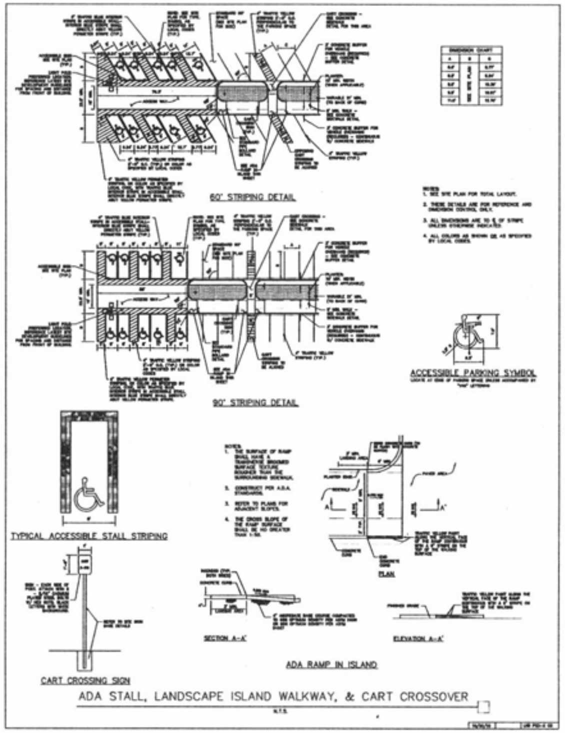
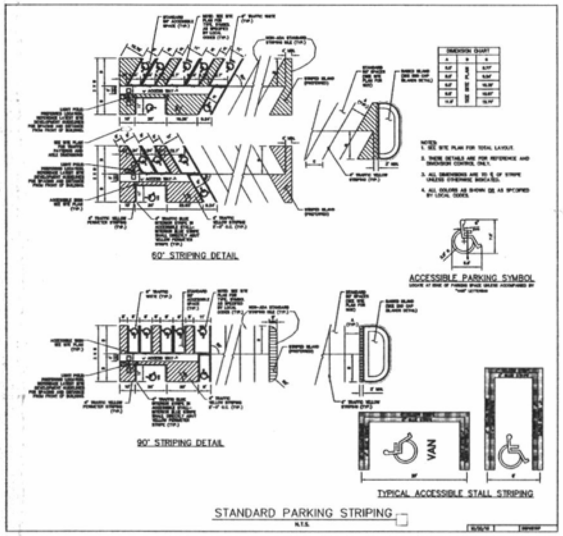
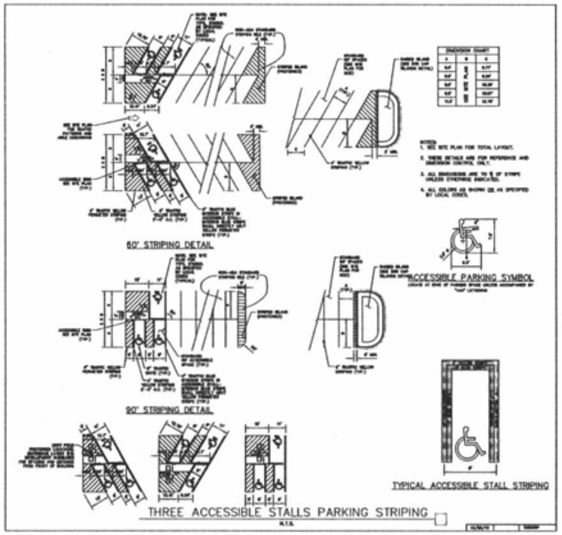
10PD071







SITE PLAN DETAILS

NOT FOR CONSTRUCTION / PERMIT REVIEW ONLY

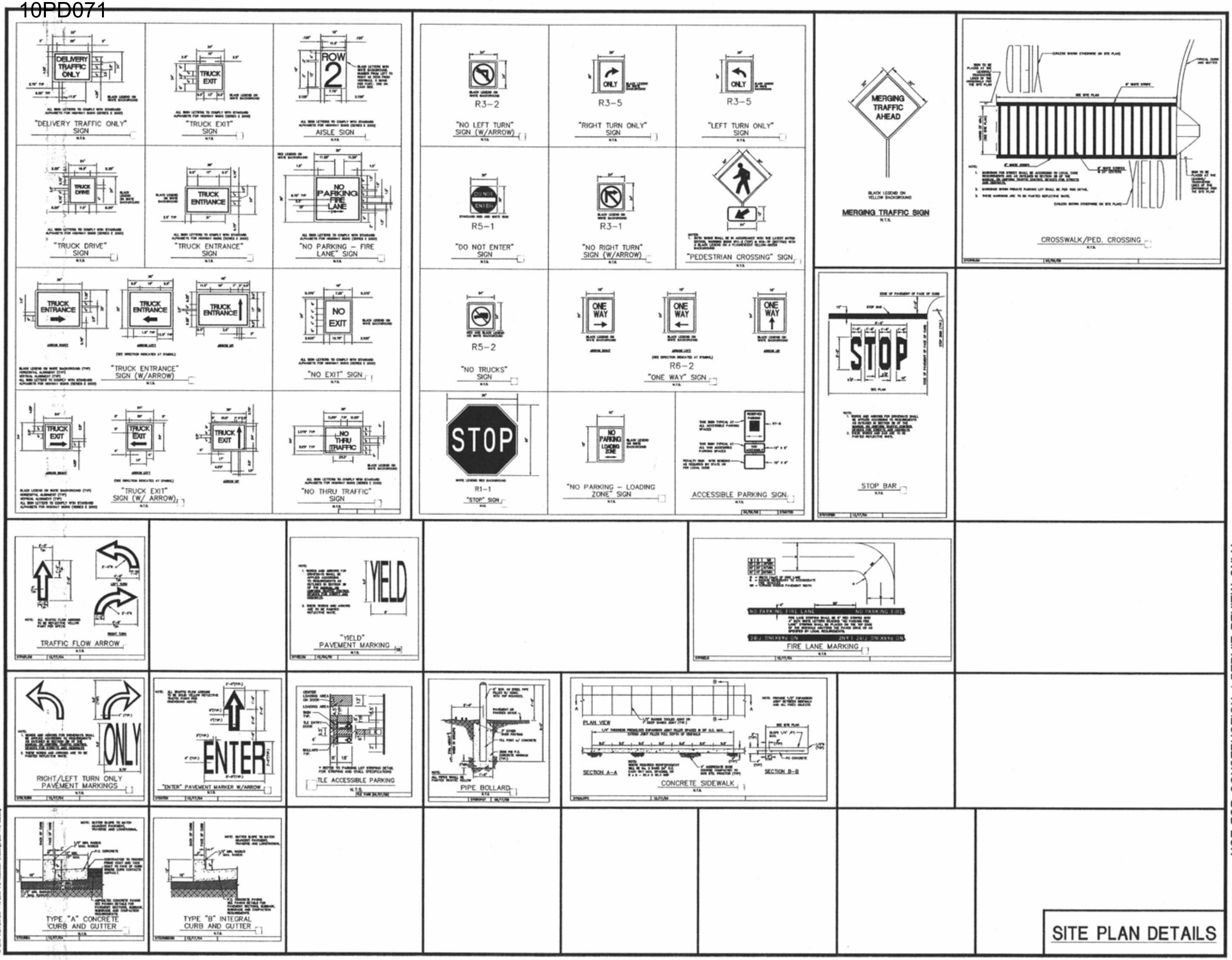
Wolverton & Associates
Consulting Engineers + Land Surveyors
www.wolverton-assoc.com

PROPOSED BLACK HILLS CENTER
Walmart # 3872-03
RAPID CITY, PENNINGTON COUNTY, S.D.
BY: THF, STONERIDGE DEVELOPMENT, LLC
ST. LOUIS, MO

REVISIONS	BY

DRAWN BY: DMN/CRP
CHECKED BY: KJW
DATE: 12/09/2010
SCALE: NO SCALE
JOB No.: 08-140
SHEET NUMBER: D-1A

10PD071



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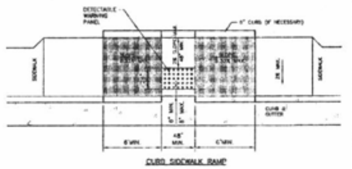


CURB SIDEWALK RAMP

GENERAL NOTES:

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY A COARSE BROOMING PERPENDICULAR TO THE SLOPE OF THE RAMP.

DETECTABLE WARNING PANEL SHALL BE PER SPECIFICATIONS.

CARE SHALL BE TAKEN TO ASSURE A UNIFORM GRADE ON THE RAMP, FREE OF SAGS AND SHORT GRADE CHANGES.

THE NORMAL GUTTER LINE PROFILE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP OPENING.

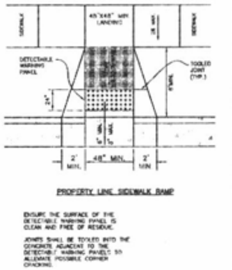
CROSS SLOPES SHALL NOT EXCEED 2%.

WHEN REMOVING EXISTING CURB AND GUTTER FOR NEW RAMP CONSTRUCTION AN EXPANSION JOINT SHALL BE CONSTRUCTED PER DETAIL 60-7.

ALL RAMPS ARE REQUIRED TO HAVE A MAXIMUM 48 INCH BY 48 INCH LANDING AREA WITH NO MORE THAN A 2% SLOPE IN ANY DIRECTION.

ALL RAMPS SHALL HAVE A MAXIMUM RUNNING SLOPE OF 8.33% (1 INCH PER FT.).

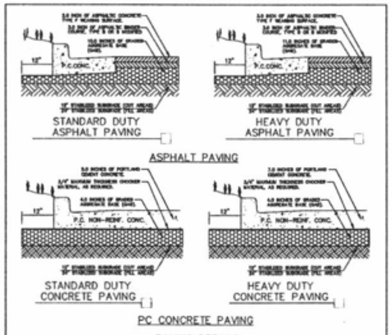
OBSTRUCTIONS SUCH AS SIGNAL POLES, LIGHT POLES, TRAFFIC CONTROLLER CABINETS, ETC. CAN NOT BE LOCATED IN THE LANDING AREA OR THE RAMP SLOPE.



PROPERTY LINE SIDEWALK RAMP

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

HANDICAP ACCESS RAMPS — DATE: 5-1-07 — SEC. SHT. 61-5



ASPHALT PAVING

PC CONCRETE PAVING

PAVING DETAILS

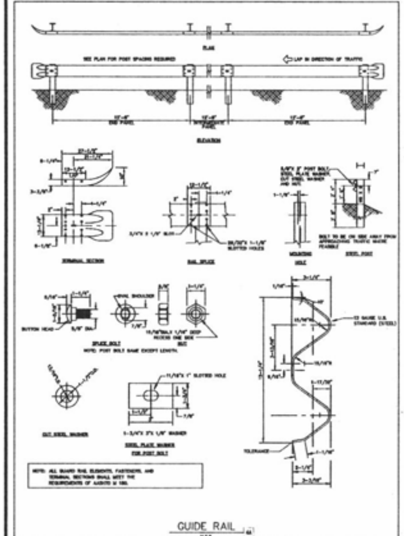
N.T.S.

GENERAL NOTES

1. FOR PREPARATION OF PAVEMENT SUBGRADE, FILL PLACED WITHIN 24 INCHES OF FINISHED SUBGRADE ELEVATION IN FILL AREAS AND AT LEAST THE UPPER 12 INCHES OF SUBGRADE IN ALL AREAS TO BE PAVED SHOULD BE COMPACTED TO AT LEAST 98 % OF THE MATERIAL'S MAXIMUM STANDARD PROCTOR DRY DENSITY (ASTM D-698). FILL PLACED BELOW THIS LEVEL SHOULD BE COMPACTED TO AT LEAST 95 % OF THE MATERIAL'S MAXIMUM STANDARD PROCTOR DENSITY.
2. AFTER PROOFROLLING WITH A LOADED TANDEM AXLE DUMP TRUCK AND REPAIRING DEEP SUBGRADE DEFICIENCIES, THE ENTIRE SUBGRADE SHOULD BE SCARIFIED TO A DEPTH OF 12 INCHES AND UNIFORMLY COMPACTED TO AT LEAST 98% OF STANDARD PROCTOR.
3. GRAVEL BASE COURSE AGGREGATES SHOULD CONFORM TO THE REQUIREMENTS OF SECTION 882.2, TABLE 1 OF THE SOUTH DAKOTA DOT "STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES", 2004 EDITION. COMPACTION OF GRAVEL BASE COURSE SHOULD BE 95% STANDARD PROCTOR DENSITY (ASTM D698).
4. ASPHALTIC SURFACE COURSE MIXTURES SHOULD BE IN ACCORDANCE WITH CLASS G REFERENCED IN SECTIONS 320, 880, AND 890 OF THE SOUTH DAKOTA DOT "STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES", 2004 EDITION. THE SURFACE COURSE SHOULD BE COMPACTED TO A MINIMUM OF 97% MARSHALL DENSITY (ASTM SPECIFICATION D 1559).
5. PRIME COAT MUST BE APPLIED TO THE BASE MATERIAL. REFER TO SPECIFICATION SECTION 2470 FOR REQUIREMENTS.
6. THE PORTLAND CEMENT CONCRETE PAVEMENT MIXTURE SHOULD BE AIR-ENTRAINED CONCRETE (5-7%). AGGREGATES SHOULD CONFORM TO THE REQUIREMENTS OF SOUTH DAKOTA "STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES", 2004 EDITION. THE MIXTURE SHOULD BE DESIGNED TO DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS WITH A 4 INCH MAXIMUM SLUMP
7. CONTRACTOR SHALL PROVIDE A PRIME COAT AND TACK COAT TO CURB WHERE CURB CONTACTS ASPHALT.
8. PAVEMENT DESIGN WAS PREPARED BY TERRACON. GEOTECHNICAL REPORT PROJECT B4105021 DATED NOVEMBER 12, 2010. FURTHER DETAILS ON PREPARATION AND COMPACTION CAN BE FOUND BOTH IN THEIR REPORT AND PROJECT SPECIFICATIONS.
9. PAVEMENT DESIGN IS BASED ON CBR VALUE OF 1.3.

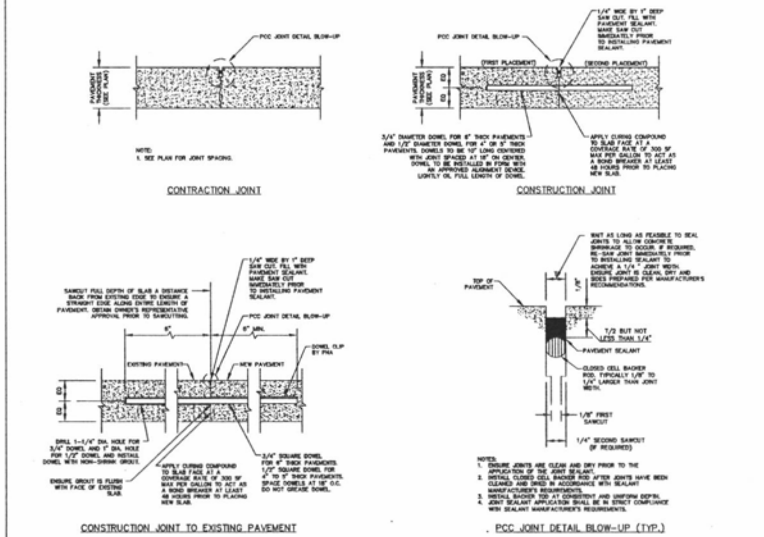
CONCRETE PAVEMENT GENERAL NOTES:

1. ALL CONSTRUCTION METHODS AND MATERIALS SHOULD BE IN ACCORDANCE WITH THE LATEST EDITION OF "STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES", DEPARTMENT OF TRANSPORTATION, STATE OF SOUTH DAKOTA. CONSTRUCTION OF ROADS AND BRIDGES, 2004 EDITION.
2. PORTLAND CEMENT CONCRETE SHOULD HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 psi WITH A MODULES OF RUPTURE OF 600 psi OR MORE.
3. SAW CUT CONTRACTION JOINTS SHOULD BE SPACED AT 15' O.C. MAXIMUM EACH WAY. JOINTS SHOULD EXTEND TO A DEPTH OF 1.5" INTO THE SLAB. ISOLATION JOINTS SHOULD BE USED WHERE PAVEMENT ABUTS DRAINAGE STRUCTURES AND BUILDINGS.
4. CONSTRUCTION JOINTS SHALL BE UNDERLAIN BY A NON-WOVEN GEOTEXTILE (APPROX. 2' WIDE) TO PREVENT UPWARD PUMPING OF SOIL FINES THROUGH THE JOINTS.
5. PAVEMENT DESIGN IS BASED ON A C.B.R. VALUE OF 1.3.



GUIDE RAIL

N.T.S.



CONTRACTION JOINT

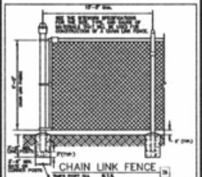
CONSTRUCTION JOINT

CONSTRUCTION JOINT TO EXISTING PAVEMENT

PCC JOINT DETAIL BLOW-UP (TYP.)

CONCRETE JOINT DETAILS

N.T.S.



CHAIN LINK FENCE

N.T.S.

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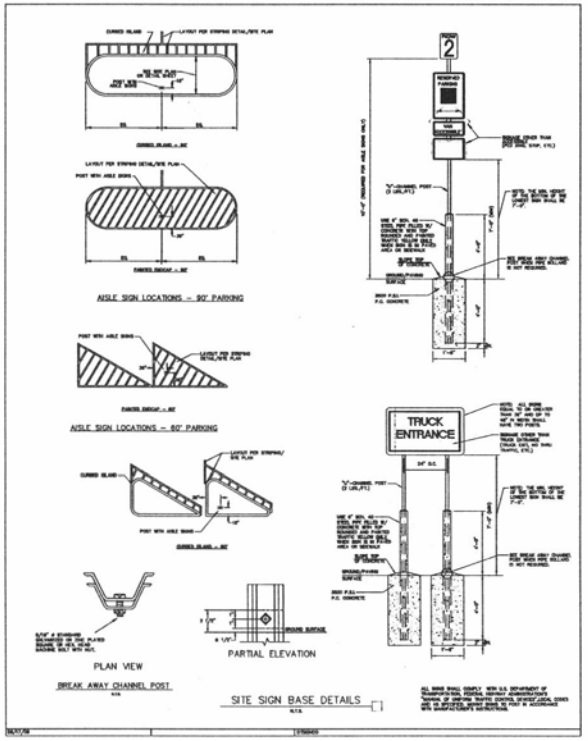

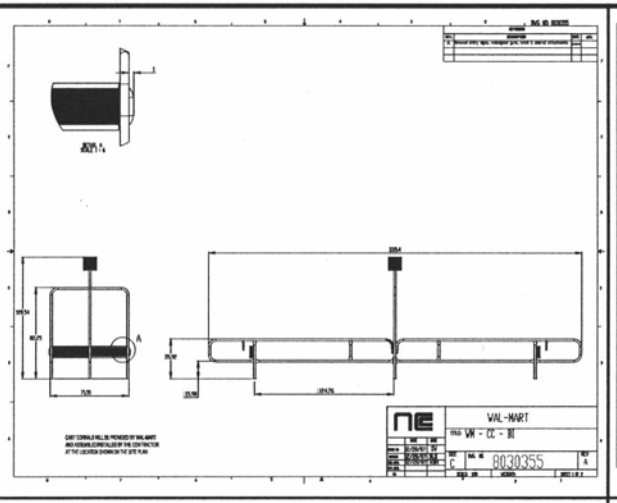

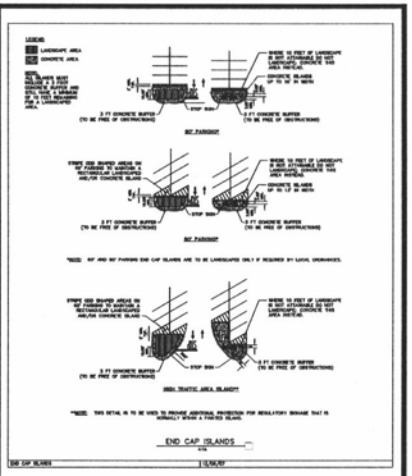

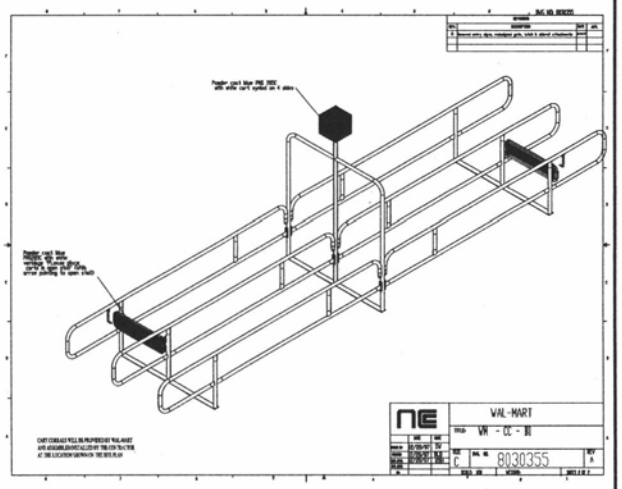

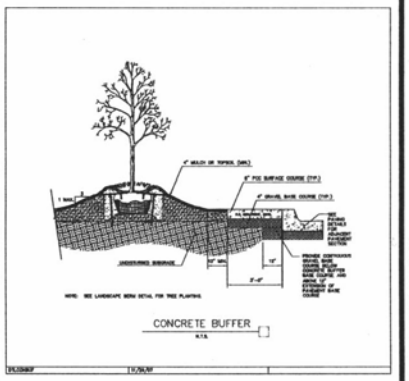

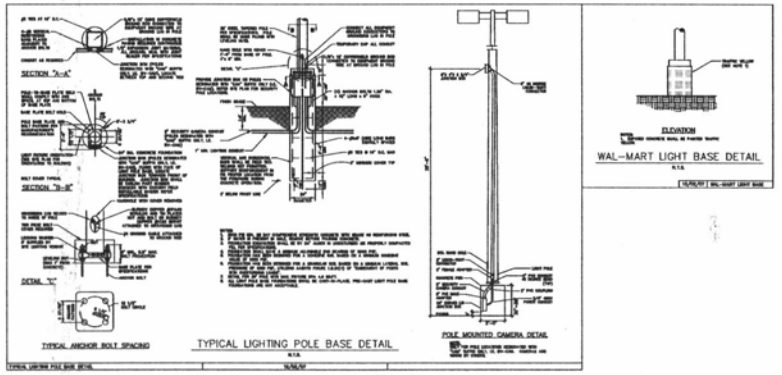

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SITE PLAN DETAILS

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8712 Beaufort Parkway - Suite 100 - Duluth, Georgia 30097
Phone (770) 447-9999 - Fax (770) 447-4570
www.wolverton-associates.com

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BY: THF, STONERIDGE DEVELOPMENT, LLC
ST. LOUIS, MO

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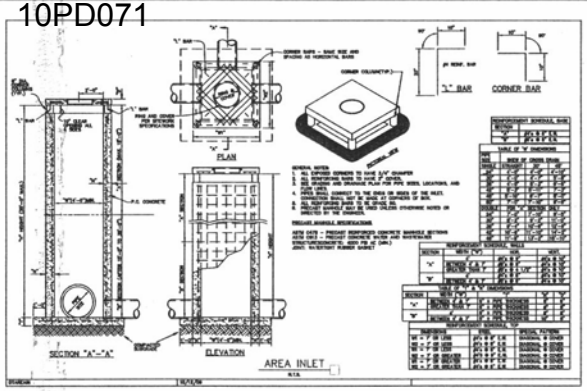

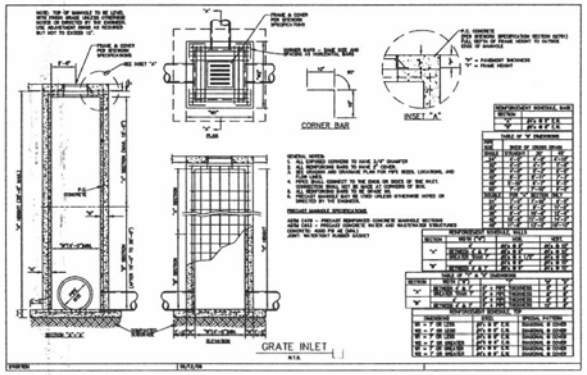

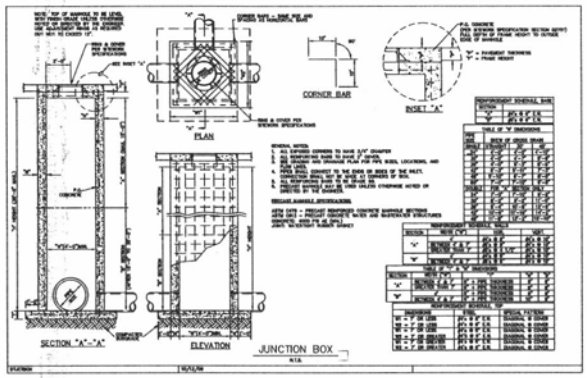

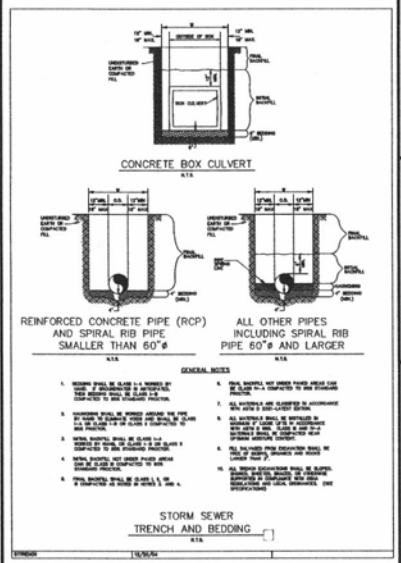

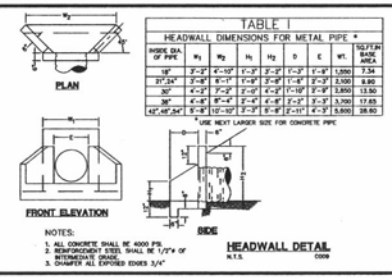

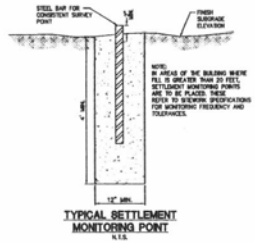

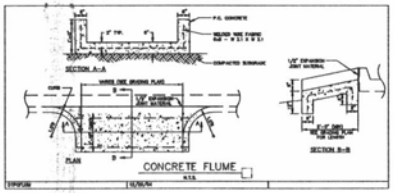

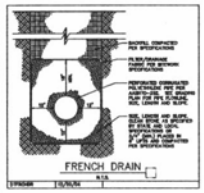

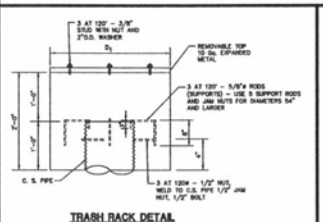

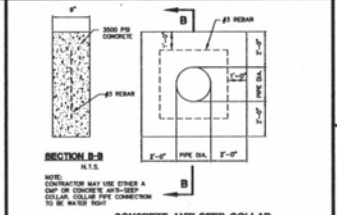

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GRADING AND DRAINAGE DETAILS

Wolverton & Associates
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8140 Ward Parkway, Suite 100, Kansas City, Missouri 64114
Phone: 816.333.4477 Fax: 816.333.1538
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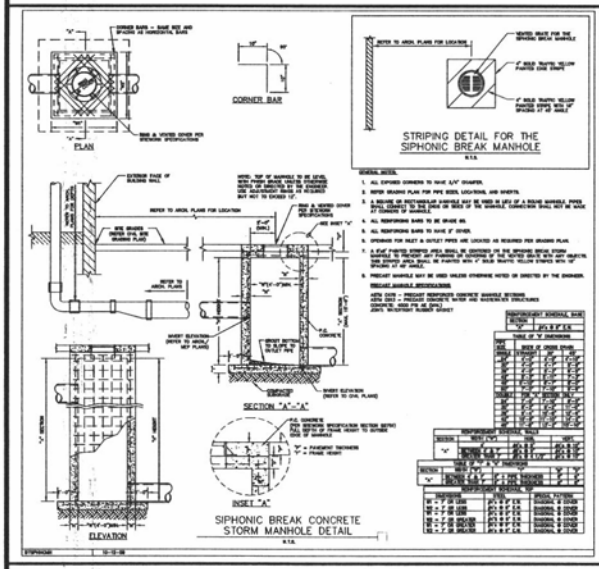

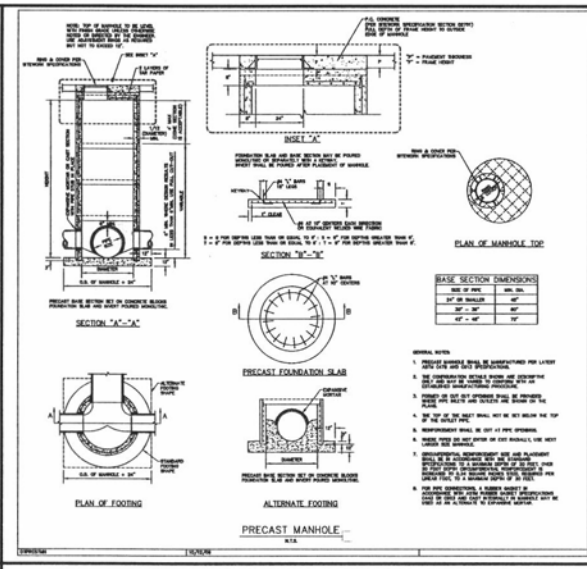

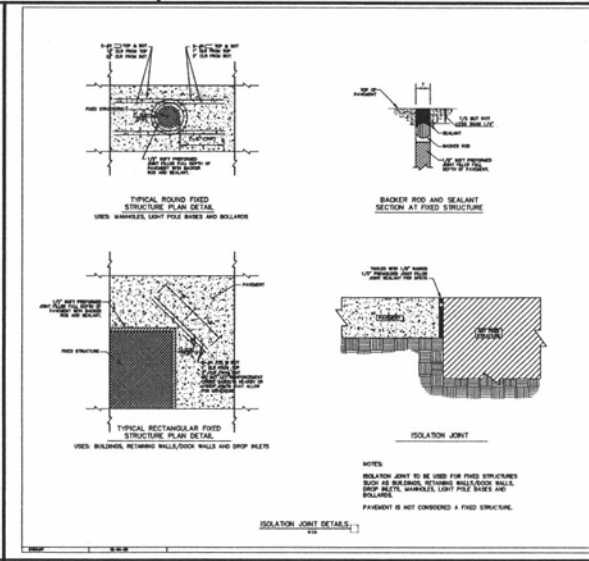

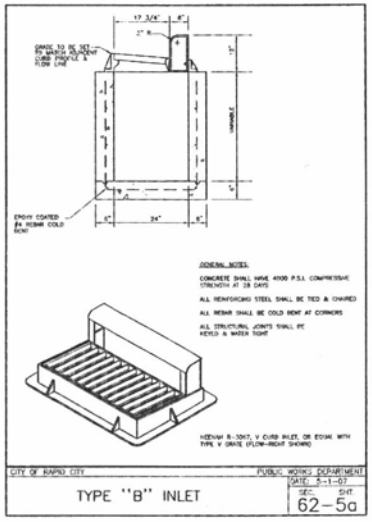

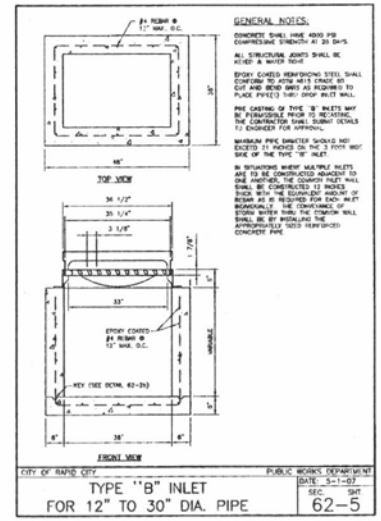

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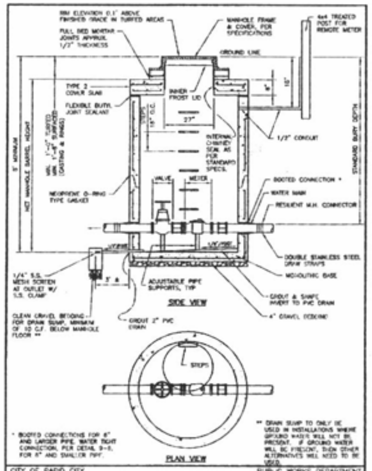
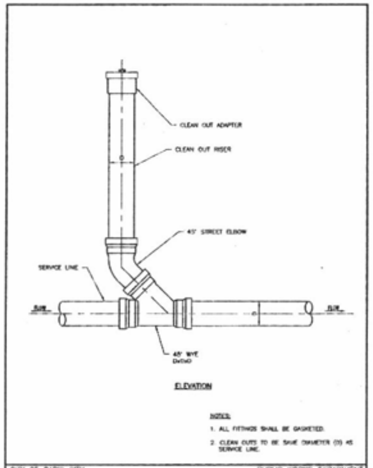


CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

TYPICAL METER PIT DETAIL
4" METER & UNDER

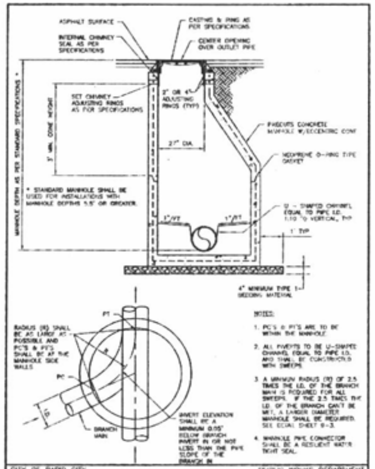
DATE: 5-1-07 | SEC. 8 | SHT. 3



CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

SANITARY SEWER SERVICE
CLEAN OUT DETAIL

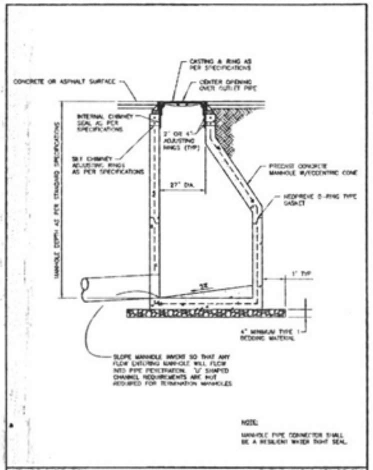
DATE: 5-1-07 | SEC. 9 | SHT. 10



CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

STANDARD MANHOLE DETAIL WITH
MONOLITHIC BASE (48" & 60")

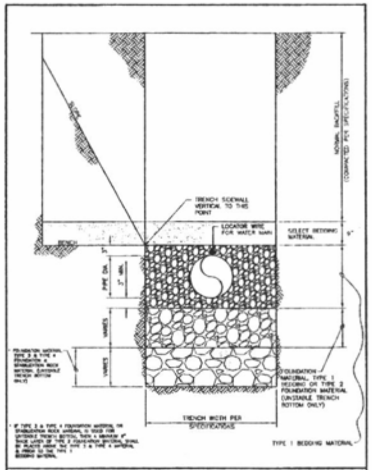
DATE: 5-1-07 | SEC. 9 | SHT. 1



CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

TERMINATION MANHOLE

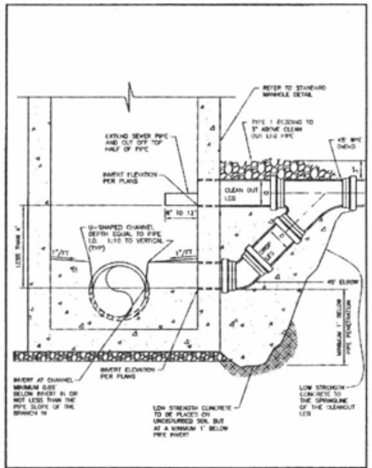
DATE: 5-1-07 | SEC. 9 | SHT. 13



CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

TRENCH DETAIL FOR
WATER & SEWER MAIN

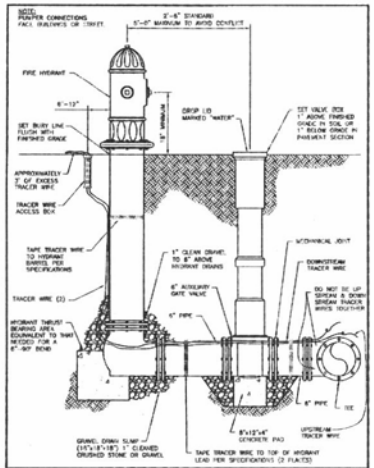
DATE: 5-1-07 | SEC. 11 | SHT. 3



CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

STANDARD DROP MANHOLE DETAIL
FOR INVERT CHANGES LESS THAN 4'

DATE: 5-1-07 | SEC. 9 | SHT. 4



CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

HYDRANT SETTING DETAIL

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UTILITY PLAN DETAILS

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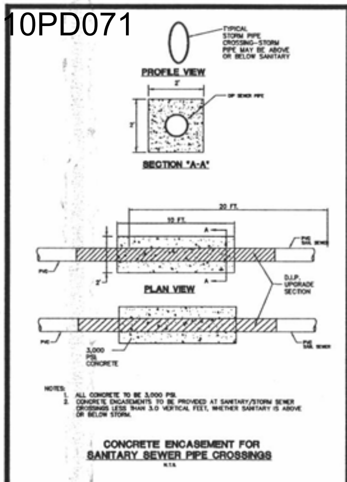
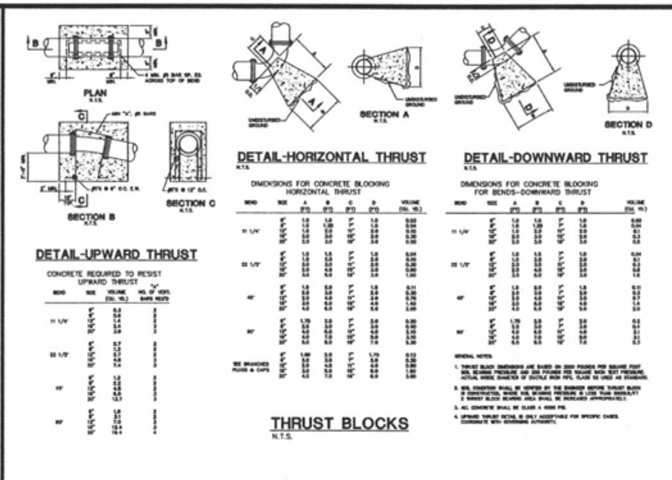
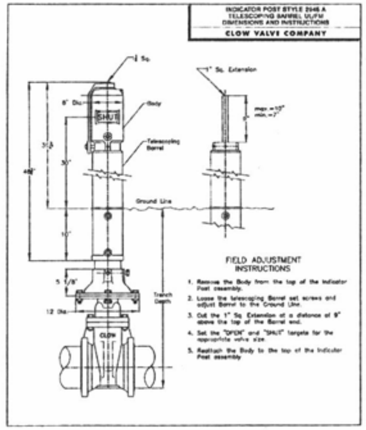
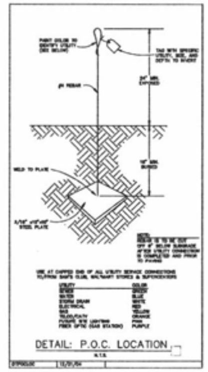
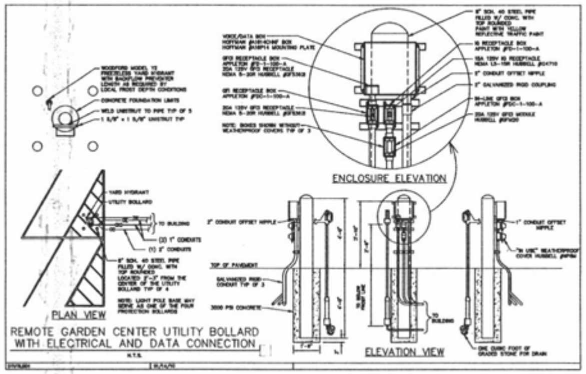
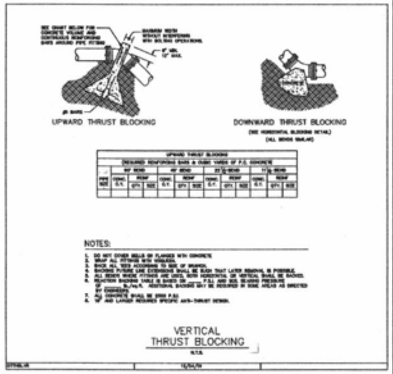


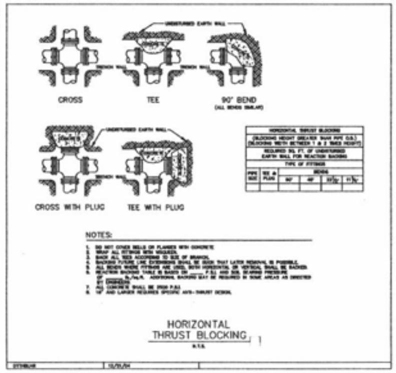


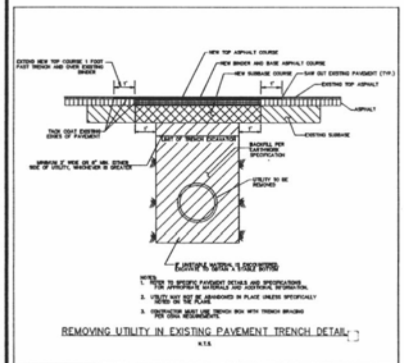


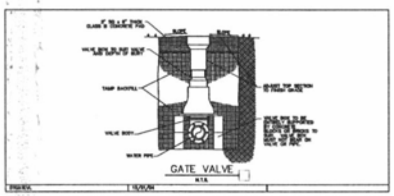












NOT FOR CONSTRUCTION / PERMIT REVIEW ONLY

UTILITY PLAN DETAILS

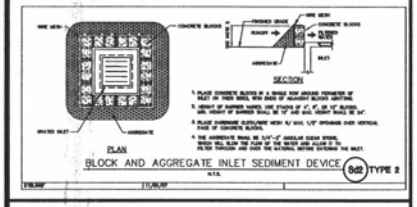
Wolverton & Associates
Consulting Engineers • Land Surveyors
www.wolverton-assoc.com

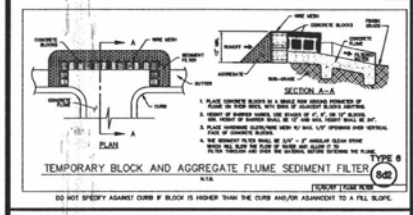
PROPOSED BLACK HILLS CENTER
Walmart # 3872-03
RAPID CITY, PENNINGTON COUNTY, S.D.
BY: THF, STONERIDGE DEVELOPMENT, LLC
ST. LOUIS, MO

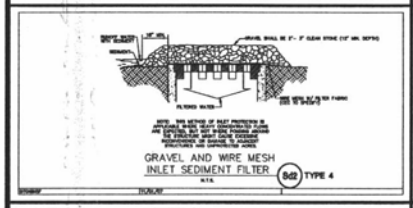
REVISIONS	BY

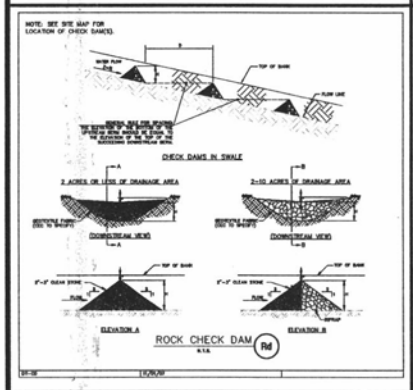
DRAWN BY	DMN/CRP
CHECKED BY	KJW
DATE	12/09/2010
SCALE	NO SCALE
JOB No.	08-140
SHEET NUMBER	D-3B

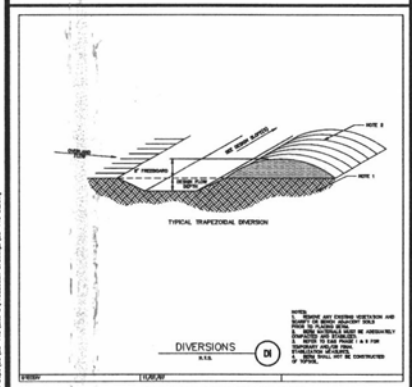
10PD071

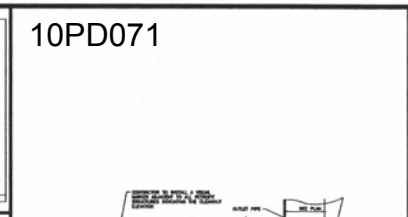


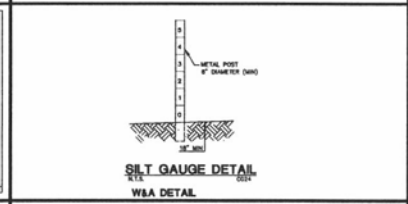


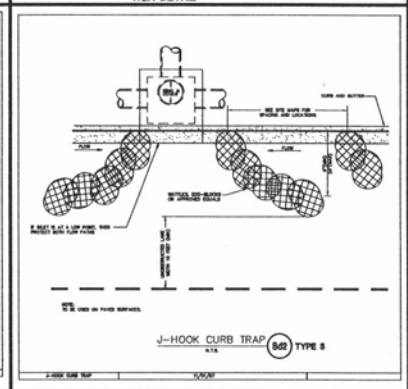


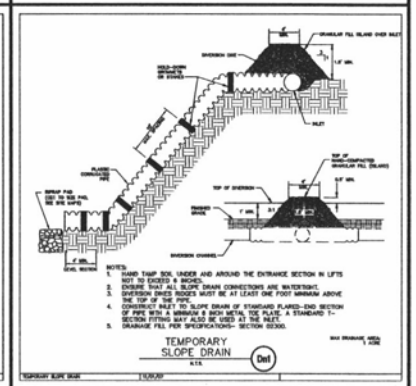


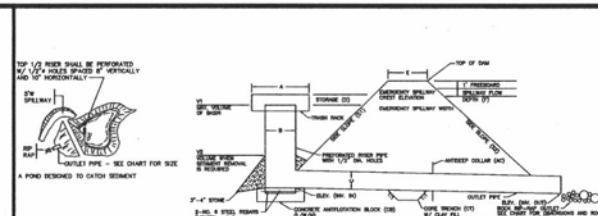


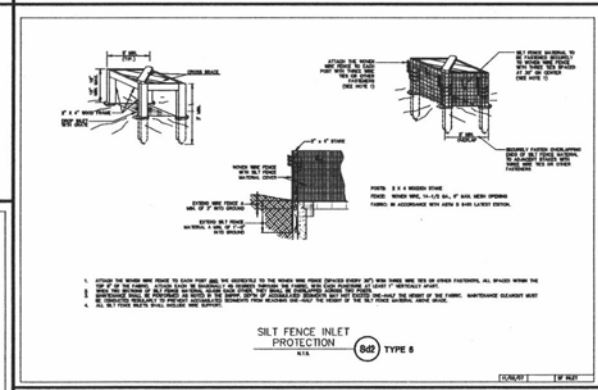


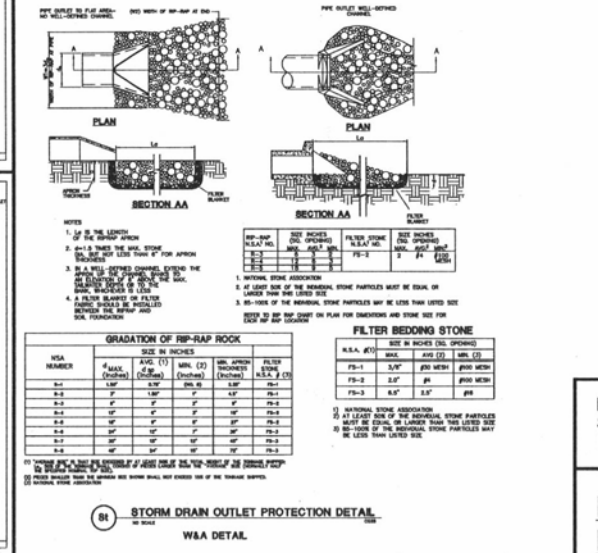


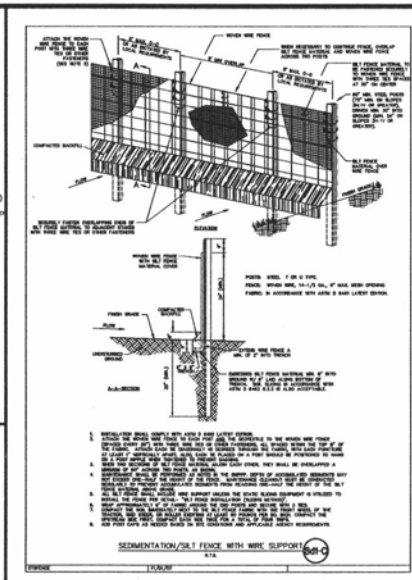


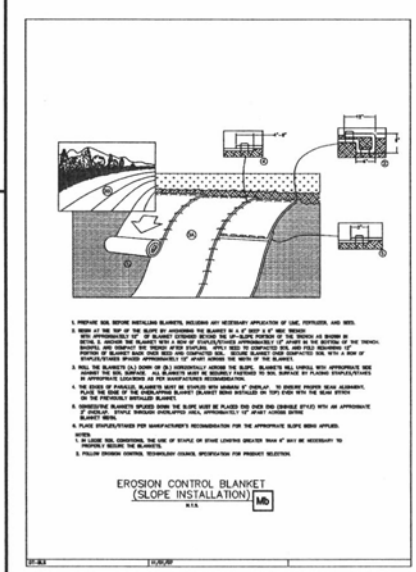












EROSION CONTROL DETAILS SHOWN ON THIS SHEET ARE WAL-MART STANDARD DETAILS EXCEPT WHERE NOTED.

EROSION, SEDIMENTATION, AND POLLUTION CONTROL DETAILS

NOT FOR CONSTRUCTION / PERMIT REVIEW ONLY

Wolverton & Associates
Consulting Engineers + Land Surveyors
8748 Sugarloaf Parkway, Suite 100, Duluth, Georgia 30097
Phone (770) 497-9886 Fax (770) 497-9870
www.wolverton-associates.com

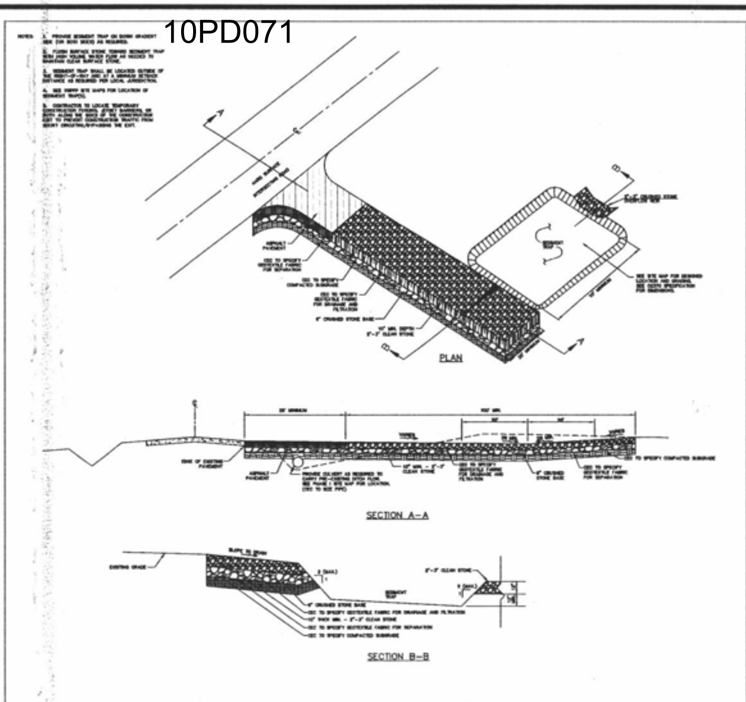
PROPOSED BLACK HILLS CENTER
Walmart ✻ # 3872-03
RAPID CITY, PENNINGTON COUNTY, S.D.
BY: THF, STONERIDGE DEVELOPMENT, LLC
ST. LOUIS, MO

REVISIONS	BY

DRAWN BY DMN/CRP
CHECKED BY KJW
DATE 12/09/2010
SCALE NO SCALE
JOB No. 08-140
SHEET NUMBER D-4A
OF SHEETS

08-140 DE.DWG

10PD071



CONSTRUCTION EXIT (Co)

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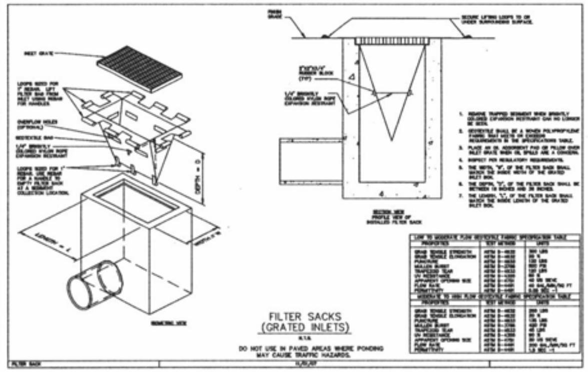

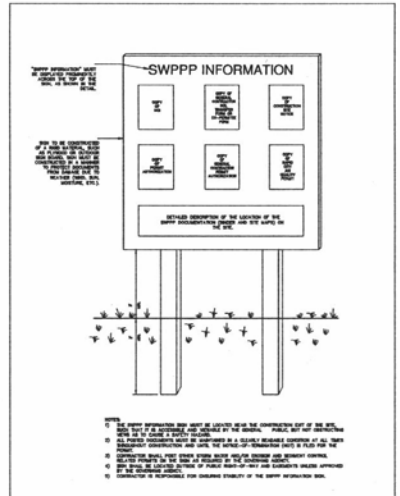

SWPPP INFORMATION SIGN

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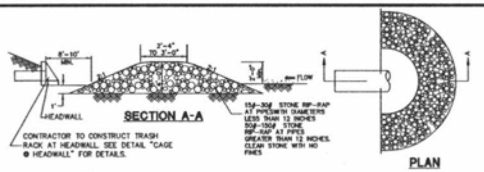
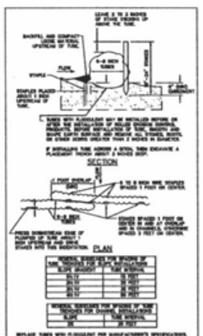
MODIFIED WAL-MART DETAIL



(Fr) RIP-RAP FILTER RING

NO SCALE

W&A DETAIL



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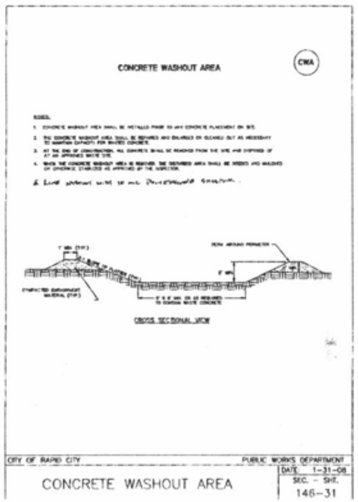
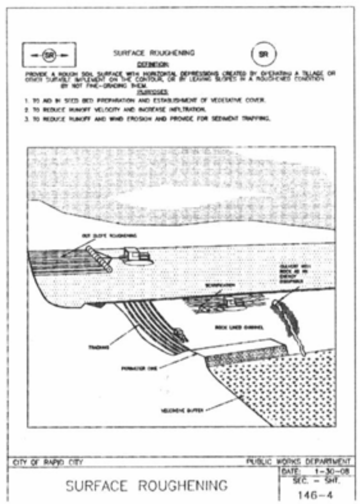


CONCRETE WASHOUT AREA

RAPID CITY DETAIL



SURFACE ROUGHENING

RAPID CITY DETAIL

EROSION CONTROL DETAILS SHOWN ON THIS SHEET ARE WAL-MART STANDARD DETAILS EXCEPT WHERE NOTED.

EROSION, SEDIMENTATION, AND POLLUTION CONTROL DETAILS

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PROPOSED BLACK HILLS CENTER
Walmart # 3872-03
RAPID CITY, PENNINGTON COUNTY, S.D.
BY: THF, STONERIDGE DEVELOPMENT, LLC
ST. LOUIS, MO

Wolverton & Associates
Consulting Engineers • Land Surveyors
www.wolverton-assoc.com

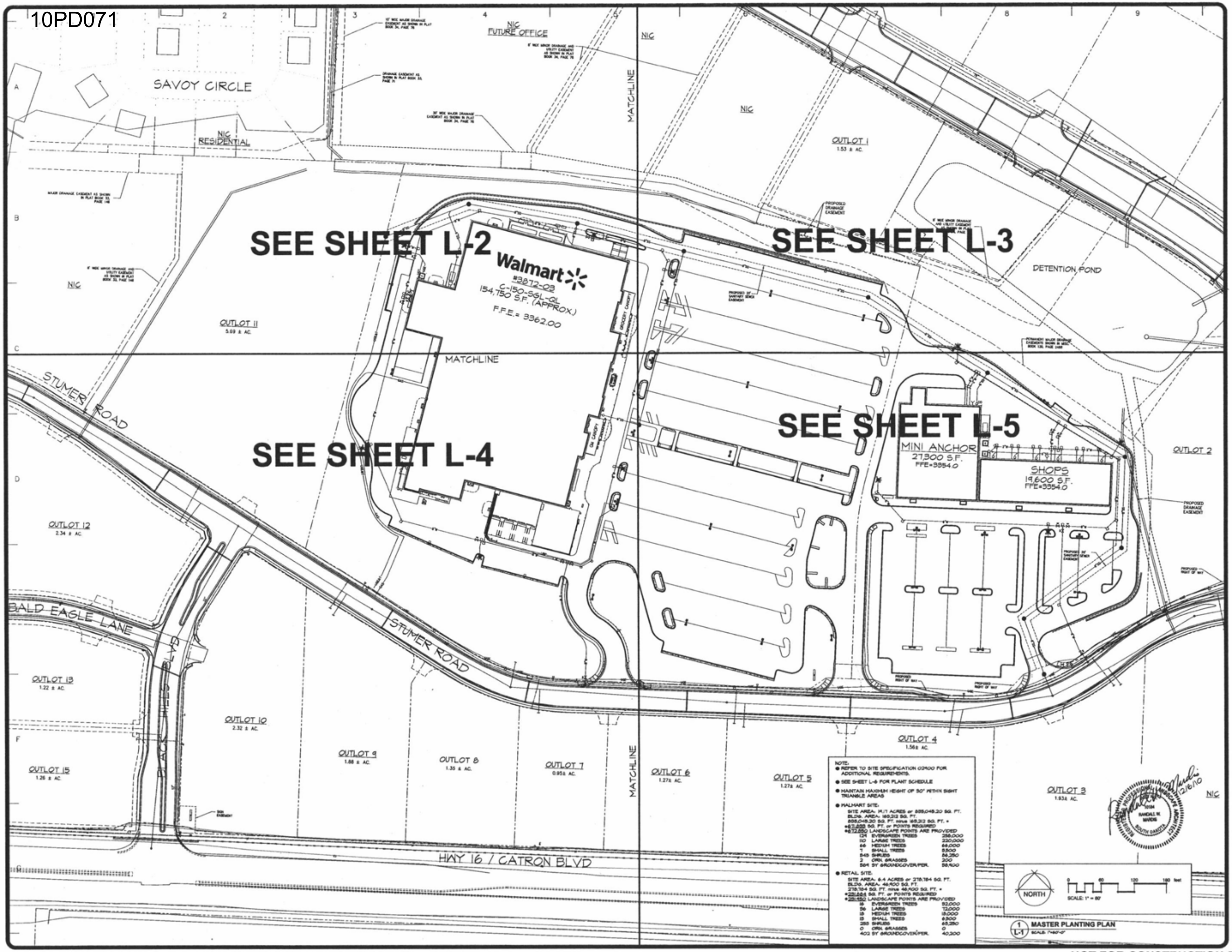
REVISIONS	BY

DRAWN BY	DMN/CRP
CHECKED BY	KJW
DATE	12/09/2010
SCALE	NO SCALE
JOB No.	08-140
SHEET NUMBER	D-4B

OF SHEETS

08-140 DE.DWG

10PD071



PRELIMINARY PLANTING PLAN FOR THE PROPOSED

Black Hills Center

WAL-MART #3872-03

RAPID CITY, PENNINGTON COUNTY, SOUTH DAKOTA

landscape TECHNOLOGIES

REVISIONS	BY
4/20/10	RMH
5/28/10	RMH
12/6/10	RMH

DRAWN R. HARDIS

SHEET L-1

NOT FOR CONSTRUCTION-For Review Only

10PD071

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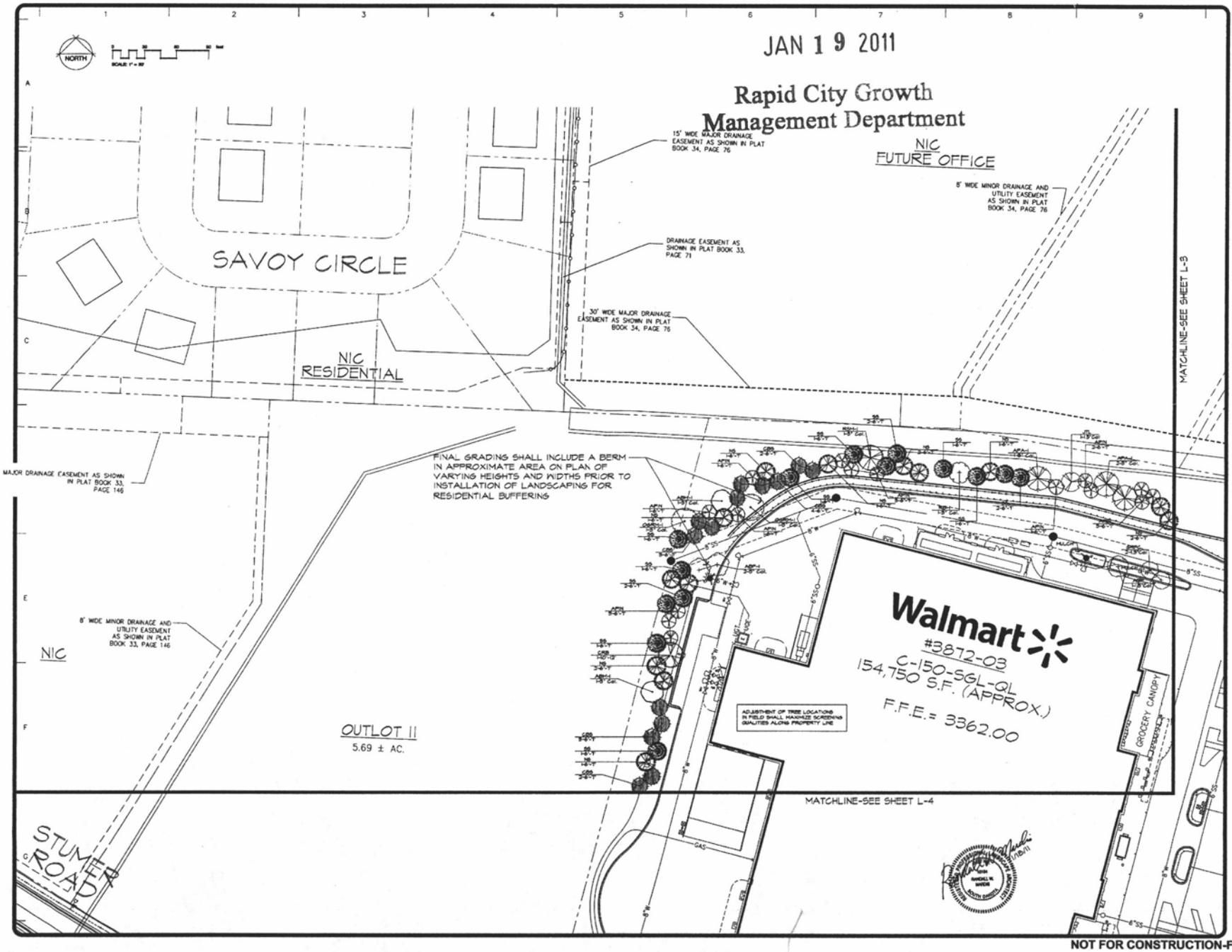
JAN 19 2011

Rapid City Growth Management Department



REVISIONS	BY
4/20/10	RHH
5/28/10	RHH
12/6/10	RHH
1/18/11	RHH

landscape ARCHITECTURE

PRELIMINARY PLANTING PLAN FOR THE PROPOSED
Black Hills Center
WAL-MART #3872-03
RAPID CITY, PENNINGTON COUNTY, SOUTH DAKOTA

DRAWN: R. HARDING
CHECKED: RHH/R.B.
DATE: 5/14/10
SCALE: 1"=30'-0"
JOB NO: 300-08
SHEET: L-2 OF EIGHT SHEETS

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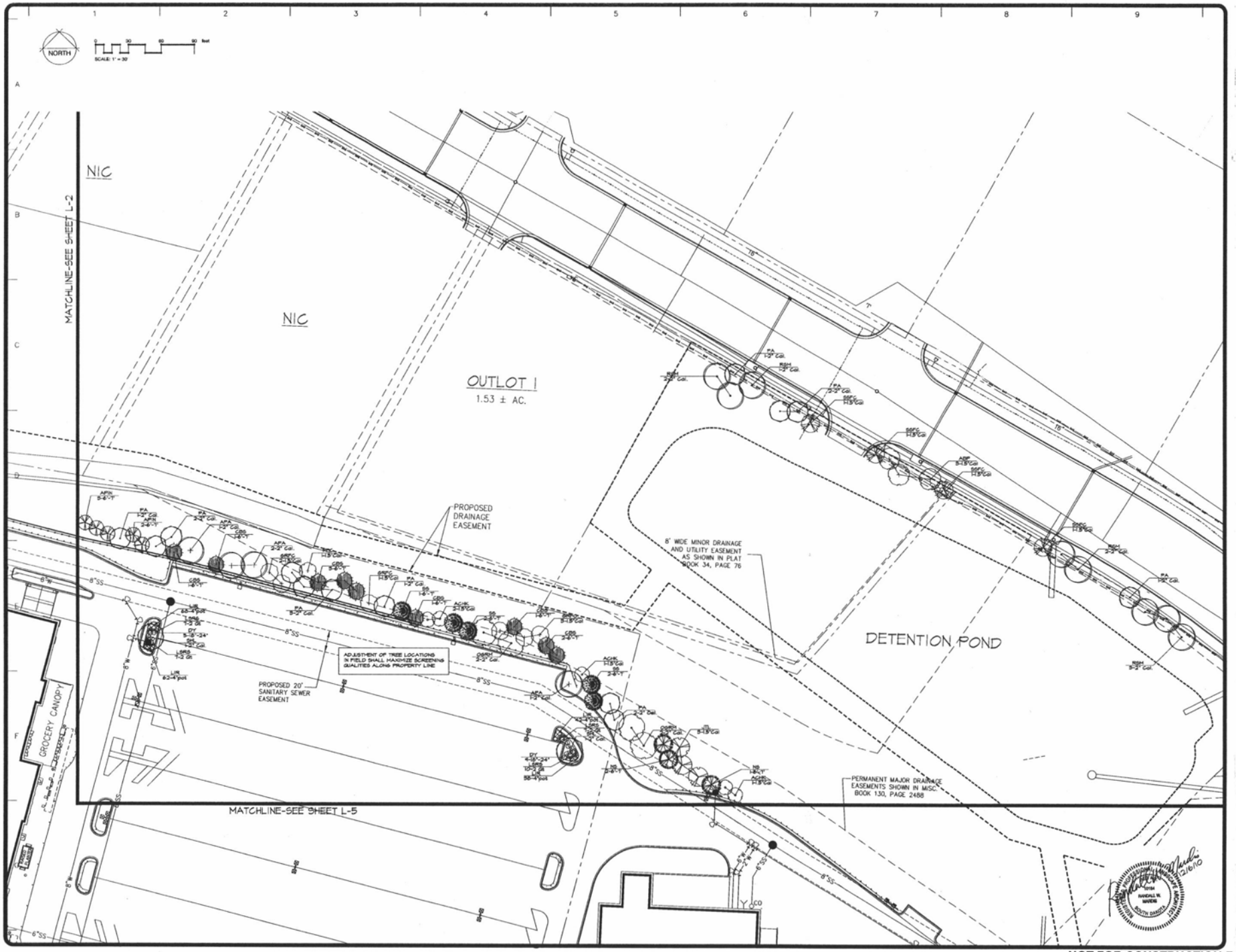
10PD071



REVISIONS	BY
4/20/10	RHH
5/26/10	RHH
12/6/10	RHH

landscape ARCHITECTS

PRELIMINARY PLANTING PLAN FOR THE PROPOSED

Black Hills Center

WAL-MART #3872-03

RAPID CITY, PENNINGTON COUNTY, SOUTH DAKOTA

DRAWN: R. HARDIS
CHECKED: RHH/LB
DATE: 5/19/10
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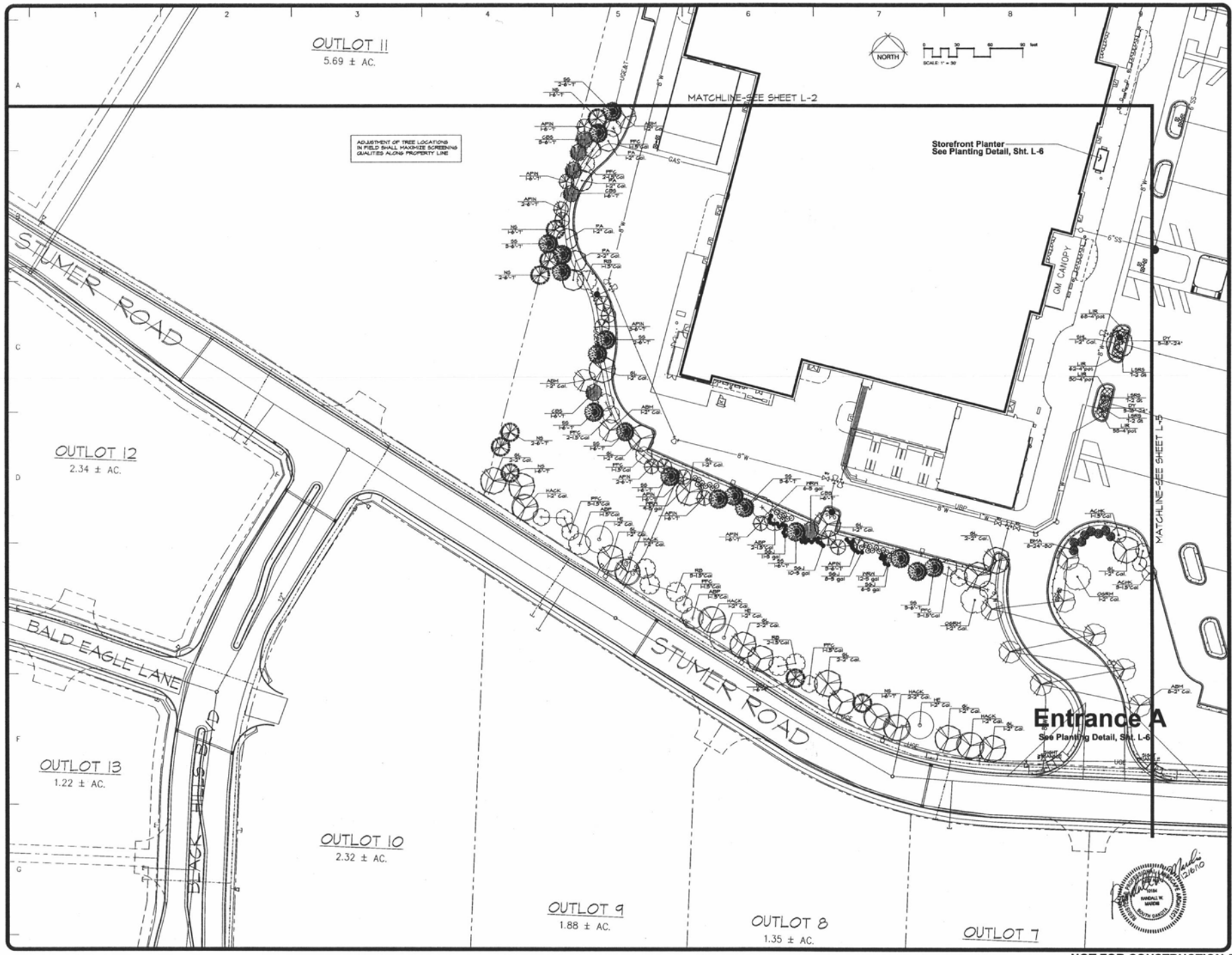
OF EIGHT SHEETS

NOT FOR CONSTRUCTION-For Review Only

10PD071



REVISIONS	BY
4/20/10	RHH
5/26/10	RHH
12/8/10	RHH

landscape TECHNOLOGIES

PRELIMINARY PLANTING PLAN FOR THE PROPOSED
Black Hills Center
WAL-MART #3872-03
RAPID CITY, PENNINGTON COUNTY, SOUTH DAKOTA

DRAWN: R. HARDIN
CHECKED: RHH/RJB
DATE: 5/14/10
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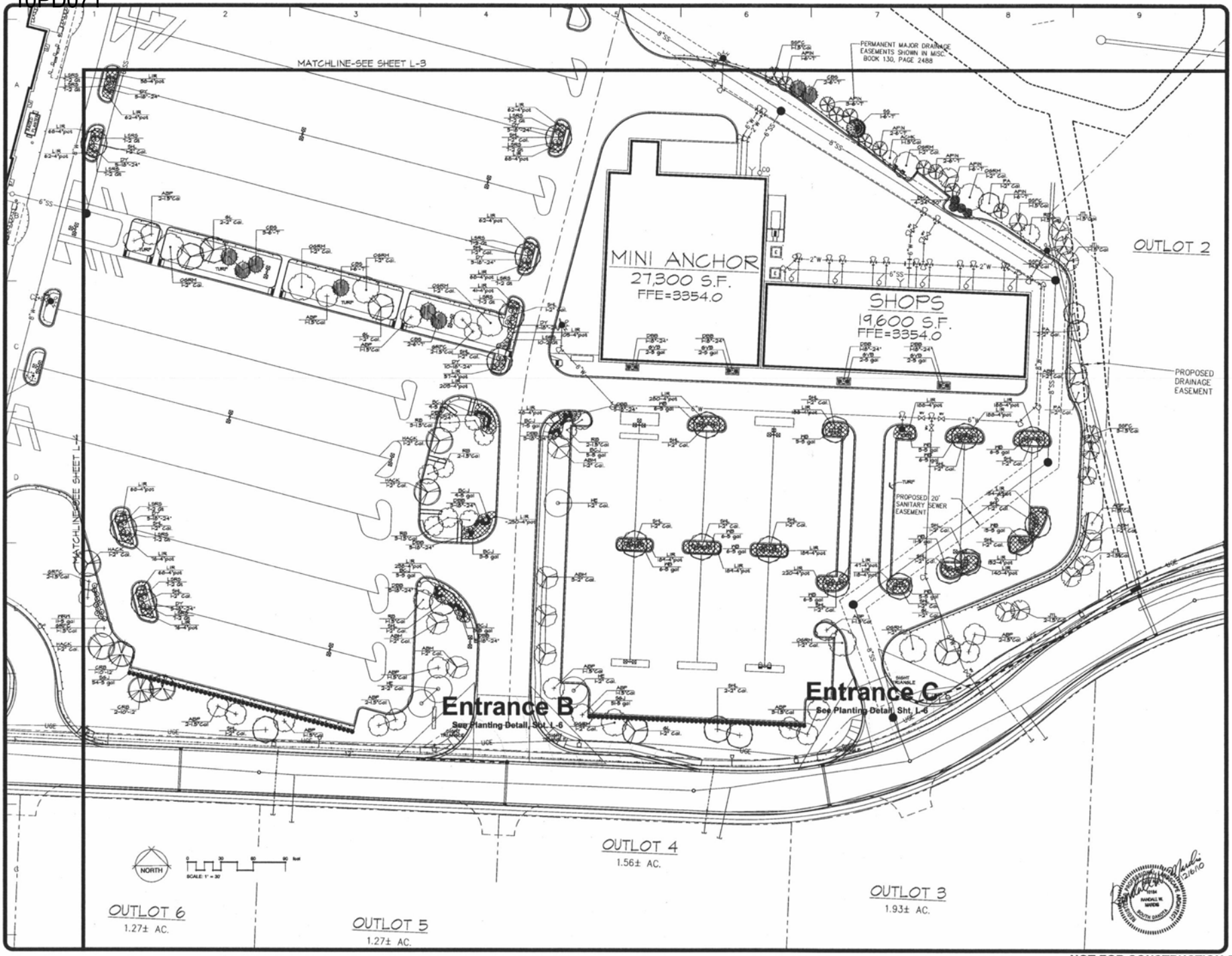
JOB No: 2010-106
SHEET: L-4
OF EIGHT SHEETS

NOT FOR CONSTRUCTION-For Review Only

10PD071



REVISIONS	BY
4/20/10	RJH
5/26/10	RJH
12/6/10	RJH

Landscape TECHNOLOGIES
67 Jacobs Creek Drive
St. Charles, Missouri 63304
Phone: (636) 928-2290
Fax: (636) 928-4868
SOUTH DAKOTA Firm #C-4837

PRELIMINARY PLANTING PLAN FOR THE PROPOSED

Black Hills Center

WAL-MART #3872-03

RAPID CITY, PENNINGTON COUNTY, SOUTH DAKOTA

DRAWN	R. HARDIS
CHECKED	RJH/HB
DATE	5/14/10
SCALE	1"=30'-0"
JOB No.	2010-106
SHEET	L-5
OF	EIGHT SHEETS

RANDALL W. HARDIS — SOUTH DAKOTA — 12/6/10

10PD071

LANDSCAPE GUIDELINE SPECS:

GENERAL:

1.) All natural vegetation shall be maintained where it does not interfere with construction or the permanent plan of operation. Every effort possible shall be made to protect existing structures or vegetation from damage due to equipment usage. Contractor shall at all times protect all materials and work against injury to public.
2.) The landscape contractor shall be responsible for any coordination with other site related work being performed by other contractors. Refer to architectural drawings for further coordination of work to be done.
3.) Underground facilities, structures and utilities must be considered approximate only. There may be others not presently known or shown. It shall be the landscape contractor's responsibility to determine or verify the existence of and exact location of the above.
4.) Plant material are to be planted in the same relationship to grade as was grown in nursery conditions. All planting beds shall be cultivated to 6" depth minimum and graded smooth immediately before planting of plants. Plant groundcover to within 12" of trunk of trees or shrubs planted within the area.
5.) It shall be the landscape contractor's responsibility to:
   A.) Verify all existing and proposed features shown on the drawings prior to commencement of work.
   B.) Report all discrepancies found with regard to existing conditions or proposed design to the landscape architect immediately for a decision.
   C.) Stake the locations of all proposed plant material and obtain the approval of the owner's representative or landscape architect prior to installation.
6.) Items shown on this drawing take precedence over the material list. It shall be the landscape contractor's responsibility to verify all quantities and conditions prior to implementation of this plan. No substitutions of types or size of plant materials will be accepted without written approval from the landscape architect.
7.) Provide single-stem trees unless otherwise noted in plant schedule.
8.) All plant material shall comply with the recommendations and requirements of ANSI Z60.1 "American Standards for Nursery Stock".
9.) It shall be the contractor's responsibility to provide for inspection of the plant material by the Landscape Architect prior to acceptance. Plants not conforming exactly to the plant list will not be accepted and shall be replaced at the landscape contractor's expense.
10.) All bids are to have unit prices listed. The Owner has the option to delete any portion of the contract prior to signing the contract or beginning work. This will be a unit price contract.
11.) All plant material to be transplanted shall be transplanted according to guidelines set by AAN standards. Transplanted material will not be guaranteed by the landscape contractor.

MULCH:

1.) All mulch to be shredded oak bark mulch at 4" depth (after compaction) unless otherwise noted. Mulch shall be clean and free of all foreign materials, including weeds, mold, deleterious materials, etc.
2.) Edge all beds with black vinyl edge where any turf meets planting beds. Provide alternate price for Permaloc aluminum edging in lieu of vinyl edge.

TOPSOIL:

1.) Topsoil mix for all proposed landscape plantings shall be five (5) parts well-drained screened organic topsoil to one (1) part Canadian sphagnum peat moss as per planting details. Roto-till topsoil mix to a depth of 6" minimum and grade smooth.
2.) Provide a soil analysis, as requested, made by an independent soil-testing agency outlining the % of organic matter, inorganic matter, deleterious material, pH and mineral content.
3.) Any foreign topsoil used shall be free of roots, stumps, weeds, brush, stones (larger than 1"), litter or any other extraneous or toxic material.
4.) Landscape contractor to apply pre-emergent herbicide to all planting beds upon completion of planting operations and before application of shredded bark mulch.

MISC. MATERIAL:

1.) Provide stakes and deadmen of sound, new hardwood, free of knotholes and defects.
2.) Tree wrap tape shall be 4" minimum, designed to prevent borer damage and winter freezing. Additionally, only 3-ply tying material shall be used.

MAINTENANCE:

1.) Landscape Contractor shall provide a separate proposal to maintain all plants, shrubs, groundcover, perennials and annuals for a period of 12 months after acceptance.
2.) Contractor shall ensure that only competent and trained personnel shall provide such services and that such services be provided in a timely manner.

ADDITIONAL XERISCAPE NOTES:

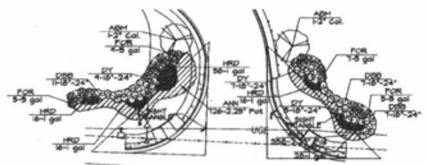
1.) All landscaped areas are to receive a minimum of 4" topsoil. See 2900 Specification.
2.) All plant material shall be healthy, vigorous and free of pests and disease.
3.) All plant material shall be container grown or balled and burlapped as indicated in the plant schedule.
4.) All trees shall have a straight trunk and full head and meet all requirements specified.
5.) All material is subject to the approval of the Landscape Architect before, during and after the installation.
6.) All trees must be guyed and staked as shown in the planting details. All planting areas shall be completely mulched as specified.
7.) Prior to construction, the contractor shall be responsible for locating all
8.) underground utilities and shall avoid damage to all utilities during the course of the work. Locations of existing buried utilities shown on the plans are based upon best available information and are to be considered approximate. It shall be the responsibility of the contractor to 1.) verify the locations of utility lines adjacent to the work area, 2.) protect all of the utility lines during construction and 3.) repair any and all damage to utilities, structures, site appurtenances, etc. which occurs as a result of the construction. The contractor shall be responsible for verifying all quantities shown on these plans before pricing the work.
9.) The contractor shall be responsible for delivery schedule and protection between delivery and planting per specifications to maintain healthy plant
11.) conditions.
12.) Any plant material which is diseased, distressed, dead or rejected (prior to substantial completion) shall be promptly removed from the site and replaced with material of the same species, quantity and size and meeting all plant list specifications. The contractor shall completely guarantee all plant material for a period defined in the 02900 Specification and shall promptly make all
13.) replacements during the normal planting season. After being dug at the nursery source, all trees in leaf shall be acclimated for two (2) weeks under a mist system prior to installation.
14.) Standards set forth in "American Standard for Nursery Stock" represent guideline specifications only and shall constitute minimum quality requirements for plant material.
15.) Where shown on the plans and details, planting beds are to be completely covered with a hardwood mulch from a local source harvested in a sustainable manner to a minimum depth of four (4) inches.
16.) Refer to Wal-Mart specifications for information needed for implementation of planting plans. Weed mat is required in landscaped islands as specified. All plant material quantities shown are approximate. Contractor shall be
17.) responsible for complete coverage of all planting beds at spacing shown.
18.) This plan is to be implemented cooperatively with SWPPP plan, as
19.) needed, to maximize the effectiveness of the SWPPP plan for this site. The contractor is encouraged to complete temporary or permanent seeding or sodding in stages for soil stabilization as areas are
20.) completed after grading. This plan does not present any temporary stabilization required as part of the SWPPP plan.

TURF:

1.) Place 18"-24" wide strip of solid slab sod adjacent to paved surfaces including sidewalks, curbs, walls, drainage structures and vehicular pavement as shown on the drawings. Continually seed remaining disturbed areas until fully turfed with no bare spots.
2.) Sod shall be cut at a uniform thickness of 3/4". No broken pieces, irregular pieces or torn pieces will be accepted.
3.) All sod shall be placed a maximum of 24 hours after harvesting.
4.) Recondition existing lawn areas damaged by Contractor's operations including equipment/material storage and movement of vehicles.
5.) All disturbed lawn areas to be seeded or sodded with Turf-Type Fescue. Lawn areas shall be unconditionally warranted for a period of 90 days from date of final acceptance. Bare areas more than one square foot per any 50 square feet shall be replaced.

WARRANTY:

1.) All plant material (excluding ground cover, perennials and annuals) are to be warranted for a period of 12 months after installation at 100% of the installed price.
2.) Any plant material found to be defective shall be removed and replaced within 30 days of notification or in growth season determined to be best for that plant.
3.) Only one replacement per tree or shrub shall be required at the end of the warranty period, unless loss is due to failure to comply with warranty.
4.) Lawn establishment period will be in effect once the lawn has been mowed three times. Plant establishment period shall commence on the date of acceptance and 100% completion.



Entrance A
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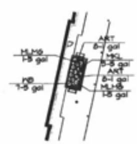

Wal Mart Storefront Planter
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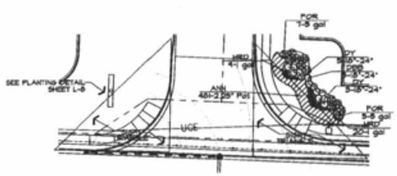


Entrance B
Scale: 1"=30'-0"

Entrance C
Scale: 1"=30'-0"

PLANT SCHEDULE:

Retail Parcel

TREES	Quantity	Botanical/Common	Size
OGRM	7	Acer rubrum 'October Glory' / 'October Glory' Maple	2" Cal.
ABM	6	Acer x freemanii 'Jeffersred' / Autumn Blaze Maple	2" Cal.
PA	4	Fraxinus pennsylvanica 'Patmore' / 'Patmore' Ash	2" Cal.
SHL	15	Gleditsia triacanthos 'Skyline' / 'Skyline' Locust	2" Cal.
GL	2	Tilia cordata 'Greenspire' / Greenspire Littleleaf Linden	2" Cal.
HE	2	Ulmus 'Homestead' / Homestead Elm	2" Cal.
EVERGREEN TREES	Quantity	Botanical/Common	Size
NS	3	Picea abies / Norway Spruce	6'-7'
SS	1	Picea omorika / Serbian Spruce	6'-7'
CBS	2	Picea pungens 'Glauca' / Colorado Blue Spruce	6'-7'
APIN	10	Pinus nigra / Austrian Pine	6'-7'
FLOWERING TREES	Quantity	Botanical/Common	Size
RB	3	Cercis canadensis / Redbud	1.5"Cal
SSFC	6	Malus 'Spring Snow' / Spring Snow Flowering Crab	1.5"Cal
ACHK	3	Prunus maackii / Amur Chokecherry	1.5"Cal
ABP	9	Pyrus calleryana 'Autumn Blaze' / Autumn Blaze Pear	1.5"Cal
JTL	9	Syringa reticulata 'Ivory Silk' / Ivory Silk Japanese Tree Lilac	1.5"Cal
SHRUBS	Quantity	Botanical/Common	Size
WB	81	Buxus microphylla 'Wintergreen' / Wintergreen Boxwood	5 gal
GVB	8	Buxus 'Green Velvet' / Green Velvet Boxwood	5 gal
DBB	34	Euonymus alatus 'Compactus' / Compact Burning Bush	18"-24"
FOR	42	Forsythia intermedia 'Northern Gold' / Northern Gold Forsythia	5 gal
SGJ	51	Juniperus chinensis 'Sea Green' / Sea Green Juniper	5 gal
BCJ	12	Juniperus horizontalis 'Blue Chip' / Blue Chip Juniper	5 gal
DY	21	Taxus media 'Densiformis' / Dense Yew	18"-24"
BMA	4	Viburnum dentatum 'Blue Muffin' / Blue Muffin Arrowwood	24"-30"
ANNUALS/PERENNIALS	Quantity	Botanical/Common	Size
HRD	264	Hemerocallis hybrid 'Happy Returns' / Happy Returns Daylily	1 gal
GROUND COVERS	Quantity	Botanical/Common	Size
LIR	2290	Liriope spicata / Creeping Liriope	4"pot@ 12" oc
ANN	1068	Min. of Five Varieties / Mixed Annuals	2.25" Pot @ 12" oc

REVISIONS	BY
4/20/10	RWH
5/26/10	RWH
12/6/10	RWH

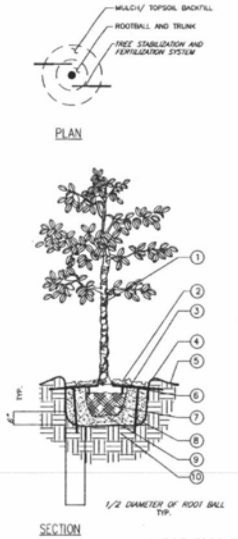
landscape TECHNOLOGIES
67 Jacobs Creek Drive
St. Charles, Missouri 63304
(636) 428-2510
Fax (636) 428-4569
SOUTH DAKOTA Firm #C-4691

PRELIMINARY PLANTING PLAN FOR THE PROPOSED
Black Hills Center
WAL-MART #3872-03
RAPID CITY, PENNINGTON COUNTY, SOUTH DAKOTA

DRAWN R. HARDIS
CHECKED RWH/SJB
DATE 3/14/10
SCALE 1"=30'-0"
JOB No. 2010-106
SHEET **L-6** OF EIGHT SHEETS

NOT FOR CONSTRUCTION-For Review Only

10PD071

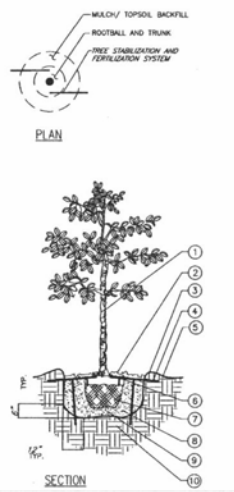


1. TREE WRAP
2. 4" MINIMUM OF HARDWOOD BARK MULCH COMPACTED OR AS SPECIFIED.
3. STAKE SIZE SHALL BE ONE SIZE HIGHER THAN REQUIRED FOR SIZE OF TREE. REFER TO SITEWORK SPECIFICATIONS FOR APPROVED MATERIALS AND INSTALLATION REQUIREMENTS. GUY AS NECESSARY IN EXTREME WIND CONDITIONS WITH #10 GAUGE WIRE.
4. 3" HIGH SOIL BERM TO HOLD WATER.
5. FINISHED GRADE (SEE GRADING PLAN)
6. TOP OF ROOTBALL MIN. 1" ABOVE FINISHED GRADE
7. B & B OR CONTAINERIZED (SEE SPECIFICATIONS FOR ROOT BALL REQUIREMENTS).
8. PREPARED PLANTING SOIL AS SPECIFIED.
9. ROOTBALLS GREATER THAN 24" DIAMETER SHALL BE PLACED ON MOUND OF UNDISTURBED SOIL TO PREVENT SETTLING ROOTBALLS SMALLER THAN 24" IN DIA. MAY SIT ON COMPACTED EARTH.
10. UNDISTURBED SUBSOIL

NOTES:

A. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.
B. REMOVE BURLAP, WIRE AND STRAPS (ANYTHING THAT COULD GIRDLE TREE OR RESTRICT ROOT GROWTH) ON UPPER 1/3 OF ROOTBALL.
C. SEE LANDSCAPE NOTES FOR THE TYPE OF MULCH MATERIAL TO USE.
D. PRUNE TREE AS DIRECTED BY LANDSCAPE ARCHITECT.
E. BRANCHING HEIGHT TO A.A.N. STANDARDS.

LARGE TREE PLANTING
(14' OR GREATER)
N.T.S. 1

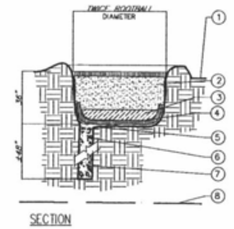


1. TREE WRAP
2. 4" MINIMUM OF HARDWOOD BARK MULCH COMPACTED OR AS SPECIFIED.
3. 3" HIGH SOIL BERM TO HOLD WATER.
4. STAKE SIZE SHALL BE ONE SIZE HIGHER THAN REQUIRED FOR SIZE OF TREE. REFER TO SITEWORK SPECIFICATIONS FOR APPROVED MATERIALS AND INSTALLATION REQUIREMENTS. GUY AS NECESSARY IN EXTREME WIND CONDITIONS WITH #10 GAUGE WIRE.
5. FINISHED GRADE (SEE GRADING PLAN)
6. TOP OF ROOTBALL MIN. 1" ABOVE FINISHED GRADE
7. B & B OR CONTAINERIZED (SEE SPECIFICATIONS FOR ROOT BALL REQUIREMENTS).
8. PREPARED PLANTING SOIL AS SPECIFIED.
9. ROOTBALLS GREATER THAN 24" DIAMETER SHALL BE PLACED ON MOUND OF UNDISTURBED SOIL TO PREVENT SETTLING ROOTBALLS SMALLER THAN 24" IN DIA. MAY SIT ON COMPACTED EARTH.
10. UNDISTURBED SUBSOIL

NOTES:

A. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.
B. REMOVE BURLAP, WIRE AND STRAPS (ANYTHING THAT COULD GIRDLE TREE OR RESTRICT ROOT GROWTH) ON UPPER 1/3 OF ROOTBALL.
C. SEE LANDSCAPE NOTES FOR THE TYPE OF MULCH MATERIAL TO USE.
D. PRUNE TREE AS DIRECTED BY LANDSCAPE ARCHITECT.
E. BRANCHING HEIGHT TO A.A.N. STANDARDS.

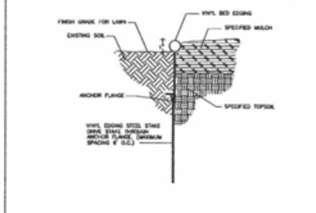
SMALL TREE PLANTING
(14' OR LESS)
N.T.S. 2



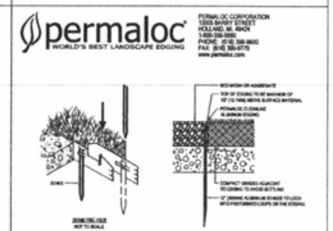
1. FINISH GRADE
2. BACKFILL WITH PREPARED PLANTING SOIL MIX AS SPECIFIED.
3. 12"+ CLEAN SAND, COMPACTED. ADJUST LAYER THICKNESS SO TOP OF ROOTBALL IS AT EAST 1" ABOVE FINISHED GRADE.
4. FILTER CLOTH
5. SLOPE BOTTOM TO DRAIN
6. 18"+ AUGERED HOLE PENETRATE THROUGH OCCLUDING LAYER TO WATER TABLE OR TO A DEPTH OF 7' TO ASSURE PROPER PERCOLATION.
7. BACKFILL WITH 1/2" - 3/4" GRAVEL.
8. WATER TABLE

FOR A PARKING ISLAND PLANTING SITUATION, CONTRACTOR TO BACKFILL ENTIRE LENGTH OF PLANTING AREA TO WITHIN 6" OF BACK OF CURB OR EDGE OF PAVEMENT.

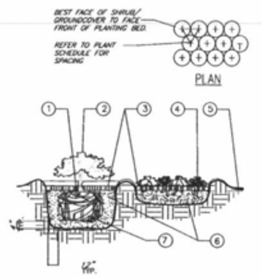
POOR DRAINAGE CONDITION
N.T.S. 3



VINYL EDGE DETAIL
N.T.S. 8

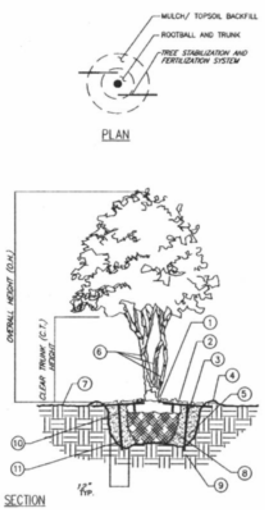


ALTERNATE #1: PERMALOC ALUMINUM EDGE DETAIL
N.T.S. 9



1. TOP OF SHRUB ROOTBALLS TO BE PLANTED 1" - 2" HIGH WITH SOIL MOUNDING UP TO THE TOP OF ROOTBALL.
2. WHEN USED IN MASSES- PRUNE ALL SHRUBS TO ACHIEVE A UNIFORM MASS/HEIGHT
3. 4" MINIMUM OF HARDWOOD BARK MULCH COMPACTED OR AS SPECIFIED.
4. EXCAVATE ENTIRE BED SPECIFIED FOR GROUNDCOVER BED.
5. 4" MINIMUM OF TOPSOIL TO BRING TO FINISHED GRADE (SEE GRADING PLAN).
6. PREPARED PLANTING SOIL AS SPECIFIED. NOTE: WHEN GROUND- COVERS AND SHRUBS USED IN MASSES ENTIRE BED TO BE AMENDED WITH PLANTING SOIL MIX AS SPECIFIED.
7. SCARIFY ROOTBALL SIDES AND BOTTOM.

SHRUB/GROUNDCOVER PLANTING
N.T.S. 6

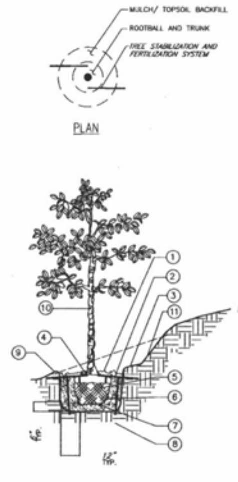


1. BASE OF TREE SHALL BE PLANTED SLIGHTLY ABOVE (1" MIN.) ADJACENT FINISH GRADE. REMOVE ALL TWINE & STRAPS & CUT BURLAP FROM TOP 1/3 OF ROOTBALL. NO SYNTHETIC BURLAP WILL BE ACCEPTED.
2. 4" SHREDDED HARDWOOD BARK MULCH OR APPROVED EQUAL
3. DIAMETER OF TREE PIT TO BE TWICE THE DIAMETER OF ROOTBALL-ROUGHEN SIDES OF TREE PIT.
4. 3" HIGH SOIL BERM TO HOLD WATER.
5. TOPSOIL MIX BACKFILL
6. TREE WRAP
7. 4" MIN. OF TOPSOIL TO BRING TO FINISHED GRADE (SEE GRADING PLAN)
8. ROOTBALLS GREATER THAN 24" DIAMETER SHALL BE PLACED ON MOUND OF UNDISTURBED SOIL TO PREVENT SETTLING ROOTBALLS SMALLER THAN 24" IN DIA. MAY SIT ON COMPACTED EARTH.
9. UNDISTURBED SUBSOIL
10. PREPARE PLANTING SOIL AS SPECIFIED.
11. STAKE SIZE SHALL BE ONE SIZE HIGHER THAN REQUIRED FOR SIZE OF TREE. REFER TO SITEWORK SPECIFICATIONS FOR APPROVED MATERIALS AND INSTALLATION REQUIREMENTS. GUY AS NECESSARY IN EXTREME WIND CONDITIONS WITH #10 GAUGE WIRE.

NOTES:

A. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.
B. SET TREE AT ORIGINAL DEPTH. REMOVE BURLAP, WIRE AND STRAPS (ANYTHING THAT COULD GIRDLE TREE OR RESTRICT ROOT GROWTH) ON UPPER 1/3 OF ROOTBALL.
C. SEE LANDSCAPE NOTES FOR THE TYPE OF MULCH MATERIAL TO USE.
D. PRUNE TREE AS DIRECTED BY LANDSCAPE ARCHITECT
E. BRANCHING HEIGHT TO A.A.N. STANDARDS
F. IF SITE CONDITIONS REQUIRE GUYING OF THE TREE, FASTEN #10 GUY WIRE TO STRONGEST TRUNK AT THE CENTER OF THE MULTI-TRUNK TREE.

MULTI-TRUNK TREE PLANTING
N.T.S. 4

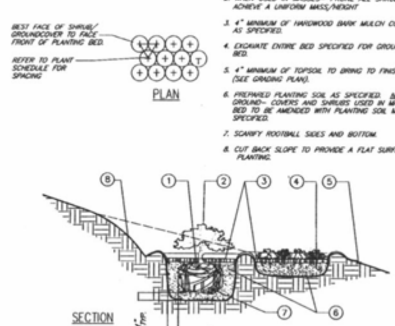


1. 4" MINIMUM OF HARDWOOD BARK MULCH COMPACTED OR AS SPECIFIED.
2. STAKE SIZE SHALL BE ONE SIZE HIGHER THAN REQUIRED FOR SIZE OF TREE. REFER TO SITEWORK SPECIFICATIONS FOR APPROVED MATERIALS AND INSTALLATION REQUIREMENTS. GUY AS NECESSARY IN EXTREME WIND CONDITIONS WITH #10 GAUGE WIRE.
3. 4" MINIMUM OF TOPSOIL TO BRING TO FINISHED GRADE (SEE GRADING PLAN).
4. TOP OF ROOTBALL MIN. 1" ABOVE FINISHED GRADE
5. B&B OR CONTAINERIZED (SEE SPECIFICATIONS FOR ROOT BALL REQUIREMENTS).
6. PREPARE PLANTING SOIL AS SPECIFIED.
7. ROOTBALLS GREATER THAN 24" DIAMETER SHALL BE PLACED ON MOUND OF UNDISTURBED SOIL TO PREVENT SETTLING ROOTBALLS SMALLER THAN 24" IN DIA. MAY SIT ON COMPACTED EARTH.
8. UNDISTURBED SUBSOIL
9. 3" HIGH SOIL BERM TO HOLD WATER.
10. TREE WRAP
11. CUT BACK SLOPE TO PROVIDE A FLAT SURFACE FOR PLANTING.

NOTES:

A. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.
B. REMOVE BURLAP, WIRE AND STRAPS (ANYTHING THAT COULD GIRDLE TREE OR RESTRICT ROOT GROWTH) ON UPPER 1/3 OF ROOTBALL.
C. SEE LANDSCAPE NOTES FOR THE TYPE OF MULCH MATERIAL TO USE.
D. PRUNE TREE AS DIRECTED BY LANDSCAPE ARCHITECT.
E. BRANCHING HEIGHT TO A.A.N. STANDARDS.

TREE PLANTING ON SLOPE
N.T.S. 5



1. TOP OF SHRUB ROOTBALLS TO BE PLANTED 1" - 2" HIGH WITH SOIL MOUNDING UP TO THE TOP OF ROOTBALL.
2. WHEN USED IN MASSES- PRUNE ALL SHRUBS TO ACHIEVE A UNIFORM MASS/HEIGHT
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5. 4" MINIMUM OF TOPSOIL TO BRING TO FINISHED GRADE (SEE GRADING PLAN).
6. PREPARED PLANTING SOIL AS SPECIFIED. NOTE: WHEN GROUND- COVERS AND SHRUBS USED IN MASSES ENTIRE BED TO BE AMENDED WITH PLANTING SOIL MIX AS SPECIFIED.
7. SCARIFY ROOTBALL SIDES AND BOTTOM.
8. CUT BACK SLOPE TO PROVIDE A FLAT SURFACE FOR PLANTING.

SHRUB/GROUNDCOVER PLANTING ON SLOPE
N.T.S. 7

REVISIONS	BY
4/20/10	RWH
5/26/10	RWH
12/6/10	RWH

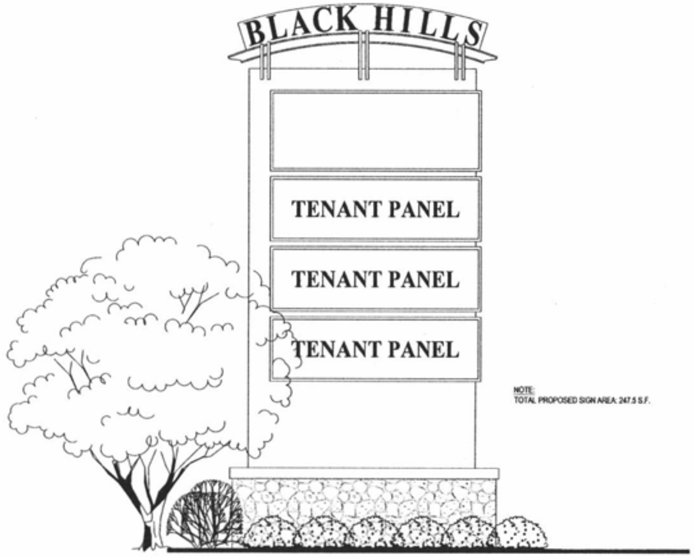
landscape TECHNOLOGIES

PRELIMINARY PLANTING PLAN FOR THE PROPOSED
Black Hills Center
WAL-MART #3872-03
RAPID CITY, PENNINGTON COUNTY, SOUTH DAKOTA

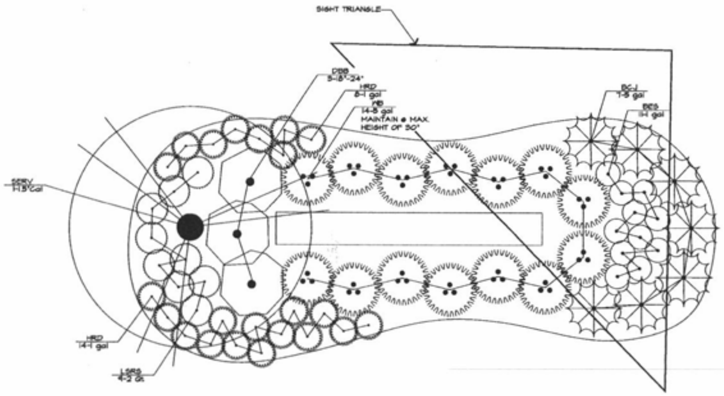
DRAWN R. HARDIS
CHECKED RWH/SJB
DATE 5/14/10
SCALE 1"=50'-0"
JOB No. 2010-106
SHEET L-7 OF EIGHT SHEETS

NOT FOR CONSTRUCTION-For Review Only

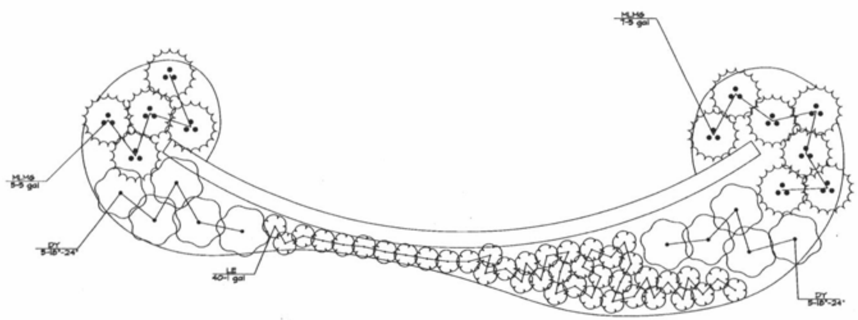
10PD071



NOTE:
TOTAL PROPOSED SIGN AREA: 247.5 S.F.



Planting Plan @ Pylon Sign
Scale: 1"=10'-0"



Planting Plan @ Entrance Monuments (2 Total)
Scale: 1"=10'-0"

REVISIONS	BY
12/6/10	RAH

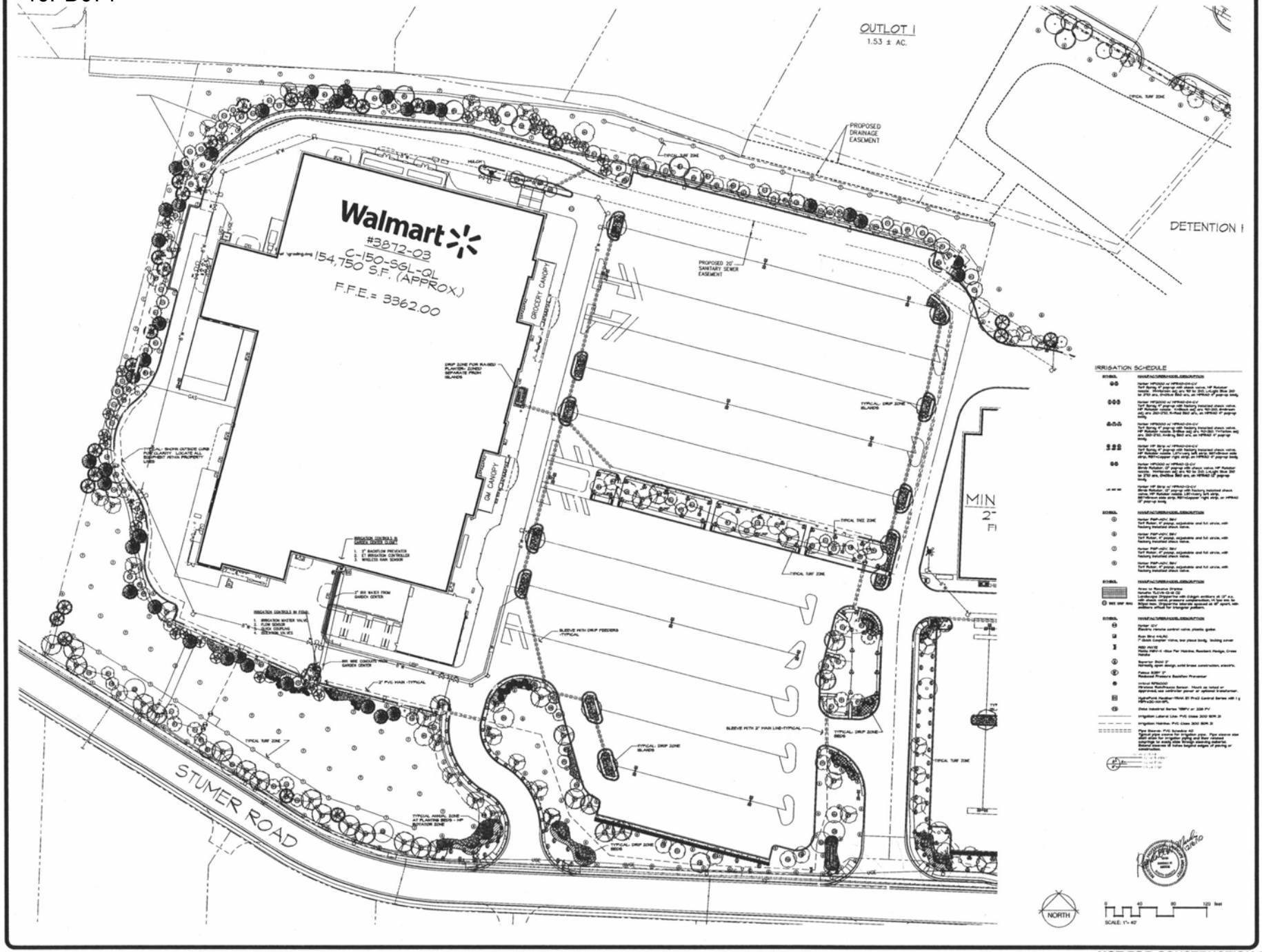
Landscape TECHNOLOGIES

PRELIMINARY PLANTING PLAN FOR THE PROPOSED
Black Hills Center
WAL-MART #3872-03
RAPID CITY, PENNINGTON COUNTY, SOUTH DAKOTA

DRAWN R. HARDIS
SCALE 1"=10'-0"
SHEET
L-8
OF EIGHT SHEETS

NOT FOR CONSTRUCTION-For Review Only

10PD071



REVISIONS	BY

landscape TECHNOLOGIES

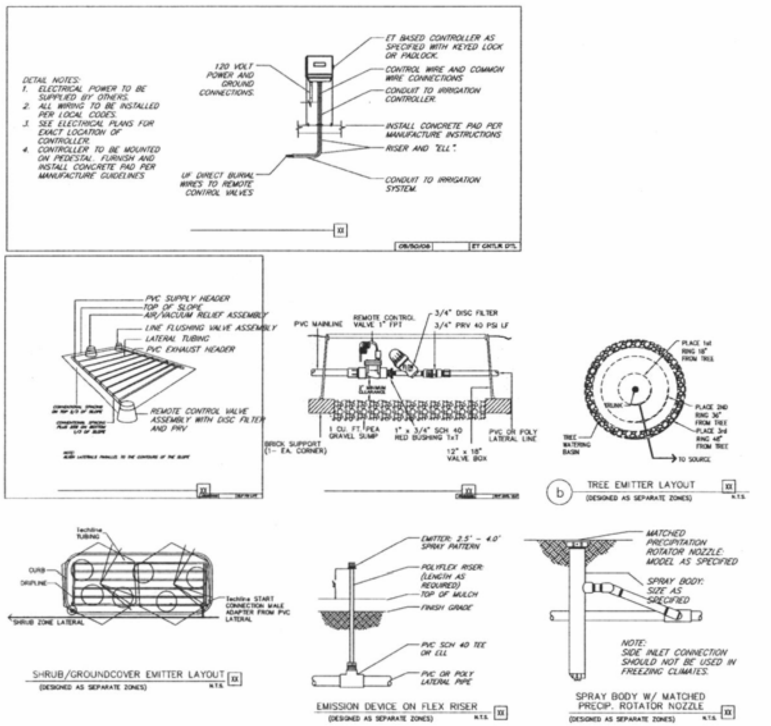
PRELIMINARY IRRIGATION PLAN FOR THE PROPOSED
Black Hills Center
WAL-MART #3872-03
RAPID CITY, PENNINGTON COUNTY, SOUTH DAKOTA

DRAWN	SNEHOTT
CHECKED	KHHS-JS
DATE	12/8/10
SCALE	1"=40'-0"
JOB No	2010-106
SHEET	IR-1
OF	THREE SHEETS

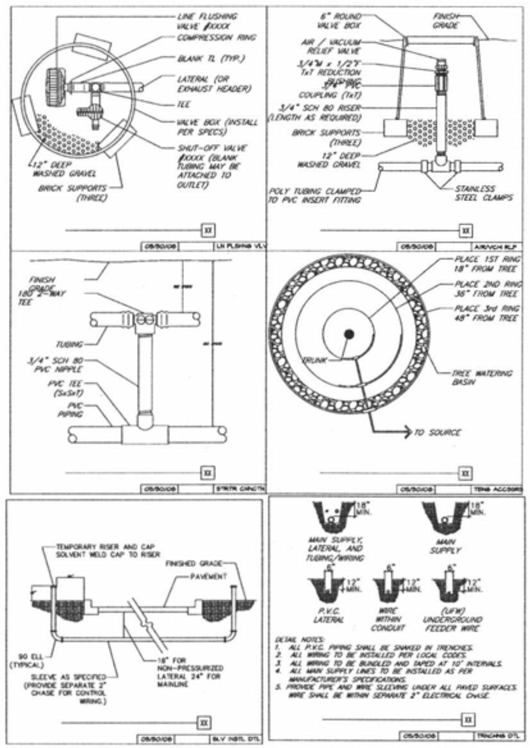
NOT FOR CONSTRUCTION-For Review Only

10PD071

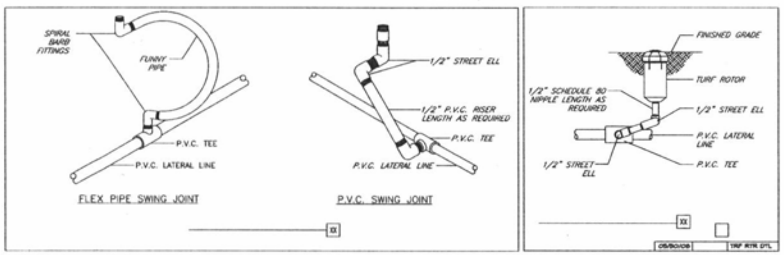
GENERAL APPLICATION COMPONENTS

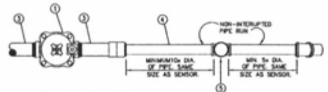


LOW VOLUME APPLICATION COMPONENTS



HIGH VOLUME APPLICATION COMPONENTS





PLAN VIEW SCHEMATIC

1. SUPERIOR 3100 SOLENOID ACTUATED, NORMALLY OPEN MASTER CONTROL VALVE – SIZE AS NOTED.
2. 12" RECTANGULAR VALVE BOX (NOT SHOWN)
3. PVC MAINLINE PIPE. SAME SIZE AS FLOW SENSOR. ALLOW MINIMUM DISTANCE OF 10 PIPE DIAMETERS FROM NEAREST UPSTREAM VALVE, FITTING, METER, OR REDUCING COUPLER.
4. 12" SCHEDULE 80 TOE NIPPLE TO MASTER VALVE.
5. FLOW SENSOR – SERIES 735 1"

FLOW SENSOR / MASTER VALVE SCHEMATIC

IRRIGATION SCHEDULE

IRRIGATION NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A COPY OF THE PROJECT SPECIFICATIONS PRIOR TO BIDDING. THE PROJECT SPECIFICATIONS ARE A PART OF THESE PLANS AND SHALL BE CONSULTED BY THE IRRIGATION CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING WORK AS SPECIFIED IN THE PROJECT SPECIFICATIONS AND ON THE PLANS.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, EQUIPMENT QUANTITIES, AND UTILITY LOCATIONS PRIOR TO BEGINNING WORK.
3. CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES IN PLANS OR SPECIFICATIONS PRIOR TO BEGINNING OR CONTINUING WORK.
4. THE CONTRACTOR SHALL MAKE NO SUBSTITUTIONS, DELETIONS, OR ADDITIONS TO THIS PLAN WITHOUT APPROVAL OF THE LANDSCAPE ARCHITECT.
5. ALL CONSTRUCTION SHALL CONFORM TO CITY, COUNTY, STATE, AND FEDERAL REQUIREMENTS. IT SHALL BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO ENSURE THAT ALL IRRIGATION EQUIPMENT MEETS GOVERNMENT REGULATIONS. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS OR APPROVALS.
6. THIS PLAN IS SCHEMATIC AND DUE TO THE NATURE OF CONSTRUCTION SLIGHT FIELD MODIFICATIONS MAY BE NECESSARY TO IMPLEMENT PLAN.
7. THIS IRRIGATION SYSTEM IS DESIGNED TO THE FOLLOWING STATS: 50 G.P.M. STATIC WATER PRESSURE IS REPORTED TO 75 P.S.I.
8. CONTRACTOR TO VERIFY ACTUAL AVAILABLE WATER PRESSURE BEFORE BEGINNING INSTALLATION. CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT IF AVAILABLE WATER PRESSURE EXCEEDS 5 PSI HIGHER OR LOWER THAN AVAILABLE WATER PRESSURE.
9. IRRIGATION SYSTEMS CONNECTED TO POTABLE WATER SUPPLY, SHALL HAVE A BACKFLOW PREVENTER INSTALLED.
10. WHERE APPLICABLE IRRIGATION HEADS ARE TO BE ADJUSTED FOR COMPLETE COVERAGE WITH MINIMUM OVER SPRAY BEYOND LANDSCAPE AREAS.
11. EXISTING TREES TO REMAIN ARE TO BE PROTECTED FROM DAMAGE. DO NOT TRENCH OR EXCAVATE WITHIN THE CRITICAL ROOT ZONE OF ANY TREE.
12. IRRIGATION LATERAL LINES, MAIN LINES AND EQUIPMENT MAY BE SHOWN OUTSIDE PROPERTY LINES ON THIS PLAN. ALL IRRIGATION LINES AND EQUIPMENT ARE TO BE WITHIN AND INSTALLED WITHIN THE LIMITS OF THE PROPERTY LINE.
13. ALL IRRIGATION SLEEVING TO BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR. ELECTRICAL WIRES FOR IRRIGATION VALVES AND IRRIGATION LINES ARE TO BE PLACED IN SEPARATE SLEEVES. SEE SLEEVING DETAIL.
14. SUPPLY LINE AND METER TO BE PROVIDED BY GENERAL CONTRACTOR. BACKFLOW PREVENTER TO BE PROVIDED BY IRRIGATION CONTRACTOR. IRRIGATION CONTRACTOR'S POINT OF CONNECTION TO BEGIN AFTER THE IRRIGATION WATER METER. USE EXISTING BACKFLOW AND CONNECT WHERE NOTED ON PLANS.
15. IRRIGATION CONTRACTOR SHALL REVIEW WINTERIZATION PROCEDURES FOR IRRIGATION SYSTEM WITH OWNERS REPRESENTATIVE.
16. ALL PLANT MATERIAL IN TREE HOLDING AREAS SHALL BE MANUALLY WATERED/IRRIGATED TO KEEP MOIST UNTIL PLANTED.
17. SEE SPECIFICATIONS FOR OWNER FURNISHED EQUIPMENT TO BE INSTALLED BY IRRIGATION CONTRACTOR.

REVISIONS	BY

landscape TECHNOLOGIES

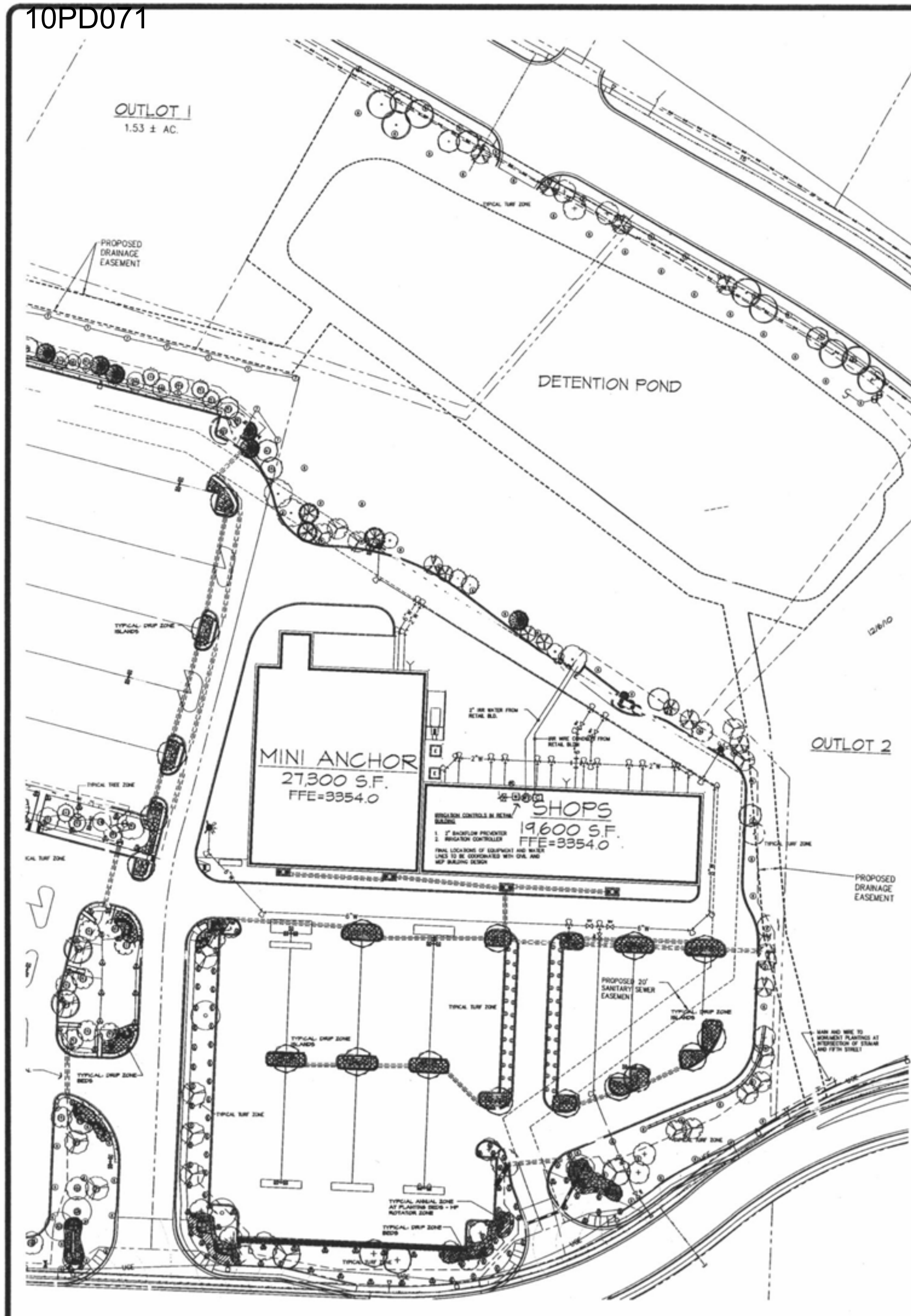
PRELIMINARY IRRIGATION PLAN FOR THE PROPOSED
Black Hills Center
WAL-MART #3872-03
RAPID CITY, PENNINGTON COUNTY, SOUTH DAKOTA

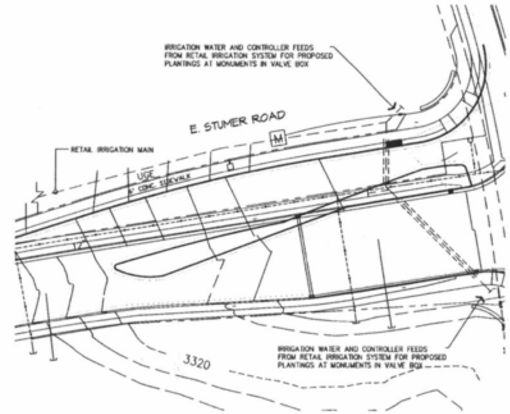
DRAWN	SNEHOFF
CHECKED	RHH/SJB
DATE	12/6/10
SCALE	1"=40'-0"
JOB No.	2010-106
SHEET	IR-2

OF THREE SHEETS

NOT FOR CONSTRUCTION-For Review Only

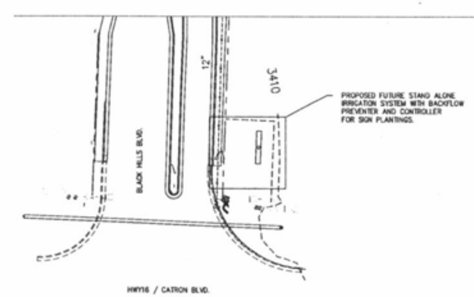
10PD071





ENTRANCE AT STUMAR AND FIFTH

NORTH
SCALE: 1"= 30'



ENTRANCE AT BLACK HILLS & HWY 16

NORTH
SCALE: 1"= 30'

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	Toro 0-T-8102-4P PRX 12 Series. Turf Spray, 4" popup with X-Flow shut-off device and pressure regulator. Precision Series spray nozzles.
	Hunter HP1000 w/ HPRAO-04-CV. Turf Spray 4" pop-up with check valve, HP Rotator nozzle. [illegible]
	Hunter HP2000 w/ HPRAO-04-CV. Turf Spray 4" pop-up with factory installed check valve, HP Rotator nozzle. [illegible]
	Hunter HP3000 w/ HPRAO-04-CV. Turf Spray 4" pop-up with factory installed check valve, HP Rotator nozzle. [illegible]
	Hunter HP1000 w/ HPRAO-12-CV. Shrub Rotator, 12" pop-up with check valve, HP Rotator nozzle. [illegible]

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	Hunter PGP-ADV, 36V. Turf Rotor, 4" popup, adjustable and full circle, with factory installed check valve.

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	Area to Receive Dripline. Netafim TLCV9-12-18 (2). Landscape Dripperline with 0.9gph emitters at 12" o.c. with check valve, pressure compensation, [illegible] Dripperline laterals spaced at 18" apart, with emitters offset for triangular pattern.

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	Hunter ICV. Electric remote control valve, plastic globe.
	Shut Off Valve
	Febco 825Y 2". Reduced Pressure Backflow Preventer
	Rain Bird ESPLXM. Rain Bird ESP-LX Modular Series. Modular controller up to 32 stations maximum [illegible] Install the proper number of modules to accomodate the number of stations in the scope of work.
	Irritrol RFS1000. Wireless Rain/Freeze Sensor. Mount as noted or approved, use controller power or optional transformer.
	Irrigation Lateral Line: PVC Class 200 SDR 21
	Irrigation Mainline: PVC Class 200 SDR 21
	Pipe Sleeve: PVC Schedule 40. Typical pipe sleeve for irrigation pipe. Pipe sleeve size shall allow for irrigation piping and their related couplings to easily slide through sleeving material. Extend sleeves 18 inches beyond edges of paving or construction.

REVISIONS	BY

landscape TECHNOLOGIES

PRELIMINARY IRRIGATION PLAN FOR THE PROPOSED
Black Hills Center
WAL-MART #3872-03
RAPID CITY, PENNINGTON COUNTY, SOUTH DAKOTA

DRAWN	[illegible]
CHECKED	[illegible]
DATE	12/6/10
SCALE	VARIES
JOB No.	2010-106
SHEET	IR-3

OF THREE SHEETS

NOT FOR CONSTRUCTION-For Review Only

10PD071

SEGMENTAL RETAINING WALL (SRW) GENERAL NOTES

CONSTRUCTION SPECIFICATIONS
SPECIFICATION FOR CONSTRCUTION OF SEGMENTAL RETAINING WALL SYSTEMS SHALL BE WALMART SPECIFICATION SECTION 02830- "SEGMENTAL RETAINING WALL SYSTEMS" AND RELATED SECTIONS.

CONSTRUCTION DRAWINGS
THESE DRAWINGS ARE PROVIDED FOR SEGMENTAL RETAINING WALL (SRW) CONSTRUCTION USING THE FOLLOWING SRW UNIT - GEOGRID REINFORCEMENT COMBINATION: KEYSTONE COMPAC II TRI-PLANE SRW UNITS - MIRAFI MIRAGRID GEOGRID

WALL ERECTION
THE WALL SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SRW MANUFACTURER'S RECOMMENDATIONS, WALMART SPECIFICATIONS, AND THESE REQUIREMENTS. WHERE CONFLICTS EXIST, THE MORE STRINGENT REQUIREMENTS SHALL PREVAIL.

WALL CONTRACTOR QUALIFICATIONS
SEE WALMART SPECIFICATIONS FOR MINIMUM EXPERIENCE AND DOCUMENTATION REQUIREMENTS.

SUBMITTALS
SEE WALMART SPECIFICATIONS FOR SUBMITTAL REQUIREMENTS, CERTIFICATIONS OF COMPLIANCE, AND SAMPLES.

DEVIATIONS FROM SITE PLANS
THESE DESIGNS ARE BASED UPON SITE PLANS PERFORMED BY WOLVERTON & ASSOCIATES, INC. CHANGES OR DEVIATIONS FROM THESE SITE PLANS, INCLUDING GRADING, DRAINAGE, UTILITIES, OR SURCHARGE LOADS MAY AFFECT WALL DESIGN REQUIREMENTS. WALL ENGINEER SHALL BE NOTIFIED OF ANY CHANGES TO OR DEVIATIONS FROM THE SITE PLAN SO AN ASSESSMENT OF WALL DESIGN REQUIREMENTS CAN BE MADE.

INSPECTION AND TESTING AGENCY
IN ACCORDANCE WITH WALMART SPECIFICATIONS (PARA 3.8.A.) THE OWNER'S CONSTRUCTION TESTING LABORATORY (CTL) SHALL CONDUCT QUALITY CONTROL TESTS AND INSPECTIONS IN ACCORDANCE WITH WALMART SPECIFICATIONS 02830- SEGMENTAL RETAINING WALL SYSTEMS.

CTL INSPECTION ENGINEER
THE CTL INSPECTION ENGINEER IS RESPONSIBLE FOR READING AND UNDERSTANDING THESE DRAWINGS AND SPECIFICATIONS, HE SHALL BE IN POSSESSION OF A COMPLETE SET OF THESE DRAWINGS WHEN PERFORMING INSPECTION DUTIES ON SITE. THE INSPECTION ENGINEER SHALL INSPECT CONSTRUCTION OF THE WALL FOR CONFORMANCE TO THE WALL PLANS, WALMART SPECIFICATIONS AND THESE CONSTRUCTION REQUIREMENTS. INSPECTION SHALL BE PERFORMED BY AN INDIVIDUAL EXPERIENCED WITH SRW CONSTRUCTION, AND IN ACCORDANCE WITH WALMART SPECIFICATIONS (PARA 3.8.B). INSPECTION SHALL INCLUDE FOUNDATION AND RETAINED SOIL EVALUATION, EACH LIFT OF FILL PLACEMENT AND COMPACTION, AND SRW AND GEOSYNTHETIC REINFORCEMENT INSTALLATION. THE INSPECTION ENGINEER SHALL CONTACT WALL DESIGNER IF ANY ASPECT OF THESE CONSTRUCTION DRAWINGS ARE UNCLEAR.

VERIFICATION OF DESIGN ASSUMPTIONS
THE INSPECTION ENGINEER SHALL INSPECT SOIL IN THE RETAINED AND FOUNDATION SOIL ZONES TO VERIFY THAT THE ASSUMPTIONS MADE BY THE WALL DESIGN ENGINEER REGARDING THE SHEAR STRENGTH OF THESE SOILS ARE ADEQUATELY CONSERVATIVE. IF ACTUAL SOIL SHEAR STRENGTHS ARE LESS THAN THOSE WHICH ARE ASSUMED, THEN THE INSPECTION ENGINEER SHALL NOTIFY THE CONTRACTOR AND THE CONTRACTOR SHALL STOP WORK AND CONTACT THE WALL DESIGN ENGINEER. IF THE ASSUMED SHEAR STRENGTH VALUES ARE NOT CONSERVATIVE, THEN REDESIGN OF THE RETAINING WALL MAY BE REQUIRED. THE INSPECTION ENGINEER SHALL CONFIRM THAT THE SOIL PROPERTIES USED FOR THIS DESIGN ARE ADEQUATELY CONSERVATIVE AFTER INSPECTION OF ACTUAL REINFORCED, RETAINED, AND FOUNDATION SOIL.

PRECONSTRUCTION MEETING
THE GENERAL CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING THAT SHALL BE ATTENDED BY THE WALL DESIGN ENGINEER, THE WALL CONTRACTOR, THE GRADING CONTRACTOR, AND THE CTL INSPECTION ENGINEER. THE GENERAL CONTRACTOR SHALL PROVIDE AT LEAST 14 DAYS NOTICE OF THE MEETING DATE.

JOB SITE SAFETY
JOB SITE SAFETY SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL PERFORM WORK IN ACCORDANCE WITH OSHA REQUIREMENTS.

CLEARING AND GRUBBING
BEFORE WALL CONSTRUCTION BEGINS, THE CONTRACTOR SHALL CLEAR AND GRUB THE REINFORCED SOIL ZONE AND REMOVE TOPSOIL, BRUSH, FROZEN SOIL, AND ORGANIC MATERIAL. THE CONTRACTOR SHALL ALSO REMOVE ALL FOUNDATION SOIL DESIGNATED BY THE INSPECTION ENGINEER AS UNSUITABLE AND REPLACE IT WITH SOIL DESIGNATED BY THE INSPECTION ENGINEER AS SUITABLE AND COMPACT IT TO PROJECT SPECIFICATIONS. THE INSPECTION ENGINEER SHALL ASSESS THE REQUIREMENTS TO INSTALL GEOSYNTHETICS FOR BASE STABILIZATION AND SETTLEMENT MITIGATION.

EXCAVATION AND FOUNDATION PREPARATION
THE CONTRACTOR SHALL EXCAVATE TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS. EXCAVATIONS SHALL CONFORM TO OSHA REQUIREMENTS AND SHALL BE PERFORMED UNDER THE SUPERVISION OF THE INSPECTION ENGINEER. EXCAVATIONS AT THE BACK OF THE REINFORCED ZONE SHALL BE BENCH-CUT AS DIRECTED BY THE INSPECTION ENGINEER. THE COST OF OVER-EXCAVATION SHALL NOT BE COMPENSATED AND REPLACEMENT WITH MATERIAL MEETING THE REQUIREMENTS OF THE REINFORCED FILL SHALL BE REQUIRED AT THE CONTRACTOR'S EXPENSE. DISTURBANCE OF SOIL OUTSIDE THE LINES OF EXCAVATION SHALL BE AVOIDED.

LEVELING PAD
THE LEVELING PAD SHALL BE AT LEAST 24 INCHES WIDE AND 6 INCHES THICK. THE LEVELING PAD SHALL BE CONSTRUCTED SO AS TO PROVIDE A LEVEL, HARD SURFACE UPON WHICH TO PLACE THE FIRST COURSE OF SRW UNITS. THE LEVELING PAD SHALL BE PREPARED TO INSURE COMPLETE CONTACT BETWEEN THE PAD AND THE FIRST COURSE OF SRW UNITS.

THE LEVELING PAD SHALL BE CONSTRUCTED USING EITHER GRAVEL, CRUSHED STONE OR UNREINFORCED CONCRETE. IF GRAVEL IS USED TO CONSTRUCT THE LEVELING PAD, IT SHALL SATISFY ASTM C33 CRITERIA FOR CW OR CP AND IT SHALL BE COMPACTED WITH A MINIMUM OF FIVE PASSES OF A VIBRATORY SLED AND TO THE SATISFACTION OF THE INSPECTION ENGINEER. IF UNREINFORCED CONCRETE IS USED TO CONSTRUCT THE LEVELING PAD, IT SHALL EXHIBIT A 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI. IF WALL ELEVATION REQUIRES STEPS THAT EXCEED 8" THEN THE ENTIRE LEVELING PAD SHALL BE CONSTRUCTED USING UNREINFORCED CONCRETE (3000 PSI MIN.) ONLY.

SLOTTED DRAIN PIPE AND DRAINAGE BLANKET
INSTALL THE SLOTTED DRAIN PIPE AND DRAINAGE BLANKET AS SHOWN ON THE CONSTRUCTION DETAILS. CONNECT TO OUTLET PIPES SPACED AT INTERVALS OF 25 FEET O.C. MAX. CUT SRW UNITS AS SHOWN IN STANDARDS SRW DETAILS FOR OUTLET PIPE PENETRATION. INSTALL DRAINAGE AGGREGATE, CORE FILL, AND REINFORCED SOIL EVERY COURSE OF SRW UNITS.

BLOCK STACKING
NO MORE THAN ONE COURSE OF SRW UNITS MAY BE STACKED BEFORE DRAINAGE AGGREGATE, CORE FILL, AND REINFORCED SOIL IS INSTALLED.

DRAIN PIPE
DRAIN PIPE INSTALLED BEHIND THE WALL FACE SHALL COMPRISE 4-INCH DIAMETER SLOTTED HDPE PIPE.

GEOSYNTHETIC REINFORCEMENT
INSTALL GEOSYNTHETIC REINFORCEMENT AT THE LOCATIONS AND ELEVATIONS SHOWN ON THE WALL PLAN. GEOSYNTHETIC REINFORCEMENT LENGTH IS MEASURED FROM THE WALL FACE. PANELS OF GEOSYNTHETIC REINFORCEMENT SHALL BE TENSIONED SUCH THAT ALL FOLDS AND WRINKLES ARE REMOVED BEFORE REINFORCED SOIL IS PLACED. PANELS SHALL BE STAKED OR ANCHORED AS NECESSARY TO MAINTAIN TAUT CONDITION. ADJACENT PANELS SHALL BE ABUTTED. 100 PERCENT REINFORCEMENT COVERAGE IS REQUIRED. WALL CONTRACTOR AND INSPECTION ENGINEER SHALL VERIFY THAT GEOSYNTHETIC REINFORCEMENT TYPE CORRESPONDS TO THE TYPE SHOWN ON THE WALL PLAN BEFORE THE REINFORCEMENT IS INSTALLED. IF APPLICABLE GEOSYNTHETIC REINFORCEMENT PANELS INSTALLED AT WALL CORNERS AND RADII MAY OVERLAP. OVERLAPPING PANELS SHALL BE SEPARATED BY AT LEAST 3 INCHES OF COMPACTED SOIL. CONNECT GEOGRID TO SRW UNIT IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND THESE DRAWINGS.

GEOTEXTILE FILTER
GEOTEXTILE FILTER SHALL COMPRISE NEEDLE-PUNCHED, NONWOVEN, POLYPROPYLENE MATERIAL AND:

TYPE A GEOTEXTILE SHALL SATISFY AASHTO M288-0 STRENGTH CRITERIA FOR CLASS 2 SURVIVABILITY. IT SHALL EXHIBIT A MIN AVG ROLL VALUE OF PERMITTIVITY OF 0.1 PER SEC AND A MAX AVG ROLL VALUE OF APPARENT OPENING SIZE OF 0.22mm. PRE-APPROVED MATERIALS INCLUDE AMOCO 455, MIRAFI 160N AND SYNTHETIC INDUSTRIES GEOTEX 601.

TYPE B GEOTEXTILE SHALL SATISFY AASHTO M288-00 STRENGTH CRITERIA FOR CLASS 1 SURVIVABILITY. IT SHALL EXHIBIT A MIN AVG ROLL VALUE OF PERMITTIVITY OF 0.1 PER SEC AND A MAX AVG ROLL VALUE OF APPARENT OPENING SIZE OF 0.22mm. PRE-APPROVED MATERIALS INCLUDE AMOCO 4553, MIRAFI 180N AND SYNTHETIC INDUSTRIES GEOTEX 801.

DRAINAGE AGGREGATE AND SRW CORE FILL
DRAINAGE AGGREGATE AND SRW CORE FILL SHALL SATISFY ASTM C33 CRITERIA FOR NO. 57 OR 67 STONE.

DRAINAGE AND EROSION PROTECTION
AT THE END OF EACH WORK DAY, THE CONTRACTOR SHALL GRADE THE SURFACE OF THE LAST LIFT OF REINFORCED SOIL AWAY FROM THE WALL FACE AND COMPACT. DURING SITE CONSTRUCTION, THE WALL SHALL BE PROTECTED FROM SURFACE WATER AT ALL TIMES BY THE USE OF BERMS, DIVERSION DITCHES, TEMPORARY DRAINS AND ALL OTHER MEANS THAT ARE REQUIRED. WATER SHALL NOT BE PERMITTED TO POND BEHIND THE WALL. ALL SLOPE ABOVE AND BELOW THE WALL SHALL BE VEGETATED AND PROTECTED FROM EROSION AS SOON AS POSSIBLE FOLLOWING THEIR CONSTRUCTION. THE GENERAL CONTRACTOR IS SOLELY RESPONSIBLE FOR THE PROTECTION OF THE WALLS AGAINST THE ADVERSE EFFECTS OF SURFACE WATER.

DEFICIENCY NOTIFICATION
THE INSPECTION ENGINEER SHALL NOTIFY THE WALL CONTRACTOR OF DEFICIENCIES. THE WALL CONTRACTOR SHALL BE PROVIDED THE OPPORTUNITY TO REPAIR. IF REPAIR IS NOT EFFECTED, THEN THE INSPECTION ENGINEER SHALL NOTIFY THE GENERAL CONTRACTOR. INSPECTION RESULTS SHALL BE DOCUMENTED.

COMPACTION DENSITY AND MOISTURE CONTENT REQUIREMENTS
COMPACT SOIL IN REINFORCED ZONE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:

SOIL IN THE REINFORCED ZONE SHALL BE COMPACTED TO WITHIN 95 PERCENT OF ITS MAXIMUM DRY DENSITY AND WITHIN 2 PERCENT OF ITS OPTIMUM WATER CONTENT AS MEASURED IN ACCORDANCE WITH ASTM D 698 (STANDARD PROCTOR METHOD). THE COMPACTED DENSITY AND MOISTURE CONTENT OF THE SOIL IN THE REINFORCED ZONE SHALL BE TESTED IN ACCORDANCE WITH THE FOLLOWING:

1. AT LEAST ONCE PER EVERY 1000 SQUARE FEET IN PLAN AREA PER 8-INCH-THICK-LIFT.
2. AT LEAST ONCE PER EVERY 2 FEET OF WALL ERECTION.

FILL SOIL INSTALLED IN SLOPES ABOVE OR BELOW THE WALL SHALL BE COMPACTED TO WITHIN 95 PERCENT OF ITS MAXIMUM DRY DENSITY AND TO WITHIN 2 PERCENT OF ITS OPTIMUM WATER CONTENT AS MEASURED IN ACCORDANCE WITH ASTM D 698 (STANDARD PROCTOR METHOD).

COMPACTION EQUIPMENT
HEAVY (I.E., RIDE-ON) COMPACTION EQUIPMENT OR OTHER HEAVY CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED WITH 4 FEET OF THE WALL FACE, WITHIN 4 FEET OF THE WALL FACE, ONLY HAND-OPERATED (I.E., WALK-BEHIND) COMPACTION EQUIPMENT MAY BE USED.

SOIL COMPACTION DOCUMENTATION AND INSPECTION
THE INSPECTION ENGINEER SHALL INSPECT AND DOCUMENT COMPACTION OF SOIL IN THE REINFORCED SOIL ZONE IN ACCORDANCE WITH THESE REQUIREMENTS. INSPECTION RECORDS SHALL DOCUMENT VISUAL SOIL DESCRIPTION, REQUIRED MINIMUM DRY UNIT WEIGHT, ACTUAL DRY UNIT WEIGHT, ALLOWABLE MOISTURE CONTENT, ACTUAL MOISTURE CONTENT, TEST LOCATION AND ELEVATION, AND PASS OR FAIL ASSESSMENT. SOIL SHALL BE INSTALLED IN COMPACTED LIFTS NO GREATER THAN 8 INCHES AND NO LESS THAN 6 INCHES IN THICKNESS.

IRRIGATION LINES
THE INSTALLATION OF PVC IRRIGATION LINES ABOVE THE REINFORCED ZONE OR WITHIN 10 FEET OF A REINFORCED ZONE OR WITHIN 10 FEET OF A WALL TOE IS NOT PERMITTED.

LANDSCAPING
SMALL SHRUBS MAY BE INSTALLED ABOVE THE REINFORCED ZONE BUT SHALL BE SPACED NO CLOSER THAN 10 FEET. IF THE TOP LAYER OF GEOGRID OBSTRUCTS SHRUB INSTALLATION, THE CONTRACTOR SHALL CAREFULLY EXPOSE THE GEOGRID AND CUT A HOLE NO LARGER THAN 24 INCHES IN DIAMETER USING A KNIFE. NO OTHER EXCAVATION THROUGH LAYERS OF GEOSYNTHETIC REINFORCEMENT IS PERMITTED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE WALL DESIGNER.

TURF REINFORCEMENT MAT (TRM)
TRM, IF REQUIRED, SHALL CONSIST OF EITHER NORTH AMERICAN GREEN C350 OR SYNTHETIC INDUSTRIES LANDLOK TRM 450.

SRW WALL DESIGN DATA

SPECIFICATIONS
WALMART SPECIFICATIONS 02830- "SEGMENTAL RETAINING WALL SYSTEMS" AND RELATED SECTIONS
NCMA DESIGN MANUAL FOR SEGMENTAL RETAINING WALLS

PARAMETERS
LOADING ---------- FLAT BACKFILL SLOPE
TRAFFIC LOADING = 250 PSF (LIVE)
BUILDING LOADING = 0 PSF - BUILDING FOUNDED ON PIERS
ADD'L DEAD LOAD = 120 PSF (DEAD)

BEARING CAPACITY REQUIRED -- VARIES, SEE WALL ELEVATION VIEWS.

SEISMIC PARAMETERS ---- SEISMIC CATEGORY "C". HORIZONTAL ACCELERATION = 0.12G

FACTOR(S) OF SAFETY:

SLIDING	1.5
OVERTURNING	2.0
MATERIAL UNCERTAINTY	1.5
GLOBAL STABILITY	1.5
BEARING	2.5
OVERSTRESS	1.0
PULLOUT	1.5
CONNECTION	1.5
COMPOUND FAILURE	1.35
INSTALLATION DAMAGE	1.25
L/H	0.7 MIN

GEOTECHNICAL SITE INVESTIGATION REPORT
THIS DESIGN IS BASED ON FINDINGS THE FOLLOWING REPORT(S) OF GEOTECHNICAL SITE INVESTIGATION:

"INITIAL GEOTECHNICAL ENGINEERING REPORT" TERRACON PROJECT NUMBER B4105021 DATED NOVEMBER 12, 2010 PERFORMED BY TERRACON CONSULTANTS, INC.

ANY ADDITIONAL GEOTECHNICAL AND CONSTRUCTION REQUIREMENTS ARE NOTED ON THE DRAWINGS.

GROUNDWATER
NO GROUNDWATER IS EXPECTED TO OCCUR ALONG THE PROPOSED WALLS, AS NOTED IN THE GEOTECHNICAL REPORT. IF GROUNDWATER IS ENCOUNTERED DURING WALL CONSTRUCTION, STOP WORK AND NOTIFY WALL DESIGNER.

UNDERCUT AND STONE BACKFILL
PRIOR TO INSTALLATION OF WALL NUMBER 2, THE CONTRACTOR SHALL UNDERCUT THE FOUNDATION SOIL UNTIL COMPETENT ROCK IS EXPOSED. THE CONTRACTOR SHALL INSTALL AND COMPACT STONE BACKFILL OR LEAN CONCRETE TO THE BOTTOM OF THE FIRST COURSE OF THE WALL TO PROVIDE THE REQUIRED BEARING CAPACITY INDICATED ON THE PLANS. THE WALL DESIGNER SHALL BE NOTIFIED PRIOR TO INSTALLATION OF THE DEPTH AND LIMITS OF UNDERCUT AND THE GRADATION OF STONE BACKFILL. SEE TYPICAL SECTION DETAIL ON SHEET RW-2.

UTILITIES

SEE SITE PLANS FOR UTILITIES LOCATED IN OR NEAR REINFORCED BACKFILL OF WALL. WALL CONTRACTOR TO COORDINATE WALL CONSTRUCTION WITH UTILITY AND STORM DRAIN PIPE INSTALLATION.

SRW MATERIALS

REINFORCED SOIL ZONE - ENGINEERED FILL
SOIL INSTALLED IN THE REINFORCED SOIL ZONE SHALL SATISFY THE REQUIREMENTS IN SECTION 02830 (PARA 2.6) OF THE WALMART SPECIFICATIONS. REINFORCED SOIL SHALL EXHIBIT A MINIMUM Φ = 36.0 DEGREES AND A NOMINAL UNIT WEIGHT OF 135 PCF. A COHESION VALUE OF ZERO IS ASSUMED.

RETAINED SOIL ZONE
SOIL INSTALLED IN THE RETAINED SOIL ZONE SHALL SATISFY THE REQUIREMENTS IN SECTION 02830 (PARA 2.7) OF THE WALMART SPECIFICATIONS. SOIL SHALL EXHIBIT A MINIMUM Φ = 20 DEGREES AND A NOMINAL UNIT WEIGHT OF 110 PCF. SOIL INSTALLED IN THE RETAINED ZONE SHALL BE FREE OF MUCK, ROOTS, FROZEN MATERIAL, CONSTRUCTION DEBRIS.

FOUNDATION SOIL ZONE
SOIL BENEATH THE REINFORCED ZONE AND THE ENTIRE RETAINED SOIL ZONE ARE ASSUMED TO SATISFY THE REQUIREMENTS IN SECTION 02830 (PARA 3.3B) OF THE WALMART SPECIFICATIONS. FOR WALL NUMBER 2, IN-SITU FOUNDATION SOIL SHALL BE EXCAVATED UNTIL COMPETENT SHALE ROCK IS EXPOSED.

SRW UNITS AND CAP UNITS
SRW UNITS SHALL COMPRISE OF THE FOLLOWING:

KEYSTONE COMPAC II TRI-PLANE SRW UNITS AND CAP UNITS (TO BE USED ONLY WITH MIRAFI MIRAGRID GEOGRID)
BLOCK COLOR TO BE COMPATIBLE WITH BUILDING AND TO BE DETERMINED IN FIELD

GEOSYNTHETIC REINFORCEMENT
USE ONLY THE GEOSYNTHETIC REINFORCEMENT SHOWN ON THE REINFORCEMENT SCHEDULE.
THE WALL CONTRACTOR AND INSPECTION ENGINEER SHALL VERIFY THAT GEOSYNTHETIC TYPE CORRESPONDS TO THE TYPE SHOWN ON THE WALL ELEVATION BEFORE ITS INSTALLATION.

NOT FOR CONSTRUCTION
FOR PERMITTING ONLY

811
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REGISTERED PROFESSIONAL ENGINEER
7028
JERRY CARL WOLVERTON JR.

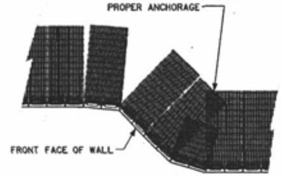
PROJECT TITLE: BLACK HILLS CENTER
WALMART STORE #3872-03
RAPID CITY, SOUTH DAKOTA
BY: THF STONERIDGE DEVELOPMENT
ST. LOUIS, MISSOURI

SEGMENTAL RETAINING WALL
GENERAL NOTES

REVISIONS	BY
DRAWN BY:	K. LEWIS
DESIGNED BY:	K. LEWIS
DATE:	12-09-10
SCALE:	NO SCALE
JOB No.	08-140

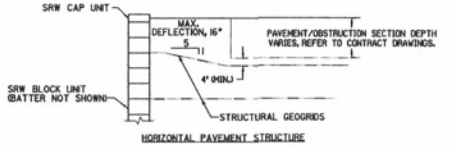
SHEET NUMBER
RW-1
1 OF 7 SHEETS

10PD071



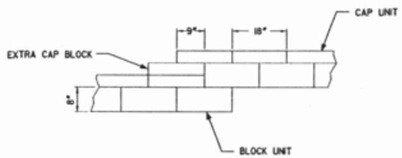
TRIM GEOGRID SO AS NOT TO BE VISIBLE AT WALL FACE

GEOGRID AT WALL CORNER DETAIL



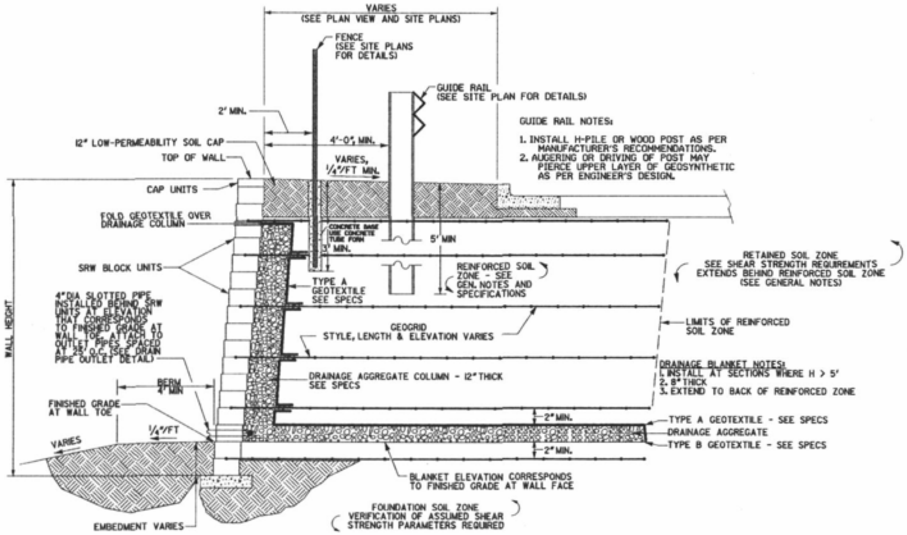
GEOGRID PLACEMENT AT PAVEMENT/OBSTRUCTION SECTION

NOTE:
CONTRACTOR IS RESPONSIBLE TO COORDINATE THE PLACEMENT OF THE GEOGRID TO AVOID CONFLICT WITH THE CONTRACT PAVEMENT/OBSTRUCTION SECTION. GEOGRID MUST BE SEPARATED FROM THE PAVEMENT/OBSTRUCTION SECTION BY A MINIMUM OF 4".



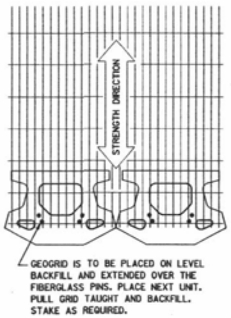
CAP BLOCK STEP DETAIL

WALL ELEVATIONS MEASURED TO EDGE OF TOP CAP BLOCK

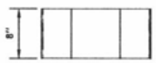


TYPICAL CROSS SECTION OF WALL

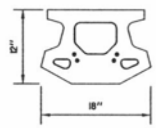
NOTES:
1. GEOGRID SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. SEE WALL ELEVATION FOR GEOGRID STYLE, LENGTH, AND LOCATION.
2. WALL SETBACK TO BE 1" - 1.25" PER UNIT (APPROX. 7.1° TO 8.8°).
3. UNDERCUT AND STONE BACKFILL, IF REQUIRED, NOT SHOWN. SEE BELOW FOR DETAIL.



GRID & PIN CONNECTION

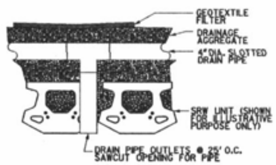


COMPAC II ELEVATION

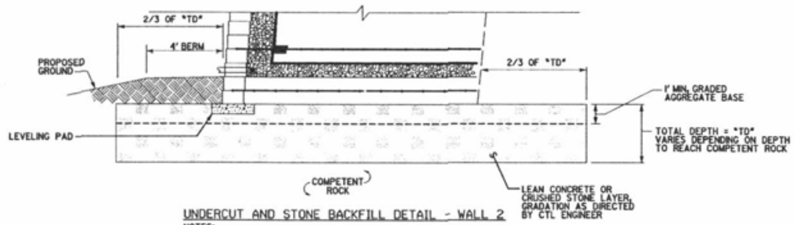


COMPAC II PLAN

COMPAC II UNIT

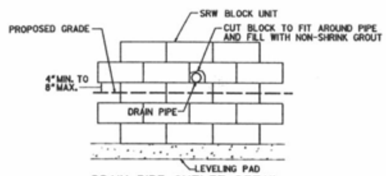


DRAIN PIPE DETAIL



UNDERCUT AND STONE BACKFILL DETAIL - WALL 2

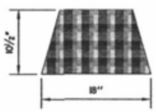
NOTES:
1. GEOGRID SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. SEE WALL ELEVATION FOR GEOGRID STYLE, LENGTH, AND LOCATION.
2. THE CONTRACTOR SHALL UNDERCUT THE FOUNDATION SOIL UNTIL COMPETENT ROCK IS EXPOSED. ESTIMATED AVERAGE DEPTH BELOW EXISTING GRADE = 14 FEET.



DRAIN PIPE OUTLET DETAIL

EMBEDMENT VARIES

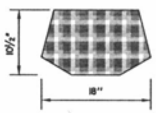
CAP UNIT ELEVATION



CAP UNIT PLAN

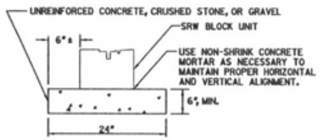
UNIVERSAL CAP UNIT OPTION

CAP UNIT ELEVATION



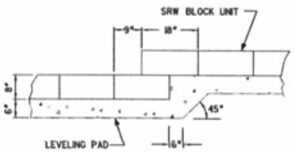
CAP UNIT PLAN

3 PLANE SPLIT CAP UNIT OPTION



LEVELING PAD DETAIL

NOTES:
1. UNREINFORCED CONCRETE MUST HAVE 3000 PSI COMPRESSIVE STRENGTH, MINIMUM.
2. 1/2"-3/4" CRUSHED STONE OR GRAVEL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.



LEVELING PAD STEP DETAIL

811

Know what's below
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NOT FOR CONSTRUCTION
FOR PERMITTING ONLY

Wolverton & Associates
Consulting Engineers + Land Surveyors

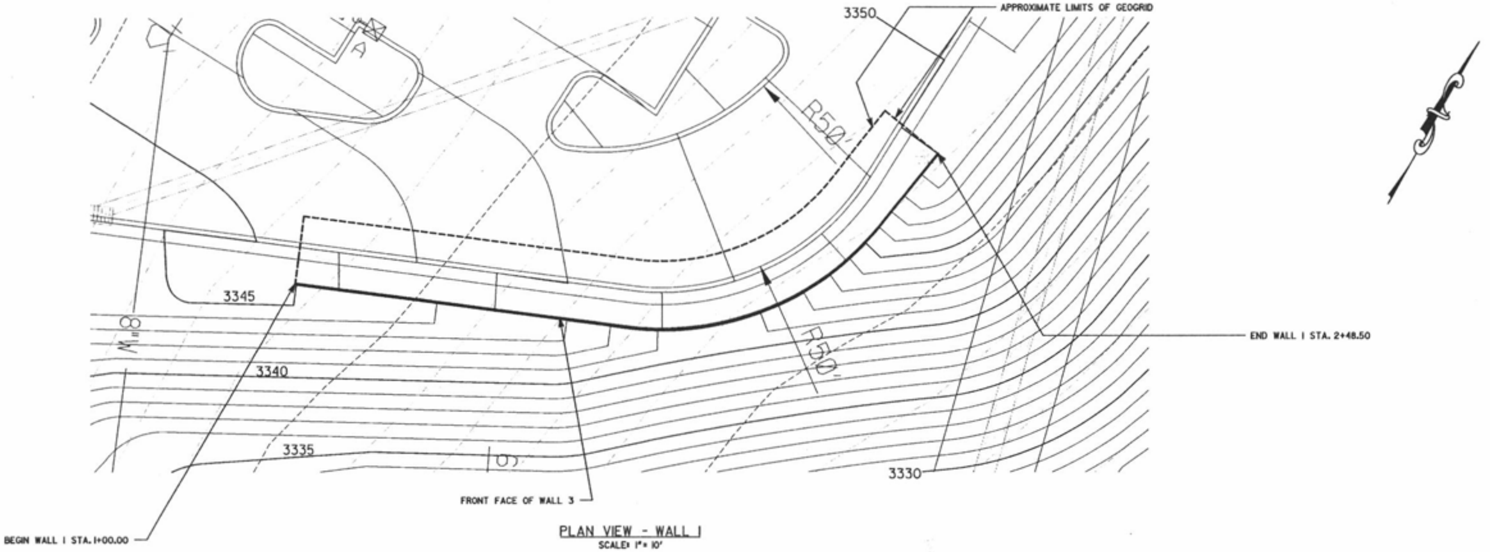
REGISTERED PROFESSIONAL ENGINEER 7026 JERRY CARL WOLVERTON JR. SOUTH DAKOTA

PROJECT TITLE: BLACK HILLS CENTER
WALMART STORE #3872-03
RAPID CITY, SOUTH DAKOTA
BY: THF STONERIDGE DEVELOPMENT
ST. LOUIS, MISSOURI

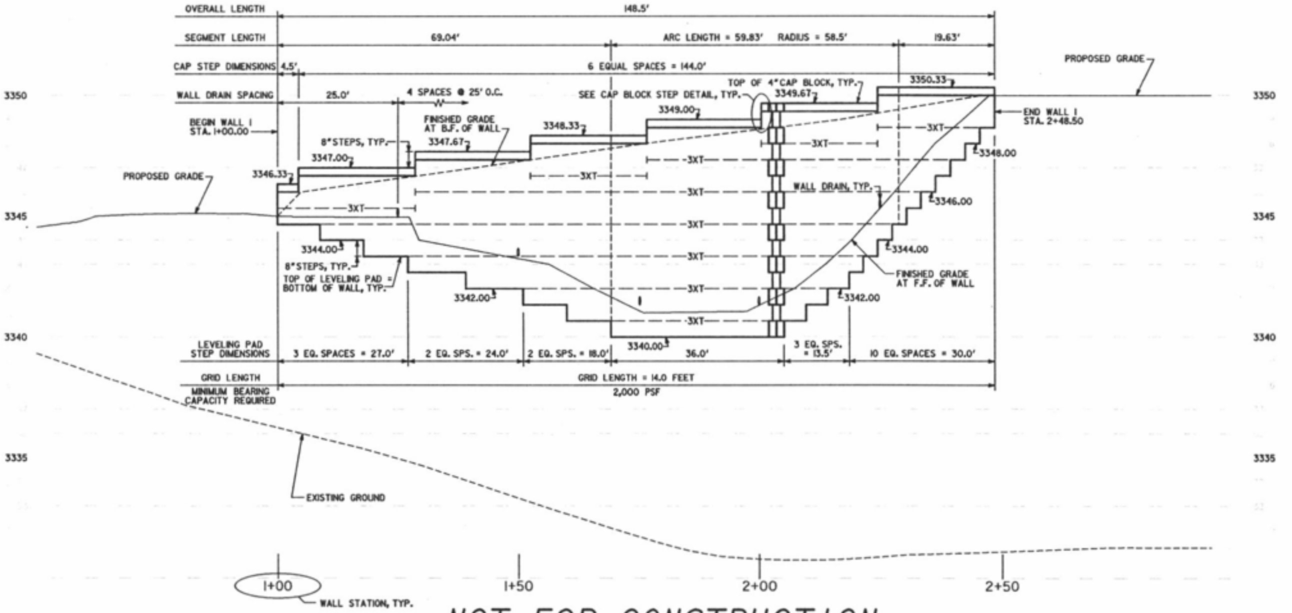
SEGMENTAL RETAINING WALL
DETAILS

REVISIONS	BY
DRAWN BY:	W. LEWIS
DESIGNED BY:	W. LEWIS
DATE:	12-09-10
SCALE:	NO SCALE
JOB No.	08-140
SHEET NUMBER	RW-2
2 OF 7 SHEETS	

10PD071



PLAN VIEW - WALL 1
SCALE: 1" = 10'



NOT FOR CONSTRUCTION
FOR PERMITTING ONLY

ELEVATION VIEW - WALL 1
SCALE: 1" = 10' HORIZONTAL; 1" = 2' VERTICAL
LOOKING AT FRONT FACE OF WALL

NOTES:
1. HORIZONTAL DIMENSIONS ARE MEASURED ALONG FRONT FACE OF WALL AT TOP OF WALL. CONTRACTOR SHALL ADJUST DIMENSIONS TO ACCOUNT FOR DRIFT DUE TO WALL BATTER.
2. SEE SHEET RW-1 FOR GENERAL NOTES.
3. WALL CONTRACTOR TO COORDINATE WALL CONSTRUCTION WITH UTILITY AND STORM PIPE INSTALLATIONS, WHEN APPLICABLE.

GENERIC GEOSYNTHETIC REINFORCEMENT DESIGNATION	SRW UNIT WITH CORRESPONDING GEOGRID MANUFACTURER'S DESIGNATION
	KEYSTONE COMPAC II BLOCKS
---3XT---3XT---3XT---3XT---	MIRAFI MIRAGRID 3XT

WALL ELEVATION LEGEND

SRW UNITS ILLUSTRATED FOR ELEVATION REFERENCE
TOP OF WALL (CAP) ELEVATION
CAP UNITS
FINISHED GRADE PROFILES
BOTTOM OF WALL ELEVATION TOP OF LEVELING PAD
REINFORCEMENT TYPE EMBEDMENT LENGTH MEASURED FROM WALL FACE
TERMINATION OF REINFORCEMENT OR CHANGE IN EMBEDMENT LENGTH
F.F. = FRONT FACE
B.F. = BACK FACE

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Consulting Engineers + Land Surveyors
6745 Sugarloaf Parkway Suite 100 Duluth, Georgia 30097
Phone: (770) 447-8999 Fax: (770) 447-8678

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 7026
JERRY CARL WOLVERTON JR.
SOUTH DAKOTA

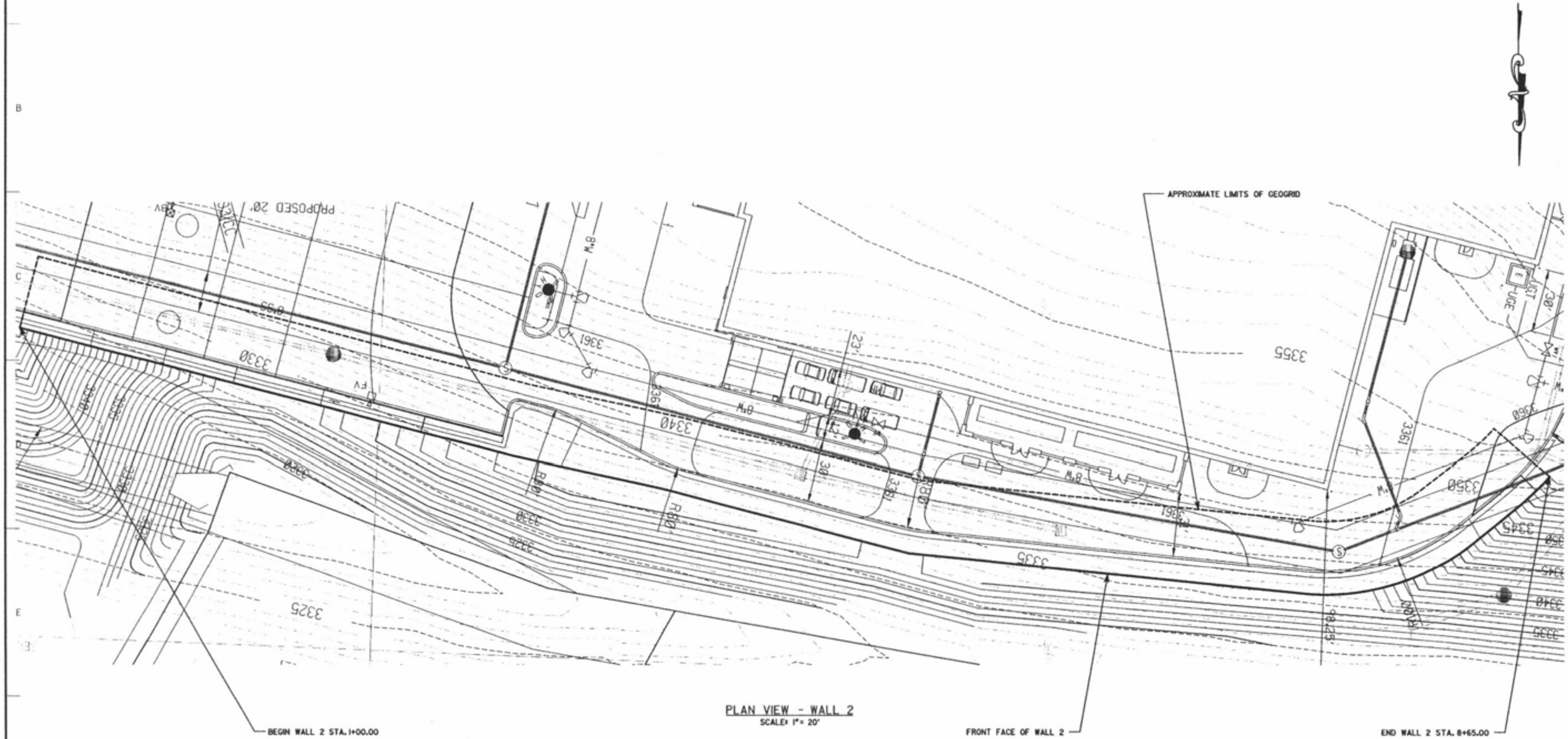
PROJECT TITLE: BLACK HILLS CENTER
WALMART STORE #3872-03
RAPID CITY, SOUTH DAKOTA
BY: THE STONERIDGE DEVELOPMENT
ST. LOUIS, MISSOURI

RETAINING WALL No. 1
PLAN AND ELEVATION

REVISIONS	BY
DRAWN BY:	W. LEWIS
DESIGNED BY:	W. LEWIS
DATE:	12-09-10
SCALE:	AS NOTED
JOB No.	08-140

SHEET NUMBER
RW-3

10PD071



PLAN VIEW - WALL 2
SCALE: 1"= 20'

811
Know what's below
Call before you dig
1-800-781-7474 OUTSIDE S.D.

NOTES:
1. HORIZONTAL DIMENSIONS ARE MEASURED ALONG FRONT FACE OF WALL AT TOP OF WALL. CONTRACTOR SHALL ADJUST DIMENSIONS TO ACCOUNT FOR DRIFT DUE TO WALL BATTER.
2. SEE SHEET RW-1 FOR GENERAL NOTES.
3. WALL CONTRACTOR TO COORDINATE WALL CONSTRUCTION WITH UTILITY AND STORM PIPE INSTALLATIONS, WHEN APPLICABLE.

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6745 Sugarloaf Parkway, Suite 100 · Duluth, Georgia 30097
Phone: (770) 447-8999 · Fax: (770) 447-9878
www.wolverton-assoc.com

REGISTERED PROFESSIONAL ENGINEER REG. NO. 7026 JERRY CARL WOLVERTON JR. SOUTH DAKOTA

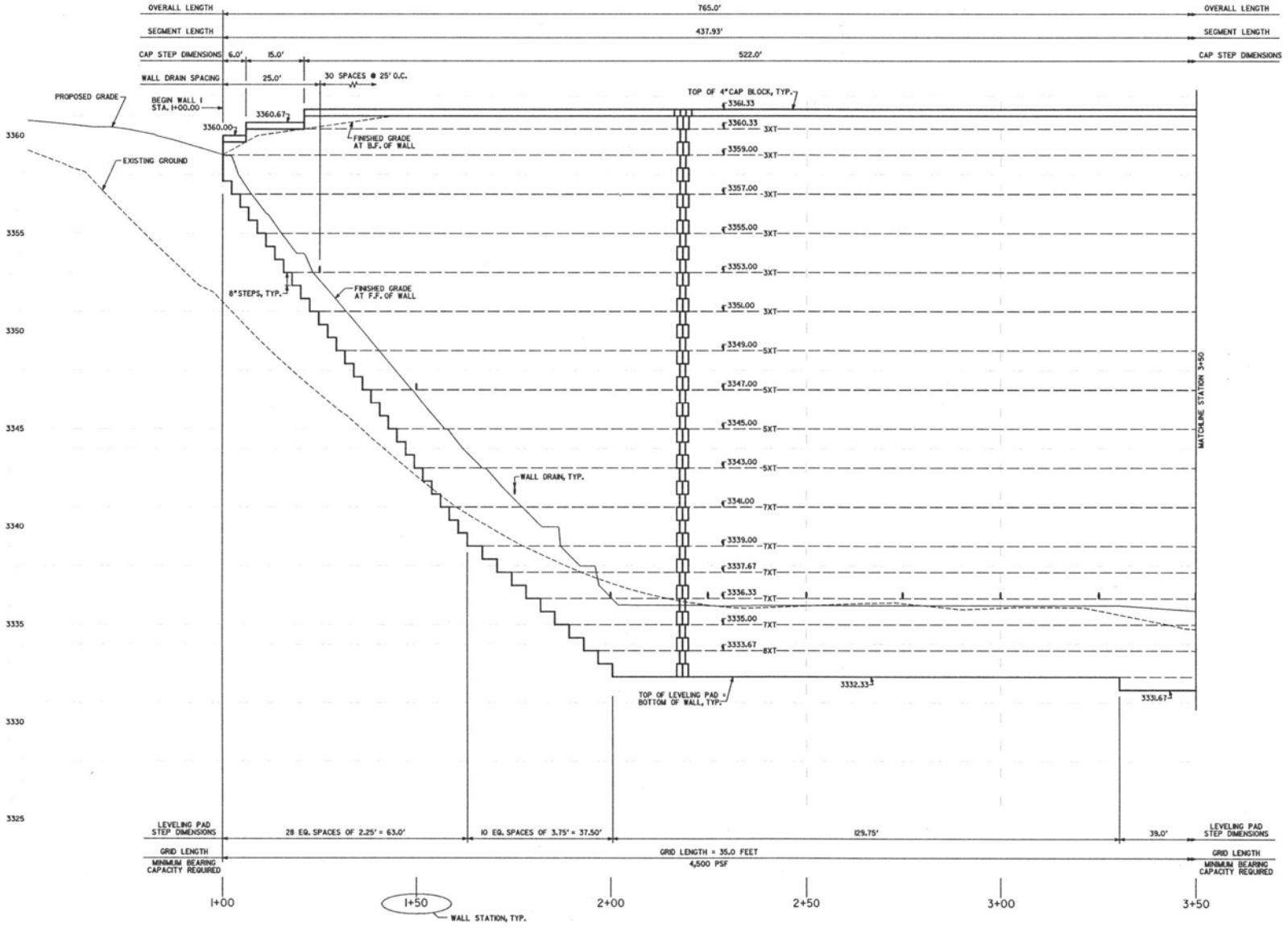
PROJECT TITLE: BLACK HILLS CENTER
WALMART STORE #3872-03
RAPID CITY, SOUTH DAKOTA
BY: THF STONERIDGE DEVELOPMENT
ST. LOUIS, MISSOURI

RETAINING WALL No. 2
PLAN AND ELEVATION

REVISIONS	BY
DRAWN BY:	M. LEWIS
DESIGNED BY:	M. LEWIS
DATE:	12-09-10
SCALE:	AS NOTED
JOB No.	08-140

SHEET NUMBER
RW-4
4 OF 7 SHEETS

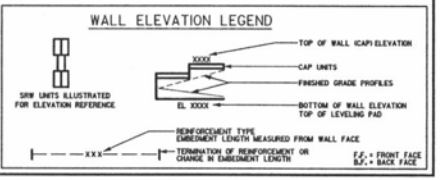
10PD071



NOT FOR CONSTRUCTION
FOR PERMITTING ONLY

GENERIC GEOSYNTHETIC REINFORCEMENT DESIGNATION	SRW UNIT WITH CORRESPONDING GEOGRID MANUFACTURER'S DESIGNATION
	KEYSTONE COMPAC II BLOCKS
---3XT---3XT---3XT---3XT---	MIRAFI MIRAGRID 3XT
---5XT---5XT---5XT---5XT---	MIRAFI MIRAGRID 5XT
---7XT---7XT---7XT---7XT---	MIRAFI MIRAGRID 7XT
---8XT---8XT---8XT---8XT---	MIRAFI MIRAGRID 8XT

WALL ELEVATION LEGEND



PART ELEVATION VIEW - WALL 2

SCALE: 1" = 10' HORIZONTAL; 1" = 2' VERTICAL
LOOKING AT FRONT FACE OF WALL

NOTES:
1. HORIZONTAL DIMENSIONS ARE MEASURED ALONG FRONT FACE OF WALL AT TOP OF WALL. CONTRACTOR SHALL ADJUST DIMENSIONS TO ACCOUNT FOR DRIFT DUE TO WALL BATTER.
2. SEE SHEET RW-1 FOR GENERAL NOTES.
3. WALL CONTRACTOR TO COORDINATE WALL CONSTRUCTION WITH UTILITY AND STORM PIPE INSTALLATIONS, WHEN APPLICABLE.

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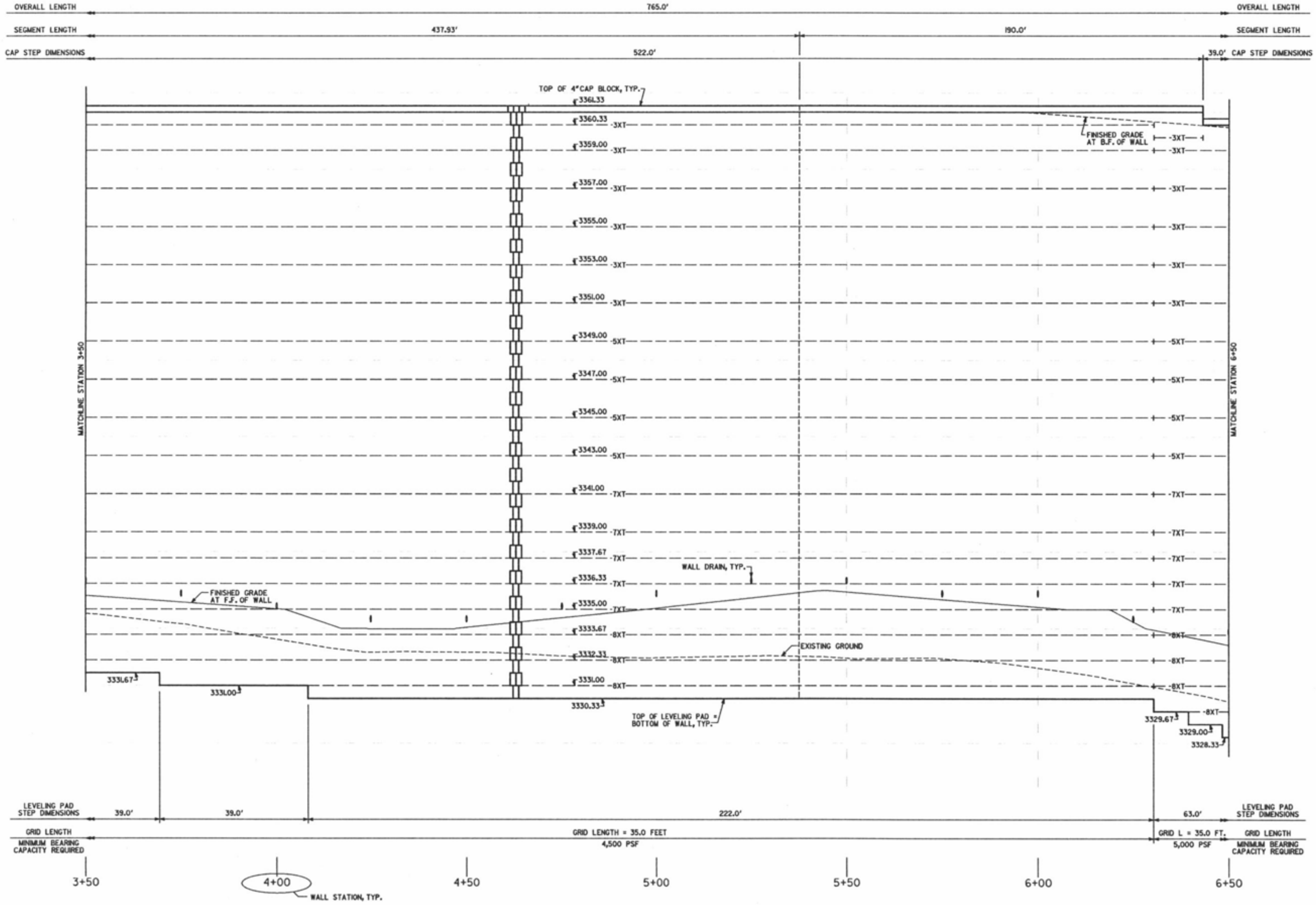
Consulting Engineers + Land Surveyors
6745 Superior Parkway, Suite 180, Duluth, Georgia 30097
Phone (770) 447-8996 Fax (770) 447-8978

PROJECT TITLE: BLACK HILLS CENTER
WALMART STORE #3872-03
RAPID CITY, SOUTH DAKOTA
BY: THF STONERIDGE DEVELOPMENT
ST. LOUIS, MISSOURI

RETAINING WALL No. 2
PLAN AND ELEVATION (1 OF 3)

REVISIONS	BY
DRAWN BY:	M. LEWIS
DESIGNED BY:	M. LEWIS
DATE:	12-09-10
SCALE:	AS NOTED
JOB No.	08-140
SHEET NUMBER	RW-5
5 OF 7 SHEETS	

10PD071



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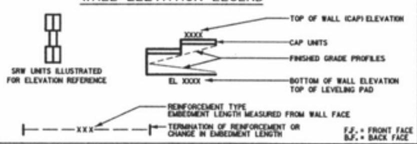
PART ELEVATION VIEW - WALL 2
SCALE: 1"= 10' HORIZONTAL; 1"= 2' VERTICAL
LOOKING AT FRONT FACE OF WALL

GENERIC GEOSYNTHETIC REINFORCEMENT DESIGNATION	SRW UNIT WITH CORRESPONDING GEOGRID MANUFACTURER'S DESIGNATION
	KEYSTONE COMPAC II BLOCKS
---3XT---3XT---3XT---3XT---	MIRAFI MIRAGRID 3XT
---5XT---5XT---5XT---5XT---	MIRAFI MIRAGRID 5XT
---7XT---7XT---7XT---7XT---	MIRAFI MIRAGRID 7XT
---8XT---8XT---8XT---8XT---	MIRAFI MIRAGRID 8XT

WALL ELEVATION LEGEND



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Phone: (770) 447-8999 Fax: (770) 447-9878
www.wolverton-assoc.com

REGISTERED PROFESSIONAL ENGINEER REG. NO. 7026 JERRY CARL WOLVERTON JR. SOUTH DAKOTA

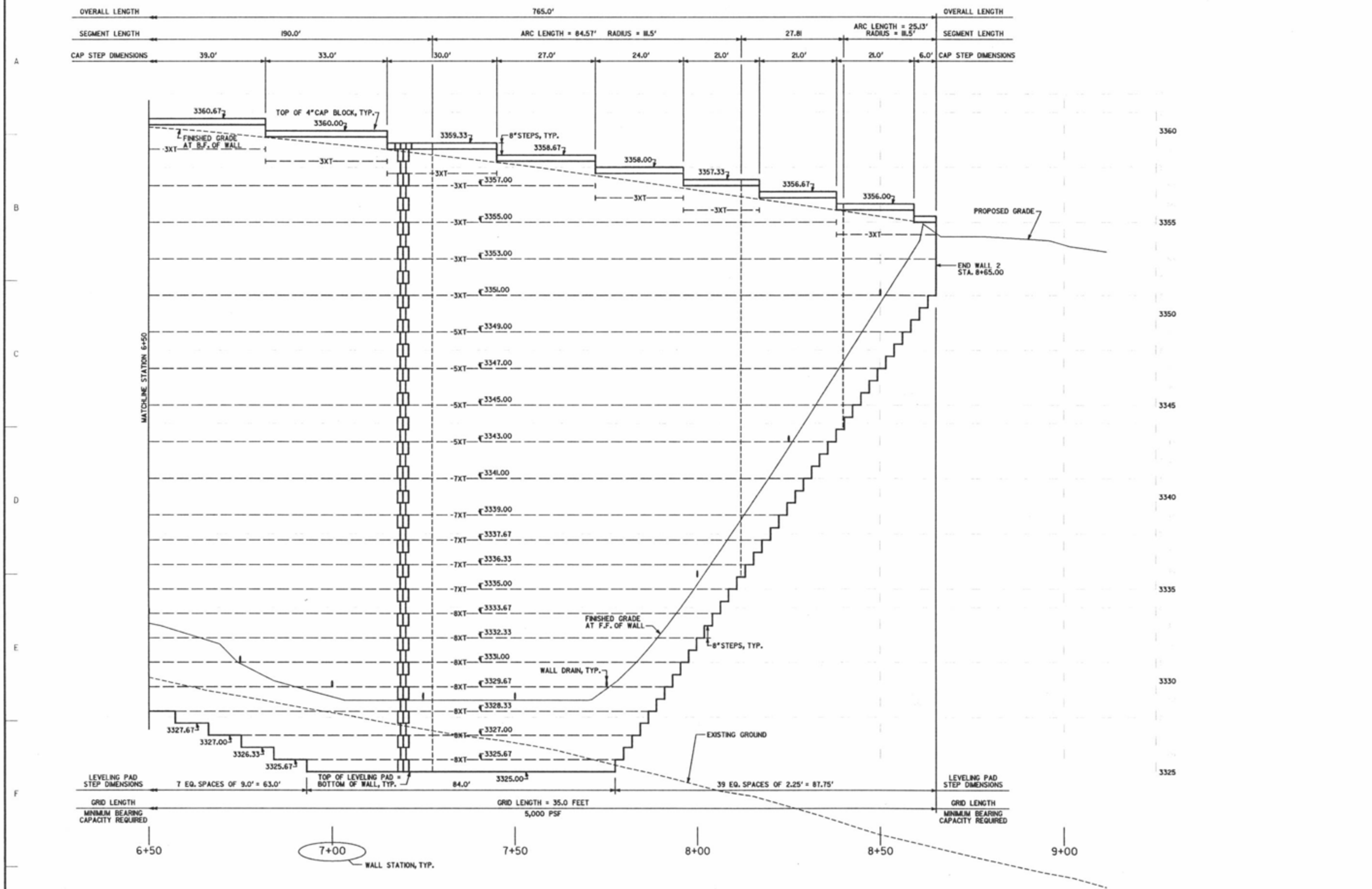
PROJECT TITLE: BLACK HILLS CENTER
WALMART STORE #3872-03
RAPID CITY, SOUTH DAKOTA
BY: THF STONERIDGE DEVELOPMENT
ST. LOUIS, MISSOURI

RETAINING WALL No. 2
PLAN AND ELEVATION (2 OF 3)

REVISIONS	BY
DRAWN BY:	W. LEWIS
DESIGNED BY:	W. LEWIS
DATE:	12-09-10
SCALE:	AS NOTED
JOB No.	08-140

SHEET NUMBER
RW-6
6 OF 7 SHEETS

10PD071



NOT FOR CONSTRUCTION
FOR PERMITTING ONLY

NOTES:
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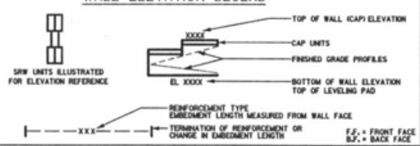
2. SEE SHEET RW-1 FOR GENERAL NOTES.
3. WALL CONTRACTOR TO COORDINATE WALL CONSTRUCTION WITH UTILITY AND STORM PIPE INSTALLATIONS, WHEN APPLICABLE.

PART ELEVATION VIEW - WALL 2

SCALE: 1" = 10' HORIZONTAL; 1" = 2' VERTICAL
LOOKING AT FRONT FACE OF WALL

GENERIC GEOSYNTHETIC REINFORCEMENT DESIGNATION	SRW UNIT WITH CORRESPONDING GEOGRID MANUFACTURER'S DESIGNATION
	KEYSTONE COMPAC II BLOCKS
---3XT---3XT---3XT---3XT---	MIRAFI MIRAGRID 3XT
---5XT---5XT---5XT---5XT---	MIRAFI MIRAGRID 5XT
---7XT---7XT---7XT---7XT---	MIRAFI MIRAGRID 7XT
---8XT---8XT---8XT---8XT---	MIRAFI MIRAGRID 8XT

WALL ELEVATION LEGEND



F.F. = FRONT FACE
B.F. = BACK FACE

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PROJECT TITLE: BLACK HILLS CENTER
WALMART STORE #3872-03
RAPID CITY, SOUTH DAKOTA

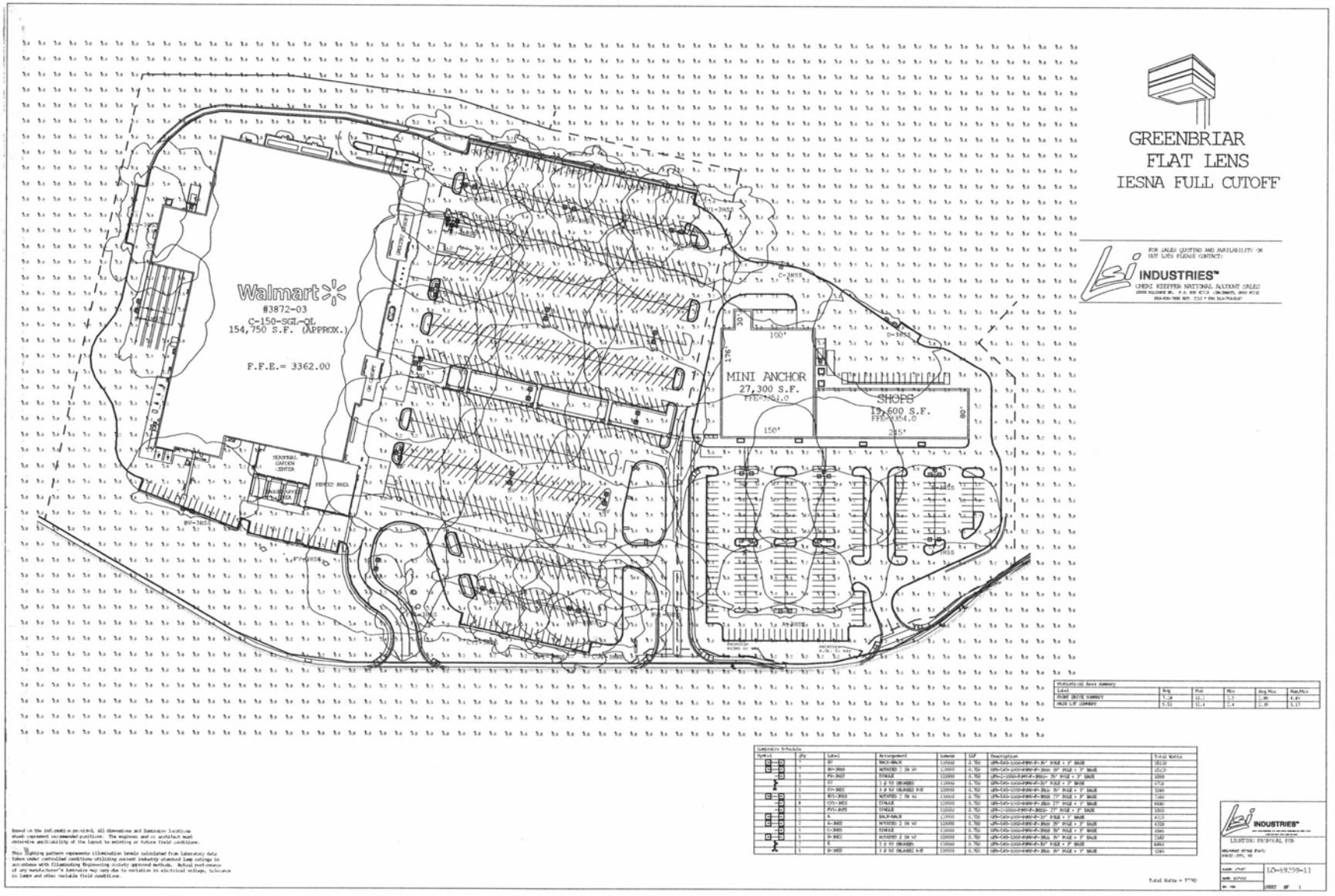
BY: THF STONERIDGE DEVELOPMENT
ST. LOUIS, MISSOURI

RETAINING WALL No. 2
PLAN AND ELEVATION (3 OF 3)

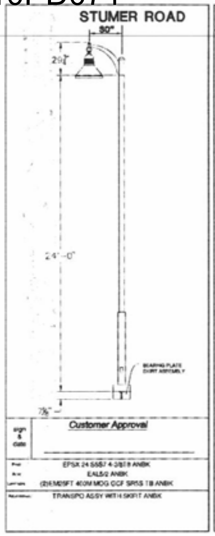
REVISIONS	BY
DRAWN BY:	M. LEWIS
DESIGNED BY:	M. LEWIS
DATE:	12-09-10
SCALE:	AS NOTED
JOB No.	08-140

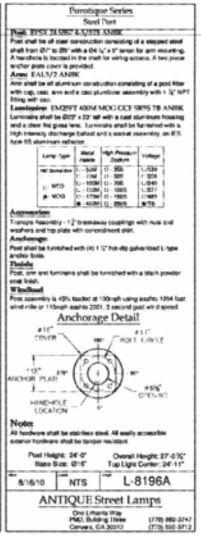
SHEET NUMBER
RW-7
7 OF 7 SHEETS

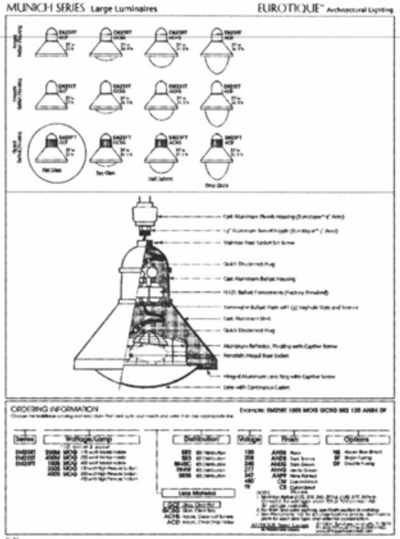
10PD071

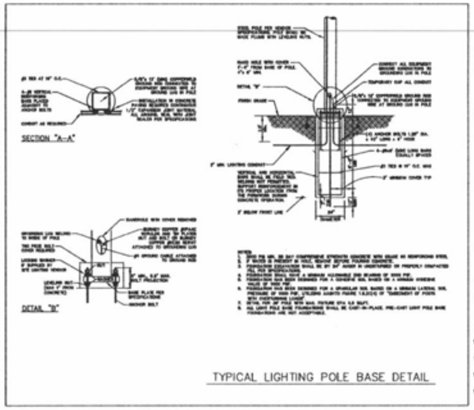

Walmart
#3872-03
C-150-SGL-QL
154,750 S.F. (APPROX.)
F.F.E.= 3362.00
MINI ANCHOR
27,300 S.F.
SHOPS
15,600 S.F.
100'
150'
80'
255'
GREENBRIAR
FLAT LENS
IESNA FULL CUTOFF
INDUSTRIES™
NOT FOR CONSTRUCTION
PROPOSED BLACK HILLS CENTER
Walmart ■ 3872-03
RAPID CITY, PENNINGTON COUNTY, S.D.
BY: THF, STONERIDGE DEVELOPMENT, LLC
ST. LOUIS, MO
REVISIONS
BY
DRAWN BY DMN/CRP
CHECKED BY KJW
DATE 12/09/2010
SCALE:
JOB NO. 08-140
SHEET NUMBER
SL-1
OF SHEETS

10PD071









NOTES

1. ALL WORK AND MATERIALS SHALL COMPLY WITH ALL CITY/COUNTY REGULATIONS AND CODES AND O.S.H.A. STANDARDS.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELOCATION'S, INCLUDING BUT NOT LIMITED TO, ALL UTILITIES, STORM DRAINAGE, SIGNS, TRAFFIC SIGNALS & POLES, ETC. AS REQUIRED. ALL WORK SHALL BE IN ACCORDANCE WITH GOVERNING AUTHORITIES SPECIFICATIONS AND SHALL BE APPROVED BY SUCH. ALL COST SHALL BE INCLUDED IN BASE BID.
3. ALL BOUNDARY AND TOPOGRAPHICAL INFORMATION SHOWN WAS TAKEN FROM A TOPOGRAPHIC SURVEY BY RENNER & ASSOCIATES, LLC. DATED 02/04/2010
4. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF ALL EXISTING UTILITIES (ABOVE OR BELOW GROUND) AS SHOWN ON THESE PLANS ARE APPROXIMATE AND WERE LOCATED BASED ON EITHER VISUAL OBSERVATIONS AT THE SITE, EXISTING SURVEYS AND/OR FROM UTILITY OWNERS. WOLVERTON AND ASSOCIATES INC. DOES NOT GUARANTEE THAT EXISTING UTILITY LOCATIONS SHOWN ARE EXACT. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXACT LOCATIONS OF EXISTING UTILITIES (ABOVE OR BELOW GROUND) BEFORE BEGINNING ANY CONSTRUCTION. THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANIES AND THE UTILITIES PROTECTION CENTER AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY OWNER AND/OR ENGINEER OF ANY UTILITY CONFLICTS WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
5. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.
6. CONTRACTOR SHALL NOTIFY THE UTILITY AUTHORITIES INSPECTORS 72 HOURS BEFORE CONNECTING TO ANY EXISTING LINE.
7. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 4'-0" COVER ON ALL WATERLINES.
8. LINES UNDERGROUND SHALL BE INSTALLED, INSPECTED AND APPROVED BEFORE BACKFILLING.
9. DRAWINGS DO NOT PURPORT TO SHOW ALL EXISTING UTILITIES.
10. EXISTING UTILITIES SHALL BE VERIFIED IN FIELD PRIOR TO INSTALLATION OF ANY NEW LINES.
11. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES FOR INSTALLATION REQUIREMENTS AND SPECIFICATIONS.
12. CONTRACTOR TO PROVIDE TRENCHING, CONDUIT, PULL WIRE AND BACKFILL FOR ELECTRIC LINES.
13. ALL CONSTRUCTION TO CONFORM TO APPLICABLE CITY/COUNTY SPECIFICATIONS AND IN ACCORDANCE WITH CITY/COUNTY ORDINANCES.

LOCATION MAP

NOT TO SCALE

THE SITE IS LOCATED IN THE S1/2 OF THE NE1/4, OR AKA IN THE SW1/4 OF THE NE1/4 AND IN THE SE1/4 OF THE NE1/4, SECTION 24, T1N, R7E, BHM, RAPID CITY, PENNINGTON COUNTY, SOUTH DAKOTA.

UTILITY PLAN LEGEND

UGE	ELETRICAL CONDUIT
UGT	TELEPHONE CONDUIT
8"SS	SANITARY SEWER PIPE
8"W	WATER MAIN PIPE
3"W	DOMESTIC WATER PIPING
GAS	GAS PIPE
TS	TAMPER SWITCH CONDUIT
	TAPPING SLEEVE & VALVE
	WATER VALVE
	FIRE HYDRANT
	THRUST BLOCK
	SANITARY SEWER MANHOLE
	POWER POLE
	GAS METER

Wolverton & Associates
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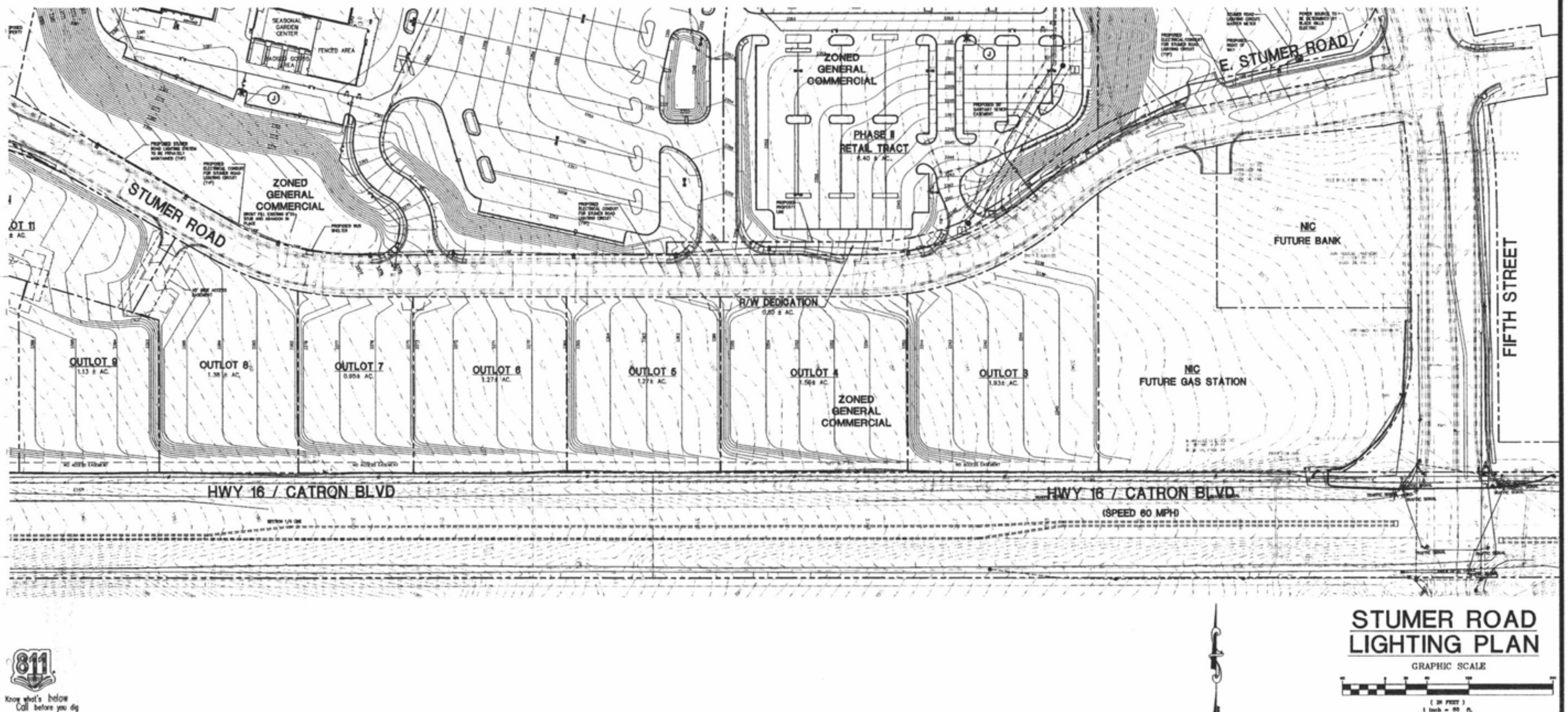

Know what's below. Call before you dig

STUMER ROAD LIGHTING PLAN

GRAPHIC SCALE

1 inch = 60 ft.

PROPOSED BLACK HILLS CENTER
Walmart # 3872-03
RAPID CITY, PENNINGTON COUNTY, S.D.
BY: THF, STONERIDGE DEVELOPMENT, LLC
ST. LOUIS, MO

REVISIONS	BY

DRAWN BY	DMN
CHECKED BY	KJW
DATE	08/18/2010
SCALE	1"= 60'
JOB No.	08-140
SHEET NUMBER	SR-L

10PD071

STATISTICS

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

LUMINAIRE SCHEDULE

Symbol	Label	Qty	Catalog Number	Description	Lamp	File	Lumens	LLF	Watts
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

NOTES

1. [illegible]

Plan View

Rapid City
Singles
August 18, 2010

SAINT LOUIS LIGHTING GROUP

Designer
Jennifer Wall
Date
Aug 18 2010
Scale

Drawing No.

1 of 1

NOT FOR CONSTRUCTION

Wolverton & Associates
Consulting Engineers • Land Surveyors

PROPOSED BLACK HILLS CENTER
Walmart ■ 3872-03
RAPID CITY, PENNINGTON COUNTY, S.D.
BY: THF, STONERIDGE DEVELOPMENT, LLC
ST. LOUIS, MO

REVISIONS	BY

DRAWN BY DMN/CRP
CHECKED BY KJW
DATE 12/09/2010
SCALE
JOB No. 08-140
SHEET NUMBER
1 OF 1