

# ALBANY PARKS ADA RAMPS

- 6.0 STANDARD DETAILS



#### **GENERAL NOTES:**

ALL WORK AND MATERIALS SHALL CONFORM TO THE CITY OF ALBANY STANDARD CONSTRUCTION SPECIFICATIONS AND THE ODOT 2024 STANDARD CONSTRUCTION SPECIFICATIONS. UNLESS NOTED OTHERWISE. THE CURRENT VERSION OF THE CITY OF ALBANY STANDARD CONSTRUCTION SPECIFICATIONS CAN BE FOUND ON THE CITY'S WEBSITE AT www.cityofalbany.net. THE CURRENT ODOT STANDARD CONSTRUCTION SPECIFICATIONS CAN BE FOUND AT https://www.oregon.gov/odot/Business/Specs/2024\_STANDARD\_SPECIFICATIONS.pdf.

THE LOCATION OF EXISTING UTILITIES SHOWN ON THE PLANS IS APPROXIMATE AND SHOWN FOR INFORMATION PURPOSES ONLY. THE CONTRACTOR SHALL HAVE ALL UTILITIES LOCATED PRIOR TO COMMENCING CONSTRUCTION AND SHALL COORDINATE WITH THE ENGINEER THE LOCATION, ADJUSTMENT OR REPLACEMENT OF ANY UTILITY OR RELATED STRUCTURE AS MAY BE NECESSARY. ADDITIONAL UNDERGROUND UTILITIES MAY EXIST. FOR A FIELD LOCATE, CALL THE UTILITIES NOTIFICATION CENTER AT 1-800-332-2344.

THE CONTRACTOR SHALL CONTROL TRAFFIC THROUGH AND ADJACENT TO THE PROJECT SITE IN CONFORMANCE WITH THE LATEST EDITION OF "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES." THE CONTRACTOR SHALL AT ALL TIMES MAINTAIN LOCAL ACCESS FOR RESIDENTS LIVING IN THE PROJECT SITE.

TRAFFIC CONTROL, ACCESS, AND PROTECTION OR TEMPORARY PROVISION OF UTILITIES RELATING TO UNINTERRUPTED UTILIZATION OF EXISTING BUILDINGS ADJACENT TO THE PROJECT SITE OR AFFECTED BY PROJECT WORK OPERATIONS SHALL BE PROVIDED.

THE CONTRACTOR SHALL PROVIDE ON-SITE PARKING OF CONTRACTOR & CONSTRUCTION RELATED VEHICLES AT ALL TIMES DURING CONSTRUCTION WITHIN THE WORK AREA. TO BE LOCATED IN A DESIGNATED STAGING AREA TO BE AGREED UPON WHEN PROJECT BEGINS.

AT ALL TIMES THAT WORK IS BEING PERFORMED CONTRACTOR SHALL HAVE A FULL SET OF CONTRACT DOCUMENTS ON SITE AND ALL SUB-CONTRACTORS SHALL HAVE ALL PORTIONS OF CONTRACT DOCUMENTS ON SITE THAT ARE RELEVANT TO THE WORK BEING PERFORMED.

CONTRACTOR IS RESPONSIBLE FOR ALL SAFETY CONSIDERATIONS ON SITE AND RELATING TO THE WORK. INSTALL SECURITY FENCING AS NOTED ON PLANS.

THE ENGINEER AND/OR REECE & ASSOCIATES, INC. HAS NOT BEEN RETAINED OR COMPENSATED TO PROVIDE DESIGN AND CONSTRUCTION REVIEW SERVICES RELATING TO THE CONTRACTORS SAFETY PRECAUTIONS OR TO MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES REQUIRED FOR THE CONTRACTOR TO PERFORM HIS/HER WORK.

TREES, STUMPS, BRUSH ROOTS AND OTHER MATERIAL IN THE WAY OF WORK AND WITHIN THE WORK AREA SHALL BE REMOVED AND DISPOSED OF OFFSITE BY THE CONTRACTOR. MATERIAL SHALL BE DISPOSED OF IN A MANNER AS TO MEET LOCAL REGULATIONS. NO CLEARING, STAGING OR STOCKPILING MAY OCCUR OUTSIDE THE WORK AREA EXCEPT AS INDICATED ON THE PLANS. ALL TOPSOIL SHALL BE STOCKPILED ON SITE AT LOCATIONS SHOWN ON THE DRAWINGS OR INDICATED IN THE SPECIFICATIONS OR AS DESIGNATED BY OWNER.

OPERATING ACCESS FOR CITY MAINTENANCE PERSONNEL TO EXISTING AND NEW WATER VALVES AND MANHOLES SHALL BE CONTINUOUSLY MAINTAINED BY THE CONTRACTOR DURING ALL CONSTRUCTION ACTIVITIES.

CONTRACTOR SHALL VERIFY ALL EXISTING PIPE ELEVATIONS, PIPE DIAMETERS, AND PIPE MATERIALS AT CONNECTION AND ABANDONMENT LOCATIONS PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED TO ENGINEER PRIOR TO BEGINNING WORK.

DISCHARGE OF GROUNDWATER OR STORMWATER TO THE SANITARY SEWER IS STRICTLY PROHIBITED. (AMC 10.06).

ALL EXCAVATIONS SHALL BE BACKFILLED OR STEEL SHEETED BY THE END OF EACH WORKING DAY.

THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERETO APPURTENANT.

NO SITE PREPARATION, SITE DISTURBANCE, BACK EXCAVATION OR OTHER CONSTRUCTION SHALL BE COMMENCED UNTIL ALL PERMITS REQUIRED BY OTHER LAWS, ORDINANCES, RULES OR REGULATIONS SHALL HAVE BEEN ISSUED.

THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT ALL EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY AND ALL DAMAGES DONE TO EXISTING UTILITIES DUE TO HIS/HER NEGLIGENCE SHALL BE IMMEDIATELY AND COMPETENTLY REPAIRED AT HIS/HER EXPENSE.

NO DEBRIS SHALL BE BURIED ON THIS SITE.

THE OWNER SHALL PROCURE ALL PERMITS. THE CONTRACTOR SHALL CONFORM TO ALL PERMITS AND INSPECTIONS REQUIRED BY THE CITY, COUNTY, ODOT, AND OTHER AGENCIES AS REQUIRED.

CONTRACTOR SHALL PROVIDE ALL BONDS AND INSURANCE REQUIRED BY PUBLIC AND/OR PRIVATE AGENCIES HAVING JURISDICTION.

UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER, CONSTRUCTION OF ALL PUBLIC FACILITIES SHALL BE PERFORMED BETWEEN 7:00 A.M. AND 6:00 P.M., MONDAY THROUGH FRIDAY.

ANY INSPECTIONS BY THE PROJECT ENGINEER, CITY, COUNTY, OR OTHER AGENCIES SHALL NOT, IN ANY WAY, RELIEVE THE CONTRACTOR FROM ANY OBLIGATION TO PERFORM THE WORK IN STRICT COMPLIANCE WITH THE APPROVED CONSTRUCTION DRAWINGS, PROJECT REPORTS, PROJECT SPECIFICATIONS, APPLICABLE CODES AND AGENCY REQUIREMENTS.

CONTRACTOR SHALL PROCURE AND CONFORM TO CITY OF MILLERSBURG EROSION AND SEDIMENT CONTROL PERMIT FOR CONSTRUCTION ACTIVITIES.

THE CONTRACTOR SHALL COORDINATE AND PAY ALL COSTS ASSOCIATED WITH CONNECTING TO EXISTING UTILITY FACILITIES.

CONTRACTOR SHALL PROVIDE ALL MATERIALS, EQUIPMENT, MANPOWER AND FACILITIES REQUIRED FOR TESTING ALL UTILITY PIPING IN ACCORDANCE WITH CITY STANDARDS AND/OR THE CURRENT STATE OF OREGON PLUMBING SPECIALTY CODE.

CONTRACTOR TO ACQUIRE ALL PERMITS REQUIRED PER LOCAL BUILDING CODES INCLUDING BUILDING, MECHANICAL, PLUMBING, AND ELECTRICAL.

#### DIVISION 2 - GENERAL TECHNICAL REQUIREMENTS 201 MOBILIZATION

#### 201.01.00 DESCRIPTION

Mobilization is the work necessary to move sufficient personnel, materials, and equipment onto the job site to commence construction.

201.02.00 CONSTRUCTION

The contractor shall mobilize personnel, materials, and equipment and set up construction facilities within designated or approved areas.

202 TEMPORARY TRAFFIC CONTROL

#### 202.01.00 MATERIALS AND APPLICABLE REGULATIONS

The term "traffic control devices" shall include barricades, detour and warning sig traffic delineators, flagpersons, and any other devices or personnel of whatever r or function that are necessary to conduct construction operations in a manner that protect the public and offer the least possible obstruction and inconvenience to r and pedestrians.

Traffic control devices and their application to the work shall conform to the most edition of:

Manual on Uniform Traffic Control Devices (MUTCD), published by the U.S. Dep of Transportation; Oregon supplements to the MUTCD published by the Oregon Department of Transportation; and Oregon Temporary Traffic Control Handbook, published by the Oregon Department of Transportation.

Traffic control devices shall be clean and free of stains, excessive wear, or other damage as determined by the City Engineer.

#### 202.02.00 CONSTRUCTION

The fabrication, application, and maintenance of traffic control devices shall conf provisions in the contract documents and to applicable sections of the MUTCD. The contractor shall place, relocate, or remove traffic control devices as often as

necessary to reflect changing road and traffic conditions. No construction shall commence or continue without required traffic control devices located as required contract documents or the MUTCD.

During construction at any location, additional traffic control devices and flagpers shall be used as necessary, or as directed by the City Engineer, to isolate the popublic right-of-way under construction and to advise motorists or pedestrians of a detours.

When, in the judgment of the City Engineer, vehicular parking is a hazard to through-traffic or to the work, the contractor shall furnish and place "NO PARKING signs on any street that is directly involved in the construction work.

202.02.01 ACCESS TO PUBLIC AND PRIVATE PROPERTY

When access to private, public, or commercial property will be denied or impaired contractor shall give agencies providing emergency services and occupants of af properties advance notice of such restricted access in accordance with applicable requirements in Section 105 CONTROL OF WORK. For commercial properties, i addition to required notifications, the contractor shall provide and maintain approsigning to advise potential customers and commercial traffic of alternate routes to property.

#### 202.02.02 DETOURS

The contractor shall construct and maintain temporary detours for protection of the and the safe passage of traffic around the work area as required in the contract documents, the MUTCD, or as directed by the City Engineer. When detours are never available, the contractor shall confine operations to a width that provides for safe passage of traffic. If, in the judgment of the City Engineer, one-way piloted traffic necessary, the contractor shall provide at least two flagpersons to control traffic, flagperson being stationed at each end of the roadway being limited to restricted and furnish a pilot car and driver to lead traffic. At the end of each day, the proje shall be left in such condition that it can be traveled without damage to the work a without danger to pedestrians and motor vehicle traffic.

#### 202.02.03 NONCOMPLIANCE WITH SPECIFIED REQUIREMENTS

Partial compliance or failure on the part of the contractor to provide and maintain temporary traffic control as specified in the contract documents, or as directed by City Engineer, will result in a suspension of work or a reduction in payment for traccontrol, or both, until such time the contractor is in compliance with specified requirements. In situations involving an immediate hazard to traffic, the City Engineary, at his/her discretion, have the necessary traffic control established by others the costs thereof deducted from any payment due the contractor.

#### 203 CLEARING AND GRUBBING

203.01.00 DEFINITION

Clearing and grubbing is work necessary to remove and dispose of debris and vegetation within the designated limits and to protect structures, objects, and veg that are designated to remain in place.

#### 203.02.00 MATERIALS

203.02.01 EXPLOSIVES

Explosives shall be supplied, stored, and used in conformance with Subsection 107.18.00 USE OF EXPLOSIVES.

#### 203.03.00 CONSTRUCTION

Trees, shrubs, plant growth, sod, topsoil, and organic earth shall be removed with designated areas. The work area shall be cleared above and below the natural g surface of all debris and other objectionable materials. Tree stumps shall be con removed to a depth not less than 24 inches below any subgrade within the design excavation area.

Grass and sod on areas to be occupied by fills shall be removed to a depth not le 18 inches below subgrade or the slope surface on which the fill is to be constructed Mail boxes in the work area shall be temporarily relocated to allow clearing and excavation as well as easy access by mail carriers and residents. Upon completi excavation, mail boxes shall be permanently restored to original locations or as sp in the contract documents.

#### 203.03.01 PROTECTION OF EXISTING SITE FEATURES

#### 203.03.01A TREES AND VEGETATION

Trees, shrubs, and other vegetation not designated for removal shall be protect from damage caused by the work. The contractor shall provide construction fe or other resources approved by the Engineer to visibly define the limits of work Construction activities shall not occur within the preserved areas defined by th of work delineators. Construction fencing and other delineators shall not be pl within the dripline of trees being preserved. The contractor shall cut and remotrees and branches only where approved by the City Engineer. When directed City Engineer, the contractor shall remove additional branches to provide a ba appearance of any tree.

#### 203.03.02 SALVAGEABLE MATERIALS

Owners of property adjacent to the work shall have salvage rights to plants, tre shrubs, fences and other improvements in the right-of-way.

Owner reserves the right to merchantable timber as designated in the contract documents and as marked at the project site by the City Engineer. Designate merchantable timber shall be cut, trimmed, and handled as directed in the con documents. Contractor shall assume ownership and remove and dispose of a timber and waste materials.

ENTS	DIVISION 2 - GENERAL TECHNICAL REQUIREMENTS (CONT'D)	DIVISION 2 - (CONT'D)
	204 EXCAVATION, BACKFILL, AND OTHER SITE WORK	204.03.02 PRO
, and	204.01.00 DEFINITIONS	The contractor s starting work of
	204.01.01 UNCLASSIFIED EXCAVATION Excavation, regardless of type, nature, or condition of materials encountered	survey monume
t up	unless separately designated. The contractor shall assume full responsibility to estimate the kind and extent of various materials to be encountered in order to accomplish the work.	City Engineer. damage, the con appropriate prot
	204.01.02 TRENCH EXCAVATION	
	Excavation encountered in the trench to the depths and widths as shown and shall	204.03.02A I The contract
ning signs, atever nature	204.01.03 BORROW MATERIAL	survey marke
nner that will	Material obtained from sources lying outside of, separated from, or independent of	Restoration c
	planned excavation occurring within the project limits.	performed by monuments y
e most recent	The furnishing, placing, and compacting of specified materials to the depth and	
S. Department	configuration specified in the contract documents.	204.03.03 PRO The contractor s
)regon	The removal of unsuitable material in the bottom of an excavation and replacement	endangered by
r other	with specified material for support of a roadbed, pipe, structure, or appurtenances thereto.	damage to such from the introdu indirectly from a
	Adterial supplied and placed under and partially around the pipe in accordance	The contractor s
all conform to	with the appropriate standard detail.	the contract doc
ITCD.	204.01.07 PIPE ZONE The full width of tranch from subgrade to a point 10 inches above the ten outside	equivalent to the
ften as shall	surface of the barrel of pipe.	replacing, or oth restoration work
required by the	204.01.08 TRENCH BACKFILL	The contractor s
agpersons	Material supplied and placed in the trench between the pipe zone and the base course for surface improvements or restoration.	possessions as
the portion of	204.01.09 BASE COURSE	other improvemed be destroved or
ans of available	Material supplied and placed between the trench backfill and the bottom of pavement surface or other structures constructed over the trench	The contractor s
to	204.01.10 OVERBREAK	right-of-way or e operations to mi
ARKING	Any material that is excavated, displaced, or loosened outside and beyond slopes, lines, or grades as staked or reestablished, regardless of whether overbreak is due to blasting, to inherent character of any formation encountered, or to any other	204.03.04 EXIS
mpaired, the	cause.	204.03.04A
plicable	204.02.00 MATERIALS	The approxir expected to b
erties, in n appropriate	Fill and borrow materials shall be of a type specified in the contract documents.	documents.
outes to the	Generally, fill and borrow material shall be bank-run or river-run gravel, or crushed aggregate depending upon the intended application. Fill materials shall be free of organic matter, clay, or other materials or conditions detrimental to construction of	included in th
on of the work	firm, dense, and sound fills.	204.03.04B
ntract	204.02.02 FOUNDATION STABILIZATION	surface and
or safe	205.03.03 FOUNDATION STABILIZATION MATERIAL.	are to remain
d traffic is traffic. one	204.02.03 PIPE ZONE MATERIAL	to determine
stricted use,	Bedding and backfill in the pipe zone for the installation of rigid and flexible pipes and conduits shall conform to applicable requirements in Subsection 205.03.02 TRENCH	Hand methoo endangering
e project area e work and	BACKFILL.	location of su
	204.02.04 NATIVE BACKFILL MATERIAL	The contract
aintain	contract documents or approved by the City Engineer.	all damage to
cted by the	Native material excavated from within limits of the project and imported native-type materials shall be free of organic matter, day, or other materials or conditions	disclosed du
ied	detrimental to meeting specified compaction requirements.	204.03.04C
ty Engineer v others with	Maximum particle size for trench backfill shall not exceed four inches in any dimension	The contract relocated or
,		that have be
	Materials for select backfill shall conform to applicable requirements in Subsection	the location a shall include
	205.03.02 TRENCH BACKFILL.	support adjad
and and vegetation	204.02.06 TOPSOIL	needed.
Ū	topsoil, representative of local productive soil that is free of rocks, clay, or other	The contract
	foreign matter. Topsoil shall have a pH of 5.0 to 7.0, and not less than three percent humus as determined by loss on ignition of moisture-free samples dried at 100° C.	by the City E
	Topsoil shall be free of noxious vegetation and their seeds. Should such regenerative material be present in the soil, resultant growth, both surface and root, shall be	The contract
ection	removed and replaced to original specifications at the contractor's expense within one	indirectly from
	year of acceptance of the work. Existing topsoil may be reused only where specified in the contract documents or	limited to wat basins; culve
ved within	authorized by the City Engineer.	
atural ground	204.02.07 EXPLOSIVES	204.03.04D
e designated	Explosives shall be supplied, stored, and used in conformance with Subsection 107 18 00 USE OF EXPLOSIVES	during the co
h not less than	204 03 00 GENERAL CONDITIONS	utilities shall
instructed.		nearest joint
g and completion of	The contractor shall give notice to the City Engineer not less than three working days	in the approp
or as specified	in advance of when City provided survey services will be required in connection with any portion of the work.	specified her
	The City Engineer will furnish and set construction stakes or marks establishing	The repair of
	contract. The contractor shall be responsible for the transfer of the lines and grade to	of the duity.
e protected	the work. The City Engineer will not transfer the offset lines or grades for trenching operations, into the work area for any phases of street construction, to batterboards	<u>204.03.04E</u>
uction fencing	or any other point within the work.	The owner a
ed by the limits	The contractor shall preserve construction stakes and marks for the duration of their usefulness during construction.	new installati
not be placed nd remove	Upon completion, all work shall conform to the lines, elevations, and grades	contractor sh work to be ad
directed by the	reierenced by construction staking established by the City Engineer.	waiting or "do
ue a valanced	<b>204.03.01A REPLACEMENT OF CONSTRUCTION STAKES AND MARKS</b> Disturbed, damaged, or lost construction stakes and marks will be replaced or restored by the City Engineer.	
and to	If any construction stakes or marks are disturbed, damaged, or lost through	<b>204.03.05 S/</b> Frame and c
ants, trees,	negligence of the contractor, and in the judgment of the City Engineer need to be replaced, the actual replacement cost of the construction stake or marker will be	materials fro
contract	deducted from payments due the contractor.	property of the delivered to t
signated the contract		Other salvag
ose of all other		be disposed

## DIVISION 2 - GENERAL TECHNICAL REQUIREMENTS (CONT'D)

**204.03.02 PROTECTION OF SURVEY MARKERS AND MONUMENTS** The contractor shall notify the City Engineer not less than three working days prior to starting work of precautions the contractor will take to ensure the preservation of survey monuments, property pins, bench marks, and other permanent survey markers. Permanent survey markers shall not be disturbed without the consent of the City Engineer. Where permanent survey markers are at risk of construction related damage, the contractor, at the contractor's expense, shall provide and maintain appropriate protection for the marker in a manner approved by the City Engineer.

### 204.03.02A REPLACEMENT OF SURVEY MARKERS AND MONUMENTS

The contractor shall bear the expense of restoring or replacing any permanent survey markers and monuments that are disturbed without consent of the City

Restoration or replacement of permanent survey markers and monuments will be performed by the City. The actual cost to replace or restore survey markers or monuments will be deducted from payments due the contractor.

#### 204.03.03 PROTECTION OF PROPERTY

The contractor shall protect all public and private property, insofar as it may be endangered by operations and shall take every reasonable precaution to avoid damage to such property. The contractor shall at all times protect surface waters from the introduction of eroded sediments or other pollutants resulting directly or indirectly from any aspect of the work.

The contractor shall be responsible for the restoration or replacement of any public or private improvement, facility, or structure that is visibly evident or correctly shown in the contract documents and is damaged directly or indirectly by any act, omission, or neglect in the execution of the work. The contractor shall restore to a condition equivalent to that existing before such damage occurred, by repairing, rebuilding, replacing, or otherwise effecting restoration thereof. Costs associated with such restoration work shall be borne by the contractor.

## The contractor shall give reasonable notice to occupants of buildings on property adjacent to the work to permit the occupants to remove vehicles, trailers, and other possessions as well as salvage or relocate plants, trees, fences, sprinkler systems, or

other improvements in the right-of-way that are designated for removal or which might be destroyed or damaged by work operations. The contractor shall protect designated trees and planted areas within the

ight-of-way or easements. The contractor shall exercise care and conduct operations to minimize damages to other planted areas.

#### 204.03.04 EXISTING UTILITIES AND IMPROVEMENTS

#### 204.03.04A LOCATION OF UTILITIES

The approximate location of known underground utilities and other structures expected to be adjacent to or encountered in the work are shown in the contract documents. The information shown is not guaranteed to be precise and complete. Data previously gathered in connection with other public improvements may not be included in the utility information presented.

#### 204.03.04B EXCAVATION

he contractor shall conduct operations in such a manner that existing streets, urface and subsurface utilities, railroad tracks, structures, and other facilities that re to remain in place will not be damaged.

The contractor shall be responsible for excavating far enough ahead of the work to determine the exact location of interfering utilities or underground structures. Hand methods shall be used for excavation that cannot be accomplished without endangering existing or new structures or other facilities. When the approximate ocation of subsurface structures is known, the contractor shall locate such structures by hand excavation prior to utilizing mechanical excavation equipment.

The contractor shall be responsible for costs associated with the repair of any and all damage to contract work or to any utility, whether previously known or disclosed during the work, as may be caused by contractor's operations.

#### 204.03.04C PROTECTION AND MAINTENANCE

The contractor shall protect and maintain existing utilities until they can be relocated or altered by others. The contractor shall protect and maintain utilities that have been relocated by others until the project work has progressed through the location and the utility can be permanently set in place. Protective measures shall include the installation of cribbing, shoring, or whatever means necessary to support adjacent material containing temporary and permanent facilities, or to support the facilities themselves, and maintain such supports until no longer needed.

The contractor shall provide for the flow of sewers, storm drains, or water lines nterrupted during the progress of the work and restore such utilities as directed by the City Engineer or shown in the contract documents.

The contractor shall at all times protect new and existing stormwater facilities from the introduction of eroded sediments or other pollutants resulting directly or indirectly from any aspect of the work. These facilities may include, but are not limited to waters of the state; ditches and drainage swales; curb inlets; catch basins; culverts; manholes; and storm drainage piping.

#### 204.03.04D REPAIR OF UTILITIES DAMAGED DURING CONSTRUCTION

The contractor shall assume responsibility for the repair of utilities damaged during the course of the work. Costs associated with the repair of such damaged utilities shall be borne entirely by the contractor.

Water, storm drain, and sanitary sewer pipe shall be sawcut or removed to the nearest joint and replaced with pipe and mechanical couplers of a type specified in the appropriate section of the Standard Construction Specifications.

The contractor shall install and compact underlying backfill to the density specified herein prior to repairing the utility.

The repair of other utilities shall be as directed by the City Engineer or the owner of the utility.

#### 204.03.04E OWNER MAINTENANCE AND REPAIR

The owner and/or representatives of other utilities shall have the right to enter upon the right-of-way and upon any structure therein for the purpose of making new installations, changes, or repairs required during the course of the work. The contractor shall conduct operations so as to provide the time needed for such work to be accomplished during the progress of the improvement. The cost of waiting or "down" time necessary to accomplish such work shall be borne entirely by the contractor.

#### 204.03.05 SALVAGED MATERIALS

Frame and cover sets, gratings, water system components, and other reusable materials from removed or abandoned structures and systems shall remain the property of the City and shall be salvaged as directed by the City Engineer and delivered to the City's storage area by the contractor.

Other salvageable materials shall become the property of the contractor and shall be disposed of by the contractor away from the site of the work.

#### DIVISION 2 - GENERAL TECHNICAL REQUIREMENTS (CONT'D)

204.03.05A REUSE OF SALVAGED MATERIALS

Salvaged materials of any kind shall not be reused in new work without the written approval of the City Engineer.

#### 204.03.06 GENERAL CLEANUP

The contractor shall maintain a clean and orderly appearance of the work area at all times. Maintenance shall be continuous and without further order from the City Engineer. As the work progresses, the contractor shall remove all dirt, gravel, unused construction materials, refuse, and other debris from areas open to the general public and all roadways are open to traffic.

Failure to maintain the cleanliness of the work area continuously, or at the direction of the City Engineer, will result in the City Engineer having the work done, without further notice to the contractor or the contractor's surety, and the costs thereof will be deducted from any payment due the contractor.

#### 204.04.00 CONSTRUCTION

#### 204.04.01 GENERAL EXCAVATION

Excavation shall include the excavation, removal, and disposal of all natural or manmade materials encountered within limits of excavation specified in the contract documents, including surface and subsurface improvements and fill materials, irrespective of nature or condition. The method of excavation used is optional. Overbreak shall be removed at the contractor's expense.

The contractor shall excavate to the depths and widths designated, allowing for forms, shoring, working space, and surface improvements. Excavation shall not be extended deeper than the elevation specified in the contract documents.

Remaining ends of abandoned pipes, or portions of other items partially removed under this work and that would be left exposed after final excavation, shall be removed to a minimum of 12 inches below the finished grade or elevation. Ends of abandoned pipes in backfill or fill areas shall be plugged with concrete.

The contractor shall notify the City Engineer prior to filling or capping any pipes that are encountered during the course of the work. The contractor shall allow the City Engineer sufficient time to determine whether such pipes should be abandoned or maintained in serviceable condition. The costs of waiting or "down" time to determine serviceability and the subsequent abandonment or repair of such pipes shall be borne by the contractor.

Suitable barricades shall be erected and maintained around all unattended, open excavations, regardless of depth. The use of steel sheets to cover excavations shall be limited to locations where there is daily, ongoing work. Other excavations shall be backfilled and temporarily resurfaced the day they are excavated.

**204.04.01A OVEREXCAVATION AND FOUNDATION STABILIZATION** If, in the judgment of the City Engineer, material at the bottom of an excavation is unsuitable for supporting the structure or utility for which it was intended, the unstable material shall be removed and replaced with compacted foundation stabilization material. Geotextile fabric shall be placed to form a barrier between the existing subgrade material and the foundation stabilization material.

Voids caused by overexcavation under footings shall be filled with concrete of strength equal to that of the footing. Excavation carried below grade lines without approval of the City Engineer shall be replaced with the specified foundation stabilization material at the contractor's expense.

#### 204.04.02 SAWCUTTING AND SURFACE REMOVAL FOR TRENCHES

Slurry, sediments, dust, and other waste created by sawcutting shall be contained within and prevented from moving beyond the immediate sawcutting work zone. The Contractor shall protect against vehicular, equipment, or pedestrian traffic that may cause tracking of the sawcutting waste material. Sawcutting waste material shall be vacuumed and removed from the site concurrently with or immediately upon completion of sawcutting operations.

Concrete and asphalt surfaces shall be cut to full depth with a pavement saw or other suitable pavement cutter prior to excavation of trenches. The method of removal shall preclude or minimize damage to pavement adjacent to the trench. Sawcutting tools shall not "overcut" beyond the extents of the pavement to be removed.

Portland cement concrete pavement, curbs, and sidewalks shall be sawcut to a minimum depth of four inches or one-half the concrete thickness, whichever is greater. During removal of concrete structures, care shall be taken not to damage adjacent concrete. Use of a jackhammer or backhoe to remove concrete shall be limited to areas isolated by sawcutting or existing cold joints. Edges that are spalled or cracked during removal of adjacent material shall be recut. The contractor shall be responsible for recutting edges damaged during surface removal and no payment will be made for additional sawcutting or surface replacement.

Width of cut shall be at least equal to the required width of trench at ground surface and shall follow lines parallel to pipe or conduit centerline. Remove loose, undermined, or damaged pavement. When the distance between the final sawcut pavement edge and a curb, gutter, pavement edge, construction joint, or other concrete structure or improvement will be less than 24 inches, the contractor shall remove the intervening pavement and include that area in the pavement restoration. This requirement is intended to prevent subsequent settlement, displacement, or premature breakup of narrow, noncontiguous sections of pavement.

Pavement, concrete, and other excavated materials shall be removed from the site and not used for trench backfill.

**204.04.02A REMOVAL AND REPLACEMENT OF EXISTING TOPSOIL** Existing topsoil shall be reused only when specified in the contract documents or approved by the City Engineer. When specified or approved for reuse, existing topsoil shall be removed to a depth of at least 18 inches for the full width of the trench to be excavated. Topsoil shall be stockpiled within the construction easement and not mixed with other excavated materials. Topsoil shall be protected from weather conditions or other situations that may render the topsoil unsuitable for reuse. Stockpiled topsoil shall be placed in the top of the backfilled trench to the depth removed and lightly compacted.

Finished grade of topsoil shall conform to the area adjacent to the trench. Damage to adjacent topsoil caused by work operations shall be repaired. Rock, gravel, clay, and any other foreign materials shall be removed from the surface of the ground, the area regraded, and additional topsoil added as required.



## DIVISION 2 - GENERAL TECHNICAL REQUIREMENTS (CONT'D)

#### 205 CONCRETE, ASPHALT, AND AGGREGATE MATERIALS

205.01.00 PORTLAND CEMENT CONCRETE PRODUCTS

### 205.01.01 PORTLAND CEMENT

### 205.01.01A TYPES

### The various types of portland cement and associated properties or characteristics are as follows:

Type I For general use when special properties of other type cements are not required.

Type IA Air-entraining cement for same uses as Type I, where air-entrainment is required. Type II For use when moderate sulfate resistance or moderate heat of hydration is required. Type IIA Air-entraining cement for same uses as Type II, where air-entrainment is required.

Type III For use when high, early strength is required. Type IIIA Air-entraining cement for same use as Type III, where air-entrainment is required. Differing brands or types of cement, or the same brand or type of cement from different plants shall not be mixed during use nor be used alternately.

### 205.01.01B SPECIFICATIONS

Portland cement shall conform to AASHTO M 85 for low alkali cement except as follows: (1) Total alkali content (sodium and potassium oxide calculated as Na20+0.658K20) shall not exceed 0.8 percent.

(2) Types I, IA, III, or IIIA must contain a maximum of 10 percent tricalcium aluminate.
(2) Time of acting tests about the burget and a contain a maximum of 10 percent tricalcium aluminate.

(3) Time-of-setting tests shall be by either the Gillmore Test or the Vicat Test, or both, as the City Engineer may elect.

#### 205.01.01C APPLICATIONS

High, early strength concrete (Type III cement) shall be used when patching trenches in portland cement concrete pavement.

Type II cement concrete shall be used for all sewer and water main construction and appurtenances thereto.

Type I portland cement shall be used when a type is not specified in the contract documents.

#### 205.01.02 PORTLAND CEMENT CONCRETE

#### 205.01.02A MIX DESIGN

Before beginning any concrete work, the contractor shall submit a concrete mix design to the City Engineer for approval. Concrete used in the work shall conform to the approved mix design.

Any requested and authorized alteration to proportions of any of the concrete materials in the mix shall be made at the contractor's sole expense.

#### The mix design shall meet the following requirements:

(1) Entrained air range three percent to six percent (percent by volume). AASHTO T 152(2) Slump range - two inches to four inches. AASHTO T 119

(3) When using <sup>3</sup>/<sub>4</sub>-inch maximum size aggregate, the fine aggregate shall be between 40 percent and 48 percent of the total aggregate used.

(4) When using  $1\frac{1}{2}$ -inch maximum size aggregate, the fine aggregate shall be between 35 percent and 45 percent of the total aggregate used.

#### COMPRESSIVE STRENGTH

Portland cement concrete shall have a compressive strength of 4,000 psi, a maximum aggregate size of 1½ inches, a slump of between two inches and four inches, and a minimum of 658 pounds of portland cement per cubic yard.

#### FLEXURAL STRENGTH

Flexural strength requirements will be specified in the contract documents.

When a minimum flexural strength is specified, the contractor shall conduct such sampling and testing as is necessary to establish a correlation between the compressive and flexural strength for each mix design used in the work.

Prior to commencement of work, the contractor shall submit sufficient written documentation to the City Engineer to demonstrate that the concrete will meet the specified requirements.

#### 205.01.02B AGGREGATES

Aggregates used in the production of portland cement concrete shall conform to requirements in Section 02690 - PCC AGGREGATES of the Oregon Standard Specifications for Construction.

#### 205.01.02C WATER

Potable water shall be used in all work.

#### 205.01.02D ADMIXTURES

AIR-ENTRAINING ADMIXTURES

Air-entraining admixtures shall conform to AASHTO M 154 (ASTM C 260). Chloride content of admixture must not exceed 0.5 percent by weight.

WATER-REDUCING, RETARDING, AND ACCELERATING ADMIXTURES Water reducing, retarding, and accelerating admixtures shall conform to AASHTO M 194 (ASTM C 494) using one or more of several tests as the City Engineer may direct. Chloride content of admixture must not exceed 0.5 percent by weight.

#### MINERAL ADMIXTURES

The use of fly ash requires approval of the City Engineer. Where approved, the weight of fly ash shall not exceed 20 percent of the weight requirement for portland cement. Fly ash shall conform to applicable requirements in ASTM C 141, 595, and 618.

#### 205.01.02E SAMPLING AND TESTING

During progress of work, if concrete strength and quality as determined by sampling and testing conducted by the City Engineer fail to attain the requirements specified, the contractor shall suspend all concrete work and make necessary adjustments to obtain required results.

Portland cement concrete shall be sampled and tested in accordance with the following ASTM test methods:

AS IN lest methods.		
(1)	Sampling Fresh Concrete	

(1)	Sampling Fresh Concrete	C172
(2)	Obtaining Drilled Cores	C42
(3)	Molding and Curing Specimens	C31 or AASHTO T 23
(4)	Compressive Strength	C39 or AASHTO T 22
(5)	Flexural Strength	C78
(6)	Slump	C143
(7)	Air Content	C173 or C231
(8)	Unit Weight Yield	C138
(9)	Setting of Mortar	C191 or C266

#### DIVISION 2 - GENERAL TECHNICAL REQUIREMENTS (CONT'D) DIVISION 2 - GENERAL TECHNICAL REQUIREMENTS (CONT'D)

205.01.03 PORTLAND CEMENT MORTAR

Portland cement used in portland cement mortar shall be Type I or Type II conforming to Subsection 205.01.01 PORTLAND CEMENT.

Use either standard premixed mortar conforming to ASTM C 387, or mortar proportioned with one part portland cement to two parts clean, well-graded sand that passes a <sup>1</sup>/<sub>8</sub>-inch screen and which conforms to AASHTO M 45.

Admixtures may be used, but shall not exceed the following percentages of

cement by weight: hydrated lime, 10 percent; and diatomaceous earth or other inert materials, five percent. Testing shall conform to the OSHD test for mortar strength.

205.01.04 PORTLAND CEMENT GROUT

Portland cement used in portland cement grout shall be Type I or Type II conforming to Subsection 205.01.01 PORTLAND CEMENT.

#### 205.01.04A TYPE A GROUT

Type A grout shall consist of one part portland cement and three parts of clean and well-graded sand. A minimum amount of water shall be used to produce a grout with a thick, creamy consistency.

#### 205.01.04B TYPE B GROUT

Type B grout shall consist of one part portland cement, five parts of clean and well-graded sand, and seven parts pea gravel, by volume.

205.01.04C NON-SHRINK GROUT

Non-shrink grout shall be a non-metallic, cementitious commercial grout exhibiting zero shrinkage in conformance with ASTM C 827 and CRD C 621.

205.01.05 PORTLAND CEMENT TREATED BASE (CTB)

#### 205.01.05A MIX DESIGN

The contractor shall furnish the City Engineer a complete mix design showing the proportions of all constituents proposed for use and strength test results of samples prepared using the proposed proportions and constituents for a minimum of 7-day, 14-day, and 28-day curing periods.

#### 205.01.05B COMPOSITION OF MIXTURE

The CTB mixture shall be comprised of aggregate, portland cement, and water in the proportions and amounts established by the mix design. The cement content shall be between 4.5 percent and 5.5 percent of the dry weight of the aggregate. The mixture shall be proportioned to provide for a minimum 28-day compressive strength of 1,000 psi. The proportions of the materials will be subject to change as required to meet these specifications.

In all plants, the weight or rates of feed of aggregates and water shall be within five percent of the amounts of the materials specified. The weights or rates of feed of cement shall be such that the variations in cement content in samples, taken from any part of a mixed batch or from different batches, or from time to time from the product of continuous mixers, or from mixtures spread on the roadbed, shall not have variations above or below the cement content designated by the City Engineer of more than 0.5 of a percentage point.

#### 205.01.05C AGGREGATE

Aggregates used in the production of plant-mixed CTB shall conform to requirements in Section 02630 of the Oregon Standard specifications for Construction.

Aggregate size will be specified in the contract documents.

205.01.05D PORTLAND CEMENT

Portland cement to be used shall be Type I or Type II conforming to Subsection 205.01.01 PORTLAND CEMENT.

#### 205.01.05E WATER

Water used in mixing shall conform to Subsection 205.1.02C WATER. 205.01.05F

#### ASPHALT MATERIALS

The asphalt used for the curing seal shall conform to Subsection 205.2.01 ASPHALT CEMENT.

### 205.01.06 PORTLAND CEMENT CONCRETE FOR EXTRUSIONS

205.01.06A AGGREGATE

Aggregates used in the production of portland cement concrete for extrusion methods of construction shall conform to applicable requirements of Section 02690 of the Oregon Standard Specifications for Construction.

#### Maximum aggregate size shall not exceed ½ inch.

205.01.06B PORTLAND CEMENT

Portland cement to be used shall be Type I conforming to Subsection 205.01.01 PORTLAND CEMENT, and shall have a maximum slump of 2 inches. 205.01.06C WATER

Water used in mixing shall conform to Subsection 205.1.02C WATER.

205.02.00 ASPHALT CEMENT PRODUCTS

#### 205.02.01 ASPHALT CEMENT

Asphalt cements, liquid asphalts, and emulsified asphalts shall conform to the requirements of the ODOT's annual publication titled "Specifications for Asphalt Materials." Copies of this publication are available through the ODOT Pavement Services Engineer.

#### Asphalt cement types and applications shall conform to the following:

205.02.01A HOT AND WARM MIX ASPHALT For hot and warm mix asphalt concrete applications, use asphalt cement as

specified below:

#### Collector and Arterial Wearing Course (top 2-inches):

PG 70-22 is required if reclaimed asphalt binder content is less than 25 percent. PG 64-22 is required if reclaimed asphalt binder content is between 25 and 35 percent.

#### All other applications: PG 64-22 is required if reclaimed asphalt binder content is less than 25 percent. PG 58-28 is required if reclaimed asphalt binder content is between 25 and 35

percent. The reclaimed asphalt binder content shall not exceed 35% for any application.

205.02.01B TACK COAT For tack coat applications, use CRS-1 or CSS-1 cationic emulsified asphalt.

205.02.01C JOINT SEALER For joint seal applications, use either hot asphalt (PG 64-22) or CRS-1\_CRS

For joint seal applications, use either hot asphalt (PG 64-22) or CRS-1, CRS-2, or CSS-1 cationic emulsified asphalt.

205.02.01D CURING SEAL

For curing seal applications, use CRS-1 or CRS-2 emulsified asphalt.

205.02.02 ASPHALT CONCRETE PAVEMENT

#### 205.02.02A APPLICATIONS

Asphalt concrete pavement shall conform to Section 00745 - Hot Mixed Asphalt Concrete (HMAC) of the Oregon Standard Specifications for Construction. HMAC used in the work shall be Level 2 dense graded mixture. The type of mix shall be <sup>3</sup>/<sub>4</sub>-inch (B-mix), <sup>1</sup>/<sub>2</sub>-inch (C-mix) or <sup>3</sup>/<sub>8</sub>-inch (D-mix) as specified in the contract documents. Where the type of HMAC is not specified a Level 2, dense graded <sup>1</sup>/<sub>2</sub>-inch mix shall be used for the top lift, or wearing course, and Level 2, dense graded <sup>3</sup>/<sub>4</sub>-inch mix shall be used for base lifts. Level 2, dense graded <sup>3</sup>/<sub>8</sub>-inch mix shall be used where the compacted thickness of the top lift, or wearing course, will be less than 1<sup>1</sup>/<sub>2</sub> inches.

#### 205.02.02B MIX FORMULA

When required by the City Engineer, the contractor shall submit a job-mix formula conforming to Subsection 00745.13 of the Oregon Standard Specification for Construction.

The job-mix formula shall indicate the gradation and proportion of each of the several aggregate constituents to be used in the mixture. The job-mix formula shall also indicate the ASTM bulk specific gravity of each aggregate constituent, the measured maximum specific gravity of the mix at the optimum asphalt content determined in accordance with ASTM D 2041, the percent of asphalt lost due to absorption by the aggregate, and any other information pertinent to the design of the mix.

The contractor shall submit a new job mix formula to the City Engineer for approval should conditions, as determined by the City Engineer, justify a change in materials.

#### 205.02.02C MATERIALS

Asphalt cement shall conform to requirements in Subsection 205.02.01 ASPHALT CEMENT.

Aggregates, mineral fillers, and anti-stripping additives used in the production of asphalt concrete shall conform to applicable requirements of Subsection 00745.11 of the Oregon Standard Specifications for Construction.

#### 205.02.02D PROPORTIONS OF MATERIALS

Proportions of materials that comprise the various classes of asphalt concrete shall be within the range of proportions and tolerances specified in Subsections 00745.12, 00745.13, and 00745.14 of the Oregon Standard Specifications for Construction.

#### 205.02.02E ACCEPTANCE OF MATERIALS

Asphalt and aggregate shall be subject to approval preceding mixing. Mixtures will be subject to final approval after blending and mixing, either at the plant or at the place of delivery prior to rolling. Approval will be based on periodic sampling and testing of the materials at the discretion of the City Engineer.

The contractor shall collect and analyze as many samples as the City Engineer determines necessary to confirm that the mixture, and the materials that comprise the mixture, is in conformance with the mix design and all other applicable requirements specified herein.

Costs associated with the collection and testing of samples shall be borne by the contractor.

#### 205.03.00 AGGREGATES

205.03.01 AGGREGATE BASE

# Aggregate for aggregate base shall be well-graded 1-inch minus or <sup>3</sup>/<sub>4</sub>-inch minus crushed gravel or crushed aggregate meeting all appropriate requirements for aggregate shoulder and base materials as specified in the Oregon Standard Specifications for Construction.

205.03.02 TRENCH BACKFILL

#### 205.03.02A PIPE ZONE MATERIAL

One-inch minus or <sup>3</sup>/<sub>4</sub>-inch minus crushed gravel or crushed aggregate shall be used for bedding and backfill in the pipe zone for the installation of all rigid and flexible pipes and conduits.

Pipe zone backfill shall conform to requirements specified for aggregate base material.

#### 205.03.02B SELECT BACKFILL MATERIAL

Material for select backfill shall be imported bank-run or river-run gravel, crushed gravel, or crushed aggregate.

#### BANK-RUN AND RIVER-RUN GRAVEL

Imported bank-run or river-run gravel shall be from a source approved by the City Engineer. Approval of material from a location does not mean approval of the entire site, but only as material continues to meet specification.

Material shall be well-graded sandy gravel free from organic matter, clay, or other deleterious material and debris. No more than five percent by weight shall pass the No. 200 sieve.

Materials excavated on site during the course of the work may not be used as select backfill until testing by a firm approved by the City has determined that the material is in conformance with the requirements specified above and has been approved for use by the City Engineer. If approved for use, the contractor shall stockpile reusable excavated materials prior to reuse until the materials are examined by the City Engineer and approved for use to ensure the materials continue to meet the specified requirements.

### For trench backfill the maximum particle size shall not exceed three inches in any dimension.

#### CRUSHED AGGREGATE

One-inch minus or <sup>3</sup>/<sub>4</sub>-inch minus crushed gravel or crushed aggregate shall be used for select backfill.

Crushed gravel and crushed aggregate shall conform to requirements specified for aggregate base material.

#### 205.03.02C CONTROLLED DENSITY FILL

Controlled Density Fill (CDF) shall be used only with the prior authorization of the City Engineer.

CDF shall be a uniform, flowable mixture of aggregate and cementitious material. Cured CDF shall present a consolidated mass easily penetrated or excavated with standard mechanical equipment.

Aggregate shall not exceed 3/8 inch in size, and shall not contain more than 12 percent by weight passing a No. 200 sieve. Cementitious material shall be a mixture of Portland cement and fly ash at a sufficient quantity to develop a 28-day compressive strength no less than 50 psi, and no more than 100 psi. CDF shall be self-compacting upon placement.

Contractor shall submit a mix design for approval prior to performing any work anticipating the use of CDF. The Contractor shall submit testing documentation from a state certified agency to demonstrate 28day compressive strength meets the requirements of this section.

Air and surface temperatures shall be 40 degrees Fahrenheit and rising before placement of CDF.

## DIVISION 2 - GENERAL TECHNICAL REQUIREMENTS (CONT'D)

205.03.03 FOUNDATION STABILIZATION MATERIAL

Foundation stabilization material shall consist of dense graded 3" minus crushed aggregate containing no more than 5 percent (5%) material passing the No. 200 sieve.

205.03.04 ACCEPTANCE OF MATERIALS

Aggregate shall be subject to approval after mixing and prior to compaction. Approval will be based on periodic sampling and testing of the materials at the discretion of the City Engineer.

The contractor shall collect and analyze as many samples as the City Engineer determines necessary to confirm the aggregate is in conformance with all of applicable requirements specified herein. Aggregate samples shall be taken from the actual stockpiles from which the aggregate will be taken for use in the work.

Costs associated with the collection and testing of samples shall be borne by the contractor. 205.04.00 MEASUREMENT AND PAYMENT

Measurement and payment of materials will conform to the specific section within these specifications that is applicable to the type of work specified.

#### 206 CONCRETE STRUCTURES

206.01.00 APPLICABILITY OF SECTION

This section contains requirements that pertain to the mixing, delivery, handling, placing, finishing, and curing of plain and reinforced portland cement concrete. Additional requirements applicable to specific types of concrete structures are contained in other sections of these specifications.

#### 206.02.00 MATERIALS

206.02.01 PORTLAND CEMENT CONCRETE

Portland cement concrete, grout, and mortar shall conform to Section 205 CONCRETE AND ASPHALT MATERIALS.

#### 206.02.02 JOINT MATERIALS

206.02.02A PREFORMED EXPANSION JOINT FILLERS

Preformed expansion joint fillers for concrete shall conform to AASHTO M 153 or AASHTO M 213 except that those furnished under AASHTO M 213 shall be tested in conformance to ASTM D 1751.

#### 206.02.03 EPOXY CEMENT

Epoxy cement shall be a two-compound epoxy resin adhesive conforming to requirements of AASHTO M 235.

#### 206.02.04 STEEL REINFORCEMENT

The contractor shall furnish mill certification that will substantiate that the reinforcing bars delivered to the project site are as specified in the contract documents.

#### 206.02.04A BAR REINFORCEMENT

Steel deformed bars shall conform to ASTM A 615, Grade 40.

Longitudinal bars used in continuously reinforced concrete pavement and in high strength bar reinforcement applications shall be Grade 60.

#### 206.02.04B DOWELS

Dowels for concrete pavement, slab or wall load transfer devices at joints and other elements, shall conform to ASTM A 615, Grade 60, unless otherwise specified.

#### 206.02.04C BAR MATS

Bar and rod mats shall be of the clipped type and shall conform to ASTM A 184.

#### 206.02.04D SPIRAL REINFORCEMENT

Plain wire for spiral reinforcement shall conform to ASTM A 82, except that FY shall be the stress corresponding to a strain of 0.35 percent if design yield strength exceeds 60,000 psi.

#### 206.02.04E WELDED WIRE FABRIC

Welded wire fabric shall conform to ASTM A 185

#### 206.02.04F TIES AND SUPPORTS

Ties shall be fabricated from 16-gauge, black, soft-annealed wire. Bar supports in beams and slabs that will be exposed after stripping shall be galvanized or plastic coated. Concrete supports shall be used for reinforcing in concrete placed on grade. Galvanizing shall conform to ASTM A 153, Class D. Plastic shall not chemically react with concrete, shall be impervious, and have a minimum thickness of 3/32 inches at the point of contact with the form.

206.02.05 CURING MATERIALS FOR PORTLAND CEMENT CONCRETE Curing materials shall conform to the following requirements:

- (1) Plastic Film ASTM C 171
- (2) Reinforced Paper ASTM C 171
- (3) Liquid Membrane-Forming Curing Compounds ASTM C 309
- (4) Burlap Cloth, Cotton Mats AASHTO M 182
- (5) Water
- (6) Other materials approved by the City Engineer.

White-pigmented, liquid membrane-forming compound shall be used for curing portland cement concrete pavement.

Other types of materials or methods used for curing concrete will be dependent upon weather and other existing site conditions and shall be subject to the approval of the City Engineer.

#### 206.02.06 FABRICATED METAL ADJUSTMENT RINGS

Fabricated metal rings or plates used in the adjustment of existing frame and cover assemblies over concrete structures shall be equal to characteristics of strength and support required of the covers or grates to be adjusted. Fabricated metal materials shall provide uniform bearing of bearing surfaces and positive protection against displacement when in service.

Existing frame and cover assemblies on concrete structures may be reused at the discretion of the City Engineer. Salvaged components approved by the City Engineer for reuse shall be cleaned as necessary to return them to a serviceable condition.

Fabricated and/or salvaged metal frame and cover assemblies and other related components shall conform to applicable OSHD requirements pertaining to fabrication, installation, and applicable service limitations of such materials.

206.03.00 CONSTRUCTION

#### 206.03.01 MIXING AND DELIVERY OF CONCRETE

Concrete shall be machine mixed. Concrete shall be transported in transit mixer trucks. Concrete that has developed an initial set, or is partially hardened, shall not be retempered or remixed and shall be removed from the job site and disposed of by the contractor.

Manufacturing facilities and transportation equipment shall ensure continuous delivery of concrete as required by the type of construction and shall provide for the proper handling and placement of the concrete at the job site.

Methods of delivery and handling concrete shall allow placing with a minimum of rehandling and without damage to the structure or concrete.

## DIVISION 2 - GENERAL TECHNICAL REQUIREMENTS (CONT'D)

#### 206.03.01A MIXING AT SITE

Batch mixers of a size and type that will ensure a uniform distribution of materials throughout the mass shall be used for mixing concrete on site.

Mixers shall be equipped with adequate water storage and a device for accurately measuring and automatically controlling amount of water used in each batch.

#### 206.03.01B TRUCK MIXING

Revolving drum-type truck mixers shall be used for truck mixing concrete. Truck mixers shall be watertight and constructed such that concrete can be mixed to ensure a uniform distribution of materials throughout the mass.

Truck mixers shall have suitable means by which the amount of water added to the mix on-site can be readily verified by the City Engineer.

206.03.01C TIME OF HAULING AND PLACING MIXED CONCRETE

All concrete shall be discharged and placed into the forms within 90 minutes after the introduction of mixing water to cement and aggregate, or cement to aggregate, or before 250 revolutions of the truck drum or blades, whichever comes first.

This time shall be reduced during conditions that contribute to accelerated setting of concrete, or when the temperature of the concrete is  $85^{\circ}$  F, or above.

Water shall not be added to concrete during hauling or before discharge, unless directed or approved by the City Engineer.

#### 206.03.02 FORMWORK

Concrete shall be contained by the use of forms when constructing any concrete structure. Materials such as rock backfill, earth, and similar materials shall not be used as forms for containing concrete. Adjacent edges of asphalt cement concrete shall not be used as a form for containing concrete in curbs, gutters, and similar structures.

Forms shall be mortar-tight and sufficiently rigid to prevent distortion due to weight of the concrete and other loads incidental to construction operations. Forms shall be constructed in a manner that will provide for the complete removal of form materials upon completion of the work. Form materials shall be removed from the structure prior to final acceptance of the work.

Wood forms for exposed concrete surfaces shall be constructed of dressed lumber of uniform thickness with a form liner of an approved type. Plywood shall be sufficiently supported if used as a form liner. Formwork for exposed concrete surfaces shall be constructed of materials that are smooth with grain running in the same direction to give a good finished appearance.

Metal ties or anchorages within forms shall be installed in a manner that will permit their removal to a depth of at least one inch from face without injury to concrete. Cavities shall be patched with cement mortar in a manner that will leave the finished surface sound, smooth, and uniform in color.

In order to ensure easy form removal without damage to the concrete, the contractor shall fillet or bevel forms at all sharp corners or projections. Forms shall be treated with a release agent immediately before placing concrete. The

contractor shall use release agents that will not adhere to or discolor the concrete.

#### 206.03.02A FALSEWORK

For structures requiring poured-in-place concrete superstructures, working drawings and calculations for falsework prepared and stamped by an Engineer registered to practice in the state of Oregon shall be submitted to the City Engineer for review.

Falsework shall be designed and constructed to support the total applied loads with a deflection/span ratio not to exceed 1/500 in any falsework span. Falsework for post-tensioned structures shall be designed to carry full dead load and any additional vertical or horizontal loads caused by the prestressing operation. Post-tensioned structures shall not be considered self-supporting until post-tensioning is complete.

Deck forms for concrete box girder spans shall be supported by girder stems. Posts or other supports for deck forms shall not come in contact with bottom slab of box girder.

#### 206.03.02B REMOVAL OF FORMWORK

The contractor shall be responsible for all damage resulting from removal of forms. Earth backfill shall not be placed against walls below grade. Forms and shoring shall not be removed from structural slabs or beams until concrete has reached an actual field strength equal to 75 percent of the specified 28-day design field strength. Actual field strength shall be determined from field-cured test cylinders that shall be cured under conditions equivalent to the most unfavorable conditions for the portions of concrete which the cylinders represent. Formwork shall be removed prior to final acceptance of the work.

#### 206.03.03 REINFORCEMENT

Bar reinforcement shall be fabricated, shipped, and marked in conformance with *Manual* of *Standard Practice for Reinforced Concrete Construction* of the Western Concrete Reinforcing Steel Institute.

#### Steel reinforcement bars shall be deformed when cold.

Steel reinforcement shall be delivered with suitable hauling and handling equipment. Steel reinforcement shall be kept free from dirt, detrimental rust or scale, paint, oil, or other foreign substance.

#### 206.03.03A PLACING

Reinforcing steel shall be accurately placed in the position shown in the contract documents. Bars shall be tied at all intersections except where spacing is less than one foot in each direction, in which case, alternate intersections shall be tied. Tack welding of reinforcing steel shall not be permitted. If bundled reinforcing bars are required, the bars shall be securely tied together with wire ties at not more than six-foot centers.

Reinforcing steel shall be securely blocked from the forms by means of small mortar blocks not more than two inches square so the reinforcement does not vary from the position shown in the contract documents by more than ¼ inch. The blocks shall have a compressive strength equal to that of the concrete in which the mortar blocks are embedded. Mortar blocks for supporting reinforcing steel in slabs shall have either a tie wire embedded with the protruding ends tied to the reinforcing steel or a grooved top designed to hold the mortar blocks in place.

If metal chair supports are used as supports for steel reinforcing bars, all surfaces of the chair supports not covered by a minimum of ½ inch of concrete shall be treated by one of the following methods:

(1) Hot-dipped galvanized after fabrication in conformance with ASTM A 153, Class D.

minimum thickness of 3/32 inch, and is not chemically reactive with the concrete.

(2) Plastic or epoxy coating provided that the coating is bonded to the metal, has a

(3) Constructed of stainless steel in conformance with ASTM A 493, Type 302.

Installation of steel reinforcement will be inspected by the City Engineer before placing of concrete begins.

If fabric reinforcement is shipped in rolls, the fabric shall be straightened into flat sheets before being placed. For fabric reinforcement, fabric shall be extended to within two inches of edges of slab, and lap splices at least 1½ courses of fabric with a minimum of six inches. Laps and splices in fabric shall be tied securely at ends and at least every 24 inches.



#### DIVISION 2 - GENERAL TECHNICAL REQUIREMENTS (CONT'D)

#### 206.03.03B SPLICING

Steel bars for concrete reinforcement shall be furnished in the full lengths indicated in the contract documents. No changes in the number of splices, their type, or location shall be permitted without the written approval of the City Engineer. Splices shall be well distributed and/or located at points of low tensile stress. Splices will not be permitted at points where the section is not sufficient to provide a minimum distance of two inches between the splice and the nearest adjacent bar or the surface of the concrete. The bars shall be rigidly clamped or wired at all splices. Bars that are lapped for splicing shall be placed in contact for the length of the splice and tied together near each end.

Number 11 bars and smaller shall be lap spliced. Splicing of No. 14 and No. 18 bars shall be in conformance with the following requirements:

(1) Splices shall be made by a mechanical butt splicing method utilizing a ferrous filler metal and an enclosing steel sleeve.

(2) Splices shall develop in tension or compression, as required, at least 125 percent of specified yield strength (fy) of the bar.

206.03.03C WELDING REINFORCING STEEL

Welding of steel reinforcing bars shall conform to the requirements of the AWS 12.1, Reinforcing Steel Welding Code.

#### 206.03.04 WEATHER LIMITATIONS

The contractor shall be solely responsible for taking whatever precautions necessary to protect concrete work performed during unusual or inclement weather conditions.

The contractor shall take appropriate precautions in placing, finishing, and curing concrete when the ambient temperature reaches 85° F or higher or whenever relative humidity, wind velocity, or exposure to sun is expected to cause adverse conditions for concrete work.

Concrete shall not be placed when the ambient temperature is below 32° F. The surface temperature of fresh concrete shall be maintained at no less than 50° F for a period of seven days after finishing.

Insulated formwork, plastic sheeting, straw, temporary enclosures, portable heat sources, or combinations thereof, shall be used as applicable to maintain the minimum required temperature. When using portable heating sources, a means of providing and maintaining sufficient atmospheric moisture for curing shall be provided.

#### 206.03.05 HANDLING AND PLACING

Construction debris shall be removed from the formwork prior to placing concrete. Temporary bracing shall be removed from within formwork as the concrete is being placed. Temporary braces and other formwork shall not be left buried in the concrete.

Prior to placing concrete, the base rock, leveling course, or other underlying material shall be thoroughly moistened.

Concrete shall be placed so as to avoid segregation of material and displacement of reinforcement. Concrete shall not be allowed to "free fall" more than six feet.

The concrete shall be thoroughly consolidated as it is being placed. The concrete shall be

consolidated by mechanical vibration in conformance with the following provisions. (1) Vibrating devices shall be capable of transmitting vibration to concrete at frequencies of not

- less than 4,500 impulses per minute. Intensity of vibration shall be such that a concrete mass of one-inch slump is visibly affected over a radius of at least 18 inches.(2) A sufficient number of vibrating devices shall be used to properly compact each batch as it
- is being placed in the forms.(3) Vibrating devices shall be manipulated in a manner that will thoroughly consolidate concrete
- around reinforcement and embedded fixtures and into corners and angles of forms without causing segregation of the mixture.

4) Vibrating devices shall not be applied directly to reinforcing steel or to layers of concrete that have hardened to the degree that concrete ceases to be plastic under vibration.

(5) Mechanical vibration methods shall be supplemented by hand work as necessary to ensure smooth surfaces and dense concrete.

#### 206.03.06 JOINTS IN PORTLAND CEMENT CONCRETE

Joints in concrete structures will be designated as construction joints, contraction joints, and cold joints and shall be constructed as specified herein and in other sections of these specifications applicable to specific structures.

#### 206.03.06A CONSTRUCTION JOINTS

Wherever possible, the placing of concrete shall be continuous and without the use of intermediate construction joints.

The contractor shall install a construction joint at the termination point of each day's work, at the beginning of temporary work stoppages, and at any other time where the concrete will be allowed to harden or take its initial set prior to resumption of work.

Construction joints shall be formed by shaping the leading edge of the concrete as necessary to form a vertical face with an edge thickness of not less than four inches. Construction joints shall be constructed transverse to the longitudinal axis of these structures.

Where a construction joint is required in the sloped top surface of a retaining wall, or similar type work, additional formwork shall be used to produce a blocked out portion in the preceding layer that will produce an edge thickness of not less than six inches in the succeeding layer. Placing of concrete shall not be discontinued within 18 inches of the top of any face during wall construction.

Before placing fresh concrete against concrete that has hardened or attained initial set, the surface of the previously placed concrete shall be roughened in a manner that will not leave loosened particles of aggregate or damaged concrete at the surface. The surface shall be thoroughly cleaned and saturated with water prior to resumption of work.

#### 206.03.06B CONTRACTION JOINTS

Contraction joints shall be of the weakened plane type in the exposed surfaces of concrete structures at such locations required to confine the contraction joint spacing to a maximum of 15 feet.

Contraction joints shall be constructed by pushing a thin steel sheet, or similar tool, vertically into the fresh concrete to separate the coarse aggregate at the joint. Contraction joints shall be formed to a minimum depth of  $\frac{1}{3}$  of the thickness of concrete and to a width of  $\frac{1}{8}$  inch.

Contraction joints shall be installed in a straight line, transverse to the longitudinal axis of the structure. The edges of the joint shall be tooled.

Contraction joints shall coincide with existing joints in adjacent concrete structures.

#### 206.03.06C COLD JOINTS

Cold joints shall be formed between adjacent structures by placing fresh concrete against a previously formed concrete surface that has been allowed to harden or obtain its initial set.

Cold joints shall be located and constructed such that one of two or more adjacent concrete structures can be removed without damage to the structures that are to remain in place.

#### 206.03.06D KEYWAY JOINTS

Keyway joints in walls, slabs, and other structures shall be located and formed/installed as specified in the contract documents or as directed by the City Engineer.

### DIVISION 2 - GENERAL TECHNICAL REQUIREMEN (CONT'D)

206.03.07 SURFACE FINISHING

under applicable sections of Division 3.

Details relative to wall and slab finishes will be specified in the contract documents Details relative to concrete street, sidewalk, driveway, and curb finishes are include

#### 206.03.08 CURING

Concrete surfaces shall be cured by covering with materials conforming to Subsect 206.02.05. The contractor shall use curing materials consistent with the weather a other existing site conditions.

Slab concrete structures, such as pavement, sidewalks, curbs, and similar work, the exposed to conditions causing premature drying during placing operations shall be protected by wind breaks, fog spray, or by other suitable methods.

The curing process shall be maintained for a time period of not less than 72 hours the time the curing process commenced.

#### 206.03.08A SHEET COVERINGS

Sheet-type curing materials, including burlap, cotton mats, plastic film, and sim coverings shall be placed as soon as the concrete has hardened sufficiently to support installation of the covering without marring the surface of the concrete.

Plastic film and similar non-absorbent sealing materials shall extend over and b the sides or edges of the concrete and shall be installed and secured as neces to hold the covering in position as a moisture proof covering.

Burlap cloth, cotton mats, and other absorbent materials shall be saturated with water and kept fully wetted during the curing period.

206.03.08B LIQUID, MEMBRANE-FORMING COMPOUNDS

Liquid, membrane-forming compounds shall be applied uniformly to damp cond by pressure-spray methods at a rate that will form an impervious membrane in accordance with ASTM C 309.

206.03.08C WATER CURING

If the use of other curing materials is impractical or not required, the surfaces sl kept moist by flushing or sprinkling with water in a manner approved by the City Engineer.

The application of water shall be such that the concrete and surfaces of all form be kept damp for a period of seven days after placing of concrete. Curing and finishing shall be coordinated when both requirements are to be met at same time

Water used for curing shall be free of harmful amounts of deleterious materials will stain, discolor, or adversely affect the physical properties of the concrete. Of shall be taken to avoid thermal shock due to the use of cold water or high rates evaporative cooling.

#### 206.03.08D OTHER MATERIALS

The use of straw, earth, sand, sawdust, or other similar materials that have be saturated with water shall be used only when approved by the City Engineer.

#### 206.03.09 PROTECTION OF CONCRETE

The contractor shall erect and maintain suitable barriers to protect the concrete fro traffic or other detrimental trespass until the concrete has attained the specified compressive strength.

Wherever traffic, of any type, is to be permitted to move over the surface of the concrete, the contractor shall construct and maintain suitable bridges over the concrete.

The contractor shall repair or replace, as determined by the City Engineer, any contract has been damaged prior to its acceptance by the owner. The contractor shall solely responsible for costs associated with the repair or replacement of work that damaged prior to final acceptance.

206.03.10 ADJUSTMENT OF EXISTING CONCRETE STRUCTURES TO GRADE Wherever possible, existing concrete structures shall be adjusted to a new elevation the addition or removal of precast concrete adjustment rings or extensions. Final adjustment to grade shall be made by seating the frame in fresh mortar and adjust the assembly to finish elevation. Mortar shall not be placed to a depth in excess of inch.

Concrete reinforcement may be required by the City Engineer depending on the ty and location of the structure and the amount of adjustment required.

Portions of existing structures to be removed shall be isolated by sawcuts or other suitable means prior to removal to preclude spalling, cracking, or other damage to sections of the structure that are to remain in place.

206.03.10A EXCAVATION AND BACKFILL

Excavation shall be unclassified and shall include removal and disposal of what materials are encountered to the depths required to conduct the work.

If the structure is located in an improved area, the contractor shall sawcut and remove the asphalt or concrete from around the structure and excavate sufficient underlying material to conduct the work. The contractor shall not remove more material than is necessary to perform the required work.

Backfill shall be provided, placed, and compacted in conformance with the cont documents.

#### 206.03.10B RAISING TOPS OF CONCRETE STRUCTURES

If the structure has no provision for the use of precast concrete extensions, free concrete shall be used to extend the structure to the new grade. The existing concrete surface shall be cleaned by brushing or with compressed air and mois with water prior to placing the new concrete. New concrete shall be contained suitable formwork and placed to a minimum depth of four inches in non-traffic a and six inches in traffic areas. New concrete shall be cured at least three days which the frame shall be seated in fresh mortar and brought to proper grade.

If the required adjustment exceeds one inch but is less than the specified minir thickness for the new concrete, existing shells or walls of structures to be raise be cut down as necessary to provide space for the new construction.

#### 206.03.10C LOWERING TOPS OF CONCRETE STRUCTURES

Where the tops of manholes and similar structures are to be lowered and there provision for the removal of precast adjustment rings or extensions, the manhol cone shall be removed and the standard manhole sections removed and replace with appropriate heights to accommodate the new finish grade. On shallow manholes and similar structures, it may be necessary to replace the cone section with a flat top section to achieve the new finish grade. Manhole cones and similar components shall not be modified.

Where curb inlets, catch basins, and similar structures are to be lowered and the no provision for the removal of precast extensions, the walls of the structure sharemoved to an elevation that will locate the frame and cover assembly at finish grade. Final adjustment to grade shall be made by seating the frame in fresh mand adjusting the assembly to finish elevation.

ENTS	DIVISION 2 - GENERAL TECHNICAL REQUIREMENTS (CONT'D) 208 RESURFACING	DIVISION 2 - GENERAL TECHNICAL REQUIREMENTS (CONT'D) 208.03.01D WEATHER LIMITATIONS
ents. cluded	208.01.00 APPLICABILITY OF SECTION This section covers work necessary to replace all pavement base, pavement, curbs, sidewalks, and other surface features, with the exception of landscaping, damaged during the construction of public improvement projects.	Pavement restoration shall not be performed when the atmospheric temperature is lower than 40° F, during rainfall, or when the surface upon which the paving material is to be placed is frozen or has impounded water unless precautionary measures have been taken and are approved by the City Engineer.
osection ner and	208.02.00 MATERIALS	208.03.01E PROTECTION OF ADJACENT STRUCTURES AND PROPERTY The contractor shall take necessary precautionary measures to protect
k, that are Il be	208.02.01 HOT AND WARM MIX ASPHALT CONCRETE Hot and warm mix asphalt concrete shall conform to requirements in Section 205 CONCRETE, ASPHALT, AND AGGREGATE MATERIALS.	exposed structures and any other adjacent property, including motor vehicles and surface improvements, from paving materials and paving operations. Paving materials and other undesirable matter that may be deposited on adjacent structures or property as a result of paving operations shall be
ours from	<u>208.02.02 COLD MIX ASPHALT CONCRETE</u> Cold mix asphalt concrete with an aggregate gradation of ½-inch minus shall be used for temporary resurfacing of hard-surface areas.	removed by the contractor upon completion of the work. Manhole covers, metal valve boxes, and like structures shall be protected with diesel oil, paper, or other suitable materials prior to placing paving materials.
similar y to ete.	<u>208.02.03 TACK COAT</u> Liquid asphalt shall conform to requirements for tack coat in Section 205 CONCRETE, ASPHALT, AND AGGREGATE MATERIALS.	208.03.01F RESTORATION OF PAVEMENT MARKINGS The contractor shall be responsible for the restoration of pavement striping, directional marking, crosswalk marking, and curb marking damaged by construction. Appropriate equipment operated by personnel qualified in its use
nd beyond cessary	<u>208.02.04 JOINT SEALER</u> Liquid asphalt shall conform to requirements for joint sealer in Section 205 CONCRETE, ASPHALT, AND AGGREGATE MATERIALS.	shall be used to perform this work. Restored markings shall have sharp, clearly defined edges and shall be neat and uniform in appearance. Striping placed on existing pavement or on new pavement restoration shall be of a material approved by the City Engineer
with	208.02.05 PAVEMENT BASE Pavement base material for resurfacing trenches shall be 1-inch minus or <sup>3</sup> / <sub>4</sub> -inch minus crushed gravel or crushed aggregate conforming to requirements in Subsection 205.03.01 AGGREGATE BASE.	<u>208.03.02 TEMPORARY COLD MIX ASPHALT</u> Temporary cold mix asphalt shall be placed and compacted over the backfilled and compacted trench areas to a minimum depth of two inches. After compaction, the
e in	<u>208.02.06 FORMS</u> Formwork shall conform to requirements in Section 206 CONCRETE STRUCTURES. 208.02.07	temporary cold mix asphalt shall match the adjacent existing grade.
es shall be City	ROCK SURFACING Rock surfacing shall be 1-inch minus or ¾-inch minus crushed gravel or crushed aggregate conforming to requirements in Subsection 205.03.01 AGGREGATE BASE.	<u>208.03.03A TACK COAT</u> Tack coat shall be applied in conformance with applicable requirements in Section 304 ASPHALT CONCRETE PAVEMENT.
forms will and ne time.	208.03.00 CONSTRUCTION 208.03.01 PAVEMENT RESTORATION	<u>208.03.03B ASPHALT CONCRETE PLACEMENT</u> Asphalt concrete shall be placed on the prepared base over the trench to a compacted depth of not less than four inches, or the depth of the adjacent
ials that e. Care ates of	208.03.01A SAWCUTTING AND SURFACE REMOVAL Slurry, sediments, dust, and other waste created by sawcutting shall be contained within and prevented from moving beyond the immediate sawcutting work zone. The Contractor shall protect against vehicular, equipment, or pedestrian traffic that may cause tracking of the sawcutting waste material. Sawcutting waste material shall be vacuumed and removed from the site	pavement, whichever is greater. Asphalt concrete shall be placed in a minimum of two lifts. Maximum thickness for any one lift of pavement shall not exceed three inches for class B mix and two inches for class C mix. The minimum thickness for placement of pavement shall not be less than 1½ inches.
been er. e from d	concurrently with or immediately upon completion of sawcutting operations. The existing pavement shall be sawcut a minimum of 12 inches from the edge of the existing pavement at the side of the trench or excavation. Earth saws and similar types of equipment shall not be used for cutting the pavement for final surface restoration	Asphalt shall be roller compacted with equipment capable of providing compression of 200 to 300 pounds per linear inch. Compaction equipment shall be operated in a manner that will remove all roller marks and produce a smooth, uniform surface. Density requirements for asphalt concrete pavement shall conform to those in Section 304 ASPHALT CONCRETE PAVEMENT.
e concrete.	Sawcutting of the final pavement edge shall occur after backfill and compaction operations are completed and as close to the actual time of final pavement restoration as possible.	<u>208.03.03C JOINT SEALER</u> A seal coat of liquid asphalt shall be applied to joints between the new and original asphalt pavement immediately after the new paving is completed. The seal coat shall be a minimum of 12 inches in width and shall be centered on the joint. The liquid caphalt shall be centered to the point that it begins to run
hall be that is	The sawcut shall be a straight line, parallel to the pipe centerline, and shall provide a smooth, sound edge for joining the new pavement.	off. The minimum application rate shall be 1.7 gallons per 100 linear feet.
<u>ADE</u> vation by	the 12-inch cutback, the final sawcut shall be moved out far enough to remove all damaged or undermined pavement and remain parallel to the trench. The pavement shall be cut in a manner that will provide a smooth transition back to the 12 inch outback to ellow effective use of compaction equipment along the	asphalt has been applied and before the asphalt has solidified. The sand shall be applied in a layer thick enough to prevent tracking of seal coat. <u>208.03.04 PORTLAND CEMENT CONCRETE PAVEMENT</u>
nal ljusting ss of one	edge. When the distance between the final sawcut pavement edge and a curb, gutter.	Pavement restoration shall be the same thickness as that removed, or a minimum of eight inches thick, whichever is greater.
ie type	pavement edge, construction joint, or other concrete structure or improvement will be less than 24 inches, the contractor shall remove the intervening pavement and include that area in the pavement restoration. This requirement is intended to prevent subsequent settlement, displacement, or premature breakup of	Concrete shall have a minimum compressive strength of 4,000 psi. Requirements for the provision and installation of dowels, tie bars, and load transfer devices will be specified in the contract documents.
ther e to	narrow, non-contiguous sections of pavement. The material immediately below the cutback areas shall be replaced with 1-inch minus compacted, crushed gravel base.	and protect concrete pavement in conformance with applicable provisions of Section 206 CONCRETE STRUCTURES.
whatever nd	208.03.01B PAVEMENT BASE Pavement base shall be placed to a depth of 24 inches. The contractor shall bring the top of the pavement base to a smooth, even grade allowing for the thickness of paving material specified herein.	Concrete driveways, sidewalks, and curbs shall be replaced to the same section, width, depth, line, and grade as that removed or damaged. The contractor shall replace concrete driveways, sidewalks, and curbing between scored joints. The contractor shall provide a minimum 3-inch thick compacted leveling course of 1-inch minus crushed aggregate.
nore	The contractor shall compact the pavement base as specified in Section 204 EXCAVATION, BACKFILL, AND OTHER SITE WORK. Compaction tests shall be required on the finish rock grade prior to any final trench restoration.	Concrete edges adjacent to the work that were damaged during construction shall be recut. The contractor shall be responsible for recutting edges damaged during concrete removal or construction operations and no payment will be made for
fresh	208.03.01C SURFACE SMOOTHNESS AND WORKMANSHIP Surface characteristics and workmanship of pavement restoration, including driveways, sidewalks, and curbs, as applicable, shall meet the following minimum requirements:	additional sawcutting or concrete removal. Concrete replacement work shall be completed a minimum of seven days prior to the placement of adjacent asphalt concrete.
ng moistened ned within	(1) When checked with a 12-foot straightedge, longitudinal deviation in surface smoothness for asphalt and concrete structures, including pavement, curbs, sidewalks, and driveways, shall not exceed .01 foot within 12 feet. Only one	Sidewalks, driveways, and curbs damaged outside the limits of construction shall be replaced at the expense of the contractor.
lays, after e.	such deviation is permitted within 12 feet. (2) The surfaces of the new pavement shall be flush with the existing street.	conformance with the applicable provisions of Section 206 CONCRETE STRUCTURES and Section 306 CURBS, GUTTERS, SIDEWALKS, DRIVEWAY
ninimum aised shall	(3) Crown in the resurfaced areas shall be consistent with the existing crown and the position of the patch on the street.	209 CLEANUP AND SITE RESTORATION
nere is no	(4) Completed pavement restoration shall not impound water or block existing means of drainage.	<u>209.01.00 GENERAL</u> Satisfactory completion of all requirements described herein will be a condition precedent to final acceptance of the project.
placed /	removed and replaced by the contractor at the contractor's expense.	209.02.00 CONSTRUCTION
ection similar	Heating and reworking of asphalt surfaces, "skin" patches, grinding, surface applications (binders or sealers), or other like methods of improving surface characteristics of rejected pavement restoration will not be permitted.	<u>209.02.01 RESTORATION OF PLANTED AREAS</u> Planted areas, including grassy areas, shall be raked by hand as necessary to remove gravel, clay, construction debris, and deleterious materials.
nd there is e shall be nish sh mortar	Surrace irregularities or other detrimental aspects of the existing roadway and other surfaces adjacent to the new work shall not be used by the contractor as a basis of evaluating the acceptability of the restored pavement.	Areas where the sod has been damaged shall be leveled and raked as necessary to conform to the original surface and shall be free of holes, rough spots, or other surface features detrimental to seeding or placement of sod.
		Grassy and planted areas damaged by oil, gasoline, or other hazardous and/or

poisonous materials shall be excavated and the contaminated soil removed and

replaced with suitable topsoil to the satisfaction of the City Engineer.

#### DIVISION 2 - GENERAL TECHNICAL REQUIREMENTS (CONT'D)

Grass and other plantings shall be replaced in kind. Grass shall be restored by seeding or with sod as required by the City Engineer.

Shrubs and trees located outside the limits of construction that have been disturbed or damaged shall be removed and replaced, in kind, as directed by the City Engineer and at the contractor's sole expense.

Adequate drainage shall be maintained in all restored areas.

209.02.02 REMOVAL OF EQUIPMENT AND MATERIALS Construction materials, equipment, and debris of whatever nature resulting from construction operations shall be removed from the project site.

<u>209.02.03 CLEANING DRAINS</u> Drainage facilities such as inlets, catch basins, culverts, manholes, open ditches, storm drainage and sanitary sewer lines, and similar structures shall immediately be cleaned of all debris that is the result of construction operations.

<u>209.02.04 CLEANING PAVED SURFACES AND APPURTENANCES</u> Pavement surfaces, gutters, sidewalks, manhole and valve box castings, and other similar structures and installations, whether new or existing, within the limits of the project, shall be cleaned as necessary to remove gravel, dirt, oil, asphalt, concrete, and other materials that are a result of the contractor's operations.

After gravel and larger debris have been cleaned up as much as is practicable by other methods, paved areas shall be flushed with a pressure-type flusher. Sidewalks shall be hand broomed or flushed with water, taking care not to further damage planted areas with the water.

209.02.05 RESTORING MOBILIZATION, BORROW, AND DISPOSAL AREAS Properties that were used for storage or mobilization during construction of the project shall be cleaned up, all equipment and supplies removed, and the area restored to a condition equal to or better than that existing before mobilization.

For borrow and disposal areas, cleanup shall include the disposal of all uprooted stumps, felled trees, brush, excess excavation, rock, discarded materials, rubbish, and debris.

### **EROSION PREVENTION & SEDIMENT CONTROL NOTES:**

Maintain the site to avoid sediment runoff.
 Use BMP's as required.

## SITE LEGEND

	EXISTING	CONTOUR
X	EXISTING	FENCE
EGAS	EXISTING	GAS
EOH-POWR	EXISTING	OVERHEAD UTILITIES
EPOWR	EXISTING	POWER
ESSWR ———	EXISTING	SANITARY
ESTRM	EXISTING	STORM
ECOMM	EXISTING	TELECOMMUNICATION
EWATR	EXISTING	WATER
EIRRG	EXISTING	IRRIGATION
	EXISTING	CATCH BASIN
	EXISTING	UTILITY POLE
○ — ※	EXISTING	LIGHT POLE
0	EXISTING	CLEANOUT
$\bigcirc$	EXISTING	MANHOLE
W	EXISTING	WATER METER
$\oslash$	EXISTING	WATER VALVE
۲Q٦	EXISTING	FIRE HYDRANT
	EXISTING	IRRIGATION CONTROL VALVE
CV CV	EXISTING	GAS VALVE
C	EXISTING	TELECOMMUNICATION PEDISTAL
J	EXISTING	JUNCTION BOX
PM	EXISTING	POWER METER
$\Box ( T )$	EXISTING	TRASH BIN
<u> </u>	EXISTING	SIGN
×	EXISTING (TRUNK [	CONIFEROUS TREE DIAMETER AND DRIP AS DRAWN
$\bigcirc$	EXISTING (TRUNK [	DECIDUOUS TREE DIAMETER AND DRIP AS DRAWN
	EXISTING	BUILDING
(100)	PROPOSED	MAJOR CONTOUR
-100-	PROPOSED	MINOR CONTOUR
	PROPOSED	PAVEMENT
	PROPOSED	CONCRETE





40	TAX LC
	TAX LOT 39
	TAX LOT 10
	LINN COUN





GRAPHIC SCALE 5 0 2.5 5 10 (IN FEET )

![](_page_5_Figure_2.jpeg)

![](_page_5_Figure_3.jpeg)

## GRADING KEY LEGEND

(100.00)	FINISHED GRADE SPOT ELEVATION
(100.00)Tc	PROPOSED TOP OF CURB
(100.00)Tg	PROPOSED TOP OF GUTTER
(100.00)Tp	PROPOSED TOP OF PAVEMENT
(100.00)Tw	PROPOSED TOP OF SIDEWALK
100.00	EXISTING SPOT ELEVATION
100.00 Tc	EXISTING TOP OF CURB
100.00 Tg	EXISTING TOP OF GUTTER
100.00 Tp	EXISTING TOP OF PAVEMENT
100.00 Tw	EXISTING TOP OF SIDEWALK
-2.5%	PROPOSED DIRECTIONAL ARROW AND SLOP
-2.5%	EXISTING DIRECTIONAL ARROW AND SLOPE
100	EXISTING CONTOUR
	PROPOSED CONTOUR

![](_page_5_Figure_6.jpeg)

![](_page_6_Figure_0.jpeg)

![](_page_6_Figure_1.jpeg)

![](_page_7_Figure_0.jpeg)

![](_page_7_Figure_1.jpeg)

# ELEANOR-HACKLEMAN PARK PROPOSED SITE WORK & GRADING

![](_page_7_Picture_3.jpeg)

![](_page_7_Figure_4.jpeg)

![](_page_7_Figure_5.jpeg)

![](_page_8_Figure_0.jpeg)

### SURVEYOR'S NOTES:

- THIS SITE. THERE IS A SITE BENCHMARK ON SITE AS SHOWN.

# FLOOD PLAIN NOTE:

### TAX LOT INFORMATION:

TAX LOT 12200 N.E.1/4 N.W.1/4 SEC.7 T.11S. R.03W. W.M. LINN COUNTY

![](_page_8_Figure_7.jpeg)

1.) THE HORIZONTAL AND VERTICAL DATUMS FOR THIS SURVEY ARE ARBITRARY FOR

2.) THERE WAS NO LOCATE CALLED IN PRIOR TO THIS SURVEY. ANY UTILITY LINES SHOWN ARE BASED STRICTLY ON THE CITY OF ALBANY GIS MAPPING. THESE LINES SHOULD BE FIELD VERIFIED PRIOR TO ANY CONSTRUCTION.

THIS SITE IS LOCATED FULLY WITHIN ZONE "X", OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN AS DESIGNATED ON THE FLOOD INSURANCE RATE MAP (FIRM) NUMBER 41043C0213H, LAST REVISED DECEMBER 8TH, 2016.

![](_page_8_Figure_14.jpeg)

![](_page_9_Figure_0.jpeg)

![](_page_9_Figure_8.jpeg)

![](_page_10_Figure_0.jpeg)

PERPENDICULAR CURB RAMP — WITH RETURN CURBS PER DETAIL NO. 317 ON SHEET 6.0

-(99.14) MATCH GRAVEL TO PROPOSED LANDING

REE( OREGON · (4 + 16, \* RENEWS 12/31/24 ADA RAMPS G - PROPOSED & GRADING ECREATION DEPARTMENT G Q 0 К ARK WORK D Z Δ С 4 Δ ALBAN TAKEN SIT SIT ОF ∠ <u>.</u> PLAN REVISIONS No. | DATE | BY 1 PROJECT NO. 2312-001 DATE 04/29/2024 DESIGNED A. VASQUEZ ENGINEER | D. REECE CHECKED SCALE I AS INDICATED WARNING: IF THIS GRAPHIC BAR DOES NOT MEASURE ONE INCH (1") THEN THE DRAWING IS <u>NOT</u> TO SCALE! 1/2 SHEET NUMBER — 5.1

![](_page_11_Figure_0.jpeg)

![](_page_11_Figure_1.jpeg)