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**SITE WORK MATERIALS SPECIFICATIONS**

**SECTION INCLUDES**

EXCAVATION, EMBANKMENT, BEDDING, BACKFILL AND MATERIALS FOR STRUCTURES, PAVEMENTS AND STORM DRAINS SPECIFIED OR SHOWN ON PLANS.

**QUALITY ASSURANCE**

**EARTHWORK TESTING** - GENERAL CONTRACTOR TO ARRANGE AND OWNER TO PAY FOR EARTHWORK TESTING BY MATERIALS TESTING LABORATORY REGULARLY ENGAGED TO PERFORM THE WORK REQUIRED.

**SUBMITTALS**

SUBMIT SIEVE ANALYSIS REPORT OF STRUCTURAL BACKFILL MATERIAL AND TRENCH AGGREGATE BACKFILL MATERIAL TO OWNER AND ENGINEER FOR APPROVAL.  
SUBMIT TEST RESULTS OF COMPACTION TO OWNER AND ENGINEER.  
ASPHALT MIX DESIGN.

**EXCAVATION GENERAL**

EXCEPT WHEN SHOWN OR SPECIFIED OTHERWISE, EXCAVATION INCLUDES REMOVAL OF MATERIALS OF ANY NATURE ENCOUNTERED, INCLUDING OBSTRUCTIONS THAT WOULD INTERFERE WITH THE EXECUTION OF THE WORK. REMOVE MATERIALS TO LINES AND GRADES SHOWN OR ORDERED. FURNISH, PLACE AND MAINTAIN SUPPORTS AND SHORING REQUIRED FOR THE SIDES OF EXCAVATIONS, AND PUMPING OR DITCHING MEASURES FOR THE REMOVAL OR EXCLUSION OF WATER, INCLUDING STORM WATER AND WASTE WATER REACHING THE SITE WHICH WOULD DAMAGE WORK.

**STRIPPING**

STRIP GROUND SURFACE UNDER TURF, PAVEMENTS AND SIDEWALKS OF GRASS, ROOTS AND ORGANIC MATERIAL TO A DEPTH OF THE ORIGINAL GROUND SURFACE ROOT ZONE BELOW ANY FILL SOIL OVERLAYING THE SITE. GENERALLY A MINIMUM DEPTH OF 6 INCHES IS REQUIRED. DISPOSE OF STRIPPINGS OFF SITE.

**EXCAVATION BENEATH PAVEMENT**

EXCAVATION UNDER AREAS TO BE PAVED TO EXTEND TO THE BOTTOM OF PAVEMENT SECTION. AFTER REQUIRED EXCAVATION IS COMPLETE SCARIFY EXPOSED SURFACE, BRING TO OPTIMUM MOISTURE CONTENT, AND COMPACT BY MAKING THREE PASSES OVER THE AREA WITH THE REAR TIRES OF A LOADED TEN YARD DUMP TRUCK.

**SITE PREPARATION**

PRIOR TO PLACING GEOTEXTILE AND AGGREGATE BASE ON SUBGRADE, VISUALLY INSPECT ENTIRE AREA WITH ENGINEER TO IDENTIFY POTENTIAL SOFT OR YIELDING AREAS. PROOF ROLL SUSPECT AREAS WITH LOADED 10 CUBIC YARD DUMP TRUCK. SOFT OR YIELDING AREAS SHALL BE SCARIFIED, DRIED, RE-COMPACTED, AND AGAIN PROOF ROLLED OR REMOVED AND FILLED WITH COMPACTED BASE ROCK.

**PIPELINE TRENCH EXCAVATION**

EXCEPT WHEN SHOWN OR SPECIFIED OTHERWISE, EXCAVATE FOR PIPELINES BY THE OPEN-CUT TRENCH METHOD. BOTTOM OF TRENCH TO HAVE MINIMUM WIDTH EQUAL TO THE OUTSIDE DIAMETER OF PIPE PLUS 12 INCHES AND MAXIMUM WIDTH EQUAL TO OUTSIDE DIAMETER OF PIPE PLUS 20 INCHES. EXCAVATE BOTTOM OF TRENCH UNIFORMLY TO GRADE OF BOTTOM OF PIPE.

**DISPOSAL OF EXCESS EXCAVATED MATERIAL**

REMOVE AND DISPOSE OF EXCAVATED MATERIAL OFF SITE.

**PIPE BEDDING AND BACKFILL IN PIPE ZONE**

**NON-SLOTTED STORM DRAIN PIPE** - 1 IN. MINUS CRUSHED AGGREGATE.  
**SLOTTED STORM DRAIN PIPE** - DRAIN ROCK.

**TRENCH BACKFILL ABOVE PIPE ZONE**

**OUTSIDE PAVEMENT AND TURF LIMITS** - SELECT NATIVE TRENCH EXCAVATION MATERIAL WITH GREATEST QUANTITY OF SOIL FRACTION PRACTICAL, NO ROCKS LARGER THAN 6 INCH SIZE. TOP 12 INCHES OF BACKFILL TO BE TOPSOIL.

**UNDER PAVEMENTS, TURF AND SIDEWALKS** - CRUSHED AGGREGATE.

**TRENCH COMPACTION**

**UNDER PAVEMENTS** - 95% OF OPTIMUM DENSITY AS DETERMINED BY ASTM D1557.  
**ELSEWHERE** - 90 % OF ASTM D-1557.

OBTAIN BY MECHANICAL MEANS BETWEEN PIPE AND TRENCH SIDEWALL.  
RESTORE SURFACE OF TRENCH TO ORIGINAL CONDITION IF NOT UNDER PAVEMENT OR TURF.

**CRUSHED AGGREGATE BASE ROCK**

CLEAN 1" MINUS GRADATION CRUSHED AGGREGATE CONFORMING TO OREGON STATE HIGHWAY DIVISION (O.S.H.D.) SPECIFICATIONS FOR ROADWAY BASE AGGREGATE. COMPACT IN 8 IN. LAYERS WITH MECHANICAL EQUIPMENT TO 95% OF OPTIMUM DENSITY DETERMINED BY ASTM D-1557 METHOD "D" AT ±2% OF OPTIMUM MOISTURE CONTENT.

**CRUSHED AGGREGATE FINISHING ROCK**

CLEAN 1/4" MINUS GRADATION CRUSHED AGGREGATE. COMPACT WITH MECHANICAL EQUIPMENT TO 95% OF OPTIMUM DENSITY DETERMINED BY ASTM D-1557 METHOD "D" AT ±2% OF OPTIMUM MOISTURE CONTENT.

**DRAIN ROCK**

ROUND, WATER-WORN, WASHED, SOUND, DURABLE, OPEN-GRADED ROCK FREE OF SOFT, FRIABLE, THIN, ELONGATED, OR LAMINATED PIECES, DISINTEGRATED MATERIAL, ORGANIC MATTER, OIL, ALKALI, OR OTHER DELETERIOUS SUBSTANCES. SIZE GRADATION 1 1/2" TO 3/4".

**RIPRAP**

FRACTURED BASALT QUARRY ROCK CONFORMING TO THE FOLLOWING VISUAL GRADATION,

<u>DIAMETER INCHES</u>	<u>% SMALLER</u>
7	100
6	80
4	50
1	NOT GREATER THAN 10

PLACE IN UNIFORM THICKNESS ON PREPARED FILTER BLANKET. COMPACT INTO FILTER BY TAMPING WITH BACKHOE BUCKET OR SIMILAR INSTRUMENT, UNIFORMLY FINISH DITCH BOTTOM AND SIDE SLOPES PARALLEL TO DESIGN DITCH GRADE.

**FILTER BLANKET**

CRUSHED AGGREGATE, 1/4" MINUS SIZE, CONFORMING TO OREGON HIGHWAY DIVISION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 1984.  
PLACE IN UNIFORM UNCOMPACTED THICKNESS ON PREPARED DITCH SUBGRADE.

**GEOTEXTILE FABRIC**

AMOCO 4545 NONWOVEN CONSTRUCTION FABRIC FOR DRAIN PROTECTION MANUFACTURED BY AMOCO FABRICS AND FIBERS COMPANY, OR APPROVED EQUAL.

**STORM DRAIN PIPE**

**POLYVINYL CHLORIDE PIPE (PVC)** - PVC PIPE CONFORMING TO ASTM D 3034 SDR 35. USE ASTM D 1785 SCHEDULE 40 WHEN NOTED ON PLANS OR REQUIRED BY PLUMBING CODE. PIPE SHALL HAVE INTEGRAL BELL-END UTILIZING GASKET-TYPE JOINTS. FITTINGS SHALL BE GASKET-TYPE AND COMPLY WITH PIPE SPECIFICATION SUITABLE FOR USE WITH EITHER PIPE.

**CORRUGATED HIGH DENSITY POLYETHYLENE PIPE (CHDPE)** - CORRUGATED HIGH DENSITY POLYETHYLENE PIPE CONFORMING TO AASHTO M-284 TYPE S PIPE (ADS N-12 OR EQUAL). THIS IS AN EXTERIOR ANNULAR CORRUGATED PIPE WITH A SMOOTH INTERIOR WALL. NON-SLOTTED PIPE SHALL HAVE WATERTIGHT JOINTS. O-RING GASKETS SHALL MEET THE REQUIREMENTS OF ASTM F 477. INSTALLATION SHALL BE PER ASTM D 2321. PROVIDE SLOTTED AND SOLID AS INDICATED ON PLANS.

**INLINE DRAINS**

PVC BODY WITH DUCTILE IRON GRATE. NYLOPLAST-ADS INLINE DRAINS OR APPROVE EQUAL.

**MANHOLES, JUNCTION BOXES, FRAMES AND GRATES**

CONSTRUCT AS DETAILED.

**MORTAR JOINTS**

MADE WITH PORTLAND CEMENT MIXED ONE (1) PART CEMENT TO ONE AND ONE-HALF (1 1/2) PARTS MASON'S SAND AND CLEAN WATER.

**ASPHALT PAVEMENT**

**HOT PLANT MIX ASPHALT** - CONFORM TO THE OREGON STANDARD SPECIFICATION FOR CONSTRUCTION 00745-HOT MIXED ASPHALT CONCRETE (HMAC), LATEST EDITION.

**CLASS OF ASPHALT MIX** - "LEVEL 1 HMAC" AS DEFINED BY SUBSECTION 00745.02 OF THE OREGON STANDARD SPECIFICATION FOR CONSTRUCTION, LATEST EDITION. 0.5-INCH DENSE GRADED HOT MIX ASPHALT WITH ASPHALT GRADE PG70-22.

**TACK COAT** - CONFORM TO THE OREGON STANDARD SPECIFICATION FOR CONSTRUCTION 00730-ASPHALT TACK COAT, LATEST EDITION.

**SITE PREPARATION** - PRIOR TO PLACING AGGREGATE BASE ON SUB-GRADE, PROOF ROLL ENTIRE PAVEMENT AREA WITH LOADED 10 CUBIC YARD DUMP TRUCK. SOFT OR YIELDING AREAS SHALL BE SCARIFIED, DRIED, RE-COMPACTED, AND AGAIN PROOF ROLLED.

**GEOTEXTILE FABRIC** - PLACE OVER COMPACTED SUBGRADE PRIOR TO PLACEMENT OF BASE AGGREGATE. EXXON GTF200S, AMOCO 4545 OR EQUAL NON-WOVEN FABRIC. LAP 12" MIN.

**FINE GRADE** - AFTER SUB-GRADE PROOF ROLLING IS COMPLETED, FINE-GRADE TO A TOLERANCE OF WITHIN +/-0.05 FEET OF REQUIRED GRADE. FINISHED SURFACE OF THE ASPHALT CONCRETE IS NOT TO VARY MORE THAN +/- 1/8 INCH IN TEN FEET WHEN MEASURED IN ANY DIRECTION.

**BASE AGGREGATE** - APPLY IN LIFTS TO THE THICKNESS REQUIRED ON PLANS. COMPACT TO 95% OF OPTIMUM DENSITY AS DETERMINED BY ASTM D 1557. INSTALL CONTROL ELEVATION STAKES AT TOP OF BASE AGGREGATE TO ASSIST IN ACHIEVING REQUIRED FINISHED SURFACE TO A TOLERANCE OF +/-0.04 FEET.

**JOINING EXISTING PAVEMENTS, CURBS AND STRUCTURES**

ALL EXISTING PAVEMENT EDGES AND CURBS TO BE JOINED WITH NEW PAVEMENT SHALL BE SAWCUT SUCH THAT THE CUT REMAINS STRAIGHT AND VERTICAL WITHOUT BREAKOUTS AT THE TIME OF JOINING THE NEW PAVEMENT. THOROUGHLY PAINT THE SAWCUT EDGE OR STRUCTURE WITH AR 4000, PBA-2 OR PBA-5 ASPHALT CEMENTS. EMULSIFIED ASPHALT PRODUCTS (CRS-1, CRS-2, CMS-2, CMS-2h, CMS-Ss, CSS-1 OR RS-LTP) ARE ACCEPTABLE ALTERNATES TO ASPHALT CEMENTS.

**PLACING HOT MIX ASPHALT** - AFTER BASE AGGREGATE IS INSTALLED TO FINISHED GRADE, PLACE HOT MIX ASPHALT SURFACE COURSE IN LAYER THICKNESS SHOWN ON PLANS, BUT NOT THICKER THAN 4 INCHES. PLACE HOT MIX ASPHALT WITH MECHANIZED SELF-PROPELLED PAVING MACHINES, EXCEPT PIGGY-BACK BOX SPREADERS MAY BE PERMITTED IN SMALL AREAS BY EXPRESS PERMISSION OF ENGINEER. RAKE OUT LARGER AGGREGATE WHERE FEATHERING TO MATCH EXISTING PAVEMENT.

**COMPACTION** - START ROLLER COMPACTING AS SOON AS HOT MIX ASPHALT MATERIAL CAN BE COMPACTED WITHOUT DETRIMENTAL DISPLACEMENT. ROLL SURFACE A MINIMUM OF FOUR COMPLETE PASSES WITH A POWERED STEEL WHEEL DRUM ROLLER WEIGHING NOT LESS THAN TEN NOR MORE THAN TWELVE TONS AND CONTINUE UNTIL ALL ROLLER MARKS DISAPPEAR. COMPACT TO AT LEAST 91% OF THE THEORETICAL MAXIMUM DENSITY DETERMINED IN ACCORDANCE WITH ASTM D-2041.

**CONCRETE FOR CURBS, SIDEWALKS, CATCHBASINS, MANHOLES**

**QUALITY** - MATERIALS, MIXING AND PLACING TO CONFORM TO ACI CODE 318-89.

**PROPERTIES** - 3000 PSI F<sub>c</sub> AT 28 DAYS; MAXIMUM WATER CEMENT RATIO 0.60 BY WEIGHT (DO NOT REDUCE CEMENT CONTENT BELOW MINIMUM); AIR ENTRAINED 5.5% +/- 1.5%; 4" MAXIMUM SLUMP; 3/4" MAXIMUM SIZE COARSE AGGREGATE. CALCIUM CHLORIDE PROHIBITED. WATER REDUCING ADDITIVES REQUIRED.

**CURING COMPOUND** - SPRAY SURFACE WITH PIGMENTED COMPOUND CONFORMING TO ASTM C-309.

**REINFORCEMENT** - BARS TO CONFORM TO ASTM A615 GRADE 60. REINFORCE ALL CONCRETE PAVEMENT WITH #3 AT 18" O.C. EACH WAY CENTERED IN THICKNESS OF SLAB.



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**NORTH SALEM HIGH SCHOOL  
ATHLETIC FACILITIES UPGRADE PROJECT  
765 14TH ST. NE  
SALEM, OREGON  
SPECIFICATIONS**

JOB NO.	07104-1
DATE	14 APRIL 2010
DESIGN BY	GL
CHECKED BY	GL
SHEET	11