporary construction activities, which will encroach upon navigation clearances, must be approved by the USCG.

The Contractor shall conduct work so that the free navigation of the waterway shall not be interfered with at any time; that the present navigation depths shall not be impaired; and that the channel through the structure shall be promptly cleared of any obstructions placed therein or caused by the bridge rehabilitation work, to the satisfaction of the USCG. The PLAN shall also include details of all floating equipment and/or vessels that will be utilized, including size (dimensions), location, and length of time, including calendar dates that such equipment will be on the waterway. Location shall be interpreted to mean the positioning of any and all vessels or temporary obstructions in the waterway with respect to the bridge and the navigable channel. Method of anchorage or stabilization of all floating equipment, and location of mooring sites if applicable, shall be specified in the PLAN OF OPERATIONS.

A manned safety vessel shall be in the river near the structure during work hours when any work is being performed over the river. The operator must have a VHF marine radio at all times and continually monitor the channel(s) designated by the U.S. Coast Guard for vessel contact during work hours. The operator must also have a cell phone at all times.

All correspondence with the USCG shall be coordinated through the Engineer who will forward the material to the United States Coast Guard. Contact person: Peter Sambor, M.P.A., USCG Bridge Management Specialist, 1222 Spruce Street, Suite 2.102D, St. Louis, MO 63103; Telephone number: (314) 269-2380.

All correspondence should reference the construction site as "_____".

Activities in the Navigation Channel: Channel traffic at this location cannot be detoured to another span. The amount of time allowed for work in the navigation channel for the Contractor's activities will be determined by the USCG after their review of the PLAN OF OPERATIONS. If the USCG requires revisions or additional information to the PLAN, the Engineer will direct the Contractor to furnish the additional information for re-submittal (by the Engineer) to the USCG. Notification of Commencement of Work: The Contractor shall notify the Coast Guard two weeks prior to commencing any work that includes any of the activities in the PLAN OF OPERATIONS approved by the USCG. Upon notification of schedule of work, the USCG will issue a NAVIGATIONAL ALERT for the _____ over the Illinois River. The USCG and the Engineer must be notified immediately of any change in anticipated means and methods or work schedules. The USCG and the Engineer shall be promptly notified when work described in the PLAN is completed and all equipment has been withdrawn from the waterway.

The PLAN OF OPERATIONS for the execution of work over the Illinois River should comply with the following United States Coast Guard Requirements:

a. Work shall be conducted in a manner that does not interfere with the free flow of navigation. No temporary construction will be permitted within the clear navigation channel without USCG approval.

b. The existing navigational clearances shall be maintained at all times, unless otherwise approved by the USCG.

c. Navigable depths shall not be impaired at any time. The channel or channels through the structure shall be promptly cleared of all falsework or all other obstructions placed therein or caused by the construction of the bridge.

d. Safety measures shall be implemented and exercised at all times to prevent accidental dropping of spark producing and/or flame producing particles or objects onto barges and vessels. All welding, flame cutting, and any other tasks having spark-producing potential shall cease when vessels are passing beneath the bridge.

e. A contingency plan in the event of personnel absences or failure of equipment, and provisions for back up equipment and qualified personnel to operate the equipment shall be included when requested by the USCG.

f. Radio communication shall be provided to assure coordination and adjustment of work activities with the approach and passing of commercial vessels, and any other maritime vessels.

g. The Contractor shall furnish and display such lights and danger signals upon all of his floating plant, buoys, and temporary construction as may be required for guiding and warning boats.

h. Floating equipment must yield the right of way to commercial vessels. Floating equipment shall display lights and signals as specified by INLAND NAVIGATIONAL RULES of 1980, copies of which are available from the United States Coast Guard.

i. The Coast Guard shall be notified two weeks prior to the proposed navigation lighting system going active.

In addition to the above listed requirements the Contractor should comply with any other project-specific requirements as set forth by the USCG.

This item, including the preparation, submittal and review process of the PLAN OF OPERATIONS and including the manned safety vessel, will not be paid for separately but shall be considered included in the cost of the various structure-related pay items in the plans.

Designer Note: Insert into all contracts.

LOCATION OF UNDERGROUND STATE MAINTAINED FACILITIES

Effective: August 3, 2007 Revised: July 31, 2009

The Contractor shall be responsible for locating existing and proposed IDOT electrical facilities (traffic signal, overhead lighting, Intelligent Transportation System, etc.) prior to performing any work at his/her own expense if required. The Contractor shall also be liable for any damage to IDOT facilities resulting from inaccurate locating.

The Contractor may obtain, on request, plans for existing electrical facilities from the Department.

The Contractor shall also be responsible for locating and providing protection for IDOT facilities during all phases of construction. If at any time the facilities are damaged, the Contractor shall immediately notify the Department and make all necessary arrangements for repair to the satisfaction of the Engineer. This work will not be paid for separately, but shall be included in the contract bid price.

Designer Note: To be used on Interstates, Freeways, and Expressways only. You should check with Project Implementation (Construction) and your Project Engineer before including this special provision in your project. The District Engineer has requested that discretion be utilized when selecting projects for this special provision. A common sense approach should be used in developing the limitations included in this special provision.

RIGHT-OF-WAY RESTRICTIONS

Effective July 1, 1994

Add to Article 107.32: The Contractor shall be permitted to use the State Right-of-Way adjacent to closed lanes or spread median areas for short periods of time (Designer to pick 1, 2, 3 and/or 4).

1) between (Lt., Rt., Median) Sta. to
2) within the interchange of and
3) the intersection of and
4) throughout the project limits

(then the Designer picks 1, 2, 3 and/or 4)

1) to store materials;
2) to stockpile salvaged materials;
3) to park construction machinery;
4) or to park or allow parking of any workman's vehicles

during the duration of this project.

When lanes are reopened to traffic, the Contractor shall arrange within a reasonable time period to clean up and restore areas where equipment or material has been stored on the Right-of-Way.

Designer Note: Either this special provision or the one titled "Date of Completion (Plus Working Days)" should generally be used on all projects anticipated to take a full construction season or more to complete. Consult with your project engineer for use on your project. Select projects may also use incentive/disincentive clauses. Refer to BDE Manual Chapter 66-2.04, "Policy for Incentive and Disincentive Clauses". There are three subjects in this special and each subject requires additional data to be supplied.

DATE OF COMPLETION

Effective March 1, 1990 Revised April 25, 2008

The Contractor shall schedule his operations so as to complete all work and open all the roadway to traffic on or before _____. The Contractor shall note that this completion date is based on an expedited work schedule.

Designer Note: Either this special provision or the one titled “Date of Completion” should generally be used on all projects anticipated to take a full construction season or more to complete. Consult with your project engineer for use on your project. Select projects may also use incentive/disincentive clauses. Refer to BDE Manual Chapter 66-2.04, "Policy for Incentive and Disincentive Clauses". There are four subjects in this special and each subject requires additional data to be supplied.

DATE OF COMPLETION (PLUS WORKING DAYS)

Effective March 1, 1990 Revised August 3, 2018

The Contractor shall schedule his operations so as to complete all work, except as specified below, and open all the roadway to traffic on or before _____. The Contractor shall note that this completion date is based on an expedited work schedule. The Contractor will be allowed _____ working days, after the _____ completion date, to complete punchlist and the following items: _____.

Designer Note: If your project's soils report requires geotechnical reinforcement, check with the Geotechnical Engineer prior to using this provision. There is also a CADD drawing "Geotechnical Reinforcement for Side Slopes" which is to be used with this provision and the Geotechnical Engineer will need to furnish additional data to complete that drawing. Assure treatment areas are shown on both the plans and cross sections. 7-1-94 Revised D.S.P. for Section and metrics.

GEOTECHNICAL REINFORCEMENT

Effective June 10, 1993 Revised January 1, 2007

This work shall consist of furnishing and installing a geogrid reinforcement system in the manner depicted in the bid documents and the applicable portions of Section 3.5 - Geogrid Soil Reinforcement - of the FHWA "Interim Guidelines for Design, Specifications, & Contracting of Geogrid Mechanically Stabilized Earth Slopes on Firm Foundation" dated December 1991.

The geogrid shall develop an allowable design force (T_a) in the roll direction of 2000 lb/ft. (29,000 N/m) width of grid based on the following allowable stress:

$$T_a = \frac{Tult}{FS_{cr} \times FS_{id} \times FS_{cd} \times FS_{bd} \times FS_{jnt}}$$

Where:

T_a = allowable strength, plf (Nm), for use in stability analyses.

T_{ult} = ultimate strength, plf (Nm), which is an index value used for quality control (QC) purposes

FS_{cr} = partial factor of creep deformation, ratio of QC strength to creep limiting strength.

FS_{id} = partial factor of safety for installation damage.

FS_{cd} = partial factor of safety for chemical degradation.

FS_{bd} = partial factor of safety for biological degradation, used in environments where biological degradation may exist.

FS_{jnr} = partial factor of safety for joints (seams and connections).

Total creep strain of the reinforcement shall be less than 10% over the design life of 75 years, for reinforced slopes.

In no case shall an installation damage factor (FS_{id}) less than 1.05 be used.

In no case shall a chemical durability factor (FS_{cd}) less than 1.1 be used, per Task Force 27 recommendations.

The geotechnical reinforcement rolls do not have to be connected or fastened to the ground other than to assure the grid stays in place during placement of the fill material.

Equipment will not be allowed directly on the geotechnical reinforcement. The first lift of embankment shall be placed on the geotechnical reinforcement without equipment tracking over it. Discing of the first lift of embankment will not be required.

The Contractor shall compact the embankment as specified in Section 205 of the Standard Specifications. Care shall be taken during compaction to prevent damage to the geotechnical reinforcement. Any damage shall be repaired immediately prior to continuing with the embankment. Costs for repair or geogrid replacement are the responsibility of the Contractor.

Before shipment of geogrid to the site for storage or use, the Contractor shall submit for approval the 10,000 hour creep test data, pullout test data, calculations and product literature showing compliance with the Special Provision. The data shall be submitted and sealed by an engineer licensed in Illinois.

Wide width tensile testing in accord with ASTM D4595 shall be submitted from the specific lot of material shipped to the project. Field samples may be taken by the Project Engineer to verify ASTM D4595 results.

This work will be measured in place and the area computed in Square Yards (Square Meters). The work will be paid for at the contract unit price per Square Yard (Square Meter) for GEOTECHNICAL REINFORCEMENT.

Designer Note: Use on all contracts with earth excavation, furnished excavation, or borrow excavation. This was developed by Materials to eliminate potential for trapping water in porous layers of embankment.

EMBANKMENT (RESTRICTIONS)

Effective: January 21, 2005 Revised: August 5, 2022

Replace the sixth and seventh paragraphs of Article 205.04 with the following:

Alternating layers of suitable soil and restricted-use material will not be permitted. Restricted-use materials may only be incorporated into the embankment by using one of the following procedures:

a. Restricted-use materials shall be placed in 4" lifts and disked with the underlying lift material until a uniform and homogenous material is formed having more than 35% passing the number 200 sieve.

b. Sand, gravel or crushed stone embankment when placed on the existing ground surface will be drained using a 10' (3 m) by 10' (3 m) French drain consisting of nonwoven geotechnical fabric with 12" (0.3 m) of B-3 riprap. This shall be constructed on both sides of the embankment at the toe of the foreslope spaced 150' (46 m) apart. At locations requiring a French drain the 3' (1 m) cohesive cap shall not be installed within the 10' by 10' riprap area. If the Engineer determines that the existing ground is a granular free draining soil, the French drain may be deleted.

c. Sand, gravel or crushed stone embankment when placed on top of a cohesive embankment will be drained with a permanent 4" (100 mm) underdrain system. The underdrain system shall consist of a longitudinal underdrain on both sides of the embankment and transverse underdrains spaced at 250' (75 m) centers. The underdrain shall consist of a 2' (0.6 m) deep by 1' (0.3 m) wide trench, backfilled with FA4 sand and a 4" (100 mm) diameter underdrain. In addition, both sides of the embankment will have a 6" (150 mm) diameter pipe drain which will drain the underdrain system and outletted into a permanent drainage structure or outletted by a headwall at the toe of the embankment.

The above work will not be paid for separately but shall be included in the cost of EARTH EXCAVATION, FURNISHED EXCAVATION, or BORROW EXCAVATION.

25000 250.00

Designer Note: Use for seeding small disturbed areas. Discuss with the District Roadside Manager before using.

Consider EROSION CONTROL BLANKET, and make this work incidental to the EROSION CONTROL BLANKET if cover is required. Do not mulch if EROSION CONTROL BLANKET is used.

*Figure approximate acres (hectare).

**Make everything incidental to one specified item of work.

SEEDING, MINOR AREAS

Effective July 1, 1990 Revised April 1, 2019

Seeding, fertilizing, and mulching shall be done in accordance with Article 250 of the Standard Specifications except for the following revisions:

All areas disturbed by the work performed shall be seeded, fertilized, and mulched in accordance with Article 251.03(a). The materials may be purchased locally and placed as directed by the engineer.

The estimated area is approximately _____ acres (_____ hectare). The seed mixture shall be applied at 100 pounds/acre (110 kg/ha). The mixture shall be one that contains Turf Type Tall Fescue, Creeping Red Fescue, and Kentucky Blue Grass. The Kentucky Blue Grass shall not exceed 50% of the mixture. All seeds shall meet the purity and noxious weed requirements of Article 1081.04 of the Standard Specifications, and be approved by the Engineer.

The fertilizer nutrients shall be applied at a rate of 270 lbs. (300 kg) of actual nutrients per acre (hectare). The fertilizer furnished shall be ready mixed material having a ratio of (1-1-1).

The Contractor shall provide the Engineer with the test results from the seed container and the chemical analysis of the fertilizer nutrients.

The seed, fertilizer, and mulch will not be measured for payment but will be considered included in the cost of _____.

Designer Note: Include on all interstate or four-lane highway projects that have thirty (30) working days or more. Calculate quantities assuming one mowing per fifty (50) working days. Do not use on new construction since mowing would have to be done only in areas where vegetation has been established.

MOWING

Effective: December 11, 2001 Revised: August 2, 2013

This work shall consist of mowing the entire median up to 60' (20m) in width and the roadway foreslopes of the outside lanes to the ditchline or for a width of 15' (4.572 meters) from the edge of pavement or paved shoulder, whichever is less. At intersecting roadways, the mowing shall extend to the proposed right of way for a distance of 150' (45 m) on either side of the intersection. The height of the mowing shall not be more than 6" (150 mm). Equipment used shall be capable of completely severing all growth at the cutting height and distributing it evenly over the mowed area. The Contractor will not be required to mow continuously wet ditches and drainage ways, slopes greater than 1:3 (V:H), or areas which may be designated by the Engineer as not mowable. Mowing shall be done within the project limits during the construction of the project as directed by the Engineer and prior to the final inspection of the project. Any subsequent mowing required to disperse mowed material shall be considered as included in the cost of the mowing. Debris encountered during mowing, which interferes with the mowing operation or is visible from the roadway shall be removed and disposed of according to Article 202.03.

Method of Measurement: Mowing will be measured for payment in acres of surface area mowed.

Basis of Payment: This work will be paid for at the contract unit price per Acre for MOWING.

Designer Note: Include on all rural two lane highway projects that have thirty (30) working days or more. Calculate quantities assuming one mowing per fifty (50) working days. Generally not appropriate for use on 3R or ditch grading projects – vegetation is not established enough to require mowing of the entire project limits. Mowing will generally still be needed on these projects, but should be paid for on an acre (hectare) basis.

MOWING

Effective: December 11, 2001 Revised: August 2, 2013

This work shall consist of mowing the roadway foreslopes to the ditchline or for a width of 15' (4.572 meters) from both edges of pavement or paved shoulder, whichever is less. At intersecting roadways, the mowing shall extend to the proposed right of way for a distance of 150' (45 m) on either side of the intersection. The height of the mowing shall not be more than 6" (150 mm). Equipment used shall be capable of completely severing all growth at the cutting height and distributing it evenly over the mowed area. The Contractor will not be required to mow continuously wet ditches and drainage ways, slopes greater than 1:3 (V:H), or areas which may be designated by the Engineer as not mowable. Mowing shall be done within the project limits during the construction of the project as directed by the Engineer and prior to the final inspection of the project. Any subsequent mowing required to disperse mowed material shall be considered as included in the cost of the mowing. Debris encountered during mowing, which interferes with the mowing operation or is visible from the roadway shall be removed and disposed of according to Article 202.03.

Method of Measurement: Mowing will be measured for payment in Acres of surface area mowed.

Basis of Payment: This work will be paid for at the contract unit price per Acre for MOWING.

Designer Note: The District Roadside Manager should be consulted to determine if tree replacement will be in the form of seedlings or ball and burlap trees. Existing trees to be removed on a project are replaced with ball and burlap trees on a 1:1 basis or a 1:3 basis for seedlings. If specific species are desired based on project conditions, see the District Roadside Manager for recommendations to limit the number of species and modify this Special Provision to be a project-specific special.

Immediately below is a table of potential balled and burlap trees for reference when selecting species to be planted based on size or other characteristics.

Name	Height	Width	Description
Kentucky Coffee (Gymnocladus Dioicus)	60-75'	40-50'	
Cultivar - Prairie Titan			
- Espresso			
Northern Red Oak (Quercus Rubra)	60-75'	45'	
Redbud (Cercis Canadensis)			Small, decorative
White Oak (Quercus Alba)	80-100'	50'	
Washington Hawthorn (Crataegus Phaenopyrum)	25-30'	25'	Has thorns
Black Gum (Nyssa Sylvat.ca)	30-50'	20-30'	
Cultivar - Afterburn	35'	20'	Very symmetrical
- Wildfire	35’	20'	Very symmetrical, great fall color
Red Maple (Acer Rubrum)	40-60'	35-45'	
Cultivar - Brandywine	40'	30'	
- Autumn Flame	50'	25'	
- October Glory	40'	25'	
Ginkgo (Ginkgo Biloba)	50-80'		
Cultivar - Jade Butterfly	12-15'		Dwarf
- Emperor	50'	40'	
London Planetree (Platanus Acerifolia)	70-100'	65-80'	
American Sweet Gum (Liquidambar Styraciflua)	50-70'		
American Basswood (Tilia Americana)	60-80'	30-60'	
Swamp White Oak (Quercus bicolor)	50-60'	50-60'	

SEEDLINGS

Effective: May 5, 2000 Revised: August 1, 2019

This work shall consist of planting replacement seedling trees at the locations specified in the plans and in accordance with Article 253 of the Standard Specifications. Seedlings shall consist of an equal distribution of five of the following ten species:

Kentucky Coffee (Gymnocladus Dioicus)	Black Gum (Nyssa Sylvat.ca)
Northern Red Oak (Quercus Rubra)	Red Maple (Acer Rubrum)
Redbud (Cercis Canadensis)	Ginkgo (Ginkgo Biloba)
White Oak (Quercus Alba)	London Planetree (Platanus Acerifolia)
Washington Hawthorn (Crataegus Phaenopyrum)	American Sweet Gum (Liquidambar Styraciflua)

This work will be paid for at the contract unit price per Unit for SEEDLINGS.

Designer Note: Use in cases where it is necessary to lock riprap in place due to high velocities. Discuss with your Project Engineer and Construction before using.

GROUT FOR USE WITH RIPRAP

Effective July 30, 2010

Description of Work. This work shall consist of furnishing and placing material to grout riprap in place. The riprap, bedding, and filter fabric shall be placed and paid for according to Sections 281 and 282 of the Standard Specifications.

Materials. The grout shall consist of a mixture of 490 lbs. cement, 1976 lbs. (dry weight) FA 01, 1039 lbs. (dry weight) CA 16, and 27.5 gallons of water per cubic yard. Alternatively, a mixture of 430 lbs. cement, 115 lbs. fly ash, 1937 lbs. FA 01, 1028 lbs. CA 16, and 27.5 gallons of water per cubic yard may be used. In either mixture, a high-range water reducer shall be used to attain desired consistency of the mix. The hardened grout shall have a minimum compressive strength of 2,000 pounds per square inch at 28 days.

Construction Requirements. The grout shall be pumped and placed throughout the riprap to a depth determined by the Engineer. A uniform rate of 0.22 cubic yards of grout per square yard of riprap was assumed to estimate a quantity. The grout shall fill the lower voids in the riprap and bond the riprap together.

Method of Measurement. The quantity of grout for use with riprap shall be measured in cubic yards, based on the volumes from the individual truck tickets used for the work.

Basis of Payment. This work will be paid for at the contract unit price per Cubic Yard for GROUT FOR USE WITH RIPRAP.

Designer Notes: Check with Materials on usage. Generally used on any projects requiring proof rolling of the subgrade prior to sub-base placement or lime modification.

PROOF ROLLING

Effective April 23, 2004 Revised January 1, 2007

This work shall consist of proof rolling the subgrade with a fully loaded tandem axle dump truck and driver at the direction of the Engineer. The truck shall travel the subgrade in all of the proposed lanes of traffic in the presence of the Engineer.

This work will not be paid for separately, but considered included in the various earthwork pay items.

Designer Note: Use when removing/replacing existing pavement or in cut sections. Assists in stabilizing subgrade areas. Contact Materials for the IBV value. It will most likely be "4".

SUBGRADE TREATMENT

Effective July 1, 1990 Revised January 1, 2022

Revise first sentence of first paragraph of Article 301.04 as follows:

> "When compacted, the subgrade shall have a minimum dry density of 95 percent of the standard laboratory dry density and a minimum immediate bearing value (IBV) of _____."

Delete the second paragraph (including subparagraphs a, b, and c) of Article 301.04 of the Standard Specifications and replace it with the following:

> "In cut sections the Contractor responsible for the rough grading shall obtain not less than 95% of the standard laboratory density and not more than 110% of the optimum moisture for the top 1' (300 mm) of the subgrade.
>
> The Contractor may, at his/her option, add a drying agent to lower the moisture content as specified. The drying agent must be approved by the Engineer prior to use. Additional compensation will not be allowed for the use of a drying agent but will be considered as included in the cost of the various earthwork items."

Designer Note: To compute quantities, use a rate of 5% by weight of soil for water. Check with Materials before using this special provision and the Soils Report for a % of modifier.

SOIL MODIFICATION

Effective: July 1, 1990 Revised: January 1, 2022

This work shall consist of the construction of a modified soil layer as described in Section 302 of the Standard Specifications, except as modified herein.

Revise Article 302.04 by adding:

> "The depth of treatment shall be based on proof rolling and soil strength (cone index). Proof rolling shall consist of running a loaded tandem truck over the subgrade."

Revise Article 302.08 by adding the following:

> "Mixing. The modifier, soil, and water (if necessary) shall be thoroughly blended by rotary speed mixers. The mixing shall continue until it has been determined by the Engineer that a homogeneous layer of the required thickness has been obtained. A disc harrow may be used to supplement the mixing by the rotary mixer."

Add to Article 302.10 Finishing:

> "After adequate compaction is obtained, no construction equipment will be permitted on the finished subgrade for a period of three (3) days, after which only equipment used for grading prior to placement of paving materials will be permitted."

Add to Article 302.09 Compaction:

> "A grader to shape the cross slope and smooth the tilled area shall be used prior to compaction."

Designer Note: Check with Materials before using this special provision. Can be used District-wide since this is the lowest quality (B) rock. This special provision is intended to be used when rock fill is recommended for ground stabilization or undercuts. This material may need to be capped with 6" CA 7 or CA 11, crushed stone depending upon situation and modify this special provision. Remember when using precast box culverts, a 6" bedding layer is included in the box culvert pay item.

A filter fabric (or bedding material) may be required - discuss with the Geotechnical Engineer. He may want you to provide a pay item/quantity for "Geotechnical Fabric for Ground Stabilization".

ROCK FILL

Effective October 15, 1995 Revised April 26, 2013

This work shall consist of furnishing, transporting and placing rock fill for ground stabilization.

For Rock Fill depths ≤18", the material shall meet Quality Designation "B" as required in Article 1004.01 of the Standard Specifications for Road and Bridge Construction. The material shall be crushed stone and meet the gradation of CA 7 or CA 11 per Article 1004.01 of the Standard Specifications for Road and Bridge Construction.

The aggregate shall be placed in 6 in. (150 mm) lifts, loose measurements, and compacted in a manner approved by the Engineer, except that if the desired results are being obtained, the compacted thickness of any lift may be increased to a maximum of 8 in. (200 mm).

For Rock Fill depths > 18", the top 6" shall meet the requirements listed above for depths ≤18" and the remaining depth shall meet Quality Designation "B" as required in Article 1005.01 of the Standard Specifications for Road and Bridge Construction and may be shot rock or primary crusher run. It shall not contain objectionable quantities of dirt, sand, clay or rock fines. The material shall be well graded with a maximum stone dimension of 8 inches (200 mm). No more than 35% shall have a dimension less than 2 inches (50 mm).

Rock fill will be measured for payment in tons (metric tons), in accordance with Article 311.08 except that all references to cubic yard (cubic meter) measurement and payment shall be deleted.

This work will be paid for at the contract unit price per Ton (Metric Ton) for ROCK FILL.

Designer Note: Discuss use with Project Engineer and Construction Field Engineer before using. It was developed for locations where controlling contraction cracks in PCC Base Course is necessary.

SAWCUTTING OF PCC BASE COURSE AND BASE COURSE WIDENING

Effective January 1, 2016

Construction of the PCC Base Course and/or PCC Base Course Widening shall be according to Section 353 of the Standard Specifications and as described herein.

When the PCC Base Course and/or PCC base Course Widening is to be constructed adjacent to concrete gutter, curb, or median, transverse contraction joints shall be cut into the base course or widening as a continuation of the joints required for the concrete gutter, curb, or median. These contraction joints shall be cut in accordance with Article 420.05 of the Standard Specifications. No dowel bars will be required at these contraction joints and no sealing of joints will be required.

This work will not be paid for separately, but will be included in the cost of the PCC BASE COURSE AND BASE COURSE WIDENING pay items and no additional compensation will be allowed.

Designer Note: Use whenever temporary pavement is called for on the plans. The intent is to allow the Contractor the option as to the most economical type of pavement to provide. Use with District Special Provision "Hot-Mix Asphalt Base Course" (355.02) or "Hot-Mix Asphalt Base Course Widening" (356.02d).

The Designer should calculate design thicknesses for concrete and bituminous pavements using BDE Manual Sections 54-4.02 and 54-5.02 and insert the thickness into the special provision:

X = thickness in inches (millimeters) of Hot-Mix Asphalt Base Course
Y = thickness in inches (millimeters) of PCC Base Course

TEMPORARY PAVEMENT

Effective October 1, 1995 Revised April 24, 2020

This item shall include all materials, labor and equipment necessary to construct temporary pavement in accordance with applicable sections of the Standard Specifications except as herein specified.

The Contractor shall have the option of constructing temporary pavement made of (X) hot-mix asphalt base course or (Y) PCC base course.

Hot-Mix Asphalt base course shall be placed in accordance with applicable portions of Section 355. Material for Hot-Mix Asphalt base course shall be Hot-Mix Asphalt Binder Course in accordance with Sections 406 and 407 and as shown in the Mix Design Table. Tack Coat shall be in accordance with Section 406 and at the rate shown in the General Notes. PCC base course shall be in accordance with Section 353.

This work will be paid for at the contract unit price per Square Yard (Square Meter) for TEMPORARY PAVEMENT.

Removal of Temporary Pavement will be paid for separately in accordance with Section 440 of the Standard Specifications.

35600 356.00

Designer Note: Fill the HMA and PCC depths as the same depth. Use the HMA depth for the pay item name and calculation of the Earth Excavation for Widening quantity. Method of payment is described in the last paragraph of Section 356 of the Standard Specifications.

Use this item when the Contractor may need to construct widening for staging and the type of payment is not required to be as specific material. Make sure there will be adequate coverage with final overlay.

TEMPORARY BASE COURSE WIDENING _____"

Effective April 26, 2013 Revised April 24, 2020

This item shall include all materials, labor and equipment necessary to construct base course widening in accordance with Section 356 of the Standard Specifications except as herein specified.

The Contractor shall have the option of constructing temporary pavement made of _____" Hot-Mix Asphalt base course or _____" PCC base course.

Hot-Mix Asphalt base course shall be placed in accordance with applicable portions of Section 356 of the Standard Specifications. Material for Hot-Mix Asphalt base course shall be Hot-Mix Asphalt Binder Course in accordance with Sections 406 and 407 of the Standard Specifications and as shown in the Mix Design Table. Tack Coat shall be in accordance with Section 406 and at the rate show in the General Notes. PCC base course shall be in accordance with Section 354 of the Standard Specifications.

This work will be pad for at the contract unit price per Square Yard (Square Meter) for BASE COURSE WIDENING _____."

40600 406.00

Designer Note: This special provision creates a pay item for removing vegetation from the existing edge of pavement joint and is intended for use on resurfacing projects which have existing bituminous shoulders or concrete gutters adjacent to the pavement. In some instances, the joint between the existing pavement and bituminous shoulder will contain a considerable growth of vegetation which must be removed prior to resurfacing. This has led to some substantial extra work bills on some projects, especially interstate resurfacing projects. Field check your project for the presence of vegetation which will need removed prior to resurfacing and use judgment as to whether a pay item should be included in your plans.

CLEAN EXISTING PAVEMENT EDGE JOINT

Effective January 3, 2000 Revised April 24, 2020

Description: This work shall consist of removing loose material and vegetation present in the existing edge of pavement joint between the pavement and hot-mix asphalt shoulders. Any existing vegetation and other loose material shall be removed from the edge joint and deposited on the roadside in a method acceptable to the Engineer. The existing edge joint shall then be cleaned of any loose material using compressed air. After cleaning, any depressions in the edge joint greater than 1" (25 mm) in depth shall be filled with leveling binder placed and compacted by hand methods.

Basis of Payment: This work shall be paid for in accordance with Article 109.04 of the Standard Specifications.

Designer Note: This special should be inserted into contracts using Cold-in-Place Recycling (CIR) with Emulsified Asphalt (CBM).

COLD-IN-PLACE RECYCLING (CIR) WITH EMULSIFIED ASPHALT (CBM)

Effective: December 1, 2025
Revised: April 1, 2026

State of Illinois
Department of Transportation
Special Provision
for
COLD IN-PLACE RECYCLING (CIR) WITH EMULSIFIED ASPHALT (CBM)

Description. This work shall consist of cold milling and pulverizing existing bituminous layers to a specified depth and maximum size; mixing emulsified asphalt, water and additives with the recycled material; and spreading and compacting the mixture.

Materials. Materials shall be according to the following Articles of Division 1000 – Materials.

Item	Article/Section
(a) Portland Cement (Note 1)	1001
(b) Water	1002
(c) Fine Aggregate (Note 2)	1003
(d) Coarse Aggregate (Note 2)	1004
(e) Reclaimed Asphalt Pavement (Note 3)	1031
(f) Emulsified Asphalt (Note 4)	1031.06
(g) Cold Pulverized Material (Note 5)	

Note 1. If necessary, the mix design may require additional additives to increase fines in the mix. The type and allowable percentage will be described in the mix design.

Note 2. The mix design will specify gradation and quality of any additional aggregate.

Note 3. The Engineer may allow reclaimed asphalt pavement (RAP) from Fractionated RAP, Homogeneous, or Conglomerate RAP stock piles as specified in Article 1031.02 or from other millings of the existing pavement, “B” quality or better. The RAP material shall not exceed the maximum size requirement of the cold pulverized material, and when blended with the cold pulverized material shall produce a product which meets the specifications of AASHTO MP 31-17.

Note 4. The emulsified asphalt shall be selected for the project by the emulsified asphalt supplier based on the Contractor’s mix design. The penetration of the supplied emulsified asphalt shall be within ±25 dmm of the penetration

of the design emulsified asphalt but cannot exceed the values listed in the table below. A representative from the emulsified asphalt supplier shall be on the job site at the beginning of the project to monitor the characteristics and the performance of the emulsified asphalt. Throughout the job, the representative shall be available to check on the project and make adjustments to the emulsified asphalt formulation as required. The emulsified asphalt shall be received on site at a temperature no greater than 120°F (49°C).

The emulsified asphalt shall meet the following requirements:

CIR EMULSIFIED APSHALT MATERIAL SPECIFICATION			
Test	Procedure	Minimum	Maximum
Viscosity, Saybolt Furol, at 77°F (25°C), SFS	AASHTO T 72	20	100
Sieve Test, No. 20 (850 μm), retained on sieve, %	AASHTO T 59		0.10
Storage Stability Test, 24 hr., %	AASHTO T 59		1.0
Distillation Test, Residue from distillation to 347 ±9°F (175 ±5°C), %	AASHTO T 59 [1]	64.0	
Oil distillate by volume, %	AASHTO T 59		1.0
Penetration, 77°F (25°C), 100 g, 5 s, dmm	AASHTO T 49	75	200

Note: 1. Modified AASHTO T 59 procedure – distillation temperature listed above with a 20-minute hold.

Note 5. Prior to the addition of emulsified asphalt, the gradation of the cold pulverized material shall be 100% passing the 1 1/2 in. (37.5 mm).

Equipment. Equipment shall be according to the following.

Item	Article/Section
(a) Self-propelled Pneumatic-Tired Rollers (Note 1)	1101.01(c)
(b) Steel Wheel Tandem Rollers	1101.01(e)(1)
(c) Vibratory Roller (Note 2)	1101.01(g)
(d) Mechanical Sweeper	1101.03
(e) Self-propelled Milling Machine	1101.16(a)
(f) Spreading and Finishing Machine	1102.03
(g) Aggregate Spreaders	1102.04
(h) Dry Cement Spreader (Note 3)	
(i) Multi-unit Recycling Train (Note 4, 6, 8)	
(j) Single-unit Recycler (Note 5, 6, 8)	
(k) Pickup Machine (Note 7)	

Note 1. The self-propelled pneumatic-tired roller shall have a gross weight (mass of not less than 25 Tons (23 Metric Tons).

Note 2. The double drum vibratory rollers shall have a gross operating weight (mass) of not less than 10 Tons (9 Metric Tons) and a width of 78 in. (1950 mm).

Note 3. Spreaders used to apply dry cement recycling additives shall be non-pressurized mechanical vane-feed, cyclone or screw type capable of providing a consistent, accurate and uniform distribution of material while minimalizing dust during construction. The spreader shall have the ability to control the cement content to within ±0.5 lb./sq. yd. (0.27 kg/ sq. m) of the design target.

Note 4. The multi-unit recycling train shall contain the following.

a. A self-propelled cold milling machine that is capable of pulverizing the existing bituminous material in a single pass to the depth shown on the plans and to a minimum width of not less than 12.5 ft. (3.8 m). The machine shall have automatic depth controls to maintain the cutting depth to within 0.25 in. (6 mm) of that shown on the plans and shall have a positive means for controlling cross slope elevations. The use of a heating device to soften the pavement will not be permitted.

b. A material sizing unit having screening and crushing capabilities to reduce the cold pulverized material to the appropriate size. The screening and crushing unit shall have a closed-circuit system capable of continuously returning oversized material to the crusher. All of the pulverized material (100 percent) shall be processed to the maximum size requirements as specified.

c. A mixing unit equipped with a belt scale for the continuous weighing of the pulverized and sized bituminous material and a coupled/interlocked computer controlled liquid metering device. The mixing unit shall be an on-board completely self-contained pugmill. The liquid metering device shall be capable of automatically adjusting the flow of emulsified asphalt to compensate for any variation in the weight of pulverized material coming into the mixer. The metering device shall deliver the amount of emulsified asphalt to within ± 0.2 percent of the required amount by weight of pulverized bituminous material (for example, if the design requires 3.0 percent, the metering device shall maintain between 2.8 percent to 3.2 percent). The emulsified asphalt pump should be of sufficient capacity to allow emulsion contents up to 4.0 percent by weight of pulverized bituminous material. Also, automatic digital readings will be displayed for both the flow rate and total amount of pulverized bituminous material and emulsified asphalt in appropriate units of weight and time.

Note 5. The single-unit recycler shall be a self-propelled cold milling machine/cold recycling machine with a down cutting cutter head capable of pulverizing and recycling the existing hot-mix asphalt pavement to a maximum depth of 5 in. (125 mm), incorporate the emulsified asphalt and water, and mix the materials to produce a homogeneous material. The minimum power of this machine is 900 hp (670 kW). The machine shall be capable of pulverizing and recycling not less than 12.5 ft. (3.8 m) wide in each pass.

The machine shall have two systems for adding emulsified asphalt and water, with each system having a full-width spray bar with a positive displacement pump interlocked to the machine's ground speed to insure that the amount of emulsified asphalt and water being added is automatically adjusted with changes to the machine's ground speed.

Each additive system shall have its own spray bar equipped with 2 nozzles per ft (6 nozzles per m) of spray bar and be capable of incorporating up to 7 gal./sq. yd. (31.7 L/sq. m) of emulsified asphalt and/or water. Individual valves on the spray bar shall be capable of being turned off as necessary to minimize emulsified asphalt and water overlap on subsequent passes.

Note 6. Any additives such as water added by the recycling equipment at the mill head or mixing unit shall be controlled through liquid metering devices capable of automatically adjusting for the variation in the weight of the pulverized material going into the mixing unit. The metering devices shall be capable of delivering the amount of additive to within ±0.2 percent of the required amount by weight of the pulverized bituminous material. A capability of adding up to 5% water by weight of the pulverized bituminous material, if necessary, based on environmental and material requirements, is mandatory. It will not be required to meter the water added at the milling machine to control dust in the screens, belts, or crusher/material sizing unit.

Note 7. The pick-up machine shall be capable of removing the entire windrow down to the remaining underlying material.

Note 8. The recycling units, single-unit and multi-unit shall be calibrated annually. Copies of the calibration charts shall be submitted to the Engineer prior to production.

CONSTRUCTION REQUIREMENTS

Weather Limitations. Unless otherwise authorized by the Engineer, recycling operations shall be done between May 15th and September 15th for Districts 1 through 6, and between May 1st and September 15th for Districts 7 through 9. The air temperature at time of construction shall be a minimum 60°F (15°C) and the forecast for the next 48 hours shall be above 45°F (7°C) with no fog or rain. Air temperature shall be measured in the shade. The Engineer may restrict work when the heat index is greater than 100°F (38°C).

Authorized Project Delay. For working day contracts, the Contractor may request to delay the start of work for a period of up to 40 consecutive calendar days after the execution of the contract for the processing of the CIR mix design. The delay shall be requested by the Contractor at or prior to the time of the preconstruction meeting.

When approved, the charging of working days will begin at the termination of the delay.

Mix Design. CIR mix designs shall be in accordance with Illinois Modified AASHTO PP 86 and comprised of existing RAP, asphalt emulsion, and additives, if necessary. The mix design and all associated testing shall be performed using samples of each proposed material. RAP samples shall be either collected from the existing pavement at the project site representing the milling

depth. The mix design shall be completed by a design laboratory that is AASHTO accredited in Hot-Mix Asphalt.

Test Method	Criteria	Property
Indirect Tensile Strength, dry subset, Illinois Modified T 283	Minimum 45 psi (310kPa)	Cured Strength
Tensile strength ratio, Illinois Modified T 283	Minimum 0.70	Resistance to Moisture Induced Damage
Marshall Stability, dry subset, T 245	Minimum 1250 lbs. (5560 N)	Cured Stability
Retained Marshall Stability[1], T 245	Minimum 0.70	Resistance to Moisture Induced Damage
Raveling Test of Cold Mixed Bituminous Mixtures, ASTM D7196	Maximum 2.0% loss	Resistance to Raveling
Ratio of Asphalt Emulsion to Cement	Minimum 3.0:1.0	Prevent Rigid Behavior

[1] Retained Marshall stability = average of conditioned Marshall stability/average of dry Marshall stability

Preparation of Existing Pavement. Grass and other vegetation shall be removed from the edge of the existing pavement to prevent contamination of the pulverized bituminous material during the milling operation.

The existing pavement shall be milled to the required depth and width as indicated on the plans. Recycling shall be in a manner that does not disturb the underlying material in the existing roadway. The milling operation shall be conducted so that the amount of fines occurring along the vertical faces of the cut will not prevent bonding of the cold recycled materials. The pulverized bituminous material shall be processed to the required gradation specified, if the max gradation is exceeded, operations will be stopped until adequate adjustments are made. When a paving fabric is encountered during the CIR operation, the Contractor shall make the necessary adjustments in equipment or operations so that at least 90 percent of the shredded fabric in the recycled material is no more than 5 sq. in. (3200 sq. mm). Additionally, no fabric piece shall have any dimension exceeding a length of 4 in. (100 mm). These changes may include, but not be limited to, adjusting the milling rate or screens in order to obtain a recycled material meeting specification requirements. The Contractor shall be required to waste material containing over-sized pieces of paving fabric as directed by the Engineer. When the Contractor is aware that paving fabric exists, such as indicated on the plans, the Contractor will not receive additional payment. However, if the Contractor is not made aware of the paving fabric, then the Contractor shall receive additional payment for any necessary adjustments in equipment and operations.

Spreading Cement. If cement is required in the mix design, cement shall be spread over the existing pavement prior to the mixing operation. The spreading shall be done in a manner to minimize dusting. The mixing operation shall start within a half an hour of the dry cement being spread.

Mixing Operation. The pulverized material shall be processed through a mixing unit capable of combining the pulverized material, emulsified asphalt, water, and any additives to produce a homogeneous recycled mixture. The emulsified asphalt shall be incorporated into the pulverized bituminous material at the initial rate determined by the mix design(s) and approved by the Engineer. Sampling and mix design may determine different levels of emulsified asphalt at various portions of the project.

Spreading and Finishing. The recycled material shall be spread using a self-propelled paver. The material shall be transferred to the self-propelled paver via integral conveyor, or a pick-up machine shall be used to transfer the windrowed recycled material into the paver. The pick-up machine must be within 150 ft. (45 m) of the mixing unit. The recycled material shall be spread by a spreading and finishing machine in one continuous pass, without segregation, and to the lines and grades established by the Engineer.

Compaction. The compacted recycled material shall be at a thickness of 2.5 in. to 5.0 in. (63 mm to 125 mm). The recycled material shall be compacted according to the following.

(a) The effective rolling distance behind the spreading and finishing machine shall not exceed 150 feet. Rolling shall start no more than 30 minutes behind the paver. When possible, rolling shall not be started or stopped on uncompacted materials but with rolling patterns established so that they begin or end on previously compacted material.

(b) The breakdown roller shall be a steel wheel tandem or vibratory roller in either static or dynamic mode. Dynamic mode shall only be used if it is shown to not damage the mixture.

(c) Growth Curve. Rolling patterns shall be developed using growth curves. The Contractor shall perform a growth curve within the first 500 ft of mixture placed each day. The Contractor shall perform additional growth curves during the day if placement begins on a different lift or if mixture emulsion content changes by 0.5% or more. A new growth curve shall be performed if breakdown roller equipment changes.

The growth curve, consisting of a plot of lb./cu. ft. (kg/cu. m) versus the number of passes with the project breakdown roller, shall be developed. Roller speed during the growth curve development shall be the same as the normal compaction operation. The curve shall be established by using a nuclear gage in backscatter mode according to ASTM D 2950. Tests shall be taken after each pass until the highest lb./cu. ft. (kg/ cu. m) is obtained. This value shall be the target density.

(d) Quality Control by the Contractor. The Contractor shall control the compaction process by testing the mix density at random locations as determined according to the QC/QA document, "Determination of Random Density Test Site Locations", and recording the results on forms approved by the Engineer. Testing shall be performed according to ASTM D 2950 in backscatter mode with the same nuclear gage used for growth curve development. Longitudinal joint testing shall be located at each random density location at a distance equal to the lift thickness or a minimum of 2 inches (50 mm) from each pavement edge.

Density shall be between 95.0% and 102.0% of the target density. Unconfined edge density shall be a minimum of 93.0% of the target density. All density test results shall be reported to the Engineer prior to the start of the next day’s production. The Engineer shall be immediately notified of any failing tests and subsequent remedial action.

(e) Quality Assurance by the Engineer. The Engineer will conduct independent assurance density testing with a nuclear gage utilized in conjunction with daily growth curve development.

If the Contractor is not controlling the compaction process and is making no effort to take corrective action, the operation shall stop as directed by the Engineer.

Opening to Traffic. After the completion of compaction of the recycled material, no traffic, including that of the Contractor, shall be permitted on the completed recycled material for at least two hours. After two hours, rolling traffic may be permitted on the recycled material. This time may be adjusted by the Engineer to allow establishment of sufficient cure so traffic will not initiate raveling or permanent deformation. All loose particles that may develop on the pavement surface shall be removed by power brooming.

After opening to traffic, the surface of the recycled pavement shall be maintained in a condition suitable for the safe movement of traffic.

Maintenance. The Contractor shall maintain the recycled pavement in a manner satisfactory to the Engineer until the wearing course has been constructed. Maintenance related to Contractor construction procedures or quality of work, shall not be paid for separately.

Curing. Before placing the specified wearing course, the recycled pavement shall be allowed to cure until the moisture of the material is reduced to 2.5 percent or less. If a rain event occurs between the final cure and wearing course paving operations, additional moisture content testing shall be conducted to verify the moisture content does not exceed 2.5 percent prior to placing the wearing course. Moisture content testing shall be observed by the Engineer and the test samples shall be taken as a representative sample form the entire thickness of the CIR Unless otherwise directed by the Engineer, the specified wearing course shall be placed within two weeks of the recycled pavement final cure.

Quality Control / Quality Assurance.

QC/QA TESTING FREQUENCY		
Test	QC Frequency[1]	QA Frequency[1]
Pulverized Material Sizing and Gradation	1 per 0.5 day of production	1 per day of production
Optimum Field Density	1 per day of production	1 per day of production
Pulverized Moisture Content	1 per 0.5 day of production	1 per day of production
Compacted Density	1 per 0.5 mile (0.4 km)	1 per mile (1.6 km)
Field Moisture Content for Curing	1 per each day of production	1 per each day of production
Emulsion Content	1 per day of production	1 per day of production

Note: 1. The Contractor shall perform all quality control tests within the first 500 ft. (150 m) after startup or any change in the mix. The Department will also run the split samples at these locations.

(a) Quality Control by the Contractor. The Contractor shall perform or have performed the inspection and tests required to assure conformance to the contract requirements. Control includes the recognition of obvious defects and their immediate correction. This may require increased testing, communication of test results to the job site, modification of operations, suspension of work, or other actions as appropriate.

The Engineer shall be immediately notified of any failing tests and subsequent remedial action. Passing tests shall be reported to the Engineer no later than the start of the next work day.

(b) Quality Assurance by the Engineer. The Engineer will conduct independent assurance tests on split samples taken by the Contractor for quality control testing. In addition, the Engineer will witness the sampling and splitting of these samples and will immediately retain witnessed samples for quality assurance testing. The Engineer will check the yield daily.

(c) Test Methods:

(1) Pulverized Material Sizing and Gradation. A sample shall be obtained after the milling operation is complete and screened using a 1.5 in. (37.5 mm) sieve to determine if meeting the maximum particle size requirement. The mixing operations shall be turned off and samples collected to check the gradation. Gradations shall be performed each day on the millings at field moisture content using the following sieves: 1.5 in. (37.5 mm), 1.0 in. (25 mm), 3/4 in. (19 mm), 1/2 in. (12.5 mm), 3/8 in. (9.5 mm), No. 4 (4.75 mm), No. 8 (2.36 mm), No. 16 (1.18 mm), and No. 30 (600 µm). The resulting gradation shall be compared to the mix design gradations to determine any necessary changes to emulsion content. The recycling train shall be move back to the beginning of the sample milling section and all processes turned on to complete the recycling process of the material.

Sampling procedures shall generally be in accordance with ASTM D 979 or AASHTO T 168.

(2) Compacted Density. A wet density shall be determined using a nuclear moisture density gauge following the procedures for ASTM D 2950, backscatter measurement. The measurement shall be compared to the target density obtained by the growth curve.

(3) Emulsion Content. Total weight of material used against the total area of CIR constructed. It would require any nurse tanks to be weighed at the beginning of the project and at the end of each day of production.

(4) Field Moisture Content for Curing. The moisture content of the in-place material shall be tested as specified in Illinois Test Procedure 255.

Surface Tests. If the completed recycled pavement will be overlaid with hot-mix asphalt, then the completed recycled pavement will be tested for smoothness according to 407.09.

If the recycled pavement has a surface treatment as the final surface then the completed recycled pavement will be tested for smoothness in the wheel paths with a 16 ft (5 m) straightedge.

For each variation in the recycled pavement that exceeds 3/8 in. (10 mm), the entire area affected shall be corrected by a self-propelled milling machine. After the completion of the Cold In-Place Recycling operation, the Contractor shall survey the pavement surface at the centerline, middle of each lane and each edge of pavement at every 500 ft. station or as directed by the Engineer. After the survey is completed, the Contractor shall verify the cross slope meets the slopes defined in the plans. If the slope does not meet that which is defined in the plans, corrective milling action

will be taken by the Contractor. The Contractor shall propose a milling plan to be approved by the Resident Engineer. The Contractor shall be allowed a maximum of 0.75 inches milling at the centerline to create the required cross slope. If needed, additional Hot-Mix Asphalt required to correct the cross slope will not be paid for beyond the maximum allowed per Article 406.13 (b) of the Standard Specifications.

If milling for surface variations or cross slope correction are required, the milling machine shall be operated at a maximum speed of 50 feet per minute. The milled material will be disposed of as per Article 202.03 of the Standard Specifications at the contractor's expense. The recycled pavement shall be swept by a mechanical broom to remove all loose material from the recycled pavement before opening to traffic.

The Contractor shall furnish a 16 ft. (5 m) straightedge and shall provide for its jobsite transportation at no additional cost to the Department.

Method of Measurement. Bituminous materials will be measured for payment as specified in Section 1032 of the Standard Specifications.

Coarse aggregate will be measured in Tons (Metric Tons).

Reclaimed asphalt pavement from existing stockpiles will be measured in Tons (Metric Tons).

Corrective milling will be measured in Square Yards (Square Meters) of the corrected pavement.

The cold in-place recycling will be measured in Square Yards (Square Meters) of the recycled pavement. The width and depth will be as shown on the plans or as directed by the Engineer.

Basis of Payment. The bituminous material will be paid for at the contract unit price per Ton (Metric Ton) for CIR-FDR EMULSIFIED ASPHALT. Payment will be made for the bituminous material in accordance with the approved job mix formula (± 0.2 percent) and any agreed adjustments.

The coarse aggregate will be paid for at the contract unit price per Ton (Metric Ton) for ADD ROCK.

The reclaimed asphalt pavement from existing stockpiles will be paid for at the contract unit price per Ton (Metric Ton) for RECLAIMED ASPHALT PAVEMENT.

Correcting milling will be paid for at the contract unit price per Square Yard (Square Meter) for HMA SURFACE REMOVAL, VARIABLE DEPTH.

The cold in-place recycling will be paid for at the contract unit price per Square Yard (Square Meter) for COLD IN-PLACE RECYCLING, of the thickness specified.

If provided as a payment item, the additional cement required by the mix design will be measure and paid as specified in Section 302 of the Standard Specifications. If not provided as a payment item, the cost of additional cement required by the mix design will be paid for according to Article 109.04 of the Standard Specifications.

Designer Note: This special requires the Contractor to furnish a person to operate the bump buggy and assist in removing bumps in the surface course while IDOT Construction personnel monitor the bump buggy operation and record bumps that cannot be removed. Discuss the need for this special with Construction prior to insertion.

HOT-MIX ASPHALT SURFACE COURSE SURFACE TESTS

Effective: November 1, 2003 Revised January 1, 2007

The Contractor shall provide a person to operate the straight edge in accordance with Article 406.11 of the Standard Specifications and communicate with IDOT Personnel to minimize the surface course bumps. If surface course bumps cannot be removed at this time, IDOT personnel will record the locations and provide deductions as stated in Article 406.11.

Designer Note: Check with Materials and/or Construction for use of this special provision. It will typically be used on urban type jobs. This special allows the use of either a spray paver or a special tack coat material.

HOT MIX ASPHALT – TACK COAT (SPECIAL) OPTIONS

Effective: August 1, 2019
Revised: November 8, 2019

The Contractor will have the option to apply tack coat by either of the following means: SS-1hP applied simultaneously with HMA paving via spray paver, or NTEA applied via distributor truck prior to HMA paving.

Revise Note 1 of Article 406.02 of the Standard Specifications to read:

"Note 1. The bituminous material used for tack coat shall be one of the types listed in the following table:

Application	Bituminous Material Types
Tack Coat on Brick, Concrete, or HMA Bases	SS-1hP, NTEA"

Revise Article 406.05(b)(1) of the Standard Specifications to read:

"(b) Tack Coat. The bituminous material shall be prepared according to Article 403.05 and applied according to Article 403.10.

(1) Tack Coat for Brick, Concrete or HMA Bases. The base shall be cleaned of all dust, debris and any substance that will prevent the prime coat from adhering to the base. Cleaning shall be accomplished by sweeping to remove all large particles and air blasting to remove dust. As an alternate to air blasting, vacuum sweeping may be used to accomplish the dust removal. Vacuum sweeping shall be accomplished with a regenerative air vacuum sweeper. The base shall be free of standing water at the time of application. The prime coat shall be applied uniformly and at a rate that will provide a residual asphalt rate on the prepared surface as specified in the following table.

Type of Surface to be Primed	Residual Asphalt Rate (1) Lb./sq. ft.
Milled HMA, Aged Non-Milled HMA, Milled Concrete, Non-Milled Concrete & Tined Concrete	0.08
Fog Coat between HMA Lifts, IL-4.75 & Brick	0.08

The bituminous material for the tack coat shall be placed one lane at a time. If a spray paver is not used, the tacked lane shall remain closed until the tack coat is fully cured and does not pick-up under traffic."

Revise the first paragraph of Article 406.14 of the Standard Specifications to read:

"**Basis of Payment.** Tack Coat will be paid for at the contract unit price per Pound of residual asphalt applied for BITUMINOUS MATERIALS (TACK COAT), SPECIAL."

Designer Note: Use for permanent installation of rumble strips across a lane in advance of stop signs where warranted. Check with Traffic on usage/spacing of strips. Include CADD detail on layout of rumble strips. Pay Item is Z0055500, Rumble Strip. This is not intended for shoulder rumble strips.

GROOVED-IN RUMBLE STRIP

Effective November 16, 2007 Revised July 30, 2010

This work shall consist of the construction of grooved-in rumble strips at locations as detailed in the plans.

The equipment shall be a self-propelled milling machine with a rotary-type cutting head(s). The cutting head(s) shall be suspended from the machine such that it can align itself with the slope of the pavement and any surface irregularities. The teeth of the cutting head(s) shall be arranged to provide a smooth cut, with no more than an 1/8 in. (3 mm) difference between peaks and valleys.

Prior to commencement of the work, the Contractor shall demonstrate the ability of the equipment to achieve the desired results without damaging the pavement.

The rumble strips shall be cut to the dimensions shown on the plans. Guides shall be used to ensure consistent alignment, spacing and depth. In Portland cement concrete, rumble strips may be formed according to the details shown on the plans immediately after the application of the final finish.

Rumble strips shall be omitted within the limits of structures, entrances and side roads. In Portland cement concrete pavement, rumble strips shall not be placed within 6 in. (150 mm) of transverse joints.

This work will be measured for payment in Square Feet (Square Meters). Measurement will include both the cut and uncut (formed and unformed) sections of the rumble strips.

This work will be paid for at the contract unit price per Square Feet (Square Meter) of the actual treated area for RUMBLE STRIP.

Designer Note: For use on urban projects with existing drains thru sidewalks. Discuss with your Project Engineer.

SIDEWALK DRAINS

Effective March 1, 1991 Revised January 1, 2007

Drainage troughs and pipes of various designs carry storm water from inlets in commercial entrances across the sidewalk to the gutter. These drainage facilities are to be restored as they are located. The existing pipes and grates shall be salvaged if possible. The cost of any concrete work to restore these drains shall be included in the unit price per Square Foot (Square Meter) for PORTLAND CEMENT CONCRETE SIDEWALK, 4" (100 mm). Any pipe or grate materials which have to be replaced will be paid for in accordance with Article 109.04 of the Standard Specifications.

Designer Note: For use on urban projects where sidewalk removal and replacement required and access must be maintained at all times. There are pay items for Temporary Sidewalk and Temporary Ramps if the designer knows where and how much quantity will be needed. If using the pay items, provide locations and quantities in the plans and define the material to be used, but do not use this special provision. Only use this special when there are locations such as ramps that are difficult to anticipate what will be needed or where they will be needed.

TEMPORARY SIDEWALKS

Effective March 1, 1991 Revised February 1, 1996

Temporary sidewalks may be required at various locations as determined by the Engineer to provide access to and from businesses and to provide continuity for pedestrian traffic. The temporary sidewalks shall be constructed using material of the type and thickness as specified by the Engineer. The work, including the subsequent removal of the temporary sidewalk, will be paid for in accordance with Article 109.04 of the Standard Specifications.

44000 440.00

Designer Note: Include in contracts with partial depth patching. Discuss depth of patch and replacement lift thicknesses with Construction and Materials. If patches must remain open overnight, remove the paragraph saying they have to be opened the same day.

Priming of the patch surfaces is included in the cost of the Partial Depth Patching pay item and should not be paid separately in the plans. Do not use BDE special "PCC Partial Depth Hot-Mix Asphalt" if using this special.

Pay Item is X0556100, PARTIAL DEPTH PATCHING (SPECIAL), by the Square Yard to cover the milling. Use Pay Item X4421000, PARTIAL DEPTH PATCHING by the Ton to cover the HMA.

Fillings: ***** Total depth patch.
****** Number of lifts.
******* Thickness of lifts.

PARTIAL DEPTH PATCHING

Effective: April 26, 2013 Revised: November 6, 2020

This work shall consist of partial depth patching of the existing pavement structure and replacement with Hot-Mix Asphalt (HMA) material at the locations shown in the plans or as directed by the Engineer. This work will be performed before completion of the cold milling operation and prior to the placement of the HMA overlay, if applicable.

This work shall include all labor, equipment, and materials necessary to remove the existing HMA overlay to a depth of (_____")*****. The removal shall be performed with a cold milling machine of sufficient size and weight to remove the existing HMA. The milling machine must be operated longitudinally with the flow of traffic and will not be permitted to cut transversely across the lane. Disposal of waste materials for the work described herein shall be in accordance with Article 202.03 of the Standard Specifications. After cold milling the patch, all loose material shall be removed and the area air-blast cleaned to the satisfaction of the Engineer. Replacement HMA material shall be as shown in the Mixture Requirements Table in the plans.

Prior to placement of the HMA material, the bottom and sides of the patch shall be primed in accordance with Article 406.05 of the Standard Specifications using an SS-1hP bituminous material. The prime shall be applied at a residual rate of 0.08 lbs./Sq. Ft. by means of a mechanical distributor and shall be placed on all surfaces of the milled trench.

The HMA material shall be placed in (_____)****** (_____")******* inch lifts and shall match the elevation of the surrounding pavement after final compaction. Bumps greater than ¼", measured with a 16' straight edge, left after compaction shall be removed with pavement surface grinding equipment in accordance with Article 1101.04 of the Standard Specifications.

The HMA mixture and density control limits shall conform to Article 1030 of the Standard Specifications. Compaction shall be accomplished using a vibrating roller that conforms to the applicable sections of Article 1101.01 of the Standard Specifications.

The Contractor shall fill all patches with the HMA material in the same day they are milled. No open patches will be allowed to remain overnight.

Removal of the existing HMA will be measured for payment in place, and the area computed in Square Yards. The limits will be the area of the patch that measures at least (_____")***** in depth, and shall not include the rounded transition at the beginning and end of the patch.

If after milling, it's determined by the Resident Engineer that damage to the existing pavement structure still exists and must be addressed by means of a full-depth patch, the additional labor and materials required shall be paid in accordance to Article 109.04 of the Standard Specifications for "Road and Bridge Construction."

Replacement with HMA will be measured in Tons placed to fill the full depth milled area (PARTIAL DEPTH PATCHING).

Basis of Payment: Partial depth removal and cleaning of the pavement will be paid for at the contract unit price per Square Yard for PARTIAL DEPTH PATCHING (SPECIAL). The HMA placement and the priming of the partial depth patches will be paid for at the contract unit price per Ton for PARTIAL DEPTH PATCHING.

Designer Note: To be used for milling deteriorated pavement longitudinal joints at the depth determined by the Designer, 3' feet wide and placement of Hot-Mix Asphalt (HMA) surface mix in trench.

Do not use the Recurring Special, "Longitudinal Joint and Crack Patching" if using this District Special.

LONGITUDINAL JOINT REPAIR

Effective April 26, 2013 Revised July 1, 2021

This work shall include all labor, equipment and material required to mill out an area along and either side of an existing pavement longitudinal joint and replacement with hot-mix asphalt (HMA). The replacement HMA material shall be as specified in the HMA Mixtures Design Table in the plans. The removal shall be done with a cold milling machine of sufficient size and weight to remove the pavement to a depth of _____ and a width of three feet (3') in a single operation; skid steer-mounted mills will not be allowed. After cold milling the existing joint, all loose material shall be removed with a mechanical sweeper then air blast cleaned to the satisfaction of the Engineer. Any removal of material below the _____ and any hand placement of the HMA material prior to paving shall be paid in accordance to Article 109.04 of the Standard Specification.

Prior to placement of any HMA material, the milled trench shall be primed in accordance with Article 406.05 of the Standard Specifications using an SS-1HP bituminous material. The prime shall be applied at a residual rate of 0.08 lb./sq. ft. by means of a mechanical distributor and shall be placed on all surfaces of the milled trench.

The HMA mixtures and density control limits shall conform to Article 1030 of the Standard Specifications. Placement shall be a single lift by machine methods and shall match the profile of the existing pavement after final compaction. Compaction shall be accomplished using a vibratory roller that conforms to the applicable section of Article 1101.01 of the Standard Specifications.

The Contractor shall fill all trenches in the same day they are milled. No open trench will be allowed to remain overnight.

The partial depth removal of the pavement to a depth of _____ will be paid for at the contract unit price per Square Yard for HMA SURFACE REMOVAL – LONGITUDINAL JOINT.

The machine method of the HMA material will be paid for at the contract unit price per Ton for LONGITUDINAL JOINT REPAIR.

Designer Note: Use on urban projects with cold mill depth greater than 1" (25 mm). Provides for longer temporary taper around manhole castings in traffic lanes.

PROTECTION OF FRAMES AND LIDS OF UTILITY STRUCTURES

Effective March 6, 1991 Revised January 1, 2007

This work shall consist of protecting frames and lids of utility structures in the pavement after the adjacent hot-mix asphalt surface has been removed to the required depth by cold milling or by hand methods.

After the area has been swept clean and before the lane is opened to traffic, a hot bituminous mixture shall be placed around the casting, flush with its surface and decreasing to a featheredge in a distance of 4 feet (1.2 m) around the entire surface of the casting. Cold mix or milled material will not be permitted. This mixture shall remain in place until the day surfacing operations are undertaken within the immediate area of the structure. Prior to placing the surface course, the temporary hot-mix asphalt mixture shall be removed and disposed of by the Contractor as specified in Article 202.03 of the Standard Specifications.

The temporary tapers and their removal shall be considered included in the contract unit price per Square Meter (Square Yard) for HOT-MIX ASPHALT SURFACE REMOVAL of the depth specified, and no additional compensation will be allowed.

Designer Note: This special provision requires a 12' wide milling machine. Check with Construction before using. This provision shall be used in lieu of either DSP 440.03B or Check Sheet #12 "Hot-Mix Asphalt Surface Correction." Intended for use on rural "SMART" and other types of extended length cold milling projects to develop a smooth pavement profile for resurfacing. Do not require on urban or intersection type projects. This special provision should be limited to jobs with more than 25,000 Sq. Yds. (20,000 Square Meters) of mainline milling.

The designer should check existing field conditions and as built plans to determine the existing overlay thickness is so that we can eliminate spalling of the bituminous surface that is to remain in place after the cold milling.

Discuss cleanup equipment with Construction, then insert the following: (a) For rural projects, a "mechanical broom" for cleanup is acceptable. (b) For urban projects. It is recommended to require use of a "self-propelled street sweeper with power vacuum capability". If (b) is used, then revise and underline the "cleanup" paragraph and put a revised date on the special provision.

This special as written covers the standard milling and resurfacing situations. If unusual circumstances such as grade correction, cross slope correction, etc. are to be performed, the special may need to be revised and a detail showing the treatment included in the plans.

**Designer shall insert thickness or range of thickness here.

HOT-MIX ASPHALT SURFACE REMOVAL, _____" (_____MM)

Effective: March 1, 1993
Revised: January 1, 2022

Description: This work shall consist of removing a portion of the existing hot-mix asphalt concrete surface course in accordance with the applicable portions of Section 440 and 1101 of the Standard Specifications, this special provision, details in the plans and as directed by the Engineer. The cold milled salvaged aggregate resulting from this operation shall become the property of the Contractor.

Equipment: The machine used for milling and planing shall be a self-propelled grinding machine having a minimum 12' (3.6 m) wide drum at least 28" (710 mm) in diameter. When a milling width in excess of 12' is required and the Contractor's milling machine is less than the required width shown in the plans, the remaining area shall be milled with a machine capable of meeting the requirements of this special provision. Milling attachments used with skid steer tractors will not be allowed for longitudinal areas to mill additional widths.

When the teeth become worn so that they do not produce a uniform surface texture, they shall all be changed at the same time (as a unit). Occasionally, individual teeth may be changed if they lock up or break, but this method shall not be used to avoid changing the set of teeth as a unit. Occasional gouges, due to deteriorated pavement condition, or separation of lifts will not be cause to replace all teeth. The Engineer will be the sole judge of the cause of the pavement gouging and the corrective work required. Corrective work due to negligence or poor workmanship shall be at the Contractor's expense.

The moldboard is critical in obtaining the desired surface texture. It shall be straight, true, and free of excessive nicks or wear, and it shall be replaced as necessary to uniformly produce the

required surface texture. Gouging of the pavement by more than 1/4 inch (6 mm) shall be sufficient cause to require replacement of all teeth.

Add the following after the third sentence of Article 406.05 (c)(1):

"Vacuum sweeping shall be accomplished with a regenerative air sweeper."

Construction Requirements

General: Weather conditions, when milling work is performed, must be such that short term or temporary pavement markings can be placed the day the surface is milled in accordance with Section 703 "Work Zone Pavement Markings".

An automatic grade control device shall be used when milling mainline pavement and shall be capable of controlling the elevation of the drum relative to either a preset grade control stringline or a grade reference device traveling on the adjacent pavement surface. The automatic grade control device may be utilized only on one side of the machine with a automatic slope control device controlling the opposite side. The traveling grade reference device shall not be less than 30 feet (9 m) in length. When milling cross roads, turn lanes, intersections, crossovers, or other miscellaneous areas, the Engineer may permit the matching shoe. The Contractor, at his option, may also substitute an approved 6' wide (1.8 m) machine for areas other than mainline pavement.

The Contractor shall mill **_____inch (_____mm)** at the centerline and project the proposed cross slope to the edge of pavement. In the event the milling at the outer edge of the lane would exceed **_____inches (_____mm)**; then the Contractor shall reduce the cut at the centerline to provide the maximum cut of **_____inches (_____mm)** at the edge of pavement. If deemed necessary, the Contractor may reduce the cross slope from normal 1.5% to 1%.

Surface tests will be performed in accordance with Article 406.11 of the Standard Specifications. The longitudinal profile will be taken 3 ft. (0.9 m) from and parallel to each edge of pavement and 3 ft. (0.9 m) from and parallel to the centerline on each side. If a shadow area is found at the 3 ft. (0.9 m) points the pavement smoothness tester will be moved sufficient distance either side to measure the Contractor's milling efforts. Any surface variations exceeding the tolerance in Article 406.11 shall be corrected by reprofiling at no additional expense to the Department. In addition, the Contractor shall be responsible for refilling with approved hot-mix asphalt mixtures any area that lowered the pavement profile as a result of faulty milling operations if directed by the Engineer. The Contractor shall be responsible for providing the pavement smoothness tester described elsewhere to retest the pavement profile obtained.

If the milling depth is intended to expose the original concrete pavement, then additional hand or machine work may be necessary to remove any remaining veneer of bituminous pavement which may be left in place behind the milling machine. Such work will be at the direction of the Engineer and at no extra cost to the Department.

The Contractor shall provide a 10-foot (3 m) straightedge equipped with a carpenter's level or a 7-foot (2.1 m) electronic straightedge to check the cross slope of the roadway at regular intervals as directed by the Engineer.

Surface Texture: Each tooth on the cutting drum shall produce a series of discontinuous longitudinal striations. There shall be 16 to 20 striations (tooth marks) for each tooth for each 6 feet (1.8 m) in the longitudinal direction, and each striation shall be 1.7 inches ±0.2 inch (43 ±5 mm) in length after the area is planed by the moldboard. Thus, the planed length between each pair of striations shall be 2.3 inches ±0.2 inch (58 ±5 mm). There shall be 80 to

96 rows of discontinuous longitudinal striations for each 5 feet (1.5 m) in the transverse dimension. The areas between the striations in both the longitudinal and transverse directions shall be flat topped and coplaner. The moldboard shall be used to cut this plane; and any time the operation fails to produce this flat plane interspersed with a uniform pattern of discontinuous longitudinal striations, the operation shall be stopped and the cause determined and corrected before recommencing. Other similar patterns of uniform discontinuous longitudinal striations interspersed on a flat plane may be approved by the Engineer. The drawing titled "Hot-Mix Asphalt Surface Removal" showing the desired surface texture is included in the plans.

The start-up milling speed shall be limited to a maximum of 50-foot (15 m) per minute. The Contractor shall limit his operations to this speed to demonstrate his ability to obtain the striations and ride ability as described above. If the Contractor is able to demonstrate that he can consistently obtain the desired striations and ride ability at a greater speed he will be permitted to run at the increased speed.

Cleanup: After cold milling a traffic lane and before opening the lane to traffic, the pavement shall be swept by a **regenerative air sweeper** to prevent compaction of the cuttings onto the pavement. All loose material shall be removed from the roadway. Before the prime coat is placed, the pavement shall be cleaned of all foreign material to the satisfaction of the Engineer.

This cleanup work shall be considered included in the contract unit price per Square Meter (Square Yard) for HOT-MIX ASPHALT SURFACE REMOVAL of the depth specified, and no additional compensation will be allowed.

Method of Measurement:

(a) Contract Quantities. The requirements for the use of Contract Quantities shall be Article 202.07(a) of the Standard Specifications.

(b) Measured Quantities. Cold milling and planing will be measured and the area computed in Square Yards (Square Meters) of surface.

Areas not milled (shadowed areas) due to rutting in the existing pavement surface will be included in the area measured for payment.

Basis of Payment: The cold milling and planing will be paid for at the contract unit price per Square Yard (Square Meter) for HOT-MIX ASPHALT SURFACE REMOVAL of the depth specified. Payment as specified will include variations in depth of cuts due to rutting, superelevations, and pavement crown and no additional compensation will be allowed.

Designer Note: This special provision requires use of a 6' milling machine. Check with Construction before using. This provision shall be used instead of either DSP 440.03AD or Check Sheet #12 "Hot-Mix Asphalt Surface Correction." Intended for use on urban project or rural project with less than 25,000 Square Yards (20,000 Square Meters) of cold milling and is intended to develop a smooth pavement profile for resurfacing.

The designer should check existing field conditions and as built plans to determine the existing overlay thickness is so that we can eliminate spalling of the hot-mix asphalt surface that is to remain in place after the cold milling.

This special as written covers the standard milling and resurfacing situations. If unusual circumstances such as grade correction, cross slope correction, etc. are to be performed, the special may need to be revised and a detail showing the treatment included in the plans.

**Designer shall insert thickness or range of thickness here.

HOT-MIX ASPHALT SURFACE REMOVAL, " (MM)

Effective: February 5, 1993
Revised: January 1, 2022

Description: This work shall consist of removing a portion of the existing hot-mix asphalt concrete surface course in accordance with the applicable portions of Section 440 and 1101 of the Standard Specifications, this special provision, details in the plans and as directed by the Engineer. The cold milled salvaged aggregate resulting from this operation shall become the property of the Contractor.

When the teeth become worn so that they do not produce a uniform surface texture, they shall all be changed at the same time (as a unit). Occasionally, individual teeth may be changed if they lock up or break, but this method shall not be used to avoid changing the set of teeth as a unit.

The moldboard is critical in obtaining the desired surface texture. It shall be straight, true, and free of excessive nicks or wear, and it shall be replaced as necessary to uniformly produce the required surface texture. Gouging of the pavement by more than 1/4 inch (6 mm) shall be sufficient cause to require replacement of all teeth. Occasional gouges, due to deteriorated pavement condition, or separation of lifts will not be cause to replace all teeth. The Engineer will be the sole judge of the cause of the pavement gouging and the corrective work required. Corrective work due to negligence or poor workmanship will be at the Contractor's expense.

Add the following after the third sentence of Article 406.05 (c)(1):

"Vacuum sweeping shall be accomplished with a regenerative air sweeper."

Construction Requirements

General: Weather conditions, when milling work is performed, must be such that short term or temporary pavement markings can be placed the day the surface is milled in accordance with Section 703 "Work Zone Pavement Markings."

An automatic grade control device shall be used when milling mainline pavement and shall be capable of controlling the elevation of the drum relative to either a preset grade control stringline or a grade reference device traveling on the adjacent pavement surface. The automatic grade control device may be utilized on only one side of the machine with an automatic slope control device controlling the opposite side. The traveling grade reference device shall not be less than 30 feet (9 m) in length for rural areas. For urban areas, a device not less than 20 feet (6 m) in length will be required. When milling cross roads, turn lanes, intersections, crossovers, or other miscellaneous areas, the Engineer may permit the use of a matching shoe.

The Contractor shall mill **inch (mm)** at the centerline and project the proposed cross slope to the edge of pavement. In the event the milling at the outer edge of the lane would exceed **inch (mm)**; then the Contractor shall reduce the cut at the centerline to provide the maximum cut of **inch (mm)** at the edge of pavement. If deemed necessary, the Contractor may reduce the cross slope from normal to 1.5% to 1%.

Surface tests will be performed according to Article 406.11 of the Standard Specifications. The profile will be taken 3 ft. (0.9 m) from and parallel to each edge of pavement and 3 ft. (0.9 m) from and parallel to the centerline on each side. If a shadow area is found at the 3 ft. (0.9 m) points, the pavement smoothness tester will be moved sufficient distance either side to measure the Contractor's milling efforts. If any (milled) surface variations found to be outside the tolerance of Article 406.11, then the roadway shall be reprofiled at no additional cost. In addition, the Contractor shall be responsible for refilling, with approved hot-mix asphalt mixtures, any area that lowered the pavement profile as a result of his faulty milling operations if directed by the Engineer. The Contractor shall be responsible for providing the pavement smoothness tester described elsewhere to retest the pavement profile obtained.

If the milling depth is intended to expose the original concrete pavement, then additional hand or machine work may be necessary to remove any remaining veneer of bituminous pavement which may be left in place behind the milling machine. Such work will be at the direction of the Engineer and at no extra cost to the State.

The Contractor shall provide a 10' (3 m) straightedge equipped with a carpenter's level or a 7' (2.1 m) electronic straightedge to check the cross slope of the roadway at regular intervals as directed by the Engineer.

Surface Texture: Each tooth on the cutting drum shall produce a series of discontinuous longitudinal striations. There shall be 16 to 20 striations (tooth marks) for each tooth for each 6' (1.8 m) in the longitudinal direction, and each striation shall be 1.7 inches ± 0.2 inch (43 ± 5 mm) in length after the area is planed by the moldboard. Thus, the planed length between each pair of striations shall be 2.3 inches ± 0.2 inch (58 ± 5 mm). There shall be 80 to 96 rows of discontinuous longitudinal striations for each 5' (1.5 m) in the transverse dimension. The areas between the striations in both the longitudinal and transverse directions shall be flat topped and coplaner. The moldboard shall be used to cut this plane; and any time the operation fails to produce this flat plane interspersed with a uniform pattern of discontinuous longitudinal striations, the operation shall be stopped and the cause determined and corrected before recommencing. Other similar patterns of uniform discontinuous longitudinal striations interspersed on a flat plane may be approved by the Engineer.

The startup milling speed shall be limited to a maximum of 50' (15 m) per minute. The Contractor shall limit his operations to this speed to demonstrate his ability to obtain the striations and rideability as described above. If the Contractor is able to demonstrate that he can consistently obtain the desired striations and rideability at a greater speed he will be permitted to run at the increased speed.

Cleanup: After cold milling a traffic lane and before opening the lane to traffic, the pavement shall be swept by a regenerative air sweeper to prevent compaction of the cuttings onto the pavement. All loose material shall be removed from the roadway. Before the prime coat is placed, the pavement shall be cleaned of all foreign material to the satisfaction of the Engineer.

This cleanup work shall be considered included in the contract unit price per Square Yard (Square Meter) for HOT-MIX ASPHALT SURFACE REMOVAL of the depth specified, and no additional compensation will be allowed.

Method of Measurement:

(a) Contract Quantities. The requirements for the use of Contract Quantities shall be Article 202.07(a) of the Standard Specifications.

(b) Measured Quantities. Cold milling and planing will be measured and the area computed in Square Yards (Square Meters) of surface.

Areas not milled (shadow areas) due to rutting in the existing pavement surface will be included in the area measured for payment.

Basis of Payment: The cold milling and planing will be paid for at the contract unit price per Square Yard (Square Meter) for HOT-MIX ASHPALT SURFACE REMOVAL of the depth specified. Payment as specified will include variations in depth of cuts due to rutting, superelevations, and pavement crown and no additional compensation will be allowed.

Designer Note: Use whenever we are cold milling the pavement and the possibility exists to trap water on the pavement. In many situations where the shoulder is being overlaid, the milling operation can be extended 2'± onto the shoulder and "Daylight Out"; thereby eliminating the need for this specification.

PAVEMENT DRAINAGE AFTER COLD MILLING

Effective March 15, 1996 Revised November 8, 2019

This work shall consist of cold milling a 1.5" (40 mm) deep and 2' (0.6 m) wide drainage channel through the existing shoulder at locations as directed by the Engineer and replacing the mix after the surface has been placed.

To prevent pooling of water in the milled surface, a drainage channel shall be cut in the shoulder at low spots in superelevated curves and other locations where pooling of water may occur as specified by the Engineer.

After the surface has been placed on the adjacent through lane, the drainage channel shall be primed and then filled with a hot-mix asphalt shoulder mix approved by the Engineer and compacted to the satisfaction of the Engineer.

This work shall not be paid for separately but shall be included in the contract unit price for HOT-MIX ASPAHLT SURFACE REMOVAL of the depth specified.

Designer Note: This special provision requires the Contractor to mill before patching. It should be discussed with your Project Engineer and Implementation prior to use. Do not use General Note 406.18 "Butt Joint Time Restriction" when this special provision is used.

PAVEMENT PATCHING WITH HOT-MIX ASPHALT SURFACE REMOVAL

Effective March 1, 1997 Revised January 1, 2007

The Contractor shall complete the hot-mix asphalt surface removal prior to pavement patching.

Delete the third paragraph of Article 440.04 of the Standard Specifications.

Designer Note: Insert into projects where the 6" wider milling is requested. Include quantities for the extra 6" of milling, tacking, and surface in your schedule of quantities.

HOT-MIX ASPHALT JOINT TRIMMING

Effective: August 5, 2022

When specified in the plans, unconfined hot mix asphalt (HMA) edges will be placed and trimmed per the following guidelines:

1. Place the HMA tack coat and HMA pavement/shoulder 6" wider than the designated lane line (centerline or edge of pavement).

2. When the joint is trimmed as an independent operation, mill the excess 6" of the unconfined HMA to the lane line. The milling equipment must be capable of producing a straight line. The depth of the milling must be controlled so as not to gouge the underlying lift. The intent is to create a vertical face at the lane line and provide a lateral confinement for the adjacent mat. Skid-steer mounted mills will not be allowed. Milling and cleaning must be done prior to tacking of the adjacent HMA paving. Milling the same day as HMA placement will not be allowed. If the Engineer determines excessive raveling of the milled face is occurring, the contractor shall make adjustments to the operation such as slowing the mill speed, replacing mill teeth, or adjustment of mill box side plates.

3. When the joint is trimmed as part of the adjacent mat milling, milling the same day as HMA placement will not be allowed. If the Engineer determines excessive raveling of the milled face is occurring, the contractor shall make adjustments to the operation such as slowing the mill speed, replacing mill teeth, or adjustment of mill box side plates.

4. Clean and prepare the surface of the adjacent mat as per Article 406.05 of the Standard Specification prior to the placement of the HMA. The HMA Tack Coat shall be sprayed the full width of the lane/shoulder and also lapped onto the adjacent mat a distance not to exceed 4". In addition, the vertical face of the adjacent mat shall be thoroughly tacked by means of a dedicated spray nozzle, mounted at a 45 degree angle, aimed toward the face.

5. Placement of this HMA mat shall require the use of a joint-matching device in lieu of a longitudinal averaging ski. The compacted height of this mat shall be exactly flush, or not more than 1/32" higher, to the adjacent mat to ensure the joint has sufficient material for adequate compaction. During placement, the side plate of the screed shall not exceed 1/2" overlap onto the adjacent mat.

When milled independently, the 6" extra width at the lane line will be paid for at the contract unit price per Square Yard for HOT-MIX ASPHALT SURFACE REMOVAL – SPECIAL. When milled with the adjacent mat, the 6" extra width at the lane line will be paid for at the contract unit price for HOT-MIX ASPHALT SURFACE REMOVAL of the depth specified. The extra HMA tack coat will be paid for at the contract unit price per Pound for the tack coat specified in the plans. The extra trimmed HMA will be paid for at the contract unit price per Ton or Square

Yard, as specified in the plans. All other extra work will not be paid for separately but shall be included in the unit bid price of the various pay items and no other compensation will be allowed.

Designer Note: Use this special provision on projects where the existing HMA shoulders are narrow enough to be paved in the same pass (usually 3' to 4' wide) and it is beneficial to do so. If a wider shoulder is practical to overlay simultaneously revise the 4' width and remove the effective date to make a project specific special provision. Discuss with Implementation and Project Engineer before using. The designer will need to use the same mix and pay item for the top lift of shoulder as the mainline surface course. Also, if a MTD is specified for the mainline surface course then a tonnage for the shoulder surface course will need to be added to the MTD pay item.

HOT-MIX ASPHALT SHOULDER RESURFACING REQUIRED TO BE CONSTRUCTED SIMULTANEOUSLY WITH MAINLINE PAVING

Effective April 23, 2010
Revised August 4, 2017

When the top lift of the shoulders are specified to be placed simultaneously with the mainline surface course and a Material Transfer Device is required for the mainline surface course, the shoulder will be placed with the Material Transfer Device and both the mainline and shoulder tonnage will be paid for at the contract unit price for Material Transfer Device.

A roller meeting the requirements of Article 1101.01 shall be required. This roller will be in addition to any rollers required for compaction of the mainline roadway resurfacing. This additional roller will not be paid for separately, but shall be included in the contract unit price bid for the Hot-Mix Asphalt surface course material being placed.

The various HMA mixtures placed with the material transfer device will be paid for as specified in their respective specifications.

Designer Note: Use this special provision on projects which include bituminous shoulder resurfacing along with mainline paving. Consult Construction and Materials prior to use to determine if substitution of the mainline mix will be allowed for use on the shoulder so the mainline and shoulder may be paved simultaneously.

HOT-MIX ASPHALT SHOULDER RESURFACING CONSTRUCTED SIMULTANEOUSLY WITH MAINLINE PAVING

Effective: January 22, 2001 Revised: January 1, 2007

If the Department allows resurfacing hot-mix asphalt shoulders simultaneously with the mainline pavement resurfacing, a roller meeting the requirements of Article 1101.01 shall be required. This roller will be in addition to any rollers required for compaction of the mainline roadway resurfacing. This additional roller will not be paid for separately, but shall be included in the contract unit price bid for the mainline bituminous material being placed.

Designer Note: Use for similar type and size headwall removal to simplify documentation of quantities. Use on locations where the headwall is tied to the pipe culvert and a section of pipe must be removed with the headwall for ease of construction.

CONCRETE HEADWALL REMOVAL

Effective July 1, 1990

This work shall consist of the removal of existing concrete headwalls at various locations as shown on the plans and shall be done in accordance with the applicable portions of Section 501 of the Standard Specifications.

The above work shall include the removal of the first section of pipe with the headwall. The removal of the first section of pipe will not be paid for separately but shall be included in the unit price Each for CONCRETE HEADWALL REMOVAL, and no additional compensation will be allowed due to the various sizes of pipes and headwalls.

Designer Note: For use where concrete handrail cannot easily be measured and converted to cubic yards (cubic meters) as specified under Article 501.04 of the Standard Specifications.

CONCRETE HANDRAIL REMOVAL

Effective July 1, 1990 Revised January 1, 2007

This work shall consist of the removal and disposal of the concrete handrail as shown on the plans.

This work shall be done in accordance with the applicable portions of Section 501 of the Standard Specifications and will be paid for at the contract unit price per Foot (Meter) for CONCRETE HANDRAIL REMOVAL.

Designer Note: This Special Provision is intended to ensure the use of aggregates that facilitate drainage behind abutment structures and prevent obstruction of pipe underdrains. Please include in all contracts which require Granular Backfill for Structures.

GRANULAR BACKFILL FOR STRUCTURES

Effective August 4, 2017 Revised November 6, 2020

The aggregate shall be one of the following gradations:

CA7, CA11, or CA13 thru CA16, according to Sections 1003 and 1004 of the Standard Specifications.

Designer Note: Use this special in conjunction with PROTECTIVE COAT (SPECIAL). It is used to fill cracks in existing bridge parapets (and other concrete items) as required by the Bridge Maintenance Engineer. Estimated quantity is approximately 1 gallon of SURFACE FILLER (SPECIAL) for every 1,000 Square Yards of PROTECTIVE COAT (SPECIAL).

SURFACE FILLER (SPECIAL)

Effective: April 23, 2010 Revised: October 1, 2023

This work shall consist of filling cracks over 1/32" with a gun-grade elastomeric sealant prior to overcoating with "Protective Coat (Special)".

Material. The material shall be a 1-component, polyurethane-based, non-sag elastomeric sealant that meets ASTM C-920, Type S, Grade NS, Class 100/50, use T, NT, G, M, or other material as recommended in writing by the manufacturer of the material used in Protective Coat (Special).

Construction. All cracks shall be sound, dry, and clean of any foreign material. The intent is primarily to caulk cracks greater than 1/32"; it is not essential, nor even intended, to fill every bug hole, spall, or other large defect. Curing time shall be as recommended by the manufacturer, but a minimum of one day cure time shall be allowed prior to overcoating with "Protective Coat, Special".

A manufacturer’s technical representative shall be available for phone consultation on, or prior to, the first day of surface filling operations to ensure correct interpretation of the Manufacturer’s specifications.

Method Measurement. The surface filler will be measured for payment in Gallons used in place to the nearest 0.1 Gallon.

Basis of Payment. The surface filler will be paid for at the contract unit price per Gallon for SURFACE FILLER (SPECIAL).

Designer Note: Insert into any contracts with cast-in-place concrete that may require pumping such as: superstructure, piers, abutments, box culverts, headwalls, metal shell piles, concrete in inaccessible locations, etc.

PCC PLACEMENT BY PUMP REQUIREMENTS

Effective: January 1, 2022

These provisions are required for concrete structures and drilled shaft construction.

Revise the 7th paragraph of Article 503.07 to read:

"When air entrained concrete is pumped, a reduction hose at point of placement will be utilized. In addition, the pump shall be operated with sufficient minimum pressure and flow rate to create a steady stream of material at the point of placement. The maximum allowable air loss caused by the pumping operation shall be 3.0 percent with the minimum air content at the point of discharge meeting the requirements of Article 1020.04. The initial air test utilized to determine the air content correction factor shall not be conducted within the confines of the pour. A pneumatic or mechanical shut-off device shall be incorporated in the pump apparatus as close as practical to point of placement; the device shall be utilized to maintain a full surcharge of material in the pump during pump stoppage."

Revise the 4th paragraph of Article 503.08 to read:

"At the Contractor's option, pumping equipment may be used in lieu of a tremie to deposit concrete underwater. The Engineer will approve the concrete pumping equipment and its piping before the work is started. If pumping equipment is used to deliver concrete to a tremie and hopper, a reduction hose at point of placement will be utilized. In addition, the pump shall be operated with sufficient minimum pressure and flow rate to create a steady stream of material at the point of placement. The maximum allowable air loss caused by the pumping operation shall be 3.0 percent with the minimum air content at the point of discharge meeting the requirements of Article 1020.04. The initial air test utilized to determine the air content correction factor shall not be conducted within the confines of the pour. A pneumatic or mechanical shut-off device shall be incorporated in the pump apparatus as close as practical to point of placement; the device shall be utilized to maintain a full surcharge of material in the pump during pump stoppage."

Designer Note: Use where existing bridge deck drains are to be plugged. Discuss proposed work with the Bridge Maintenance Engineer. Modify to fit your situation. Include plan details on proposed work.

PLUG EXISTING DECK DRAINS

Effective January 1, 1996 Revised November 6, 2020

Description. This work consists of the satisfactory plugging of the existing bridge deck drains at locations and as detailed in the plans.

Construction Requirements. The threaded rod, nuts and washers shall be galvanized according to AASHTO M 232. The material used to plug the drains shall be Class BS concrete and shall be placed according to Section 503 of the Standard Specifications.

Basis of Payment. This work will be paid for at the contract unit price Each for PLUG EXISTING DECK DRAINS.

Designer Note: Consider when extending bridge decks.

FLOOR DRAIN EXTENSION

Effective: March 22, 2001 Revised: November 6, 2020

Description. This work consists of the furnishing and installing extensions on the existing bridge deck drains at locations and as detailed on the plans and as directed by the Engineer.

Construction Requirements. The drains shall be fabricated from material as shown on the plans and is to be bent and/or formed according to the dimensions shown on the plans. The Contractor shall verify all plan dimensions prior to fabrication of the extensions. The extensions shall be braced as shown on the plans and the cost of all supporting members shall be included in the cost of FLOOR DRAIN EXTENSIONS.

Basis of Payment. This work will be paid for at the contract unit price Each for FLOOR DRAIN EXTENSION.

Designer Note: Use this special when applying the "stretchy paint" listed below to the parapets of an existing structure (and other concrete items). Do not use unless requested by the Bridge Maintenance Engineer. This is **NOT** the standard Boiled Linseed Oil item.

PROTECTIVE COAT (SPECIAL)

Effective: April 23, 2010 Revised: December 19, 2023

This work consists of applying a protective coat system as specified herein, on bridge parapets and other concrete surfaces as shown on the plans and as directed by the Engineer.

Materials. The concrete coating shall meet the following material requirements:

Color – Grey
Texture – Smooth
Type – One-component, elastomeric, crack-bridging, anti-carbonation, water vapor permeable, acrylic protective coating.
Weather Resistance – The product shall be intended for exterior applications.

Allowable Products:

- Sikagard 550W Elastocolor
- MasterProtect EL 850
- Or equivalent

Construction. The concrete surface to be coated shall be sound, dry and clean of any foreign material. Surface Preparation shall be according to the Manufacturer's specifications, except blast cleaning or power washing (3,000 psi min.) will be required. If the surface becomes soiled as determined by the Engineer, after either the initial cleaning or after the first coating, the Contractor shall clean the surface at no additional cost to the Department.

Cracks greater than 1/32" shall be caulked prior to coating according to the Special Provision for "SURFACE FILLER (SPECIAL)". Popouts, bug holes, spalls, etc., not filled with SURFACE FILLER (SPECIAL) shall have all surfaces thoroughly sealed with PROTECTIVE COAT (SPECIAL) by any means necessary such as cutting-in with a paint brush.

Mixing, application, and curing of the coating shall be according to the manufacturer's specifications, except application by spraying will not be allowed. A manufacturer's technical representative shall be present on the first day of the surface preparation operations and the first day of coating operations to ensure correct interpretation of the Manufacturer's specifications.

Do not apply material if it is raining or snowing, or if such conditions are imminent. Minimum application temperature 40°F (5°C) and rising.

The protective coat shall be applied in two coats with a minimum 12 hours wait time between coats. The application rate per coat shall produce a dry film thickness between

200-280 microns (8-11 mils). The final dry film thickness of protective coat system shall be between 400-560 microns (16 and 22 mils). Any additional coatings or removal of coatings to stay within the total system range shall be the Contractors responsibility and shall be accomplished at no additional cost to the Department.

The Contractor shall protect pedestrian, vehicular, watercraft, or other traffic upon or underneath the structure and/or roadway and also all portions of the structure and/or roadway against damage or disfigurement during surface preparation and protective coat operations. When doing surface preparation or applying the protective coat over waterways, the Contractor shall implement such controls as are necessary to avoid contamination of the water, spills into the water, or films from collecting on the water surface during operations. If the Engineer determines that the protection methods are not effective, the Engineer will withdraw approval of operations until such time when protective measures are approved.

For bridge projects where an existing structure number that is stenciled on a concrete parapet or pier will be covered by the new Protective Coat (Special), the Contractor shall reapply the stenciled structure number at the same location. The numbers shall be 2" tall and painted with black acrylic paint in the format "xxx-xxxx". This work shall be considered included in the cost of PROTECTIVE COAT (SPECIAL).

Method of Measurements. This work will be measured for payment and the area computed in Square Meters (Square Yards) of parapet wall surface covered, complete in place.

Basis of Payment. The protective coat will be paid for at the contract unit price per Square Yard for PROTECTIVE COAT (SPECIAL).

54200 542.00

Designer Note: Use this special provision along with CADD Standard 601401 of 601501 if you are using seepage collars.

SEEPAGE COLLAR

Effective December 1, 1996

This work shall be done in accordance with Section 542 of the Standard Specifications and details shown in the plans.

Basis of Payment. This work will be paid for at the contract unit price per Each for SEEPAGE COLLAR.

Designer Note: Do not use this provision without discussing with Operations (Maintenance) to find out if the existing culverts are in good enough condition that they can be reused. This provision does not apply to a "Temporary" pipe culvert that might be specified on your project to be placed in one location then subsequently relocated to another site. The pay item number is X1200207.

REMOVE AND RELAY PIPE CULVERT (SPECIAL)

Effective July 1, 1990 Revised November 6, 2020

The existing pipe culverts, as designated on the plans, shall be removed and re-laid to the lines and grades of the proposed ditches. The Contractor shall use all precautions in removing the pipe. Any pipe damaged by negligence in removing, handling, or relaying shall be replaced by the Contractor at his own expense. The relaying of the pipe shall be done in accordance with the applicable portions of Section 542 of the Standard Specifications.

This work will be paid for at the contract unit price per Foot (Meter) for REMOVE AND RELAY PIPE CULVERTS (SPECIAL).

Designer Note: Use this special when pushing a pipe culvert under the roadway. Always specify Class A in the pay item. Do not use Class C or Class D.

PIPE CULVERTS (JACKED)

Effective January 1, 2014

This work shall be performed in accordance with Section 552 of the Standard Specifications, the plan details and as described herein.

Obstructions shall be defined as any object (such as but not limited to, boulders, logs, old foundations, old wingwalls, etc.) that cannot be removed with normal earth drilling procedures but requires special augers, tooling, core barrels or rock augers to remove the obstruction. When obstructions are encountered, the Contractor shall notify the Engineer and upon concurrence of the Engineer, the Contractor shall begin working to core, break up, push aside, or remove the obstruction. Lost tools or equipment in the excavation as a result of the Contractor's operation shall not be defined as obstructions and shall be removed at the Contractor's expense.

This work will be paid for at the contract unit price per Foot for PIPE CULVERTS (JACKED) of the class and size specified in the plans.

Designer Note: Use whenever pipe culverts are to be placed across existing pavements that are to remain in place. Trench backfill is to be measured and paid for separately and this quantity should be included in the plans.

BACKFILL - PIPE CULVERTS

Effective October 15, 1995 Revised January 1, 2007

When trenches or excavation are made across existing pavement to remain in place, revise Article 542.04(f) 4th paragraph as follows:

"The remainder of the trench and excavation shall be backfilled with trench backfill. All backfill material shall be deposited in the trench or excavation in such a manner as not to damage the culvert. Trench backfill above the center of the pipe shall be compacted by either Method 2 or Method 3 specified in Article 550.07, or in accordance with Method 1 specified in Article 550.07, except that the compacted lifts shall not exceed 8" (200 mm) in thickness.

When the trench has been widened for the removal and replacement of unstable or unsuitable material, the backfilling with trench backfill and impervious material will be required for the entire width of the trench or excavation. Each 8" (200 mm) layer for the entire trench width shall be completed before beginning the placement of the next layer."

Basis of Payment: This work will not be paid for separately but shall be included in the contract unit price per Foot (Meter) for PIPE CULVERTS, of the type and diameter specified. Trench backfill will be paid for as specified in Article 208.04.

Designer Note: Use in locations where a water main quality pipe is required for storm sewer, such as, adjacent to water lines.

STORM SEWER, (WATER MAIN QUALITY PIPE)

Effective January 1, 2011
Revised January 1, 2021

This work consists of constructing storm sewer to meet water main standards, as required by the IEPA or when otherwise specified. The work shall be performed in accordance with applicable parts of Section 550 of the Standard Specifications, applicable sections of the current edition of the IEPA Regulations (Title 35 of the Illinois Administrative Code, Subtitle F, Chapter II, Section 653.119), the applicable sections of the current edition of the "Standard Specifications for Water and Sewer Main Construction in Illinois", and as herein specified.

This provision shall govern the installation of all storm sewers which do not meet IEPA criteria for separation distance between storm sewers and water mains. Separation criteria for storm sewers placed adjacent to water mains and water service lines are as follows:

(1) Water mains and water service lines shall be located at least 10 feet (3.05 meters) horizontally from any existing or proposed drain, storm sewer, sanitary sewer, or sewer service connections.

(2) Water mains and water service lines may be located closer than 10 feet (3.05 meters) to a sewer line when:

   (a) Local conditions prevent a lateral separation of 10 feet (3.05 meters); and

   (b) The water main or water service invert is 18 inches (460 mm) above the crown of the sewer; and

   (c) The water main or water service is either in a separate trench or in the same trench on an undisturbed earth shelf located to one side of the sewer.

(3) A water main or water service shall be separated from a sewer so that its invert is a minimum of 18 inches (460 mm) above the crown of the drain or sewer whenever water mains or services cross storm sewers, sanitary sewers or sewer service connections. The vertical separation shall be maintained for that portion of the water main or water services located within 10 feet (3.05 meters) horizontally of any sewer or drain crossed.

When it is impossible to meet (1), (2) or (3) above, the storm sewer shall be constructed of concrete pressure pipe, slip-on or mechanical joints ductile iron pipe, or PVC pipe equivalent to water main standards of construction. Construction shall extend on each side of the crossing until the perpendicular distance from the water main or water service to the sewer or drain line is at least 10 feet (3.05 meters). Storm sewer meeting water main requirements shall be constructed of the following pipe materials:

Concrete Pressure Pipe

Concrete pressure pipe shall conform to the latest ANSI/AWWA C300, C301, or C303.

Joints shall conform to Article 41-2.07B of the "Standard Specifications for Water and Sewer Main Construction in Illinois."

Ductile Iron Pipe

Ductile Iron pipe shall conform to ANSI A 21.51 (AWWA C151), class or thickness designed per ANSI A 2150 (AWWA C150), tar (seal) coated and/or cement lined per ANSI A 21.4 (AWWA C104), with a mechanical or rubber ring (slip seal or push on) joints.

Joints for ductile iron pipe shall be in accordance with the following applicable specifications.

1. Mechanical Joints - AWWA C111 and C600
2. Push-On Joints - AWWA C111 and C600

Plastic Pipe

Plastic pipe shall be marked with the manufacturer's name (or trademark); ASTM or AWWA specification; Schedule Number, Dimension Ratio (DR) Number or Standard Dimension Ratio (SDR) Number; and Cell Class. The pipe and fittings shall also meet NSF Standard 14 and bear the NSF seal of approval. Fittings shall be compatible with the type of pipe used. The plastic pipe options shall be in accordance with the following:

1. Polyvinyl Chloride (PVC) conforming to ASTM Standard D 1785. Schedule 80 is the minimum required for all pipe sizes, except when the pipe is to be threaded, and then it shall be Schedule 120. It shall be made from PVC compound meeting ASTM D 1784, Class 12454C.
2. Polyvinyl Chloride (PVC) conforming to ASTM D 2241. A minimum wall thickness of SDR 26 is required for all pipe sizes (Note: The lower the SDR number, the higher the wall thickness and pressure rating). It shall be made from PVC compound meeting ASTM D 1784, Class 12454B.
3. Chlorinated Polyvinyl Chloride (CPVC) conforming to ASTM F 441. A minimum of Schedule 80 is required for all pipe sizes. Threaded joints are not allowed. It shall be made from CPVC compound meeting ASTM D 1784, Class 23447B.
4. Chlorinated Polyvinyl Chloride (CPVC) conforming to ASTM F 442M/F422M. A minimum wall thickness of SDR 26 is required for all pipe sizes (Note: The lower the SDR number, the higher the wall thickness and pressure rating). It shall be made from CPVC compound meeting ASTM D 1784.
5. Polyvinyl Chloride (PVC) conforming to ANSI/AWWA C900. A minimum of wall thickness of DR 25 is required for all pipe sizes (Note: The lower the DR number, the higher the wall thickness and pressure rating). It shall be made from PVC compound meeting ASTM D 1784, Class 12454.
6. Polyvinyl Chloride (PVC) conforming to ANSI/AWWA C905. A minimum of wall thickness of DR 26 is required for all pipe sizes (Note: The lower the DR number, the higher the wall thickness and pressure rating). It shall be made from PVC compound meeting ASTM D 1784, Class 12454.

Joining of plastic pipe shall be by push-on joint, solvent welded joint, heat welded joint, flanged joint, or threaded joint, butt fused or electro fused, in accordance with the pipe manufacturer's instructions and industry standards. Special precautions shall be taken to insure clean, dry contact surfaces when making solvent or heat welded joints. Adequate setting time shall be allowed for maximum strength.

Elastometric seals (gaskets) used for push-on joints shall comply with ASTM F477.

Solvent cement shall be specific for the plastic pipe material and shall comply with ASTM D 2564 (PVC) or ASTM F 493 (CPVC) and be approved by NSF.

This work will be measured and paid for at the contract unit price per Foot (Meter) for STORM SEWER (WATER MAIN QUALITY PIPE) of the diameter and type specified.

Designer Note: Use for building demolition contracts to insure proper backfill material and compaction of areas under the proposed roadway. Check with local building codes for other requirements that may apply.

For each building removal, check with Land Acquisition for asbestos testing/inspections/etc. Also, discuss with Land Acquisition any extra debris (garbage/dump items/etc.) that may, by agreement, be left behind for the Contractor to clean up. Include a separate special provision for each building and describe situation/basis of payment.

BACKFILL, BUILDING REMOVAL

Effective August 20, 1991 Revised January 1, 2007

All material furnished for backfilling holes and basements for building removal shall satisfy Article 1003.04 or 1004.05 of the Standard Specifications.

The cavities under the proposed roadway shall be backfilled as outlined under Article 550.07 Method 1, 2, or 3 of the Standard Specifications.

Aggregate used shall contain no frozen matter nor shall the aggregate be placed on snow or ice. Jetting or inundating shall not be done during freezing weather.

After the filling of the void, the site shall be graded and cleaned-up to the satisfaction of the Engineer.

If there is a possibility of trapping of sub-surface drainage, basement floors shall be broken to comply with local building codes to prevent entrapment of water.

A suitable earth cap, minimum 12 inches (300 mm) thick, shall be placed as the final backfill lift on all cavity areas outside the proposed embankment or pavement structure.

This work will not be paid for separately, but shall be included in the cost of the building removal pay items included in the contract.

Designer Note: Use this special provision when a steel pipe is to serve as a pipe culvert that is to be jacked beneath an existing railroad track. Discuss in detail with the District Project Support Unit (Utilities/Agreements). Check to see that current A.R.E.A. specifications are included herein and are still applicable. Specify the type of material, type of loading and wall thickness required for the steel pipe. *Insert diameter. This steel pipe provision first used on AT&SF Railroad on IL Route 91 at Princeville in 1994.

10-24-96 – Revised measurements to metric.

STEEL PIPE CULVERT, SPECIAL (JACKED) _____ INCHES (_____ MM)

Effective July 1, 1994 Revised January 1, 2007

This work shall consist of jacking a steel pipe under the railroad embankment in accordance with Section 552 of the Standard Specifications and this special provision.

The steel pipe shall meet ASTM A-53 Grade _____ for _____ loading and have a wall thickness of _____ inches (_____ mm).

All joints shall be field welded as approved by the Engineer. Any voids between the pipe and the embankment shall be filled with grout to the satisfaction of the Engineer. The steel pipe culvert shall be installed in accordance with the following portions of Chapter 1, Part 5.2, of the latest edition of the A.R.E.A. manual:

(INCLUDE HERE ALL APPLICABLE SPECIFICATIONS from the latest edition of the "Manual for Railroad Engineering" as listed at the end of this provision.)

A jacking plan shall be provided to the Engineer and Railroad Company for approval.

Method of Measurement. Steel Pipe Culvert, Special jacked in place of the different diameters will be measured for payment in Foot (Meter) in place.

Excavation in rock will be measured for payment as specified in Article 502.12.

Basis of Payment. This work will be paid for at the contract unit price per Foot (Meter) for Steel Pipe Culvert, Special (Jacked) of the diameter specified, which price shall include the steel pipe culvert, including backfilling all voids and all other materials and equipment necessary to install the steel pipe culvert and all excavation except excavation in rock.

Excavation in rock will be paid for as specified in Article 502.13 for Rock Excavation for Structures.

Manual for Railroad Engineering

Manual for Railroad Engineering 1990, current through July 31, 1991

5.2 Specifications for Pipelines Conveying Non-Flammable Substances

5.2.1 SCOPE

Pipelines included under these specifications are those installed to carry steam, water or any non-flammable substance which, from its nature or pressure, might cause damage if escaping on or in the vicinity of railway property. The term "engineer" as used herein means chief engineer of the railway company, or his authorized representative.

5.2.2 GENERAL REQUIREMENTS

Pipelines under railway tracks and across railway Rights-of-Way shall be encased in a larger pipe or conduit called the casing pipe as indicated in Fig. 5.2.2.1. Casing pipe may be omitted under the following conditions:

(a) Under secondary or industry tracks as approved by the engineer.

(b) On pipelines in streets where joints are of leak-proof construction and the pipe material will safely withstand the combination of internal pressure and external loads.

(c) For non-pressure sewer crossings where the pipe strength is capable of withstanding railway loading.

Pipelines shall be installed under tracks by boring or jacking, if practicable.

Pipelines shall be located, where practicable, to cross tracks at approximately right angles thereto but preferably at not less than 45° degrees and shall not be placed within culverts nor under railway bridges where there is likelihood of restricting the area required for the purpose for which the bridges or culverts were built, or of endangering the foundations.

Pipelines laid longitudinally on railway rights-of-way shall be located as far as practicable from any tracks or other important structures. If located within 25 Feet (7.5 Meters) of the centerline of any track or where there is danger of damage from leakage to any bridge, building or other important structure, the carrier pipe shall be encased or of special design as approved by the engineer.

Any replacement of a carrier pipe shall be considered a new installation, subject to the requirements of these specifications.

Where laws or orders of public authority prescribe a higher degree of protection than specified herein, then the higher degree of protection so prescribed shall supersede the applicable portions.

Pipelines and casing pipe shall be suitably insulated from underground conduits carrying electric wires on railway Rights-of-Way.

5.2.3 CARRIER PIPE

Carrier pipe and joints shall be of accepted material and construction as approved by the engineer. Joints for carrier line pipe operating under pressure shall be mechanical or welded type.

The pipe shall be laid with sufficient slack so that it is not in tension.

5.2.4 CASING PIPE

Casing pipe and joints shall be of leak-proof construction, capable of withstanding railway loading.

The inside diameter of the casing pipe shall be at least 2" (50 mm) greater than the largest outside diameter of the carrier pipe, joints or couplings, for carrier pipe less than 6" (150 mm) in diameter; and at least 4" (100 mm) greater for carrier pipe 6" (150 mm) and over in diameter. It shall, in all cases, be great enough to allow the carrier pipe to be removed subsequently without disturbing the casing pipe or roadbed.

Table 5.2.4.1.1

Minimum Wall Thickness for Steel Casing Pipe for E 72 Loading

Nominal Thickness inches (mm)	Nominal Diameter inches (mm)
0.188 (5.0)	14 (Under 350)
0.219 (5.5)	14 & 16 (350 & 400)
0.250 (6.4)	18 (450)
0.281 (7.0)	20 (500)
0.312 (8.0)	22 (550)
0.344 (9.0)	24 (600)
0.375 (9.5)	26 (650)
0.406 (10.0)	28 & 30 (700 & 750)
0.438 (11.0)	32 (800)
0.469 (12.0)	34 & 36 (850 & 900)
0.500 (13.0)	38, 40 & 42 (950, 1000 & 1050)

When casing is installed without benefit of a protective coating, and said casing if not cathodically protected, the wall thickness shown above shall be increased to the nearest standard size, which is a minimum of 0.063 in. (1.6 mm) greater than the thickness shown except for diameters under 12-3/4 in. (325 mm).

5.2.4.1 Steel Pipe

Steel pipe shall have a minimum yield strength of 35,000 psi (241,320 kPa).

5.2.4.2 Cast Iron Pipe

Cast iron pipe may be used for a casing provided the method of installation is by open trench. Cast iron pipe shall conform to American National Standards Institute A 21. The pipe shall be of the mechanical-joint type or plan-end pipe with compression-type couplings. The strength of cast iron pipe to sustain external loads shall be computed in accordance with ANSI A 21.1 "Manual for the Computation of Strength and Thickness of Cast Iron Pipe."

5.2.4.3 Concrete Pipe

For pressure under 100 psi (690 kPa) in the carrier pipe, the casing pipe may be reinforced concrete pipe conforming to the AREA Specifications for Reinforced Concrete Culvert Pipe, Part 10, Chapter 8, or bituminous-coated corrugated metal pipe conforming to the AREA specifications for such pipe, Part 4, this Chapter.

5.2.4.4 Length of Pipe

Casing pipe under railway tracks and across railway Rights-of-Way shall extend to the greater of the following distances, measured at right angles to centerline of track:

(a) 2' (600 mm) beyond toe of slope.
(b) 3' (1 m) beyond ditch.
(c) A minimum distance of 25' (7.5 m) from centerline of outside track when end of casing is below ground.
(d) If additional tracks are constructed in the future or the railway determines that the roadbed should be widened, the casing shall be extended correspondingly.

5.2.5 CONSTRUCTION

Casing pipe shall be so constructed as to prevent leakage of any substance from the casing throughout its length except at ends. Casing shall be so installed as to prevent the formation of a waterway under the railway, with an even bearing throughout its length, and shall slope to one end (except for longitudinal occupancy).

Where casing and/or carrier pipe is cathodically protected, the engineer shall be notified and suitable test made to ensure that other railway structures and facilities are adequately protected from the cathodic current in accordance with the recommendations of current Reports of Correlating Committee on Cathodic Protection, published by the National Association of Corrosion Engineer.

5.2.5.1 Method of Installation

(a) Installations by open-trench methods shall comply with Installation of Pipe Culverts, Part 4, this Chapter.

(b) Bored or jacked installations shall have a bored hole diameter essentially the same as the outside diameter of the pipe plus the thickness of the protective coating. If voids should develop or if the bored hole diameter is greater than the outside diameter of the pipe (including coating) by more than approximately 1" (30 mm), remedial measures as approved by the chief engineer of the railway company shall be taken. Boring operations shall not be stopped if such stoppage would be detrimental to the railway.

(c) Tunneling operations shall be conducted as approved by the Engineer. If voids are caused by the tunneling operations, they shall be filled by pressure grouting or by other approved methods which will provide proper support.

5.2.5.2 Depth of Installation

5.2.5.2.1 Casing Pipe

Casing pipe under railway tracks and across railway Rights-of-Way shall be not less than 5-1/2 ft. (1.7 m) from base of railway rail to top of casing at its closest point, except that under secondary or industry tracks this distance may be 4-1/2 ft. (1.4 m). On other portions of rights-of-way where casing is not directly beneath any track, the depth from ground surface or from bottom of ditches to top of casing shall not be less than 3 ft. (1 m).

5.2.5.2.2 Carrier Pipe

Carrier pipe installed under secondary or industry tracks without benefit of casing shall be not less than 4-1/2 ft. (1.4 m) from base of railway rail to top of pipe at its closest point nor less than 3 ft. (1 m) from ground surface or from bottom of ditches.

5.2.5.2.3 On Right-of-Way

Pipeline laid longitudinally on railway Rights-of-Way 50' (15 m) or less from centerline of track, shall be buried not less than 4' (1.2 m) from ground surface to top of pipe. Where pipeline is laid more than 50' (15 m) from centerline of track, minimum cover shall be at least 2' (600 mm).

5.2.5.3 Shut-Off Valves

Accessible emergency shut-off valves shall be installed within effective distances each side of the railway is mutually agreed to by the engineer and the pipeline company. Where pipelines are provided with automatic control stations at locations and within distances approved by the engineer, no additional valves shall be required.

5.2.6 APPROVAL OF PLANS

Plans for proposed installation shall be submitted to and meet the approval of the Engineer before construction is begun.

Plans shall be drawn to scale showing the relation of the proposed pipeline to railway tracks, angle of crossing, location of valves, railway survey station, Right-of-Way lines and general layout of tracks and railway facilities. Plans should also show a cross section (or sections) from field survey, showing pipe in relation to actual profile of ground and tracks. If open-cutting or tunneling is necessary, details of sheeting and method of supporting tracks or driving tunnel shall be shown.

In addition to the above, plans should contain the following data:

	Carrier Pipe	Casing Pipe
Contents to be handled		
Outside diameter		
Pipe material		
Specification and grade		
Wall thickness		
Actual working pressure		
Type of joint		
Coating		
Method of installation		

Protection at ends of casing:

Both ends: One end: Type:

Bury: Base of rail to top of casing m (ft.) mm (in.)

Bury: (Not beneath tracks) m (ft.) mm (in.)

Bury: (Roadway ditches) m (ft.) mm (in.)

5.2.7 EXECUTION OF WORK

The execution of the work on railway Rights-of-Way, including the supporting of tracks, shall be subject to the inspection and direction of the engineer.

Designer Note: Use this special provision whenever necessary to jack a storm sewer/pipe culvert underneath an existing Railroad track. Jacking pipes under Railroad Right-of-Way generally requires using a steel casing and specially designed pipe to meet railroad loading requirements. This provision is intended as a starting point and should be modified to meet your project and railroad requirements. Check to see that current A.R.E.A. specifications are included herein and are still applicable. Discuss in detail with the District Project Support Unit (Utilities/Agreements). Specify the length, inside diameter, type of loading, type of material, and wall thickness for the casing pipe. Fill in the following data as applicable to your project:

*Storm Sewer or Pipe Culvert
**Pipe Diameter

10-24-96 Revised measurements to metric.

(_____ STORM SEWER/PIPE CULVERT) JACKED IN PLACE, _____ INCHES (_____ MM)

Effective July 1, 1994 Revised January 1, 2007

This work shall consist of jacking a _____ under the railroad embankment in accordance with Section 552 of the Standard Specifications and this special provision.

A _____ ft. (_____ m) long, _____ inch (_____ mm) diameter steel casing pipe meeting ASTM A-53 Grade _____ for _____ loading and a wall thickness of _____ inches (_____ mm) will be required.

The casing pipe shall be installed in accordance with the following portions of Chapter 1, Part 5, of the latest edition of the A.R.E.A. Manual:

(INCLUDE HERE ALL APPLICABLE SPECIFICATIONS from the latest edition of the "Manual for Railroad Engineering" as listed at the end of this provision).

A jacking plan shall be provided to the Engineer and Railroad Company for approval.

Method of Measurement. _____ jacked in place of the different diameters will be measured for payment in foot (meter) in place.

Excavation in rock will be measured for payment as specified in Article 502.12.

Basis of Payment. This work will be paid for at the contract unit price per Foot (Meter) for _____ JACKED IN PLACE, of the diameter specified, which price shall include the _____, metal liner, including backfilling all voids between the _____ and metal liner, all other materials and equipment necessary to install the _____ and all excavation except excavation in rock.

Excavation in rock will be paid for as specified in Article 502.13 for Rock Excavation for Structures.

5.2 Specifications for Pipelines Conveying Non-Flammable Substances

5.2.1 SCOPE

Pipelines included under these specifications are those installed to carry steam, water or any non-flammable substance which, from its nature or pressure, might cause damage if escaping on or in the vicinity of railway property. The term "Engineer" as used herein means chief engineer of the railway company, or his authorized representative.

5.2.2 GENERAL REQUIREMENTS

Pipelines under railway tracks and across railway Rights-of-Way shall be encased in a larger pipe or conduit called the casing pipe as indicated in Fig. 5.2.2.1. Casing pipe may be omitted under the following conditions:

(a) Under secondary or industry tracks as approved by the engineer.

(b) On pipelines in streets where joints are of leak-proof construction and the pipe material will safely withstand the combination of internal pressure and external loads.

(c) For non-pressure sewer crossings where the pipe strength is capable of withstanding railway loading.

Pipelines shall be installed under tracks by boring or jacking, if practicable.

Pipelines shall be located, where practicable, to cross tracks at approximately right angles thereto but preferably at not less than 45° degrees and shall not be placed within culverts nor under railway bridges where there is likelihood of restricting the area required for the purpose for which the bridges or culverts were built, or of endangering the foundations.

Pipelines laid longitudinally on railway Rights-of-Way shall be located as far as practicable from any tracks or other important structures. If located within 25' (7.5 m) of the centerline of any track or where there is danger of damage from leakage to any bridge, building or other important structure, the carrier pipe shall be encased or of special design as approved by the Engineer.

Any replacement of a carrier pipe shall be considered a new installation, subject to the requirements of these specifications.

Where laws or orders of public authority prescribe a higher degree of protection than specified herein, then the higher degree of protection so prescribed shall supersede the applicable portions.

Pipelines and casing pipe shall be suitably insulated from underground conduits carrying electric wires on railway Rights-of-Way.

5.2.3 CARRIER PIPE

Carrier pipe and joints shall be of accepted material and construction as approved by the engineer. Joints for carrier line pipe operating under pressure shall be mechanical or welded type.

The pipe shall be laid with sufficient slack so that it is not in tension.

5.2.4 CASING PIPE

Casing pipe and joints shall be of leak-proof construction, capable of withstanding railway loading.

The inside diameter of the casing pipe shall be at least 2" (50 mm) greater than the largest outside diameter of the carrier pipe, joints or couplings, for carrier pipe less than 6" (150 mm) in diameter; and at least 4" (100 mm) greater for carrier pipe 6" (150 mm) and over in diameter. It shall, in all cases, be great enough to allow the carrier pipe to be removed subsequently without disturbing the casing pipe or roadbed.

Table 5.2.4.1.1

Minimum Wall Thickness for Steel Casing Pipe for E 72 Loading

Nominal Thickness inches (mm)	Nominal Diameter inches (mm)
0.188 (5.0)	14 (Under 350)
0.219 (5.5)	14 & 16 (350 & 400)
0.250 (6.4)	18 (450)
0.281 (7.0)	20 (500)
0.312 (8.0)	22 (550)
0.344 (9.0)	24 (600)
0.375 (9.5)	26 (650)
0.406 (10.0)	28 & 30 (700 & 750)
0.438 (11.0)	32 (800)
0.469 (12.0)	34 & 36 (850 & 900)
0.500 (13.0)	38, 40 & 42 (950, 1000 & 1050)

When casing is installed without benefit of a protective coating, and said casing if not cathodically protected, the wall thickness shown above shall be increased to the nearest standard size, which is a minimum of 0.063 in. (1.6 mm) greater than the thickness shown except for diameters under 12-3/4 in. (325 mm).

5.2.4.1 Steel Pipe

Steel pipe shall have a minimum yield strength of 35,000 psi (241,320 kPa).

5.2.4.2 Cast Iron Pipe

Cast iron pipe may be used for a casing provided the method of installation is by open trench. Cast iron pipe shall conform to American National Standards Institute A 21. The pipe shall be of the mechanical-joint type or plan-end pipe with compression-type couplings. The strength of cast iron pipe to sustain external loads shall be computed in accordance with ANSI A 21.1 "Manual for the Computation of Strength and Thickness of Cast Iron Pipe."

5.2.4.3 Concrete Pipe

For pressure under 100 psi (690 kPa) in the carrier pipe, the casing pipe may be reinforced concrete pipe conforming to the AREA Specifications for Reinforced Concrete Culvert Pipe, Part 10, Chapter 8, or bituminous-coated corrugated metal pipe conforming to the AREA specifications for such pipe, Part 4, this Chapter.

5.2.4.4 Length of Pipe

Casing pipe under railway tracks and across railway rights-of-way shall extend to the greater of the following distances, measured at right angles to centerline of track:

(a) 2' (600 mm) beyond toe of slope.
(b) 3' (1 m) beyond ditch.
(c) A minimum distance of 25' (7.5 m) from centerline of outside track when end of casing is below ground.
(d) If additional tracks are constructed in the future or the railway determines that the roadbed should be widened, the casing shall be extended correspondingly.

5.2.5 CONSTRUCTION

Casing pipe shall be so constructed as to prevent leakage of any substance from the casing throughout its length except at ends. Casing shall be so installed as to prevent the formation of a waterway under the railway, with an even bearing throughout its length, and shall slope to one end (except for longitudinal occupancy).

Where casing and/or carrier pipe is cathodically protected, the engineer shall be notified and suitable test made to ensure that other railway structures and facilities are adequately protected from the cathodic current in accordance with the recommendations of current Reports of Correlating Committee on Cathodic Protection, published by the National Association of Corrosion Engineer.

5.2.5.1 Method of Installation

(a) Installations by open-trench methods shall comply with Installation of Pipe Culverts, Part 4, this Chapter.

(b) Bored or jacked installations shall have a bored hole diameter essentially the same as the outside diameter of the pipe plus the thickness of the protective coating. If voids should develop or if the bored hole diameter is greater than the outside diameter of the pipe (including coating) by more than approximately 1" (30 mm), remedial measures as approved by the Chief Engineer of the railway company shall be taken. Boring operations shall not be stopped if such stoppage would be detrimental to the railway.

(c) Tunneling operations shall be conducted as approved by the Engineer. If voids are caused by the tunneling operations, they shall be filled by pressure grouting or by other approved methods which will provide proper support.

5.2.5.2 Depth of Installation

5.2.5.2.1 Casing Pipe

Casing pipe under railway tracks and across railway Rights-of-Way shall be not less than 5-1/2 ft. (1.7 m) from base of railway rail to top of casing at its closest point, except that under secondary or industry tracks this distance may be 4-1/2 ft. (1.4 m). On other portions of Rights-of-Way where casing is not directly beneath any track, the depth from ground surface or from bottom of ditches to top of casing shall not be less than 3 ft. (1 m).

5.2.5.2.2 Carrier Pipe

Carrier pipe installed under secondary or industry tracks without benefit of casing shall be not less than 4-1/2 ft. (1.4 m) from base of railway rail to top of pipe at its closest point or less than 3 ft. (1 m) from ground surface or from bottom of ditches.

5.2.5.2.3 On Right-of-Way

Pipeline laid longitudinally on railway Rights-of-Way 50' (15 m) or less from centerline of track, shall be buried not less than 4' (1.2 m) from ground surface to top of pipe. Where pipeline is laid more than 50' (15 m) from centerline of track, minimum cover shall be at least 2' (600 mm).

5.2.5.3 Shut-Off Valves

Accessible emergency shut-off valves shall be installed within effective distances each side of the railway is mutually agreed to by the Engineer and the pipeline company. Where pipelines are provided with automatic control stations at locations and within distances approved by the engineer, no additional valves shall be required.

5.2.6 APPROVAL OF PLANS

Plans for proposed installation shall be submitted to and meet the approval of the Engineer before construction is begun.

Plans shall be drawn to scale showing the relation of the proposed pipeline to railway tracks, angle of crossing, location of valves, railway survey station, Right-of-Way lines and general layout of tracks and railway facilities. Plans should also show a cross section (or sections) from field survey, showing pipe in relation to actual profile of ground and tracks. If open-cutting or tunneling is necessary, details of sheeting and method of supporting tracks or driving tunnel shall be shown.

In addition to the above, plans should contain the following data:

	Carrier Pipe	Casing Pipe
Contents to be handled		
Outside diameter		
Pipe material		
Specification and grade		
Wall thickness		
Actual working pressure		
Type of joint		
Coating		
Method of installation		

Protection at ends of casing:

Both ends: One end: Type:

Bury: Base of rail to top of casing ft. (m) in. (mm)

Bury: (Not beneath tracks) ft. (m) in. (mm)

Bury: (Roadway ditches) ft. (m) in. (mm)

5.2.7 EXECUTION OF WORK

The execution of the work on railway Rights-of-Way, including the supporting of tracks, shall be subject to the inspection and direction of the Engineer.

Designer Note: Use when proposed water mains are to be located under new pavement structures or services requiring casing pipe that is less than 12" in diameter. Check with Utilities/Project Engineer for inclusion. ASTM A53 required for pipe to be ordered by NPS (nominal pipe size, I.D.) and weight class or schedule number, or both; or by outside diameter (O.D.) and nominal wall thickness. This provision has been written to conform with the I.D. ordering requirements. If an outside diameter is needed then the Designer must revise this provision and so reflect the provisions of A53. *Insert diameter __*__ inches.

STEEL CASINGS _____ INCHES

Effective July 1, 1990 Revised January 1, 2013

This work shall consist of furnishing a Schedule 40 Steel Pipe, _____ I.D. to A.S.T.M. Specification A-53 and using it to encase the water main at the location shown on the plans. All joints are to be field welded in a manner approved by the Engineer.

This work will be paid for at the contract unit price per Foot for STEEL CASINGS, _____ inches, which price shall include all material, equipment, and labor necessary to complete the work.

Designer Note: Use when proposed water mains requiring a casing pipe that is 12"± or larger in diameter are to be located under new pavement structures. Check with Utilities/Project Engineer for inclusion. The specification for the pipe is manufactured to is A.S.T.M. A-252, Grade 2. The Designer should investigate the proper wall thickness based on the O.D. If an inside diameter is needed, then the Designer must revise. *Insert diameter * inches and wall thickness ** inches.

An industry contact person is Mark Lible at Pittsburgh Pipe in St. Louis, MO; Phone (800) 325-2653.

STEEL CASINGS (*) INCHES

Effective July 1, 1990 Revised January 1, 2013

This work shall consist of furnishing a all equipment, materials, and labor to install a Steel Pipe, * O.D. to A.S.T.M. Specification A-252, Grade 2 in accordance with Section 542 of the Standard Specifications for watermain encasement at the location shown on the plans. All joints are to be field welded in a manner approved by the Engineer and in accordance with the Standard Specifications.

The inside and outside of the pipe shall be coated with a bituminous based paint system such as BB-99 or approved equivalent.

The Contractor shall furnish mill test reports for the pipe used. Wall thickness shall be a minimum of **(**)**.

Each end of the casing shall be capped with concrete block and mortar to the satisfaction of the Engineer.

This work will be paid for at the contract unit price per Foot for STEEL CASINGS, _____ INCHES, which price shall include all material, equipment, and labor necessary to complete the work.

59300 593.00

Designer Note: This special is for filling voids under bridge slope walls when making repairs or improvements to the structure. Consult with Mark Eckhoff before using this pay item. The quantity will be an estimate.

SLOPE WALL SLURRY PUMPING

Effective July 31, 2020 Revised October 1, 2024

General: This work shall consist of the placement of a Culvert Liner Mix to fill voids under bridge concrete slope walls at locations shown in the plans and as directed by the Engineer.

Materials: The material shall be according to Article 593 of the Standard Specifications and utilize District 4's mix design 84PCC9994.

Construction: The placement of the Culvert Liner Mix may be by pumping or by chute. If required, the Contractor shall core or cut holes in the slope wall to facilitate placement of the material. The Contractor shall place forms, sandbags, or other means to confine the Culvert Liner Mix under the slope wall and to restrict seepage. Multiple lifts/placements may be required to allow the material to harden sufficiently between lifts/placements in order to prevent blow outs due to excessive head pressures.

Method of Measurement: This work will be measured for payment at the contract unit price per Cubic Yard (Cubic Meter). The measured volume shall be the actual volume of the void computed from field measurements.

Basis of Payment: This work will be paid for at the contract unit price per Cubic Yard (Cubic Meter) for SLOPE WALL SLURRY PUMPING.

Designer Note: The Type G-1 design encroaches onto the pavement. Therefore, the use of the G-1, Special design, which is recessed, should be considered if topography permits and if it doesn't interfere with a proposed curb line sidewalk.

Designer to include the appropriate District CADD Standard for diagonal or vane grate. Specify left or right in the plans for the vane grate.

INLETS, TYPE G-1

Effective October 1, 1995 Revised January 1, 2007

This work shall consist of furnishing all labor, equipment, and material for the construction of Type G-1 Inlets and Combination Concrete Curb and Gutter in accordance with Sections 602 and 606 of the Standard Specifications and the details in the plans.

Add "INLETS, TYPE G-1" to Article 602.16 of the Standard Specifications. Delete the first paragraph in Articles 606.14 and 606.15.

Payment for transitional Combination Concrete Curb and Gutter will be included in "INLETS, TYPE G-1" in accordance with details shown in the plans.

This work will be paid for at the contract unit price Each for INLETS, TYPE G-1.

Designer Note: Designer to include the appropriate District CADD Standard for diagonal or vane grate. Specify left or right in the plans for the vane grate.

INLETS, TYPE G-1, SPECIAL

Effective October 1, 1995 Revised January 1, 2007

This work shall consist of furnishing all labor, equipment, and material for the construction of Type G-1, Special inlets and Combination Concrete Curb and Gutter in accordance with Sections 602 and 606 of the Standard Specifications and the details in the plans.

Add "INLETS, G-1, SPECIAL" to Article 602.16 of the Standard Specifications. Delete the first paragraph in Articles 606.14 and 606.15.

Payment for transitional Combination Concrete Curb and Gutter will be included in "INLETS, TYPE G-1, SPECIAL" in accordance with details shown in the plans.

This work will be paid for at the contract unit price Each for INLETS, TYPE G-1, SPECIAL.

Designer Note: Designer to include the appropriate District CADD Standard for diagonal or vane grates. Specify left or right in the plans for the vane grates.

INLETS, TYPE G-1, DOUBLE, SPECIAL

Effective October 1, 1995 Revised January 1, 2007

This work shall consist of furnishing equipment, labor, and materials for the construction of Type G-1, Double, Special Inlets and Combination Concrete Curb and Gutter in accordance with Section 602 and 606 of the Standard Specifications and the details in the plans.

Add "INLETS, TYPE G-1, DOUBLE, SPECIAL" to Article 602.16 of the Standard Specifications. Delete the first paragraph in Articles 606.14 and 606.15.

Payment for transitional Combination Concrete Curb and Gutter will be included in "INLETS, TYPE G-1, DOUBLE SPECIAL" in accordance with details shown in the plans.

This work will be paid for at the contract unit price Each for INLETS, TYPE G-1, DOUBLE, SPECIAL.

Designer Note: The Type G-1 design encroaches onto the pavement. Therefore, the use of the G-1, Special design, which is recessed, should be considered if topography permits. Designer to include District CADD Standard in the plans.

INLET-MANHOLE, TYPE G-1, 4' (1.2 M) DIAMETER

Effective October 1, 1995 Revised January 1, 2007

This work shall consist of furnishing all labor, equipment, and materials for the construction of Inlet-Manhole, Type G-1, 4' (1.2 m) Diameter and Combination Concrete Curb and Gutter in accordance with Sections 602 and 606 of the Standard Specifications and the details in the plans.

Add "INLET-MANHOLE, TYPE G-1, 4' (1.2 m) DIAMETER" to Article 602.16 of the Standard Specifications. Delete the first paragraph of Articles 606.14 and 606.15 of the Standard Specifications.

Payment for transitional Combination Curb and Gutter will be included in "INLET-MANHOLE, TYPE G-1, 4' (1.2 m) DIAMETER" in accordance with details shown in the plans.

This work will be paid for at the contract unit price Each for INLET-MANHOLE, TYPE G-1, 4' (1.2 m) DIAMETER.

Designer Note: Designer to include District CADD Standard in the plans.

INLET-MANHOLE, TYPE G-1, 4' (1.2 M) DIAMETER, SPECIAL

Effective October 1, 1995 Revised January 1, 2007

This work shall consist of all labor, equipment, and material for the construction of Inlet-Manhole, Type G-1, 4' (1.2 m) Diameter, Special and Combination Concrete Curb and Gutter in accordance with Section 602 and 606 of the Standard Specifications and the details in the plans.

Add "INLET-MANHOLE, TYPE G-1, 4' (1.2 m) DIAMETER, SPECIAL" to Article 602.16 of the Standard Specifications. Delete the first paragraph of Articles 606.14 and 606.15.

Payment for transitional Combination Concrete Curb and Gutter will be included in "INLET-MANHOLE, TYPE G-1, 4' (1.2 m) DIAMETER, SPECIAL" in accordance with details shown in the plans.

This work will be paid for at the contract unit price Each for INLET-MANHOLE, TYPE G-1, 4' (1.2 m) DIAMETER, SPECIAL.

Designer Note: The Type G-1 design encroaches onto the pavement. Therefore, the use of the G-1, Special design, which is recessed, should be considered if topography permits. Also consider impact on any curb line sidewalk. Designer is to include District CADD Standards in the plans.

INLET-MANHOLE, TYPE G-1, 5' (1.5 M) DIAMETER

Effective October 1, 1995 Revised January 1, 2007

This work shall consist of furnishing all labor, equipment, and materials for the construction of Inlet-Manhole, Type G-1, 5' (1.5 m) Diameter and Combination Concrete Curb and Gutter in accordance with Sections 602 and 606 of the Standard Specifications and the details in the plans.

Add "INLET-MANHOLE, TYPE G-1, 5' (1.5 m) DIAMETER" to Article 602.16 of the Standard Specifications. Delete the first paragraph of Articles 606.14 and 606.15 of the Standard Specifications.

Payment for transitional Combination Concrete Curb and Gutter will be included in "INLET-MANHOLE, TYPE G-1, 5' (1.5 m) DIAMETER" in accordance with details shown in the plans.

The work will be paid for at the contract unit price Each for INLET-MANHOLE, TYPE G-1, 5' (1.5 m) DIAMETER.

Designer Note: Designer to include District CADD Standard in the plans.

INLET-MANHOLE, TYPE G-1, 5' (1.5 M) DIAMETER, SPECIAL

Effective October 1, 1995 Revised January 1, 2007

This work shall consist of furnishing all labor, equipment, and materials for the construction of Inlet-Manhole, Type G-1, 1.5 m (5') Diameter, Special and Combination Concrete Curb and Gutter in accordance with Sections 602 and 606 of the Standard Specifications and the details in the plans.

Add "INLET-MANHOLE, TYPE G-1, 5' (1.5 m) DIAMETER, SPECIAL" to Article 602.16 of the Standard Specifications. Delete the first paragraph of Articles 606.14 and 606.15.

Payment for transitional Combination Concrete Curb and Gutter will be included in "INLET-MANHOLE, TYPE G-1, 5' (1.5 m) DIAMETER, SPECIAL" in accordance with details shown in the plans.

This work will be paid for at the contract unit price Each for INLET-MANHOLE, TYPE G-1, 5' (1.5 m) DIAMETER, SPECIAL.

Designer Note: Designer to include District CADD Standard in the plans.

INLET-MANHOLE, TYPE G-1, 5' (1.5 M) DIAMETER, DOUBLE, SPECIAL

Effective October 1, 1995 Revised January 1, 2007

This work shall consist of furnishing all labor, equipment, and materials to construct the Inlet-Manhole, Type G-1, 5' (1.5 m) Diameter, Double, Special and Combination Concrete Curb and Gutter in accordance with Sections 602 and 606 of the Standard Specifications and details in the plans.

Add "INLET-MANHOLE, TYPE G-1, 5' (1.5 m) DIAMETER, DOUBLE, SPECIAL" to Article 602.16 of the Standard Specifications. Delete the first paragraph of Articles 606.14 and 606.15 of the Standard Specifications.

Payment for transitional Combination Concrete Curb and Gutter will be included in "INLET-MANHOLE, TYPE G-1, 5' (1.5 m) DIAMETER, DOUBLE, SPECIAL" in accordance with details shown in the plans.

This work will be paid for at the contract unit price Each for INLET-MANHOLE, TYPE G-1, 5' (1.5 m) DIAMETER, DOUBLE, SPECIAL.

Designer Note: Designer to include District CADD Standard in the plans.

INLET-MANHOLE, TYPE G-1, 8' (2.4 M) DIAMETER, DOUBLE, SPECIAL

Effective October 1, 1995 Revised January 1, 2007

This work shall consist of furnishing all labor, equipment, and materials to construct the Inlet-Manhole, Type G-1, 8' (2.4 m) Diameter, Double, Special and Combination Concrete Curb and Gutter in accordance with Sections 602 and 606 of the Standard Specifications and details in the plans.

Add "INLET-MANHOLE, TYPE G-1, 8' (2.4 m) DIAMETER, DOUBLE, SPECIAL" to Article 602.16 of the Standard Specifications. Delete the first paragraph of Articles 606.14 and 606.15 of the Standard Specifications.

Payment for transitional Combination Concrete Curb and Gutter will be included in "INLET-MANHOLE, TYPE G-1, 8' (2.4 m) DIAMETER, DOUBLE, SPECIAL" in accordance with details shown in the plans.

This work will be paid for at the contract unit price Each for INLET-MANHOLE, TYPE G-1, 8' (2.4 m) DIAMETER, DOUBLE, SPECIAL.

Designer Note: Designer to include District CADD Standard for "Inlet-Manhole, G-1 Special and Modified" for precast slab top details. Designer to include special details in the plans.

MANHOLE TO BE ADJUSTED WITH NEW TYPE G-1 FRAME AND GRATE

Effective October 1, 1995 Revised January 1, 2007

This work shall consist of furnishing equipment, labor and material to remove the top of existing drainage structure, to place a precast slab, to mount a new G-1 frame and grate, and to construct Combination Concrete Curb and Gutter.

This work shall be completed in accordance with the applicable portions of Sections 602 and 606 of the Standard Specifications and details in the plans.

Add "Manhole to be Adjusted with New Type G-1 Frame and Grate" to Article 602.16 of the Standard Specifications. Delete the first paragraph of Articles 606.14 and 606.15 of the Standard Specifications.

Payment for transitional Combination Concrete Curb and Gutter will be included in "Manhole to be Adjusted with New Type G-1 Frame and Grate" in accordance with details in the plans.

This work will be paid for at the contract unit price Each for MANHOLE TO BE ADJUSTED WITH NEW TYPE G -1 FRAME AND GRATE.

60200kd 602.00kd

Designer Note: This special provision provides a basis of payment for CADD Standard 602401. If there are inlets that do not require a temporary drainage treatment, the plans should clearly show where this standard applies.

TEMPORARY INLET DRAINAGE TREATMENT

Effective January 1, 1997

This work shall consist of providing temporary drainage of the pavement as shown on the plans.

This work will not be paid for separately, but shall be included in the cost of the inlet.

Designer Note: Designer to include the appropriate District CADD Standard for diagonal or vane grate. Specify left or right in the plans for the vane grate.

INLETS, TYPE G-2

Effective: November 1, 2003 Revised January 1, 2007

This work shall consist of furnishing all labor, equipment, and material for the construction of Type G-2 Inlets and Concrete Gutter in accordance with Section 602 and 606 of the Standard Specifications and the details in the plans.

Add "INLETS, TYPE G-2" to Article 602.16 of the Standard Specifications. Delete the first paragraph in Articles 606.14 and 606.15 of the Standard Specifications.

Payment for transitional Concrete Gutter will be included in "INLETS, TYPE G-2" in accordance with details shown in the plans.

This work will be paid for at the contract unit price Each for INLETS, TYPE G-2.

60200m 602.00m

Designer Note: Designer to include the appropriate District CADD Standard for diagonal or vane grates. Specify left or right in the plans for the vane grates.

INLETS, TYPE G-1, DOUBLE

Effective July 31, 2009

This work shall consist of furnishing equipment, labor, and materials for the construction of Type G-1, Double Inlets and Combination Concrete Curb and Gutter in accordance with Section 602 and 606 of the Standard Specifications and the details in the plans.

Add ″INLETS, TYPE G-1, DOUBLE″ to Article 602.16 of the Standard Specifications. Delete the first paragraph in Articles 606.14 and 606.15 of the Standard Specifications.

Payment for transitional Combination Concrete Curb and Gutter will be included in "INLETS, TYPE G-1, DOUBLE" in accordance with details shown in the plans.

This work will be paid for at the contract unit price Each for INLETS, TYPE G-1, DOUBLE.

Designer Note: Designer to include the appropriate inlet type and either specify the casting to be installed within this special provision or provide a table in the plans. *Shall be replaced by "A" or "B".

INLETS, TYPE "*", WITH SPECIAL FRAME AND GRATE

Effective: August 2, 2013

This work shall consist of furnishing equipment, labor, and materials for the construction of inlets in accordance with Section 602 of the Standard Specifications, Highway Standards 602301 or 602306, and the details in the plans.

Add "INLETS, TYPE "*", WITH SPECIAL FRAME AND GRATE" to Article 602.16 of the Standard Specifications.

This work will be paid for at the contract unit price per Each for INLETS, TYPE "*", WITH SPECIAL FRAME AND GRATE.

Designer Note: Designer to include the diameter and either specify the casting to be installed within this special provision or provide a table in the plans. "*" Shall be replaced by the diameter in feet.

MANHOLE, TYPE A, OF THE DIAMETER SPECIFIED WITH SPECIAL FRAME AND GRATE

Effective: August 2, 2013

This work shall consist of furnishing equipment, labor, and materials for the construction of MANHOLE, TYPE A, OF THE DIAMETER SPECIFIED WITH SPECIAL FRAME AND GRATE of the diameter specified in accordance with Section 602 of the Standard Specifications and the details in the plans.

Add "MANHOLE, TYPE A, OF THE DIAMETER SPECIFIED WITH SPECIAL FRAME AND GRATE" of the diameter specified to Article 602.16 of the Standard Specifications.

This work will be paid for at the contract unit price per Each for MANHOLE, TYPE A "*", WITH SPECIAL FRAME AND GRATE of the diameter specified.

Designer Note: When inlets are to be filled and it is necessary to connect the existing storm sewer thru the inlet, use the following. 7-1-94 – Revised D.S.P. and Article.

FILLING EXISTING INLETS

Effective July 1, 1990 Revised July 1, 1994

Add the following paragraph to Article 605.04 of the Standard Specifications:

> The flow of water through the storm sewer passing through the inlet shall not be obstructed after abandonment. This shall be accomplished by pipe or brick and mortar connections acceptable to the Engineer.

Designer Note: For use with small diameter culverts and box culverts. Discuss size/usage with your Project Engineer. This work can be paid for by Each or by the Cubic Yard. Make sure to use the correct units and quantity. The pay item numbers are Z0023500 (Cubic Yard) or Z0023600 (Each) as of January 2017.

*****List culvert location by Station, Size, and Description (temporary culvert or existing).

Example: Station 100+10 - 30" (750 mm) Temporary Culvert

FILLING EXISTING CULVERTS

Effective: October 15, 1995 Revised: April 1, 2026

This work shall consist of filling existing pipe culverts with controlled Culvert Liner Grout Mixture meeting the requirements of Article 543.02 Note 2 of the Standard Specifications and utilize District Four's mix design 84PCC9994 or 84PCC995.

The culverts to be filled are as follows:

_____

The culverts shall be plugged on both ends with a plug material meeting the approval of the Engineer. The plug shall be adequate to withstand the hydrostatic load created during the filling operation. If the plugs fail during the filling operation, the Contractor shall be responsible for the cost of repairing the plugs and filling the remainder of the culvert.

This work, including the cost of plugging the pipe ends, will be paid for at the contract unit price per Each or at the contract price per Cubic Yard for FILLING EXISTING CULVERTS.

Designer Note: Discuss usage with your Project Engineer. For use with large culverts, boxes, or bridges. Also include a plan detail for filling each culvert.

*List drainage structure by Station, Size, and Description.

Example: Station 100+10 - 24' (7 m) span x 56' (17 m) long RC slab bridge
2 @ 30" (750 mm) CMP culverts inserted

FILLING DRAINAGE STRUCTURES

Effective October 15, 1995 Revised April 1, 2017

This work shall consist of filling existing drainage structures with granular backfill material and/or Controlled Low Strength Material. Controlled Low Strength Material shall meet the requirements of Sections 593 and 1019 of the Standard Specifications and granular material shall meet the requirements of Article 1003. Drainage structures to be filled are as follows:

*****

The Contractor may fill a portion of the structure with granular material where the size of the structure allows conventional placement and compaction methods. Granular material shall be placed in maximum 8" (200 mm) layers, loose measurement, and compacted in a manner approved by the Engineer. The remainder of the structure shall be filled with Controlled Low Strength Material. The structure shall be plugged on both ends with a plug material meeting the approval of the Engineer. The plug shall be adequate to withstand the hydrostatic load created during the filling operation. If the plug fails during the filling operation, the Contractor shall be responsible for the cost of repairing the plugs and filling the remainder of the culvert.

Structures with a vertical height exceeding 3' (1 m) shall be filled in at least two phases, with a minimum 24 hour elapsed period between pours. Structures with a vertical height exceeding 6' (1.8 m) shall be filled in at least three phases, with a minimum 24-hour elapsed period between each pour.

For structures with culvert insertions present, the Contractor shall be responsible for assuring that the insertion culvert is not damaged by the hydrostatic load of the CLSM. Measures shall also be taken to assure that the insertion culvert does not “float” out of position during the filling process. Measures may include internal and/or external bracing of the insertion culvert and placement of the CLSM in stages. The method of placement and protective measures to be used shall be approved by the Engineer prior to the start of the filling operation. Approval by the Engineer shall in no way relieve the Contractor of responsibility for damage to the insertion culvert or failure of the end plugs.

This work, including the cost of the end plugs and any bracing or other protection measures, will be paid for at the contract unit price Each for FILLING DRAINAGE STRUCTURE. Each structure location filled will be paid for separately.

Designer Note: Use when requiring a solid concrete island to be constructed on an existing pavement. Also include a detail in the plans showing cross sections and any anchor bolts if so required. If anchor bolts are required, include last sentence of special. Otherwise, be sure to remove last sentence for typing. Existing CADD drawing 606301 can be used as an example.

ISLAND PAVEMENT CONSTRUCTED ON EXISTING PAVEMENT

Effective January 1, 1997 Revised January 1, 2007

This work shall consist of constructing a solid concrete island on the existing pavement as shown on the details included in the plans and shall be done in accordance with the applicable portions of Section 606 of the Standard Specifications and the following provisions:

1. All references to Concrete Median shall be interpreted to mean Island Pavement.

2. Add the following to Article 606.09:

   Transverse expansion joints shall be installed in the Island Pavement producing a vertical prolongation of the joints in the underlying pavement. In no case shall the joints be spaced more than 100' (30 m) apart. The expansion joint shall be constructed of 3/4" (20 mm) preformed joint material.

3. Add the following to Article 606.15:

   This work will be paid for at the contract unit price per Square Foot (Square Meter), measured as specified, for ISLAND PAVEMENT, which shall include payment for furnishing and installing all joints as required. Anchor bolts will be paid for at the contract unit price per Each for ANCHOR BOLTS of the size specified.

Designer Note: Drainage holes should be provided when constructing medians, traffic islands, or curb on existing pavement to facilitate drainage and prevent water ponding.

DRAINAGE HOLES

Effective July 1, 1990 Revised January 1, 2007

At locations where medians, traffic islands, or curbs are to be constructed over the existing pavement, drainage holes shall be broken or cut through the existing pavement along the backs of the curbs at 20-foot (6-meter) intervals and at all low points in the grade. The holes shall each be approximately 1 Square Foot (0.1 Square Meter) in area.

This work will not be paid for separately but shall be considered as included in the cost of the various items of construction.

Designer Note: The Bureau of Operations has requested that a method to control erosion be provided at all guardrail locations.

Approved methods are:

1. Guardrail Aggregate Erosion Control - this spec. (Flat profile grade locations only - less than 1% without bituminous curb treatment.)

2. Treated Timber Curb with Bituminous Wedge or Bituminous Curb with Guardrail Aggregate Erosion Control - (profile grades equal to or greater than 1%).

3. Other (Bridge Approach Shoulder Pavement, etc.)

Discuss your proposed methods with your Project Engineer and the Maintenance Field Engineer. If "Guardrail Aggregate Erosion Control" is used, include CADD Std. 630101-D4, Guardrail Erosion Control Treatments for the proposed shoulder treatment.

GUARDRAIL AGGREGATE EROSION CONTROL

Effective: February 1, 1993 Revised: January 1, 2007

This work shall consist of furnishing, placing, and shaping crushed aggregate placed around and behind guardrail posts in accordance with plan details.

Method of Measurement: The aggregate for constructing the Guardrail Aggregate Erosion Control will be measured in Tons (Metric Tons).

The Geotextile Fabric will not be measured for payment.

Basis of Payment: Guardrail Aggregate Erosion Control will be paid for at the contract unit price per Ton (Metric Ton) for GUARDRAIL AGGREGATE EROSION CONTROL measured as specified herein. The Geotextile Fabric will not be measured for payment, but shall be included in the cost per Ton (Metric Ton) for GUARDRAIL AGGREGATE EROSION CONTROL.

Designer Note: In Spec. book when specified the widening of existing shoulders will be paid as "Earth and Rock Excavation" or "Borrow Excavation". This special provision shall be used when no "Earth, Furnished or Borrow Excavation" pay items are included in the contract and the contract includes, "Traffic Barrier Terminals, Type 1, Special". When widening is required for other "Traffic Barrier Terminals" and no "Furnished or Borrow Excavation" pay items are included in the contract use this special in conjunction with the Spec. book.

TRAFFIC BARRIER TERMINALS

Effective: February 1, 1996 Revised: November 5, 2004

Widening of existing shoulders/slopes for the construction of Traffic Barrier Terminals shall be completed as directed by the Engineer and paid for as specified in Article 109.04 of the Standard Specifications.

63200 632.00

Designer Note: Discuss removal, filling holes, and disposal with the Maintenance Field Engineer.

GUARD POST REMOVAL

Effective July 1, 1990 January 1, 2007

This work shall consist of the removal and disposal of the existing guard posts at the locations shown on the plans or as directed by the Engineer in accordance with Section 632.00 of the Standard Specifications.

This work will be measured and paid for at the contract unit price per Foot (Meter) for GUARD POST REMOVAL.

63500 635.00

Designer Note: To be used in conjunction with Traffic Control and Protection Standards that require flexible delineators. Discuss usage/special requirements and estimate of replacement bases (only) with Operations (Traffic) before including. The replacement/repair of the flexible delineator tube itself is considered as included in the cost of the TC&P standard unit price.

*Fill in appropriate standard number.

FLEXIBLE DELINEATOR MAINTENANCE

Effective May 5, 1992 Revised January 1, 1994

This item shall consist of all material and labor necessary to maintain the base of the flexible delineators required as part of Traffic Control and Protection, Standard.*****

The re-attachment of the flexible delineator to the base shall be considered incidental to Traffic Control and Protection, Standard.*****

Any unit which needs repair because the attachment of the base to the pavement failed within 120 hours after installation shall be re-attached by the Contractor at his expense.

The quantity listed in the contract is only an estimate of the anticipated number of units requiring repair.

FLEXIBLE DELINEATOR MAINTENANCE will be paid for in accordance with Article 109.04 of the Standard Specifications and shall consist of maintaining the flexible delineator bases required as part of Traffic Control and Protection, Standard.*****

Designer Note: To be used in conjunction with Highway Standard 702001 whenever Flexible Delineators are specified. Discuss intended usage with Operations (Traffic). Also consider flexible delineator maintenance requirements/provisions. You may want to include Flexible Delineator Maintenance (Glossary 635.00).

FLEXIBLE DELINEATORS

Effective October 1, 1995 Revised January 1, 2007

Flexible delineators shall meet the requirements of Traffic Control and Protection Standard 702001 of the Illinois Highway Design Standards for Traffic Control and as modified herein.

Flexible delineators post shall be of a hinged, self recovering design, as manufactured by Flexstake, Inc. or an approved equal.

The top portion of the post is made of a polycarbonate material which shall be resistant to impact, ultraviolet light, ozone hydrocarbons, and shall be self-erecting after withstanding vehicle impacts. Polycarbonate post shall remain dimensionally stable from -150°F (-100°C) (brittleness point) to 285°F (140°C) (melting point).

Post shall remain intact up to seventy-five impacts at a vehicle speed of 55 MPH (90 kph) by a typical American made car from either direction at temperatures from -30°F to 130°F (-35°C to 55°C).

The top section of the post shall be surface mount with a polyurethane hinge. The hinge shall have an internal memory and remain dimensionally stable to from -30°F (-35°C).

The minimum width at the top of the post shall be 3 inches (75 mm) and the maximum wall thickness shall be 0.180 inches (5 mm). Lengths shall be a minimum height of 3 feet (1 m).

The posts shall be orange in color. They shall be colorfast and shall be designed to provide an essential convex surface to accommodate a 100 m (4 inches) wide reflective sheeting on both sides. Sheeting shall meet Article 1097.03 of the Standard Specifications and shall have two alternating, reflectorized white And two alternating orange stripes sloping downward at 45° toward the side on which traffic will pass.

Posts shall be free of surface porosity and other defects that may affect appearance and serviceability.

Posts shall contain a minimum of 40% (by weight) post consumer recycled material, and all material shall be recycled.

Posts shall be field-repairable with a repair kit. Posts and other components shall be field replaceable.

When an existing flexible delineator needs to be replaced due to numerous vehicular hits, the new flexible delineator will be paid for at the contract unit price per Each.

This work will be paid for at the contract unit price per Each for FLEXIBLE DELINEATORS.

Designer Note: Use this special when installing the Recoverable Delineator pay item on your contract. This is for a permanent installation. Not for temporary traffic control. Do not confuse with the flexible Delineator pay item and District Special.

RECOVERABLE DELINEATORS

Effective: April 26, 2015
Revised: November 1, 2018

This work shall consist of furnishing and installing Recoverable Delineators in accordance to the following:

1. Driveables

    a. Ground Anchor shall be a 2" x 12 ga. x 24" piece of perforated square tubing.

    b. Shall include a flexible square to round self-righting joint.

    c. Post shall be composed of a minimum of 70% by volume post-consumer recycled materials.

    d. Post shall be permanently flattened and sealed at the top and be a minimum of 3"-wide and be capable of displaying a 3"-wide piece of reflective sheeting.

2. Surface Mount Delineator shall be omni-directional which is self-righting and can take multiple vehicle hits and return to vertical.

3. The mounting will be bolted and pinned to the ground anchor allowing the post to be replaced in less than a minute requiring no specialized tools.

4. Reflective sheeting on each highway delineator shall be 3" x 9" in dimension and white in color. Reflective sheeting shall comply with Article 1091.03 of the Standard Specifications for Road and Bridge Construction. On interchange ramps, each delineator shall also have red reflective sheeting on the reverse side of the delineator to indicate wrong-way direction.

The highway delineators shall be installed at proposed delineator locations in accordance to the construction plans.

All equipment necessary for the installation shall be per manufacturer’s recommendation.

All materials, equipment, and labor shall be included in the agreed unit bid price per Each for RECOVERABLE DELINEATORS.

Designer Note: Discuss with Implementation (Materials) prior to including this provision. Requires the Contractor to provide an acceptable storage area for nuclear density equipment. Would be primarily for major earthwork or bituminous resurfacing projects that require a field laboratory. If Materials requests on-site storage but no field laboratory, then the cost of furnishing the vault shall be included in the Engineer's Field Office of the type specified and the pay item must reflect this change. 7-1-94 – Revised Article.

EQUIPMENT VAULT FOR NUCLEAR TESTING EQUIPMENT

Effective June 24, 1993 Revised November 8, 2019

Add the following to the list of equipment and furniture to be furnished under Article 670.05 Engineer's Field Laboratory.

> A cabinet or vault shall be provided for the nuclear density equipment which shall have a suitable barrier system of concrete, steel, lead, or other radiation barrier material and shall remain at the job site. The vault shall be located in a secure, weather-proof location and be a minimum of 15' from any work station and approved by the RSO. It shall have a dimension capable of holding the number of units being stored at the site and shall have a lock for security to prevent intruders from gaining access to this equipment. All walls and doors of the unit shall be sufficient thickness to prevent any radiation leakage from the equipment should a malfunction result which would allow this leakage.

The cost of furnishing the equipment vault will not be paid for separately but shall be considered as included in the unit cost for ENGINEER'S FIELD LABORATORY.

68000 680.00

Designer Note: Discuss any proposed railroad track or tie removal with Project Support. If work is to be done by our Contractor, include "Railroad Track Removal" and "Railroad Ties Removal and Disposal" special provisions.

RAILROAD TRACK REMOVAL

Effective November 1, 1994 Revised January 1, 2007

This work shall consist of furnishing all labor, equipment and materials required for the removal and disposal off the Right-of-Way of the railroad tracks, ballast, hardware, signals, signal house, signal house foundations, signal foundations, pipe underdrain and PCC curb associated with the crossing at the locations as shown on the plans.

Any holes created by the removal operations shall be backfilled and compacted to the satisfaction of the Engineer.

The Contractor shall take extreme care during the removal operations to keep from disturbing the railroad ties.

Materials resulting from the removal operations shall be disposed of in accordance with Article 202.03 of the Standard Specifications.

The measurement for payment will be per foot (meter) measured down the centerline of the railroad tracks.

This work will be paid for at the contract unit price per Foot (Meter) for RAILROAD TRACK REMOVAL and no additional compensation will be allowed. Removal of the railroad ties and disposal is covered elsewhere in the special provisions.

Designer Note: Discuss any proposed R.R. track or tie removal with Project Support. If work is to be done by our Contractor, include "Railroad Track Rail Removal" and "Railroad Ties Removal and Disposal" special provisions. If railroad ties are used in a retaining wall which is to be removed, you will also need this special provision. Also see attached EPA Policy ruling on creosote treated wood.

RAILROAD TIES REMOVAL AND DISPOSAL

Effective November 1, 1994 Revised October 1, 1995

This work shall consist of furnishing all labor, equipment and materials required for the removal and disposal off the right of way of the railroad ties at the location shown on the plans.

The following situations explain how (weathered) treated wood, when sent for disposal or reuse, are covered by I.E.P.A. regulations.

The waste classification of the railroad ties is dependent upon the physical appearance of the tie. Railroad ties are commonly preserved with Cresol, Pentachlorophenol, or CCA (Copper, Chromium, and Arsenic). These compounds could exhibit the characteristics of a Resource Conversation and Recovery Act (RCRA) hazardous waste.

Each railroad tie that is completely dry and shows no visible wood treatment (Cresol or Pentachlorophenol) residue is considered a solid waste and can be disposed of as demolition debris. Any railroad tie that contains visible wood treatment residue should be sampled and analyzed to determine the toxicity characteristics using the toxicity characteristics leaching procedure (TCLP) test method. The railroad tie is considered an RCRA hazardous waste if the toxicity characteristics exceed 200 milligrams per liter (mg/l) for either o-Cresol, m-Cresol, p-Cresol, or total Cresol; 200 mg/l for Chromium; and 5.0 mg/l for Arsenic (35 Illinois Administration Case 721.124). The Contractor shall be responsible for the proper disposal of RCCA hazardous waste.

This work shall be done in accordance with the applicable portions of Section 202 of the Standard Specifications and as directed by the Engineer.

This work will be paid for as extra work in accordance with Article 109.04 of the Standard Specifications.

68300 683.00

Designer Note: For use with CADD Std. 660001. Use should be discussed with your Project Engineer.

MORTARED STONE WALL

Effective March 1, 1991 Revised January 1, 2007

This work shall consist of furnishing and installing mortared stone riprap for the construction of retaining walls at locations specified and in accordance with the details in the plans.

The Contractor shall submit samples of the proposed stone riprap to the Engineer for approval prior to beginning the work. The stone riprap shall have a minimum size per piece of 8 inches (200 mm) wide by 16 inches (400 mm) in length by 2 inches (50 mm) deep. Shorter pieces will be allowed for building the wall around sharp corners at private sidewalks and steps. All riprap should be the same average size so as to fit easily together. The riprap shall be of "flag stone" quality.

The earth slope shall be graded, trimmed, and compacted to the lines and grades shown on the plans before the mortared stone riprap is placed.

The stone shall be stored on the job site to keep it as clean as possible.

Stone is to be carefully selected at the job site so that various colors are evenly distributed throughout the job. Sufficient stone is to be at the job site at all times to permit proper selection and blending of colors. The stone supplier should furnish laying instructions to which the Contractor shall comply unless otherwise approved by the Engineer. All horizontal and vertical joints shall be mortared during placing operations, making sure all joints are properly filled. The vertical joints shall be staggered during the placing operations.

The mortar for setting stone shall consist of one part white non-staining waterproof Portland cement, one part hydrated lime or lime putty, and six parts clean, sharp sand by volume. Materials are to be accurately measured by volume in specially constructed gauge boxes. No mortar shall be retempered after initial set has taken place.

Stone work shall be kept as clean as possible as work progresses. Upon completion, if necessary, foreign material and mortar shall be removed from stone, subject to the Engineer's approval. If necessary, stone shall be cleaned with scrub brushes used with soap and water and completely rinsed immediately after scrubbing. Fine white sand may be added to water to aid in cleaning.

Basis of Payment: The stone wall will be paid for at the contract unit price per Square Foot (Square Meter) for MORTARED STONE WALL with the payment area being calculated as shown in the plan detail. No adjustment will be made in the unit price or method of measurement if the Contractor places Class SI concrete for that portion of the wall which is below ground.

Furnishing and installing 3/4" (20 mm) P.E.J.F., geotechnical fabric for ground stabilization, pipe underdrain, pipe drain including connections to inlets or storm sewer, porous granular backfill, and the excavation of the trench and existing earth required for placement of the stone wall will not be measured for payment but shall be included in the contract unit price for MORTARED STONE WALL.

70100 701.00

Designer Note: Do not change the wording in the first two paragraphs of the Traffic Control Plan provision. List the appropriate standards, including CADD standards, needed for your project and assure that the cover sheet listing agrees with this Traffic Control Plan list. The following are options for provisions that should be reviewed for inclusion in your plans. Provide the Secretary with the option number selected and only the heading. **Be sure to include a pay item and quantity for Traffic Control Surveillance if your plans require this item.** Additional provisions may be added to your Traffic Control Plan depending on your project circumstances. The "Effective Date" is for Tracey's use in when specials were typed; not necessary to enter a date.

Text to Include in Traffic Control Plan

1.Short-Term/Temporary Pavement Marking

NOTE: Until further notice, assume any road less than 400 ADT is low volume and any road greater than 400 ADT is not low volume.

The Designer should include the current ADT and the average daily multiple-unit traffic in percentage of total traffic on the plan cover sheet to inform the Contractor if short term no passing zone exemption is applicable. If the ADT and average daily truck volumes for the roadway are less than those indicated in Table 1, the road is considered low volume and is exempt from the requirements regarding no-passing zone pavement markings.

Table 1

Low Volume Roads

ADT	Multi-Unit Trucks
2500	10%
2000	15%
1500	20%
1000	25%

If the roadway does qualify for this exemption, the following note shall be made in the Traffic Control Plan for this project:

Short-Term/Temporary Pavement Marking

This project is considered as a low volume road and as such is exempt from the requirements regarding no-passing zone pavement markings.

2. Contractor Access

If your project requires a road closure but the Contractor must have access to the work site, then include the following text in the Traffic Control Plan to stipulate the requirements for the placement and signing of the barricades to permit him access:

Contractor Access

At road closure locations where Type III Barricades are installed in a manner that will not allow Contractor access to the project without relocation of one or more of the barricades, the arrangement of the barricades at the beginning of each work day may be relocated, when approved by the Engineer, in the manner shown on Highway Standard 701901 for Road Closed to Through Traffic. "Road Closed" signs (R11-2), supplemented by "Except Authorized

Vehicles" signs (R3-I101), shall be mounted on both the near-right and far-left barricade(s). At the end of each work day the barricades shall be returned to their in-line positions. This work will be included in the cost of the contract, and no extra compensation will be allowed.

3. Supplemental Operations Traffic Control – Designer Information Only. Use the statement below for notifying the Contractor that additional Traffic Control items may be provided through a separate contract administered by Operations. This will be utilized on projects such as interstates, expressways, and high volume urban arterials. Contact Anna Ghidina if you are unsure whether to include.

Supplemental Traffic Control: During periods of high traffic volume where long delays are expected, the Department may utilize a separate Contractor to provide supplemental Traffic Control in addition to supplemental Traffic Control items included in this contract.

Designer Reminders

1. Use of Urban "701501 - 701801 Standards and Specials". When any "701501 to 701801 Standards or Specials" are specified, the Traffic Control Plan must spell out how/when/where they are to be used. 701501 to 701801 and "701501 Special to 701801 Special" are covered in Work Zone Traffic Control, Articles 701.19 and 701.20 for measurement and payment. 701501 Special thru 701801 Special, though, require the Designer to specify method of measurement and basis of payment. Use DSP's for these "Special" Standards.

2. Traffic Control Surveillance: Review the Supplemental Specifications, Article 701.10 for when to use Traffic Control Surveillance. Also review Method of Measurement, Article 701.19(d) and Basis of Payment, Article 701.20(g) to ensure you are paying for it correctly. Include Traffic Control Surveillance in your contracts when using the traffic control standards outlined below:

Traffic control surveillance needs to be included as a pay item as outlined below:

Urban Traffic Control

Standard Number District 4 Traffic Surveillance Status For

	Inclusion in Contracts
701501	Not Required*
701606	Required for Night Use
701601	Required for Night Use
701701	Required for Night Use
701801	Required for Night Use
BLR-17	Not Required**
BLR-18	Not Required**
BLR-21	Not Required**
BLR-22	Not Required**

*****Add if potential exists for open trench for widening, curb and gutter, etc.
******No open holes overnight are anticipated

Rural Traffic Control

Standard Number District 4 Traffic Surveillance Status For

	Inclusion in Contracts
701001	Not Required
701006	Not Required
701201	Not Required
701206	Not Required
701011	Not Required
701306	Not Required
701301	Not Required
701311	Not Required
701316	Not Required
701331	Not Required
701326	Required
701336	Not Required
701106	Not Required
701101	Not Required
701406	Not Required
701401	Required
701431	Not Required
701426	Not Required
701321	Not Required
701416	Not Required
701411	Not Required

Discuss any questions you have about the number of calendar days to include with your Project Engineer and the Construction Field Engineer for the various pay items involved.

3. Traffic Control Standard Usage – Designer information only. If your project is very complex and a construction staging plan is required, then a detailed traffic control staging plan would be included in the plans and you would correlate the staging plan with this special provision. If you do not have complex staging with plan details, then your Traffic Control Plan special provision should indicate where and what particular standard is required and how it is intended to be used during the various construction operations.

TRAFFIC CONTROL PLAN

Effective: * Portable Changeable Message Boards shall be placed according to the Traffic Control Technician and Contract Plans. Two boards shall be placed at the Illinois Route 8 job limits, seven (7) days in advance of any construction work beginning, warning motorists of the upcoming construction work. This is in effort to provide motorists the opportunity to take alternative routes and reduce the expected back-ups due to the lane closures. The cost of setting, moving, and maintaining the message boards shall be included in the cost per cal. day for "Changeable Message Sign".

Traffic control shall be in accordance with the applicable sections of the "Standard Specifications for Road and Bridge Construction," the applicable guidelines contained in the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways," these Special Provisions, and any special details and Highway Standards contained herein and in the plans.

Special attention is called to Section 701 and Articles 107.09 and 107.14 of the "Standard Specifications for Road and Bridge Construction" and the following Highway Standards relating to traffic control:

701001	701006	701011	701201	701301	701306
701311	701336	701901	780001	781001	782006

Designer Note: Use on projects where there is the potential for large gaps between operations such as patching utilizing Highway Standard 701401. Consult with Don Hoffman to confirm use of this District Special Provision. if a different Highway Standard is needed, revise the special and remove the “Effective” date.

FLAGGERS

Effective: August 1, 2018

For operations when workers are on the pavement, one flagger shall be present for each separate operation that is greater than 500' from the initial flagger. The intent is a flagger is never more than 500' from a work activity with workers on the pavement regardless if there is encroachment of the work activity to the open lane. No additional compensation shall be allowed for flaggers and shall be included in the cost of Highway Standard 701401.

Designer Note: Use with rural single lane closures with two-lane, two-way run-around adjacent to the existing pavement (District CADD Standard 701331).

TRAFFIC CONTROL AND PROTECTION STANDARD 701331 (SPECIAL)

Effective: October 15, 1995 Revised: July 31, 2009

This work shall be in accordance with Section 701 of the Standard Specifications and shall include all material, equipment, and labor necessary to install the traffic control items as shown on the plan details or as described in the specifications.

Add the following to the first paragraph of Article 701.20(a):

"Traffic Control and Protection Standard 701331 (Special)".

Designer Note: UPDATED 2018-This special provision is to be used at any time when:
1) The width of the traveled lane will be 17'–6" or less due to use of temporary concrete barrier.
2) There is a fixed, immovable barrier (pier/guardrail etc.) on one side and temporary traffic control devices on the other side. If the temporary traffic control devices cannot be shifted to allow the 17'–6" opening, then signing will be required. If they can be shifted, then there will be no signing required.

Discuss use, plan layout, and sign width measurements with Bureau of Operations, Traffic Control Supervisor.

Quantity and location of signs shall be placed on the Traffic Control Plan Sheets or in the Traffic Control Plan to notify the number of installations required.

WIDTH RESTRICTION SIGNING

Effective: November 1, 2007 Revised: January 1, 2019

Description. This work shall consist of providing, placing, maintaining, and removing width restriction signing as shown on the plans and special provisions. Width restriction signing shall be required when the roadway width will be less than 17'–6" as measured from face to face of temporary concrete barrier and a concrete parapet, guardrail or other fixed, immovable barrier. Width restriction signing may be required when the roadway width will be less than 17'–6" as measured from movable traffic control devices and a fixed object (concrete parapet, guardrail or other immovable roadside barrier). The contractor shall provide signing if the traffic control devices cannot be shifted (in areas of a fixed object and patching/paving/centerline work etc.) to accommodate a traveled way opening of 17'–6". The Contractor shall furnish all materials, equipment, labor, and other essentials necessary to accomplish this work and all other work described herein and as directed by the Engineer.

Materials. All sign post materials shall be in accordance with Articles/Sections: 1093.01(a), 10007.05. Galvanizing will not be required. The nominal size of wood posts shall be 4 in. x 4 in. (100 m x 100 m).

Equipment. All equipment shall be in accordance with Article/Section 1106.01.

Notification. The Contractor shall notify the Traffic Control Supervisor, in writing, when the Contractor receives an award letter for the contract. The letter shall state the anticipated start date of lane width restrictions. The twenty-one (21) day notice will start from the Award date. No width restrictions will be allowed until twenty-one (21) days after receiving notice from the Contractor. The Contractor may elect to provide the anticipated start date of lane width restrictions at the Preconstruction meeting so long as there is a minimum of twenty-one (21) days advanced notice.

Traffic Control Supervisor	Don Hoffman	(309) 671-4488

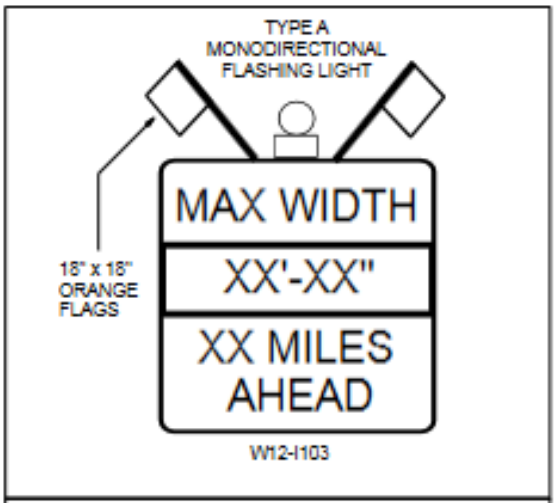
Failure to provide required advanced notice may delay project at the expense of the Contractor.

General. The Contractor shall provide the route and directional (North, South, East and West) signage. The route and directional signage shall be placed, maintained, and removed by the Contractor. The route sign shall visually be the same as the existing route signs as posted by IDOT. The directional signage shall be black lettering on a white background. Interstate signs shall have the cardinal direction signs with white on a blue background. The route and directional signage shall be placed below Sign W12-I103.

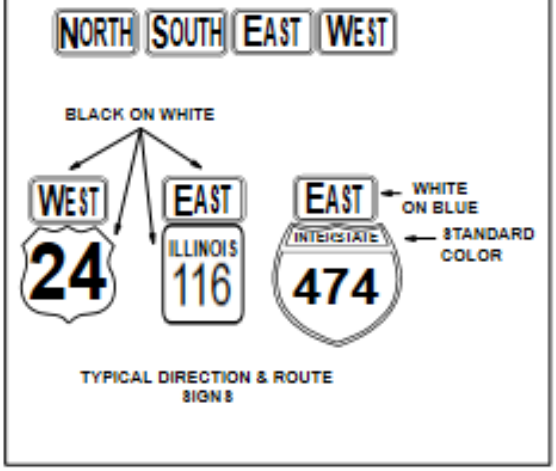
Locations, distances and quantity of signs and shall be as shown on the plan sheets or in the Traffic Control Plan. All final field locations will be marked by the Bureau of Operations, Traffic Control Supervisor.

It shall be the Contractor's responsibility to make arrangements for the J.U.L.I.E. locates.

Basis of Payment: This work will not be paid for separately but will be included in the cost of Traffic Control and Protection pay items. This work shall consist of providing, placing, maintaining, and removing width restriction signing as shown on the plans and special provisions and no additional compensation will be allowed.



TYPICAL POST MOUNT INSTALLATION



TYPICAL DIRECTION & ROUTE SIGNS

Designer Note: Insert into contracts utilizing the pay items for BLR 21 or BLR 21 (Special). Note that BLR 21 can be paid as L Sum or Each.

TRAFFIC CONTROL AND PROTECTION BLR 21

Effective: April 25, 2008 Revised: April 24, 2020

This work shall be in accordance with Section 701 of the Standard Specifications and shall include all material, equipment, and labor necessary to install the traffic control items as shown on the Highway Standard BLR 21 or as shown and described in the plans and specifications.

Add the following to the first paragraph of Article 701.20(b):

"Traffic Control and Protection Standard BLR 21".

Designer Note: Insert into contracts utilizing the pay items for BLR 22.

TRAFFIC CONTROL AND PROTECTION BLR 22

Effective: April 25, 2008 Revised: April 24, 2020

This work shall be in accordance with Section 701 of the Standard Specifications and shall include all material, equipment, and labor necessary to install the traffic control items as shown on the Highway Standard BLR 22 or as shown and described in the plans and specifications.

Add the following to the first paragraph of Article 701.20(b):

"Traffic Control and Protection Standard BLR 22".

Designer Note: Contact Traffic about usage. Use the following special provision when the State is to furnish temporary concrete barrier. Add notes as appropriate for source of barrier and special conditions. Fill in (*) source of barrier. CADD Standard 704001 should be included in your project. Review for relevance. Designer shall verify availability of state owned connecting pins. If not enough pins are available a special shall be written to make the contractor supply the pins.

TEMPORARY CONCRETE BARRIER, STATE OWNED

Effective: May 1, 1991 Revised: April 1, 2019

This work shall be in accordance with Section 704 of the Standard Specifications.

The temporary concrete barrier shall be obtained by the Contractor from the (*) Maintenance Storage Yard. This work shall consist of picking up and delivering to the worksite, placing, removing and returning the aforementioned barrier and connecting pins to the (*) Maintenance Storage Yard.

Temporary Concrete Barrier shall be installed according to Standard 704001 and applicable portions of the Standard Specifications. The placement and location of the barrier shall be as shown on the plans and as directed by the Engineer.

Designer Note: Use on all contracts with Temporary Concrete Barrier or Temporary Concrete Barrier (State Owned).

TEMPORARY CONCRETE BARRIER REFLECTORS

Effective: January 21, 2005 Revised: November 6, 2020

Installation of reflectors shall be in accordance with the Traffic Control Standards, plan details, and specifications, except that the reflector shall be fastened to the concrete using a mechanical fastener such as a screw suitable for use in concrete.

Reflectors mounted on temporary concrete barrier will not be measured for payment and shall be included in the cost of pay items associated with temporary concrete barrier.

Designer Note: Include in contracts with cantilever sign structures.

RE-TIGHTENING ANCHOR BOLTS FOR CANTILEVER SIGN STRUCTURES

Effective: April 25, 2014

After the cantilever sign structure has been installed with all required signs for a minimum of 30 calendar days, the Contractor shall re-tighten the anchor bolts to the original specifications shown on the plan details and/or Standard Specifications.

Designer Note: Use on projects with proposed guardrail in place of the Type A or B guardrail reflectors. These panels are more visible in poor light conditions.

LINEAR DELINEATOR PANELS, 4 INCH

Effective: October 1, 2022

Description. This work shall consist of furnishing and installing linear delineators on steel plate beam guardrail at locations shown on plan details.

CONSTRUCTION REQUIREMENTS

General. Linear delineator panels shall be attached to steel plate beam guardrail as shown on plan details and as directed by the Engineer. These panels shall be either white or yellow, matching the color of the adjacent pavement marking edge line. They should be spaced at a minimum of 80-foot centers horizontally, with a minimum of two linear delineator per guardrail run. Linear delineators shall not be place on guardrail terminal sections. Linear delineator spacing through horizontal curves where the normal speed limit is reduced, the spacing of the linear delineators shall be reduced to 40-foot centers. Existing steel plate beam guardrail that contain existing linear delineator panels shall have any damaged or missing panels removed and replaced as directed by the Engineer.

When securing the linear delineator panels to steel plate beam guardrail, the Contractor may use a linear delineation system panel and bracket mounting method approved by the Engineer.

Linear delineation system panel and bracket including installation methods shall be according to the manufacture’s recommendations.

The Contractor shall be responsible for testing the durability and strength of the method used to ensure permanent adhesion of the linear delineator panel to the bridge rail. Drilling into metal bridge rail or other metal surfaces to secure the linear delineator panels will not be permitted.

When removing and replacing missing or damaged linear delineator panels, the existing linear delineator panels and any adhesive or bracket when used to secure the existing linear delineator panels shall be removed to the satisfaction of the Engineer. All cost and labor associated with the removal and cleanup of the existing linear delineator panels shall not be paid for separately but shall be included in the cost of this work.

Each panel shall not be less than 34 inches in length and 4.00 inches in width. The panels shall be constructed of cube-corner retroreflective material in standard highway colors permanently bonded to an aluminum substrate. The lateral edges of each panel shall be hemmed. The panel assembly shall have a repeating raised lateral ridge every 2.25 inches. Each ridge shall be 0.34 inches high with a 45° profile and a 0.28-inch radius top.

Daytime color requirements shall be determined from measurement of the retroreflective sheeting applied to aluminum test panels. Daytime color shall be measured instrumentally using a spectrophotometer employing annular 45/0 (or equivalent 0/45) illuminating and viewing geometry. Measurements shall be made in accordance with ASTM E1164 for ordinary colors or ASTM E2153 for fluorescent colors. Chromaticity coordinates shall be calculated for CIE Illuminant D65 and the CIE 1931 (2o) Standard Colorimetric Observer in accordance with ASTM E308 for ordinary colors or ASTM E2152 for fluorescent colors.

Chromaticity Limits for White

	x	y	x	y	x	y	x	y	Limit Y (%) Min	Max
White	0.303	0.287	0.368	0.353	0.340	0.380	0.274	0.316	40	-

Chromaticity Limits for Fluorescent Yellow

	x	Y	x	Y	x	y	x	y	Total Luminance Factor YT (%) Min
Fluor. Yellow	0.521	0.424	0.557	0.442	0.479	0.520	0.454	0.491	40

Inspection of Linear Delineator Panels

The linear delineator panels installed under this contract will be inspected following installation, in addition, they will be inspected following a winter performance period that extends 180 days from December 30th.

Within 15 calendar days after the end of the winter performance period, a final performance inspection will be made. If this inspection discloses any work which is not visibly intact and serviceable, the Contractor shall, within 30 calendar days, completely repair or replace such work to the satisfaction of the Engineer.

Measured in its entirety, the work shall be 97 percent intact.

Upon completion of the final performance inspection, or after satisfactory completion of any necessary corrections, the Engineer shall notify the Contractor in writing of the date of such final performance inspection and release him/her from further performance responsibility.

This delay in performance inspection and performance acceptance of the linear delineator panels shall not delay acceptance of the entire project and final payment due if the contractor requires and receives from the subcontractor a third party “performance” bond naming the Department as obligee in the full amount of all linear delineator panels listed in the contract, multiplied by the contract unit price. The bond shall be executed prior to acceptance and final payment of the non-linear delineator panel items and shall be in full force and effect until final performance inspection and performance acceptance of the linear delineator panels. Execution of the third-party bond shall be the option of the Contractor.

Basis of Payment: This work, including all materials, equipment, and labor necessary to complete the work as described will be paid for at the contract unit price per Each for LINEAR DELINEATOR PANELS, 4 INCH.

Designer Note: Check with Operations (Traffic) prior to including this special provision. Intended to be used when conduit is trenched through stabilized shoulder to access detector loop. The pay item noted below is not currently in the coded pay item book. Discuss with the District Estimator prior to use. Pay Item No. is X8190205.

TRENCH AND BACKFILL, SPECIAL FOR CONDUIT INSTALLATION BENEATH HOT-MIX ASPHALT SHOULDERS

Effective: March 21, 1994 Revised: November 6, 2020

This work shall consist of constructing a trench beneath the hot-mix asphalt paved shoulder and backfilling it.

The trench shall be constructed in accordance with and at the locations specified in the plans or as directed by the Engineer. The sides of the trench shall be saw-cut through the full depth of the hot-mix asphalt shoulder material.

The trench shall be not less than 24" (600 mm) in depth. The width shall be as required to accommodate the appropriate number of conduits required at each specified location. The bottom of the trench shall be tamped and the trench inspected by the Engineer before the conduits are placed in the trench.

All trenches shall be backfilled as soon as possible after the installation of the conduits. The trench shall be backfilled in accordance with Section 208 of the Standard Specifications. Cinders, rocks, or other deleterious materials will not be permitted in the backfilling material.

Backfilling materials shall be deposited in the trench in layers not to exceed 6" (150 mm) in depth, and shall be thoroughly compacted with a mechanical tamper before the next layer is deposited in the trench.

Hot-Mix Asphalt surfacing shall be used to restore the shoulders to the existing grade. The bituminous material shall be compacted and finished as directed by the Engineer.

This work will be paid for at the contract unit price per Foot (Meter), measured in place along a line perpendicular to the roadway centerline and between the edge of pavement and the outside edge of the shoulders, for TRENCH AND BACKFILL FOR ELECTRICAL WORK (SPECIAL).

Designer Note: Insert into contracts with existing detector loops that are to be replaced after bituminous surface removal destroys the loops. You will likely need "EXISTING DETECTOR LOOP RISER" also.

*****Show detector loop locations on the plans.

DETECTOR LOOPS, TYPE 1

Effective March 1, 1996 Revised November 6, 2020

This work shall be in accordance with Sections 886 and 1079 of the Standard Specifications except as modified herein.

All detector loops shall utilize a separate pair of lead-ins and a Type II splice shall be used for all detector lead-ins.

All proposed detector loops shall be cut in the proposed binder course or milled surface prior to the final overlay.

All detector loops shall be re-installed in the original locations. The Engineer of Traffic shall be notified prior to detector loop installation. Please contact Ben Tellefson, Operations, at (309) 671-4477 forty-eight (48) hours prior to milling.

The above work will be paid for at the contract unit price per Foot (Meter) for DETECTOR LOOP, TYPE I.

Designer Note: Insert into contracts where "DETECTOR LOOP, TYPE 1" is used to replace loops removed by cold milling.

ADJUST EXISTING DETECTOR LOOP RISER

Effective: November 7, 2014 Revised: November 6, 2020

This work shall be in accordance with the applicable Articles of Sections 886 and 1079 of the Standard Specifications with the following modifications:

This work shall consist of the following:

- The Contractor shall locate all existing detector loop risers at an intersection prior to milling and mark their locations so that the loop risers can be located after the final bituminous surface is installed.

- The Contractor shall return to the intersection after the final bituminous surface has been installed and locate the detector loop risers.

- The Contractor shall chip out the bituminous surface as required to expose the detector loop risers.

- The Contractor shall fill the detector riser opening with Bondo so that the detector loop riser can be easily identified.

Basis of Payment: This work will be paid for at the contract unit price per Each for ADJUST EXISTING DETECTOR LOOP RISER.

Designer Note: Use when full depth patching or partial depth patching through intersections utilizing detector loops to trigger signal changes. Contact Operations (Eric Howald) to verify if loops are present and if this special shall be included. The intent is to avoid damaging the loops and not having to replace them when just performing a patching project. There are two fill-ins to be addressed. The first is for listing locations with loops. The second is for listing locations using cameras.

MISCELLANEOUS ELECTRICAL WORK

Effective: August 5, 2022

The Contractor shall perform the following items:

Location of Existing Detector Loops, Lead-In, and Loop Risers

A minimum of seventy-two hours prior to milling operations, the Contractor shall hire a qualified electrical contractor to locate all of the existing detector loops, lead-ins, and detector loop conduit risers along _____. The Contractor shall mark the locations of all existing facilities on the pavement and discuss these locations with the Resident Engineer so that accommodations can be made to adjust the depth of roto-milling operations at these locations to prevent the existing detector loops from being damaged.

The Contractor shall examine each traffic signal cabinet and make an inventory of the existing detector loops prior to locating to ensure that all of the existing detector loop facilities are located.

The intersections at _____ are equipped with video detection and do not require locating.

The Contractor may request plans for the intersections from the Department, if plans are available.

The Contractor shall verify all field conditions prior to bidding. There will be no additional compensation for this work.

Basis of Payment: This work will be paid for at the contract unit price per Lump Sum for MISCELLANEOUS ELECTRICAL WORK and shall be payment in full for all labor, materials, and equipment required to locate and mark the existing detector loop facilities as described above, complete.

Designer Note: Insert into any project with Concrete Pavement pay items.

PCC SLIPFORM PAVING AGGREGATE OPTIMIZATION

Effective: August 3, 2012 Revised: January 1, 2022

Delete Note 7/ of Article 1004.01(c) and replace Article 1004.02(d)(1) with the following:

For the slipform paving of concrete pavement, the Class PV concrete shall be uniformly graded. This may be accomplished by using a uniformly graded single coarse aggregate, or by blending two or more coarse aggregate sizes. As a minimum for multiple coarse aggregate sizes, CA 7 or CA 11 shall be blended with CA 13, CA 14, or CA 16. The final single coarse aggregate or combined coarse aggregate gradation shall have minimum 45 percent and maximum 60 percent passing the 1/2 in. (12.5 mm) sieve. However, the Contractor may propose for approval by the Engineer an alternate uniformly graded concrete mixture using the information in the "Portland Cement Concrete Level III Technician Course – Manual of Instructions for Design of Concrete Mixtures".

Designer Note: Insert into all new construction bridge projects involving the Concrete Superstructure and Concrete Wearing Surface pay items.

PCC SUPERSTRUCTURE AGGREGATE OPTIMIZATION

Effective: August 4, 2006 Revised: January 1, 2022

Delete Note 7/ of Article 1004.01(c) and replace Article 1004.02(d)(1) with the following:

For the bridge superstructure and bridge approach slab, the Class BS concrete shall be uniformly graded.

This may be accomplished by using a uniformly graded single coarse aggregate, or by blending two or more coarse aggregate sizes. As a minimum for multiple coarse aggregate sizes, CA 7 or CA 11 shall be blended with CA 13, CA 14, or CA 16. The final single coarse aggregate or combined coarse aggregate gradation shall have minimum 45 percent and maximum 60 percent passing the 1/2 in. (12.5 mm) sieve. However, the Contractor may propose for approval by the Engineer an alternate uniformly graded concrete mixture using the information in the "Portland Cement Concrete Level III Technician Course – Manual of Instructions for Design of Concrete Mixtures".

For bridge decks and bridge approach slabs, the as-placed water cement ratio shall be between 0.39 and 0.41. The coarse aggregate shall be listed on the Department’s Bureau of Materials and Physical Research "Freeze Thaw Rating List".

Concrete Superstructures Aggregate Optimization will not be paid for separately but shall be considered as included in the unit cost of CONCRETE SUPERSTRUCTURES.

Designer Note: Permits sub-standard coarse aggregate for use in Bituminous Surface Treatment (Class A-1, A-2, A-3). Used for stone quarries (local aggregates) in western section of District. Approximate dividing line is IL Route 97. Check with Materials prior to using this provision.

COARSE AGGREGATE FOR BITUMINOUS COURSES, CLASS A

Effective June 29, 1993 Revised January 1, 2007

The aggregate shall conform to Article 1004.03 of the Standard Specifications for Road and Bridge Construction, adopted by the Department of Transportation, except that one, but not both, of the following revisions to Article 1004.03(c) will apply:

1. Revise the maximum allowable percentage of weighted average loss when the material is subjected to five (5) cycles of the sodium sulfate soundness test from 20% as shown under Class C of the quality chart in Article 1004.01(b) of the Standard Specifications to 30%.

2. Revise the maximum allowable percentage of wear as determined by the Los Angeles Abrasion Method from 40%, as shown under Class C of the quality chart in Article 1004.01(b) of the Standard Specifications to 60%.

Designer Note:

1. In order to facilitate the use of available local crushed stone aggregates, which do not meet the Standard Specifications, the following Special Provision should be considered when you have the following pay items:

    A. Granular Embankment, Special
    B. Sub-base Granular Material
    C. Aggregate Shoulders
    D. Aggregate Surface Course
    E. Aggregate Base Course
    F. Erosion Control Aggregate

2. Check with the District Bureau of Materials to see if this Special Provision should be used. Intended for the Western area of District - approximate dividing line is IL 97.

3. Be sure to include this Special Provision when you have incidental aggregate items, such as the granular sub-base under approach slabs when in the areas as specified in E. above.

4. When constructing large quantities of new roadway pavement, consider modifying the first paragraph of the special and removing items, such as, Granular Embankment, Special and Sub-base Granular Material. This will allow the local aggregates to be used where they won't impact the long-term pavement support.

9-23-96 – Revised Article.

AGGREGATE QUALITY

Effective: July 1, 1990 Revised: April 26, 2013

Coarse aggregate for Granular Embankment Special, Sub-base Granular Material, Aggregate Shoulders, Aggregate Surface and Base Courses, and Erosion Control Aggregate shall conform to Article 1004.04 of the Standard Specifications for Road and Bridge Construction except that all of the following revisions to Article 1004.04(b) shall apply unless the Contractor chooses to use RAP for aggregate shoulders:

1. Revise the maximum allowable percentage of weighted average loss when the material is subjected to five (5) cycles of sodium sulfate soundness test from 25%, as shown under the Class D of the Quality Chart in Article 1004.01(b) of the Standard Specifications, to 40%; and

2. Revise the maximum allowable percentage of wear as determined by the Los Angeles Abrasion Method from 45%, as shown under Class D of the Quality Chart in Article 1004.01(b) of the Standard Specifications, to 65%; and

3. The sum of the percentages of weighted average loss when the material is subjected to 5 cycles of the sodium sulfate soundness test and the percentage of wear as determined by the Los Angeles Abrasion Method shall not exceed 95%.

Designer Note: Insert into all projects with PCC pavement pay items.

MEMBRANE CURING METHOD

Effective: July 29, 2016
Revised: November 17, 2017

Revise Article 1020.13(a)(4) paragraph 2 to read:

"After all finishing work to the concrete surface has been completed, the surface and all exposed edges shall be sealed with membrane curing compound of the type specified within ten minutes. The seal shall be maintained for the specified curing period. The edges of the concrete shall, likewise, be sealed within ten minutes after the forms are removed. Two separate applications, applied at least one minute and no more than fifteen (15) minutes apart, each at the rate of not less than 1 gal./250 sq. ft. (0.16L/sq. m) will be required upon the surfaces and edges of the concrete. These applications shall be made with the mechanical equipment specified. Type III compound shall be agitated immediately before and during the application.

Designer Note: Insert into all contracts with PCC items.

PCC QMP ELECTRONIC REPORT SUBMITTALS

Effective: January 13, 2022

The Contractor's QC personnel shall be responsible for electronically submitting the following reports to the Department: PRO and IND data for BMPR MI654 "Air, Slump, & Quantity"; PRO data for BMPR MI655 "PCC Strength"; and PRO data for BMPR MI504 "Field/Lab Gradation". The format for the electronic submittals will be the "QMP" reporting program which will be provided by the Department. Microsoft Office 2007 or newer is required for this program which must be provided by the Contractor.

Designer Note: Include in all contracts with cast in place concrete items.

PCC AUTOMATIC BATCHING EQUIPMENT

Effective: April 23, 2010 Revised: August 1, 2023

Portland cement concrete provided shall be produced from batch plants that conform to the requirements of Article 1103.03 (a) and (b) of the Standard Specifications for Road and Bridge Construction. Semi-automatic batching will not be allowed.

Plants shall have computerized batching interfaced with a printer. IDOT Producer Number, IDOT Concrete Material Code, batch weights, aggregate mixtures, water added, amount of each admixture or additive, and percent variance from design shall be printed for each batch. The ticket shall state the actual water-cement ratio as batched, and the amount of water that can be added to the batch without exceeding the maximum water-cement ratio. Truck delivery tickets will still be required as per Article 1020.11 (a)(7) of the Standard Specifications.