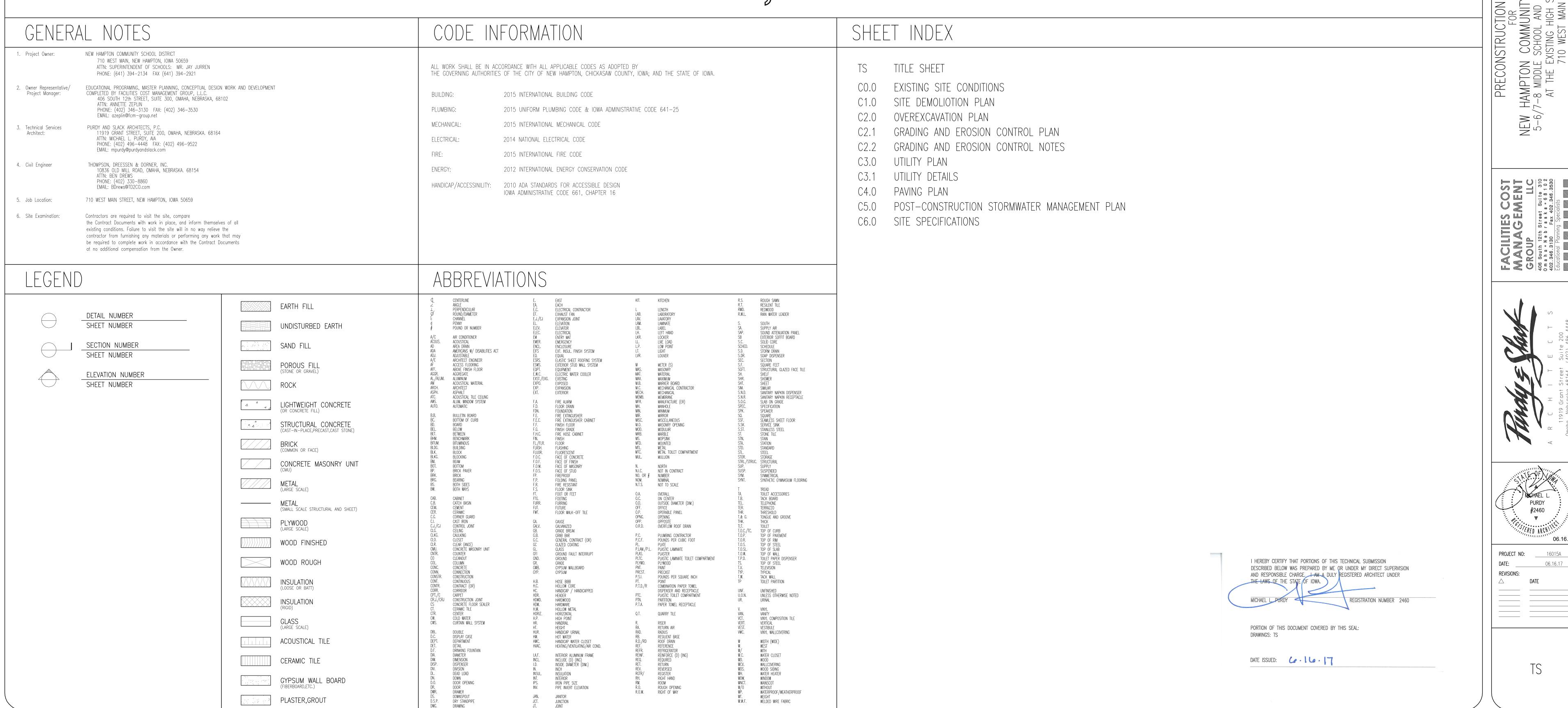
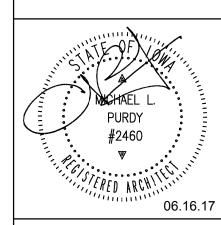
CONTRACT DOCUMENTS

# PRECONSTRUCTION SITE WORK NEW HAMPTON COMMUNITY SCHOOL DISTRICT

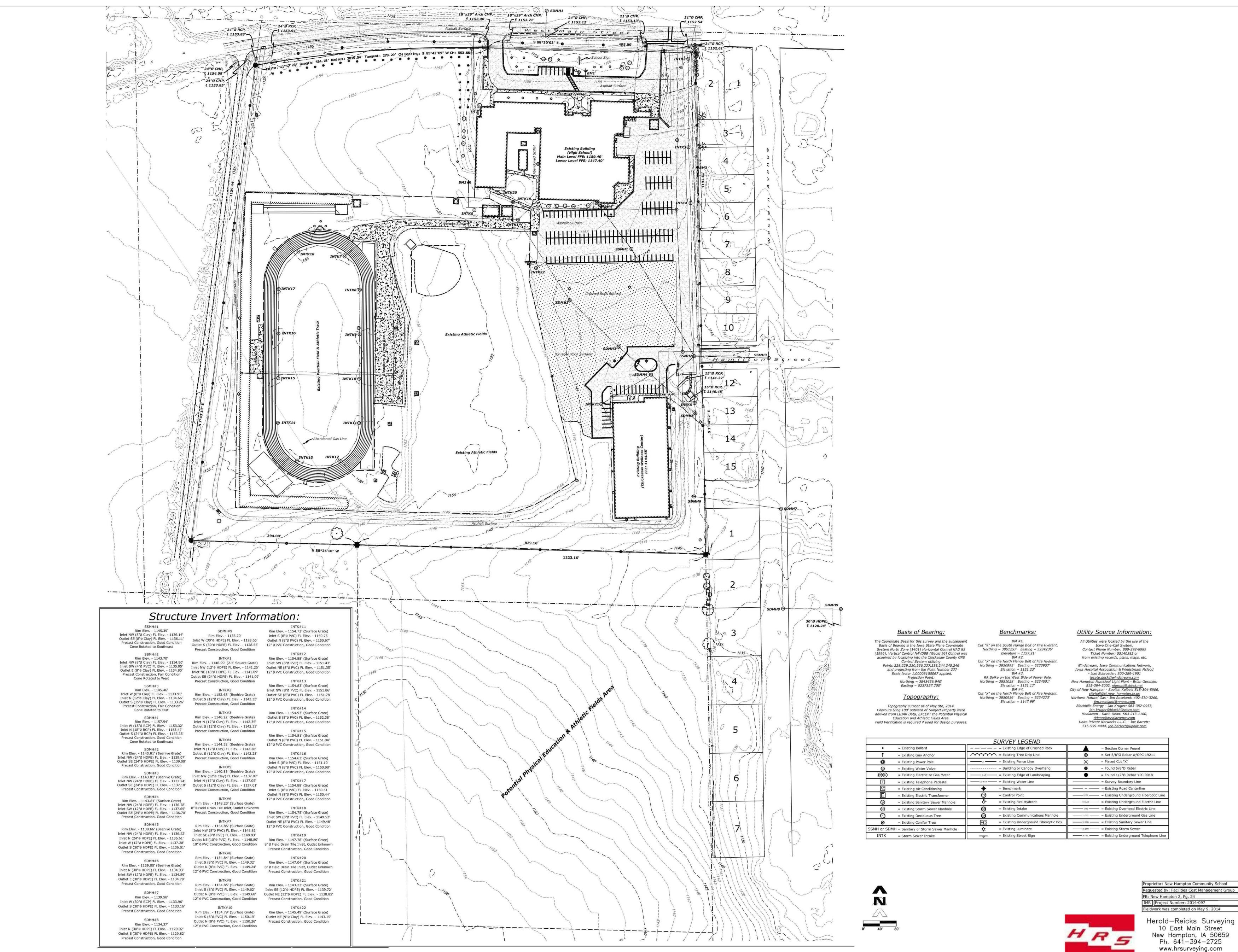
5-6/7-8 MIDDLE SCHOOL AND HIGH SCHOOL ADDITIONS AT THE EXISTING HIGH SCHOOL FACILITY 710 WEST MAIN STREET NEW HAMPTON, IOWA 50659







**PROJECT NO:** 16015A 06.16.17 **REVISIONS:** DATE



PRECONSTRUCTION SITE WORK

FOR

NEW HAMPTON COMMUNITY SCHOOL DISTRICT

5-6/7-8 MIDDLE SCHOOL AND HIGH SCHOOL ADDITIONS

AT THE EXISTING HIGH SCHOOL FACILITY

AT THE EXISTING HIGH SCHOOL FACILITY

CONDITIONS

MANAGEMENT
GROUP

Om a h a - N e b r a s k a - 6 8 1 0 2
402.346.3130

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6/16/2017 3:21 PM JEFF POPE H:\800\898-164 Purdy & Slack - New Hampton Community School Expansion\Drawings\898-164 Removals.dwg

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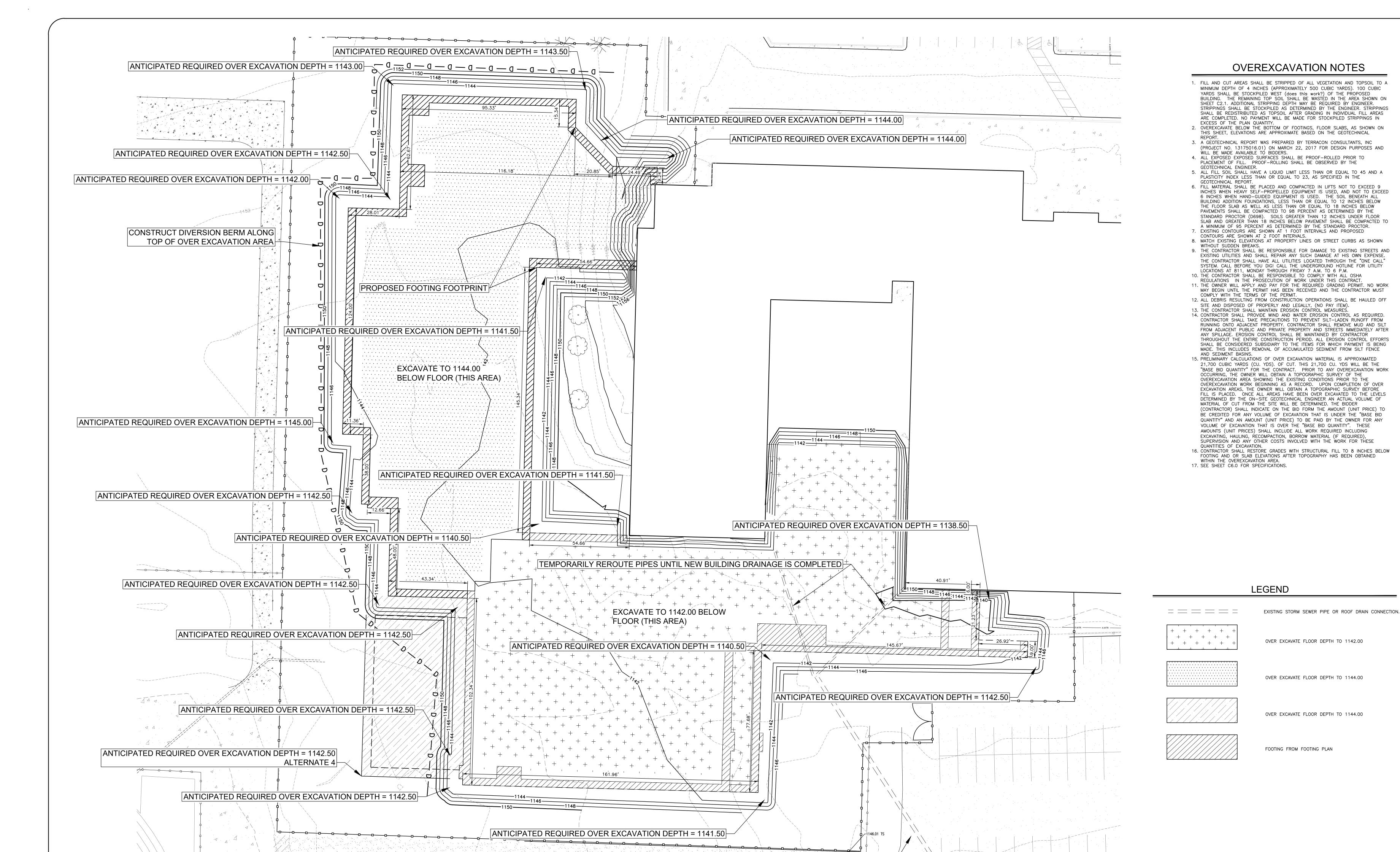
**DISTRICT**ADDITIONS

PROJECT NO: \_\_\_\_\_16015A\_\_\_

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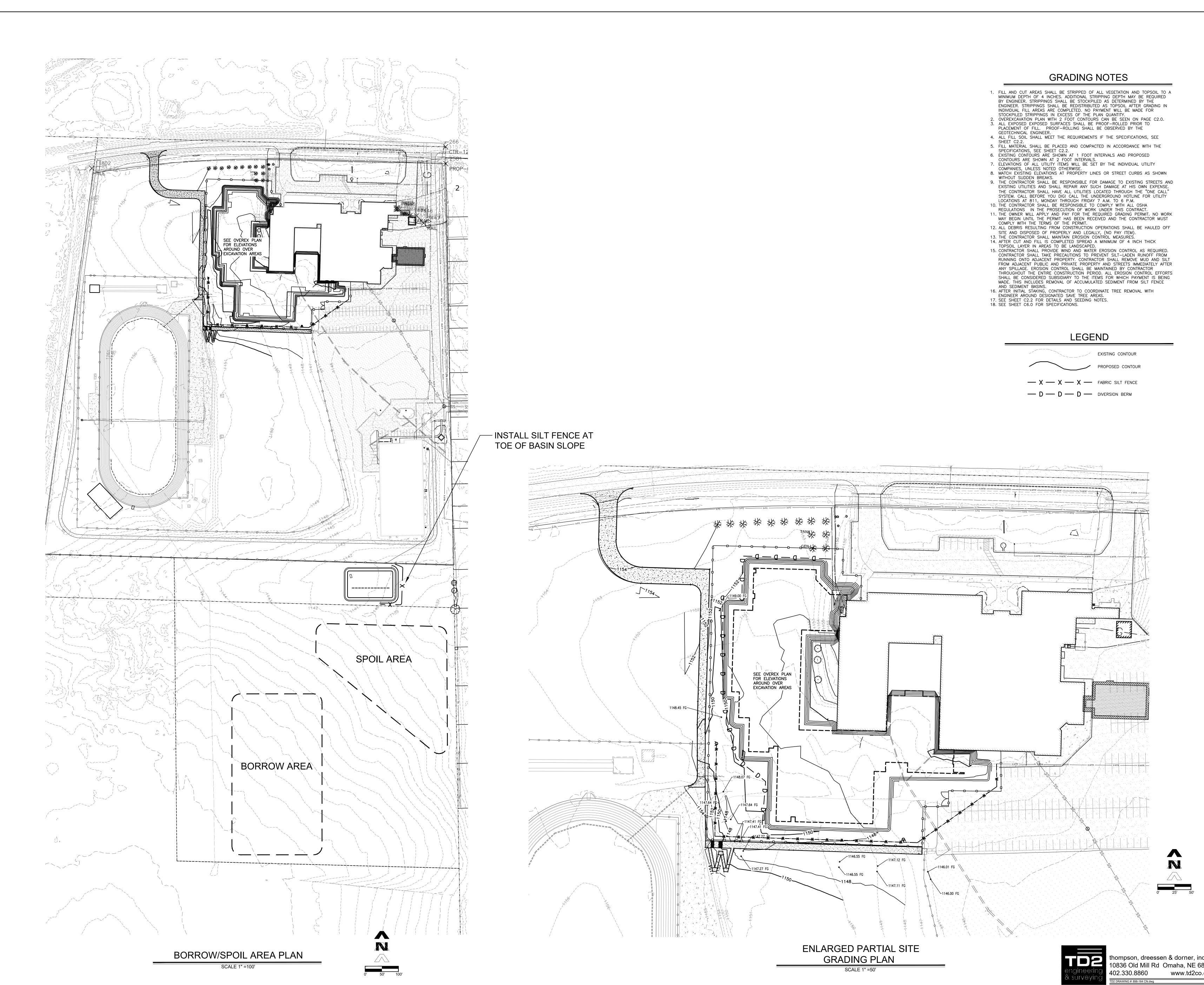
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thompson, dreessen & dorner, inc.
10836 Old Mill Rd Omaha, NE 68154
402.330.8860 www.td2co.com

C2.1



NEW 5-6,

EARTHWORK

PART 1 - GENERAL: 1.1 WORK INCLUDED

A. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, SERVICES, ETC., NECESSARY FOR AND INCIDENTAL TO THE COMPLETION OF EARTHWORK SPECIFIED HEREIN, OR SHOWN ON THE DRAWINGS, OR NECESSARY FOR COMPLETION SECTION A-A OF OTHER WORK. EARTHWORK INCLUDES, BUT IS NOT NECESSARILY LIMITED TO: TOPSOIL REMOVAL EXCAVATION NECESSARY TO ACHIEVE FINAL GROUND LINES OVEREXCAVATION FILL PLACEMENT - MOUNTABLE BERM (OPTIONAL) BACKFILL PLACEMENT TOPSOIL REDISTRIBUTION EXISTING PAVEMENT 1.2 QUALITY ASSURANCE A. COMPLY WITH ALL APPLICABLE AND/OR PERTINENT SPECIFICATIONS, STANDARDS, LAWS, CODES, REGULATIONS,

AND OTHER REQUIREMENTS PROMULGATED BY ANY GOVERNMENTAL SUBDIVISION OR AGENCY HAVING JURISDICTION AS WELL AS THOSE IMPOSED BY THE INSURANCE CARRIER PROVIDING COVERAGE FOR THE PROJECT. 1.3 <u>SUBSURFACE INVESTIGATIONS</u> A. A SUBSURFACE SOIL INVESTIGATION (DATED MARCH 22, 2017) HAS BEEN COMPLETED FOR THE THE NEW HAMPTON HIGH SCHOOL, NEW HAMPTON, IOWA FOR THE OWNER BY TERRACON, OMAHA, NEBRASKA (PROJECT NO. 13175016.01). THE INVESTIGATION WAS MADE FOR THE PURPOSE OF PROVIDING INFORMATION FOR DESIGN. A COPY OF THE BORING LOGS AND INVESTIGATION REPORT MAY BE EXAMINED AT THE OFFICE OF THE ARCHITECT, OR AT THE OFFICE OF THE OWNER. THESE DOCUMENTS ARE NOT PART OF THE CONTRACT DOCUMENTS. THEY ARE MADE AVAILABLE ONLY AS INFORMATION AND WITHOUT ANY WARRANTY OF ACTUAL CONDITIONS. 1.4 <u>SITE PREPARATION</u>
A. THE SITE IS ADJACENT TO THE EXISTING HIGH SCHOOL BUILDING. BIDDERS SHALL VISIT THE SITE AND MAKE SUCH ASSESSMENTS AS NECESSARY TO DETERMINE THE SCOPE OF WORK NECESSARY TO COMPLETE THE GRADING. THE CONTRACTOR SHALL BE REQUIRED TO COMPLETE GRADING TO THE FINISH GRADES SHOWN ON

1.5 <u>TESTING AND INSPECTION</u>
A. THE "GEOTECHNICAL ENGINEER" REFERRED TO HEREIN SHALL BE TERRACON OF OMAHA, NEBRASKA OR OTHERWISE APPROVED BY THE OWNER. B. IN GENERAL, THE SERVICES OF THE GEOTECHNICAL ENGINEER SHALL INCLUDE WHATEVER MAY BE NECESSARY TO DETERMINE THAT ALL EARTHWORK MEETS THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, AND TO PROVIDE WRITTEN REPORTS COVERING TESTS MADE, INSPECTION WORK COMPLETED, AND CONCLUSIONS CONCERNING THE ACCEPTABILITY OF THE WORK. C. TESTING AND INSPECTION SERVICES PROVIDED BY THE GEOTECHNICAL ENGINEER SHALL INCLUDE, BUT IS NOT NECESSARILY LIMITED TO: . EVALUATION AND APPROVAL OF ALL FILL MATERIALS INCLUDING ANY PROPOSED OFF-SITE MATERIALS EVALUATION AND APPROVAL OF ALL METHODS AND EQUIPMENT USED FOR EARTHWORK THE PREPARATION OF RECOMMENDATIONS FOR ACHIEVING THE SPECIFIED WORK INSPECT BUILDING EXCAVATION AND OVEREXCAVATION 5. INSPECT FOOTING AND EXCAVATIONS OBSERVATION OF ALL FILLING AND BACKFILLING

EVALUATION AND APPROVAL OF COMPLETED WORK 8. RECOMMENDATIONS FOR CORRECTION OF UNACCEPTABLE WORK, IF REQUESTED BY CONTRACTOR. 9. PROVIDING COPIES OF ALL EVALUATIONS AND APPROVALS OF MATERIAL METHODS, AND COMPLETED WORK, TOGETHER WITH RECOMMENDATIONS AND DAILY INSPECTION REPORTS FOR THE ARCHITECT AND OWNER'S FILE. THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE SHALL BE PRESENT WHEN EARTHWORK IS UNDERWAY.
THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE PRIOR TO STARTING EARTHWORK OPERATIONS AND PROVIDE ACCESS TO THE SITE FOR TESTING AND INSPECTION. 1.6 COST OF TESTING AND INSPECTION SERVICES

A. THE COST OF TESTING AND INSPECTION SERVICES SHALL BE PAID BY THE CONTRACTOR. 1.7 PREBID CONSIDERATIONS A. PRIOR TO SUBMITTING HIS/HER PROPOSAL, THE CONTRACTOR SHALL MAKE WHATEVER ON-SITE AND OFF-SITE

STUDIES OF SURFACE AND SUBSURFACE CONDITIONS HE/SHE CONSIDERS NECESSARY TO ASSURE HIMSELF/HERSELF THAT CONDITIONS ARE KNOWN TO THE DEGREE HE/SHE CONSIDERS ACCEPTABLE. ARRANGEMENTS TO MAKE ON-SITE STUDIES (BORINGS, TEST PITS, ETC.) BEFORE BIDS ARE SUBMITTED SHALL BE MADE THROUGH THE ARCHITECT. IF THE SITE IS DISTURBED BY SUCH STUDIES, APPROPRIATE REPAIRS APPROVED BY THE PROJECT GEOTECHNICAL ENGINEER SHALL BE MADE BY THE PARTY MAKING SUCH STUDIES. 1.8 <u>LAYOUT OF THE WORK</u>
A. THE CONTRACTOR SHALL PROVIDE THE SERVICES OF A COMPETENT CIVIL ENGINEER OR LAND SURVEYOR TO PROVIDE HORIZONTAL AND VERTICAL CONTROL OF THE LIMITS OF EXCAVATION AND FILL AREAS. 1.9 PROTECTION OF PERSONS AND PROPERTY

A. BARRICADE OPEN EXCAVATIONS OCCURRING AS PART OF THIS WORK AND POST WITH WARNING LIGHTS. OPERATE WARNING LIGHTS AS RECOMMENDED BY AUTHORITIES HAVING JURISDICTION. B. PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, WASHOUT, AND OTHER HAZARDS CREATED BY EARTHWORK

1.10 <u>PROTECTION OF EXISTING STRUCTURES</u>

A. PERFORM EARTHWORK REQUIREMENTS USING APPROPRIATE METHODS AND EQUIPMENT AS NECESSARY TO AVOID DAMAGING EXISTING STRUCTURES. A. PROVIDE SAMPLES OF EACH TYPE OF FILL MATERIAL FOR ANALYSIS BY THE "GEOTECHNICAL ENGINEER". PART 2 - PRODUCTS:

2.1 <u>FILL MATERIAL — GENERAL</u>
A. ALL FILL MATERIAL SHALL BE FREE FROM EXCESSIVE MOISTURE, FROZEN OR PERISHABLE MATERIAL, DEBRIS, SOD, OR STONES LARGER THAN 3 INCHES ACROSS. B. ALL MATERIALS PROPOSED FOR USE AS FILL SHALL BE EVALUATED AND APPROVED BY THE GEOTECHNICAL THE CONTRACTOR SHALL PROVIDE ALL ADDITIONAL FILL MATERIAL FROM OFF-SITE TO COMPLETE THE WORK 2.2 <u>FILL MATERIALS — PROPERTIES</u>
A. ALL STRUCTURAL FILL SHALL HAVE A LIQUID LIMIT LESS THAN OR EQUAL TO 45 AND PLASTICITY INDEX LESS THAN OR EQUAL TO 23. B. SOILS WITH A LIQUID LIMIT GREATER THAN 45 AND A PLASTICITY INDEX GREATER THAN 23 MAY BE PLACED IN GREEN AREAS AWAY FROM THE BUILDING AND PAVEMENT AREAS. MATERIALS AND SHALL NOT CONTAIN PARTICLE LARGER THAN 2 INCHES. 2.3 <u>BEDDING MATERIALS:</u>
A. PROCESSED SAND AND GRAVEL FREE FROM CLAY LUMPS, ORGANIC, OR OTHER DELETERIOUS MATERIAL, AND

COMPLYING WITH FOLLOWING GRADATION REQUIREMENTS: SIEVE SIZE PERCENT PASSING (BY WEIGHT) 3/8 INCH 15 <u>+</u> 10

SEDIMENT, WHICH MAY ENTER EXCAVATIONS.

5 <u>+</u> 5 PART 3 - EXECUTION: 3.1 <u>GENERAL</u>
A. FAMILIARIZATION; BEFORE THE WORK IS STARTED, BECOME THOROUGHLY FAMILIAR WITH THE SITE CONDITIONS

THAN THOSE ORIGINALLY PROPOSED ARE TO BE CONSIDERED, ADDITIONAL EVALUATIONS AND APPROVALS SHALL C. WATER SOIL MOISTURE AND WEATHER: 1. DO NOT PLACE OR COMPACT FILL WHEN WEATHER CONDITIONS WILL HAVE DETRIMENTAL EFFECT ON THE 2. REMOVE AND REPLACE WORK THAT IS DAMAGED BY WEATHER-RELATED FACTORS.
3. PROVIDE SUITABLE BERMS OR CHANNELS TO CONTROL AND DIRECT WATER AS MAY BE NECESSARY TO PREVENT EROSION, FLOODING, OR OTHER DAMAGE. PROMPTLY REMOVE AND DISPOSE OF ALL WATER AND

AND ALL OTHER FACTORS, WHICH MAY AFFECT THE WORK. TAKE ALL SUCH CONDITIONS AND FACTORS INTO B. APPROVALS: COMPLETE ALL EVALUATIONS AND OBTAIN APPROVALS FOR PROPOSED METHODS AND MATERIALS BY

GEOTECHNICAL ENGINEER BEFORE STARTING THE WORK. IF, FOR ANY REASON, MATERIALS OR METHODS OTHER

4. WHEN THE MOISTURE CONTENT OF THE SOIL PROPOSED FOR USE AS FILL IS MORE THAN THE LIMIT SPECIFIED, IT SHALL NOT BE USED UNLESS AND UNTIL THE MOISTURE CONTENT HAS BEEN REDUCED TO AN ACCEPTABLE LEVEL. WHEN THE MOISTURE CONTENT IS BELOW THE LIMIT SPECIFIED, THE SOIL SHALL NOT BE JSED UNLESS APPROPRIATE MOISTURE IS ADDED AND BLENDED UNIFORMLY THROUGHOUT THE MATERIAL. TOPSOIL REMOVAL AND CONSERVATION UPON COMPLETION AND APPROVAL OF ALL CLEARING AND GRUBBING OPERATIONS, ALL ACCEPTABLE TOPSOIL SHALL BE STRIPPED AND PLACED IN AN APPROVED STOCKPILE AREA FOR LATER PLACEMENT IN LANDSCAPE AREAS. REMOVAL OF TREES AND SHRUBS SHALL INCLUDE REMOVAL OF THE ROOT BALL. THE UPPER 6 TO 9" OF TOPSOIL SHALL BE REMOVED WITH THE GRASS STUBBLE AND ROOT CROWN. THE DEPTH OF TOPSOIL REMOVAL SHALL BE AT THE DIRECTION OF THE GEOTECHNICAL ENGINEER. ADDITIONAL STRIPPING DEPTH MAY BE NECESSARY, AS DIRECTED BY THE GEOTECHNICAL ENGINEER. ACCEPTABLE TOPSOIL SHALL BE CONSIDERED THE SURFACE LAYER OF SOIL THAT IS REPRESENTATIVE OF SOILS IN THE VICINITY THAT PRODUCE NATIVE VEGETATION AS DETERMINED BY THE GEOTECHNICAL ENGINEER. . TOPSOIL STOCKPILES SHALL NOT BE MORE THAN 20 FEET IN HEIGHT AND SHALL HAVE SIDE SLOPES NO STEEPER THAN TWO (2) HORIZONTAL TO ONE (1) VERTICAL. THE CONTRACTOR SHALL INSURE THAT THIS MATERIAL IS REASONABLY FREE FROM UNDERLYING SUBSOIL, LUMPS, OBJECTIONABLE WEEDS, LITTER, BRUSH, ORGANIC MATTER, ROOTS, TOXIC SUBSTANCES OR ANY MATERIALS THAT MIGHT BE HARMFUL TO PLANT GROWTH OR BE A HINDRANCE TO GRADING, PLANTING OR MAINTENANCE OPERATIONS. TOPSOIL SHALL NOT CONTAIN MORE THAN FIVE PERCENT BY VOLUME OF STONES, STUMPS OR OTHER OBJECTS LARGER THAN 3/4 INCH IN ANY DIMENSION. <u>OVEREXCAVATION</u>

A. THE NEW BUILDING ADDITIONS FOUNDATIONS SHALL BE OVEREXCAVATED TO DEPTHS SHOWN ON SHEET C2.0, AND NO LESS THAN 5 FEET BEYOND ALL SIDES OF THE NEW FOUNDATIONS TRANSITIONING BACK TO EXISTING GRADE AT A SLOPE NO GREATER THAN 1 FOOT HORIZONTAL TO 1 VERTICAL. THE CONTRACTOR MAY ELECT TO OVEREXCAVATE ACROSS THE ENTIRE BUILDING FOOTPRINT. OVEREXCAVATION NEXT TO THE EXISTING BUILDING SHALL BE EXERCISED WITH CARE. OVEREXCAVATION SHALL NOT UNDERMINE EXISTING FOUNDATIONS. OVEREXCAVATION SHALL BE COMPLETED IN SMALL ISOLATED AREAS LIMITED TO 10 FEET OF OVEREXCAVATION (EXPOSED EXISTING FOUNDATION) FOR EVERY 60 FEET OF EXISTING

THE SURROUNDING SURFACE SOIL WITHIN 20 FEET OF THE NEW ADDITIONS SHALL BE REMOVED AND RECOMPACTED TO A DEPTH OF 2 FEET. D. THE BASE OF OVEREXCAVATED AREAS SHALL BE OBSERVED BY THE GEOTECHNICAL ENGINEER.

E. AREA TO RECEIVE FILL SHALL BE SCARIFIED TO A DEPTH OF 8 INCHES, MOISTURE CONDITIONED AND COMPACTION IN ACCORDANCE WITH THE REQUIREMENT BELOW.

BUILDING/FOUNDATION AT ANY TIME.

3.4 EXCAVATION

A. BY WHATEVER APPROPRIATE MEANS MAY BE NECESSARY, EXCAVATE AS AND WHERE REQUIRED TO COMPLETE ALL WORK FOR THE PROJECT. B. MATERIALS EXCAVATED MAY BE USED FOR FILL WHEN THE PROPERTIES OF THE MATERIAL MEET THE REQUIREMENTS GIVEN HEREIN AND APPROVED BY THE GEOTECHNICAL ENGINEER. C. EXCAVATE TO ELEVATIONS SHOWN ON THE DRAWINGS. OBTAIN GEOTECHNICAL ENGINEERS INSPECTION OF SUBGRADE. REMOVE AND REPLACE LOW-DENSITY MATERIAL AS DIRECTED BY THE GEOTECHNICAL ENGINEER.

D. AFTER APPROVAL OF GEOTECHNICAL ENGINEER, EXCAVATE FOR FOOTINGS AND OBTAIN GEOTECHNICAL ENGINEERS INSPECTION. REMOVE AND REPLACE LOW-DENSITY MATERIAL AS DIRECTED BY THE GEOTECHNICAL ENGINEER. EXCAVATED MATERIALS, WHICH ARE NOT USED FOR FILL, SHALL BE LAWFULLY DISPOSED OF OFF-SITE. 3.4 FILL AND BACKFILL PLACEMENT

DETERMINED BY ASTM PROCEDURE D698, STANDARD PROCTOR. MOISTURE CONTENT REQUIREMENTS GIVEN ARE EXPRESSED AS PERCENTAGE POINT DEVIATIONS FROM OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM B. MATERIALS USED FOR FILL SHALL MEET THE REQUIREMENTS GIVEN HEREIN. FILL MATERIALS SHALL BE OF SIMILAR PROPERTIES THROUGHOUT THE PROJECT AREA. C. EACH LAYER OF FILL SHALL BE MIXED AND SPREAD EVENLY AFTER IT IS PLACED. 3.5 <u>FILL PLACEMENT REQUIREMENTS</u>

A. COMPACTION REQUIREMENTS GIVEN ARE EXPRESSED AS A PERCENTAGE OF MAXIMUM DRY DENSITY AS

A. ALL FILL SHALL BE PLACED TO MEET THE FOLLOWING REQUIREMENTS CONCERNING FILL MATERIAL TYPE,

COMPACTION, AND MOISTURE CONTENT. REQUIREMENTS (ASTM D698) MOISTURE CONTENT AREAS OF FILL PLACEMENT (STANDARD PROCTOR) (PERCENT OF OPTIMUM) STRUCTURAL FILL - PLACED BELOW BUILDING SLAB AND PAVEMENT. ≤ 12" BELOW BUILDING SLAB AND ≤ 18" BELOW PAVEMENT -2% TO +3% (INCLUDES ALL OVEREXCAVATION AREAS)

STRUCTURAL FILL — FILL SOILS PLACED ≥ 12" BELOW BUILDING SLAB AND ≥ 18" BELOW PAVEMENT -2% TO +3% B. COMPACTION REQUIREMENTS SHALL BE ACCOMPLISHED BY MEANS OF SHEEPS-FOOT ROLLERS OR OTHER ROLLERS CAPABLE OF COMPACTING THE SOIL TO THE DENSITIES SPECIFIED. ROLLING SHALL BE DONE WHILE THE SOIL IS WITHIN THE MOISTURE LIMITS SPECIFIED AND SHALL BE CONTINUOUS OVER THE ENTIRE AREA BEING FILLED WITH SUFFICIENT PASSES TO ACHIEVE THE DENSITIES SPECIFIED.

A. REMOVE FROM SITE ALL EARTHWORK AND VEGETATIVE DEBRIS WHICH IS NOT TO BE INCORPORATED INTO THE COMPLETED WORK, ALL VEGETATIVE DEBRIS AND ALL OTHER JUNK AND DEBRIS. B. EXCESS AND UNSUITABLE SOILS MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN AN APPROPRIATE LEGAL MANNER.

C. ALL DEBRIS RESULTING FROM PAVEMENT AND SIDEWALK REMOVAL AND CONSTRUCTION OPERATIONS SHALL BE

REMOVED FROM THE SITE AND DISPOSED OF IN AN APPROPRIATE LEGAL MANNER.

A. THE CONTRACTOR SHALL COMPLETE THE CUT AND FILL WORK REQUIRED TO THE GRADES SHOWN ON THE

FOR POSITIVE DRAINAGE AND ACHIEVE ELEVATIONS REQUIRED WITHIN TOLERANCE OF 0.1 FEET.

PLANS, MEET ALL REQUIREMENTS FOR FILL IN AREAS, WHICH REQUIRE FILLING, SLOPE SURFACES

LBS. TO FURNISH 60 PLS/sq. ft. LOAMS, CLAYLOAMS, AND SANDY & PER ACRE CLAYS LOAMY SAND GRASSES OR LEGUMES NATIVE GRASSES: BIG BLUESTEM  $X \quad 0 \quad - \quad - \quad X \quad - \quad 0 \quad - \quad - \quad -$ **BUFFALOGRASS (BURS)** 46.2 3.3  $0 - - \times 0 \times - - 0$ BLUE GRAMA LITTLE BLUESTEM X - - 0 X 0 X 0 X 0- - - - X - X - PLANT WITH MIXTURES PRAIRIE SANDREED RFFD CANARYGRASS 4.8 X X X - X - X - X -SAND BLUESTEM - - - - - X O X - WET AREAS SIDEOATS GRAMA  $13.5 \quad X - - X X X 0 0 0$ WESTERN WHEATGRASS 24.0 X X O O X O X O X O SAND LOVEGRASS - - - - -  $\times$   $\times$   $\times$ 6.6 X X X O X - X O X -SWITCHGRASS 15.0 X 0 - - X - 0 - 0 -INDIANGRASS **INTRODUCED GRASS:** FAIRWAY WHEATGRASS - - - X - 0 - 0 0 BUNCHY INTERMEDIATE WHEATGRASS 30.0 X 0 - 0 X 0 X 0 X 0 NOT LONGLIVED SMOOTH BROME 19.4 X 0 - 0 X 0 X 0 X -KENTUCKY BLUEGRASS - - X - X - X - X HIGH MAINTENANCE 11.6 X X - X O X X X O X MAY BE SHORTLIVED PERENNIAL RYEGRASS 11.6 0 0 0 X X X X X X BUNCHY TALL FESCUE 3.4 X X X - - - - -CREEPING FOXTAIL **LEGUMES:** ALFALFA 19.5 - - - 0 0 X - 0 0 X LOW EROSION CONTROL 10.5 - - - X 0 X 0 0 X X BIRDSFOOT TREFOIL RED CLOVER 14.4 - - - X O X O O X X CROWN VETCH 36.0 X - - - X 0 X - X - IN SOLIDS STANDSPURPLE PRAIRIECLOVER 9.6 X X - X X X X X X 29.1 X - - - X O X - X - IN SOLIDS STANDSCICER MILKVETCH 120.0 - - - - 0 0 0 X 0 HAIRY VETCH FORBS: ROUNDHEAD LESPEDEZA 17.1 X - - - X - X - X -THICKSPIKE GAYFEATHER 24.0 X - - - X - X - X -DOTTED GAYFEATHER  $18.9 \qquad X - - X X X X X X X$ 9.6 X - - 0 X 0 X 0 X X SHELLLEAF PENSTEMON MAXIMILIAN SUNFLOWER 17.4 X - - - X - X - X -A DAM, DIVERSION, DIKE D HEAVY TRAFFIC & RECREATION KEY: X BEST O FAIR E ROADSIDE C SHORELINE & LOW AREAS F RESIDENTIAL & DEVELOPMENT POOR

TABLE 9.5.21-1A

TABLE 9.5.21-1B

SITES

		17.022 0.0.21 10											
	GRASSES OR LEGUMES		0B (10 E0) (III) (3) (11)			REMARKS							
	WARM SEASON DOM	IINANT:	_A	В	С	D	Ε	F	Α	D	Ε	F	-
OCTOBER 1 - JUNE 15	BIG BLUESTEM SIDEOATS GRAMA SWITCHGRASS INDIANGRASS TALL FESCUE	4.0 2.9 0.7 3.6 2.1	X X X X	0	- - - -	- - - -	X X X X	- - - -	X X X X	_	Χ	_ _ _	FOR SANDS AND LOAMY SAND SUBSTITUTE SAND BLUESTEM FOR BIG BLUESTEM, 1.8 LBS PRAIRIE SANDREED FOR SIDEOATS GRAMA AND 0.2 LBS PLS SAND LOVEGRASS FOR TA FESCUE
	BUFFALOGRASS (BU BLUE GRAMA	RS) 38.0 0.6	<u>-</u>	_	_	X	X	X	_	X	_	X	
	BUFFALOGRASS (BU BLUE GRAMA SIDEOATS GRAMA	RS) 32.3 0.3 2.7	0 0 0	_ _ _	_ _ _	X X X	X X X	X X X	- -	X X X	- - -	X X X	
	SWITCHGRASS REED CANARYGRASS	3.8 2.0		X	X	_	_		X		X	_	WET AREAS
AUGUST 15 – APRIL 30	COOL—SEASON DOM SMOOTH BROME SWITCHGRASS	IINANT: 14.4 1.7	×	0	_		X	<del>-</del>	X		0		ADD 10 LBS OF WESTERN WHEATGRASS TO REPLACE 7.2 LBS OF BROME OR 3.6 LBS TALL FESCUE
	TALL FESCUE SWITCHGRASS	7.3 2.4	X	X	0	_	X	_	0	_	0 0	_ _	
	PERENNIAL RYEGRAS ALFALFA	5.2 10.8	_ _	_ _	_ _	X	_ _	X	<u> </u>	X	<u>-</u>	X	LESS THAN 5 YEARS
	RED CLOVER BIRDSFOOT TREFOIL TALL FESCUE	3.9 1.9	_ _ _	_ _ _	_ _ _	X X X	_ _ _	X X X	_	X X X	_	Χ	SUBSTITUTE 0.6 LBS PLS SAND LOVEGRASS TO REPLAC TALL FESCUE FOR SANDS AN LOAMY SANDS
	KEY: X B 0 F F SITES			BC	AM, CHAN SHOF	INEL	S.				AS	Ε	HEAVY TRAFFIC & RECREATION ROADSIDE RESIDENTIAL &DEVELOPMENT

## **TEMPORARY SEEDING**

CONSTRUCTION SPECIFICATIONS:

1. PRIOR TO SEEDING, INSTALL ALL NECESSARY EROSION CONTROL PRACTICES SUCH AS DIKES, WATERWAYS, AND BASINS.
2. PROVIDE PROPER SHAPING OF THE AREA TO BE SEEDED IN A MANNER SUCH THAT SEEDBED PREPARATION AND SEEDING OPERATIONS CAN BE CARRIED OUT. SEEDBED PREPARATION:

REQUIRED. WHEN THE AREA IS COMPACTED, CRUSTED OR HARDENED, THE SOIL SURFACE SHALL BE LOOSENED BY DISCING, RAKING, HARROWING, OR OTHER ACCEPTABLE MEANS. SEEDBED PREPARATION SHOULD NOT BE UNDERTAKEN WHEN EXCESSIVELY WET CONDITIONS EXIST. SEEDBED SHALL BE PREPARED TO A DEPTH OF APPROXIMATELY 3 INCHES. SUBSOIL IS TO BE SEEDED, IT WILL MOST LIKELY BE DEFICIENT IN NUTRIENTS REQUIRED FOR SEED GERMINATION AND GROWTH. 450LBS./ACRE OF 10-20-20 FERTILIZER SHOULD BE USED, AND IT IS ESSENTIAL THAT THIS FERTILIZER BE INCORPORATED INTO THE TOP 2-4 INCHES OF SOIL DURING SEEDBED PREPARATION. SOILS WHICH ARE HIGHLY ACIDIC SHOULD BE LIMITED.

SEEDING: A. CERTIFIED SEED SHALL BE USED ON ALL TEMPORARY PLANTS APPROPRIATE TO THE SEASON AND SITE CONDITIONS FROM THOSE LISTED IN THE ACCOMPANYING TABLE.

TIME OF YEAR SPECIES SEEDING RATE MARCH 15 - MAY 15 SPRING OATS 2 BU./AC. BARLEY 2 BU./AC. PERENNIAL RYEGRASS 30-40LBS./AC ORCHARD GRASS 20-25LBS./AC. MAY 16 - JULY 15 GRAIN SORGHUM (DRILLED) 10-20 LBS./AC. FORAGE SORGHUM (DRILLED) 10-20 LBS./AC. HYBRID SUDANGRASS 20-30 LBS./AC. JULY 16 - OCTOBER 15 SPRING OATS 2 BU./AC. BARLEY 2 BU./AC. AUGUST 16 - OCTOBER 15 WINTER WHEAT 1.5 BU./AC. WINTER RYE 1.5 BU./AC.

B. OTHER SEEDINGS MAY BE USED AS RECOMMENDED BY QUALIFIED AGRONOMISTS OR SOIL CONSERVATIONISTS. SEED SHOULD BE EVENLY APPLIED WITH A CYCLONE SPREADER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER. SMALL GRAINS SHALL BE PLANTED NO MORE THAN 1-1/2 INCHES DEEP AND GRASSES NO MORE THAN 1/2 INCH DEEP.

AND WITH FAVORABLE SOILS ON VERY FLAT AREAS MAY NOT NEED TO BE MULCHED. MULCHING SHALL BE DONE IN ACCORDANCE WITH THE ACCOMPANYING TABLE 9.5.23-1A, MULCHING.

A. IF THE AREA HAS BEEN RECENTLY LOOSENED OR DISTURBED, NO FURTHER ROUGHENING IS

B. IF THE SOIL BEING SEEDED IS FERTILE TOPSOIL, FERTILIZER IS NOT REQUIRED. HOWEVER, IF

OCTOBER 15 - MARCH 15 NO PLANTING, USE MULCHES 1.5 BU./AC.

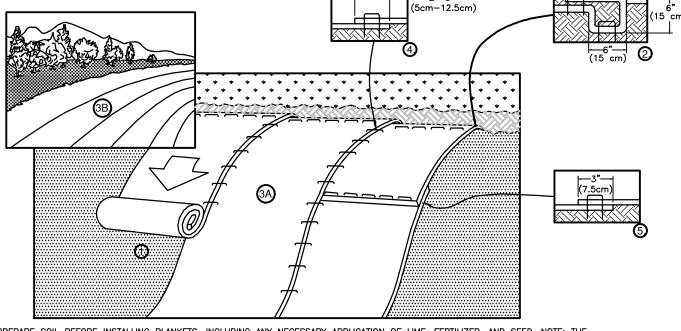
5. WHEN SEEDINGS ARE MADE ON CRITICAL SITES OR ADVERSE SOIL CONDITIONS, MULCH MATERIAL WILL BE APPLIED IMMEDIATELY AFTER SEEDING. SEEDINGS MADE DURING OPTIMUM SEEDING DATES

AREAS WHICH FAIL TO ESTABLISH VEGETATIVE COVER ADEQUATE TO PREVENT RILL EROSION WILL BE RE-SEEDED AS SOON AS SUCH AREAS ARE IDENTIFIED. CONTROL WEEDS BY MOWING.

## TABLE 9.5.23-1A ORGANIC MULCH MATERIALS AND APPLICATION RATES

MULCHES:	RA <sup>-</sup>	TES:	
WIGEGIAES.	PER ACRE	PER 1000 SF	
STRAW OR HAY	1 1/2 - 2 TONS (MINIMUM 2 TONS FOR WINTER COVER)	70 -90 LBS.	FREE FROM WEEDS AND COARSE MATTER. MUST BE ANCHORED, SPREAD WITH MULCH BLOWER OR BY HAND.
FIBER MULCH	MINIMUM 1500 LBS.	35 LBS.	DO NOT USE AS MULCH FOR WINTER COVER OR DURING HOT, DRY PERIODS.* APPLY AS SLURRY.
CORN STALKS	4 - 6 TONS	185 – 275 LBS.	CUT OR SHREDDED IN 4-6" LENGTHS. AIR-DRIED. DO NOT USE IN FINE TURF AREAS. APPLY WITH MULCH BLOWER OR BY HAND.
WOOD CHIPS	4 – 6 TONS	185 – 275 LBS.	FREE OF COARSE MATTER. AIR—DRIED. TREAT WITH 12 LBS. NITROGEN PER TON. DO NOT US IN FINE TURF AREAS. APPLY WITH MULCH BLOWER, CHIP HANDLER, OR BY HAND.
BARK CHIPS OR SHREDDED BARK	50 -70 C.Y.	1 - 2 C.Y.	FREE OF COARSE MATTER. AIR-DRIED. DO NOT USE IN FINE TURF AREAS. APPLY WITH MULCH BLOWER, CHIP HANDLER, OR BY HAND.

\*WHEN FIBER MULCH IS THE ONLY AVAILABLE MULCH DURING PERIODS WHEN STRAW SHOULD BE USED, APPLY AT A MINIMUM RATE OF 2,000 LBS./AC. OR 45 LBS./1,000 S.F.



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: THE SEED MIXTURE SHALL BE "NATIVE PRAIRIE GRASS MIXTURE" BY UNITED SEEDS INC. WHICH CONTAINS THE FOLLOWING; 2.0 PLS LBS. <u>BIG BLUESTEM</u>, 1.5 PLS LBS. EACH OF <u>LITTLE BLUESTEM</u> AND <u>INDIANGRASS</u> 0.50 PLS# EACH OF CANADA AND VIRGINIA WILD RYE, 1.0 PLS LBS OF WESTERN WHEATGRASS AND 0.6 PLS LBS. EACH OF <u>SWITCHGRASS</u> AND <u>SIDEOATS GRAMA</u>. APPROXIMATELY 13 LBS. OF OATS ARE ADDED TO MAKE A 25 LB. BAG OF BULK SEED. SEEDING DATES ARE FROM APRIL TILL JUNE, WITH GERMINATION TIMES: 7-28 DAYS (AS A MIX).

FILTER CLOTH -

1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.

IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5H:1V SLOPES WILL BE PERMITTED.

9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

3. THICKNESS - NOT LESS THAN SIX (6) INCHES.

RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.

I. FENCE POSTS SHALL BE STEEL, STUDDED T POSTS

POSTS SHALL BE 5 FOOT LONG AND DRIVEN 2 FEET INTO

3. WOVEN WIRE FENCE IS OPTIONAL AT THE CONTRACTOR'S

SHALL BE AN EQUIVALENT PRODUCT MEETING THE

DISCRETION. FILTER FABRIC SHALL BE MIRAFI 100X OR

STANDARDS OF THE CITY OF OMAHA EROSION CONTROL

5. FABRIC SHALL BE ATTACHED TO STEEL FENCE POSTS WITH

6" WIDE BY 6" DEEP TRENCH AND THE TRENCH SHALL BE

4. FABRIC SHALL BE TOED INTO THE GROUND IN A MINIMUM

WEIGHING AT LEAST 1.25 POUNDS PER FOOT.

TWO WIRE TIES AT EACH POST.

TRAPEZOIDAL CROSS-SECTION

PARABOLIC CROSS—SECTION

T/2

WHEEL WASH

(IF APPLICABLE) -

2" AGGREGATE -

EXISTING GROUND

**PROFILE** 

70' MIN.

PLAN VIEW

2. LENGTH - AS REQUIRED, BUT NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD

5. FILTER CLOTH — WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE. FILTER WILL NOT BE REQUIRED ON A SINGLE FAMILY

6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE.

PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR

STABILIZED CONSTRUCTION ENTRANCE

FENCE -

SILT FENCE DETAI

RECOMMENDED TOE-IN

METHOD

7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO

CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC

8. WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS

REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.

**EXISTING** 

**PAVEMENT** 

- STEEL FENCE POSTS (MAX. 6'

WOVEN WIRE SUPPORT (IF

SPACING)

USED)

(BACKFILLED)

IVERSION CONSTRUCTION SPECIFICATIONS
ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS AND OTHER OBJECTIONABLE MATERIAL SHALL BE

3. FILLS SHALL BE COMPACTED TO THE REQUIREMENTS OF GRADING FILL TO PREVENT UNEQUAL SETTLEMENT THAT WOULD CAUSE DAMAGE IN THE COMPLETED DIVERSION.

THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE DIVERSION.

4. ALL EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE SPREAD OR DISPOSED OF SO

5. STABILIZATION SHALL BE DONE ACCORDING TO THE APPROPRIATE STANDARD AND SPECIFICATIONS FOR

a. FOR DESIGN VELOCITIES OF LESS THAN 3.5 FT. PER SEC., SEEDING AND MULCHING MAY BE USED FOR THE ESTABLISHMENT OF THE VEGETATION. IT IS RECOMMENDED THAT, WHEN

FROM ENTERING THE DIVERSION DURING THE ESTABLISHMENT OF THE VEGETATION.

CONDITIONS PERMIT, TEMPORARY DIVERSIONS OR OTHER MEANS BE USED TO PREVENT WATER

b. FOR DESIGN VELOCITIES OF MORE THAN 3.5 FT. PER SEC. THE DIVERSION SHALL BE STABILIZED WITH SOD, WITH SEEDING PROTECTED BY JUTE OR EXCELSIOR MOLTING OR WITH SEEDING AND

MULCHING INCLUDING TEMPORARY DIVERSION OF WATER UNTIL THE VEGETATION IS ESTABLISHED

SEEDING, AND BE FREE OF IRREGULARITIES.

REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE

THE DIVERSION SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO DIRECT MAXIMUM SURFACE RUN-OFF TO THE SEDIMENT BASIN AT ALL TIMES PRIOR TO

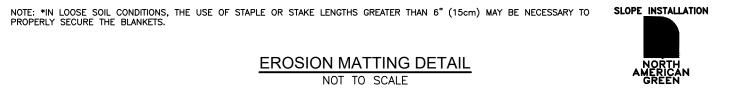
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET

3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN. 4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" (5cm-12.5cm) OVERLAP DEPENDING ON

ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET 5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5cm) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30cm) APART ACROSS ENTIRE BLANKET WIDTH.

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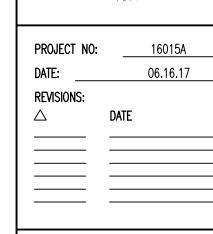
BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED



ONE CALL

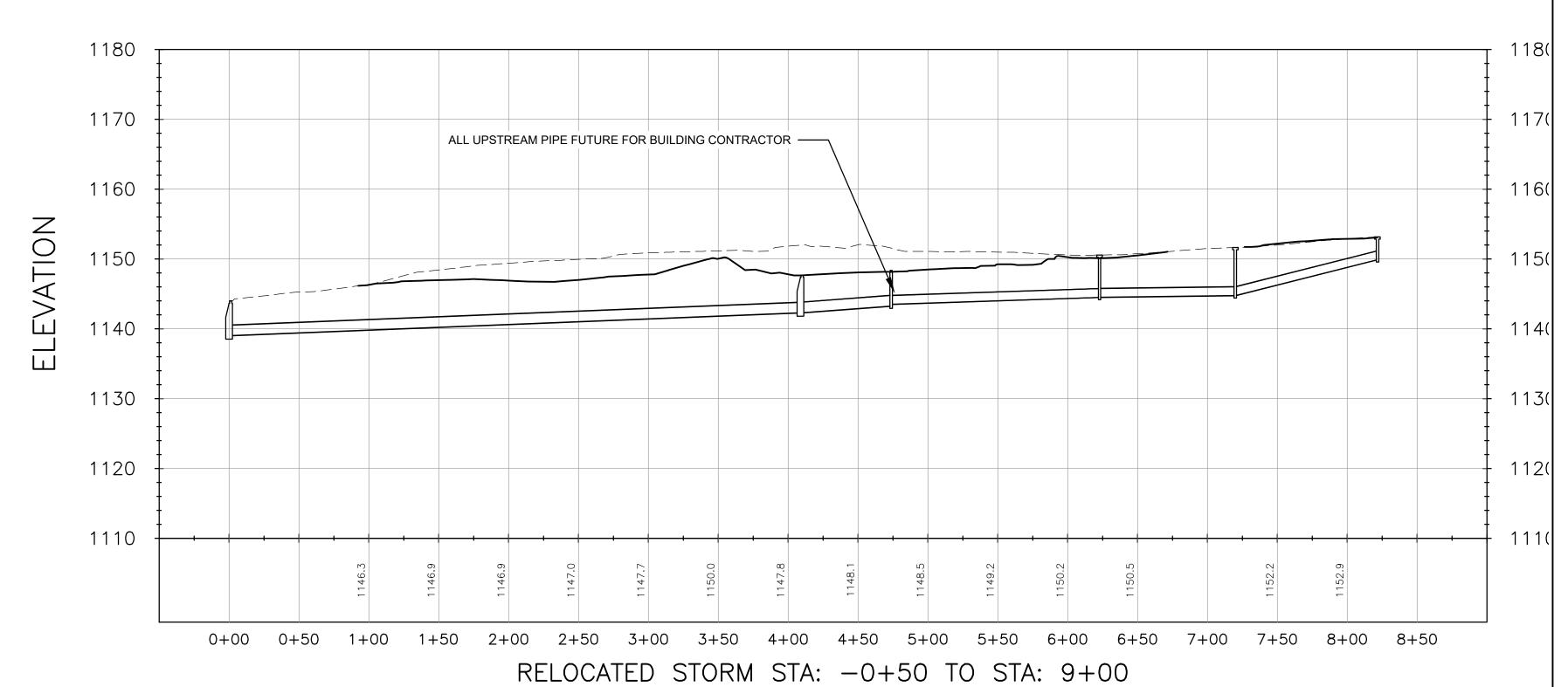
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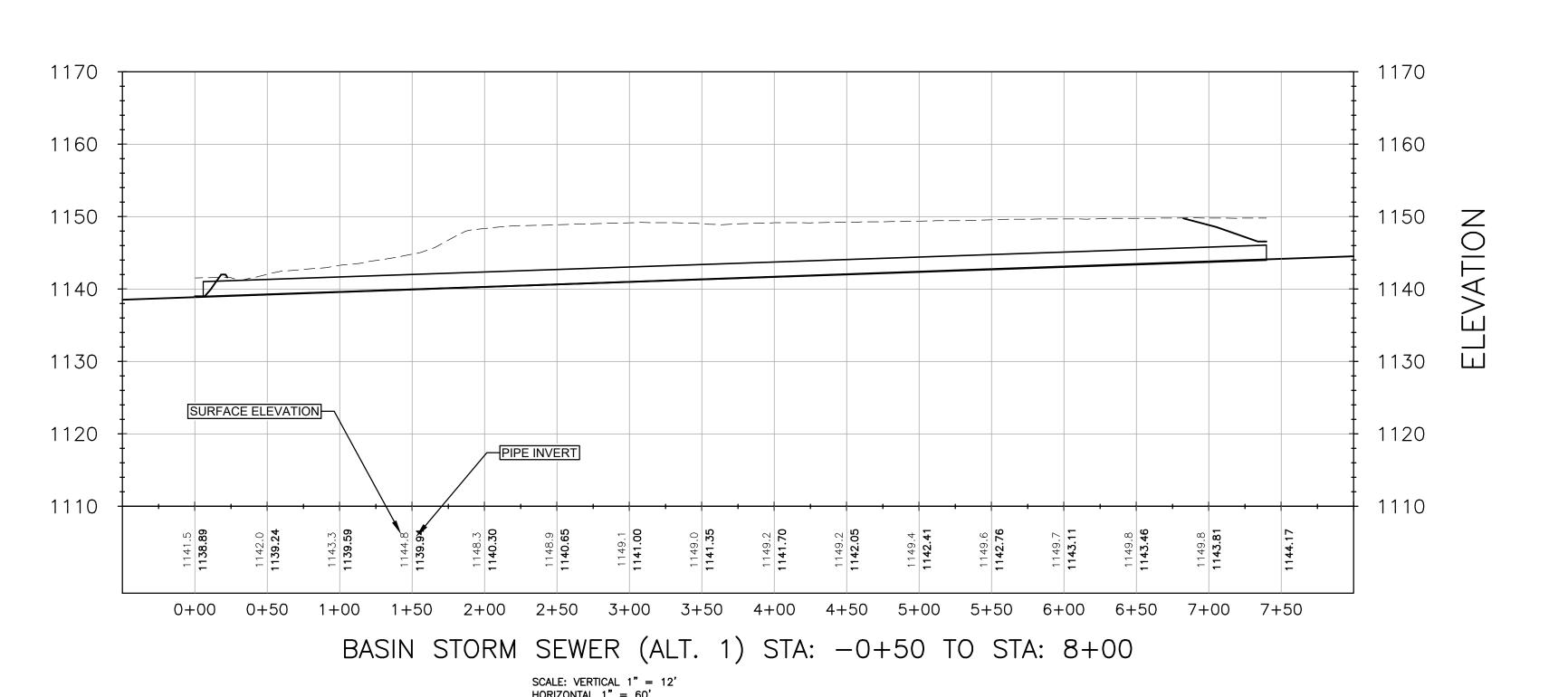


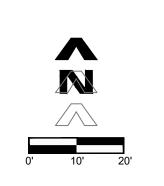


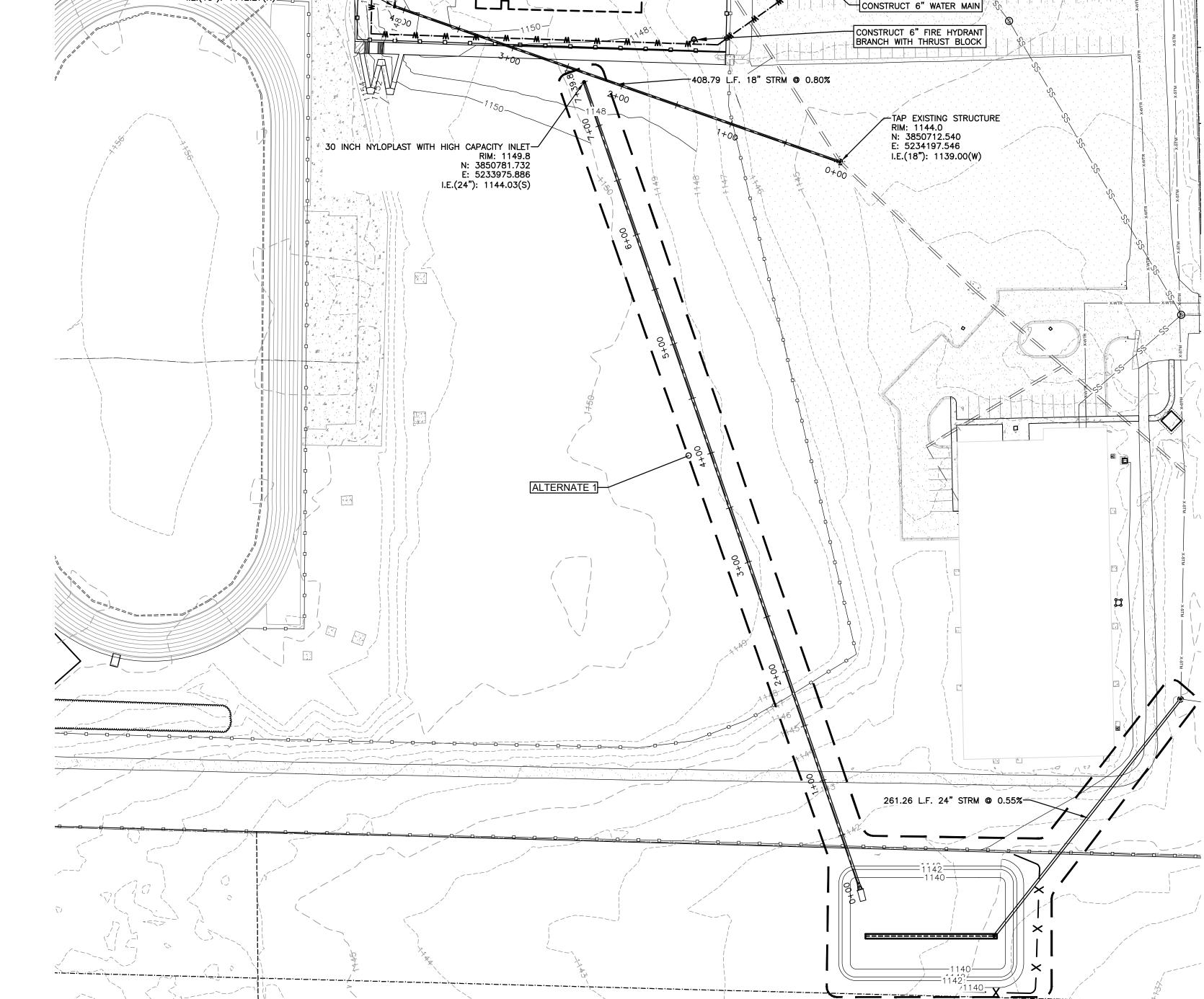


- THE LOCATIONS OF EXISTING UTILITIES ARE TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR.
   THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY DAMAGE TO EXISTING PROPERTY, UTILITIES AND STRUCTURES AND REPAIR SAME AT HIS OWN EXPENSE.
   ALL DEBRIS RESULTING FROM CONSTRUCTION OPERATIONS SHALL BE HAULED OFF SITE AND DISPOSED OF
- PROPERLY. (NO PAY ITEM)
- 4. REINFORCED CONCRETE SEWER PIPE 30 INCHES AND SMALLER IN DIAMETER SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-76, CLASS III, LATEST REVISION. REINFORCED CONCRETE SEWER PIPE 36 INCHES AND LARGER IN DIAMETER SHALL CONFORM TO THE D-LOAD SPECIFIED TO PRODUCE A 0.01 INCH CRACK IN ACCORDANCE WITH ASTM C-655, LATEST ADDITION. PIPE JOINT SEALING COMPOUND SHALL CONFORM TO FED. SPEC. SS-C-153, OR APPROVED EQUAL.
- 5. THE CONTRACTOR MUST ENSURE ALL CONCRETE STORM SEWER PIPE USED FOR CONSTRUCTION HAS BEEN
- CERTIFIED BY THE AMERICAN CONCRETE PIPE ASSOCIATION (ACPA). ALL PIPE SHALL DISPLAY THE Q-CAST SYMBOL TO VERIFY THE MANUFACTURER HAS MET THE ACPA'S CERTIFICATION PROGRAM. VISUAL INSPECTIONS
- FOR DEFECTS SHALL CONTINUE TO TAKE PLACE ON SITE. 6. HDPE IS PERMITTED ON ALL PIPE 30" AND SMALLER.
  7. SEE SHEET C3.1 FOR DETAILS.









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TAP AND VALVE EXISTING WATER MAIN

T----

18" STRM @ 1.50%

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CONSTRUCT 6" FIRE HYDRANT BRANCH WITH THRUST BLOCK

30 INCH NYLOPLAST DRAIN BASIN-

N: 3850847.395 E: 5233811.639

I.E.(18"): 1142.27(E) I.E.(18"): 1142.27(N) 🕮

EXISTING SEWER

- BREAK OUT EXISTING

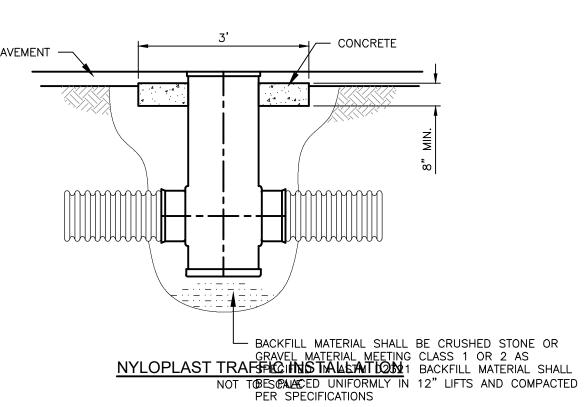
PSI. MIN. @ 28 DA.

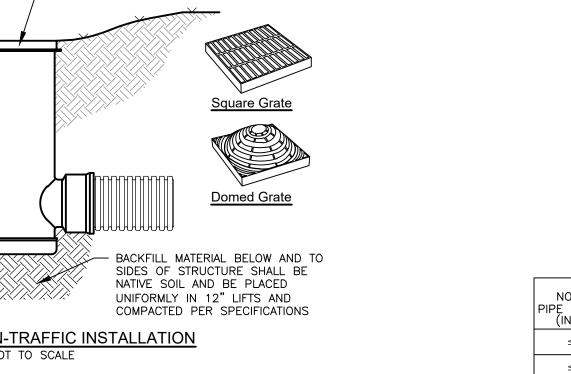
CONCRETE BEND PIPE STEEL INTO NEW CONC.
CONCRETE SHALL BE 3500

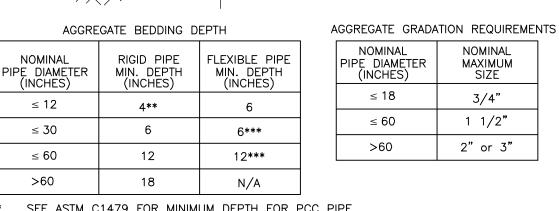
─ FINISH FLUSH

- SEE PLANS FOR INVERT ELEVATIONS

FRAME AND GRATE Square Grate Domed Grate - BACKFILL MATERIAL BELOW AND TO SIDES OF STRUCTURE SHALL BE NATIVE SOIL AND BE PLACED UNIFORMLY IN 12" LIFTS AND







TRENCH WIDTH: MINIMUM = PIPE DIA.+24"

TRENCH WIDTH

0.D./2 + 12"

O.D./2 + 12" FOR ALL FLEXIBLE PIPE

- O.D./2 FOR ALL PIPE

- SEE ATTACHED SCHEDULE

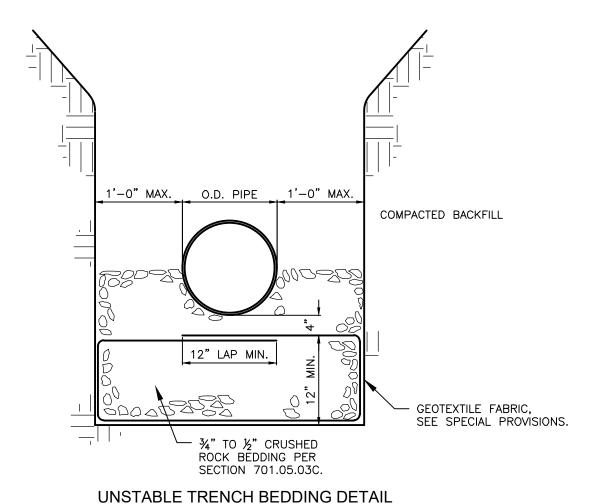
FOR ALL FLEXIBLE PIPE

O.D./2 FOR ALL PIPE

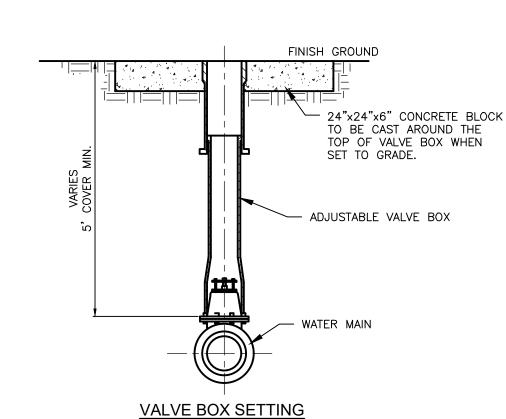
\* SEE ASTM C1479 FOR MINIMUM DEPTH FOR PCC PIPE. \*\* AS REQUIRED BY THE ENGINEER

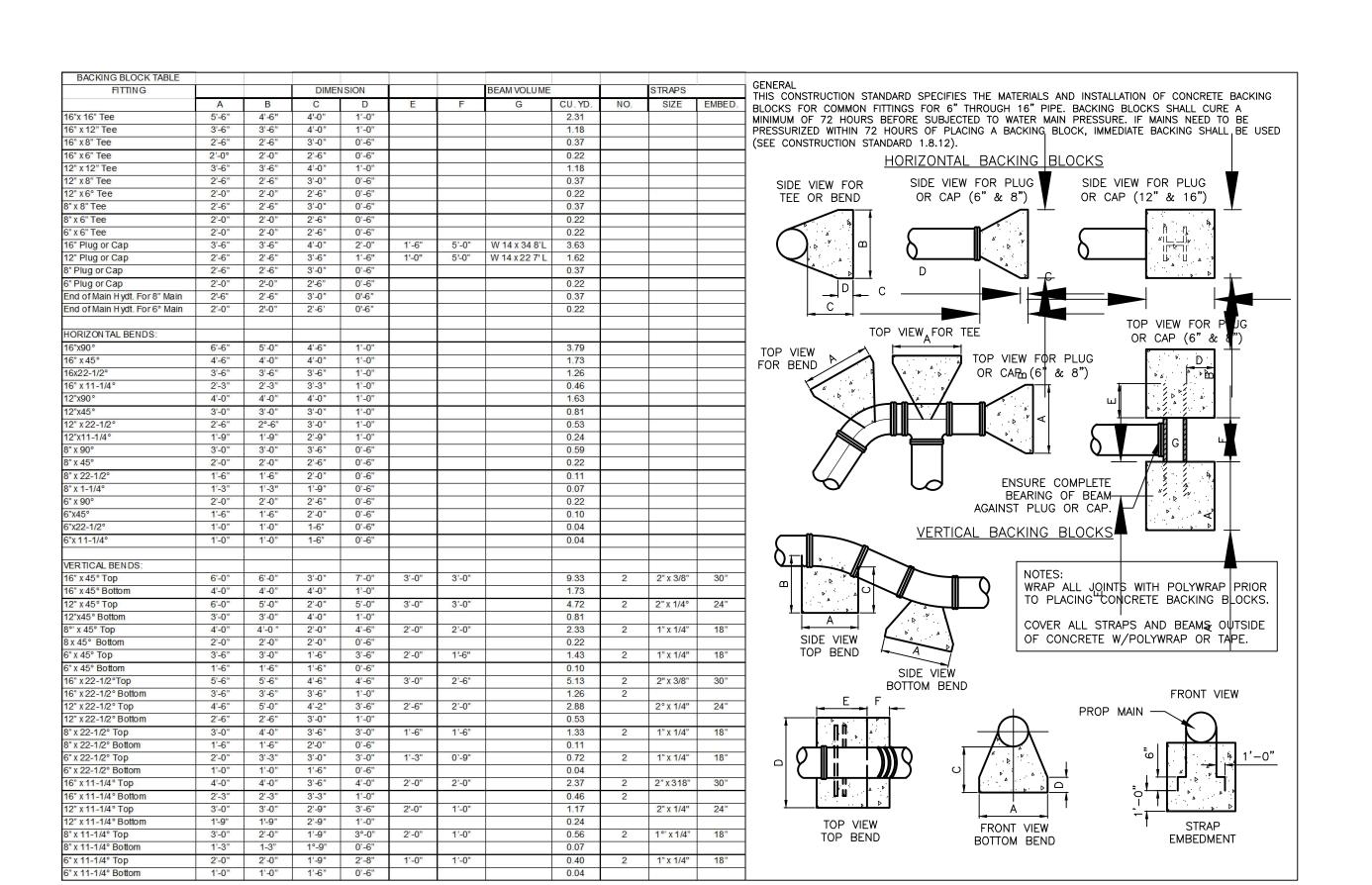
\*\*\* OR ONE-FORTH (1/4) OF THE DIAMETER, WHICHEVER IS GREATER. 1. RIGID PIPE INCLUDES BUT IS NOT LIMITED TO PCC, DUCTILE IRON, VITRIFIED CLAY, FIBERGLASS, AND PVC TRUSS. FLEXIBLE PIPE IS DEFINED AS ANY PIPE HAVING A PIPE STIFFNESS OF ONE HUNDRED FIFTY—THREE (153) POUNDS PER INCH PER INCH OR LESS. FLEXIBLE PIPE INCLUDES BUT IS NOT LIMITED TO CORRUGATED STEEL, CORRUGATED ALUMINUM, SOLID WALL PVC, CORRUGATED PVC, AND PROFILE WALL PVC. THE ENGINEER SHALL DETERMINE WHETHER A

QUARTZITE, OR DOLOMITE MEETING THE REQUIREMENTS FOR CLASS 1S COARSE AGGREGATE AS DEFINED BY ASTM C33, STANDARD SPECIFICATION FOR CONCRETE AGGREGATES. THE AGGREGATE SHALL CLASSIFY AS A WELL-GRADED GRAVEL, POORLY GRADED GRAVEL, WELL GRADED GRAVEL WITH SAND, OR A POORLY GRADED GRAVEL WITH SAND WHEN CLASSIFIED USING ASTM D2487, STANDARD CLASSIFICATION OF SOILS FOR ENGINEERING PURPOSES (UNIFIED SOIL CLASSIFICATION SYSTEM). THE MAXIMUM AMOUNT OF MATERIAL PASSING A #200 (75 UM) STANDARD SIEVE SHALL BE EIGHT (8) PERCENT AND THE NOMINAL MAXIMUM SIZE SHALL CONFORM TO THE REQUIREMENTS OUTLINED IN THE TABLE ABOVE.



NOT TO SCALE





CONSTRUCTION STANDARD FOR: Typical Backing Block for Water Mains

TOP VIEW

TOP BEND

FRONT VIEW

BOTTOM BEND

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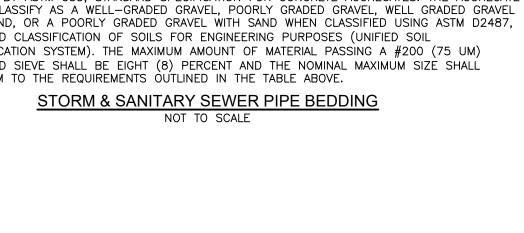
EMBEDMENT

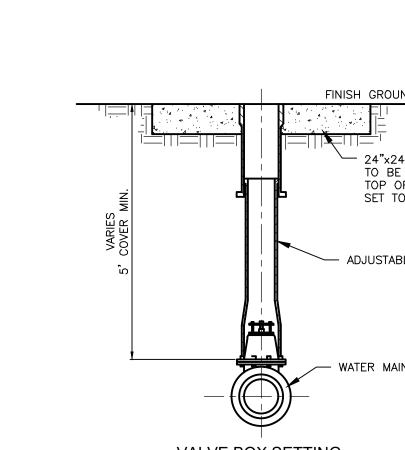
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NYLOPLAST NON-TRAFFIC INSTALLATION NOT TO SCALE **PAVEMENT** 

" x 11-1/4° Bottom

PIPE MATERIAL NOT LISTED IS RIGID OR FLEXIBLE. 2. AGGREGATE BEDDING MATERIAL SHALL CONSIST OF RECYCLED PCC, CRUSHED LIMESTONE,





18" OR SMALLER LARGER THAN 18"

NEW SEWER PIPE -

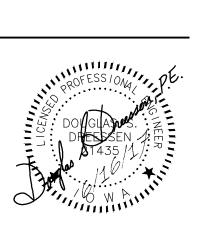
HOOP BARS (2) 2" CLEAR

SEWER TAP DETAIL

NOT TO SCALE



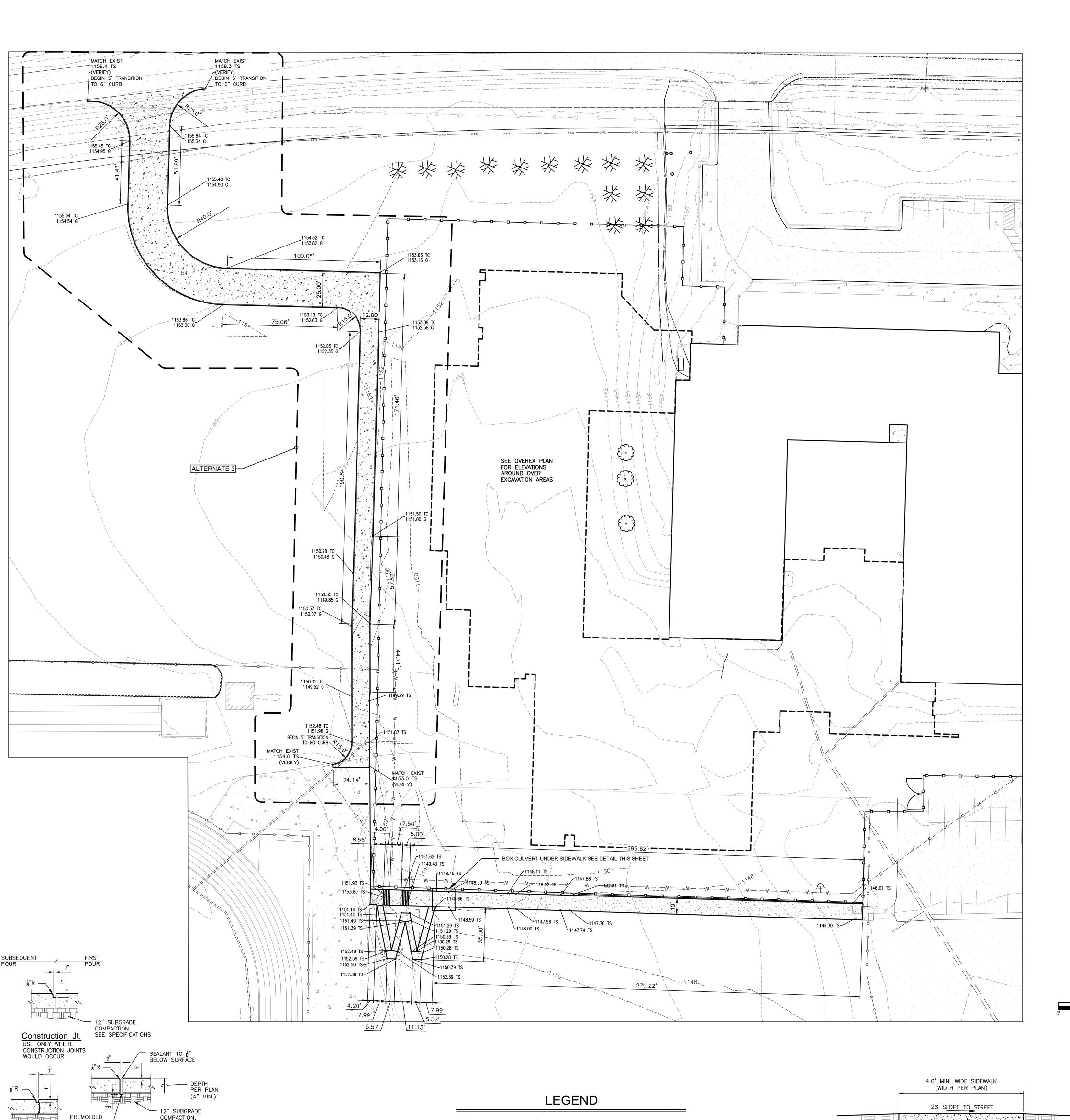




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(3/16" MAX.) SAW CUT WIDTH



PROPOSED 6" P.C.C. PAVEMENT

PROPOSED 4" P.C.C. SIDEWALK

6" COMPACTED SUBGRADE TO

1.0' BEYOND EDGE OF SIDEWALK —

4" THICK P.C.C. SIDEWALK

TYPICAL SIDEWALK SECTION

WITH INTEGRAL CURB

SEE SPECIFICATIONS

Expansion Jt.
SPACE AT 50'-0" MAX. OR

AS SHOWN ON SITE PLAN AND WHERE ABUTTING ALL

STRUCTURES AND CURBS

PROVIDE 1/2" E.J. WITH SEALANT WHEN ABUTTING BACK

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NOT TO SCALE

OF CURB AT RIGHT ANGLES AND STRUCTURES.

SIDEWALK JOINT DETAILS

Contraction Jt.
SPACE ALL JOINTS AT

OTHERWISE NOTED

5'-0" UNLESS

# SPOT ELEVATION LEGEND TOP OF SLAB TOP OF CURB

GUTTER LINE FINISHED FLOOR ELEVATION

4. DIMENSIONS SHOWN ARE TO EDGE OF SLAB, BACK OF CURB, OR FACE OF BUILDING AS APPLICABLE. CONTRACTOR SHALL VERIFY THE LAYOUT AND DIMENSIONS OF IMPROVEMENTS WITH THE OWNER AND ARCHITECT BEFORE BEGINNING CONSTRUCTION. 5. COORDINATE WORK WITH ALL OTHER TRADES. 6. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REGULATIONS IN THE EXECUTION OF THE WORK UNDER THIS CONTRACT. 7. THE CONTRACTOR SHALL ADJUST ALL UTILITIES TO FINISHED PAVEMENT GRADE OR AS REQUIRED

CONSTRUCTION OPERATIONS.

OWN EXPENSE.

IN LANDSCAPED AREAS. (NO PAY ITEM)

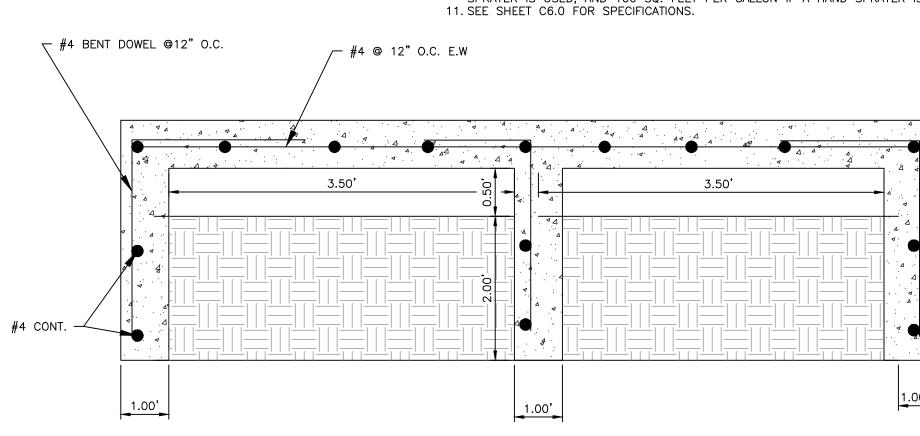
8. VERIFY ELEVATIONS AT ALL OUTSIDE DOOR LOCATIONS WITH ARCHITECT TO ENSURE CODE COMPLIANCE AND ACCESSIBILITY. SEE ARCHITECTURAL PLANS FOR STOOPS. 9. WATER REDUCING ADMIXTURES SHALL NOT BE USED UNLESS APPROVED BY THE ENGINEER. 10. CONCRETE PAVEMENT SHALL BE CURED USING A WHITE PIGMENTED LIQUID MEMBRANE FORMING CURING COMPOUND THAT HAS BEEN APPROVED BY THE IOWA DEPARTMENT OF TRANSPORTATION.
MINIMUM RATE OF APPLICATION SHALL BE 200 SQ. FEET PER GALLON IF A MECHANICAL POWER
SPRAYER IS USED, AND 100 SQ. FEET PER GALLON IF A HAND SPRAYER IS USED. 11. SEE SHEET C6.0 FOR SPECIFICATIONS.

**PAVING NOTES** 

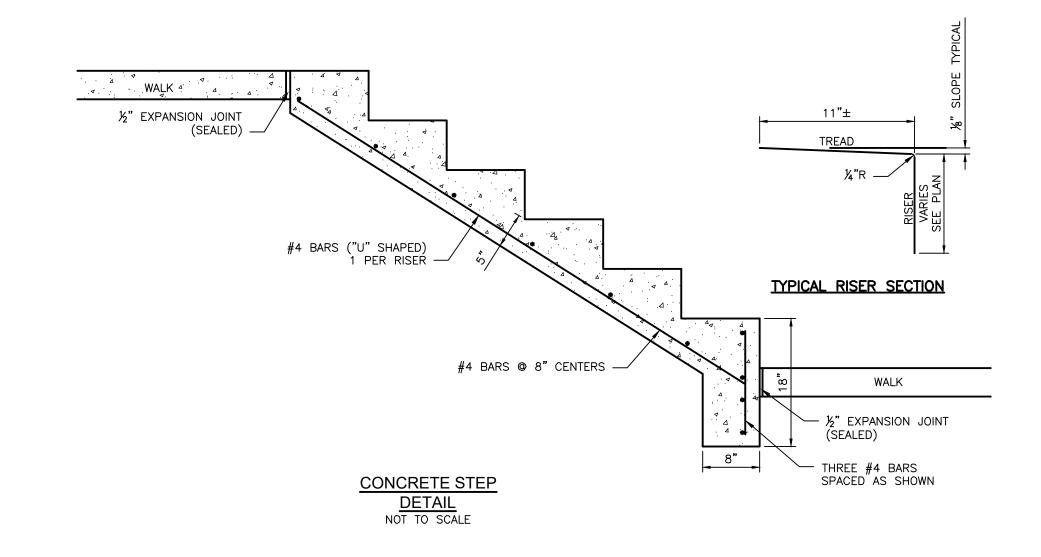
THE CONTRACTOR SHALL HAVE ALL UTILITIES LOCATED PRIOR TO CONSTRUCTION THROUGH THE IOWA 811 "ONE CALL" NOTIFICATION SYSTEM.

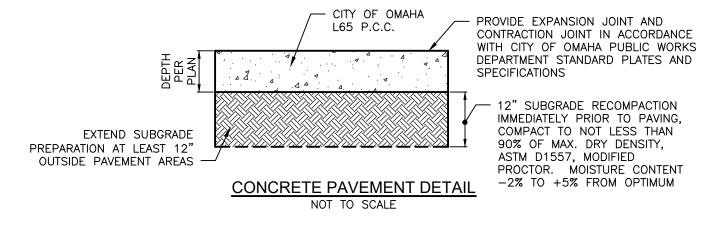
2. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS IN THE FIELD PRIOR TO THE START OF

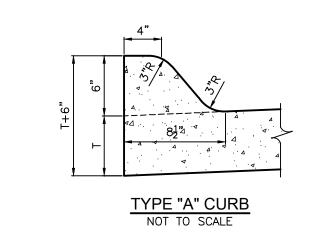
3. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY DAMAGE TO EXISTING PROPERTY, UTILITIES, AND STRUCTURES, AND WILL REPAIR OR REPLACE DAMAGED IMPROVEMENTS AT HIS

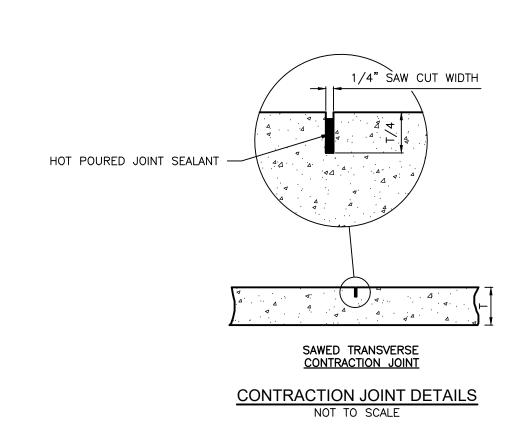


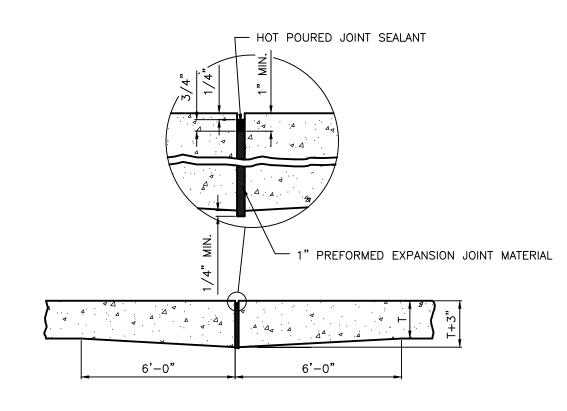
BOX CULVERT UNDER SIDEWALK DETAIL NOT TO SCALE





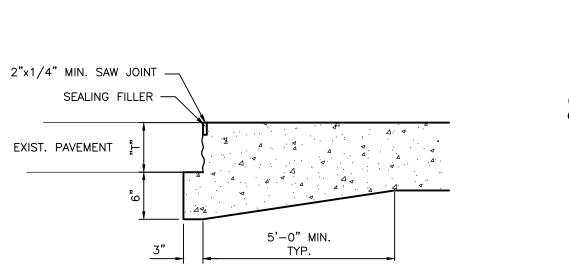






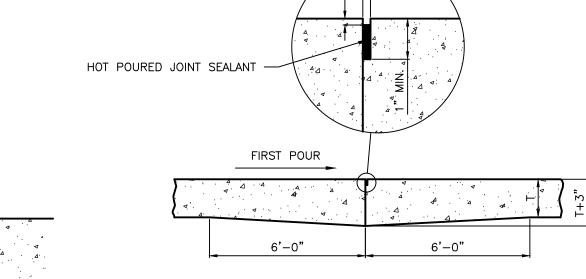
EXPANSION JOINT DETAIL

NOT TO SCALE



THICKENED EDGE DETAIL

NOT TO SCALE



TRANSVERSE CONSTRUCTION JOINT DETAIL NOT TO SCALE

thompson, dreessen a dorner, me.
10836 Old Mill Rd Omaha, NE 68154

C5.0

SEEDING AND FERTILIZING

1. UNLESS OTHERIWSE INDICATED ON THE LANDSCAPE PLANS, ALL DISTURBED AREAS (EXCEPT WITHIN BIO-RETENTION LIMITS) SHALL BE SEEDED AND FERTILIZED. SUPER TURF (TYPE I FOR NON-IRRIGATED AREAS AND TYPE II FOR IRRIGATED AREAS) SHALL BE USED, UNLESS OTHERWISE APPROVED BY OWNER/ENGINEER.

### BMP SPECIFICATIONS

AMENDED SOIL MIX (BSM)

1. NATIVE SOIL AND ACCUMULATED SEDIMENT SHALL BE REMOVED IN THE BASIN FLOOR AREA. EXCAVATE TO BASE OF AMENDED SOIL / INFILTRATION AREA WITH BACKHOE TO AVOID COMPACTION OF BASE. DURING EXCAVATION AND CONSTRUCTION OF INFILTRATION AREA PROTECT AS NECESSARY FROM ANY SILT RUNOFF.

2. AMENDED SOIL SHALL BE 80% FINE SAND AND 20% COMPOST BY VOLUME.

3. SAND SHALL MEET THE REQUIREMENTS OF NDOR CLASS A AGGREGATE.

SIEVE TARGET TOLERANCE

1" -- -
3/8" 100% NONE

#4 96% ±4

#10 77% ±13

6. COMPOST SHALL BE A GRADE 2 COMPOST OR APPROVED EQUAL. COMPOST SHALL BE DERIVED FROM PLANT MATERIAL AND PROVIDED BY A MEMBER OF THE U.S. COMPOSTING SEAL OF TESTING ASSURANCE (STA) PROGRAM. ANIMAL OR POULTRY MANURE WILL NOT BE ACCEPTABLE.

MIN. MAX.

ORGANIC MATTER CONTENT 35% 65%

C/N RATIO 6.5 8.3

MOISTURE CONTENT
DRY BULK DENSITY (LBS/CF)

25%

1.5%

HARDWOOD MULCH

1. MULCH SHALL BE DOUBLE OR TRIPLE SHREDDED HARDWOOD MULCH.

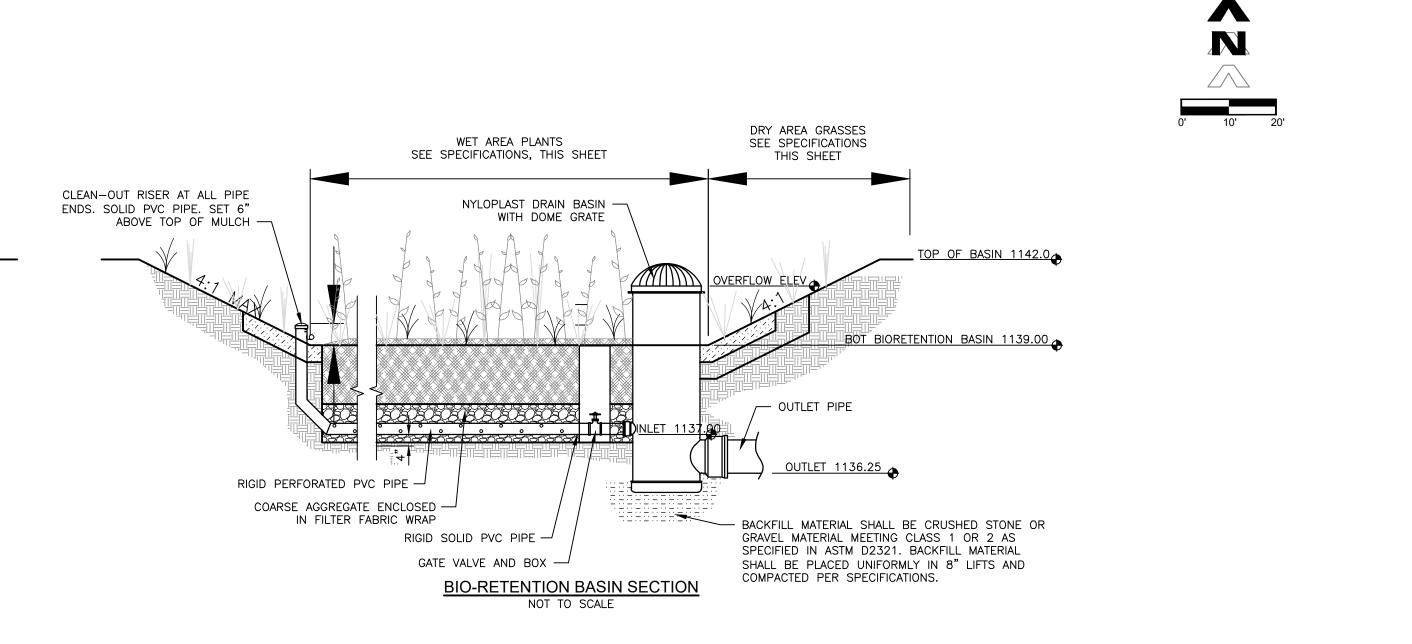
2. MULCH SHALL BE WELL AGED (6 MONTHS MIN.).

3. THE ENGINEER SHALL APPROVE ANY SUBSTITUTES.

OURSE AGGREGATE: COURSE AGGREGATE SHALL BE CLEANED CRUSH

COURSE AGGREGATE: COURSE AGGREGATE SHALL BE CLEANED CRUSHED ROCK.

SOIL TESTING AND INSPECTION:
1. THE ENGINEER SHALL BE NOTIFIED PRIOR TO ADDING THE AMENDED SOILS TO THE INFILTRATION AREA OR TILLING THE COMPOST INTO THE SOIL CONDITIONING AREAS TO OBSERVE THE INFILTRATION AREA BASE, AMENDED SOILS AND COMPOST.
2. AT LEAST ONE WEEK AFTER THE COMPOST HAS BEEN INCORPORATED INTO THE SOILS THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A SOILS ANALYSIS CONDUCTED BY A REPUTABLE LABORATORY. THE SOILS ANALYSIS SHALL BE USED TO DETERMINE WHETHER ANY FURTHER NUTRITIONAL REQUIREMENTS, PH ADJUSTMENT, AND ORGANIC MATTER ADJUSTMENTS ARE NECESSARY FOR PLANT GROWTH. THE SOIL ANALYSIS SHALL BE DONE IN CONJUNCTION WITH THE FINAL CONSTRUCTION INSPECTION TO ENSURE TILLING OF SUBSOIL HAS ACHIEVED THE DESIGN DEPTHS AND THE BIO—RETENTION BASINS HAVE BEEN CONSTRUCTED PER THE DRAWINGS.



12" ON CENTER

ALL BSIN PLANTS SHALL BE INSTALLED IN A TRIANGULAR SPACING PATTERN AS SHOWN.

PLANT BASIN MATERIAL

PLANT POCKET

CUT TEMPORARY STABILIZED MATTING AS NECESSARY AT EACH PLANT LOCATION. MINIMIZE CUT EXTENTS TO PLANT SIZE TO RETAIN INTEGRITY OF MATTING.

PLACE 12" DOUBLE SHREDDED HARDWOOD MULCH PRIOR TO EXCISION CONTROL MATTING PRIOR TO PLUG PLANTING

BASIN PLANT

MATERIAL

12" PREPARED BASIN SOIL MAEDICED WITH 1 CY OF PREPARED COMPOST PER 200 S.F. AND TILL INTO TOP 8"

PLUG PLANTING DETAIL

NOT TO SCALE

## BIO-RETENTION AREA PLANTS PLUG MIXTURE

WET AREA GRASSES: SWITCHGRASS BLUEJOINT GRASS FOX SEDGE

BLUE GRAMA

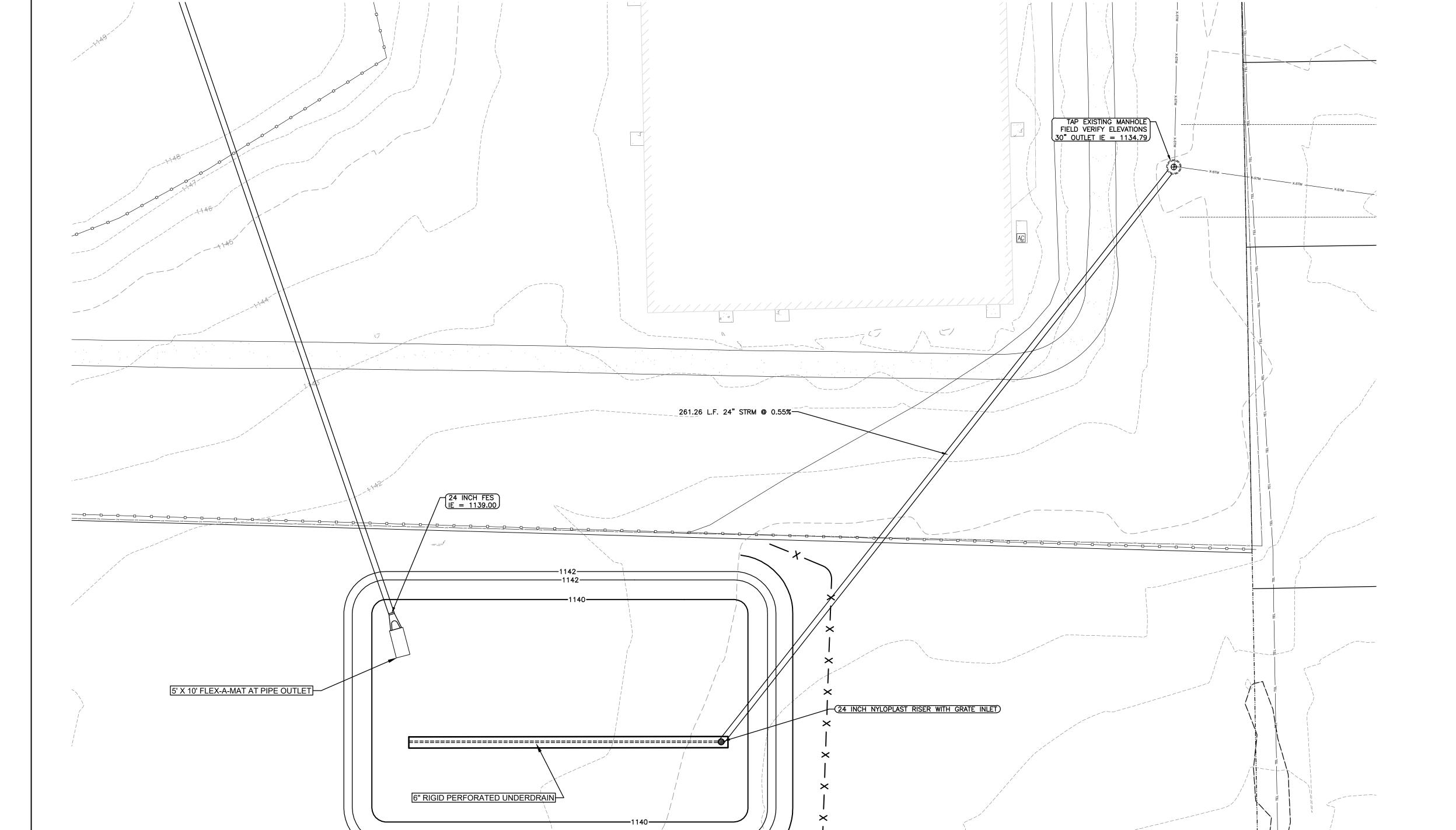
GRASS SHALL BE PLANTED 12" ON

CENTER.

DRY AREA SEDGES/GRASSES:
PALM SEDGE
BROWN FOX SEDGE
ROSY SEDGE
FEATHER REED GRASS
CAREX MORROWII CUTIVARS
TEXAS SEDGE

PLANTS SHALL BE 12" ON CENTER.

thompson, dreessen & dorner, inc.
10836 Old Mill Rd Omaha, NE 68154
402.330.8860 www.td2co.com



OPEN WEAVE GEOTEXTILE OR EQUIVALENT SEPARATION LAYER

NATIVE SOIL

- BIORETENTION SOIL (BSM) 18"

WASHED AGGREGATE 4" OR GREATER

BIO-RETENTION BASIN DETAIL

NOT TO SCALE

6" CONDITIONED SOIL AS NEEDED

PART 1 - GENERAL:

**9** 

C6.0

thompson, dreessen & dorner, inc.

A. DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND OTHER DIVISION 1 SPECIFICATION SECTIONS APPLY TO THIS SECTION.

B. SEE SPECIFICATION 02220 — BUILDING EXCAVATION, FILLING AND BACKFILLING FOR BUILDING EXCAVATIONS. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, SERVICES, ETC., NECESSARY FOR AND INCIDENTAL TO THE COMPLETION OF EARTHWORK SPECIFIED HEREIN, OR SHOWN ON THE DRAWINGS, OR NECESSARY FOR COMPLETION OF OTHER WORK. EARTHWORK INCLUDES, BUT IS NOT NECESSARILY LIMITED TO: TOPSOIL REMOVAL EXCAVATION NECESSARY TO ACHIEVE FINAL GROUND LINES

OVEREXCAVATION FILL PLACEMENT BACKFILL PLACEMENT TOPSOIL REDISTRIBUTION 1.3 QUALITY ASSURANCE

A. COMPLY WITH ALL APPLICABLE AND/OR PERTINENT SPECIFICATIONS, STANDARDS, LAWS, CODES, REGULATIONS, AND OTHER REQUIREMENTS PROMULGATED BY ANY GOVERNMENTAL SUBDIVISION OR AGENCY HAVING JURISDICTION AS WELL AS THOSE IMPOSED BY THE INSURANCE CARRIER PROVIDING COVERAGE FOR THE PROJECT. 1.4 <u>SUBSURFACE INVESTIGATIONS</u>

A. A SUBSURFACE SOIL INVESTIGATION (DATED MARCH 22, 2016) HAS BEEN COMPLETED FOR THE THE FREMONT-MILLS COMMUNITY SCHOOLS EARLY CHILDHOOD CENTER AND AUDITORIUM LOCATED AT 27 JACKSON BOULEVARD, TABOR, IOWA FOR THE OWNER BY OLSSON & ASSOCIATES, OMAHA, NEBRASKA (PROJECT NO. 016-0208). THE INVESTIGATION WAS MADE FOR THE PURPOSE OF PROVIDING INFORMATION FOR DESIGN. A COPY OF THE BORING LOGS AND INVESTIGATION REPORT MAY BE EXAMINED AT THE OFFICE OF THE ARCHITECT, OR AT THE OFFICE OF THE OWNER. THESE DOCUMENTS ARE NOT PART OF THE CONTRACT DOCUMENTS. THEY ARE MADE AVAILABLE ONLY AS INFORMATION AND WITHOUT ANY WARRANTY OF ACTUAL CONDITIONS.

1.5 SITE PREPARATION

A. THE SITE IS ADJACENT TO THE EXISTING PRE-K THRU 12 SCHOOL BUILDING. BIDDERS SHALL VISIT THE SITE AND MAKE SUCH ASSESSMENTS AS NECESSARY TO DETERMINE THE SCOPE OF WORK NECESSARY TO COMPLETE THE GRADING. THE CONTRACTOR SHALL BE REQUIRED TO COMPLETE GRADING TO THE FINISH GRADES SHOWN ON THE DRAWINGS.

1.6 <u>TESTING AND INSPECTION</u>
A. THE "GEOTECHNICAL ENGINEER" REFERRED TO HEREIN SHALL BE OLSSON ACSSOCIATES OF OMAHA, NEBRASKA OR OTHERWISE APPROVED BY THE OWNER. B. IN GENERAL, THE SERVICES OF THE GEOTECHNICAL ENGINEER SHALL INCLUDE WHATEVER MAY BE NECESSARY TO DETERMINE THAT ALL EARTHWORK MEETS THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, AND TO PROVIDE WRITTEN REPORTS COVERING TESTS MADE, INSPECTION WORK COMPLETED, AND CONCLUSIONS CONCERNING THE

ACCEPTABILITY OF THE WORK C. TESTING AND INSPECTION SERVICES PROVIDED BY THE GEOTECHNICAL ENGINEER SHALL INCLUDE, BUT IS NOT NECESSARILY LIMITED TO: EVALUATION AND APPROVAL OF ALL FILL MATERIALS INCLUDING ANY PROPOSED OFF-SITE MATERIALS EVALUATION AND APPROVAL OF ALL METHODS AND EQUIPMENT USED FOR EARTHWORK THE PREPARATION OF RECOMMENDATIONS FOR ACHIEVING THE SPECIFIED WORK 4. INSPECT BUILDING EXCAVATION AND OVEREXCAVATION

. INSPECT FOOTING AND EXCAVATIONS OBSERVATION OF ALL FILLING AND BACKFILLING EVALUATION AND APPROVAL OF COMPLETED WORK

B. RECOMMENDATIONS FOR CORRECTION OF UNACCEPTABLE WORK, IF REQUESTED BY CONTRACTOR. 9. PROVIDING COPIES OF ALL EVALUATIONS AND APPROVALS OF MATERIAL METHODS, AND COMPLETED WORK, TOGETHER WITH RECOMMENDATIONS AND DAILY INSPECTION REPORTS FOR THE ARCHITECT AND OWNER'S FILE. D. THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE SHALL BE PRESENT WHEN EARTHWORK IS UNDERWAY HE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE PRIOR TO STARTING EARTHWORK OPERATIONS AND PROVIDE ACCESS TO THE SITE FOR TESTING AND INSPECTION.

1.7 <u>COST OF TESTING AND INSPECTION SERVICES</u>

A. THE COST OF TESTING AND INSPECTION SERVICES SHALL BE PAID BY THE CONTRACTOR. 1.8 PREBID CONSIDERATIONS A. PRIOR TO SUBMITTING HIS/HER PROPOSAL, THE CONTRACTOR SHALL MAKE WHATEVER ON-SITE AND OFF-SITE STUDIES OF SURFACE AND SUBSURFACE CONDITIONS HE/SHE CONSIDERS NECESSARY TO ASSURE HIMSELF/HERSELF THAT CONDITIONS ARE KNOWN TO THE DEGREE HE/SHE CONSIDERS ACCEPTABLE. ARRANGEMENTS TO MAKE ON-SITE STUDIES (BORINGS, TEST PITS, ETC.) BEFORE BIDS ARE SUBMITTED SHALL BE

MADE THROUGH THE ARCHITECT. IF THE SITE IS DISTURBED BY SUCH STUDIES, APPROPRIATE REPAIRS APPROVED BY THE PROJECT GEOTECHNICAL ENGINEER SHALL BE MADE BY THE PARTY MAKING SUCH STUDIES. 1.9 <u>LAYOUT OF THE WORK</u>
A. THE CONTRACTOR SHALL PROVIDE THE SERVICES OF A COMPETENT CIVIL ENGINEER OR LAND SURVEYOR TO PROVIDE HORIZONTAL AND VERTICAL CONTROL OF THE LIMITS OF EXCAVATION AND FILL AREAS. 1.10 <u>PROTECTION OF PERSONS AND PROPERTY</u>
A. BARRICADE OPEN EXCAVATIONS OCCURRING AS PART OF THIS WORK AND POST WITH WARNING LIGHTS. OPERATE

WARNING LIGHTS AS RECOMMENDED BY AUTHORITIES HAVING JURISDICTION. B. PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, WASHOUT, AND OTHER HAZARDS CREATED BY EARTHWORK OPERATIONS 1.11 <u>PROTECTION OF EXISTING STRUCTURES</u>

A. PERFORM EARTHWORK REQUIREMENTS USING APPROPRIATE METHODS AND EQUIPMENT AS NECESSARY TO AVOID DAMAGING EXISTING STRUCTURES.

1.12 SUBMITTALS A. PROVIDE SAMPLES OF EACH TYPE OF FILL MATERIAL FOR ANALYSIS BY THE "GEOTECHNICAL ENGINEER"

B. HEAVY CONSTRUCTION EQUIPMENT SHOULD NOT BE OPERATED WITHIN 10 TO 15 FEET OF ANY EXISTING

PART 2 - PRODUCTS:

2.1 <u>FILL MATERIAL — GENERAL</u>
A. ALL FILL MATERIAL SHALL BE FREE FROM EXCESSIVE MOISTURE, FROZEN OR PERISHABLE MATERIAL, DEBRIS, SOD, OR STONES LARGER THAN 3 INCHES ACROSS B. ALL MATERIALS PROPOSED FOR USE AS FILL SHALL BE EVALUATED AND APPROVED BY THE GEOTECHNICAL THE CONTRACTOR SHALL PROVIDE ALL ADDITIONAL FILL MATERIAL FROM OFF-SITE TO COMPLETE THE WORK. 2.2 <u>FILL MATERIALS — PROPERTIES</u>
A. ALL STRUCTURAL FILL PLACED WITHIN 20 FEET OF THE BUILDING SHALL HAVE A LIGUID LIMIT LESS THAN 45

AND PLASTICITY INDEX LESS THAN 25.. B. SOILS WITH A LIQUID LIMIT GREATER THAN 45 AND A PLASTICITY INDEX GREATER THAN 25 MAY BE PLACED IN GREEN AREAS AWAY FROM THE BUILDING AND PAVEMENT AREAS. C. FILL MATERIAL SHALL BE FREE OF ORGANIC MATERIALS (LESS THAN 2% BY VOLUME) OR OTHER DELETERIOUS MATERIALS AND SHALL NOT CONTAIN PARTICLE LARGER THAN 2 INCHES. 2.3 <u>BEDDING MATERIALS:</u>
A. PROCESSED SAND AND GRAVEL FREE FROM CLAY LUMPS, ORGANIC, OR OTHER DELETERIOUS MATERIAL, AND

COMPLYING WITH FOLLOWING GRADATION REQUIREMENTS: PERCENT PASSING (BY WEIGHT) 3/4 INCH 3/8 INCH No. 4

#### No. 200 PART 3 - EXECUTION:

A. FAMILIARIZATION; BEFORE THE WORK IS STARTED, BECOME THOROUGHLY FAMILIAR WITH THE SITE CONDITIONS AND ALL OTHER FACTORS, WHICH MAY AFFECT THE WORK. TAKE ALL SUCH CONDITIONS AND FACTORS INTO

 $15 \pm 10$ 

5 <u>+</u> 5

B. APPROVALS: COMPLETE ALL EVALUATIONS AND OBTAIN APPROVALS FOR PROPOSED METHODS AND MATERIALS BY GEOTECHNICAL ENGINEER BEFORE STARTING THE WORK. IF, FOR ANY REASON, MATERIALS OR METHODS OTHER THAN THOSE ORIGINALLY PROPOSED ARE TO BE CONSIDERED, ADDITIONAL EVALUATIONS AND APPROVALS SHALL

WATER SOIL MOISTURE AND WEATHER: 1. DO NOT PLACE OR COMPACT FILL WHEN WEATHER CONDITIONS WILL HAVE DETRIMENTAL EFFECT ON THE

REMOVE AND REPLACE WORK THAT IS DAMAGED BY WEATHER-RELATED FACTORS. 3. PROVIDE SUITABLE BERMS OR CHANNELS TO CONTROL AND DIRECT WATER AS MAY BE NECESSARY TO PREVENT EROSION, FLOODING, OR OTHER DAMAGE. PROMPTLY REMOVE AND DISPOSE OF ALL WATER AND SEDIMENT, WHICH MAY ENTER EXCAVATIONS.

4. WHEN THE MOISTURE CONTENT OF THE SOIL PROPOSED FOR USE AS FILL IS MORE THAN THE LIMIT SPECIFIED, IT SHALL NOT BE USED UNLESS AND UNTIL THE MOISTURE CONTENT HAS BEEN REDUCED TO AN ACCEPTABLE LEVEL. WHEN THE MOISTURE CONTENT IS BELOW THE LIMIT SPECIFIED, THE SOIL SHALL NOT BE JSED UNLESS APPROPRIATE MOISTURE IS ADDED AND BLENDED UNIFORMLY THROUGHOUT THE MATERIAL.

3.2 TOPSOIL REMOVAL AND CONSERVATION . UPON COMPLETION AND APPROVAL OF ALL CLEARING AND GRUBBING OPERATIONS. ALL ACCEPTABLE TOPSOIL SHALL BE STRIPPED AND PLACED IN AN APPROVED STOCKPILE AREA FOR LATER PLACEMENT IN LANDSCAPE AREAS REMOVAL OF TREES AND SHRUBS SHALL INCLUDE REMOVAL OF THE ROOT BALL. THE UPPER 6 TO 9" OF TOPSOIL SHALL BE REMOVED WITH THE GRASS STUBBLE AND ROOT CROWN. THE DEPTH OF TOPSOIL REMOVAL SHALL BE AT THE DIRECTION OF THE GEOTECHNICAL ENGINEER. ADDITIONAL STRIPPING DEPTH MAY BE NECESSARY, AS DIRECTED BY THE GEOTECHNICAL ENGINEER. ACCEPTABLE TOPSOIL SHALL BE CONSIDERED THE SÚRFACE LAYER OF SOIL THAT IS REPRESENTATIVE OF SOILS IN THE VICINITY THAT PRODUCE NATIVE VEGETATION AS DETERMINED BY THE GEOTECHNICAL ENGINEER.

B. TOPSOIL STOCKPILES SHALL NOT BE MORE THAN 20 FEET IN HEIGHT AND SHALL HAVE SIDE SLOPES NO STEEPER THAN TWO (2) HORIZONTAL TO ONE (1) VERTICAL. THE CONTRACTOR SHÀLL INSURE THAT THIS MATÉRIAL IS REASONABLY FREE FROM UNDERLYING SUBSOIL, LUMPS, OBJECTIONABLE WEEDS, LITTER, BRUSH, ORGANIC MATTER, ROOTS, TOXIC SUBSTANCES OR ANY MATERIALS THAT MIGHT BE HARMFUL TO PLANT GROWTH OR BE A HINDRANCE TO GRADING, PLANTING OR MAINTENANCE OPERATIONS. TOPSOIL SHALL NOT CONTAIN MORE THAN FIVE PERCENT BY VOLUME OF STONES, STUMPS OR OTHER OBJECTS LARGER THAN 3/4 INCH IN ANY DIMENSION.

3.3 OVEREXCAVATION

SEE SHEET C2.0 FOR OVEREXCAVATION PLAN. B. OVEREXCAVATION NEXT TO THE EXISTING BUILDING SHALL BE EXERSIZED WITH CARE. OVEREXCAVATION SHALL NOT UNDERMINE EXISTING FOUNDATIONS. OVAEREXCAVATION SHALL BE COMPLETED IN SMALL ISOLATED AREAS LIMITED TO 10 FEET OF OVEREXCAVATION (EXPOSED EXISTING FOUNDATION) FOR EVERY 60 FEET OF EXISTING BUILDING/FOUNDATION AT ANY TIME.

THE BASE OF OVEREXCAVATED AREAS SHALL BE OBSERVED BY THE GEOTECHNICAL ENGINEER AREA TO RECEIVE FILL SHALL BE SCARIFIED TO A DEPTH OF 8 INCHES, MOISTURE CONDITIONED AND COMPACTION IN ACCORDANCE WITH THE REQUIREMENT BELOW.

3.4 EXCAVATION A. BY WHATEVER APPROPRIATE MEANS MAY BE NECESSARY, EXCAVATE AS AND WHERE REQUIRED TO COMPLETE ALL WORK FOR THE PROJECT. B. MATERIALS EXCAVATED MAY BE USED FOR FILL WHEN THE PROPERTIES OF THE MATERIAL MEET THE REQUIREMENTS GIVEN HEREIN AND APPROVED BY THE GEOTECHNICAL ENGINEER.

EXCAVATE TO ELEVATIONS SHOWN ON THE DRAWINGS. OBTAIN GEOTECHNICAL ENGINEERS INSPECTION OF SUBGRADE. REMOVE AND REPLACE LOW-DENSITY MATERIAL AS DIRECTED BY THE GEOTECHNICAL ENGINEER D. AFTER APPROVAL OF GEOTECHNICAL ENGINEER, EXCAVATE FOR FOOTINGS AND OBTAIN GEOTECHNICAL ENGINEERS SPECTION. REMOVE AND REPLACE LOW-DENSITY MATERIAL AS DIRECTED BY THE GEOTECHNICAL ENGINEER. E. EXCAVATED MATERIALS, WHICH ARE NOT USED FOR FILL, SHALL BE LAWFULLY DISPOSED OF OFF-SITE. 3.4 FILL AND BACKFILL PLACEMENT

A. COMPACTION REQUIREMENTS GIVEN ARE EXPRESSED AS A PERCENTAGE OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM PROCEDURE D698-91, STANDARD PROCTOR, MOISTURE CONTENT REQUIREMENTS GIVEN ARE EXPRESSED AS PERCENTAGE POINT DEVIATIONS FROM OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM PROCEDURE D698-91. B. ALL FILL AND BACKFILL SHALL BE PLACED IN LOOSE LIFTS NOT EXCEEDING 8 INCHES IN THICKNESS WITH MOISTURE CONTENT WITHIN THE SPECIFIED LIMITS. MATERIALS USED FOR FILL SHALL MEET THE REQUIREMENTS GIVEN HEREIN. FILL MATERIALS SHALL BE OF SIMILAR PROPERTIES THROUGHOUT THE PROJECT AREA. D. EACH LAYER OF FILL SHALL BE MIXED AND SPREAD EVENLY AFTER IT IS PLACED.

3.5 <u>FILL PLACEMENT REQUIREMENTS</u> A. ALL FILL SHALL BE PLACED TO MEET THE FOLLOWING REQUIREMENTS CONCERNING FILL MATERIAL TYPE, COMPACTION, AND MOISTURE CONTENT.

AREAS OF FILL PLACEMENT	COMPACTION REQUIREMENTS (ASTM D698) (STANDARD PROCTOR)	MOISTURE CONTENT (PERCENT OF OPTIMUM)
STRUCTURAL FILL — PLACED BELOW AND WITHIN 20 FEET OF NEW AND EXISTING BUILDINGS, PAVEMENTS, SIDEWALKS, AND RETAINING WALLS (INCLUDES ALL OVEREXCAVATION AREAS)	98%	-2% TO +3%
STRUCTURAL FILL — FILL SOILS PLACE MORE THAN 20 FEET AWAY FROM NEW BUILDINGS PAVEMENTS, SIDEWALKS, AND RETAINING WALLS.	98%	-2% TO +3%
GRANULAR SUBASES - BELOW FLOOR SLABS	98%*	AS NECESSARY TO OBTAIN DENSITY
<u>UTILITY TRENCHES</u> — COHESIVE UTILITY TRENCH BACKFILL	98%	-2% TO +3%
NON-STRUCTURAL FILL - FILL SOIL PLACED WITHIN 2 FEET OF FINAL GRADE IN NON-LOADED LANDSCAPE/GRASS AREAS	92%	AS NECESSARY TO OBTAIN DENSITY

\* MAY BE SUBSTITUTED WITH 60% "RELATIVE DENSITY" IN ACCORDANCE WITH ASTM D 4253 AND D 4254 WHEN USING GRANULAR FILL.

B. COMPACTION REQUIREMENTS SHALL BE ACCOMPLISHED BY MEANS OF SHEEPS-FOOT ROLLERS OR OTHER ROLLERS CAPABLE OF COMPACTING THE SOIL TO THE DENSITIES SPECIFIED. ROLLING SHALL BE DONE WHILE THE SOIL IS WITHIN THE MOISTURE LIMITS SPECIFIED AND SHALL BE CONTINUOUS OVER THE ENTIRE AREA BEING FILLED WITH SUFFICIENT PASSES TO ACHIEVE THE DENSITIES SPECIFIED. ROUGH GRADING

A. THE CONTRACTOR SHALL COMPLETE THE CUT AND FILL WORK REQUIRED TO THE GRADES SHOWN ON THE PLANS, MEET ALL REQUIREMENTS FOR FILL IN AREAS, WHICH REQUIRE FILLING, SLOPE SURFACES FOR POSITIVE DRAINAGE AND ACHIEVE ELEVATIONS REQUIRED WITHIN TOLERANCE OF 0.1 FEET.

3.7 <u>DISPOSAL OF MATERIALS</u> A. REMOVE FROM SITE ALL EARTHWORK AND VEGETATIVE DEBRIS WHICH IS NOT TO BE INCORPORATED INTO THE COMPLETED WORK. ALL VEGETATIVE DEBRIS AND ALL OTHER JUNK AND DEBRIS B. EXCESS AND UNSUITABLE SOILS MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN AN

C. ALL DEBRIS RESULTING FROM PAVEMENT AND SIDEWALK REMOVAL AND CONSTRUCTION OPERATIONS SHALL BE

REMOVED FROM THE SITE AND DISPOSED OF IN AN APPROPRIATE LEGAL MANNER.

APPROPRIATE LEGAL MANNER.

FURNISH ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK WHICH INCLUDES, BUT IS NOT a. INSTALLATION OF STORM SEWERS, INLETS AND CONNECTION TO EXISTING STORM SEWER SYSTEM.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PLUMBING AND CONNECTION FEES.

STORM SEWER

EARTHWORK SPECIFICATIONS

C. <u>REFERENCED SPECIFICATION</u> 1. ALL CONSTRUCTION IS TO CONFORM TO IOWA STATEWIDE URBAN DESIGN AND SPECIFICATIONS (AVAILABLE ONLINE @ HTTP://WWW.IOWASUDAS.ORG/SPECS.CFM) UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE PLANS. ). REFERENCE STANDARDS ASTM C-76 REINFORCED CONCRETE PIPE

ASTM C-478 PRE-CAST MANHOLE SECTIONS AASHTO M304/M911 PVC PROFILE WALL DRAIN PIPE & FITTINGS AASHTO M294, TYPE S CORRUGATED HDPE W/SMOOTH INTERIOR

ASTM 3034 POLYVINYL CHLORIDE (PVC), SDR 26 . CITY OF TABOR PLUMBING CODE

INSPECTION AND TESTING THE CONTRACTOR SHALL PAY FOR ALL TESTING AND INSPECTION. TESTING AND INSPECTION SHALL BE PERFORMED BY THE

GEOTECHNICAL ENGINEER OR AN APPROVED TESTING AGENCY. ALL BACKFILL SHALL BE TESTED FOR COMPACTION AND AT LEAST ONE DENSITY TEST PER 200 LINEAR FEET OF TRENCH PER FOOT OF TRENCH DEPTH BACKFILL IN ACCORDANCE W/EARTHWORK SPECIFICATION. 1. PROTECTION

1. PROTECT EXISTING STORM SEWERS, OTHER UTILITIES, AND STRUCTURES WHICH ARE TO REMAIN FROM DAMAGE. PROTECT EXCAVATIONS BY SHORING, BRACING, OR OTHER METHODS, AS REQUIRED TO PREVENT CAVE-INS OR LOOSE DIRT

FROM FALLING INTO EXCAVATIONS. PROVIDE TEMPORARY PATHS OR MEANS FOR DRAINAGE DURING INSTALLATION OF STORM SEWERS PROTECT POURED-IN-PLACE CONCRETE FROM WEATHER AND OTHER TYPES OF DAMAGE. THE CONTRACTOR SHALL, AT ALL TIMES, MAINTAIN SUITABLE AND ADEQUATE DANGER SIGNALS AND BARRIER FENCES AND SHALL ALSO MAINTAIN, WHEREVER NECESSARY, TEMPORARY BRIDGES ACROSS THE TRENCH TO PERMIT THE FREE INGRESS AND EGRESS TO AND FROM OTHER CONSTRUCTION WORK.

. ALL BACKFILL SHALL MEET THE REQUIREMENTS FOR COMPACTED FILL SET FORTH IN THESE SPECIFICATIONS. REINFORCED CONCRETE PIPE SHALL CONFORM TO ASTM C-76, CLASS III (WALL B), WITH BELL AND SPIGOT OR TONGUE AND GROOVE JOINTS. JOINTS SHALL BE SEALED WITH COLD APPLIED BITUMINOUS OR RUBBER ROPE GASKET JOINING MATERIALS PER SUDAS. REINFORCED CONCRETE PIPE SHALL BE CERTIFIED BY THE AMERICAN CONCRETE PIPE ASSOCIATION (ACPA) AND ALL PIPING SHALL DISPLAY THE QCAST SYMBOL TO VERIFY THE MANUFACTURER HAS MET THE ACPA'S CERTIFICATION PROGRAM. ALL JOINT VOIDS ARE TO BE FILLED AND TOWELED SMOOTH ON THE INTERNAL SURFACE. 3. PVC OR HDPE STORM SEWER MAY BE USED FOR I.D. 30 INCHES OR LESS, EXCEPT FOR STORM SEWER PIPES IN

AASHTO M294, TYPE S. BED PER ASTM D2321. ACCEPTABLE PRODUCTS INCLUDE ADS N-12 WT (OR APPROVED EQUAL). PVC PIPE SHALL CONFORM TO THE SANITARY SEWER PIPING REQUIREMENTS. 4. STORM SEWER STRUCTURES, JUNCTION BOXES, FLUMES, AND OTHER CAST IN PLACE STRUCTURES SHALL BE CONSTRUCTED WITH CAST IN PLACE CONCRETE HAVING A COMPRESSIVE STRENGTH OF NOT LESS THAN 3,500 P.S.I. AFTER 28 DAYS. REINFORCING STEEL AND MESH SHALL BE PROVIDED AS SHOWN IN THE DETAIL DRAWINGS ON THE PLANS AND IN THE REFERENCED STANDARDS. REINFORCING STEEL SHALL BE GRADE 60. 5. CASTINGS SHALL BE OF THE TYPE, SIZE AND WEIGHT AS SHOWN ON THE REFERENCED STANDARDS. THE CASTINGS SHALL BE FROM THE FOUNDRIES NOTED OR DETAIL DRAWINGS SHALL BE SUBMITTED TO AND APPROVED BY THE OWNER/ARCHITECT IF CASTINGS FROM OTHER FOUNDRIES ARE PROPOSED FOR USE ON THIS PROJECT.

RIGHT-OF-WAYS WHERE R.C.P. IS REQUIRED. HDPE PIPE SHALL BE CORRUGATED WITH A SMOOTH INTERIOR CONFORMING TO

SANITARY SEWER PIPING. SANITARY SEWER PIPE AND FITTINGS SHALL BE SIZE INDICATED ON THE DRAWINGS AND SHALL CONFORM TO ONE OF THE FOLLOWING a. POLY VINYL CHLORIDE (PVC) SOLID WALL PIPE SHALL CONFORM TO THE REQUIREMENTS OF ASTM D-3034 AND SHALL HAVE A MINIMUM WALL THICKNESS CONFORMING TO SDR 26.

A. EXCAVATION TRENCH WALLS BELOW TOP OF PIPE SHALL BE VERTICAL AND THE WIDTH SHALL BE AS SPECIFIED IN THE DETAILS. ABOVE TOP OF PIPE THE TRENCH WALLS MAY BE SLOPED OR SHORED. NO MORE TRENCH SHALL BE OPENED IN ADVANCE OF PIPE LAYING THAN IS NECESSARY TO EXPEDITE THE WORK.

CARE SHALL BE TAKEN TO NOT EXCAVATE BELOW THE DEPTH INDICATED ON DRAWINGS. WHERE EXCESSIVE OR UNAUTHORIZED EXCAVATION TAKES PLACE, THE OVERDEPTH SHALL BE BACKFILLED TO THE PROPER GRADE WITH COMPACTED BEDDING MATERIAL 4. WHERE UNSTABLE MATERIAL IS ENCOUNTERED IN BOTTOMS OF TRENCHES, OVER-EXCAVATION MAY BE REQUIRED AND BACKFILLED WITH COMPACTED BEDDING MATERIAL. . EXCAVATION FOR STRUCTURES SHALL EXTEND A SUFFICIENT DISTANCE FROM THE WALLS AND FOOTINGS TO ALLOW FOR FORMS, CONSTRUCTION OF WALLS, CONNECTIONS AND FOR INSPECTION. 6. DURING EXCAVATION, MATERIALS SUITABLE FOR BACKFILLING SHALL BE PILED IN AN ORDERLY MANNER A SUFFICIENT DISTANCE FROM THE BANKS OF TRENCHES TO AVOID OVERLOADING AND TO PREVENT SLIDES OR CAVE-INS. EXCAVATED

MATERIAL SHALL BE PILED ON ONE SIDE OF THE TRENCHES IN SUCH A MANNER AS TO KEEP SURFACE DRAINAGE OF ADJOINING AREAS UNORSTRUCTED 7. EXCAVATED MATERIAL NOT REQUIRED OR SUITABLE FOR BACKFILL SHALL BE REMOVED FROM THE JOB SITE AND DISPOSED 8. ALL GROUNDWATER ENCOUNTERED IN TRENCHES AND EXCAVATIONS SHALL BE CONTROLLED THROUGH THE USE OF PUMPS. CRUSHED ROCK OR OTHER MEANS REQUIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. B. <u>PIPE LAYING</u> 1. PIPELINES SHALL BE INSTALLED IN LOCATIONS AND OF SIZES INDICATED ON DRAWINGS.

2. EACH SECTION OF PIPE SHALL BE INSPECTED BEFORE BEING LOWERED INTO THE TRENCH. DEFECTIVE. DAMAGED. OR UNSOUND PIPE SHALL BE REJECTED AND REMOVED FROM THE SITE PIPE SHALL BE EMBEDDED FIRMLY TO REQUIRED LINES AND GRADES WITH BELLS AND GROOVE ENDS UP-GRADE. ENDS SHALL BE FITTED TOGETHER AND BELL HOLES SHALL BE EXCAVATED SO THAT PIPES WILL HAVE SMOOTH AND UNIFORM INVERT THROUGHOUT THEIR LENGTHS. PROVIDE BEDDING PER DETAILS ON THE DRAWINGS 4. GRADE PIPING BY MEASURING ROD FROM OVERHEAD GRADE LINE OR CENTERLINE BATTER BOARDS OR AN APPROVED LASER SYSTEM. ADJUST ALL MANHOLES AND CLEANOUTS TO MATCH FINISH GRADES. 5. AS PIPE LAYING PROGRESSES, PIPE INTERIOR SHALL BE CLEARED OF DIRT, JOINT COMPOUND OR OTHER SUPERFLUOUS MATERIALS. DURING WORK STOPPAGE PERIODS, EFFECTIVE PLUGS OR COVERS FOR OPEN ENDS OF PIPE SHALL BE PROVIDED TO PREVENT FOREIGN MATTER FROM ENTERING. JOINT CONTACT SURFACES SHALL BE CLEANED IMMEDIATELY PRIOR

TO JOINTING, LUBRICANTS, PRIMERS, OR ADHESIVES, AS RECOMMENDED BY JOINT MANUFACTURER, SHALL BE USED. TRENCHING AND EXCAVATION PITS SHALL NOT BE BACKFILLED UNTIL ALL TESTS AND INSPECTIONS COVERING THE INSTALLATION OF THE STORM SEWERS HAVE BEEN PERFORMED AND APPROVED. DO NOT FILL OVER FROZEN GROUND OR FILL WITH FROZEN MATERIALS. ALL TIMBER SHEETING BELOW A PLANE ONE FOOT (1') ABOVE TOP OF PIPE SHALL REMAIN IN PLACE IN ORDER NOT TO

DISTURB PIPE GRADING. BEFORE BACKFILLING, REMOVE ALL OTHER SHEETING, BRACING, AND SHORING 3. INITIAL TRENCH BACKFILL SHALL BE EXTENDED UP THE SIDES AND CAREFULLY PLACED AROUND AND OVER PIPE IN SIX INCH (6") MAXIMUM LAYERS. EACH LAYER SHALL BE THOROUGHLY AND CAREFULLY COMPACTED WITH HAND OPERATED EQUIPMENT UNTIL ONE FOOT (1') OF COVER EXISTS OVER PIPE. 4. THE REMAINDER OF THE TRENCH SHALL BE BACKFILLED WITH SUITABLE FILL MATERIAL TO THE SUBGRADE ELEVATION SPECIFIED ON THE PLANS. BACKFILL SHALL BE PLACED IN EIGHT (8) INCH MAXIMUM LOOSE LIFTS. THE BACKFILL SHALL BE

COMPACTED TO 98% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698, STANDARD PROCTOR. THE MOISTURE CONTENT TO BE CONTROLLED BETWEEN -2 AND +3 PERCENT OF THE OPTIMUM. ALL STRUCTURES SUCH AS INLETS, FLUMES, AND MANHOLES ARE TO BE BUILT IN ACCORDANCE WITH THE DETAILS AND

MATERIALS CALLED FOR IN THE REFERENCED STANDARD SPECIFICATIONS OR THE DETAILS SHOWN ON THE PLANS. COORDINATE WITH MECHANICAL PLANS FOR BUILDING AS TO EXACT LOCATION AND DEPTH REQUIRED FOR STORM SEWER SERVICE TO CONTINUE INTO BUILDING. 2. CONTRACTOR SHALL COORDINATE AND COMPLY WITH ALL UTILITY COMPANIES INVOLVED WITH THE PROJECT.

FURNISH ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK WHICH INCLUDES BUT IS NOT a. SCARIFY, RECOMPACT, SHAPE AND FINE GRADE PAVEMENT AND BUILDING SUBGRADE TO THE REQUIRED LINES AND b. PLACE CURB AND GUTTER, SIDEWALKS, AND PAVEMENTS TO THE REQUIRED LINES AND ELEVATIONS ADJUST ALL UTILITY COVERS TO GRADE

. APPLY PAINT STRIPING AND ACCESSIBLE STALL SIGNAGE. B. <u>REFERENCED SPECIFICATIONS</u> ALL CONSTRUCTION IS TO CONFORM TO IOWA STATEWIDE URBAN DESIGN AND SPECIFICATIONS (AVAILABLE ONLINE @ HTTP://WWW.IOWASUDAS.ORG/SPECS.CFM) UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE PLANS.

ASTM D 1751 PREFORMED EXPANSION JOINT FILLERS. ASTM D 309 LIQUID MEMBRANE FORMING COMPOUNDS FOR CURING CONCRETE.

ASTM D 1190 CONCRETE JOINT SEALER. . <u>RELATED WORK</u> 1. EARTHWORK

2. STORM SEWER

A. ALL CONCRETE PAVEMENT, CONCRETE CURB AND GUTTER, AND SIDEWALK MATERIALS AND PLACEMENT SHALL CONFORM TO THE REFERNCED STANDARD SPECIFICATIONS. THE MIXES SHALL COMPLY WITH THE FOLLOWING 1. ALL CONCRETE CURB AND GUTTER AND SIDEWALKS SHALL COMPLY WITH "IOWA DOT CLASS C AIR ENTRAINED" PER THE ABOVE REFERENCED SPECIFICATIONS. THE CURB AND GUTTER SHALL BE BUILT TO THE CONFIGURATION SHOWN ON THE DETAIL REFERENCED ON THE PLANS. . MATERIALS REQUIRED FOR THE PERFORMANCE OF THE WORK NOT SPECIFICALLY ADDRESSED IN THIS SPECIFICATION SHALL BE IN ACCORDANCE WITH THE ABOVE REFERENCED SPECIFICATION.

MARKING PAINT SHALL BE SHERWIN-WILLIAMS, SETFAST ALKYD LEADFREE WHITE (8000 - 03006), MARKING PAINT OR APPROVED EQUAL. ALL LINES SHALL BE 4" WIDE.

A. DIMENSIONS ARE TO BACK OF CURB, EDGE OF SLAB OR TO FACE OF BUILDING AS APPLICABLE UNLESS NOTED OTHERWISE. B. ELEVATIONS ARE SHOWN TO TOP OF CURB AND/OR TOP OF SLAB. ELEVATIONS REPRESENT POINTS OF GRADE CHANGE. THE CONTRACTOR SHALL ADJUST VERTICAL FORM OR GRADE LINES TO PROVIDE A SMOOTH TRANSITION AT GRADE CHANGES. C. WATER REDUCING ADMIXTURES SHALL NOT BE USED UNLESS SPECIFICALLY APPROVED BY THE ENGINEER.

D. CONCRETE PAVEMENT SHALL BE CURED USING A WHITE PIGMENT LIQUID MEMBRANE FORMING CURING COMPOUND THAT HAS BEEN APPROVED BY IOWA DEPARTMENT OF TRANSPORTATION. MINIMUM RATE OF APPLICATION SHALL BE 200 SQ. FEET PER GALLON IF MECHANICAL - POWER SPRAYER IS USED OR 100 SQ. FEET PER GALLON IF HAND POWERED SPRAYER IS USED. E. PLACE PAVEMENTS IN ACCORDANCE WITH THE REFERENCED STANDARD SPECIFICATIONS AND PROJECT PLANS. IN CASE OF CONFLICT, THE MORE STRINGENT REQUIREMENT SHALL GOVERN.

G. ADJUST ALL UTILITY STRUCTURES TO GRADE AS REQUIRED. H. FINISH TOLERANCES: SURFACE COURSE SHALL BE PLUS OR MINUS 0.05 FEET AT ANY POINT FROM LINE GRADE SHOWN ON THE DRAWINGS. TEST AREA BY FLOODING ENTIRE PAVED AREA AT COMPLETION AND MARK POCKET AREAS FOR CORRECTION. TOLERANCES SHALL NOT APPLY TO AREAS ALONG ADA ROUTES AND/OR PARKING AREAS WHERE STRICT COMPLIANCE WITH ADA REQUIREMENTS IS REQUIRED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND/OR REPAIRING ALL ADA ITEMS NOT IN COMPLIANCE WITH ADA REGULATIONS AT NO ADDITIONAL COST TO THE OWNER. I. THE LOCATIONS OF EXISTING UTILITIES ARE TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR.

CONSTRUCTION, AND SHALL REPAIR SAME AT HIS OWN EXPENSE. INSPECTION AND TESTING

A. TESTING AND OBSERVATION; TESTING AND OBSERVATION SHALL BE PROVIDED BY THE GEOTECHNICAL ENGINEER OR OTHER APPROVED TESTING AGENCY. ALL INSPECTION AND TESTING SHALL BE PAID FOR BY THE CONTRACTOR. B. SUFFICIENT TESTS TO ASCERTAIN THAT THE SPECIFIED DENSITIES ARE BEING OBTAINED THROUGHOUT THE FILL AND BACKFILL UNDER THE STRUCTURE, BUILDING SLABS, PAVED AREAS, UNPAVED AREAS AND LAWNS SHALL BE MADE BY THE SOILS

2. FILL AND BACKFILL MATERIALS SHALL BE EXAMINED AS TO SOIL CLASSIFICATION AND TESTED TO DETERMINE SUITABILITY FOR USE AND COMPLIANCE WITH THE CONTRACT DOCUMENTS.

BACKFILL SHALL BE MADE BY THE SOILS ENGINEER. a. THE NUMBER OF TESTS PERFORMED SHALL BE AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER, EXCEPT THAT THE NUMBER OF FIELD TESTS PERFORMED SHALL NOT BE LESS THAN THE MINIMUM DESCRIBED BELOW: a.a. WITHIN THE PAVED AREAS OF THE SITE, EXCEPT TRENCH EXCAVATIONS, PERFORM ONE (1) TEST FOR EVERY 5,000

a.b. TEST FAILURE: WHEN FILL OR BACKFILL DOES NOT MEET THE REQUIRED COMPACTION, REMOVE, RECOMPACT AND RETEST AT NO EXPENSE TO THE OWNER. b. SUBMIT TWO (2) COPIES OF ALL SOILS ANALYSES AND TEST RESULTS TO THE OWNER'S REPRESENTATIVE AND ONE (1) COPY TO THE ENGINEER, ARCHITECT, GENERAL CONTRACTOR, AND THE CONTRACTOR.

c. TO FACILITATE TESTING SERVICES, THE CONTRACTOR SHALL COOPERATE WITH THE GEOTECHNICAL ENGINEER AND ADVISE THE LABORATORY SUFFICIENTLY IN ADVANCE OF OPERATIONS TO ALLOW FOR COMPLETION OF TESTS AND FOR THE ASSIGNMENT OF PERSONNEL. d. NOTIFY THE GEOTECHNICAL ENGINEER IN SUFFICIENT TIME TO MONITOR EARTHWORK AND TO OBSERVE BOTTOMS OF

FOUNDATION EXCAVATIONS WHEN CONSTRUCTION BEGINS. INSPECTION AND TESTING OF PORTLAND CEMENT PAVEMENT AND ASPHALTIC CONCRETE PAVEMENT SHALL BE PERFORMED BY A OUALIFIED INDEPENDENT TESTING LABORATORY, THE CONTRACTOR SHALL PAY FOR ALL TESTING AND INSPECTION, TESTING AND INSPECTION SHALL BE PERFORMED SO AS TO MINIMIZE DISRUPTION TO WORK. ANY AREA FOUND NOT MEETING SPECIFICATIONS WILL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. RETESTING OF ANY AREAS WILL BE PAID FOR BY THE CONTRACTOR

D. THE FOLLOWING TESTS ARE REQUIRED AND TWO COPIES OF THE TEST REPORTS SHALL BE SUPPLIED TO THE ENGINEER/ARCHITECT.

STRENGTH SPECIMENS. THE MINIMUM FREQUENCIES OF TESTING SHALL BE ONE PER 50 CUBIC YARDS OF CONCRETE OR AT LEAST ONCE PER POUR. 2. ASPHALT SAMPLES SHALL BE TAKEN DURING LAY-DOWN TO VERIFY COMPLIANCE WITH THE SPECIFIED MIX MATERIAL REQUIREMENTS.

SUBGRADE PREPARATION

A. FOR ALL PAVEMENTS, THE UPPER 12 INCHES OF SUBGRADE SHALL BE SCARIFIED AND RECOMPACTED IMMEDIATELY PRIOR TO FINE GRADING AND PAVEMENT PLACEMENT WITH A MATERIAL DEFINED AS CONTROLLED FILL. THE SUBGRADE SHALL BE RECOMPACTED TO 98% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698, STANDARD PROCTOR. THE MOISTURE CONTENT TO BE CONTROLLED BETWEEN -2 AND +3 PERCENT OF THE OPTIMUM. B. FOR ALL BUILDING FLOOR SUBGRADES. THE CONTRACTOR SHALL SCARIFY AND RECOMPACT THE UPPER 8 INCHES IMMEDIATELY PRIOR TO PLACING THE SPECIFIED FLOOR SECTION (REFER TO ARCHITECTURAL AND STRUCTURAL PLANS). MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 98% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698, STANDARD PROCTOR, AT A MOISTURE CONTENT BETWEEN -2 AND +3 PERCENT OF OPTIMUM.

OPENING TO TRAFFIC A. THE ENTIRE PAVEMENT SHALL BE CLEANED OF ALL DEBRIS AND CONSTRUCTION EQUIPMENT.

A. ALL OTHER MATERIAL NOT SPECIFICALLY DESCRIBED BUT REQUIRED FOR PROPER COMPLETION OF THE WORK SHALL BE AS SELECTED BY THE CONTRACTOR SUBJECT TO APPROVAL BY THE ENGINEER.

F. ALL PAVEMENT JOINTS SHALL BE SEALED. CONCRETE JOINT SEALER IS HOT-POURED RUBBER ASPHALT, ASTM D-1190. J. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO PAVED STREETS AND EXISTING UTILITIES CAUSED BY WOR

ENGINEER AT THE CONTRACTOR'S EXPENSE. THE SERVICES OF THE SOILS ENGINEER SHALL INCLUDE BUT NOT BE LIMITED TO: 1. OBSERVE THE PROOF-ROLLING, OVEREXCAVATION, PLACEMENT OF FILL AND THE EXCAVATION AND BACKFILL FOR SITE

3. SUFFICIENT TESTS TO ASCERTAIN THAT THE SPECIFIED DENSITIES ARE BEING OBTAINED THROUGHOUT THE FILL AND

SQUARE FEET PER LIFT OF FILL.

1. PORTLAND CEMENT CONCRETE SHALL BE TESTED FOR ENTRAINED AIR AND SLUMP AND THE CASTING OF COMPRESSIVE

C. FINE GRADE SATISFACTORILY COMPACTED SUBGRADE TO PROPOSED GRADES. D. NO SURFACING SHALL BE PLACED ON FROZEN SUBGRADE.