REQUEST FOR PROPOSAL

FOR

STORMWATER BMP INSPECTIONS AND ANNUAL REPORTS TO MSD
AT VARIOUS LOCATIONS

RFP NUMBER 24-30

PARKWAY SCHOOL DISTRICT
District Operations
363 North Woods Mill Road
Chesterfield, Missouri 630l7

August 4, 2023

TABLE OF CONTENTS

SECTION 1

REQUEST FOR PROPOSAL

REQUEST FOR PROPOSAL

A. INVITATION AND OWNER IDENTIFICATION

1. OWNER:

   a. Parkway School District
   b. 455 North Woods Mill Road
   c. Chesterfield, Missouri 63017

2. OWNER'S REPRESENTATIVE:

   a. Douglas Stephens
   b. Project Manager
   c. Parkway School District
   d. 363 North Woods Mill Road
   e. Chesterfield, Missouri 63017
   f. Telephone (314) 415-8217 Fax (314) 415-8269
   g. Email dstephen@parkwayschools.net

3. This is a formal request for proposal from your firm to provide inspection and reporting services by the respondent to the Parkway School District (Owner) for the inspection of storm water best management practices (BMP) installations throughout Parkway School District and the preparation and submission of annual reports as required by the Metropolitan St. Louis Sewer District (MSD).

4. The Owner will award one contract from this selection process for duration of three (3) years.

5. Your response is to be based on the scope of services described in this request for proposal.

6. All responses shall be returned to the Owner at the District Operations Building, Purchasing Dept., Purchasing Lead Karen Shannon Office, no later than 3:00 p.m., on Tuesday, August 29, 2023. Please provide one copy of the response to the request for proposal on a USB flash drive, and one copy of the Exhibit A – Fee Proposal sealed in an envelope.

B. FORMAT FOR RESPONSE

1. The following items must be included in your proposal in the order listed. Provide each lettered item below as a separate file titled as indicated by the underlined item name in Adobe PDF file format on a USB flash drive(s). Do not provide any more information than what is requested:

   a. Introduction: A brief introductory narrative or letter describing the Respondent company or companies in the case of a team or joint venture; the Respondent company's or companies' capacity for performing the work; and in the case of a team or joint venture indicate past working relationships between the companies

(Should not exceed two (2) printed pages in length).

b. Resumes: Resumes of key individuals proposed to perform the BMP inspections and generate the reports of the inspections to include the following:

1) Name
2) Title
3) Company (required only if Respondent is utilizing subconsultants)
4) Registration, if any, including states registered
5) Education including type of degree, year received, and institution name
6) Certifications (if any)
7) Years of experience inspecting stormwater BMP's

a. Expertise and Experience: Discuss briefly team expertise and experience in inspecting stormwater BMP's and preparing annual reports for submission to MSD. Include information pertaining to inspection of both engineered systems and biological systems (Should not exceed two (2) printed pages in length).

b. References: Provide three (3) references that may be contacted by the Owner for whom the Respondent and has provided similar inspection and reporting services to include the following:

1) Company Name
2) Company Address
3) Company Contact Person Name
4) Contact Telephone Number
5) Year or years that services were provided to Company (provide the actual years that service was provided, not the quantity of years)

c. Example Report Documents: Provide two (2) examples of inspection reports. One example shall be for an engineered system BMP and the other example shall be for a biological system BMP. Either example or both examples may contain both system types as long as both system types are represented in the example reports.

d. Fee Proposal: Enclosed in a separate envelope, provide only one completed copy of the Fee Proposal document, as provided in Exhibit A. Any additional information the Respondent desires to include to clarify their Fee Proposal shall be included in this envelope with the Fee Proposal. In addition, include the insurance coverage acknowledgement identified in paragraph C of this Section 1 of the request for proposal in this envelope.

2. Verbal telephone communications will be entertained. All questions and clarifications of this request shall be directed to the Owner's Representative.

B. REQUIRED SERVICES

1. Contact MSD and obtain copies of any maintenance agreements that MSD has on file for the Owner's BMPs. Review BMP maintenance agreements to become familiar with requirements of the agreements. Provide one copy of each maintenance agreement to the Owner.

2. The Owner's BMPs are as follows:

   a. Barretts Elementary - MSD Project Number P-0018204-02
      1) Bio-swale
   b. Ross Elementary - MSD Project Number P-0017141, P-0017141-01, & P-0017141-02
      1) Underground detention and outlet structure system
   c. Henry Elementary - MSD Project Number P-0028603-01
      1) Pervious pavement system
      2) Bio-swale
   d. Bellerive Elementary - MSD Project Number P-0017564-02
      1) Pervious pavement system
      2) Underground detention and outlet structure system
   e. Central Middle - MSD Project Number P-0019772-03 & 20MSD-00057
      1) Underground detention with vortex and filter system
      2) Surface detention basin downstream of detention and filter system
   f. Central High - MSD Project Number P-0017328-09, P-0017328-11 & 20MSD-00501
      1) Science Addition bio-swales with forebays
      2) Football field bio-swale with forebay
      3) Surface detention basin downstream of football field bio-swale
      4) Concession Stand Bioretention Basin
   g. West High - MSD Project Number P-0019460-01 & P-0017909-03
      1) Football field and softball field bio-swales
      2) Amended soil area adjacent to sidewalk by softball field
   h. North High - MSD Project Number P-0011600-09 & P-0011600-11
      1) Pervious pavement system
      2) Bio-swale adjacent to the south entrance drive
      3) Football field outlet structure (manhole #3 on plans)
   i. South High - MSD Project Number P-00112306-16
      1) Football field bio-swale with forebay
   j. Instructional Services Center (McKelvey Primary)-
      MSD Project Number P-0017681-03
      1) Bio-swales along Bennington Road property line
   k. Sorrento Springs Elementary - MSD Project Number 19MSD-00511
      1) Pervious pavement system
   l. South Middle - MSD Project Number – 18MSD-00571
      1) Pervious pavement system
      2) Bioretention

3. Inspect each BMP on a quarterly basis and prepare and deliver a report to the Owner identifying any issues with the BMPs requiring maintenance and repair.

4. Annually, inspect each BMP and prepare and deliver a report to MSD satisfying MSD requirements for reporting as provided in the BMP maintenance agreements and by MSD regulations. Provide a copy of the report to the Owner.

5. Prior to beginning the inspections, provide a schedule identifying when the quarterly inspections for each BMP will be performed and when each quarterly and annual report will be submitted to the Owner and MSD.

C. PROJECT INSURANCE REQUIREMENTS

1. All Respondents to the Request shall provide acknowledgement that they currently have insurance coverage or can obtain insurance coverage as follows:

    a. Worker Compensation Insurance (statutory limits as required by the State of Missouri)
    b. Automobile Liability Insurance ($1,000,000 per accident and statutory limits as required by the State of Missouri)
    c. Comprehensive General Liability Insurance ($1,000,000 per occurrence)
    d. Employer's Liability Insurance ($1,000,000 per each accident and per each employee)
    e. Liability Umbrella Insurance ($1,000,000)

2. The Respondent shall include in the sealed envelope containing the completed Exhibit A – Fee Proposal either a letter signed by an officer of the company stating that they have the required coverage or can obtain the required coverage or a copy of the insurance certificate showing the required coverage.

3. Failure to provide this acknowledgement will cause rejection of the Respondent.

D. SELECTION

1. Owner officials will evaluate and rate the proposals of the Respondents. In evaluating the proposals of each Respondent, the Owner will use the following criteria:

    a. The specialized experience and technical competence of the Respondent's assigned personnel with respect to the type of services required as identified in the Resumes response with a maximum of 20 points awarded;

    b. The specialized experience of the Respondent's team with respect to the type of services required as identified in the Expertise and Experience response with a maximum of 20 points awarded;

    c. The capacity and capability of the Respondent to perform the services in question as identified in the Introduction response with a maximum of 10 points awarded;

    d. The past record of performance of the Respondent with regard to quality of work and ability to meet schedules as identified by information provided by the references identified in the References response and in providing services to the Owner (if any) with a maximum of 10 points;

    e. Owner officials will evaluate the Example Report Documents with a maximum of 20 points awarded. The Example Report Documents will <u>not</u> be evaluated with regard to actual content. The Example Report Documents will be evaluated based upon the following:

        1) Logical organization of the report documents.
        2) Issues requiring maintenance or repair are communicated clearly.

f. The evaluations scores will be totaled prior to opening the Exhibit A – Fee Proposal and the total scores shall be recorded by the Owner.

g. The envelope containing the Exhibit A - Fee Proposal will be opened for each Respondent. The fee proposal will be scored by taking the ratio of the lowest total fee proposal from all the Respondent's divided by each Respondent's total fee proposal for the services times 20 points. The Respondent with the lowest total fee proposal will receive 20 points and all other Respondent's will receive points in proportion as described.

h. The points received from the fee proposal described in paragraph D.1.g will be added to the evaluation points described in paragraphs D.1.f to arrive at the total points for the request for proposal response from each Respondent.

i. The Respondent with the most points will be considered the successful Respondent. The maximum possible points that can be awarded is 100.

2. The successful Respondent will be recommended to the Board of Education for award of the contract at the September 27, 2023 Board of Education meeting.

3. A Purchase Order referencing and incorporating the requirements of this request for proposal will be presented to the successful Respondent giving notice to proceed.

4. A kick-off meeting will be scheduled with the successful Respondent within 2 weeks of the Board of Education meeting.

EXHIBIT A - FEE PROPOSAL

STORMWATER BMP INSPECTIONS AND ANNUAL REPORTS TO MSD AT VARIOUS LOCATIONS RFP NUMBER 24-30

Location	1st Year Fee	2nd Year Fee	3rd Year Fee
Barretts Elementary	$	$	$
Ross Elementary	$	$	$
Henry Elementary	$	$	$
Bellerive Elementary	$	$	$
Central Middle	$	$	$
Central High	$	$	$
West High	$	$	$
North High	$	$	$
South High	$	$	$
Instructional Services Center	$	$	$
Sorrento Springs Elementary	$	$	$
South Middle	$	$	$
Subtotal by Year	$	$	$
Total Fee Proposal	$		

The undersigned proposes the above fees for providing the services identified in the request for proposal. Furthermore, the undersigned has read and understands all of the terms and conditions stated in the request for proposal, and acknowledges receipt of Addenda number _____ through _____inclusive.

AUTHORIZED SIGNATURE_____

STREET ADDRESS _____ TELEPHONE NUMBER _____

CITY, STATE & ZIP _____

FAX NUMBER _____ E-MAIL ADDRESS _____

SECTION 2

BARRETTS ELEMENTARY

BMP ORIGINAL PROJECT INFORMATION

BARRETTS ELEMENTARY SCHOOL
BUILDING RENOVATIONS AND SITE IMPROVEMENTS
PARKWAY SCHOOL DISTRICT

1780 Carman Road
Manchester, Missouri 63021

Parkway School District Project No. 011601B

Project No: 14-006.14

Issue Date: 11.29.2016

PARKWAY SCHOOLS

GENERAL NOTES

1. CONTRACTOR SHALL VERIFY EXISTING FIELD CONDITIONS PRIOR TO THE START OF CONSTRUCTION AND SHALL REPORT ANY DISCREPANCIES TO THE ARCHITECT IMMEDIATELY.

2. CONTRACTOR SHALL CROSS-REFERENCE THE VARIOUS DISCIPLINES' PLANS HEREIN AND REVIEWED SHOP DRAWINGS PRIOR TO STARTING CONSTRUCTION PHASE OF CONSTRUCTION AND SHALL REPORT ANY DISCREPANCIES TO THE ARCHITECT IMMEDIATELY.

3. ONLY CONTRACT DOCUMENTS APPROVED FOR CONSTRUCTION AND REVIEWED SHOP DRAWINGS SHALL BE USED FOR CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR DISTRIBUTION OF SAID DOCUMENTS AND UPDATES TO THE FIELD FOR CONSTRUCTION.

4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL WORK WITH THESE PROJECT DOCUMENTS.

5. DIMENSIONS TO THE EXTERIOR OF THE BUILDING ARE TO THE EXTERIOR OF FOUNDATION/MASONRY UNLESS NOTED OTHERWISE.

6. DO NOT SCALE DRAWINGS.

7. THE WORD 'ALIGN' AS USED IN THESE DOCUMENTS SHALL SUPERSEDE DIMENSIONAL INFORMATION.

8. NO PRODUCTS CONTAINING ASBESTOS SHALL BE INSTALLED IN OR USED DURING THE CONSTRUCTION OF THIS PROJECT.

9. CODE COMPLIANCE – THE WORK SHALL BE GOVERNED BY ALL CURRENT APPLICABLE LOCAL, CITY, STATE AND NATIONAL CODES AND LAWS. THESE AUTHORITIES INCLUDE, BUT ARE NOT LIMITED TO THE IBC BUILDING CODE, NATIONAL ELECTRIC CODE, NATIONAL FIRE PROTECTION ASSOCIATION OR ANY OTHER AUTHORITY OR BODY HAVING JURISDICTION OVER WORK. THE SITE, PARKING LOT, AND BUILDING NEW WORK SHALL COMPLY WITH THE ADA (AMERICANS WITH DISABILITIES ACT) REGULATIONS. NOTIFY ARCHITECT OF ANY REQUIRED CHANGES TO COMPLY WITH ADA.

10. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS BEFORE BEGINNING WORK. CONTRACTOR SHALL PROTECT EXISTING UTILITIES, EXISTING EQUIPMENT AND MATERIALS FROM DAMAGE DURING CONSTRUCTION. ANY EXISTING UTILITIES, EQUIPMENT, MATERIALS AND SERVICES DAMAGED SHALL BE REPAIRED AT NO EXPENSE TO OWNER. CONTRACTOR SHALL TEMPORARILY MOVE OR TAKE EQUIPMENT OUT SERVICES AS NECESSARY TO COMPLETE WORK. SUCH SERVICES SHALL BE REPAIRED IN ACCORDANCE WITH THE SPECIFICATION.

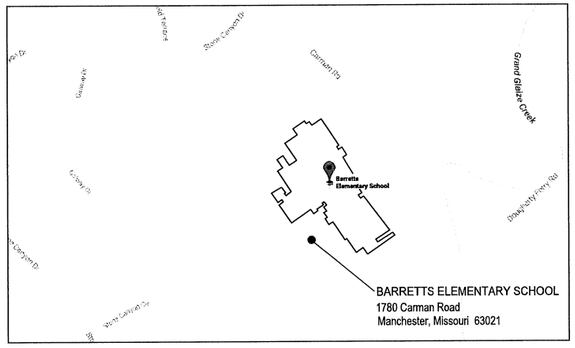
ARCHITECTURAL SYMBOLS

- 9 / FLOOR PLAN SCALE: — DRAWING TITLE
- 10 / A301 — EXTERIOR ELEVATION
- COL — COLUMN & GRID
- A — GLAZING TYPE
- 10 / A301 — SECTION DETAIL (PLAN OR SECTION)
- 12 / A506 — DETAIL (PLAN OR SECTION)
- 10'-6" — RCP SOFFIT HEIGHT
- P12 — PARTITION TYPE
- 3 / A401 / 1 — INTERIOR ELEVATIONS
- 1 — REVISION
- 10 / A301 — 10 / A301 — BUILDING SECTION (PLAN OR ELEVATION)
- RMNAME / RM #1 — ROOM NAME & NUMBER
- 9 — KEYED NOTE
- ELEVATION MARK

ARCHITECTURAL ABBREVIATIONS

ABOVE	ABV	EDGE OF SLAB	EOS	MASONRY OPENING	MO	SCHEDULE	SCHED
ABOVE FINISH FLOOR	AFF	ELECTRICAL	ELEC	MASONRY	MSRY	SECTION	SECT
ACOUSTICAL	ACT	WATER COOLER	EWC	MEDIUM DENSITY	MDF	SHEET	SHT
ALUMINUM	ALUM	ELEVATION	ELEV	FIBERBOARD		SIMILAR	SIM
AND	&	EQUAL	EQ	MECHANICAL	MECH	SOLID CORE	SC
ANGLE	∠	EQUIPMENT	EQUIP	METAL	MTL		
AT	@	EXISTING	EXIST			SPECIFICATION	SPEC
		EXPANSION JOINT	EJ	NOT IN CONTRACT	NIC	SQUARE	SQ
BLOCK	BLK			NOT TO SCALE	NTS	SQUARE FOOT	SF
BOARD	BD	FEET	FT			STAINLESS STEEL	SS
BOTTOM OF	BO	FIELD VERIFY	FV	OWNER FURNISHED	OFCI	STANDARD	STD
		FINISH GRADE	FG	CONTRACTOR INSTALLED		STEEL	STL
CEILING	CLG	FINISH FLOOR	FF	OWNER FURNISHED	OFOI	STRUCTURAL	STRUCT
CENTER LINE	℄	FIRE RETARDANT	FR	OWNER INSTALLED		SUSPENDED	SUSP
CERAMIC TILE	CT	FLOOR	FL	ON CENTER	OC		
CLEAR	CLR			OPENING	OPNG	TELEPHONE	TEL
CONCRETE	CONC	GENERAL CONTR.	GC			THICK	THK
CONC. MASONRY UNIT	CMU	GYPSUM BOARD	GYP BD	PAINTED	PTD	TOP OF	TO
CONTINUOUS	CONT			PLASTIC LAMINATE	PLAM	TONGUE & GROOVE	T&G
CONTRACTOR	CONTR	HARDWOOD	HDWD	PLYWOOD	PLYWD	TYPICAL	TYP
CONTRACTOR FURNISHED	CFCI	HIGH DENSITY	HDPB	PRESSURE TREATED	PT		
CONTRACTOR INSTALLED		PARTICLE BOARD				UNFINISHED	UNF
CONTROL JOINT	CJ	HEIGHT	HT	RADIUS	RAD	UNLESS NOTED OTHERWISE	UNO
CORNER GUARD	CG	HOUR	HR	REFERENCE	REF		
				REINFORCING	REINF	VERTICAL	VERT
DETAIL	DTL	INSULATION	INSUL	REFLECTED CEILING PLAN	RCP	VESTIBULE	VEST
DIAMETER	DIA			REQUIRED	REQ'D		
DOOR	DR	JOINT	JT	ROOF DRAIN	RD	WATERPROOF	WP
DOWNSPOUT	DS			ROOM	RM	WEIGHT	WT
DRAWING	DWG	LAVATORY	LAV	ROUGH OPENING	RO	WITH	W/
						WITH OUT	W/O
						WOOD	WD

VICINITY MAP



PROJECT DIRECTORY

CIVIL ENGINEER
EDSI Engineering Design Source, Inc.
16141 Swingley Ridge Road, Suite 300
Chesterfield, Missouri 63017
Phone : (636) 537-5585
Fax : (636) 537-0275

STRUCTURAL ENGINEER
KPFF Consulting Engineers
1630 Des Peres Road, Suite 100
St. Louis, MO 63131
Phone : (314) 835-0524
Fax : (314) 835-0749

LANDSCAPE ARCHITECT
PLANNING DESIGN STUDIO
727 North First Street, Suite 360
St. Louis, MO 63102
Phone : (314) 241-3600

OWNER
Parkway School District
Facilities Department
363 North Woods Mill Road
Chesterfield, Missouri 63107
Phone: (314) 415-8231

ARCHITECT
TR¡ ARCHITECTS
9812 Manchester Rd.
St. Louis, Missouri 63119
Phone: (314) 395-9750
Fax: (314) 395-9751

MECH, ELEC, PLUMB & FIRE PROTECTION
William Tao & Associates
7955 Manchester Road, Suite 125
St. Louis, MO 63143
Phone: (314) 884-7600
Fax: (314) 884-7601

DRAWING INDEX

I HEREBY SPECIFY, PURSUANT TO MISSOURI REGULATION 20 CSR 2030-4.015 (2)(D), 32.7.411 THAT THIS DRAWING SHEET IS AUTHENTICATED BY MY SEAL.

ARCHITECT — TR¡ ARCHITECTS
MECHANICAL ENGINEER — WILLIAM TAO & ASSOCIATES, INC.
PLUMBING / FP ENGINEER — WILLIAM TAO & ASSOCIATES, INC.
ELECTRICAL ENGINEER — WILLIAM TAO & ASSOCIATES, INC.
STRUCTURAL ENGINEER — KPFF CONSULTING ENGINEERS
CIVIL ENGINEER — EDSI - ENGINEERING DESIGN SOURCE
LANDSCAPE ARCHITECT — PDS - PLANNING DESIGN STUDIO

PARKWAY SCHOOLS

BARRETTS ELEMENTARY SCHOOL
BUILDING RENOVATIONS AND SITE IMPROVEMENTS
PARKWAY SCHOOL DISTRICT
Parkway School District Project No. 011601B
1780 Carman Road Manchester, Missouri 63021

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9812 Manchester Road, St. Louis, Missouri 63119 — T: 314-395-9750, F: 314-395-9751, www.trarchitects.com
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DATE: 11.29.16

REVISIONS

DWG. BY TAH

PSD PROJECT NO. 011601B

PROJECT NO. 14-006.14

SHEET NO.

A001

COVER SHEET

NOTE:

WHEN THE WORD "COUNTY" IS USED ON THESE PLANS IT SHALL MEAN ST. LOUIS COUNTY, MISSOURI

WHEN THE INITIALS "MSD" ARE USED ON THESE PLANS IT SHALL MEAN THE METROPOLITAN ST. LOUIS SEWER DISTRICT.

WHEN THE WORK "CITY" IS USED ON THESE PLANS IT SHALL MEAN THE CITY OF MANCHESTER, MISSOURI.

GENERAL NOTES:

1. UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THE VERIFICATION OF THE LOCATION OF UNDERGROUND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE LOCATED PRIOR TO ANY GRADING OR CONSTRUCTION OF IMPROVEMENTS.

2. TOPOGRAPHIC SURVEY PREPARED AND FIELD DATA COLLECTED BY EDSI, INC. IN JULY AND AUGUST, 2016.

3. STORMWATER SHALL BE DISCHARGED AT AN ADEQUATE NATURAL DISCHARGE POINT. SINKHOLES ARE NOT ADEQUATE NATURAL DISCHARGE POINTS.

4. FILLED PLACES INCLUDING TRENCH BACKFILLS, UNDER BUILDINGS, SANITARY SEWER LINES, AND/OR PAVED AREAS SHALL BE COMPACTED IN ACCORDANCE WITH THE SOILS REPORT FOR THIS PROJECT, UNLESS OTHERWISE SPECIFIED.

5. TRENCH BACKFILLS UNDER PAVED AREA SHALL BE GRANULAR BACKFILL, UNLESS OTHERWISE SPECIFIED.

6. CONSTRUCTION AND MATERIALS USED SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE METROPOLITAN ST. LOUIS SEWER DISTRICT, THE SAINT LOUIS COUNTY DEPARTMENT OF HIGHWAYS, AND THE PROJECT SPECIFICATIONS. THE MOST STRINGENT REQUIREMENTS SHALL APPLY.

7. LOCATION AND ELEVATION OF EXISTING INLETS, MANHOLES AND PIPES TO BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION. MANHOLES AND INLET TOPS BUILT WITHOUT ELEVATIONS FURNISHED BY THE ENGINEER WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

8. EXISTING ABOVE & BELOW GROUND UTILITIES TO BE PROTECTED AND USED IN PLACE, UNLESS OTHERWISE SPECIFIED.

9. A *.DWS FILE WILL BE MADE AVAILABLE TO THE CONTRACTOR TO WHOM THE WORK IS AWARDED FOR HIS USE IN SITE LAYOUT.

10. PARKING ON NON-SURFACED AREAS IS PROHIBITED IN ORDER TO ELIMINATE THE CONDITION WHEREBY MUD FROM CONSTRUCTION AND EMPLOYEE VEHICLES IS TRACKED ONTO THE PAVEMENT CAUSING HAZARDOUS ROADWAY AND DRIVING CONDITIONS. CONTRACTOR SHALL KEEP ROAD CLEAR OF MUD AND DEBRIS.

11. THE STREETS SURROUNDING THIS DEVELOPMENT AND ANY STREET USED FOR CONSTRUCTION ACCESS SHALL BE CLEANED THROUGHOUT THE DAY.

12. ALL TRASH AND DEBRIS ON-SITE, EITHER EXISTING OR FROM CONSTRUCTION, MUST BE REMOVED AND LEGALLY DISPOSED OF OFF-SITE.

13. NOTIFY THE COUNTY DEPARTMENT OF PUBLIC WORKS 48 HOURS PRIOR TO THE COMMENCEMENT OF GRADING AND/OR PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

14. EROSION AND SILTATION CONTROL DEVICES SHALL BE INSTALLED BY THE CONTRACTOR PRIOR TO ANY GRADING AND BE MAINTAINED THROUGHOUT THE PROJECT UNTIL ACCEPTANCE OF THE WORK BY THE OWNER AND/OR CONTROLLING REGULATORY AGENCY (AHJ) AND ADEQUATE VEGETATIVE GROWTH INSURES NO FURTHER EROSION OF THE SOIL. ADDITIONAL SILTATION CONTROL DEVICES MAY BE REQUIRED AS DIRECTED BY THE COUNTY.

15. WHEN CLEARING AND/OR GRADING OPERATIONS ARE COMPLETED OR SUSPENDED FOR MORE THAN 30 DAYS, ALL NECESSARY PRECAUTIONS SHALL BE TAKEN TO RETAIN SOIL MATERIALS ON SITE. PROTECTIVE MEASURES MAY BE REQUIRED BY THE DIRECTOR OF PUBLIC WORKS SUCH AS PERMANENT SEEDING, PERIODIC WETTING, MULCHING, OR OTHER SUITABLE MEANS.

16. SILTATION DEVICES SHALL BE INSPECTED PERIODICALLY FOR DAMAGE AND FOR THE AMOUNT OF SEDIMENT WHICH HAS ACCUMULATED. REMOVAL OF SEDIMENT WILL BE REQUIRED WHEN IT REACHES 1/2 THE HEIGHT OF THE SILTATION DEVICE.

17. SAWCUT EXISTING PAVEMENT FULL DEPTH TO ASSURE A SMOOTH MATCH BETWEEN THE EXISTING AND NEW PAVEMENT. REMOVE ENOUGH PAVEMENT TO ACCOMMODATE NEW WORK.

18. PROPOSED GRADES SHALL BE WITHIN 0.1 FEET, MORE OR LESS, OF THOSE SHOWN ON THE GRADING PLAN.

19. NO GRADING OR EXCAVATION SHALL OCCUR ON THE SITE UNTIL A PERMIT IS SECURED FROM THE AHJ AND THE SILTATION CONTROL DEVICES INDICATED ARE INSTALLED AND FUNCTIONING.

20. ALL AREAS DISTURBED BY CONSTRUCTION, EXCLUDING PAVED AREAS, SHALL RECEIVE FESCUE SOD WITHIN 30 DAYS FROM THE COMPLETION OF GRADING OPERATIONS AND SHALL BE MAINTAINED FOR A PERIOD OF TWO (2) WEEKS THEREAFTER. SOD PLACEMENT AND MAINTENANCE SHALL CONFORM IN ALL RESPECTS WITH THE PROJECT SPECIFICATIONS.

21. NOTIFY THE OWNER 48 HOURS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

22. NO EXCAVATION SHALL BE MADE SO CLOSE TO THE PROPERTY LINE AS TO ENDANGER ANY ADJOINING PROPERTY OF ANY PUBLIC OR PRIVATE STREET WITHOUT SUPPORTING AND PROTECTING SUCH PUBLIC OR PRIVATE STREET OR PROPERTY FROM SETTLING, CRACKING, OR OTHER DAMAGE.

23. ALL EXCAVATIONS, GRADING, OR FILLING SHALL HAVE A FINISHED GRADE NOT TO EXCEED A FOUR HORIZONTAL TO ONE VERTICAL (4:1) SLOPE UNLESS SPECIFICALLY APPROVED BY THE OWNER.

24. DIMENSIONS ARE TO FACE OF CURB, FACE OF WALL, OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

25. ALL FILLS PLACED UNDER PAVED AREAS, INCLUDING TRENCH BACKFILLS WITHIN AND OFF ROAD RIGHT-OF-WAY, SHALL BE COMPACTED TO 95% PER ASTM D698 FOR THE ENTIRE DEPTH OF THE FILL. COMPACTED GRANULAR BACKFILL IS REQUIRED IN ALL TRENCH EXCAVATION WITHIN THE STREET RIGHT-OF-WAY AND UNDER ALL PAVED AREAS. ALL TESTS SHALL BE PERFORMED UNDER THE DIRECTION OF AND VERIFIED BY A SOILS ENGINEER CONCURRENT WITH GRADING AND BACKFILLING OPERATIONS.

26 AT LEAST ONCE EVERY WEEK AND AFTER EVERY RAINFALL EVENT OF 0.25 INCHES OR MORE, EROSION AND SILTATION CONTROL DEVICES SHALL BE INSPECTED FOR DAMAGE AND AMOUNT OF SEDIMENTATION ACCUMULATED AND CORRECTIVE ACTIONS TAKEN. REPORTS OF THE INSPECTIONS AND CORRECTIVE ACTIONS SHALL BE PREPARED AND SUBMITTED TO THE CITY WITHIN 5 DAYS OF THE DATE OF THE INSPECTION.

27. TEMPORARY SILTATION CONTROL MEASURES (STRUCTURAL) SHALL BE MAINTAINED UNTIL VEGETATIVE COVER IS ESTABLISHED AT A SUFFICIENT DENSITY TO PROVIDE EROSION CONTROL ON THE SITE.

28. ALL FINISHED GRADES (AREAS NOT TO BE DISTURBED BY FUTURE IMPROVEMENT) IN EXCESS OF 20% SLOPES (5:1) SHALL BE MULCHED AND TACKED AT THE RATE OF 100 POUNDS PER 1,000 SQUARE FEET WHEN SEEDED AS SOON AS POSSIBLE AFTER FINAL PLACEMENT. THIS IS SEEDING AND MULCHING REFERS TO A TEMPORARY CONDITION ONLY. THE CONTRACTOR SHALL SOD ALL DISTURBED AREAS THAT ARE TO REMAIN UNPAVED AS A FINAL CONDITION OF HIS WORK.

29. DEBRIS AND FOUNDATION MATERIAL FROM ANY EXISTING IMPROVEMENT WHICH IS SCHEDULED TO BE DEMOLISHED FOR THIS DEVELOPMENT MUST BE PROPERLY DISPOSED OF OFF-SITE.

30. SHOULD SEDIMENT CONTAINMENT DEVICES FAIL AND SEDIMENT IS TRANSPORTED FROM THE SITE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING THE TRANSPORTED DEBRIS FROM THE AFFECTED PUBLIC AND/OR PRIVATE AREAS. THE DEBRIS MAY BE EITHER SPREAD OUT ON THE SCHOOL DISTRICT PROPERTY OR TRANSPORTED AND DISPOSED OF OFFSITE IN A LEGAL MANNER. THE AFFECTED AREA DAMAGED SHALL BE RESTORED TO THE CONDITIONS THAT EXISTED PRIOR TO THE CONTAINMENT DEVICE FAILURE.

GRADING PERMIT APPLICATION NOTES:

1. CONTRACTOR SHALL STORE ONSITE AN EXTRA 10% OF REQUIRED EROSION AND SILTATION CONTROL DEVICE QUANTITIES FOR EMERGENCIES.

2. SWPPP COMPLIANCE REPORTS TO BE SUBMITTED WEEKLY AND AFTER HEAVY RAINFALL TO BOTH THE COUNTY AND TO THE OWNER BY THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE THE NAME AND TELEPHONE NUMBER OF THE PERSON DESIGNATED TO PERFORM THE INSPECTIONS AND PROVIDE THE REPORTS.

POLLUTION PREVENTION PROCEDURES:

1. HANDLING AND DISPOSAL OF HAZARDOUS MATERIALS

DO: PREVENT SPILLS
USE PRODUCTS UP
FOLLOW LABEL DIRECTIONS FOR DISPOSAL
REMOVE LIDS FROM EMPTY BOTTLES AND CANS WHEN DISPOSING IN TRASH
RECYCLE WASTES WHENEVER POSSIBLE

DON'T: POUR WASTE INTO SEWERS OR WATERWAYS ON THE GROUND
POUR WASTE DOWN THE SINK, FLOOR DRAIN OR SEPTIC TANKS
BURY CHEMICALS OR CONTAINERS, OR DISPOSE OF THEM WITH CONSTRUCTION DEBRIS
BURN CHEMICALS OR CONTAINERS
MIX CHEMICALS TOGETHER

2. CONTAINERS SHALL BE PROVIDED FOR COLLECTION OF ALL WASTE MATERIAL INCLUDING CONSTRUCTION DEBRIS, TRASH, PETROLEUM PRODUCTS AND ANY HAZARDOUS MATERIALS TO BE USED ONSITE. ALL WASTE MATERIAL SHALL BE DISPOSED OF AT FACILITIES APPROVED FOR THAT MATERIAL.

3. NO WASTE MATERIALS SHALL BE BURIED ON-SITE.

4. MIXING, PUMPING, TRANSFERRING OR OTHERWISE HANDLING CONSTRUCTION CHEMICALS SUCH AS FERTILIZER, LIME, ASPHALT, CONCRETE DRYING COMPOUNDS, AND ALL OTHER POTENTIALLY HAZARDOUS MATERIALS SHALL BE PERFORMED IN AN AREA AWAY FROM ANY WATERCOURSE, DITCH OR STORM DRAIN.

5. EQUIPMENT FUELING AND MAINTENANCE, OIL CHANGING, ETC. SHALL BE PERFORMED ONLY IN AN AREA DESIGNATED FOR THAT PURPOSE. THE DESIGNATED AREA IS EQUIPPED FOR RECYCLING OIL AND CATCHING SPILLS.

6. CONCRETE WASH WATER SHALL NOT BE ALLOWED TO FLOW DIRECTLY TO STORM SEWERS, STREAMS, DITCHES, LAKES, ETC. WITHOUT BEING TREATED. A SUMP OR PIT SHALL BE CONSTRUCTED TO CONTAIN CONCRETE WASH WATER.

7. IF SUBSTANCES SUCH AS OIL, DIESEL FUEL, HYDRAULIC FLUID, ANTIFREEZE, ETC. ARE SPILLED, LEAKED, OR RELEASED ONTO SOIL, THE SOIL SHALL BE DUG UP AND DISPOSED OF AT A LICENSED SANITARY LANDFILL (NOT A CONSTRUCTION/DEMOLITION DEBRIS LANDFILL). SPILLS ON PAVEMENT SHALL BE ABSORBED WITH SAWDUST, KITTY LITTER OR PRODUCT DESIGNED FOR THAT PURPOSE AND DISPOSED OF AT A LICENSED SANITARY LANDFILL. HAZARDOUS OR INDUSTRIAL WASTES SUCH AS MOST SOLVENTS, GASOLINE, OIL-BASED PAINTS, AND CEMENT CURING COMPOUNDS REQUIRE SPECIAL HANDLING. THESE MATERIALS WILL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH MODNR REQUIREMENTS.

8. STATE LAW REQUIRES THE PARTY RESPONSIBLE FOR A PETROLEUM PRODUCT SPILL IN EXCESS OF 50 GALLONS TO REPORT THE SPILL TO MODNR (537-634-2436) AS SOON AS PRACTICAL AFTER DISCOVERY. FEDERAL LAW REQUIRES THE RESPONSIBLE PARTY TO REPORT ANY RELEASE OF OIL IF IT REACHES OR THREATENS A SEWER, LAKE, CREEK, STREAM, RIVER, GROUNDWATER, WETLAND, OR AREA, LIKE A ROAD DITCH, THE DRAINS INTO ONE OF THE ABOVE.

9. SUFFICIENT TEMPORARY TOILET FACILITIES TO SERVE THE NUMBER OF WORKERS ON THE SITE SHALL BE PROVIDED. THE FACILITIES SHALL BE SERVICED FREQUENTLY TO MAINTAIN A SANITARY CONDITION.

MSD STANDARD CONSTRUCTION:

ALL STORM AND SANITARY SEWER STRUCTURES AND APPURTENANCES TO BE DEDICATED TO MSD, OR TO BE PRIVATE UNDER MSD INSPECTION, SHALL CONFORM TO THE METROPOLITAN ST. LOUIS SEWER DISTRICT, STANDARD CONSTRUCTION SPECIFICATIONS FOR SEWERS AND DRAINAGE FACILITIES, 2009. THAT WILL INCLUDE STANDARD DETAILS SHOWN THEREIN, AND SHALL INCLUDE ALL SUBSEQUENT CHANGES MADE THERETO.

SOME RECENT CHANGES CONCERN PIPE FIELD TESTING AND PERFORMANCE, AND INCLUDE THE FOLLOWING:

PART 4 - PIPE SEWER CONSTRUCTION

SECTION B, PIPE FIELD TESTS, PARAGRAPH 2, REACH INTEGRITY TESTING - DELETE THE FIRST SENTENCE AND THE FOLLOWING REPLACEMENT APPLIES:

ALL SANITARY AND COMBINED SEWERS SHALL SUSTAIN A MAXIMUM LEAKAGE LIMIT OF 100 GALLONS/INCH OF PIPE DIAMETER/MILE OF LINE/DAY, AS REQUIRED BY THE MISSOURI DEPARTMENT OF NATURAL RESOURCES SPECIFICATIONS.

SECTION B, PIPE FIELD TESTS, PARAGRAPH 2, REACH INTEGRITY TESTING, SUBPARAGRAPH C. INFILTRATION/EXFILTRATION TESTING - DELETE THE SIXTH SENTENCE, CONCERNING LEAKAGE LIMITS, AND THE FOLLOWING REPLACEMENT APPLIES:

THE MEASUREMENT OF LEAKAGE SHALL NOT EXCEED 100 GALLONS/INCH OF PIPE DIAMETER/MILE OF LINE/DAY, AS REQUIRED BY THE MISSOURI DEPARTMENT OF NATURAL RESOUCES SPECIFICATIONS.

SECTION B, PIPE FIELD TESTS, PARAGRAPH 4, MANHOLE TESTING, SUBPARAGRAPH A, VACUUM TESTING - AFTER THE FIRST SENTENCE, THE FOLLOWING ADDITION APPLIES:

THE VACUUM TEST MUST BE PERFORMED PRIOR TO BACKFILLING AROUND THE MANHOLE UNLESS THE CONTRACTOR PROVIDES DOCUMENTATION FROM THE PRECAST MANHOLE MANUFACTURER STATING THAT THE MANHOLE MAY BE VACUUM TESTED AFTER BACKFILLING HAS TAKEN PLACE. THE CONTRACTOR MUST SUBMIT THIS DOCUMENTATION PRIOR TO BACKFILLING AROUND ANY MANHOLE.

SECTION B, PIPE FIELD TESTS, PARAGRAPH 4, MANHOLE TESTING, SUBPARAGRAPH B, EXFILTRATION TESTING - DELETE THE SECOND SENTENCE, CONCERNING LEAKAGE LIMITS, AND THE FOLLOWING ADDITION APPLIES:

FOR EXFILTRATION TESTING, THE ALLOWABLE LEAKAGE LIMIT IS 100 GALLONS/INCH OF PIPE DIAMETER/MILE OF LINE/DAY WHEN THE AVERAGE HEAD ON THE TEST SECTION IS THREE FEET (3') OF LESS

LEGEND EXISTING

- SANITARY SEWER
- STORM SEWER
- WATER MAIN (W)
- ELECTRIC (E)
- COMMUNICATION (T)
- FIBER OPTIC (FO)
- GAS (G)
- OVERHEAD ELECTRIC (OHE)
- STORM MANHOLE
- STORM INLET
- SANITARY MANHOLE (VENT)
- CLEANOUT
- ELECTRIC MANHOLE (EMH)
- ELECTRIC BREAKER OUTLET BOX (ELEC OUTLET BOX)
- ELEC METER (EM)
- GAS VALVE (GV)
- PHONE CABLE BOX (TELE J.B.)
- ELECTRIC TRANSFORMER BOX (ELEC TRANSFORMER BOX)
- POWER POLE (PP)
- LIGHT STANDARD (LS)
- GAS METER (GM)
- GAS VALVE (GV)
- SMALL DRAIN
- WATER MANHOLE (WMH)
- WATER METER (WM)
- WATER VALVE (WV)
- FIRE HYDRANT (FH)
- SPRINKLER (SPRINKLER)
- TELEPHONE MANHOLE (TMH)
- PULL BOX (PB)
- TRAFFIC SIGNAL CONTROL BOX (TFC CONTROLLER)
- BUSH
- STUMP (STUMP)
- TREE
- BOLLARD
- SIGN
- EDGE OF ASPH PAVEMENT
- EDGE OF CONC PAVEMENT
- FLOW DIRECTION OF SEWER LINE

LEGEND NEW WORK

- CONTOUR (ELEV)
- SPOT ELEVATION (ELEV)
- STORM SEWER
- SANITARY SEWER
- MANHOLE
- CURB INLET
- GRATE INLET
- WATER LINE (W)
- FIRE HYDRANT
- GAS SERVICE (G)
- ELECTRIC SERVICE (E)
- TELEPHONE SERVICE (T)
- CONCRETE PAVEMENT
- ASPHALT PAVEMENT
- TO BE REMOVED T.B.R.
- USE IN PLACE U.I.P.
- ADJUST TO GRADE A.T.G.
- TO BE REMOVED & REPLACED T.B.R.&R.
- TO BE PROTECTED T.B.P.
- TO BE ABANDONED T.B.A.
- TOP OF PAVEMENT TP
- TOP OF SIDEWALK TS
- TOP OF WALL TW
- BOTTOM OF WALL BW
- REVOVE ALL SURFACE IMPROVEMENTS
- SILTATION CONTROL
- SAWCUT

NOTE: Underground facilities, structures, and utilities have been plotted from best available records, therefore the relationship between proposed work and existing facilities, structures, and utilities must be considered approximate, and it is the contractors responsibility to determine their exact location and the existence of any not shown.

Stanley F. Visnovske
E-18136
Professional Engineer

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LEGEND AND GENERAL NOTES

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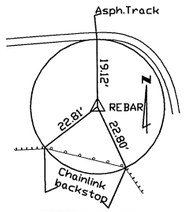
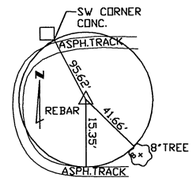
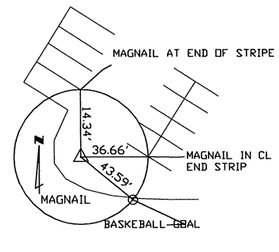


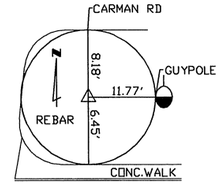
REFERENCE TIE
CONTROL POINT #1
N 998380.429
E 828059.774
ELEV 462.54
REBAR WITH ESDI CAP IN GRASS NEAR EASTERLY END OF TRACK 18' SOUTH OF TRACK 30' NORTHWEST OF WEST END OF NORTH SOCCER GOAL 20' EAST OF BACKSTOP IN LINE WITH HOMEPLATE.



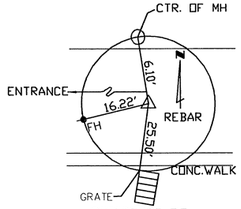
REFERENCE TIE
CONTROL POINT #2
N 998613.720
E 827913.451
ELEV 470.14
REBAR WITH EDSI CAP IN GRASS NEAR WESTERLY END OF TRACK 15' NORTH EAST OF TRACK 95' SOUTH OF SOUTH EAST CORNER CONC. WALK FROM NORTH WEST PARKING LOT TO TRACK.



REFERENCE TIE
CONTROL POINT #3
N 998778.930
E 827924.528
ELEV 471.76
MAGNAIL IN NORTH WEST CORNER OF NORTH WEST PARKING LOT 3.5' EAST OF WEST END OF ASPH. 45' NORTH OF BASKETBALL GOAL 35' NORTH WEST OF CENTER PARKING STRIPE OF DOUBLE SPACES IN MIDDLE OF PARKING LOT.



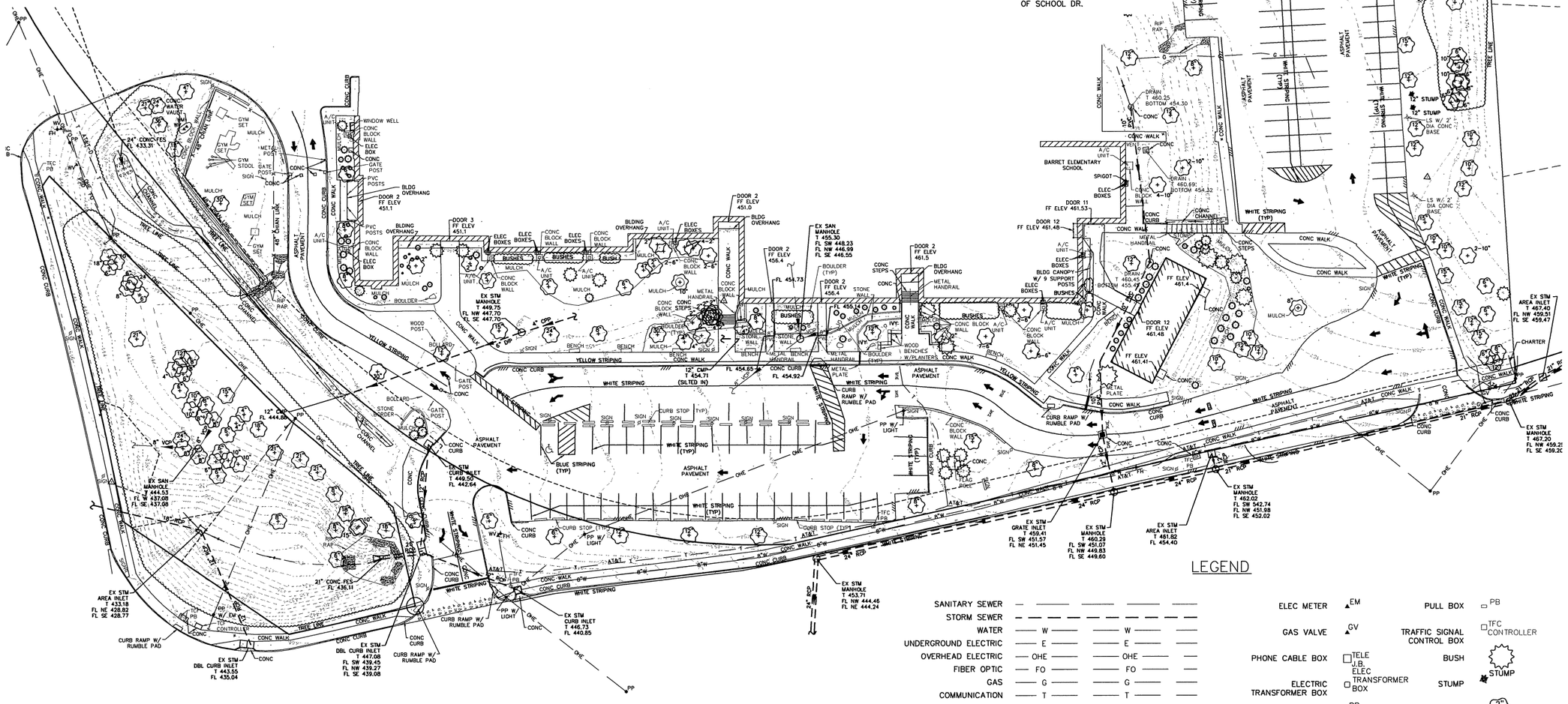
REFERENCE TIE
CONTROL POINT #4
N 998937.453
E 828148.897
ELEV 465.77
REBAR EDSI CAP IN GRASS BETWEEN CONC. WALK & WESTERLY E.O.P. CARMAN RD 45' SOUTH EAST OF CL CONC. ENTRANCE TO NORTH WEST PARKING LOT 6.5' NORTH EAST CONC. WALK 9' SOUTH WEST OF E.O.P. 11' NORTH WEST P.POLE.



REFERENCE TIE
CONTROL POINT #5
N 998834.014
E 828262.778
ELEV 460.14
REBAR WITH EDSI CAP IN GRASS BETWEEN CONC. WALK & WESTERLY E.O.P. CARMAN RD 195' SOUTH EAST OF CL CONC. DRIVE TO NORTH WEST PARKING LOT 5.5' NORTH EAST OF CONC. WALK 4' SOUTH WEST OF E.O.P. 15' EAST OF FH. & IN-LINE WITH MANHOLE IN CARMAN & AREA INLET IN CL OF SCHOOL DR.

THE UNDERGROUND UTILITIES SHOWN HEREON HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND RECORD DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, WHETHER IN SERVICE OR ABANDONED. THE UTILITIES SHOWN WITHIN THE SCHOOL PROPERTY ARE CONSIDERED PRIVATE AND ARE SHOWN FROM AVAILABLE RECORD DOCUMENTS PROVIDED BY THE PARKWAY SCHOOL DISTRICT. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING MISSOURI ONE CALL AND PARKWAY SCHOOL DISTRICT TO VERIFY THE LOCATION OF UNDERGROUND FACILITIES PRIOR TO CONSTRUCTION.

SCALE: 1"=30'
0 30' 60'



LEGEND

SANITARY SEWER		ELEC METER	EM
STORM SEWER		GAS VALVE	GV
WATER	W	PHONE CABLE BOX	TELE J.B. ELEC
UNDERGROUND ELECTRIC	E	ELECTRIC TRANSFORMER BOX	TRANSFORMER BOX
OVERHEAD ELECTRIC	OHE	POWER POLE	PP
FIBER OPTIC	FO	LIGHT STANDARD	LS
GAS	G	GAS METER	GM
COMMUNICATION	T	GAS VALVE	GV
STORM MANHOLE		SMALL DRAIN	
STORM INLET		FLOW DIRECTION OF SEWER LINE	
SANITARY MANHOLE		PULL BOX	PB
CLEANOUT	VENT	TRAFFIC SIGNAL CONTROL BOX	TFC CONTROLLER
ELECTRIC MANHOLE	EMH	BUSH	
ELECTRIC BREAKER OUTLET BOX	ELEC OUTLET BOX	STUMP	STUMP
WATER MANHOLE	WMH	TREE	
WATER METER	WM	BOLLARD	BOLLARD
WATER VALVE	WV	SIGN	
FIRE HYDRANT	FH	EDGE OF ASPH PAVEMENT	
SPRINKLER	SPRINKLER	EDGE OF CONC PAVEMENT	
TELEPHONE MANHOLE	TMH		

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SURVEY

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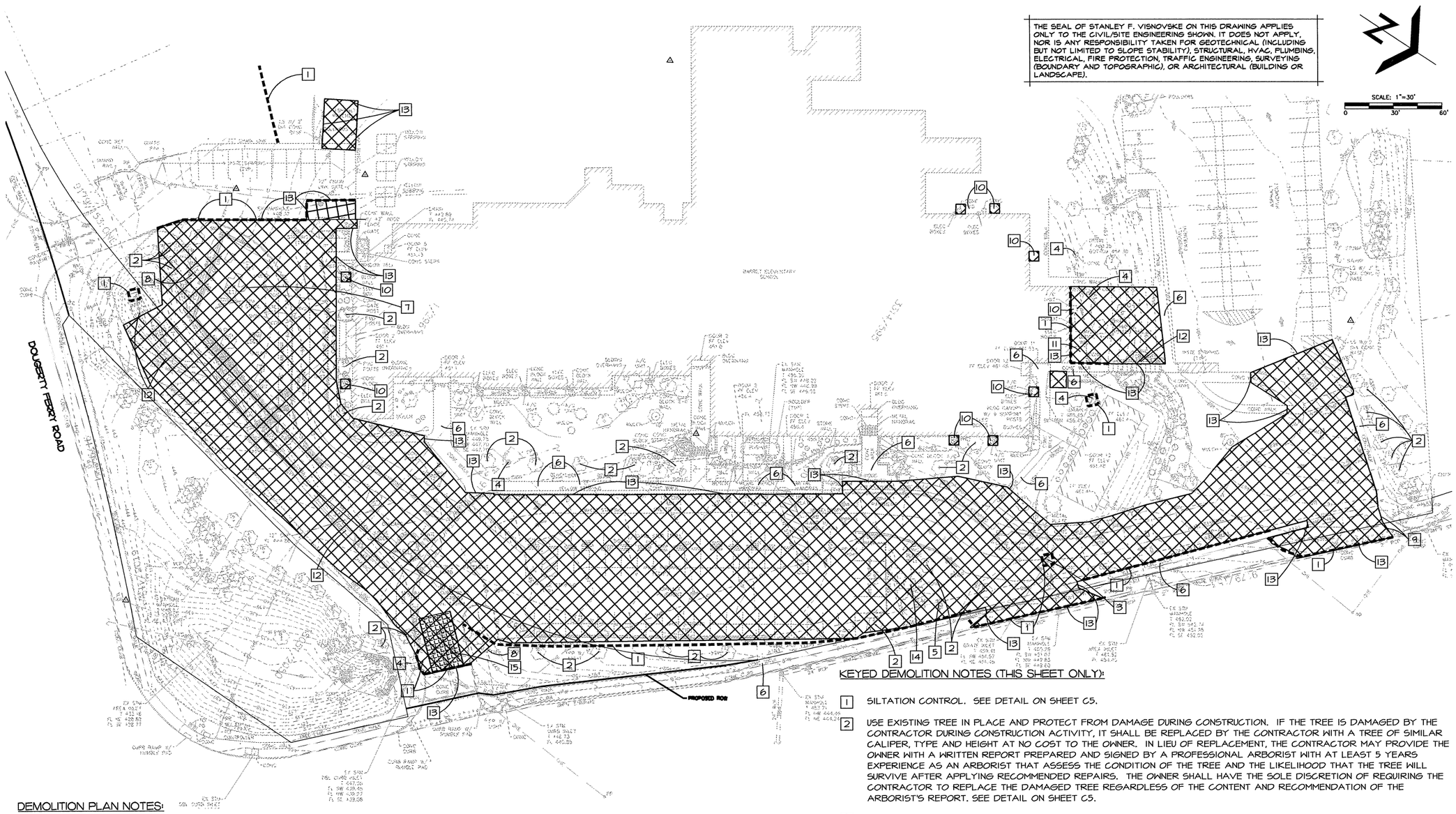

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SCALE: 1"=30'
0 30' 60'

DEMOLITION PLAN NOTES:

1. WHERE NATURAL VEGETATION IS REMOVED DURING GRADING, VEGETATION SHALL BE RE-ESTABLISHED IN SUCH A DENSITY AS TO PREVENT EROSION.
2. WHEN CLEARING AND/OR GRADING OPERATIONS ARE COMPLETED OR SUSPENDED FOR MORE THAN 5 DAYS IN ANY AREA, THE DISTURBED AREA SHALL BE SEEDED OR OTHERWISE STABILIZED TO SIGNIFICATNLY REDUCE THE ERODIBILITY OF THE SOIL. PROTECTIVE MEASURES MAY INCLUDE A COMBINATION OF SEEDING, SODDING, MULCHING OR OTHER SUITABLE MEANS TO PROTECT THE GROUND SURFACE FROM EROSION.
3. IF CUT AND FILL OPERATIONS OCCUR DURING A SEASON NOT FAVORABLE FOR IMMEDIATE ESTABLISHMENT OF PERMANENT GROUND COVER, A FAST GERMINATING ANNUAL SUCH AS RYE GRASSES OR SUDAN GRASSES SHALL BE UTILIZED TO RETARD EROSION.
4. ALL TRASH AND DEBRIS ON-SITE, EITHER EXISTING OR FROM CONSTRUCTION, MUST BE REMOVED AND PROPERLY DISPOSED OF OFF-SITE.
5. EROSION AND SILTATION CONTROL SHALL BE INSTALLED PRIOR TO ANY GRADING AND BE MAINTAINED THROUGHOUT THE PROJECT UNTIL ACCEPTANCE OF THE WORK BY THE OWNER AND /OR CONTROLLING REGULATORY AGENCY AND ADEQUATE VEGETATIVE GROWTH INSURES NO FURTHER EROSION OF THE SOIL.
6. STORM WATER PIPES, OUTLETS AND CHANNELS SHALL BE PROTECTED BY SILT BARRIERS AND KEPT FREE OF WASTE AND SILT AT ALL TIMES PRIOR TO FINAL SURFACE STABILIZATION AND/OR PAVING.
7. SILTATION CONTROL DEVICES SHALL BE INSPECTED PERIODICALLY FOR DAMAGE AND FOR THE AMOUNT OF SEDIMENT WHICH HAS ACCUMULATED. REMOVAL OF SEDIMENT WILL BE REQUIRED WHEN IT REACHES 1/2 THE HEIGHT OF THE SILTATION CONTROL DEVICE.
8. ADDITIONAL SILTATION CONTROL MAY BE REQUIRED AS DEEMED NECESSARY BY THE CITY.
9. THE CONTRACTOR SHALL REMOVE ALL SURFACE IMPROVEMENTS INCLUDING BUT NOT LIMITED TO PAVEMENT, CURBS, TREES, SIGNS, AND SHRUBS WITHIN THE AREA NOTED BY THE LEGEND SYMBOL ▨ ON THIS SHEET. THERE ARE EXCEPTIONS. EXCEPTIONS ARE NOTED BY OTHER NOTES OR BY ABBRREVIATIONS NOTED ON THIS SHEET. CURBS ARE A PROMINENT EXCEPTION AS DESCRIBED IN THE KEYED NOTES.

KEYED DEMOLITION NOTES (THIS SHEET ONLY):

1. SILTATION CONTROL. SEE DETAIL ON SHEET C5.
2. USE EXISTING TREE IN PLACE AND PROTECT FROM DAMAGE DURING CONSTRUCTION. IF THE TREE IS DAMAGED BY THE CONTRACTOR DURING CONSTRUCTION ACTIVITY, IT SHALL BE REPLACED BY THE CONTRACTOR WITH A TREE OF SIMILAR CALIPER, TYPE AND HEIGHT AT NO COST TO THE OWNER. IN LIEU OF REPLACEMENT, THE CONTRACTOR MAY PROVIDE THE OWNER WITH A WRITTEN REPORT PREPARED AND SIGNED BY A PROFESSIONAL ARBORIST WITH AT LEAST 5 YEARS EXPERIENCE AS AN ARBORIST THAT ASSESS THE CONDITION OF THE TREE AND THE LIKELIHOOD THAT THE TREE WILL SURVIVE AFTER APPLYING RECOMMENDED REPAIRS. THE OWNER SHALL HAVE THE SOLE DISCRETION OF REQUIRING THE CONTRACTOR TO REPLACE THE DAMAGED TREE REGARDLESS OF THE CONTENT AND RECOMMENDATION OF THE ARBORIST'S REPORT. SEE DETAIL ON SHEET C5.
3. CONVERT EXISTING INLET TO MANHOLE
4. USE EXISTING STORM STRUCTURE IN PLACE. ADJUST TO GRADE AS NECESSARY.
5. USE SIGN IN PLACE.
6. USE EXITING SIDEWALK IN PLACE. IF SIDEWALK IS DAMAGED BY THE CONTRACTOR DURING CONSTRUCTION ACTIVITY, IT SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE OWNER.
7. CONTRACTOR TO DEMOLISH EXISTING PLAYGROUND POSTS. SEE SITE PLAN, SHEET C2 FOR NEW PLAYGROUND LOCATION. EXISTING PLAYGROUND EQUIPMENT, INCLUDING NEW POSTS, WILL BE REMOVED AND REINSTALLED BY OWNER.
8. USE EXISTING WATER METER OR FIRE HYDRANT IN PLACE AND PROTECT FROM DAMAGE DURING CONSTRUCTION.
9. SAWCUT PAVEMENT AT EXISTING JOINT. USE EXISTING RAMP IN PLACE.
10. REMOVE CONCRETE UTILITY PAD, SEE MEP PLANS FOR CONDENSER REMOVAL.
11. REMOVE BIKE RACK PAD. OWNER TO REMOVE & REPLACE BIKE RACK. CONTRACTOR TO INSTALL NEW PAD, SEE SHEET C2.
12. DEMOLISH CONCRETE CHANNEL.
13. SAWCUT ASPHALT AND CONCRETE PAVEMENTS. SAWCUT CONCRETE PAVEMENT AND SIDEWALK AT NEAREST JOINT.
14. USE FLAGPOLE IN PLACE.
15. WASH DOWN AREA. SEE DETAIL ON SHEET C7.

MSD P-XXXXXXXX MSD BASE MAP XXX

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BUILDING RENOVATIONS AND SITE IMPROVEMENTS
PARKWAY SCHOOL DISTRICT
Parkway School District Project No. 011601B

1780 Carman Road Manchester, Missouri 63021

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Licensed Professional Engineer
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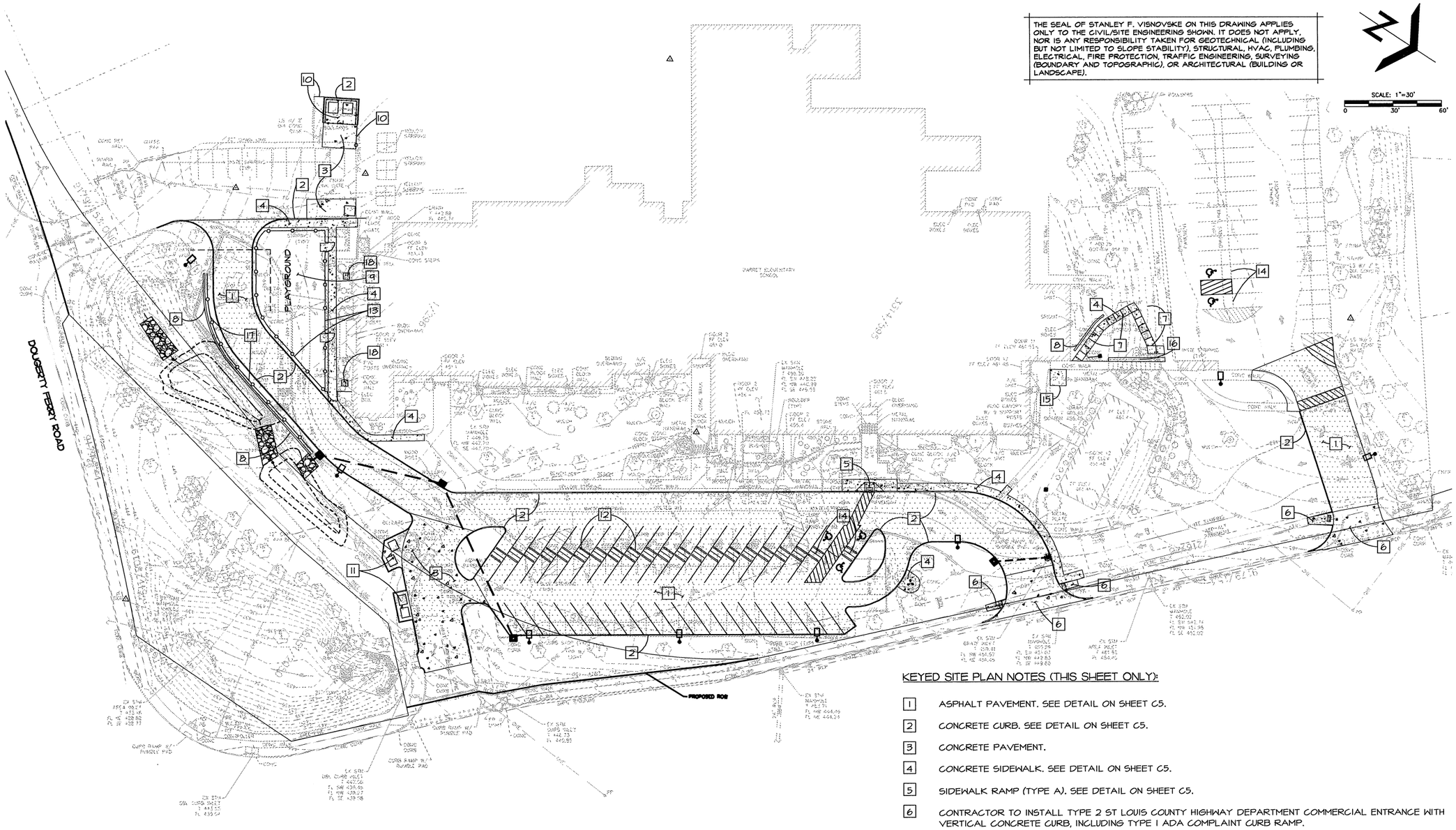
SHEET NO. C1

DEMOLITION PLAN

EDSI PROJECT #E-14-020.23



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PARKING CALCULATIONS

EXISTING STANDARD SPACES	111
49 NORTH LOT, 48 FRONT LOT, 14 SOUTH LOT (EXCLUDES 3 SPACES UNUSABLE DUE TO DUMPSTER LOCATIONS)	
EXISTING ACCESSIBLE SPACES	4
TOTAL PROPOSED STANDARD SPACES	120
46 NORTH LOT, 60 FRONT LOT, 14 SOUTH LOT	
TOTAL ACCESSIBLE SPACES	5

KEYED SITE PLAN NOTES (THIS SHEET ONLY):

1. ASPHALT PAVEMENT. SEE DETAIL ON SHEET C5.
2. CONCRETE CURB. SEE DETAIL ON SHEET C5.
3. CONCRETE PAVEMENT.
4. CONCRETE SIDEWALK. SEE DETAIL ON SHEET C5.
5. SIDEWALK RAMP (TYPE A). SEE DETAIL ON SHEET C5.
6. CONTRACTOR TO INSTALL TYPE 2 ST LOUIS COUNTY HIGHWAY DEPARTMENT COMMERCIAL ENTRANCE WITH VERTICAL CONCRETE CURB, INCLUDING TYPE 1 ADA COMPLAINT CURB RAMP.
7. RAMP WITH RAILING. SEE DETAIL ON SHEET C5.
8. RETAINING WALL. SEE DETAIL ON SHEET C6.
9. PLAYGROUND AREA AND POSTS TO BE INSTALLED BY OWNER.
10. DUMPSTER ENCLOSURE. SEE DETAIL ON SHEET C6. CONTRACTOR TO INSTALL CHAIN LINK FENCE TO CONNECT TO EXISTING FENCES. SEE FENCE ENCLOSURE DETAIL ON SHEET C7.
11. PUBLIC RECYCLING AND DUMPSTER AREA.
12. WHEEL STOPS, SEE DETAIL ON SHEET C6 FOR LOCATION.
13. ORNAMENTAL FENCE AROUND PLAY AREA PERIMETER.
14. HANDICAP SIGN, SEE DETAIL ON SHEET C2.3.
15. NEW BIKE RACK PAD BY CONTRACTOR. OWNER TO RELOCATE BIKE RACK.
16. NEW FLUME. SEE DETAIL ON SHEET C6.
17. GUARD RAIL. SEE DETAIL ON SHEET C7.
18. 4'X4' UTILITY PAD. SEE DETAIL ON SHEET C6.

MSD P-XXXXXXXX MSD BASE MAP XXX

Stanley F. Visnovske
E-2012018411
Professional Engineer
I HEREBY SPECIFY
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SHEET NO.

C2

SITE PLAN

EDSI PROJECT #E-14-020.23

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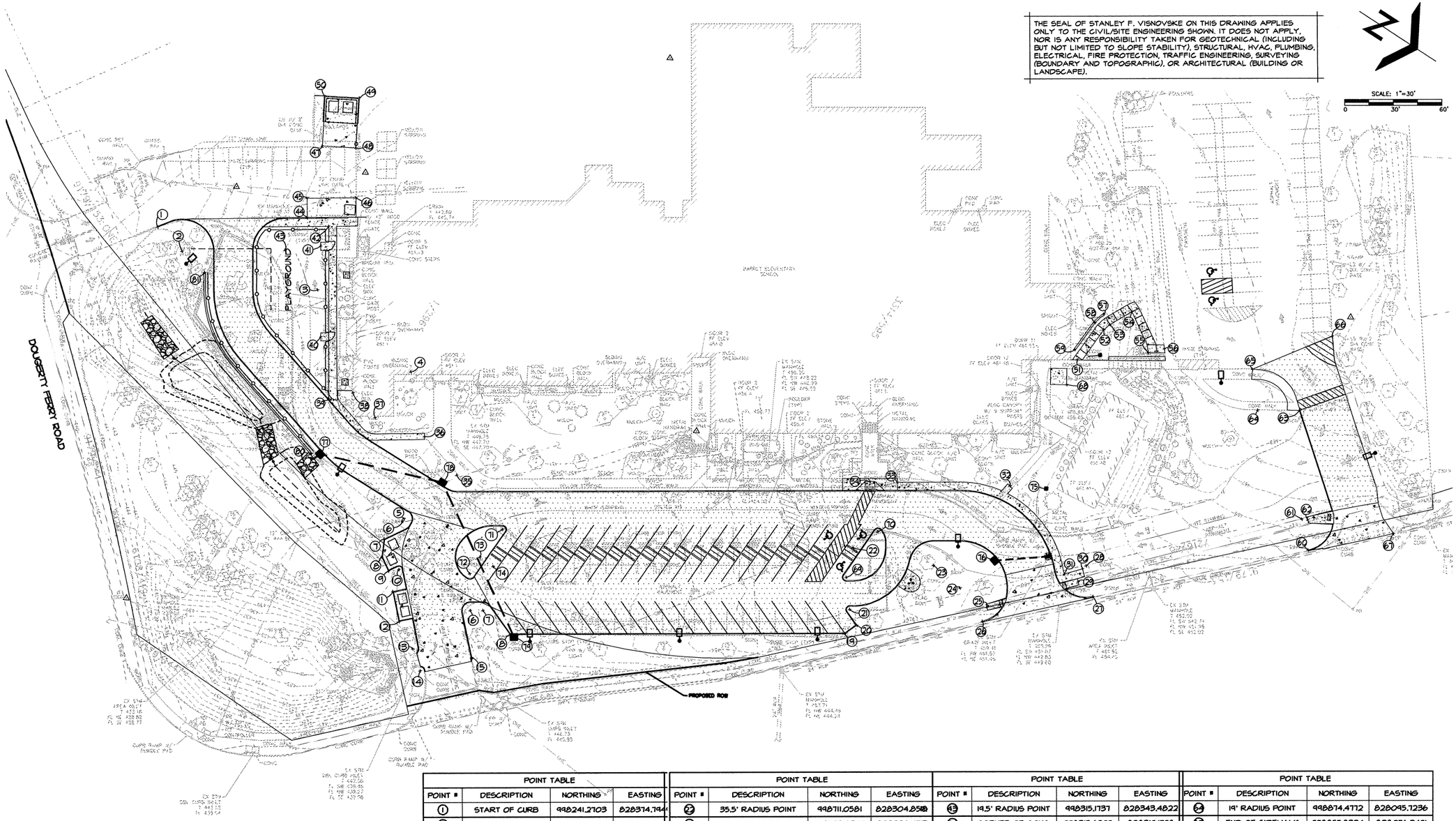

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POINT TABLE			
POINT #	DESCRIPTION	NORTHING	EASTING
1	START OF CURB	998241.2703	828314.7944
2	19.5' RADIUS POINT	998262.0973	828319.2461
3	64.5' RADIUS POINT	998345.4010	828353.1177
4	74.5' RADIUS POINT	998421.9084	828363.7525
5	5' RADIUS POINT	998468.0289	828442.1355
6	5' RADIUS POINT	998468.0975	828443.8154
7	BOC CORNER POINT	998464.4402	828454.5491
8	BOC CORNER POINT	998469.3999	828469.6421
9	BOC CORNER POINT	998477.5232	828474.6184
10	2' RADIUS POINT	998482.5009	828470.2664
11	BOC CORNER POINT	998486.1288	828483.7439
12	BOC CORNER POINT	998500.1432	828497.1992
13	3.25' RADIUS POINT	998516.5407	828506.6433
14	2.5' RADIUS POINT	998527.1615	828515.5402
15	BOC CORNER POINT	998550.1110	828491.2981
16	5' RADIUS POINT	998533.2826	828467.3553
17	5' RADIUS POINT	998539.8655	828463.0206
18	BOC CORNER POINT	998561.9841	828466.4201
19	BOC CORNER POINT	998735.6889	828352.0741
20	BOC CORNER POINT	998739.0673	828343.5868
21	2' RADIUS POINT	998729.9659	828331.8216

POINT TABLE			
POINT #	DESCRIPTION	NORTHING	EASTING
22	35.5' RADIUS POINT	998711.0581	828304.8589
23	15' RADIUS POINT	998758.6307	828286.4718
24	29' RADIUS POINT	998780.0826	828284.1267
25	END OF SIDEWALK	998800.5010	828290.0132
26	END OF CURB	998802.9298	828298.1571
27	END OF CURB	998851.9908	828248.3489
28	19.5' RADIUS POINT	998838.0235	828234.1449
29	END OF SIDEWALK	998839.2701	828245.1289
30	CORNER OF WALK	998837.0644	828231.6089
31	CORNER OF WALK	998829.4217	828246.4162
32	END OF WALK	998711.4881	828219.2952
33	CORNER OF WALK	998711.7676	828255.6162
34	END OF RAMP	998647.2025	828264.5433
35	10' RADIUS POINT	998480.5381	828401.8152
36	END OF SIDEWALK	998450.8354	828342.5672
37	10' RADIUS POINT	998418.6873	828399.6842
38	10' RADIUS POINT	998348.7800	828344.2181
39	CORNER OF SIDEWALK	998388.2035	828405.8304
40	END OF SIDEWALK	998362.9746	828376.3662
41	END OF SIDEWALK	998332.3342	828329.4823
42	CORNER OF SIDEWALK	998329.7615	828316.4062

POINT TABLE			
POINT #	DESCRIPTION	NORTHING	EASTING
43	19.5' RADIUS POINT	998315.1737	828343.4822
44	CORNER OF CONC.	998315.6299	828319.1798
45	CORNER OF CONC.	998308.9468	828304.1797
46	CORNER OF CONC.	998334.5002	828242.2632
47	CORNER OF CONC.	998299.4457	828216.9242
48	CORNER OF CONC.	998317.6664	828266.4835
49	CORNER OF CONC.	998302.6361	828234.2478
50	CORNER OF CONC.	998283.5478	828250.1856
51	END OF RAMP	998763.6269	828131.1688
52	CORNER OF RAMP	998767.2615	828106.5543
53	CORNER OF RAMP	998768.7140	828101.8534
54	CORNER OF RAMP	998775.1604	828087.6446
55	CORNER OF RAMP	998798.2806	828103.2634
56	START OF RAMP	998805.2587	828095.8105
57	START OF WALL	998761.9846	828098.5384
58	CORNER OF WALL	998760.2913	828105.8229
59	END OF WALL	998758.8281	828126.6417
60	START OF CURB	998948.0243	828151.0161
61	19.5' RADIUS POINT	998934.3159	828137.1478
62	END OF SIDEWALK	998937.6870	828135.6135
63	END OF CURB	998896.2164	828081.7186

POINT TABLE			
POINT #	DESCRIPTION	NORTHING	EASTING
64	19' RADIUS POINT	998874.4712	828095.1236
65	END OF SIDEWALK	998857.8324	828076.2491
66	CORNER OF PVMT	998888.2355	828031.9816
67	CORNER OF PVMT	998886.7453	828113.4274
68	CORNER OF CONC.	998866.5134	828147.6001
69	2' RADIUS POINT	998717.2969	828322.3023
70	2' RADIUS POINT	998718.2863	828287.4419
71	2' RADIUS POINT	998522.5681	828414.3082
72	3' RADIUS POINT	998520.5867	828448.3782
73	15' RADIUS POINT	998520.3161	828436.3812
74	25' RADIUS POINT	998530.3044	828436.7476
75	CENTER OF INLET 4	998741.1719	828208.3129
76	CENTER OF INLET 7	998788.1625	828263.1171
77	CENTER OF INLET 9	998402.3664	828437.1554
78	CENTER OF INLET 10	998475.6658	828410.4368
79	CENTER OF INLET 11	998564.9029	828466.2914
80	END OF WALL	998347.3831	828439.4744
81	END OF WALL	998280.9367	828382.4587

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Stanley F. Visnovske
E-18156
Professional Engineer
In the State of Missouri
PURSUANT TO RSMo. 327.411
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SITE PLAN COORDINATES

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SCALE: 1"=30'
0 30' 60'

DOUGERTY FERRY ROAD

STOP SIGN

PLAYGROUND

RE-ESTABLISH YELLOW STRIPING AT CURB

YIELD TO PEDESTRIAN SIGN

YELLOW STRIPE

DO NOT ENTER SIGN

STOP SIGN

ONE-WAY SIGN

"BUSES ONLY" "CARS ONLY" SIGN

DO NOT ENTER SIGN

STOP SIGN

STOP SIGN

EX. DO NOT ENTER SIGN (TO REMAIN)

EX. STOP/ ONE-WAY SIGN (TO REMAIN)

PROPOSED ROW

SIGN DETAILS: SEE SHEED C2.3

MSD P-XXXXXXXX MSD BASE MAP XXX

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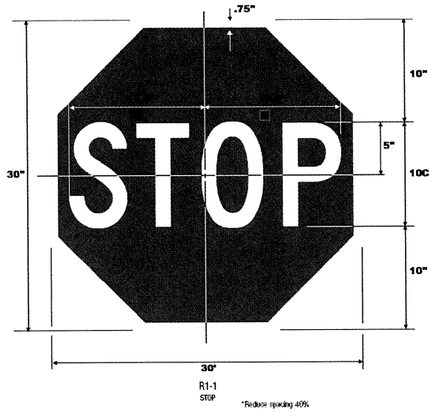
SHEET NO.

C2.2

SIGNAGE & STRIPING PLAN

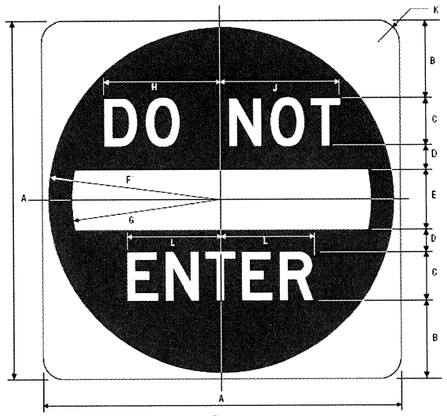
EDSI PROJECT #E-14-020.23



R1-1
STOP

*Reduce spacing 40%

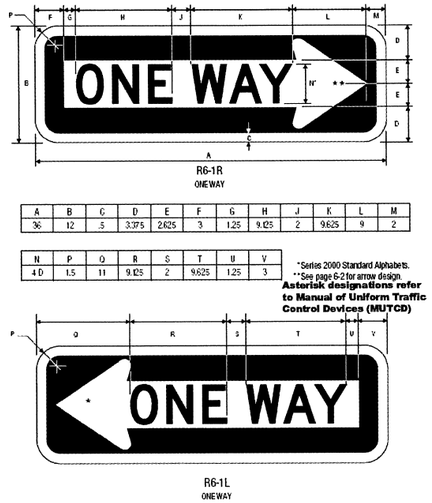
COLORS: LEGEND – WHITE (RETROREFLECTIVE)
BACKGROUND – RED (RETROREFLECTIVE)



R5-1
DO NOT ENTER

A	B	C	D	E	F	G	H	J	K	L
30	6.5	4.0	2	5	14.5	12.5	9.75	10	1.875	7.875

COLORS: SYMBOL – RED (RETROREFLECTIVE)
LEGEND & BACKGROUND – WHITE (RETROREFLECTIVE)



R6-1R
ONE WAY

A	B	C	D	E	F	G	H	J	K	L	M
36	12	.5	3.375	2.625	3	1.25	9.125	2	9.625	9	2

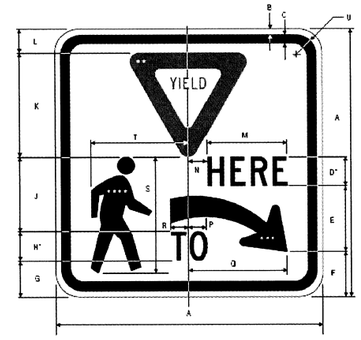
N	P	Q	R	S	T	U	V
4.0	1.5	11	9.125	2	9.625	1.25	3

*Series 2000 Standard Alphabets.
**See page 6-2 for arrow design

Asterisk designations refer to Manual of Uniform Traffic Control Devices (MUTCD)

R6-1L
ONE WAY

COLORS: LEGEND – BLACK
BACKGROUND – BLACK
ARROW – WHITE (RETROREFLECTIVE)



R1-5R
YIELD HERE TO PEDESTRIANS

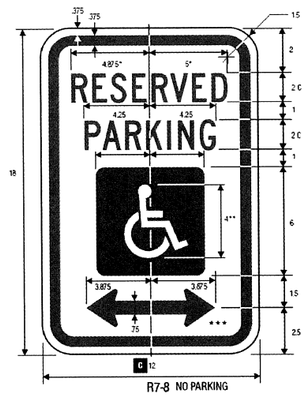
A	B	C	D	E	F	G	H	J	K	L
18	3.75	6.25	2.0	4.375	3	2.375	2.0	5	7	1.625

M	N	P	Q	R	S	T	U
5.364	1.240	1.220	6.805	1.220	7.805	6.805	1.5

*Series 2000 Standard Alphabets.
**Insert R1-2 and size to fit.
***Insert R10-6a Arrow and size to fit.
****See 6-10 for design detail.

Asterisk designations refer to Manual of Uniform Traffic Control Devices (MUTCD)

COLORS: LEGEND & ARROW – BLACK
RED SYMBOL – BLACK
BACKGROUND – WHITE (RETROREFLECTIVE)
YIELD SYMBOL – RED (RETROREFLECTIVE)



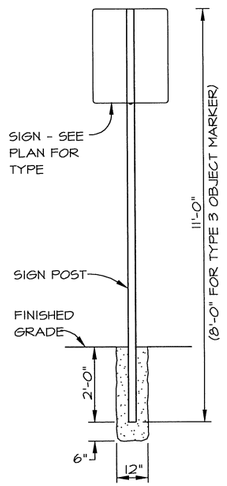
R7-8 NO PARKING

LEGEND – GREEN (RETROREFL), WHITE SYMBOL ON BLUE (RETROREFL)
BACKGROUND – WHITE (RETROREFL)

Asterisk designations refer to Manual of Uniform Traffic Control Devices

*Reduce spacing 50%.
**See page 6-31.
***See page 6-2 for arrow design.

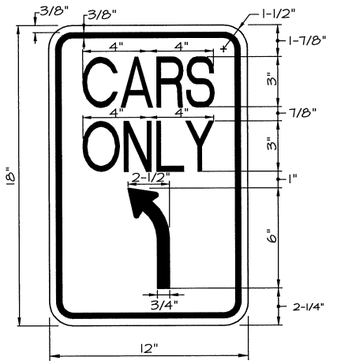
Note: Arrow may also point left or right as warranted or may be deleted entirely if a sign is to be placed for each individual accessible parking stall.



SIGN POST PLACEMENT
N.T.S.

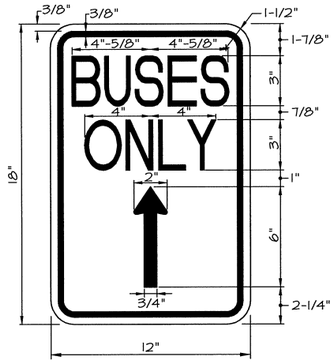
NOTES: (SIGN POST)

1. SIGN POST SHALL HAVE A 2-3/8 INCH OUTSIDE DIAMETER AND BE 11 FEET IN LENGTH. THEY SHALL BE EITHER SCH. 40 ALUMINUM PIPE OR GALVANIZED STEEL W/ A WALL THICKNESS OF 0.065 INCHES. THE INSIDE WALL SHALL BE GALVANIZED OR HAVE A FULL ZINC BASED ORGANIC COATING IN ACCORDANCE WITH ASTM-A513 TO OBTAIN A WEIGHT OF 0.90 OZ. PER SQ. FT. COMMERCIAL ZINC WEIGHT (G90).
2. SIGNS ARE TO BE MOUNTED A MINIMUM OF 3.5 FEET FROM THE BACK OF CURB WITH A MINIMUM CLEARANCE FROM THE SIDEWALK OF 1.5 FEET.
3. SIGN POST SHALL BE MOUTED 24 INCHES IN THE GROUND AND BE SET IN A CONCRETE BASE.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF UNDERGROUND UTILITIES AND STRUCTURES SHOWN OR NOT SHOWN PRIOR TO THE PLACEMENT OF SIGN POSTS.



COLORS:
LEGEND - RED
BACKGROUND - WHITE

SIGN DETAIL - "CARS ONLY"
N.T.S.



COLORS:
LEGEND - RED
BACKGROUND - WHITE

SIGN DETAIL - "BUSES ONLY"
N.T.S.

SIGN	PSD EXTERIOR STANDARD DETAIL #
STOP	R1-1
DO NOT ENTER	R5-1
ONE-WAY	R6-1R
YIELD TO PED.	R1-5R

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Professional Engineer
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PROJECT NO. 14-006.14

SHEET NO.

C2.3

SIGN DETAILS

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SCALE: 1"=30'
0 30' 60'

TC 447.90
BC 447.25 (S CORNER - MATCH EXISTING GRADE)
BC 447.40 (N CORNER)

TC 447.78
BC 447.00 (SE - MATCH EXISTING GRADE)
BC 447.28 (NW)

TC 448.10
BC 447.60 (MATCH EXISTING GRADE)

TC 448.40
BC 447.90 (MATCH EXISTING GRADE)

TC 447.7
BC 447.2 (MATCH EXISTING GRADE)

447.7 (MATCH EXISTING GRADE)

448.55 (MATCH EXISTING GRADE)

TC 448.90
BC 448.40

448.15

449.75

TC 443.20
BC 442.70

TC 445.90
BC 445.40

TC 443.27
BC 442.77

TC 445.85
BC 445.35

TC 447.22
BC 446.72

DOUGHERTY FERRY ROAD

TW 444.83
BW 444.5

450.08

450.20

TC 450.24
BC 449.74

TC 450.10
BC 449.60

TW 446.00
BW 439.5

TC 450.45
BC 449.95

450.17

TC 449.95
BC 449.45

449.77

449.97

TC 449.20
BC 448.70

TC 450.35
BC 449.85

TW 447.00
BW 439.5

TC 449.94
BC 449.44

TC 451.26
BC 450.76

TW 448.00
BW 439.0

TC 450.00
BC 449.50

TC 450.19
BC 449.69

TC 451.00
BC 450.50

TC 452.03
BC 451.53

TW 448.50
BW 446.0

TC 451.72
BC 451.22

BASIN CROSS SECTIONS, SEE SHEET C3.1

TC 450.50
BC 450.00

TC 449.93
BC 449.93

TC 450.31
BC 449.81

TC 450.50
BC 450.00

TC 449.70
BC 449.20

TC 450.61
BC 450.11

TC 451.03
BC 450.53

TC 448.45
BC 448.45

TC 449.70
BC 449.20

TC 449.18
BC 448.68

TC 450.32
BC 449.82

TC 448.41
BC 447.91

TC 447.61
BC 447.11

TC 448.16
BC 447.66

TC 447.23
BC 446.73

TC 447.17
BC 446.67

TC 446.67
BC 446.17

TC 446.69
BC 446.19

PROPOSED ROW

BARRETT ELEMENTARY SCHOOL

SEGUINE

CONC WALK

458.15

TC 458.10
BC 457.60

460.78

459.69

457.07

TC 459.64
BC 459.14

TC 457.16
BC 456.66

460.92

TC 457.69
BC 457.19

TC 460.70
BC 460.20

TC 459.41
BC 458.97

TC 459.80
BC 459.30

TC 456.16
BC 455.66

TC 456.69
BC 456.19

460.77

TC 458.35
BC 457.85

TC 459.79
BC 459.29

TC 459.55
BC 459.05

461.27

461.41

TC 457.24
BC 456.74

TC 456.66
BC 456.16

TC 461.13
BC 461.23

TC 465.0
BC 464.5

TC 461.5
BC 461.0

459.59

TC 458.52
BC 458.02

TC 461.29
BC 460.79

TC 459.67
BC 459.17

459.38

TC 458.23
BC 457.74

TC 456.45
BC 455.95

TC 458.8
BC 458.3

TC 472.16
BC 471.66

TC 470.28
BC 469.78

470.91

TC 471.07
BC 470.57

TC 466.74
BC 466.24

TC 466.96
BC 466.46

TC 466.94
BC 466.44

466.36

TC 466.63
BC 466.13

SCALE: 1"=10'
0 10' 20'

CONC WALK
463.69
TW 463.33
BW 463.0
463.81
465.62
A/C UNIT
TW 463.50
BW 461.7
465.64
SPIGOT
ELEC BOXES
468.52
TW 461.43
BW 461.1
461.28
460.27
468.29
METAL
460.50

MSD P-XXXXXXXX MSD BASE MAP XXX

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PROJECT NO. 14-006.14

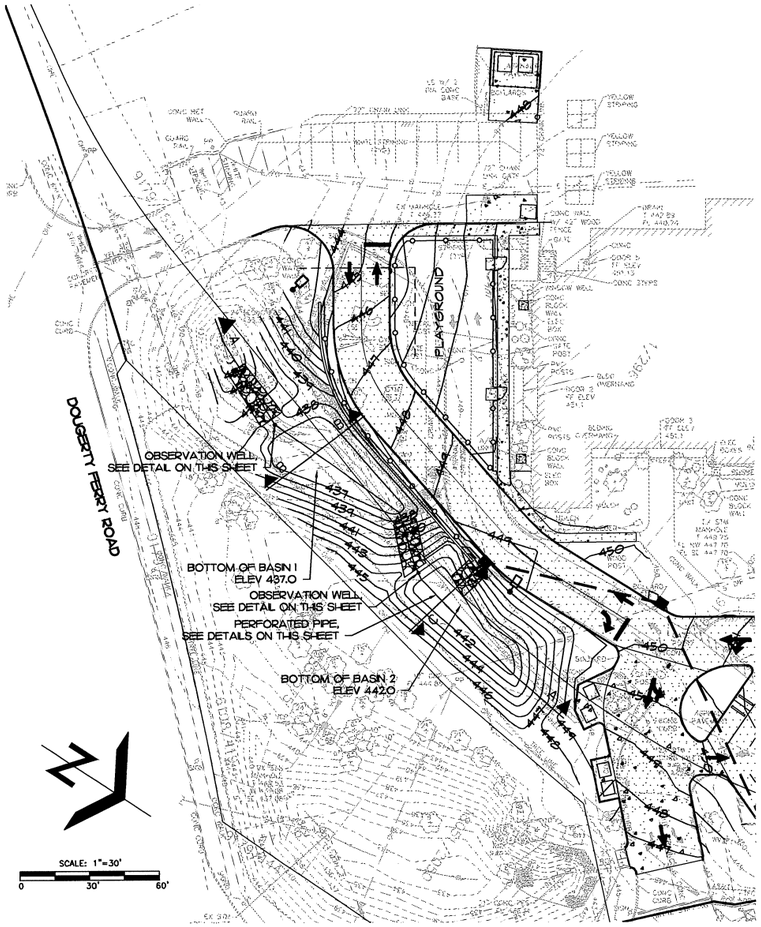
SHEET NO.

C3

GRADING PLAN

EDSI PROJECT #E-14-020.23

SEE SHEET C3 FOR SPOT ELEVTION



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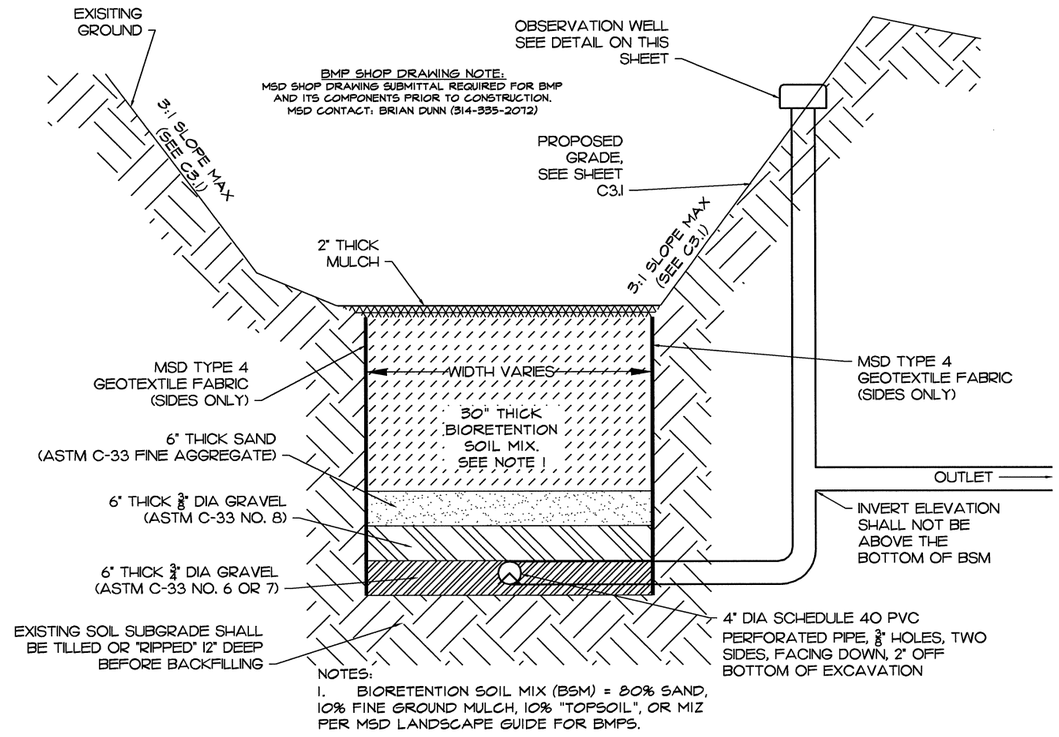
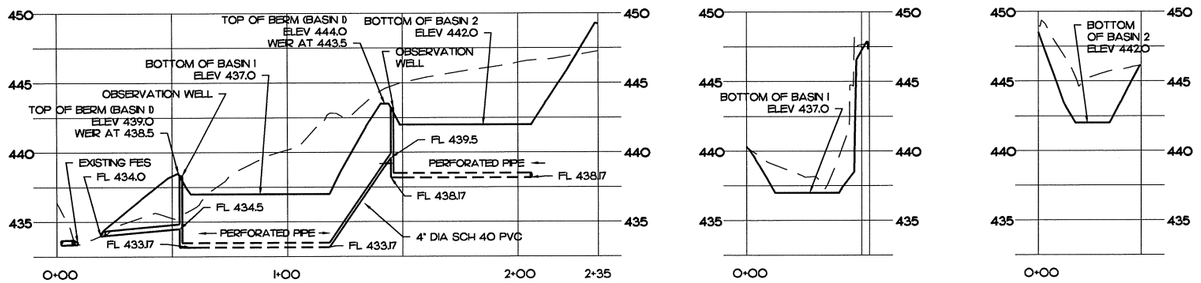


NOTES:
1. BIORETENTION SOIL MIX (BSM) = 80% SAND, 10% FINE GROUND MULCH, 10% "TOPSOIL", OR MIZ PER MSD LANDSCAPE GUIDE FOR BMPS.

TYPICAL BIORETENTION SECTION
N.T.S.

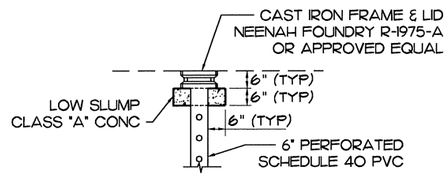


A-A

B-B

C-C

CROSS SECTIONS



OBSERVATION WELL DETAIL

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SHEET NO.

C3.1

GRADING & BIO RETENTION PLAN

EDSI PROJECT #E-14-020.23

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SCALE: 1"=30'
0 30' 60'

DOUGHERTY FERRY ROAD

BARRETT ELEMENTARY SCHOOL

PROPOSED ROW

KEYED UTILITY PLAN NOTES (THIS SHEET ONLY):

1. CONNECT NEW PRIVATE YARD DRAIN TO EXISTING STORM PIPE. USE 12" NDS 1200NGB CATCH BASIN, PER PSD SPECS.
2. USE EXISTING WATER BOX IN PLACE, ADJUST TO GRADE AS NEEDED.
3. CONVERT EXISTING INLET TO MANHOLE.
4. USE EXISTING STORM STRUCTURE IN PLACE, ADJUST TO GRADE AS NEEDED.
5. NEW CURB INLET.
6. NEW STORM SEWER, SEE PROFILE ON SHEET C4.1.
7. CONNECT EXISTING STORM PIPE TO NEW CURB INLET
8. NEW BIORETETNION BASIN, SEE DETENTION SHEET C3.1.
9. PIPE OUTLET PROTECTION. SEE DETAIL ON SHEET C6.
10. ELECTRICAL CONDUIT. SEE ELECTRIC SITE PLAN.
11. CONTRACTOR TO REMOVE 18 INCHES BELOW FINAL GRADE WITHIN 6 FEET OF THE FENCE LIMITS OF THE PLAYGROUND AREA, DENOTED BY [▨▨▨▨] ON THIS SHEET. CONTRACTOR TO INSTALL 6 INCHES OF DRAINAGE AGGREGATE AND A 4 INCH SUBDRAIN, WHICH SHALL OUTFALL ONTO THE OTHER SIDE OF THE SERVICE ROAD AS SHOWN ON THIS SHEET. OWNER TO INSTALL PLAYGROUND EQUIPMENT AND FILL WITH MULCH. IN THE 6 FT WIDE AREA INSIDE THE FENCE AREA CONTRACTOR TO INSTALL PLANTING SOIL, SEE LANDSCAPE PLAN FOR DETAILS.

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C4

UTILITY PLAN

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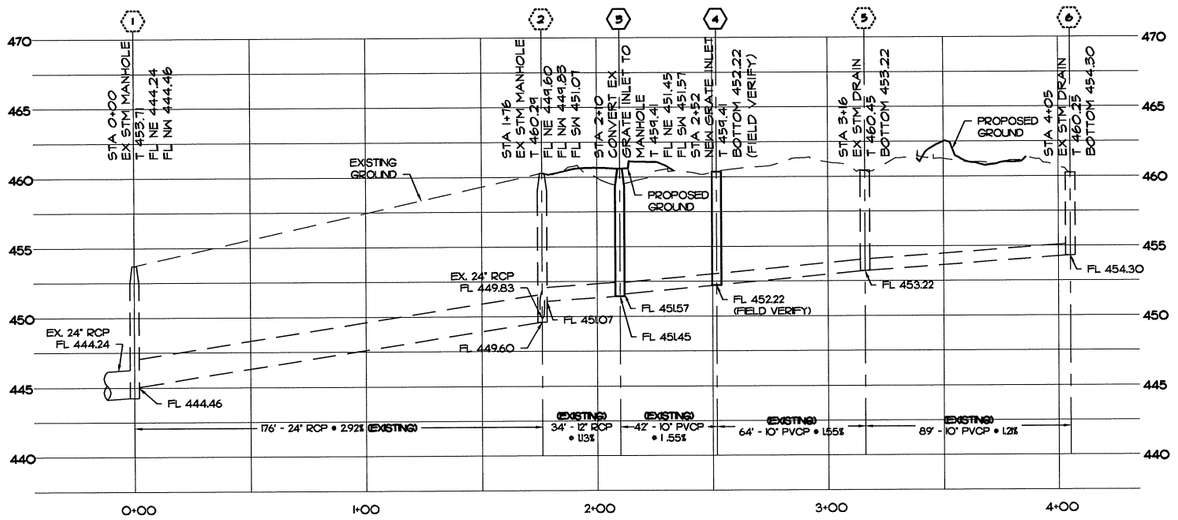
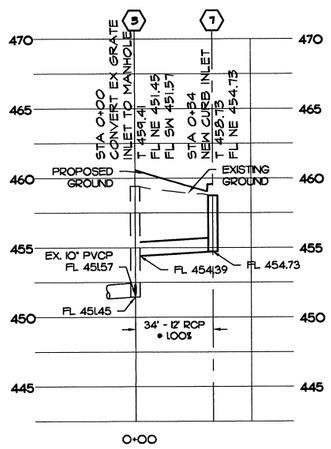
SCALE: 1"=30'
0 30' 60'

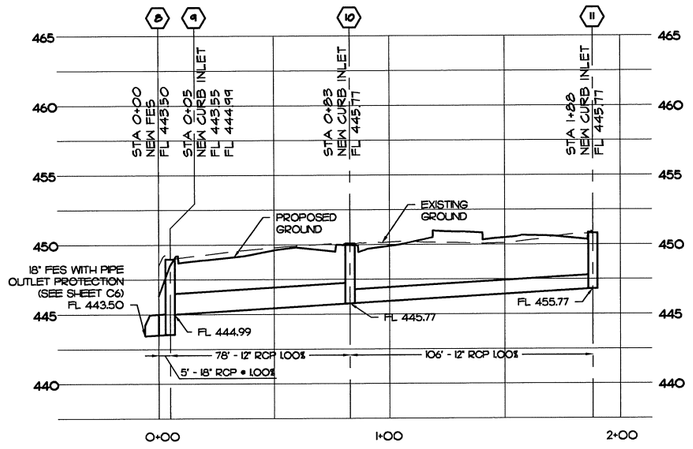
NOTE: DASHED LINES INDICATE AN EXISTING PIPE OR STRUCTURE



SCALE: 1"= 30' HORZ.
1"= 5" VERT.



SCALE: 1"= 30' HORZ.
1"= 5" VERT.



SCALE: 1"= 30' HORZ.
1"= 5" VERT.

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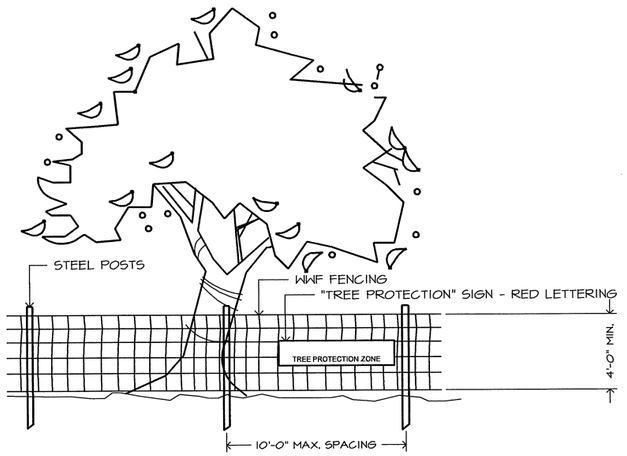
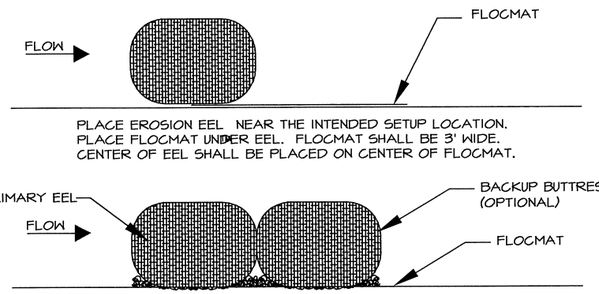
STORM PROFILES

EDSI PROJECT #E-14-020.23



TREE PROTECTION DETAIL
N.T.S.



PLACE EROSION EEL NEAR THE INTENDED SETUP LOCATION. PLACE FLOCMAT UNDER EEL. FLOCMAT SHALL BE 3' WIDE. CENTER OF EEL SHALL BE PLACED ON CENTER OF FLOCMAT.

MOVE THE EEL OVER THE FLOCMAT AREA.

PLACE A SECOND EEL ADJACENT TO THE INITIAL EEL LOCATION (DOWNSLOPE) TO PROVIDE ADDITIONAL WEIGHT AS A BUTTRESS (OPTIONAL).

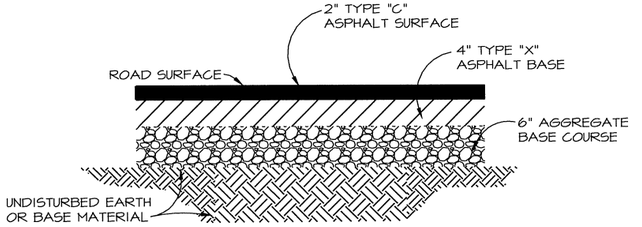
MAINTENANCE:

1. KEEP BAGS FREE OF ACCUMULATED SILT, DEBRIS, ETC., UNTIL THE DISTURBED AREA HAS BEEN ADEQUATELY STABILIZED.

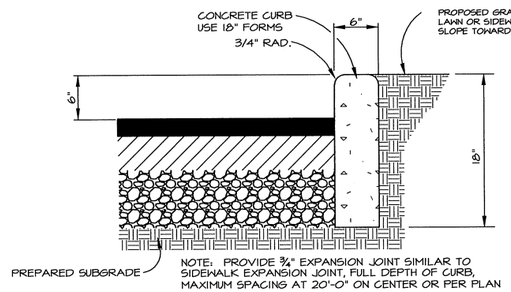
2. REMOVE SEDIMENT AND DEBRIS WHEN ACCUMULATION AFFECTS THE PERFORMANCE OF THE DEVICE, AFTER A RAIN, AND WHEN DIRECTED.

3. REPAIR OR REPLACE DAMAGED DEVICES THAT ARE TORN OR PUNCTURED AS REQUIRED TO MAINTAIN THE INTEGRITY OF THE DEVICE.

SILTATION CONTROL DETAIL
N.T.S.



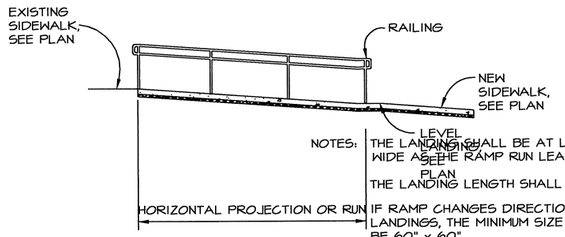
PAVEMENT REPLACEMENT SECTION
N.T.S.



NOTE: PROVIDE ¾" EXPANSION JOINT SIMILAR TO SIDEWALK EXPANSION JOINT, FULL DEPTH OF CURB, MAXIMUM SPACING AT 20'-0" ON CENTER OR PER PLAN

NEW VERTICAL CURB
N.T.S.

NOTE: SEE SITE PLAN AND THE GRADING PLAN FOR LANDING LOCATIONS AND ELEVATIONS.



NOTES:
THE LANDING SHALL BE AT LEAST AS WIDE AS THE RAMP RUN LEADING TO IT. SEE PLAN
THE LANDING LENGTH SHALL 60" WIDE.
IF RAMP CHANGES DIRECTION AT LANDINGS, THE MINIMUM SIZE SHALL BE 60" x 60".

SLOPE	MAXIMUM RISE (INCHES)	MAXIMUM HORIZONTAL PROJECTION (FEET)
1:12	30	30

RAMP ELEVATION SCHEMATIC
N.T.S.

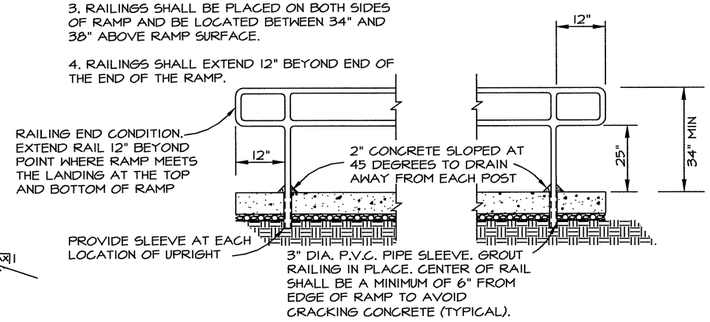
NOTES:

1. RAMP AND HANDRAILS SHALL CONFORM TO THE CURRENT ISSUE OF "THE AMERICANS WITH DISABILITIES ACT - ACCESSIBILITY GUIDELINES."

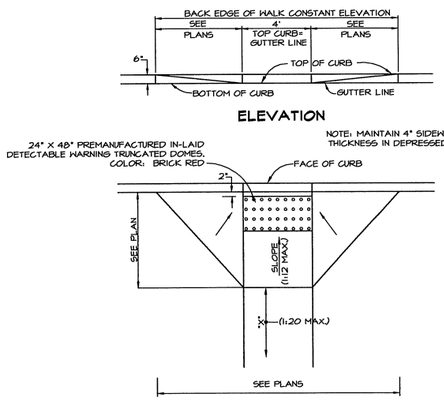
2. DIAMETER OF ALL RAILINGS SHALL BE 1 1/2".

3. RAILINGS SHALL BE PLACED ON BOTH SIDES OF RAMP AND BE LOCATED BETWEEN 34" AND 38" ABOVE RAMP SURFACE.

4. RAILINGS SHALL EXTEND 12" BEYOND END OF THE END OF THE RAMP.



A.D.A. CONCRETE RAMP
N.T.S.

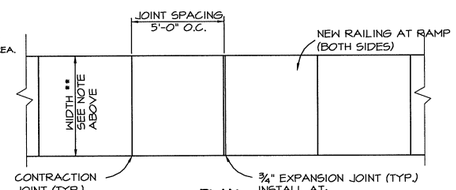


ELEVATION

PLAN

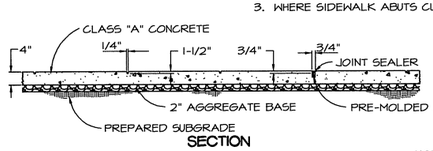
NOTE: IF "X" IS LESS THAN 48", FLARED SIDE SLOPE SHALL NOT EXCEED 1:12.

HANDICAP RAMP (TYPE A)
N.T.S.



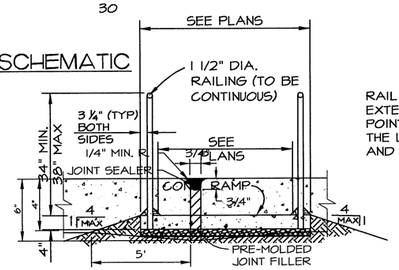
PLAN

¾" EXPANSION JOINT (TYP.) INSTALL AT:
1. 40' ON CENTER OR PER PLANS
2. WHERE NEW CONSTRUCTION MEETS EXISTING
3. WHERE SIDEWALK ABUTS CURB.



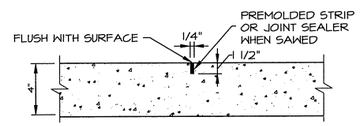
SECTION

CONCRETE SIDEWALK
N.T.S.



EXPANSION JOINT
N.T.S.

NOTE: SEAL ALL JOINTS WITH APPROVED JOINT SEALER



CONTRACTION JOINT
N.T.S.

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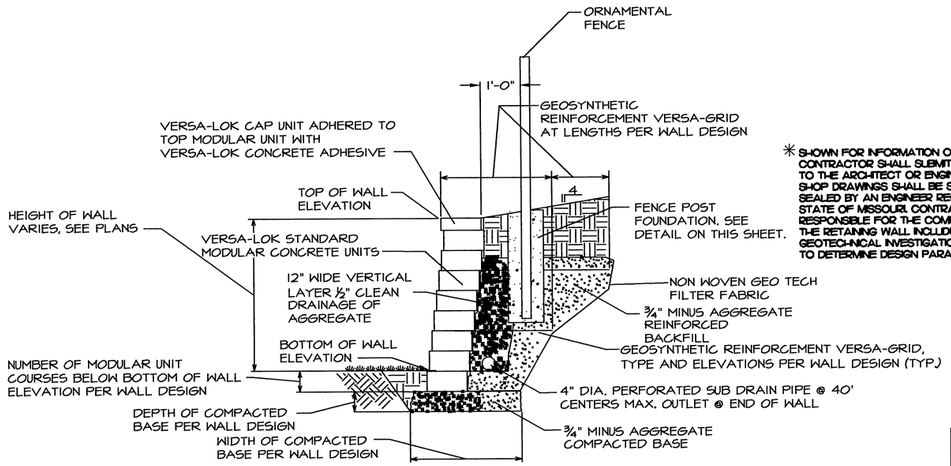
DETAILS

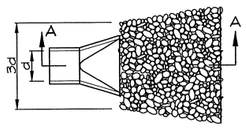
EDSI PROJECT #E-14-020.23



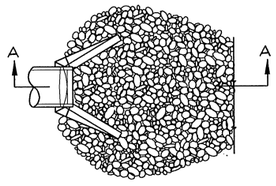
✳ SHOWN FOR INFORMATION ONLY. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ARCHITECT OR ENGINEER. SUBMITTED SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY AN ENGINEER REGISTERED IN THE STATE OF MISSOURI. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE DESIGN OF THE RETAINING WALL INCLUDING ANY AND ALL GEOTECHNICAL INVESTIGATIONS NECCESARY TO DETERMINE DESIGN PARAMETERS.

TYPICAL SECTION-SEGMENTAL RETAINING WALL

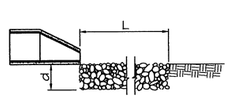
SCALE: NONE **(FOR INFORMATION ONLY)**



PLAN

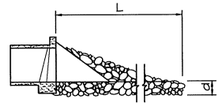


PLAN



SECTION A-A

PIPE OUTLET TO FLAT AREA WITH NO DEFINED CHANNEL



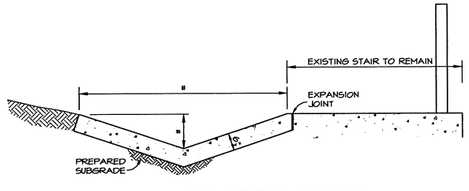
SECTION A-A

PIPE OUTLET TO WELL-DEFINED CHANNEL

1. Apron lining may be rip-rap or concrete.
2. L is the length of the rip-rap. (L=10' x Dia. of pipe in feet)
3. d=1.5' times the maximum stone diameter but not less than 6 inches
4. Apron lining must extend into a stable channel.

PIPE OUTLET PROTECTION

N.T.S.



CONCRETE SWALE

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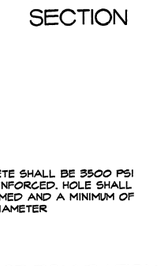
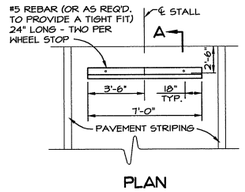


SECTION A



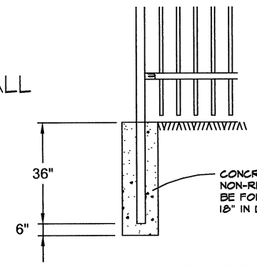
PLAN

PRECAST CONCRETE WHEEL STOP

N.T.S.

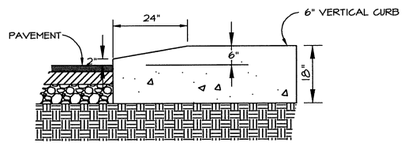
CONTRACTOR NOTE:

ONLY THE CONCRETE PAD AT THE DUMPSTER LOCATION IS TO RECEIVE THE FORTA FIBER REINFORCEMENT. CURBS, SIDEWALKS, STAIRS, AND OTHER SITE WORK ITEMS DO NOT.



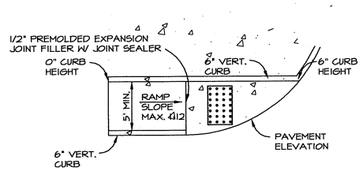
ORNAMENTAL FENCE POST FOUNDATION

N.T.S



CURB TURNDOWN DETAIL

N.T.S.

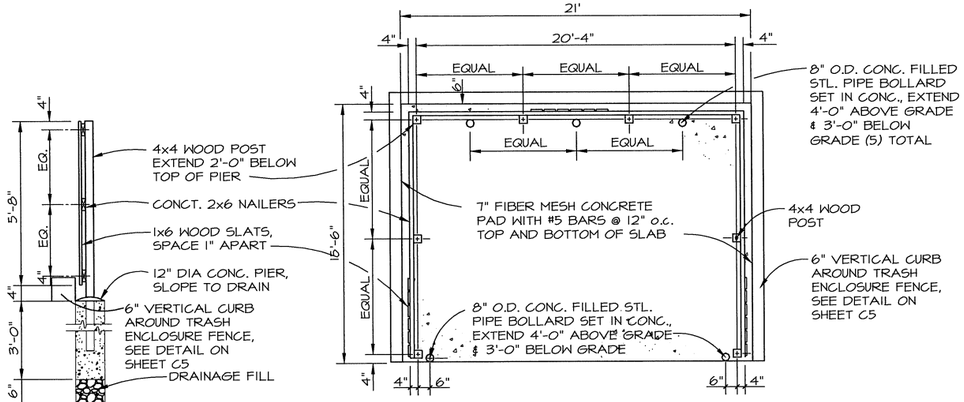


GENERAL NOTES:

1. MINIMUM SIDEWALK WIDTH ALONG 6" VERTICAL CURB SHALL BE 5 FEET. MINIMUM SIDEWALK WIDTH ALONG 3" ROLLED CURB SHALL BE 4 FEET.
2. MAXIMUM SIDEWALK CROSS SLOPE 0.02' / FT.
3. ALL SIDEWALK SECTIONS SHALL BE 4" THICK.
4. WHERE CURB RAMP MEETS PAVEMENT, BULLNOSE WILL NOT BE PERMITTED.

STRAIGHT CURB RAMP - 6" VERTICAL CURB (TYPE I)

N.T.S.



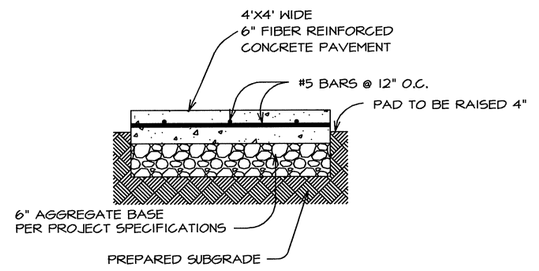
PLAN

SECTION

NOTE:
PROVIDE GATE (SWING OUT) MADE OF SAME WOOD MATERIAL AS REMAINDER OF ENCLOSURE.

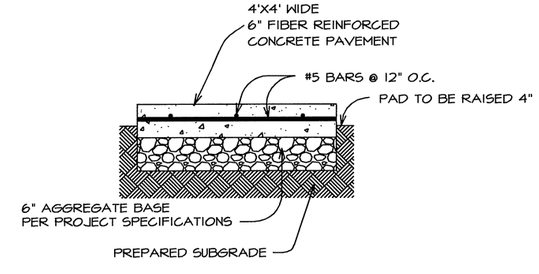
TRASH ENCLOSURE DETAIL

N.T.S.



CONCRETE UTILITY PAD DETAIL

N.T.S.



CONCRETE UTILITY PAD DETAIL

N.T.S.

MSD P-XXXXXXXX MSD BASE MAP XXX

Stanley F. Visnovske
E-25356
Professional Engineer
I HEREBY SPECIFY
PURSUANT TO RSMo. 327.411
THAT THIS DRAWING SHEET
IS AUTHENTICATED BY MY
SEAL.

ARCHITECT
MECHANICAL ENGINEER
PLUMBING / FP ENGINEER
ELECTRICAL ENGINEER
STRUCTURAL ENGINEER
CIVIL ENGINEER
LANDSCAPE ARCHITECT

TRJ - ARCHITECTS
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PARKWAY SCHOOLS

BARRETTS ELEMENTARY SCHOOL
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PARKWAY SCHOOL DISTRICT
Parkway School District Project No. 011601B
1780 Carman Road Manchester, Missouri 63021

TRJ Architects of the Possible®
9812 Manchester Road St. Louis, Missouri 63119
T: 314-385-9700 F: 314-385-9751 www.trjarchitects.com

DATE: 11.28.16

REVISIONS

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PSD PROJECT NO. 011601B

PROJECT NO. 14-006.14

SHEET NO.

C6

DETAILS

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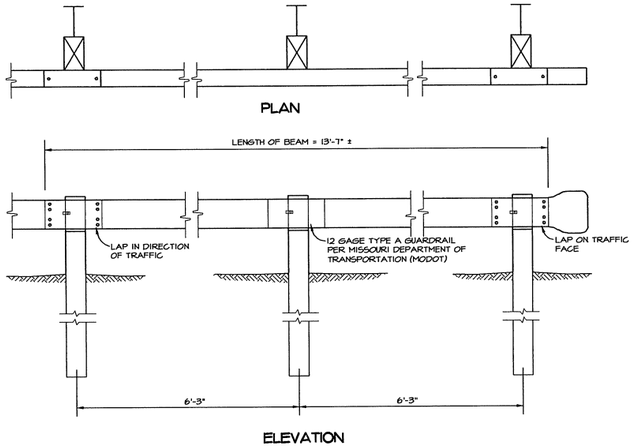
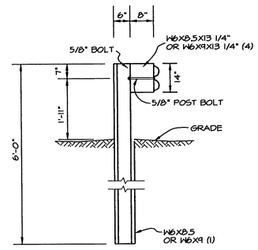
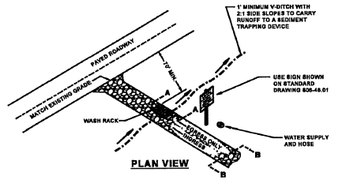
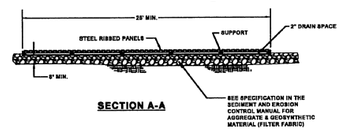
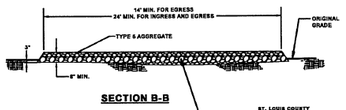




GUARD RAIL
N.T.S.



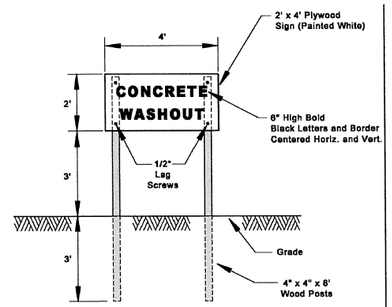




ST. LOUIS COUNTY
DEPARTMENT OF TRANSPORTATION
CREVE COEUR, MISSOURI

TYPICAL BMP DETAIL
WASHDOWN STATION

REVISION DATE: January 1, 2016
DRAWING 806-46.00



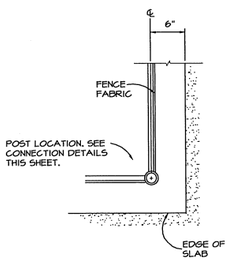
CONCRETE WASHOUT SIGN DETAIL (OR EQUIVALENT AS APPROVED BY COUNTY)

GENERAL NOTES

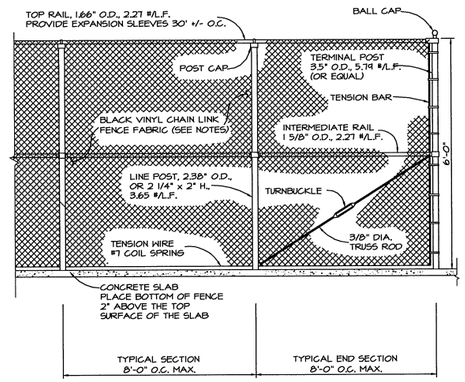
1) Do not scale drawing, follow dimensions.
2) Actual layout determined in the field.
3) The "Concrete Washout" sign shall be installed within 30 feet of each temporary concrete washout facility.

NOTES:

1. WIRE MESH TO BE FASTENED TO LINE POST, TOP RAIL, AND TENSION WIRE WITH # 9 GAUGE ALUMINUM TIE WIRE. SPACING FOR TIE OR CLIP WIRES SHALL BE AS FOLLOWS:
   TOP RAIL - 15"
   LINE POST - 15"
   TENSION WIRE - 15"
2. POST SPACING SHALL NOT EXCEED EIGHT (8') FEET. PULL POST SHALL BE PROVIDED SO THAT NO RUN EXCEEDS 100' IN LENGTH.
3. THE TOP RAIL SHALL PASS THROUGH OPENINGS PROVIDED FOR THAT PURPOSE IN THE POST TOPS AND EACH LENGTH SHALL BE COUPLED WITH INSERT SLEEVE COUPLINGS.
4. POSTS SHALL BE GROUTED INTO THE 4" OPENINGS PROVIDED IN THE CHANNEL WALLS WITH A UNIFORM MIXTURE OF "POR-ROK" TYPE GROUT OR EQUAL.
5. WIRE MESH TO BE PLACED ON THE STREET SIDE OF THE LINE POSTS.
6. HEIGHT OF FENCE 72".



POST PLACEMENT



FENCE ELEVATION

FENCE ENCLOSURE DETAILS
N.T.S.

MSD P-XXXXXXXX MSD BASE MAP XXX

Stanley F. Visscroke
E-31615
Professional Engineer
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ARCHITECT
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PLUMBING / FP ENGINEER
ELECTRICAL ENGINEER
STRUCTURAL ENGINEER
CIVIL ENGINEER
LANDSCAPE ARCHITECT

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DATE: 11.28.16

REVISIONS

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PSD PROJECT NO. 011601B

PROJECT NO. 14-006.14

SHEET NO.

C7

DETAILS

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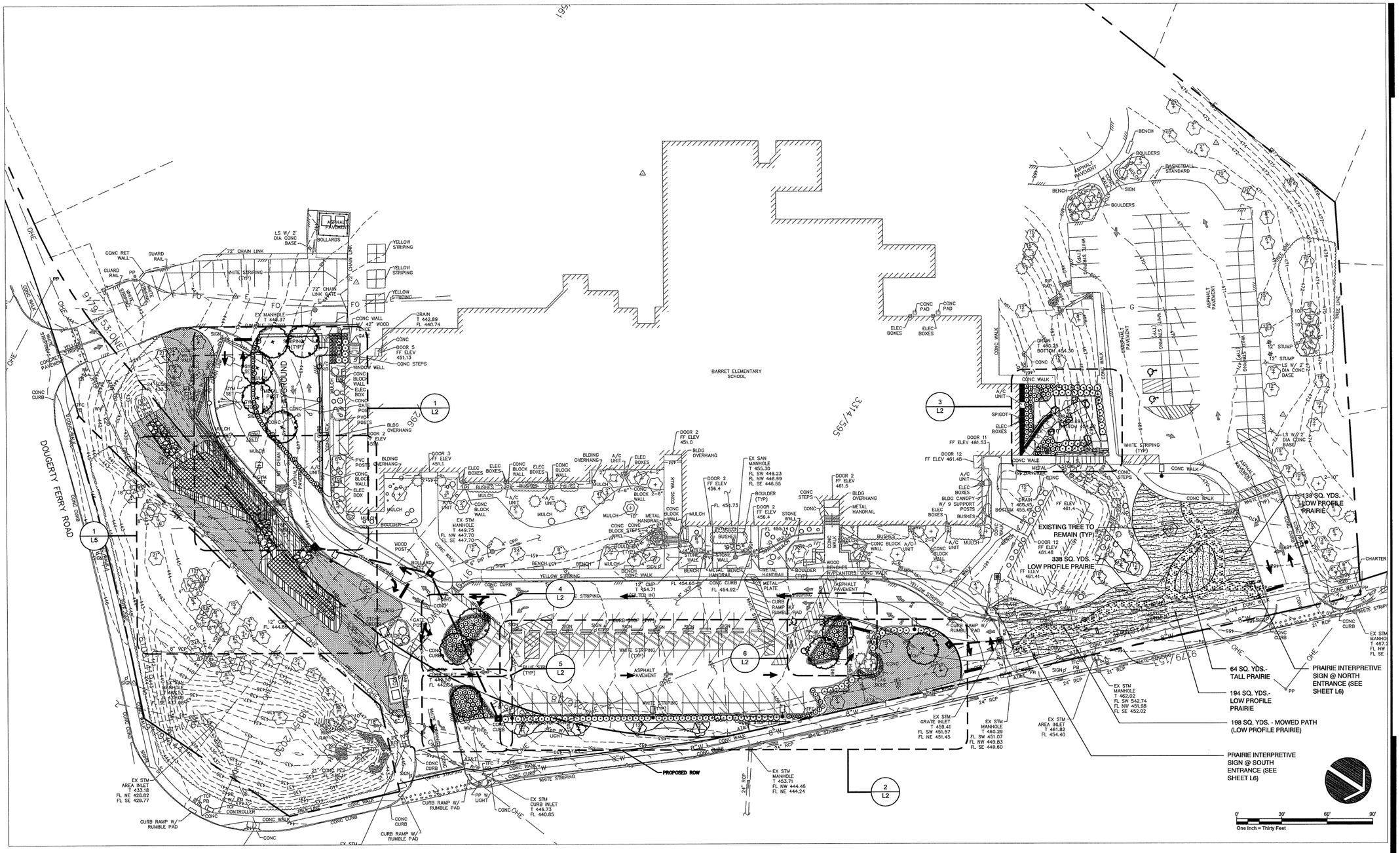

LANDSCAPE PLAN

1 / L1 PLAN

1" = 30' - 0"

E ER L OTES PPLIES TO LL S EETS :

1. REFER TO DEMOLITION PLAN FOR REMOVAL OF EXISTING VEGETATION.
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14. IN THE PLANTING BEDS BY THE RAMP AT THE NORTH PARKING LOT, PROVIDE 5-8 WEATHERED LIMESTONE BOULDERS, APPROXIMATELY 3' WIDE BY 5' LONG AND 18" TALL. SUPPLIED BY EARTHWORKS INC. 16900 BAXTER ROAD, CHESTERFIELD, MO 63005, PHONE (636) 532-0713, OR EQUAL. LANDSCAPE ARCHITECT TO REVIEW AND APPROVE FINAL LOCATION AND PLACEMENT.

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ELECTRICAL ENGINEER — KPFF CONSULTING ENGINEERS
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DATE: 11.29.16

REVISIONS

DWG. BY: SBT
PSD PROJECT NO.: 011601B
PROJECT NO.: 14-006.14
SHEET NO.: L1
LANDSCAPE PLAN

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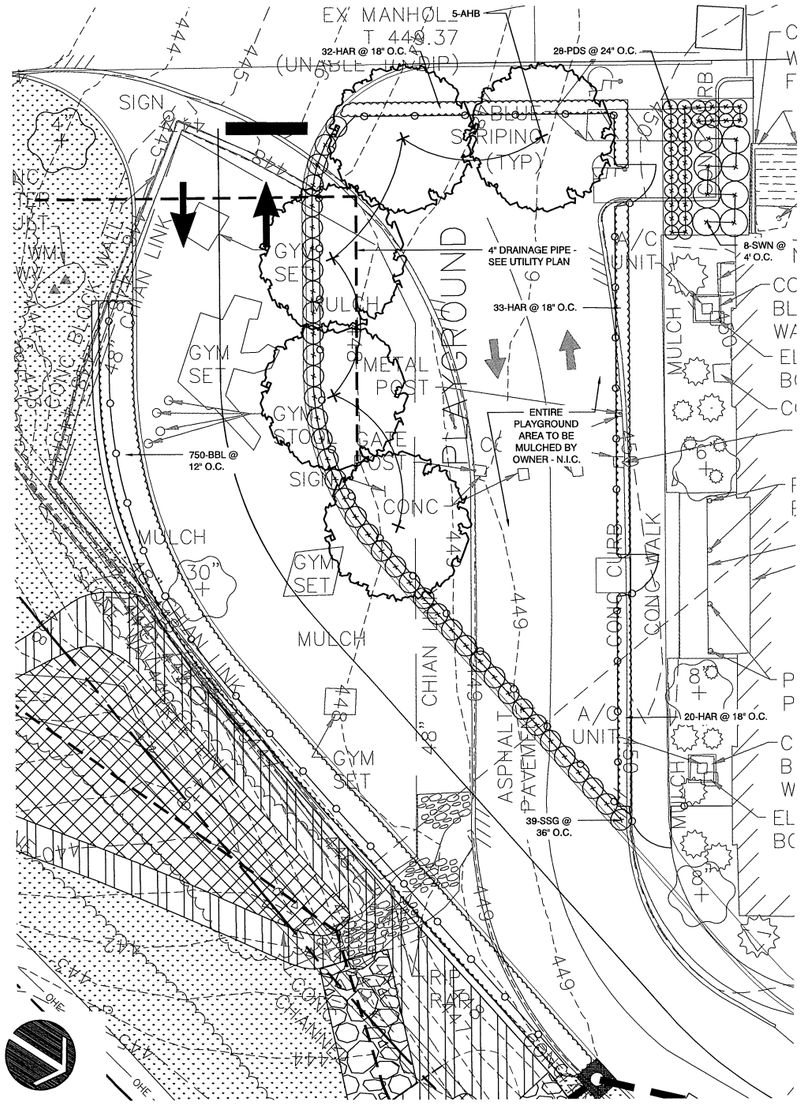
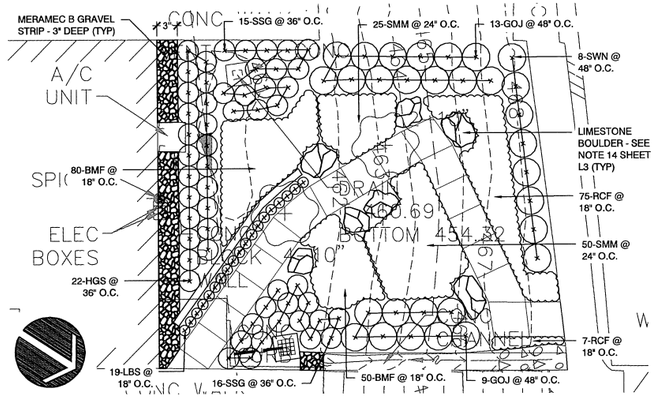


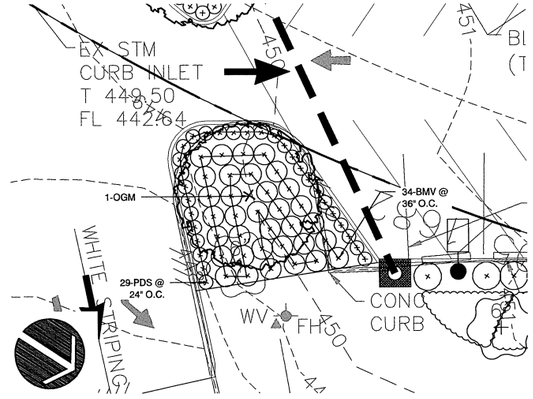
1 L2 **PLAYGROUND AREA**

1" = 10'-0"



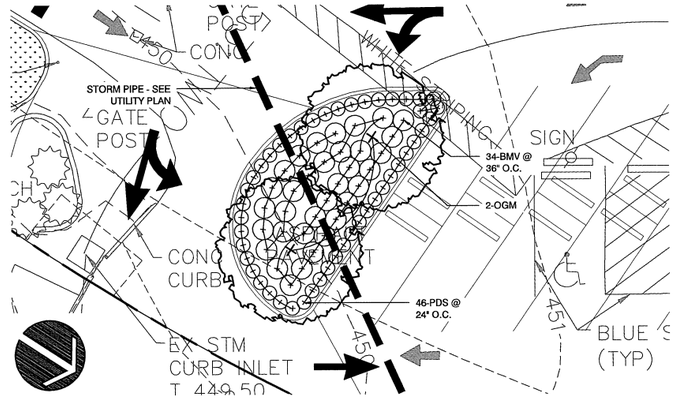
3 L2 **RAMP AT NORTH PARKING LOT**

1" = 10'-0"



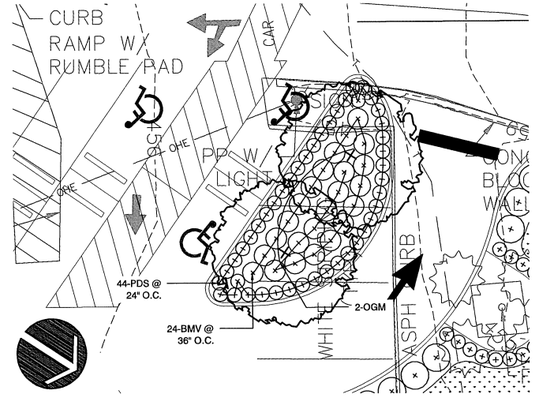
5 L2 **SOUTH PARKING EXIT ISLAND**

1" = 10'-0"



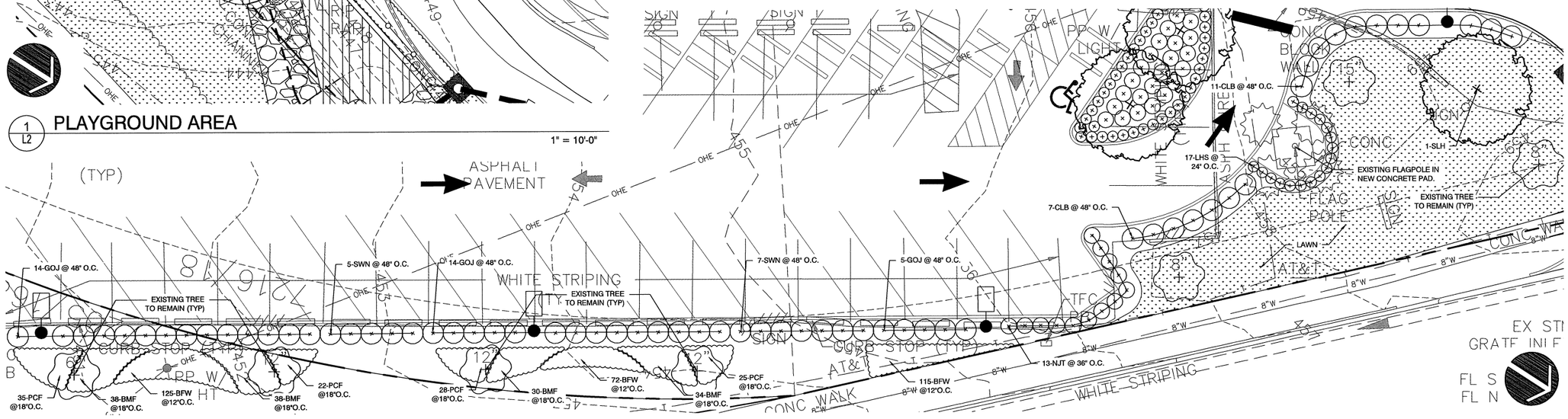
4 L2 **SOUTH PARKING ISLAND**

1" = 10'-0"



6 L2 **NORTH PARKING ISLAND**

1" = 10'-0"



2 L2 **CARMEN ROAD**

1" = 10'-0"

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WILLIAM TAO & ASSOCIATES, INC.	PLUMBING / FP ENGINEER
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DATE:	11.29.16
REVISIONS	
DWG. BY	SBT
PSD PROJECT NO.	011601B
PROJECT NO.	14-006.14
SHEET NO.	L2

LANDSCAPE PLAN

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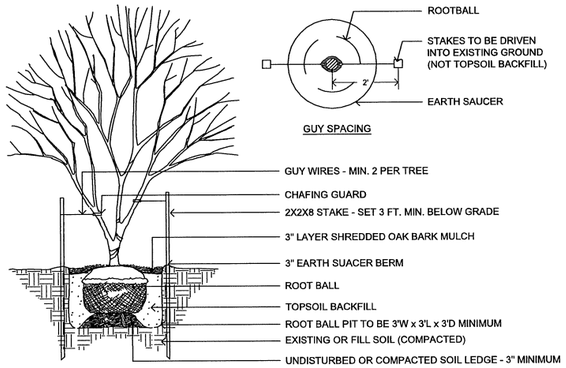
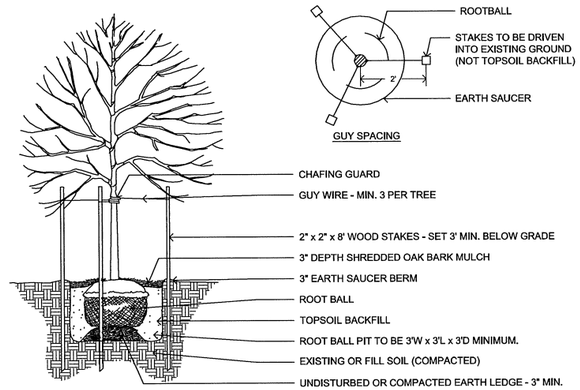


1 L3 **ORNAMENTAL TREE PLANTING**
PLAN & SECTION NTS



2 L3 **CANOPY TREE PLANTING**
PLAN & SECTION NTS

E ER L OTES:

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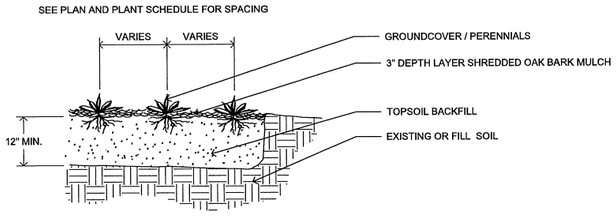
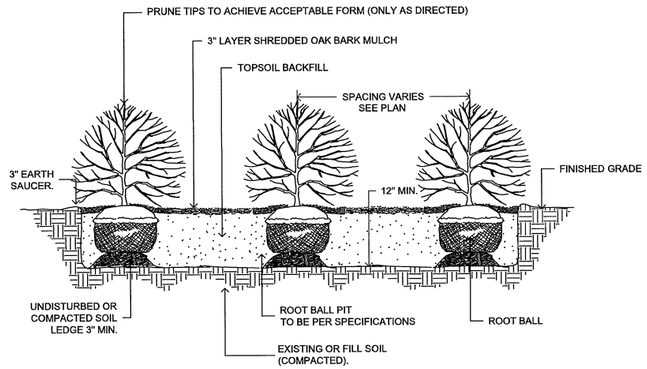


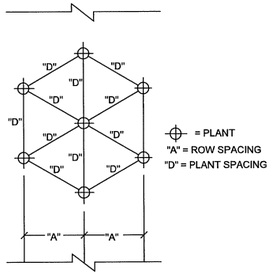
3 L3 **GROUNDCOVER AND PERENNIAL PLANTING**
SECTION NTS



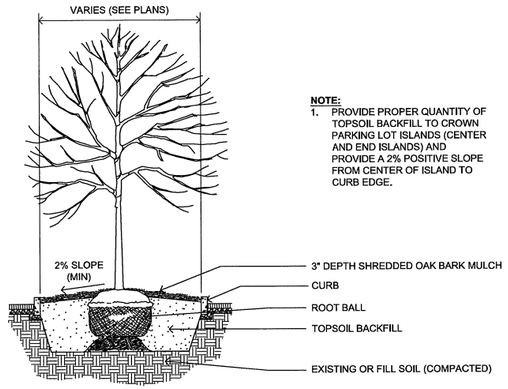
4 L3 **DECIDUOUS SHRUB PLANTING**
SECTION NTS

FOR USE WITH ALL PLANT TYPES SPACED EQUIDISTANTLY

SPACING "D"	ROW "A"	NO. OF PLANTS	AREA UNIT
10" O.C.	8.66"	1.66	1 sq. ft.
12" O.C.	10.4"	1.15	
15" O.C.	13.0"	7.38	10 sq. ft.
18" O.C.	15.6"	5.12	
24" O.C.	20.8"	2.9	
30" O.C.	26.0"	1.85	
36" O.C.	30.0"	1.28	
4' O.C.	4.33'	4.61	100 sq. ft.
6' O.C.	5.2'	3.2	
8' O.C.	6.93'	1.8	
10' O.C.	8.66'	1.16	



5 L3 **PLANT SPACING**
DIAGRAM NTS



NOTE:
1. PROVIDE PROPER QUANTITY OF TOPSOIL BACKFILL TO CROWN PARKING LOT ISLANDS (CENTER AND END ISLANDS) AND PROVIDE A 2% POSITIVE SLOPE FROM CENTER OF ISLAND TO CURB EDGE.

6 L3 **PARKING LOT ISLAND PLANTING**
SECTION NTS

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L3

LANDSCAPE DETAILS

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LO PROFILE PR IRIE SEED MI :

Common Name	Botanical Name	Seeds/oz.	oz./acre	Seeds/SF.
Side Oats Grama	Bouteloua curtipendula	9,375	41.67	8.968233471
Blue Grama	Bouteloua gracilis	40,000	12.00	11.01928375
Little Bluestem	Andropogon scoparius	8,800	42.67	8.62020202
Blue Wild Indigo	Baptisia australis	1,600	10.67	0.391919192
Butterfly Milkweed	Asclepias tuberosa	3,500	7.33	0.588957759
Partridge Pea	Cassia fasciculata	3,800	28.00	2.442607897
Lanceleaf Coreopsis	Coreopsis lanceolata	12,500	20.00	5.739210285
Plains Coreopsis	Coreopsis tinctoria	87,500	13.33	26.77628558
Prairie Blazing Star	Liatris pycnostachya	10,750	6.67	1.646062902
Illinois Bundleflower	Desmanthus illinoensis	4,888	20.00	2.24426079
Showy Tick Trefoil	Desmodium canadense	4,500	10.67	1.102272727
Wild Senna	Cassia marilandica	1,280	22.67	0.666152433
Pale Purple Coneflower	Echinacea pallida	5,000	12.00	1.377410468
Grayheaded Coneflower	Ratibida pinnata	25,250	8.00	4.63728191
Wild Bergamot	Monarda fistulosa	78,000	2.65	4.745179063
Wild Quinine	Parthenium integrifolium	6,800	12.00	1.873278237
Foxglove Beard tongue	Penstemon digitalis	115,000	2.67	7.048898072
White Prairie Clover	Dalea candida	26,250	8.00	4.820936639
Purple Prairie Clover	Dalea purpurea	20,000	12.00	5.509641873
Slender Mountain Mint	Pycnanthemum tenuifolium	375,000	1.00	8.608815427
Black-eyed Susan	Rudbeckia hirta	110,000	10.67	26.94444444
Sweet Black-eyed Susan	Rudbeckia subtomentosa	46,000	2.00	2.112029385
Columbine	Aquilegia canadensis	25,000	2.00	1.147842057
Hoary Vervain	Verbena stricta	32,000	4.00	2.938475666
Common Spiderwort	Tradescantia ohiensis	8,000	2.00	0.367309458
Roundhead Lespedeza	Lespedeza capitata	10,000	5.33	1.223599633
	TOTALS		320.00	143.56

T LL R SS PR IRIE SEED MI :

Common Name	Botanical Name	Seeds/Oz	oz./acre	Seeds/SF.
Big Bluestem	Andropogon gerardii	8,188	32	6.015059688
Indian Grass	Sorghastrum nutans	8,516	32	6.256014692
Side Oats Grama	Bouteloua curtipendula	9,375	32	6.887052342
Canada Wild Rye	Elymus canadensis	4,258	32	3.128007346
Virginia Wild Rye	Elymus virginicus	4,375	32	3.213957759
Switch Grass	Panicum virgatum	28,356	10	6.509641873
Little Bluestem	Andropogon scoparius	8,800	64	12.92929293
Total				
Sky Blue Aster	Aster azureus	82,000	1.6	3.011937557
Blue Wild Indigo	Baptisia australis	1,600	1.6	0.058769513
White Wild Indigo	Baptisia alba	1,700	1.6	0.062442608
Tickseed Sunflower	Bidens aristosa	8,600	3.2	0.631772268
Partridge Pea	Cassia fasciculata	3,800	12.8	1.116620753
Lanceleaf Coreopsis	Coreopsis lanceolata	12,500	12.8	3.673094582
Plains Coreopsis	Coreopsis tinctoria	201,375	6.4	29.58677686
Brown-eyed Susan	Rudbeckia triloba	33,000	1.6	1.212121212
Illinois Bundleflower	Desmanthus illinoensis	4,888	16	1.795408632
Showy Tick Trefoil	Desmodium canadense	4,500	1.6	0.165289256
Pale Purple Coneflower	Echinacea pallida	5,000	3.2	0.367309458
Purple Coneflower	Echinacea purpurea	6,600	19.2	2.909090909
Rattlesnake Master	Eryngium yuccifolium	8,000	9.6	1.763085399
False Sunflower	Heliopsis helianthoides	6,500	9.6	1.432506887
Prairie Blazing Star	Liatris pycnostachya	10,750	3.2	0.789715335
Wild Bergamot	Monarda fistulosa	78,000	4	7.162534435
Wild Quinine	Parthenium integrifolium	6,800	1.6	0.249770432
Foxglove Beard Tongue	Penstemon digitalis	115,000	3.2	8.448117539
White Prairie Clover	Dalea candida	26,250	3.2	1.928374656
Purple Prairie Clover	Dalea purpurea	20,000	9.6	4.407713499
Slender Mountain Mint	Pycnanthemum tenuifolium	375,000	1.6	13.77410468
Grayheaded Coneflower	Ratibida pinnata	25,250	15.2	8.810835629
Black-Eyed Susan	Rudbeckia hirta	110,000	3.2	8.080808081
Sweet Black-Eyed Susan	Rudbeckia subtomentosa	46,000	4.8	5.068870523
Lead Plant	Amorpha canescens	17,000	1.6	0.624426079
Compass Plant	Silphium laciniatum	650	3.2	0.04775023
Common Spiderwort	Tradescantia ohiensis	8,000	3.2	0.587695133
Common Ironweed	Vernonia fasciculata	21,875	1.6	0.80348944
Maximilian's Sunflower	Helianthus maximiliani	13,000	1.6	0.477502296
Prairie Dock	Silphium terebinthinaceum	1,100	4.4	0.111111111
			400	154.0980716

E ER L OTES PPLIES TO LL S EETS :

1. REFER TO DEMOLITION PLAN FOR REMOVAL OF EXISTING VEGETATION.
2. UNLESS OTHERWISE NOTED, ALL NATURAL VEGETATION SHALL BE MAINTAINED WHERE IT DOES NOT INTERFERE WITH CONSTRUCTION. PROTECT EXISTING UTILITIES, STRUCTURES OR VEGETATION FROM DAMAGE. CONTRACTOR SHALL MAINTAIN AND SECURE THE PROJECT SITE TO PROTECT THE PUBLIC FROM INJURY DUE TO WORK AND RELATED MATERIAL.
3. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH OTHER SITE RELATED WORK BEING PERFORMED BY OTHERS. REFER TO CIVIL, STRUCTURAL, BUILDING, AND UTILITY DRAWINGS FOR FURTHER COORDINATION OF WORK TO BE COMPLETED.
4. UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHERS NOT PRESENTLY KNOWN OR SHOWN. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE TO DETERMINE AND VERIFY THE EXISTENCE OF AND EXACT LOCATION OF ALL UTILITIES.
5. LANDSCAPE CONTRACTOR IS ADVISED TO STUDY THE PLANS AND VISIT THE SITE TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS. REPORT ANY DISCREPANCIES IMMEDIATELY TO THE OWNER'S REPRESENTATIVE.
6. LANDSCAPE CONTRACTOR SHALL STAKE THE LOCATIONS OF ALL PROPOSED PLANT MATERIAL AND PLANTING BED EDGES FOR APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
7. ALL PLANT MATERIAL SHALL BE WARRANTED FOR A PERIOD OF 12 MONTHS AFTER ACCEPTANCE BY OWNER.
8. CONTRACTOR SHALL STAKE AND BRACE TREES IMMEDIATELY FOLLOWING INSTALLATION ACCORDING TO PLANS, DETAILS, AND SPECIFICATIONS.
9. ALL PLANTING BED EDGES SHALL BE SPADE CUT UNLESS OTHERWISE INDICATED.
10. CONTRACTOR TO SOD ALL AREAS DISTURBED DUE TO CONSTRUCTION ACTIVITIES.
11. ALL PLANT MATERIAL SHALL BE TAGGED OR OTHERWISE APPROVED BY THE OWNER'S REPRESENTATIVE. APPROVAL IN THE NURSERY DOES NOT INDICATE FINAL ACCEPTANCE.
12. ITEMS SHOWN ON THESE DRAWINGS TAKE PRECEDENCE OVER THE MATERIAL LIST. LANDSCAPE CONTRACTOR SHALL VERIFY ALL QUANTITIES AND CONDITIONS PRIOR TO BIDDING AND IMPLEMENTATION OF THE PLAN. NO SUBSTITUTIONS OF TYPES OR SIZE OF PLANT MATERIAL WILL BE ACCEPTED WITHOUT WRITTEN APPROVAL BY OWNER'S REPRESENTATIVE, INCLUDING VARIETIES OF PLANT MATERIAL (SUCH AS VARIEGATED VS. NOT VARIEGATED).
13. ALL PLANT MATERIAL SHALL CONFORM TO UPPER RANGE LIMITS FOR CALIPER, HEIGHT AND ROOT BALL DIMENSIONS LISTED IN ANSI Z60.1-2014.
14. IN THE PLANTING BEDS BY THE RAMP AT THE NORTH PARKING LOT, PROVIDE 5-8 WEATHERED LIMESTONE BOULDERS, APPROXIMATELY 3' WIDE BY 5' LONG AND 18" TALL. SUPPLIED BY EARTHWORKS INC. 16900 BAXTER ROAD, CHESTERFIELD, MO 63005, PHONE (636) 532-0713, OR EQUAL. LANDSCAPE ARCHITECT TO REVIEW AND APPROVE FINAL LOCATION AND PLACEMENT.

PL T SC EDULE:

KEY	BOTANICAL NAME	COMMON NAME	MISSOURI NATIVE*	SIZE	CONDITION	TOTAL**
SHADE TREES						
AHB	*Carpinus caroliniana*	American Hornbeam	Y	3" CAL.	B&B	5
OGM	*Acer rubrum* 'October Glory'	October Glory Red Maple	Y	3" CAL.	B&B	5
SHL	*Gleditsia triacanthos f. inermis* 'Skycole' SKYLINE	Skyline Honey Locust	Y	3" CAL.	B&B	1
EVERGREEN SHRUBS						
GOJ	*Juniperus virginiana* 'Grey Owl'	Grey Owl Juniper	Y	#3	CONT.	55
SHRUBS						
BMV	*Viburnum dentatum* 'Christom' BLUE MUFFIN	Blue Muffin Viburnum	Y	#3	CONT.	92
CLB	*Symphoricarpos orbiculatus*	Coralberry	Y	#3	CONT.	18
HGS	*Itea virginica* 'Henry's Garnet'	Henry's Garnet Virginia Sweetspire	Y	#3	CONT.	22
LHS	*Itea virginica* 'Sprich' LITTLE HENRY	Little Henry Virginia Sweetspire	Y	#1	CONT.	17
NJT	*Ceanothus americanus*	New Jersey Tea	Y	#3	CONT.	13
SWN	*Physocarpus opulifolius* 'Seward' SUMMER WINE	Summer Wine Ninebark	Y	#3	CONT.	28
PERENNIALS						
BBL	*Liriope muscari* 'Big Blue'	Big Blue Lily Turf	N	1 QT	CONT.	750
BFW	*Asclepias tuberosa*	Butterfly Weed	Y	1 QT	CONT.	312
BMF	*Conoclunium coelestinum*	Blue Mistflower	Y	1 QT	CONT.	270
HAR	*Heuchera villosa* 'Purpurea'	Hairy Alum Root	Y	1 QT	CONT.	85
LBS	*Schizachyrium scoparium*	Little Bluestem	Y	#1	CONT.	19
PCF	*Echinacea purpurea*	Purple Coneflower	Y	1 QT	CONT.	110
PDS	*Sporobolus heterolepis*	Prairie Dropseed	Y	#1	CONT.	147
RCF	*Echinacea* 'Tomato Soup' or other red variety	Red Coneflower	Y	1 QT	CONT.	82
SMM	*Pycnanthemum tenuifolium*	Slender Mountain Mint	Y	1 QT	CONT.	75
SSG	*Panicum virgatum* 'Shenandoah'	Shenandoah Switch Grass	Y	#1	CONT.	70

* INCLUDES CULTIVARS OF MISSOURI NATIVES.
** SEE SHEET L5 FOR TOTALS OF ALL PLANT MATERIAL IN THE BIORETENTION BASINS.

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L4
LANDSCAPE SCHEDULES

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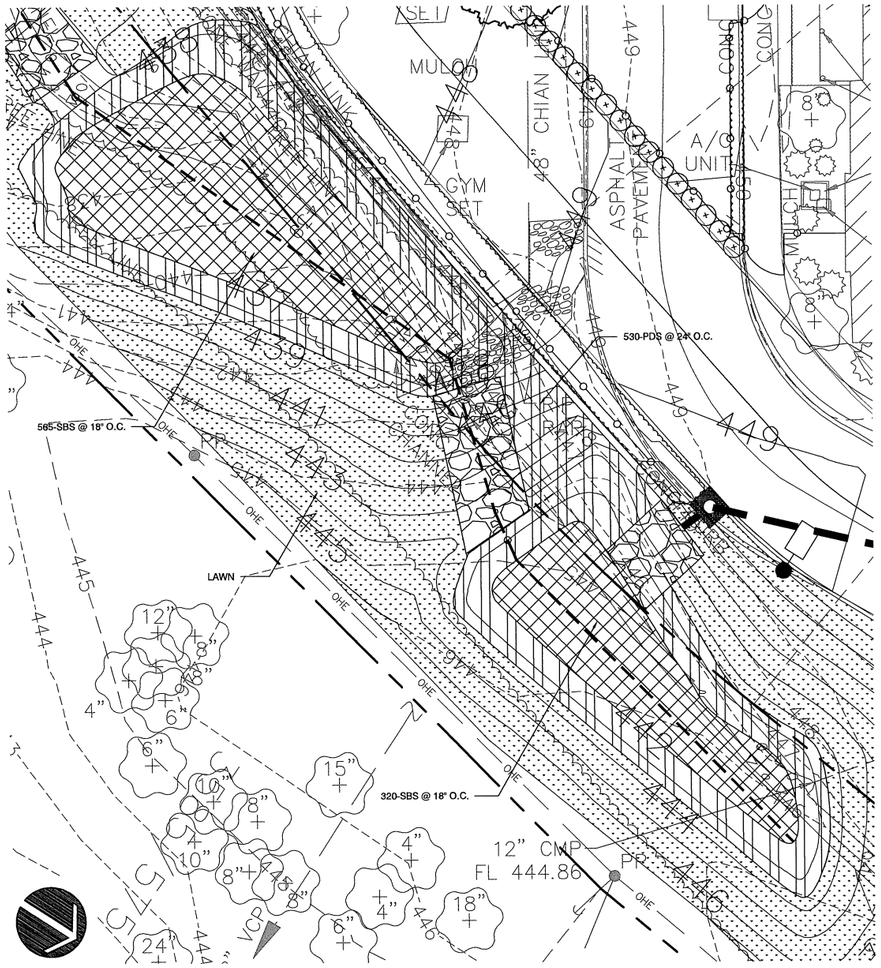

1 L5 **BIORETENTION BASINS PLAN**

1" = 10'-0"

PLANTING PLAN

SYMBOL	COMMON NAME	LATIN NAME	QUANTITY*	SPACING	PLUG SIZE
	PRAIRIE DROPSEED (PDS)	SPOROBOLUS HETEROLEPIS	530 EA	24" O.C.	#1 CONTAINER
	SHINING BLUESTAR (SBS)	AMSONIA ILLUSTRIS	885 EA	18" O.C.	QUART CONTAINER

* QUANTITIES ARE FOR BIORETENTION BASIN PLANTING ONLY. SEE LANDSCAPE SCHEDULE ON SHEET L4 FOR TOTALS OF OTHER PLANT MATERIAL.

PLANTING, WATER AND MULCH REQUIREMENTS

WATER AVAILABILITY	REQUIRED PLANTING PERIOD	MINIMUM CONTAINER SIZE	WATER REQUIREMENT FIRST 3 WEEKS*	WATER REQUIREMENTS AFTER 3 WEEKS*	MAXIMUM MULCH DEPTH****
NO AVAILABILITY TO WATER AFTER	LATE FEB.-APRIL ONLY	2.25" X 3.75" OR LARGER	WATER EACH PLUG IMMEDIATELY		1.5" FOR PLUGS
MANUAL WATERING WITH STANDARD SPRINKLER	LATE FEB. - EARLY JUNE SEPT. - OCTOBER	4.5" X 5" (QUART) OR LARGER IN SUMMER & FALL	1" (60 MIN) EVERY 4 DAYS	1" (60 MIN) EVERY 7 DAYS UNTIL PLANTS ESTABLISHED***	1.5" FOR PLUGS 2.5" FOR QUARTS
AUTOMATIC IRRIGATION (SET TO WATER MORE FREQUENTLY THAN NORMAL DURING FIRST TWO MONTHS AFTER PLANTING)	LATE FEB. - EARLY OCT.	2.25" X 3.75" (PLUG) OR LARGER IN SPRING. 4.5" X 5" (QUART) OR LARGER IN SUMMER & FALL	1" (60 MIN) EVERY 4 DAYS IN SPRING AND FALL. 1" (60 MIN) EVERY 3 DAYS IN SUMMER	1" (60 MIN) EVERY 7 DAYS UNTIL PLANTS ESTABLISHED***	1.5" FOR PLUGS 2.5" FOR QUARTS

* THIS WATER AMOUNT INCLUDES NATURAL RAINFALL. IF YOU GET A ½ INCH OF NATURAL RAIN THEN YOU WILL NEED TO ADD A ½ INCH OF WATER TO MEET THE 1 INCH REQUIREMENT.

** REQUIRES TRANSPORT OF WATER TO THE PLANTING SITE IN LARGE CONTAINERS AND POURING ENOUGH WATER ONTO EACH PLANT (AFTER PLANTING) TO MOISTEN THE ENTIRE PLANTING PIT.

*** PLANTS ARE ESTABLISHED WHEN ROOTS HAVE GROWN OUT OF THE CONTAINER SOIL AND INTO THE NATIVE SOIL BY 3-5 INCHES. THIS NORMALLY TAKES 3-4 MONTHS FOR MOST PERENNIALS AND GRASSES AND UP TO 6-7 MONTHS FOR TREES AND SHRUBS.

**** SHREDDED LEAF COMPOST IS RECOMMENDED FOR USE WITH PERENNIALS AND GRASSES. SHREDDED BARK MULCH IS RECOMMENDED FOR TREE AND SHRUB PLANTINGS AT A DEPTH OF 2 INCHES. SEE TYPICAL SECTION ON SHEET C3.1.

WATERING SCHEDULE

WATER AVAILABILITY	WATER REQUIREMENT FIRST 3 WEEKS*	WATER REQUIREMENTS AFTER 3 WEEKS*
MANUAL WATERING WITH STANDARD SPRINKLER	1" (60 MIN) EVERY 4 DAYS	1" (60 MIN) EVERY 7 DAYS UNTIL PLANTS ESTABLISHED**

* THIS WATER AMOUNT INCLUDES NATURAL RAINFALL. IF YOU GET A ½ INCH OF NATURAL RAIN THEN YOU WILL NEED TO ADD A ½ INCH OF WATER TO MEET THE 1 INCH REQUIREMENT.

** PLANTS ARE ESTABLISHED WHEN ROOTS HAVE GROWN OUT OF THE CONTAINER SOIL AND INTO THE NATIVE SOIL BY 3-5 INCHES. THIS NORMALLY TAKES 3-4 MONTHS FOR MOST PERENNIALS AND GRASSES AND UP TO 6-7 MONTHS FOR TREES AND SHRUBS.

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BIORETENTION BASIN PLANTING

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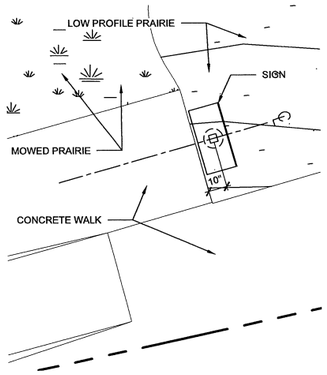
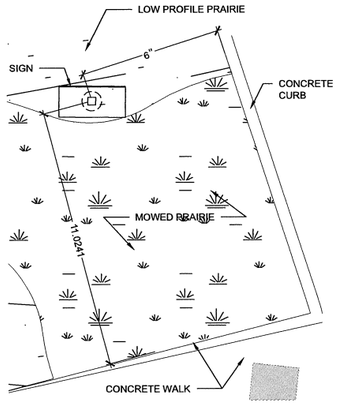
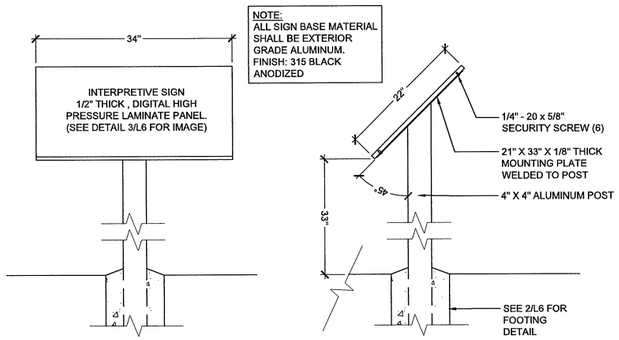


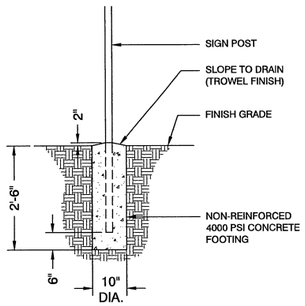
PLAN VIEW @ SOUTH ENTRANCE



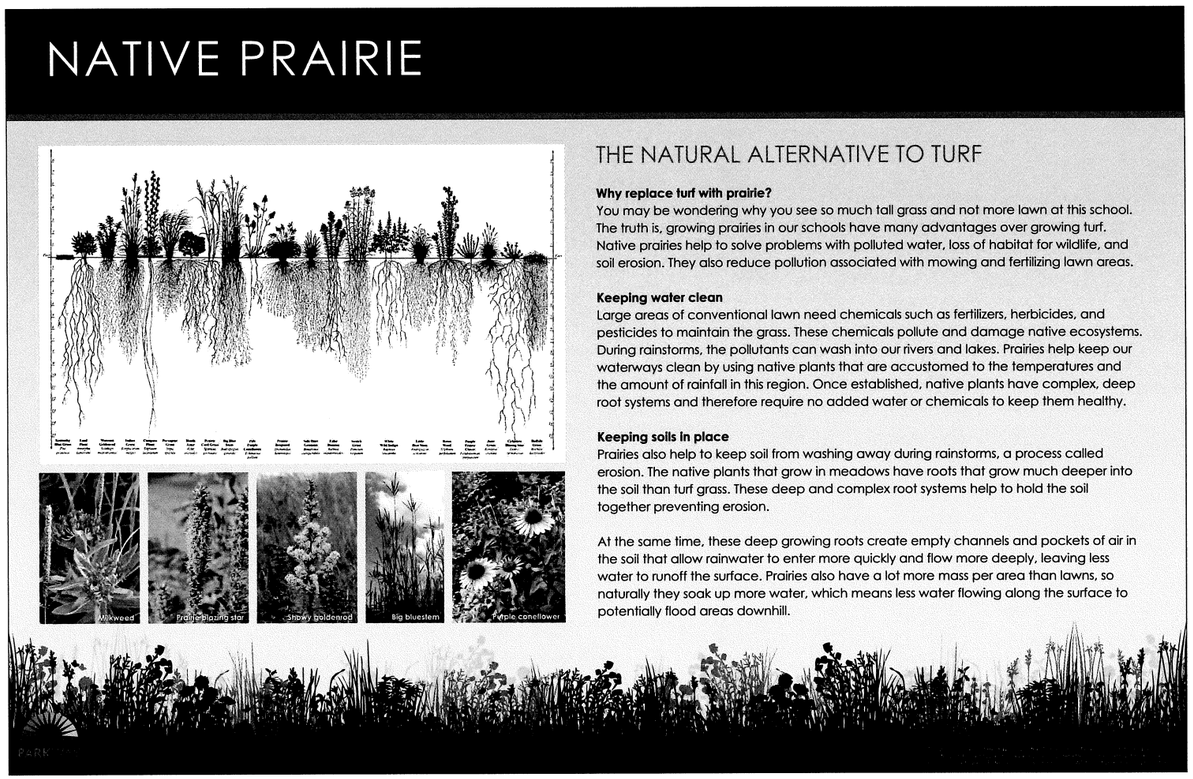
PLAN VIEW @ NORTH ENTRANCE



1 L6 INTERPRETIVE SIGN BASE
SECTION NTS



2 L6 SIGN FOOTING DETAIL
SECTION NTS



NOTE:
1. SEE SPECIFICATION SECTION 101400 FOR ADDITIONAL SIGNAGE INFORMATION.
2. AN ADOBE ILLUSTRATOR FILE WILL BE PROVIDED TO THE CONTRACTOR FOR USE IN FABRICATING THE SIGNS.

3 L6 INTERPRETIVE SIGN GRAPHIC - BOTH SIGNS
NTS

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BUILDING RENOVATIONS AND
SITE IMPROVEMENTS

PARKWAY SCHOOL DISTRICT
Parkway School District Project No. 011601B

1780 Carman Road Manchester, Missouri 63021

TRi Architects of the Possible®

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DATE: 11.29.16

REVISIONS

DWG. BY SBT

PSD PROJECT NO. 011601B

PROJECT NO. 14-006.14

SHEET NO.

L6

INTERPRETIVE SIGN DETAILS

PDS project #1617 | Last saved 11/21/2016 11:49:57 AM by Stalbert | Last plotted 11/21/2016 12:00:25 PM

SECTION 3

ROSS ELEMENTARY

BMP ORIGINAL PROJECT INFORMATION

ROSS ELEMENTARY SCHOOL
BUILDING RENOVATIONS AND SITE IMPROVEMENTS
PARKWAY SCHOOL DISTRICT

1150 Ross Avenue
St. Louis, Missouri 63146

Parkway School District Project No. 061601B

Project No: 14-006.17

Issue Date: 12.01.2016

PARKWAY SCHOOLS

GENERAL NOTES

1. CONTRACTOR SHALL VERIFY EXISTING FIELD CONDITIONS PRIOR TO THE START OF CONSTRUCTION AND SHALL REPORT ANY DISCREPANCIES TO THE ARCHITECT IMMEDIATELY.

2. CONTRACTOR SHALL CROSS-REFERENCE THE VARIOUS DISCIPLINES' PLANS HEREIN AND REVIEWED SHOP DRAWINGS PRIOR TO STARTING CONSTRUCTION PHASE OF CONSTRUCTION AND SHALL REPORT ANY DISCREPANCIES TO THE ARCHITECT IMMEDIATELY.

3. ONLY CONTRACT DOCUMENTS APPROVED FOR CONSTRUCTION AND REVIEWED SHOP DRAWINGS SHALL BE USED FOR CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR DISTRIBUTION OF SAID DOCUMENTS AND UPDATES TO THE FIELD FOR CONSTRUCTION.

4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL WORK WITH THESE PROJECT DOCUMENTS.

5. DIMENSIONS TO THE EXTERIOR OF THE BUILDING ARE TO THE EXTERIOR OF FOUNDATION/MASONRY UNLESS NOTED OTHERWISE.

6. DO NOT SCALE DRAWINGS.

7. THE WORD 'ALIGN' AS USED IN THESE DOCUMENTS SHALL SUPERSEDE DIMENSIONAL INFORMATION.

8. NO PRODUCTS CONTAINING ASBESTOS SHALL BE INSTALLED IN OR USED DURING THE CONSTRUCTION OF THIS PROJECT.

9. CODE COMPLIANCE – THE WORK SHALL BE GOVERNED BY ALL CURRENT APPLICABLE LOCAL, CITY, STATE AND NATIONAL CODES AND LAWS. THESE AUTHORITIES INCLUDE, BUT ARE NOT LIMITED TO THE IBC BUILDING CODE, NATIONAL ELECTRIC CODE, NATIONAL FIRE PROTECTION ASSOCIATION OR ANY OTHER AUTHORITY OR BODY HAVING JURISDICTION OVER WORK. THE SITE, PARKING LOT, AND BUILDING NEW WORK SHALL COMPLY WITH THE ADA (AMERICANS WITH DISABILITIES ACT) REGULATIONS. NOTIFY ARCHITECT OF ANY REQUIRED CHANGES TO COMPLY WITH ADA.

10. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS BEFORE BEGINNING WORK. CONTRACTOR SHALL PROTECT EXISTING UTILITIES, EXISTING EQUIPMENT AND MATERIALS FROM DAMAGE DURING CONSTRUCTION. ANY EXISTING UTILITIES, EQUIPMENT, MATERIALS AND SERVICES DAMAGED SHALL BE REPAIRED AT NO EXPENSE TO OWNER. CONTRACTOR SHALL TEMPORARILY MOVE OR TAKE EQUIPMENT OUT SERVICES AS NECESSARY TO COMPLETE WORK. SUCH SERVICES SHALL BE REPAIRED IN ACCORDANCE WITH THE SPECIFICATION.

ARCHITECTURAL SYMBOLS

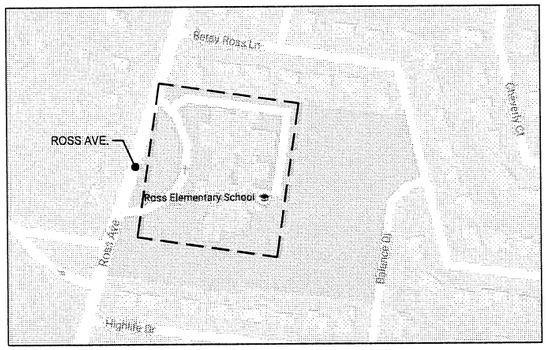
9 FLOOR PLAN SCALE:	DRAWING TITLE	10 A301	EXTERIOR ELEVATION	COL	COLUMN & GRID
10 A301	SECTION DETAIL (PLAN OR SECTION)	12 A505	DETAIL (PLAN OR SECTION)	10'-8"	RCP SOFFIT HEIGHT
10 A301 / 10 A301	BUILDING SECTION (PLAN OR ELEVATION)	RM NAME 2	ROOM NAME & NUMBER	3 A401 1	INTERIOR ELEVATIONS
				9	KEYED NOTE

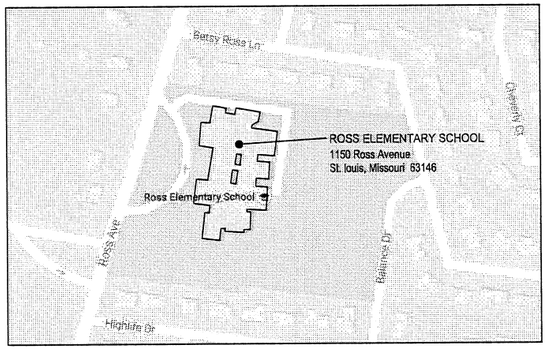
A	GLAZING TYPE
P12	PARTITION TYPE
1	REVISION
	ELEVATION MARK

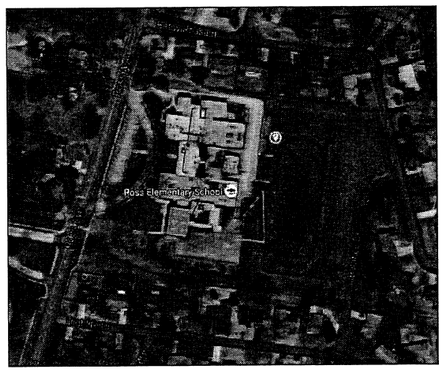
ARCHITECTURAL ABBREVIATIONS

ABOVE	ABV	EDGE OF SLAB	EOS	MASONRY OPENING	MO	SCHEDULE	SCHED
ABOVE FINISH FLOOR	AFF	ELECTRICAL	ELEC	MASONRY	MSRY	SECTION	SECT
ACOUSTICAL	ACT	WATER COOLER	EWC	MEDIUM DENSITY	MDF	SHEET	SHT
ALUMINUM	ALUM	ELEVATION	ELEV	FIBERBOARD		SIMILAR	SIM
AND	&	EQUAL	EQ	MECHANICAL	MECH	SOLID CORE	SC
ANGLE	∠	EQUIPMENT	EQUIP	METAL	MTL		
AT	@	EXISTING	EXIST			SPECIFICATION	SPEC
		EXPANSION JOINT	EJ	NOT IN CONTRACT	NIC	SQUARE	SQ
BLOCK	BLK			NOT TO SCALE	NTS	SQUARE FOOT	SF
BOARD	BD	FEET	FT			STAINLESS STEEL	SS
BOTTOM OF	BO	FIELD VERIFY	FV	OWNER FURNISHED	OFCI	STANDARD	STD
		FINISH GRADE	FG	CONTRACTOR INSTALLED		STEEL	STL
CEILING	CLG	FINISH FLOOR	FF	OWNER FURNISHED	OFOI	STRUCTURAL	STRUCT
CENTER LINE	℄	FIRE RETARDANT	FR	OWNER INSTALLED		SUSPENDED	SUSP
CERAMIC TILE	CT	FLOOR	FL	ON CENTER	OC		
CLEAR	CLR			OPENING	OPNG	TELEPHONE	TEL
CONCRETE	CONC	GENERAL CONTR.	GC			THICK	THK
CONC. MASONRY UNIT	CMU	GYPSUM BOARD	GYP BD	PAINTED	PTD	TOP OF	TO
CONTINUOUS	CONT			PLASTIC LAMINATE	PLAM	TONGUE & GROOVE	T&G
CONTRACTOR	CONTR	HARDWOOD	HDWD	PLYWOOD	PLYWD	TYPICAL	TYP
CONTRACTOR FURNISHED	CFCI	HIGH DENSITY	HDPB	PRESSURE TREATED	PT		
CONTRACTOR INSTALLED		PARTICLE BOARD				UNFINISHED	UNF
CONTROL JOINT	CJ	HEIGHT	HT	RADIUS	RAD	UNLESS NOTED OTHERWISE	UNO
CORNER GUARD	CG	HOUR	HR	REFERENCE	REF		
				REINFORCING	REINF	VERTICAL	VERT
DETAIL	DTL	INSULATION	INSUL	REFLECTED CEILING PLAN	RCP	VESTIBULE	VEST
DIAMETER	DIA			REQUIRED	REQ'D		
DOOR	DR	JOINT	JT	ROOF DRAIN	RD	WATERPROOF	WP
DOWNSPOUT	DS			ROOM	RM	WEIGHT	WT
DRAWING	DWG	LAVATORY	LAV	ROUGH OPENING	RO	WITH	W/
						WITH OUT	W/O
						WOOD	WD

VICINITY MAP







DRAWING INDEX

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I HEREBY SPECIFY, PURSUANT TO RSMo. 327.411 THAT THIS DRAWING SHEET IS AUTHENTICATED BY MY SEAL.

TRI, ARCHITECTS	ARCHITECT
WILLIAM TAO & ASSOCIATES, INC.	MECHANICAL ENGINEER
WILLIAM TAO & ASSOCIATES, INC.	PLUMBING / FP ENGINEER
WILLIAM TAO & ASSOCIATES, INC.	ELECTRICAL ENGINEER
KPFF CONSULTING ENGINEERS	STRUCTURAL ENGINEER
EDSI - ENGINEERING DESIGN SOURCE	CIVIL ENGINEER
PDS - PLANNING DESIGN STUDIO	LANDSCAPE ARCHITECT

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SHEET NO.

A001

COVER SHEET

NOTE:

WHEN THE WORD "COUNTY" IS USED ON THESE PLANS IT SHALL MEAN ST. LOUIS COUNTY, MISSOURI

WHEN THE INITIALS "MSD" ARE USED ON THESE PLAND THEY SHALL MEAN THE METROPOLITAN ST. LOUIS SEWER DIDTRICT

GENERAL NOTES:

1. UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THE VERIFICATION OF THE LOCATION OF UNDERGROUND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE LOCATED PRIOR TO ANY GRADING OR CONSTRUCTION OF IMPROVEMENTS.

2. TOPOGRAPHIC SURVEY PREPARED AND FIELD DATA COLLECTED BY EDSI, INC. IN JULY AND AUGUST, 2016.

3. STORMWATER SHALL BE DISCHARGED AT AN ADEQUATE NATURAL DISCHARGE POINT. SINKHOLES ARE NOT ADEQUATE NATURAL DISCHARGE POINTS.

4. FILLED PLACES INCLUDING TRENCH BACKFILLS, UNDER BUILDINGS, SANITARY SEWER LINES, AND/OR PAVED AREAS SHALL BE COMPACTED IN ACCORDANCE WITH THE SOILS REPORT FOR THIS PROJECT, UNLESS OTHERWISE SPECIFIED.

5. TRENCH BACKFILLS UNDER PAVED AREA SHALL BE GRANULAR BACKFILL, UNLESS OTHERWISE SPECIFIED.

6. CONSTRUCTION AND MATERIALS USED SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE MSD, THE SAINT LOUIS COUNTY DEPARTMENT OF HIGHWAYS, AND THE PROJECT SPECIFICATIONS. THE MOST STRINGENT REQUIREMENTS SHALL APPLY.

7. LOCATION AND ELEVATION OF EXISTING INLETS, MANHOLES AND PIPES TO BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION. MANHOLES AND INLET TOPS BUILT WITHOUT ELEVATIONS FURNISHED BY THE ENGINEER WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

8. EXISTING ABOVE & BELOW GROUND UTILITIES TO BE PROTECTED AND USED IN PLACE, UNLESS OTHERWISE SPECIFIED.

9. A *.DWG FILE WILL BE MADE AVAILABLE TO THE CONTRACTOR TO WHOM THE WORK IS AWARDED FOR HIS USE IN SITE LAYOUT.

10. PARKING ON NON-SURFACED AREAS IS PROHIBITED IN ORDER TO ELIMINATE THE CONDITION WHEREBY MUD FROM CONSTRUCTION AND EMPLOYEE VEHICLES IS TRACKED ONTO THE PAVEMENT CAUSING HAZARDOUS ROADWAY AND DRIVING CONDITIONS. CONTRACTOR SHALL KEEP ROAD CLEAR OF MUD AND DEBRIS.

11. THE STREETS SURROUNDING THIS DEVELOPMENT AND ANY STREET USED FOR CONSTRUCTION ACCESS SHALL BE CLEANED THROUGHOUT THE DAY.

12. ALL TRASH AND DEBRIS ON-SITE, EITHER EXISTING OR FROM CONSTRUCTION, MUST BE REMOVED AND LEGALLY DISPOSED OF OFF-SITE.

13. NOTIFY THE COUNTY DEPARTMENT OF PUBLIC WORKS 48 HOURS PRIOR TO THE COMMENCEMENT OF GRADING AND/OR PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

14. EROSION AND SILTATION CONTROL DEVICES SHALL BE INSTALLED BY THE CONTRACTOR PRIOR TO ANY GRADING AND BE MAINTAINED THROUGHOUT THE PROJECT UNTIL ACCEPTANCE OF THE WORK BY THE OWNER AND/OR CONTROLLING REGULATORY AGENCY (AHJ) AND ADEQUATE VEGETATIVE GROWTH INSURES NO FURTHER EROSION OF THE SOIL. ADDITIONAL SILTATION CONTROL DEVICES MAY BE REQUIRED AS DIRECTED BY THE COUNTY.

15. WHEN CLEARING AND/OR GRADING OPERATIONS ARE COMPLETED OR SUSPENDED FOR MORE THAN 30 DAYS, ALL NECESSARY PRECAUTIONS SHALL BE TAKEN TO RETAIN SOIL MATERIALS ON SITE. PROTECTIVE MEASURES MAY BE REQUIRED BY THE DIRECTOR OF PUBLIC WORKS SUCH AS SODDING, TEMPORARY SEEDING, PERIODIC NETTING, MULCHING, OR OTHER SUITABLE MEANS.

16. SILTATION DEVICES SHALL BE INSPECTED PERIODICALLY FOR DAMAGE AND FOR THE AMOUNT OF SEDIMENT WHICH HAS ACCUMULATED. REMOVAL OF SEDIMENT WILL BE REQUIRED WHEN IT REACHES 1/2 THE HEIGHT OF THE SILTATION DEVICE.

17. SAWCUT EXISTING PAVEMENT FULL DEPTH TO ASSURE A SMOOTH MATCH BETWEEN THE EXISTING AND NEW PAVEMENT. REMOVE ENOUGH PAVEMENT TO ACCOMMODATE NEW WORK.

18. PROPOSED GRADES SHALL BE WITHIN 0.1 FEET, MORE OR LESS, OF THOSE SHOWN ON THE GRADING PLAN.

19. NO GRADING OR EXCAVATION SHALL OCCUR ON THE SITE UNTIL A PERMIT IS SECURED FROM THE AHJ AND THE SILTATION CONTROL DEVICES INDICATED ARE INSTALLED AND FUNCTIONING.

20. ALL AREAS DISTURBED BY CONSTRUCTION, EXCLUDING PAVED AREAS, SHALL RECEIVE FESCUE SOD WITHIN 30 DAYS FROM THE COMPLETION OF GRADING OPERATIONS AND SHALL BE MAINTAINED FOR A PERIOD OF TWO (2) WEEKS THEREAFTER. SOD PLACEMENT AND MAINTENANCE SHALL CONFORM IN ALL RESPECTS WITH THE PROJECT SPECIFICATIONS.

21. NOTIFY THE OWNER 48 HOURS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

22. NO EXCAVATION SHALL BE MADE SO CLOSE TO THE PROPERTY LINE AS TO ENDANGER ANY ADJOINING PROPERTY OF ANY PUBLIC OR PRIVATE STREET WITHOUT SUPPORTING AND PROTECTING SUCH PUBLIC OR PRIVATE STREET OR PROPERTY FROM SETTLING, CRACKING, OR OTHER DAMAGE.

23. ALL EXCAVATIONS, GRADING, OR FILLING SHALL HAVE A FINISHED GRADE NOT TO EXCEED A FOUR HORIZONTAL TO ONE VERTICAL (4:1) SLOPE UNLESS SPECIFICALLY APPROVED BY THE OWNER.

24. DIMENSIONS ARE TO BACK OF CURB, FACE OF WALL, OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

25. ALL FILLS PLACED UNDER PAVED AREAS, INCLUDING TRENCH BACKFILLS WITHIN AND OFF ROAD RIGHT-OF-WAY, SHALL BE COMPACTED TO 95% PER ASTM D698 FOR THE ENTIRE DEPTH OF THE FILL. COMPACTED GRANULAR BACKFILL IS REQUIRED IN ALL TRENCH EXCAVATION WITHIN THE STREET RIGHT-OF-WAY AND UNDER ALL PAVED AREAS. ALL TESTS SHALL BE PERFORMED UNDER THE DIRECTION OF AND VERIFIED BY A SOILS ENGINEER CONCURRENT WITH GRADING AND BACKFILLING OPERATIONS.

26. AT LEAST ONCE EVERY WEEK AND AFTER EVERY RAINFALL EVENT OF 0.25 INCHES OR MORE, EROSION AND SILTATION CONTROL DEVICES SHALL BE INSPECTED FOR DAMAGE AND AMOUNT OF SEDIMENTATION ACCUMULATED AND CORRECTIVE ACTIONS TAKEN, REPORTS OF THE INSPECTIONS AND CORRECTIVE ACTIONS SHALL BE PREPARED ON THE FORMS PROVIDED BY THE COUNTY AND SUBMITTED WITHIN 5 DAYS OF THE DATE OF THE INSPECTION.

27. TEMPORARY SILTATION CONTROL MEASURES (STRUCTURAL) SHALL BE MAINTAINED UNTIL VEGETATIVE COVER IS ESTABLISHED AT A SUFFICIENT DENSITY TO PROVIDE EROSION CONTROL ON THE SITE.

28. ALL FINISHED GRADES (AREAS NOT TO BE DISTURBED BY FUTURE IMPROVEMENT) IN EXCESS OF 20% SLOPES (5:1) SHALL BE SODDED AS SOON AS POSSIBLE AFTER FINAL PLACEMENT.

29. DEBRIS AND FOUNDATION MATERIAL FROM ANY EXISTING IMPROVEMENT WHICH IS SCHEDULED TO BE DEMOLISHED FOR THIS DEVELOPMENT MUST BE PROPERLY DISPOSED OF OFF-SITE.

30. SHOULD SEDIMENT CONTAINMENT DEVICES FAIL AND SEDIMENT IS TRANSPORTED FROM THE SITE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING THE TRANSPORTED DEBRIS FROM THE AFFECTED PUBLIC AND/OR PRIVATE AREAS. THE DEBRIS MAY BE EITHER SPREAD OUT ON THE SCHOOL DISTRICT PROPERTY OR TRANSPORTED AND DISPOSED OF OFFSITE IN A LEGAL MANNER. THE AFFECTED AREA DAMAGED SHALL BE RESTORED TO THE CONDITIONS THAT EXISTED PRIOR TO THE CONTAINMENT DEVICE FAILURE.

GRADING PERMIT APPLICATION NOTES:

1. CONTRACTOR SHALL STORE ONSITE AN EXTRA 10% OF REQUIRED EROSION AND SILTATION CONTROL DEVICE QUANTITIES FOR EMERGENCIES.

2. SWPPP COMPLIANCE REPORTS TO BE SUBMITTED WEEKLY AND AFTER HEAVY RAINFALL TO BOTH THE CITY AND TO THE OWNER BY THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE THE NAME AND TELEPHONE NUMBER OF THE PERSON DESIGNATED TO PERFORM THE INSPECTIONS AND PROVIDE THE REPORTS.

POLLUTION PREVENTION PROCEDURES:

1. HANDLING AND DISPOSAL OF HAZARDOUS MATERIALS

DO: PREVENT SPILLS
USE PRODUCTS UP
FOLLOW LABEL DIRECTIONS FOR DISPOSAL
REMOVE LIDS FROM EMPTY BOTTLES AND CANS WHEN DISPOSING IN TRASH
RECYCLE WASTES WHENEVER POSSIBLE

DON'T: POUR WASTE INTO SEWERS OR WATERWAYS ON THE GROUND
POUR WASTE DOWN THE SINK, FLOOR DRAIN OR SEPTIC TANKS
BURY CHEMICALS OR CONTAINERS, OR DISPOSE OF THEM WITH CONSTRUCTION DEBRIS
BURN CHEMICALS OR CONTAINERS
MIX CHEMICALS TOGETHER

2. CONTAINERS SHALL BE PROVIDED FOR COLLECTION OF ALL WASTE MATERIAL INCLUDING CONSTRUCTION DEBRIS, TRASH, PETROLEUM PRODUCTS AND ANY HAZARDOUS MATERIALS TO BE USED ONSITE. ALL WASTE MATERIAL SHALL BE DISPOSED OF AT FACILITIES APPROVED FOR THAT MATERIAL.

3. NO WASTE MATERIALS SHALL BE BURIED ON-SITE.

4. MIXING, PUMPING, TRANSFERRING OR OTHERWISE HANDLING CONSTRUCTION CHEMICALS SUCH AS FERTILIZER, LIME, ASPHALT, CONCRETE DRYING COMPOUNDS, AND ALL OTHER POTENTIALLY HAZARDOUS MATERIALS SHALL BE PERFORMED IN AN AREA AWAY FROM ANY WATERCOURSE, DITCH OR STORM DRAIN.

5. EQUIPMENT FUELING AND MAINTENANCE, OIL CHANGING, ETC. SHALL BE PERFORMED ONLY IN AN AREA DESIGNATED FOR THAT PURPOSE. THE DESIGNATED AREA IS EQUIPPED FOR RECYCLING OIL AND CATCHING SPILLS.

6. CONCRETE WASH WATER SHALL NOT BE ALLOWED TO FLOW DIRECTLY TO STORM SEWERS, STREAMS, DITCHES, LAKES, ETC. WITHOUT BEING TREATED. A SUMP OR PIT SHALL BE CONSTRUCTED TO CONTAIN CONCRETE WASH WATER.

7. IF SUBSTANCES SUCH AS OIL, DIESEL FUEL, HYDRAULIC FLUID, ANTIFREEZE, ETC., ARE SPILLED, LEAKED, OR RELEASED ONTO SOIL, THE SOIL SHALL BE DUG UP AND DISPOSED OF AT A LICENSED SANITARY LANDFILL (NOT A CONSTRUCTION/DEMOLITION DEBRIS LANDFILL). SPILLS ON PAVEMENT SHALL BE ABSORBED WITH SAWDUST, KITTY LITTER OR PRODUCT DESIGNED FOR THAT PURPOSE AND DISPOSED OF AT A LICENSED SANITARY LANDFILL. HAZARDOUS OR INDUSTRIAL WASTES SUCH AS MOST SOLVENTS, GASOLINE, OIL-BASED PAINTS, AND CEMENT CURING COMPOUNDS REQUIRE SPECIAL HANDLING. THESE MATERIALS WILL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH MoDNR REQUIREMENTS.

8. STATE LAW REQUIRES THE PARTY RESPONSIBLE FOR A PETROLEUM PRODUCT SPILL IN EXCESS OF 50 GALLONS TO REPORT THE SPILL TO MoDNR (537-634-2436) AS SOON AS PRACTICAL AFTER DISCOVERY. FEDERAL LAW REQUIRES THE RESPONSIBLE PARTY TO REPORT ANY RELEASE OF OIL IF IT REACHES OR THREATENS A SEWER, LAKE, CREEK, STREAM, RIVER, GROUNDWATER, WETLAND, OR AREA, LIKE A ROAD DITCH, THE DRAINS INTO ONE OF THE ABOVE.

9. SUFFICIENT TEMPORARY TOILET FACILITIES TO SERVE THE NUMBER OF WORKERS ON THE SITE SHALL BE PROVIDED. THE FACILITIES SHALL BE SERVICED FREQUENTLY TO MAINTAIN A SANITARY CONDITION.

ST. LOUIS COUNTY HIGHWAYS AND TRAFFIC GENERAL NOTES:

1. ALL SEDIMENT SHALL BE WASHED FROM ALL VEHICLES AT WASH DOWN STATION PRIOR TO LEAVING THE SITE. NO TRACKING OF MUD ONTO COUNTY ROADS SHALL BE ALLOWED.

2. INTERIM STORM WATER DRAINAGE CONTROL IN THE FORM OF SILTATION CONTROL MEASURES SHALL BE PROVIDED.

3. ADDITIONAL SILTATION CONTROL SHALL BE INSTALLED AS REQUIRED BY ST. LOUIS COUNTY DEPARTMENT OF TRANSPORTATION.

4. A PERMIT SHALL BE OBTAINED FORM THE ST. LOUIS COUNTY DEPARTMENT OF PUBLIC WORKS FOR CONSTRUCTION OF RETAINING WALLS.

5. ALL AFFECTED OFFSITE PROPERTY OWNERS SHALL BE GIVEN NOTICE 48 HOURS IN ADVANCE OF ANY WORK.

6. ANY DISTURBED OFF SITE PROPERTY (I.E. BUSHES, FENCES, MAILBOX, ETC.) SHALL BE REPLACED IN KIND AT THE DEVELOPER'S EXPENSE.

7. ALL CONSTRUCTION SHALL BE PER MOST CURRENT DETAILS LOCATED IN THE ST. LOUIS COUNTY DESIGN CRITERIA MANUAL AND/OR THE SEDIMENT AND EROSION CONTROL MANUAL.

LEGEND EXISTING

- SANITARY SEWER
- STORM SEWER
- WATER MAIN (W)
- ELECTRIC (E)
- COMMUNICATION (T)
- FIBER OPTIC (FO)
- GAS (G)
- OVERHEAD ELECTRIC (OHE)
- STORM MANHOLE
- STORM INLET
- SANITARY MANHOLE
- CLEANOUT (VENT)
- ELECTRIC MANHOLE (EMH)
- ELECTRIC BREAKER OUTLET BOX (ELEC OUTLET BOX)
- ELEC METER (EM)
- GAS VALVE (GV)
- PHONE CABLE BOX (TELE J.B.)
- ELECTRIC TRANSFORMER BOX (ELEC TRANSFORMER BOX)
- POWER POLE (PP)
- LIGHT STANDARD (LS)
- GAS METER (GM)
- GAS VALVE (GV)
- SMALL DRAIN
- WATER MANHOLE (WMH)
- WATER METER (WM)
- WATER VALVE (WV)
- FIRE HYDRANT (FH)
- SPRINKLER (SPRINKLER)
- TELEPHONE MANHOLE (TMH)
- PULL BOX (PB)
- TRAFFIC SIGNAL CONTROL BOX (TFC CONTROLLER)
- BUSH
- STUMP (STUMP)
- TREE
- BOLLARD
- SIGN
- EDGE OF ASPH PAVEMENT
- EDGE OF CONC PAVEMENT
- FLOW DIRECTION OF SEWER LINE

LEGEND NEW WORK

- CONTOUR (ELEV)
- SPOT ELEVATION (ELEV)
- STORM SEWER
- SANITARY SEWER
- MANHOLE
- CURB INLET
- GRATE INLET
- WATER LINE (W)
- FIRE HYDRANT
- GAS SERVICE (G)
- ELECTRIC SERVICE (E)
- TELEPHONE SERVICE (T)
- CONCRETE PAVEMENT
- ASPHALT PAVEMENT
- TO BE REMOVED (T.B.R.)
- USE IN PLACE (U.I.P.)
- ADJUST TO GRADE (A.T.G.)
- TO BE REMOVED & REPLACED (T.B.R.&R.)
- TO BE PROTECTED (T.B.P.)
- TO BE ABANDONED (T.B.A.)
- TOP OF PAVEMENT (TP)
- TOP OF SIDEWALK (TS)
- TOP OF WALL (TW)
- BOTTOM OF WALL (BW)
- REVOVE ALL SURFACE IMPROVEMENTS
- SILTATION CONTROL
- SAWCUT

THE SEAL OF STANLEY F. VISNOVSKE ON THIS DRAWING APPLIES ONLY TO THE CIVIL/SITE ENGINEERING SHOWN. IT DOES NOT APPLY, NOR IS ANY RESPONSIBILITY TAKEN FOR, GEOTECHNICAL (INCLUDING BUT NOT LIMITED TO SLOPE STABILITY), STRUCTURAL, HVAC, PLUMBING, ELECTRICAL, FIRE PROTECTION, TRAFFIC ENGINEERING, SURVEYING (BOUNDARY AND TOPOGRAPHIC), OR ARCHITECTURAL (BUILDING OR LANDSCAPE).

MSD P-XXXXXXXX MSD BASE MAP XXX

Stanley F. Visnovske
E-18139
Professional Engineer
I HEREBY SPECIFY, PURSUANT TO RSMo. 327.411 THAT THIS DRAWING SHEET IS AUTHENTICATED BY MY SEAL.

TRJ. ARCHITECTS — ARCHITECT
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WILLIAM TAO & ASSOCIATES, INC. — PLUMBING / FP ENGINEER
WILLIAM TAO & ASSOCIATES, INC. — ELECTRICAL ENGINEER
KPFF CONSULTING ENGINEERS — STRUCTURAL ENGINEER
EDSI - ENGINEERING DESIGN SOURCE — CIVIL ENGINEER
PDS - PLANNING DESIGN STUDIO — LANDSCAPE ARCHITECT

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PSD PROJECT NO. 091601B

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SHEET NO.

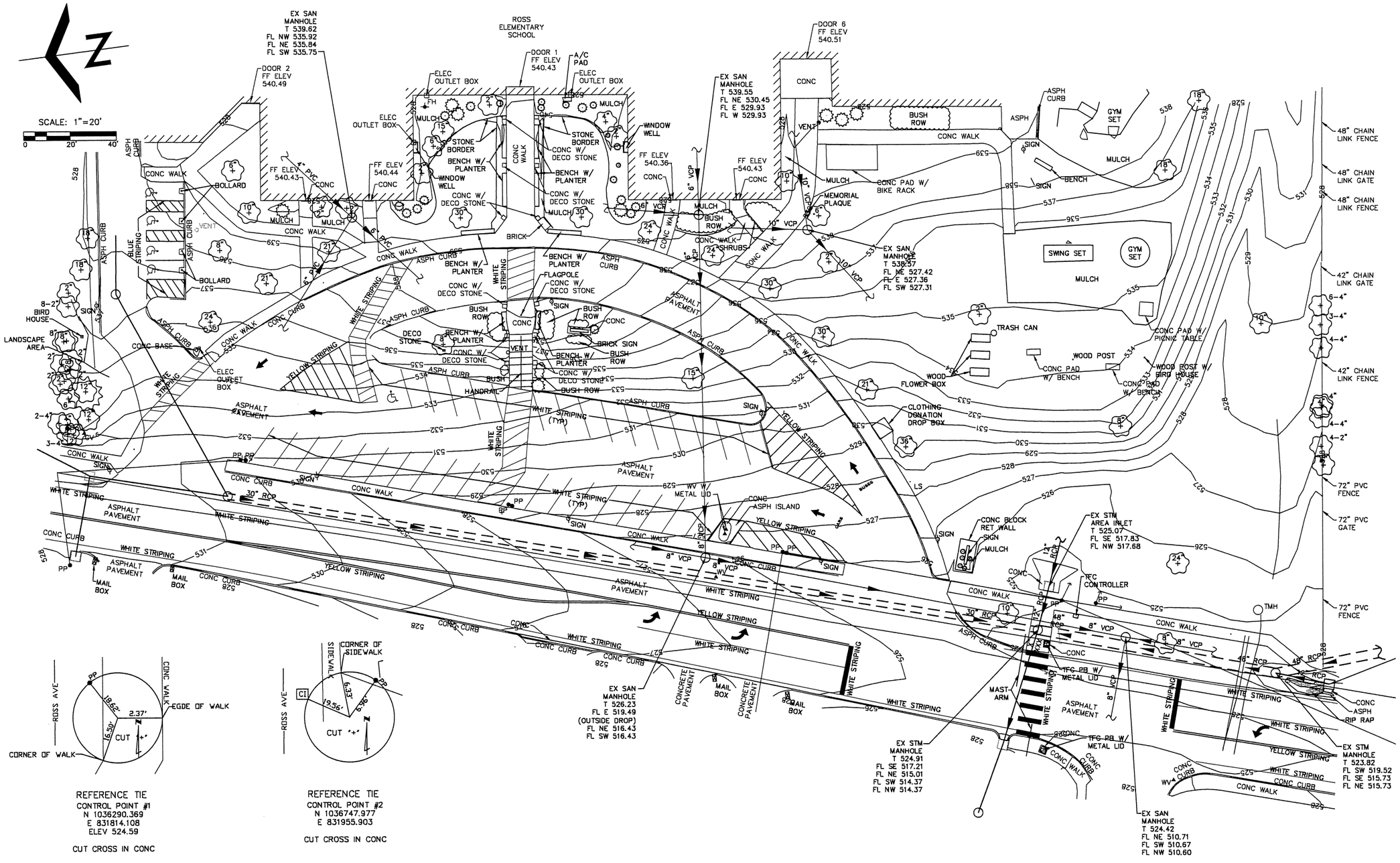
C0

LEGEND AND GENERAL NOTES

EDSI PROJECT #E-14-020.25

11/28/2016 3:33:15 PM Veronica Page
Z:\Parkway School District\E-14-020.25 - Ross Elementary\ISSSUE FOR BID\Revised Entry A -2016.11.28_TRANSLATED.dwg

SCALE: 1"=20'
0 20' 40'

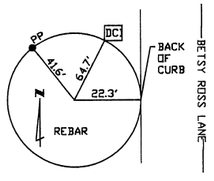


REFERENCE TIE
CONTROL POINT #1
N 1036290.369
E 831814.108
ELEV 524.59

CUT CROSS IN CONC

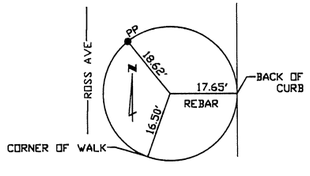
REFERENCE TIE
CONTROL POINT #2
N 1036747.977
E 831955.903

CUT CROSS IN CONC



REFERENCE TIE
CONTROL POINT #3
N 1036663.067
E 832611.018
ELEV 558.41

REBAR WITH ESDI CAP IN GRASS



REFERENCE TIE
CONTROL POINT #4
N 1036197.890
E 832513.704
ELEV 553.00

REBAR WITH ESDI CAP IN GRASS

THE UNDERGROUND UTILITIES SHOWN HEREON HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND RECORD DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, WHETHER IN SERVICE OR ABANDONED. THE UTILITIES SHOWN WITHIN THE SCHOOL PROPERTY ARE CONSIDERED PRIVATE AND ARE SHOWN FROM AVAILABLE RECORD DOCUMENTS PROVIDED BY THE PARKWAY SCHOOL DISTRICT. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING MISSOURI ONE CALL AND PARKWAY SCHOOL DISTRICT TO VERIFY THE LOCATION OF UNDERGROUND FACILITIES PRIOR TO CONSTRUCTION.

MSD P-XXXXXXXX MSD BASE MAP XXX

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PSD PROJECT NO. 091601B

PROJECT NO. 14-006.15

SHEET NO.
C0.1

SURVEY

EDSI PROJECT #E-14-020.25

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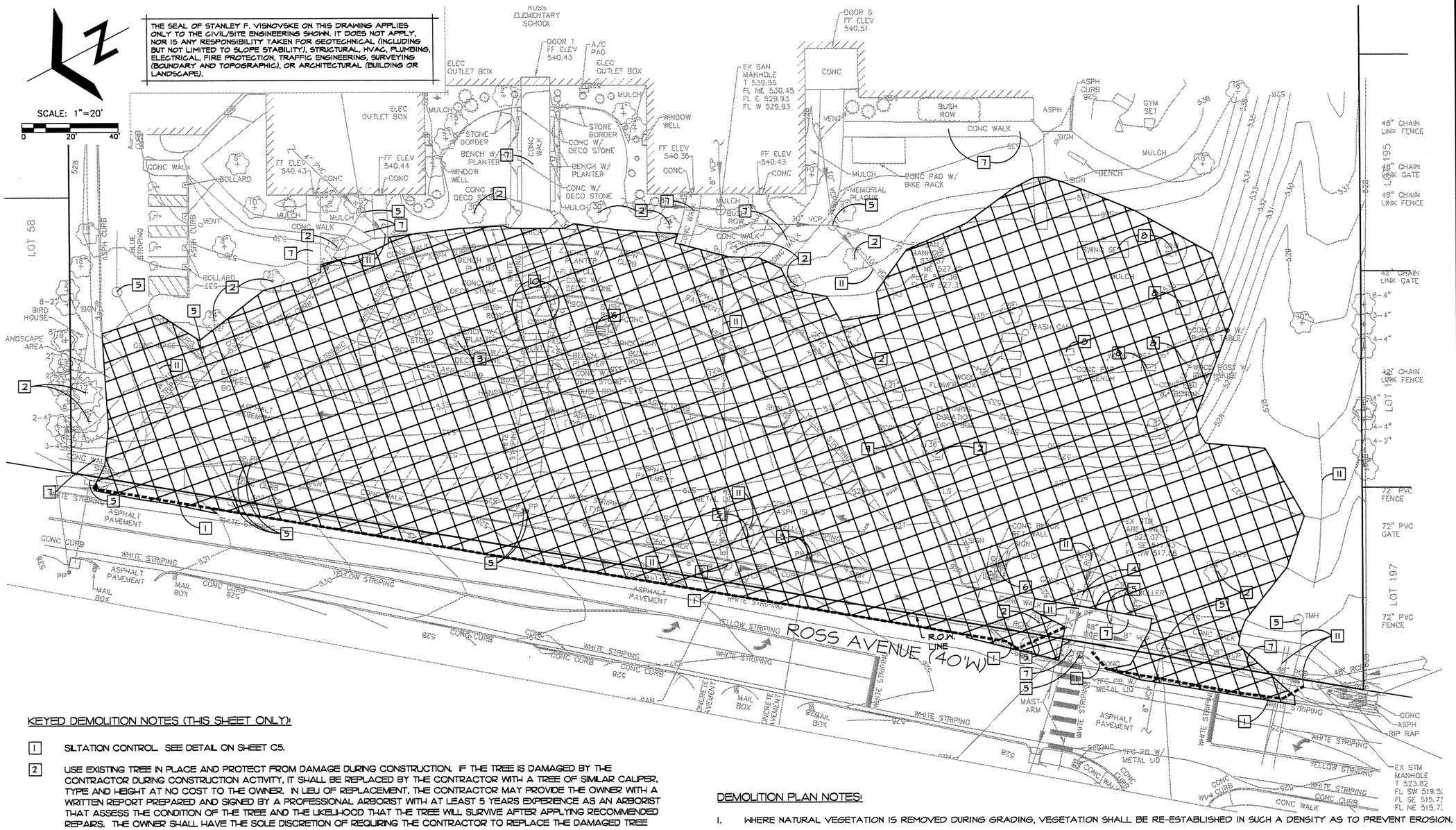
SCALE: 1"=20'



KEYED DEMOLITION NOTES (THIS SHEET ONLY):

1. SILTATION CONTROL. SEE DETAIL ON SHEET C5.
2. USE EXISTING TREE IN PLACE AND PROTECT FROM DAMAGE DURING CONSTRUCTION. IF THE TREE IS DAMAGED BY THE CONTRACTOR DURING CONSTRUCTION ACTIVITY, IT SHALL BE REPLACED BY THE CONTRACTOR WITH A TREE OF SIMILAR CALIPER, TYPE AND HEIGHT AT NO COST TO THE OWNER. IN LIEU OF REPLACEMENT, THE CONTRACTOR MAY PROVIDE THE OWNER WITH A WRITTEN REPORT PREPARED AND SIGNED BY A PROFESSIONAL ARBORIST WITH AT LEAST 5 YEARS EXPERIENCE AS AN ARBORIST THAT ASSESS THE CONDITION OF THE TREE AND THE LIKELIHOOD THAT THE TREE WILL SURVIVE AFTER APPLYING RECOMMENDED REPAIRS. THE OWNER SHALL HAVE THE SOLE DISCRETION OF REQUIRING THE CONTRACTOR TO REPLACE THE DAMAGED TREE REGARDLESS OF THE CONTENT AND RECOMMENDATION OF THE ARBORIST'S REPORT. SEE DETAIL ON SHEET C5.
3. EXISTING MEMORIAL TREE TO BE RELOCATED BY OWNER. SEE LANDSCAPE PLAN FOR RELOCATION SITE.
4. CONVERT EXISTING INLET TO MANHOLE. SEE UTILITY PLAN (SHEET C4).
5. USE EXISTING MANHOLE, POWER POLE, PULL BOX, TRAFFIC CONTROL BOX, TRAFFIC SIGNAL, AND WATER MANHOLE IN PLACE. ADJUST TO GRADE AS NECESSARY.
6. REMOVE AND RELOCATE EXISTING SCHOOL SIGNS. SEE SHEET C2 FOR RELOCATION AND COORDINATE WITH LANDSCAPE PLAN.
7. USE EXITING SIDEWALK IN PLACE. IF SIDEWALK IS DAMAGED BY THE CONTRACTOR DURING CONSTRUCTION ACTIVITY, IT SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE OWNER.
8. SWING SET, GYM SET, PICNIC TABLE, BENCHES, BIRD HOUSE WITH POST WILL BE REMOVED BY THE OWNER PRIOR TO CONSTRUCTION.
9. RELOCATE CLOTHING DONATION DROP BOX AND PUBLIC RECYCLING CONTAINER.
10. SALVAGE AND RELOCATE BENCHES AND FLAGPOLES. SEE SHEET L2 FOR RELOCATION.
11. USE EXISTING UTILITY IN PLACE AND PROTECT FROM DAMAGE DURING CONSTRUCTION.

DEMOLITION PLAN NOTES:

1. WHERE NATURAL VEGETATION IS REMOVED DURING GRADING, VEGETATION SHALL BE RE-ESTABLISHED IN SUCH A DENSITY AS TO PREVENT EROSION.
2. WHEN CLEARING AND/OR GRADING OPERATIONS ARE COMPLETED OR SUSPENDED FOR MORE THAN 5 DAYS IN ANY AREA, THE DISTURBED AREA SHALL BE SEEDED OR OTHERWISE STABILIZED TO SIGNIFICANTLY REDUCE THE ERODIBILITY OF THE SOIL. PROTECTIVE MEASURES MAY INCLUDE A COMBINATION OF SEEDING, SODDING, MULCHING OR OTHER SUITABLE MEANS TO PROTECT THE GROUND SURFACE FROM EROSION.
3. IF CUT AND FILL OPERATIONS OCCUR DURING A SEASON NOT FAVORABLE FOR IMMEDIATE ESTABLISHMENT OF PERMANENT GROUND COVER, A FAST GERMINATING ANNUAL SUCH AS RYE GRASSES OR SUDAN GRASSES SHALL BE UTILIZED TO RETARD EROSION.
4. ALL TRASH AND DEBRIS ON-SITE, EITHER EXISTING OR FROM CONSTRUCTION, MUST BE REMOVED AND PROPERLY DISPOSED OF OFF-SITE.
5. EROSION AND SILTATION CONTROL SHALL BE INSTALLED PRIOR TO ANY GRADING AND BE MAINTAINED THROUGHOUT THE PROJECT UNTIL ACCEPTANCE OF THE WORK BY THE OWNER AND /OR CONTROLLING REGULATORY AGENCY AND ADEQUATE VEGETATIVE GROWTH INSURES NO FURTHER EROSION OF THE SOIL.
6. STORM WATER PIPES, OUTLETS AND CHANNELS SHALL BE PROTECTED BY SILT BARRIERS AND KEPT FREE OF WASTE AND SILT AT ALL TIMES PRIOR TO FINAL SURFACE STABILIZATION AND/OR PAVING.
7. SILTATION CONTROL DEVICES SHALL BE INSPECTED PERIODICALLY FOR DAMAGE AND FOR THE AMOUNT OF SEDIMENT WHICH HAS ACCUMULATED. REMOVAL OF SEDIMENT WILL BE REQUIRED WHEN IT REACHES 1/2 THE HEIGHT OF THE SILTATION CONTROL DEVICE.
8. ADDITIONAL SILTATION CONTROL MAY BE REQUIRED AS DEEMED NECESSARY BY THE CITY.
9. THE CONTRACTOR SHALL REMOVE ALL SURFACE IMPROVEMENTS INCLUDING BUT NOT LIMITED TO PAVEMENT, CURBS, TREES, SIGNS, AND SHRUBS WITHIN THE AREA NOTED BY THE LEGEND SYMBOL XXXXXX ON THIS SHEET. THERE ARE EXCEPTIONS. EXCEPTIONS ARE NOTED BY OTHER NOTES OR BY ABBREVIATIONS NOTED ON THIS SHEET. CURBS ARE A PROMINENT EXCEPTION AS DESCRIBED IN THE KEYED NOTES.

MSD P-XXXXXXXX MSD BASE MAP XXX

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PROJECT NO. 14-006.15

SHEET NO.

C1

DEMOLITION PLAN

EDSI PROJECT #E-14-020.25

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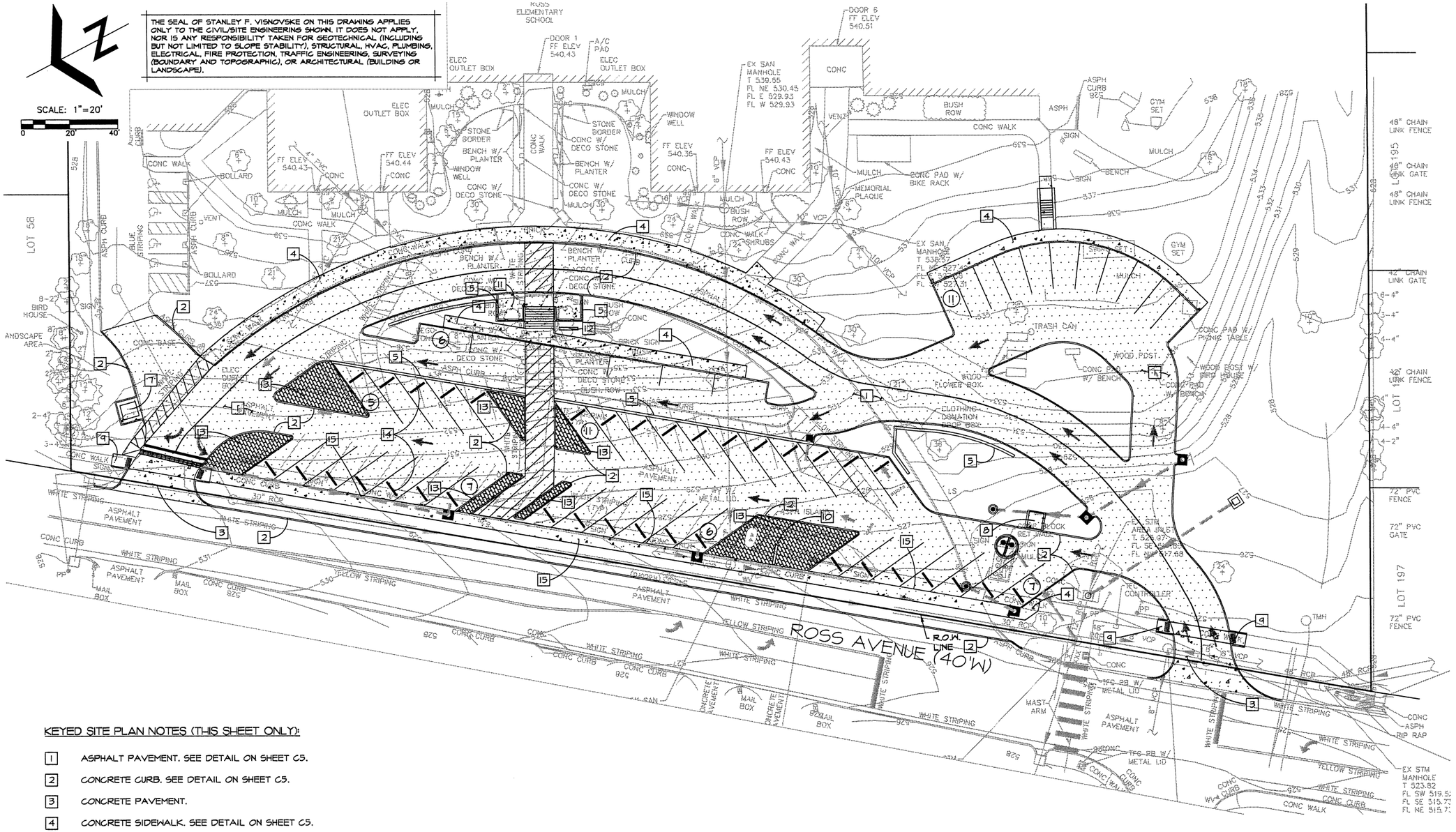
SCALE: 1"=20'

0 20' 40'



KEYED SITE PLAN NOTES (THIS SHEET ONLY):

1. ASPHALT PAVEMENT. SEE DETAIL ON SHEET C5.
2. CONCRETE CURB. SEE DETAIL ON SHEET C5.
3. CONCRETE PAVEMENT.
4. CONCRETE SIDEWALK. SEE DETAIL ON SHEET C5.
5. MODULAR BLOCK RETAINING WALL. WALL DESIGN BY CONTRACTOR. WALL SHALL BE DESIGNED FOR VEHICLE SURCHARGE WHERE APPLICABLE. SEE DETAIL ON SHEET C5.
6. PLAYGROUND AREA TO BE INSTALLED BY OWNER. CONTRACTOR TO REPLACE POSTS. INSTALL ORNAMENTAL FENCE AROUND PLAY PERIMETER.
7. RELOCATE PUBLIC CLOTHING DONATION DROP BOX. SEE PAVEMENT DETAIL ON SHEET C5.
8. RELOCATE PUBLIC RECYCLING CONTAINER. SEE PAVEMENT DETAIL ON SHEET C5.
9. ADA ACCESSIBLE RAMP, SEE DETAIL ON SHEET C5.
10. NEW LOCATION FOR EXISTING SCHOOL MARQUEE SIGN
11. FOR LOCATION OF PLACEMENT OF EXISTING FLAGPOLE, SEE LANDSCAPE PLAN.
12. NEW LOCATION FOR EXISTING SCHOOL SIGN. SEE LANDSCAPE PLANS FOR DETAILS.
13. NEW PRE-CAST PAVER. SEE DETAIL ON SHEET C5.
14. WHEEL STOPS, DEE DETAIL ON SHEET C6.
15. INTEGRAL SIDEWALK/CURB. SEE DETAIL ON SHEET C6.

MSD P-XXXXXXXX MSD BASE MAP XXX

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PROJECT NO. 14-006.15
SHEET NO.
C2
SITE PLAN

EDSI PROJECT #E-14-020.25

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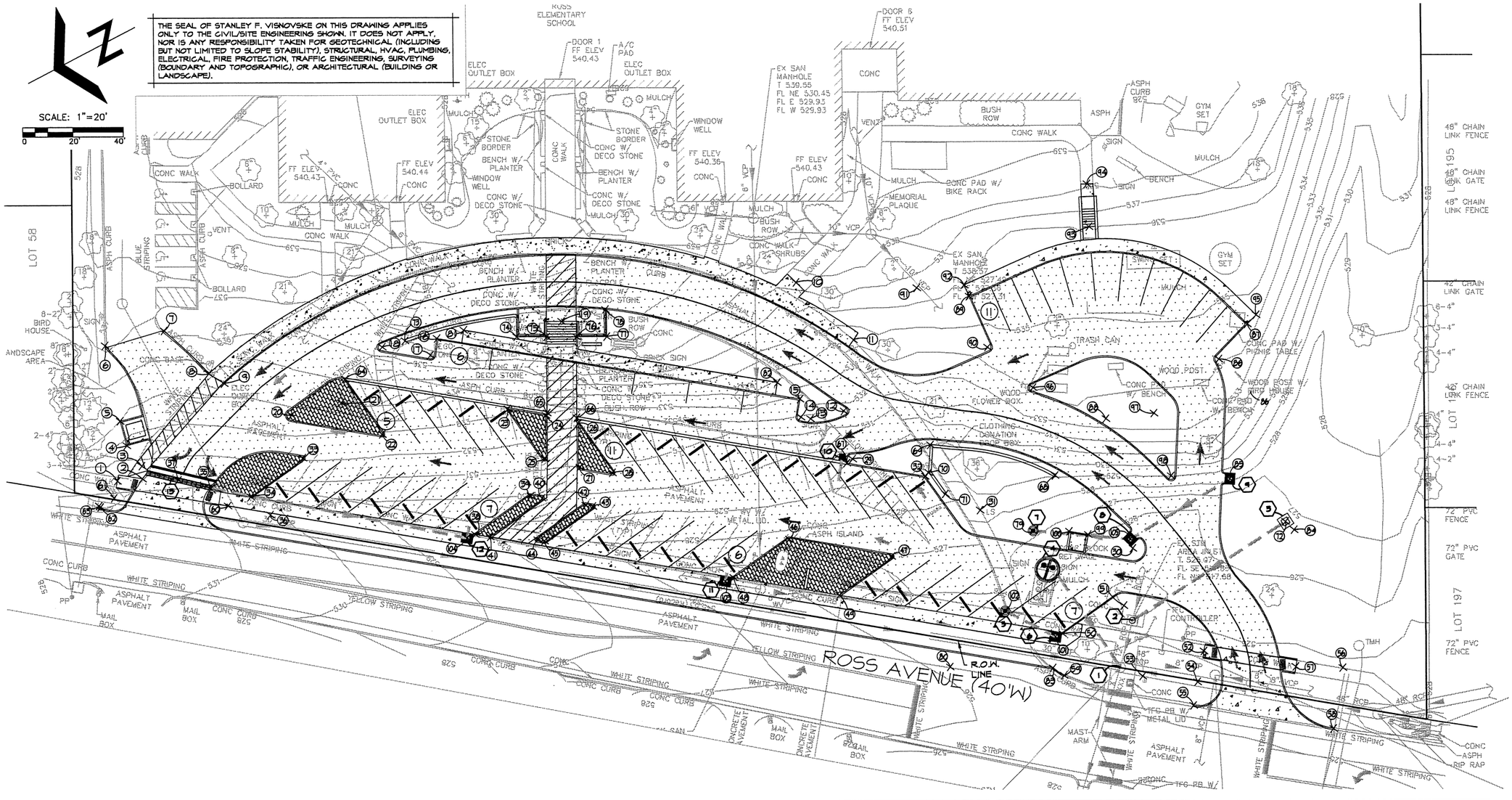

POINT TABLE			
POINT #	DESCRIPTION	NORTHING	EASTING
1	END OF SIDEWALK	1036758.29	831953.48
2	CORNER OF CURB	1036748.30	831953.01
3	END OF SIDEWALK	1036747.82	831958.03
4	CORNER OF CURB	1036752.66	831966.92
5	CORNER OF CURB	1036753.94	831976.84
6	END OF CURB	1036755.76	832007.38
7	END OF CURB	1036731.67	832010.09
8	END OF CURB	1036716.32	831990.81
9	END OF CURB	1036710.73	831986.16
10	END OF SIDEWALK	1036479.72	831995.65
11	END OF SIDEWALK	1036460.21	831970.06
12	1.5' RADIUS POINT	1036467.81	831942.44
13	1.5' RADIUS POINT	1036481.43	831941.23
14	1.5' RADIUS POINT	1036485.12	831942.36
15	CORNER OF CURB	1036484.49	831949.49
16	CORNER OF CURB	1036624.42	831992.66
17	1.5' RADIUS POINT	1036627.92	831986.41
18	1.5' RADIUS POINT	1036646.39	831992.11
19	END OF STAIRS	1036574.26	831992.74

POINT TABLE			
POINT #	DESCRIPTION	NORTHING	EASTING
20	2' RADIUS POINT	1036685.90	831970.08
21	9.5' RADIUS POINT	1036665.47	831972.36
22	0.5' RADIUS POINT	1036651.07	831957.76
23	CORNER OF CURB	1036600.26	831961.14
24	CORNER OF CURB	1036585.54	831956.60
25	0.5' RADIUS POINT	1036588.30	831939.59
26	CORNER OF CURB	1036573.22	831951.79
27	0.5' RADIUS POINT	1036575.03	831934.38
28	0.5' RADIUS POINT	1036562.51	831930.46
29	2' RADIUS POINT	1036467.04	831923.18
30	5' RADIUS POINT	1036361.43	831873.13
31	10' RADIUS POINT	1036419.46	831896.26
32	CORNER OF CURB	1036439.38	831912.56
33	0.5' RADIUS POINT	1036683.81	831952.69
34	END OF CURB	1036706.51	831940.12
35	CORNER OF CURB	1036721.85	831945.37
36	25' RADIUS POINT	1036699.70	831931.95
37	CENTER OF DRAIN	1036734.14	831950.59
38	END OF CURB	1036620.03	831913.44

POINT TABLE			
POINT #	DESCRIPTION	NORTHING	EASTING
39	0.5' RADIUS POINT	1036595.90	831925.60
40	0.5' RADIUS POINT	1036591.56	831924.23
41	END OF CURB	1036614.25	831911.67
42	0.5' RADIUS POINT	1036574.77	831919.06
43	0.5' RADIUS POINT	1036572.06	831918.22
44	0.5' RADIUS POINT	1036595.65	831908.02
45	0.5' RADIUS POINT	1036592.94	831907.18
46	0.5' RADIUS POINT	1036496.39	831894.88
47	0.5' RADIUS POINT	1036456.94	831882.71
48	END OF CURB	1036520.44	831882.73
49	END OF CURB	1036479.65	831870.14
50	CORNER OF CURB	1036393.60	831843.23
51	5' RADIUS POINT	1036368.02	831851.09
52	END OF SIDEWALK	1036338.79	831828.91
53	31.5' RADIUS POINT	1036364.35	831822.23
54	9.5' RADIUS POINT	1036342.97	831817.06
55	END OF CURB	1036345.80	831807.99
56	24.5' RADIUS POINT	1036284.77	831815.05
57	END OF SIDEWALK	1036303.22	831817.95

POINT TABLE			
POINT #	DESCRIPTION	NORTHING	EASTING
58	END OF CURB	1036291.65	831791.54
59	END OF CURB	1036395.21	831826.65
60	9.5' RADIUS POINT	1036715.96	831937.80
61	5' RADIUS POINT	1036760.50	831946.88
62	0.5' RADIUS POINT	1036766.36	831943.98
63	END OF CURB	1036766.84	831944.64
64	END OF WALL	1036662.67	831981.43
65	END OF WALL	1036584.92	831957.45
66	END OF WALL	1036573.45	831953.91
67	END OF WALL	1036469.54	831921.86
68	END OF WALL	1036388.01	831905.95
69	CORNER OF WALL	1036435.56	831924.65
70	CORNER OF WALL	1036437.78	831913.81
71	END OF WALL	1036432.30	831904.51
72	CENTER OF STRUCTURE	1036299.52	831875.63
73	END OF WALL	1036637.15	831993.38
74	CORNER OF WALL	1036592.83	831989.03
75	CORNER OF WALL	1036580.93	831987.45
76	CORNER OF WALL	1036569.18	831985.90

POINT TABLE			
POINT #	DESCRIPTION	NORTHING	EASTING
77	CORNER OF WALL	1036557.29	831984.34
78	END OF WALL	1036556.37	831995.13
79	CENTER OF STRUCTURE	1036399.61	831885.30
80	89.5' RADIUS POINT	1036439.78	831836.03
81	CORNER OF WALK	1036613.39	831994.49
82	CORNER OF WALK	1036492.57	831957.22
83	CORNER OF CURB	1036399.21	831830.25
84	29.5' RADIUS POINT	1036296.53	831871.97
85	CENTER OF STRUCTURE	1036319.16	831895.47
86	1.5' RADIUS POINT	1036317.10	831943.14
87	CORNER OF CURB	1036303.86	831955.49
88	24.5' RADIUS POINT	1036364.99	831925.61
89	CORNER OF CURB	1036412.26	831981.08
90	1.5' RADIUS POINT	1036407.66	831960.02
91	34.5' RADIUS POINT	1036432.46	831987.15
92	CORNER OF WALK	1036413.66	831985.87
93	START OF STAIRS	1036361.16	832002.08
94	END OF WALK	1036359.69	832019.01
95	CORNER OF WALK	1036299.93	831958.58

POINT TABLE			
POINT #	DESCRIPTION	NORTHING	EASTING
96	1.5' RADIUS POINT	1036391.93	831941.70
97	9.5' RADIUS POINT	1036345.72	831925.28
98	1.5' RADIUS POINT	1036342.28	831899.71
99	CORNER OF CONC.	1036378.22	831880.93
100	CORNER OF CONC.	1036385.39	831883.14
101	CENTER OF STRUCTURE	1036396.58	831842.43
102	CENTER OF STRUCTURE	1036414.89	831855.18
103	CENTER OF STRUCTURE	1036523.86	831881.69
104	CENTER OF STRUCTURE	1036623.44	831912.42
105	CENTER OF STRUCTURE	1036361.87	831876.94

MSD P-XXXXXXXX MSD BASE MAP XXX

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PROJECT NO. 14-006.15
SHEET NO.
C2.1
SITE PLAN COORDINATES

EDSI PROJECT #E-14-020.25

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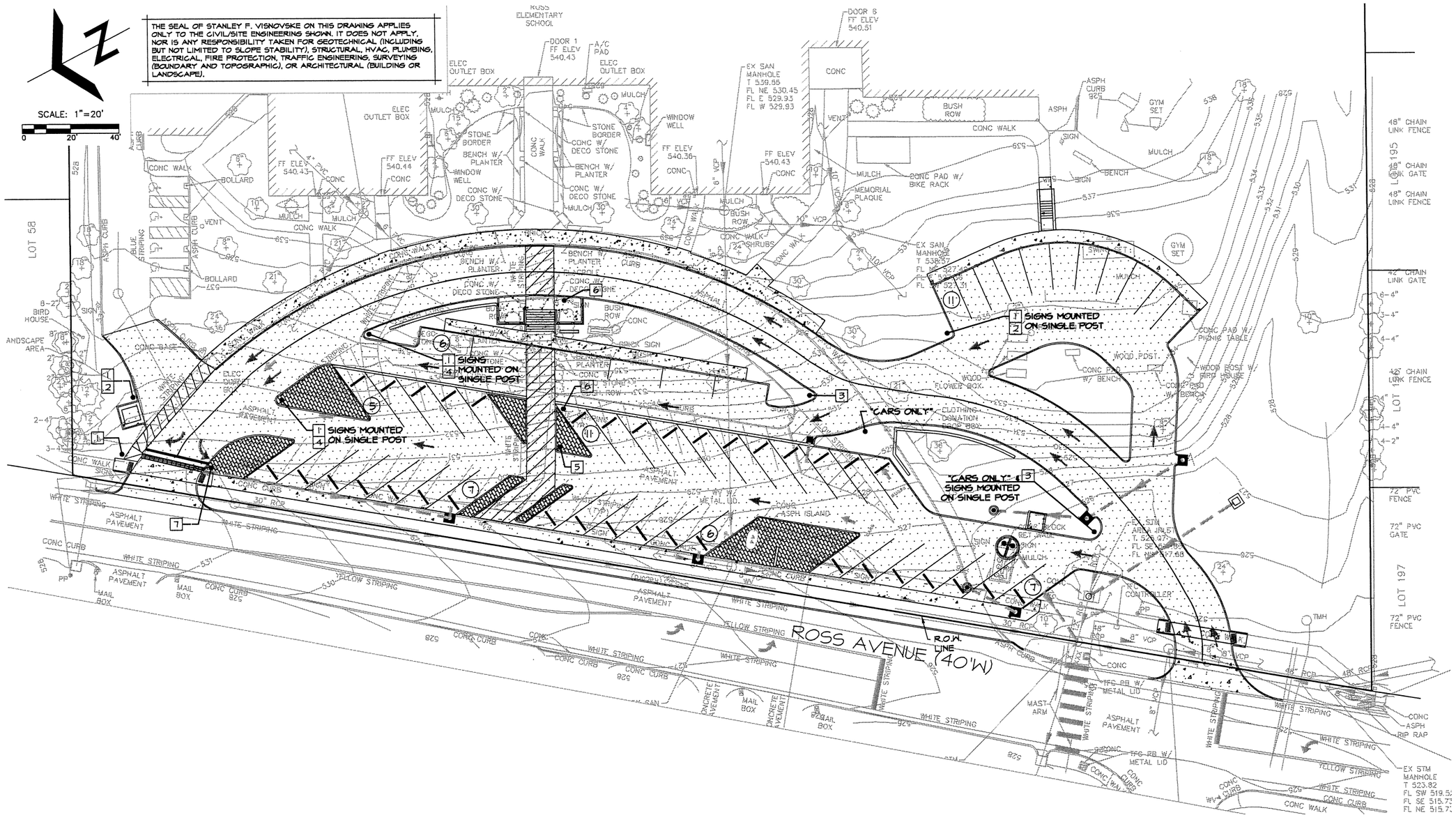
0 20' 40'



SIGN NOTES (THIS SHEET ONLY - SEE DETAIL ON SHEET C2.3)

1. STOP SIGN
2. NO LEFT TURN SIGN
3. ONE-WAY SIGN (R6-1L)
4. NO RIGHT TURN SIGN
5. YIELD TO PEDESTRIAN (LEFT - R1-5L)
6. YIELD TO PEDESTRIANS (RIGHT - R1-5R)
7. DO NOT ENTER SIGN (SIGN TO FACE ROSS AVENUE)

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Stanley F. Visnovske
E-18136
Professional Engineer
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ROSS ELEMENTARY SCHOOL
BUILDING RENOVATIONS AND SITE IMPROVEMENTS
PARKWAY SCHOOL DISTRICT
Parkway School District Project No. 061601B
1150 Ross Avenue
St. Louis, Missouri 63146

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DATE: 12.01.16

REVISIONS

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PSD PROJECT NO. 091601B

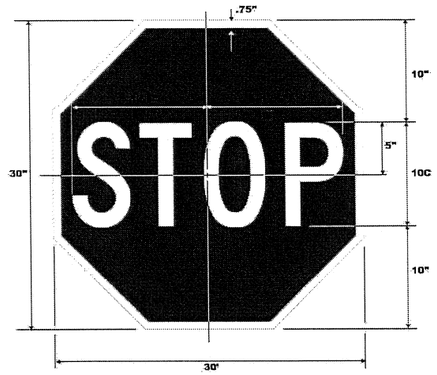
PROJECT NO. 14-006.15

SHEET NO.

C2.2

SIGNAGE STRIPING

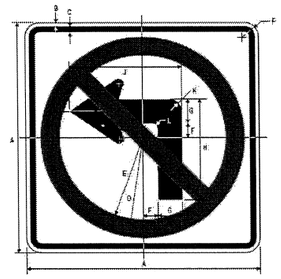
EDSI PROJECT #E-14-020.25



R1-1
STOP

*Reduce spacing 40%

COLORS: LEGEND – WHITE (RETROREFLECTIVE)
BACKGROUND – RED (RETROREFLECTIVE)

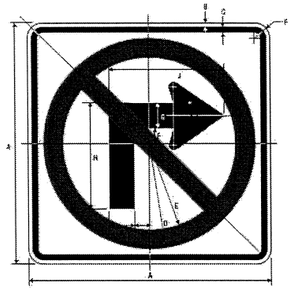


R3-2
LEFT TURN PROHIBITION

A	B	C	D	E	F	G	H	J	K	L
24	.375	.625	10.5	8.5	1.5	2.5	10.5	11.5	2	.5

Asterisk designations refer to Manual of Uniform Traffic Control Devices (MUTCD)

COLORS: CIRCLE & DIAGONAL – RED (RETROREFLECTIVE)
SYMBOL & BORDER – BLACK
BACKGROUND – WHITE (RETROREFLECTIVE)

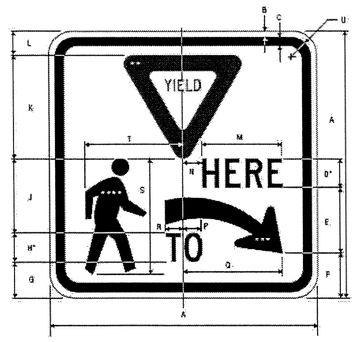


R3-1
RIGHT TURN PROHIBITION

*See page 6-2 for design

A	B	C	D	E	F	G	H	J	K
24	.375	.625	10.5	8.5	1.5	2.5	10.5	11.5	2

COLORS: CIRCLE & DIAGONAL – RED (RETROREFLECTIVE)
SYMBOL & BORDER – BLACK
BACKGROUND – WHITE (RETROREFLECTIVE)



R1-5R
YIELD HERE TO PEDESTRIANS

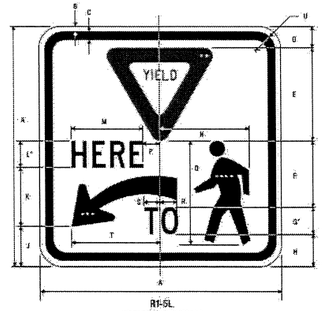
A	B	C	D	E	F	G	H	J	K	L
18	.375	.625	2.0	4.375	.3	2.375	2.0	.5	.7	1.625

M	N	P	Q	R	S	T	U
5.354	1.240	1.220	5.805	1.220	7.505	5.805	1.5

*Series 2000 Standard Alphabets.
**Insert R1-2 and size to fit.
***Insert R10-6a Arrow and size to fit.
****See 6-10 for design detail.

Asterisk designations refer to Manual of Uniform Traffic Control Devices (MUTCD)

COLORS: LEGEND & ARROW – BLACK
RED SYMBOL – BLACK
BACKGROUND – WHITE (RETROREFLECTIVE)
YIELD SYMBOL – RED (RETROREFLECTIVE)



R1-5L
YIELD HERE TO PEDESTRIANS

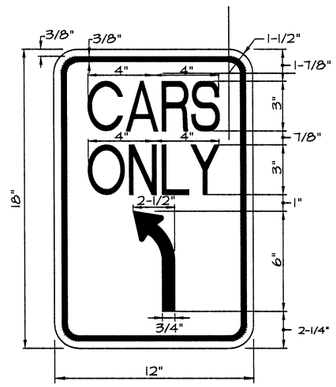
A	B	C	D	E	F	G	H	J	K	L
18	.375	.625	1.625	7	.5	7.12	2.375	3	4.375	2.0

M	N	P	Q	R	S	T	U
5.354	5.805	1.240	7.805	1.220	1.220	5.805	1.5

*Series 2000 Standard Alphabets.
**Insert R1-2 and size to fit.
***Insert R10-6a Arrow and size to fit.
****See 6-10 for design detail.

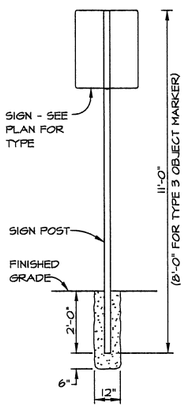
Asterisk designations refer to Manual of Uniform Traffic Control Devices (MUTCD)

COLORS: LEGEND & ARROW – BLACK
RED SYMBOL – BLACK
BACKGROUND – WHITE (RETROREFLECTIVE)
YIELD SYMBOL – RED (RETROREFLECTIVE)



COLORS:
LEGEND – RED
BACKGROUND – WHITE

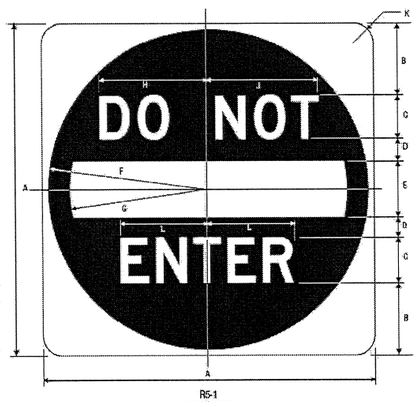
SIGN DETAIL - "CARS ONLY"
N.T.S.



NOTES: (SIGN POST)

1. SIGN POST SHALL HAVE A 2-3/8 INCH OUTSIDE DIAMETER AND BE 11 FEET IN LENGTH. THEY SHALL BE EITHER SCH. 40 ALUMINUM PIPE OR GALVANIZED STEEL W/ A WALL THICKNESS OF 0.065 INCHES. THE INSIDE WALL SHALL BE GALVANIZED OR HAVE A FULL ZINC BASED ORGANIC COATING IN ACCORDANCE WITH ASTM-A513 TO OBTAIN A WEIGHT OF 0.90 OZ. PER SQ. FT. COMMERCIAL ZINC WEIGHT (G90).
2. SIGNS ARE TO BE MOUNTED A MINIMUM OF 3.5 FEET FROM THE BACK OF CURB WITH A MINIMUM CLEARANCE FROM THE SIDEWALK OF 1.5 FEET.
3. SIGN POST SHALL BE MOUTED 24 INCHES IN THE GROUND AND BE SET IN A CONCRETE BASE.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF UNDERGROUND UTILITIES AND STRUCTURES SHOWN OR NOT SHOWN PRIOR TO THE PLACEMENT OF SIGN POSTS.

SIGN POST PLACEMENT
N.T.S.



R5-1
DO NOT ENTER

A	B	C	D	E	F	G	H	J	K	L
30	6.5	4.0	2"	5	14.5	12.5	9.75	10	1.875	7.875

COLORS: SYMBOL – RED (RETROREFLECTIVE)
LEGEND & BACKGROUND – WHITE (RETROREFLECTIVE)

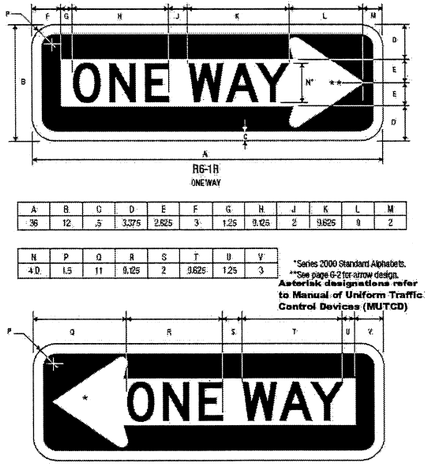
R7-8 NO PARKING

LEGEND – GREEN (RETROREFL), WHITE SYMBOL ON BLUE (RETROREFL)
BACKGROUND – WHITE (RETROREFL)

Asterisk designations refer to Manual of Uniform Traffic Control Devices

*Reduce spacing 50%.
**See page 6-31.
***See page 6-2 for arrow design.

Note: Arrow may also point left or right as warranted or may be deleted entirely if a sign is to be placed for each individual accessible parking stall.



R6-1R
ONEWAY

A	B	C	D	E	F	G	H	J	K	L	M
36	12	.5	3.375	2.625	3	1.25	9.125	2	9.625	9	2

N	P	Q	R	S	T	U	V
4.0	1.5	11	9.125	2	3.625	1.25	3

*Series 2000 Standard Alphabets.
**See page 6-2 for arrow design.

Asterisk designations refer to Manual of Uniform Traffic Control Devices (MUTCD)

R6-1L
ONEWAY

COLORS: LEGEND – BLACK
BACKGROUND – BLACK
ARROW – WHITE (RETRORERLECTIVE)

MSD P-XXXXXXXX MSD BASE MAP XXX

Stanley F. Visnovske
E-18135
Professional Engineer
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PARKWAY SCHOOLS

ROSS
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BUILDING RENOVATIONS AND SITE IMPROVEMENTS

PARKWAY SCHOOL DISTRICT
Parkway School District Project No. 061601B

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PROJECT NO. 14-006.15
SHEET NO.
C2.3
SIGN DETAILS

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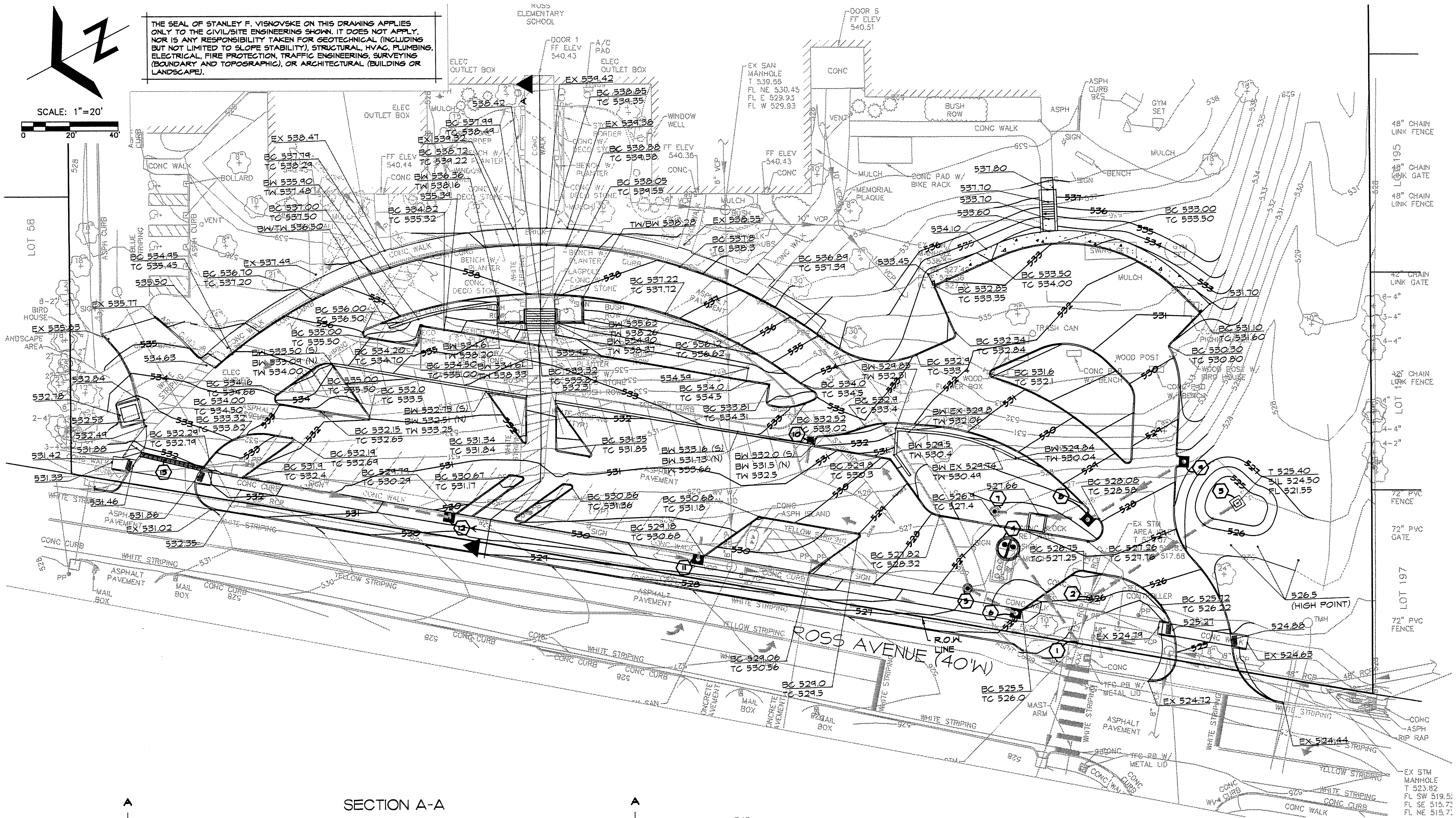

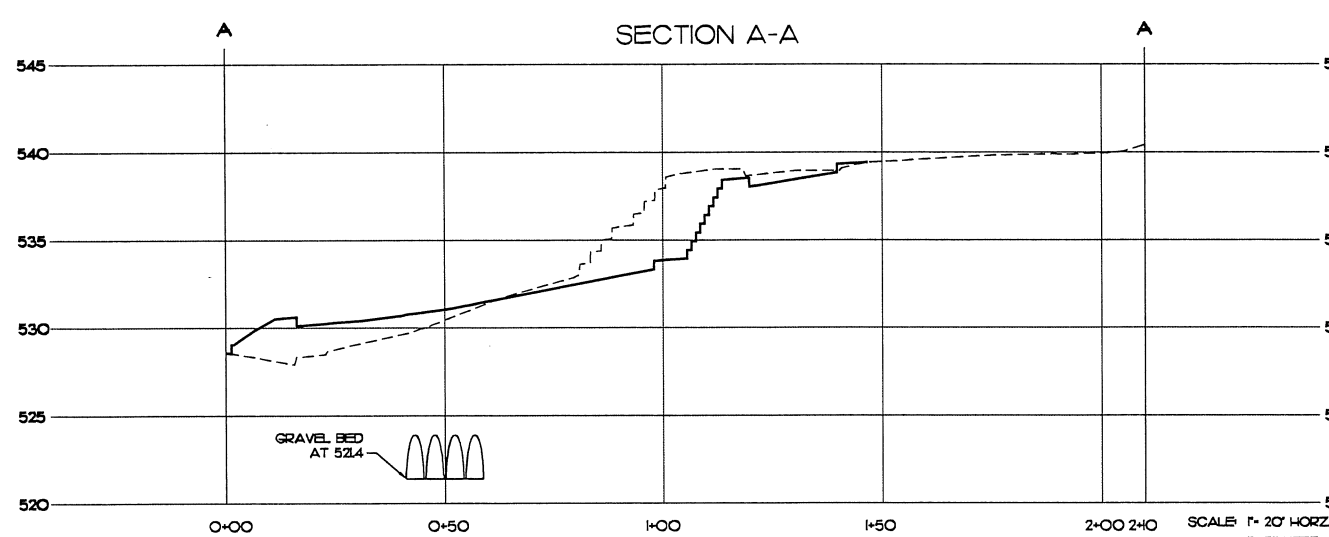

MSD P-XXXXXXXX MSD BASE MAP XXX

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PROJECT NO. 14-006.15

SHEET NO.

C3

GRADING PLAN

EDSI PROJECT #E-14-020.25

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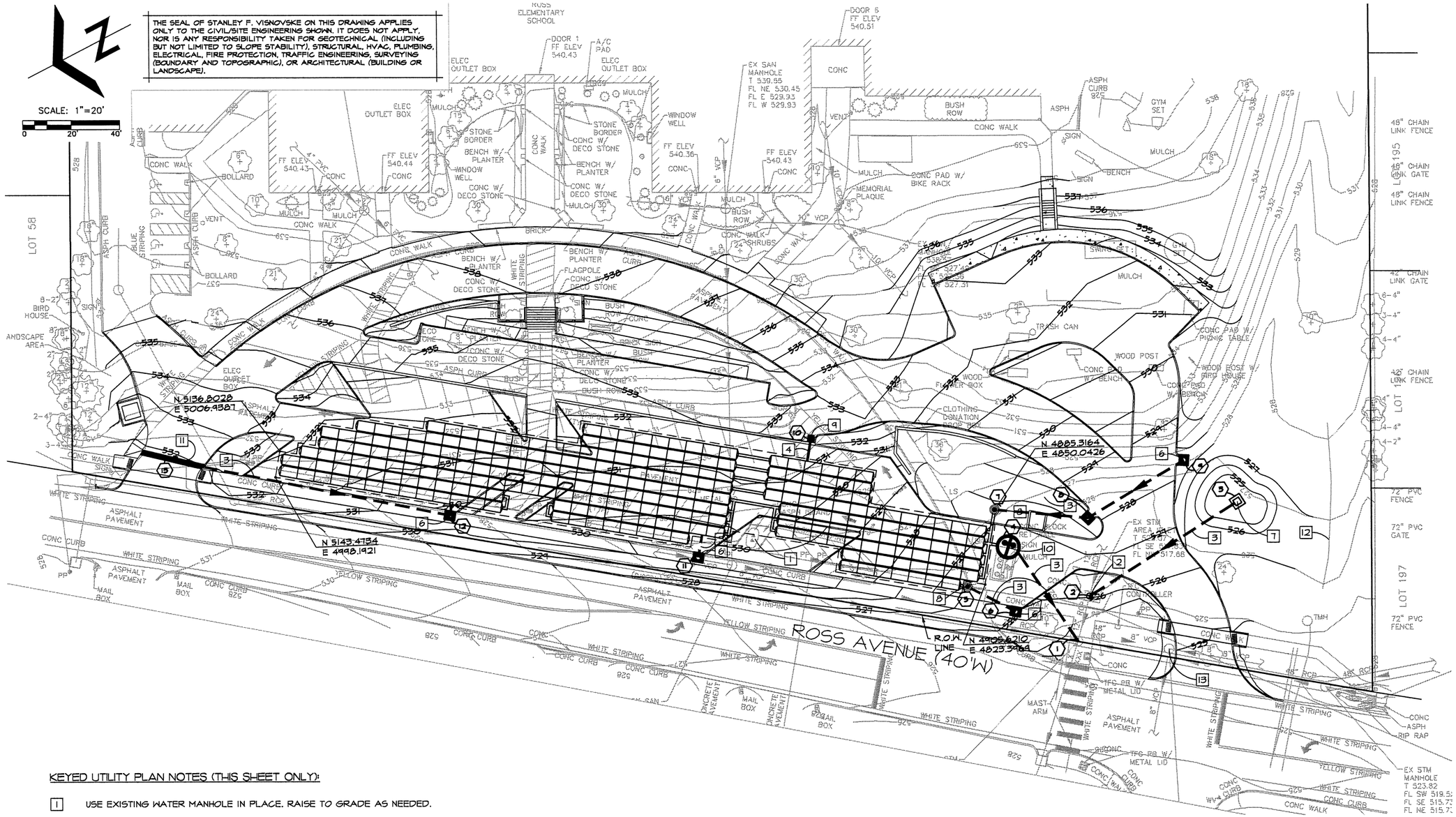
SCALE: 1"=20'

0 20' 40'



KEYED UTILITY PLAN NOTES (THIS SHEET ONLY):

1. USE EXISTING WATER MANHOLE IN PLACE. RAISE TO GRADE AS NEEDED.
2. CONVERT EXISTING INLET TO MANHOLE. RAISE TO GRADE AS NEEDED.
3. NEW STORM SEWER, SEE PROFILES ON SHEET C4.1.
4. 10" PVC STORM PIPE X 8 LF, SEE INSERT-A-TEE CONNECTION DETAIL ON SHEET C9.
5. 10" PVC STORM PIPE X 9 LF, SEE INSERT-A-TEE CONNECTION DETAIL ON SHEET C9.
6. NEW MSD STANDARD CURB INLET.
7. NEW MSD STANDARD 4 WAY INLET.
8. NEW MANHOLE, SEE DETAIL ON SHEET C9.
9. NEW MSD STANDARD STEEL GRATE INLET.
10. NEW OUTLET STRUCTURE, SEE DETAIL ON SHEET C7.
11. TRENCH GRATE X 28 LF, SEE DETAIL ON SHEET C6.
12. POSSIBLE LOCATION OF EXISTING FIBER OPTIC LINE.
13. USE EXISTING SANITARY MANHOLE IN PLACE. RAISE TO GRADE AS NEEDED.

SEE SHEET C7 FOR STORMTECH DIMENSIONS

MSD P-XXXXXXXX MSD BASE MAP XXX

11/28/2016 3:51:14 PM Veronica Page
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PARKWAY SCHOOL DISTRICT
Parkway School District Project No. 061601B
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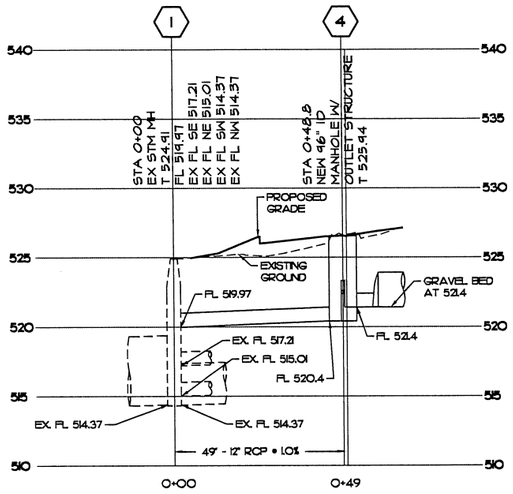
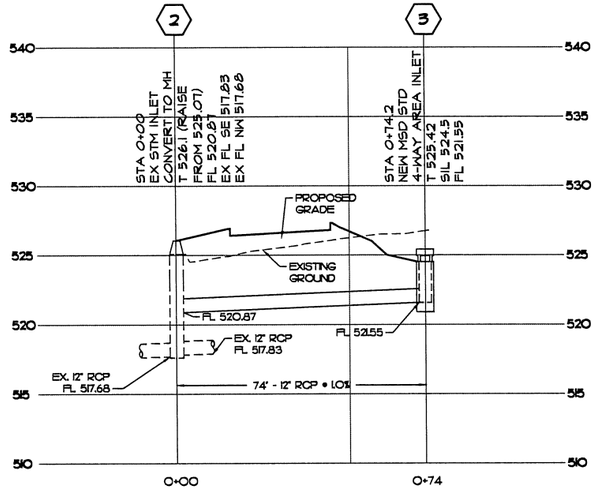
SHEET NO. C4

UTILITY PLAN

EDSI PROJECT #E-14-020.25



SCALE: 1" = 20' HORZ.
1" = 5' VERT.



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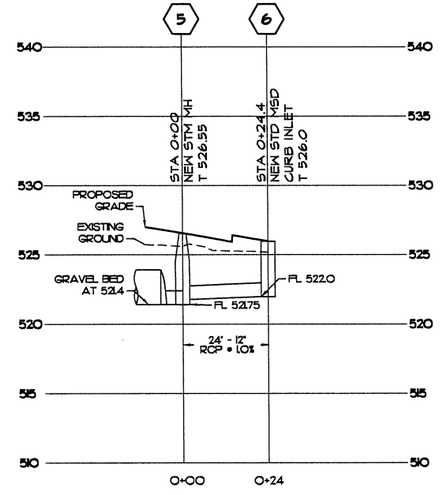
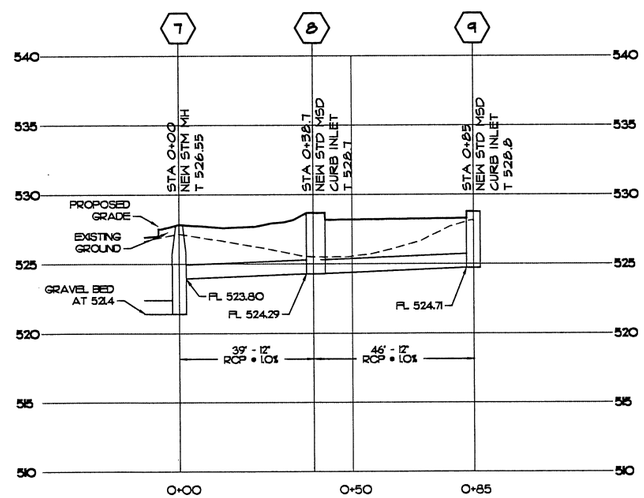
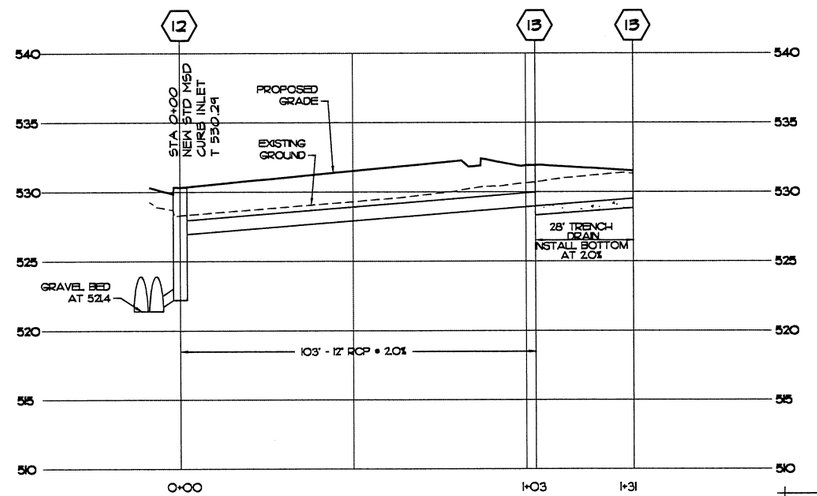
1" = 5' VERT.



SCALE: 1" = 20' HORZ.
1" = 5' VERT.



SCALE: 1" = 20' HORZ.
1" = 5' VERT.



SCALE: 1" = 20' HORZ.
1" = 5' VERT.

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MSD P-XXXXXXXX MSD BASE MAP XXX

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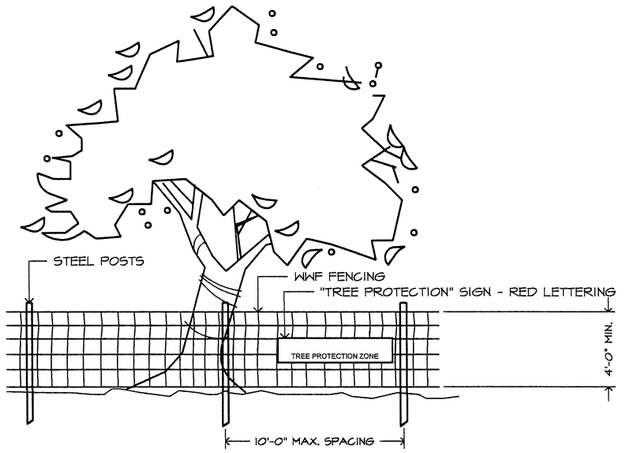
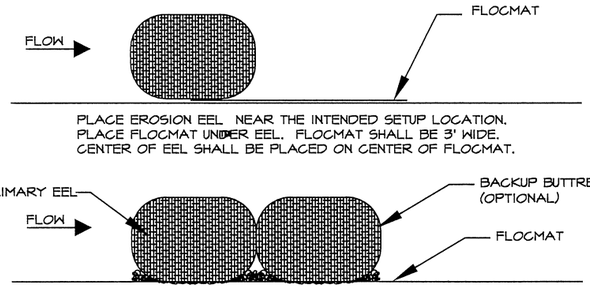
PROJECT NO. 14-006.15
SHEET NO.
C4.1
PROFILES

EDSI PROJECT #E-14-020.25



TREE PROTECTION DETAIL
N.T.S.



PLACE EROSION EEL NEAR THE INTENDED SETUP LOCATION. PLACE FLOCMAT UNDER EEL. FLOCMAT SHALL BE 3' WIDE. CENTER OF EEL SHALL BE PLACED ON CENTER OF FLOCMAT.

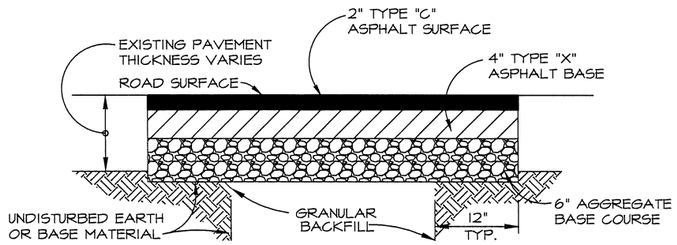
MOVE THE EEL OVER THE FLOCMAT AREA.

PLACE A SECOND EEL ADJACENT TO THE INITIAL EEL LOCATION (DOWNSLOPE) TO PROVIDE ADDITIONAL WEIGHT AS A BUTTRESS (OPTIONAL).

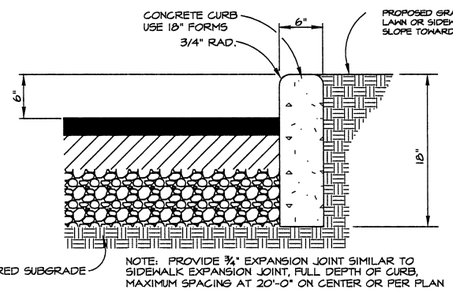
MAINTENANCE:

1. KEEP BAGS FREE OF ACCUMULATED SILT, DEBRIS, ETC., UNTIL THE DISTURBED AREA HAS BEEN ADEQUATELY STABILIZED.
2. REMOVE SEDIMENT AND DEBRIS WHEN ACCUMULATION AFFECTS THE PERFORMANCE OF THE DEVICE, AFTER A RAIN, AND WHEN DIRECTED.
3. REPAIR OR REPLACE DAMAGED DEVICES THAT ARE TORN OR PUNCTURED AS REQUIRED TO MAINTAIN THE INTEGRITY OF THE DEVICE.

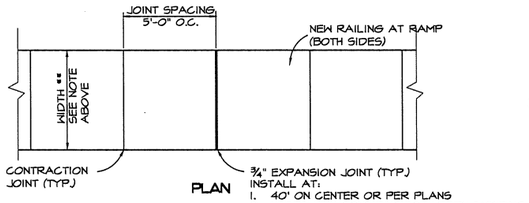
SILTATION CONTROL DETAIL
N.T.S.



ASPHALT PAVEMENT SECTION
N.T.S.

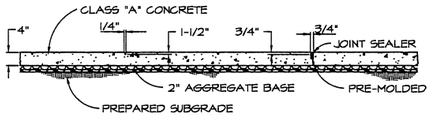


NEW VERTICAL CURB
N.T.S.



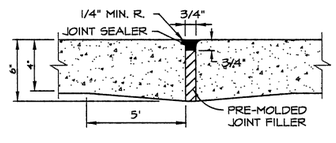
PLAN

INSTALL AT:
1. 40' ON CENTER OR PER PLANS
2. WHERE NEW CONSTRUCTION MEETS EXISTING
3. WHERE SIDEWALK ABUTS CURB.



SECTION

CONCRETE SIDEWALK
N.T.S.



EXPANSION JOINT
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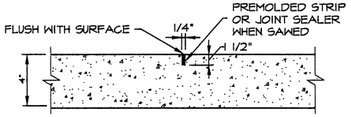

NOTE: SEAL ALL JOINTS WITH APPROVED JOINT SEALER

CONTRACTION JOINT
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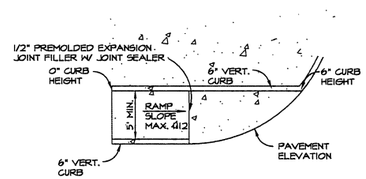
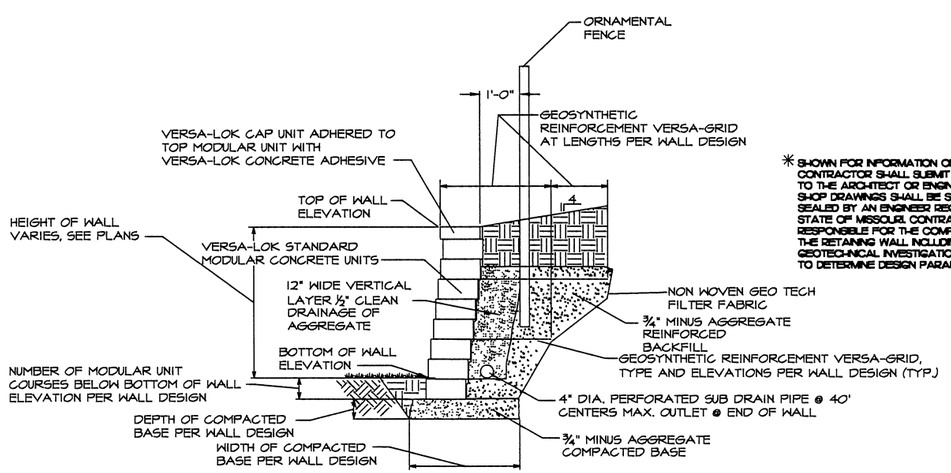


GENERAL NOTES:

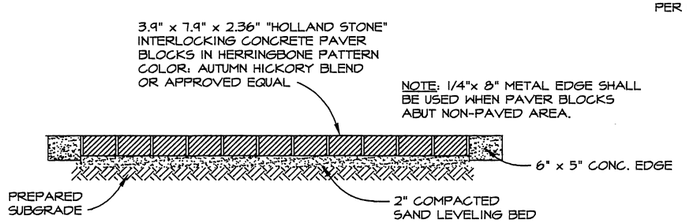
1. MINIMUM SIDEWALK WIDTH ALONG 6" VERTICAL CURB SHALL BE 5 FEET. MINIMUM SIDEWALK WIDTH ALONG 3" ROLLED CURB SHALL BE 4 FEET.
2. MAXIMUM SIDEWALK CROSS SLOPE 0.02' / FT.
3. ALL SIDEWALK SECTIONS SHALL BE 4" THICK.
4. WHERE CURB RAMP MEETS PAVEMENT, BULLNOSE WILL NOT BE PERMITTED.

STRAIGHT CURB RAMP - 6" VERTICAL CURB (TYPE I)
N.T.S.



* SHOWN FOR INFORMATION ONLY. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ARCHITECT OR ENGINEER. SUBMITTED SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY AN ENGINEER REGISTERED IN THE STATE OF MISSOURI. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE DESIGN OF THE RETAINING WALL INCLUDING ANY AND ALL GEOTECHNICAL INVESTIGATIONS NECCESSARY TO DETERMINE DESIGN PARAMETERS.

TYPICAL SECTION-SEGMENTAL RETAINING WALL
SCALE: NONE **(FOR INFORMATION ONLY)**



PAVER BLOCK DETAIL
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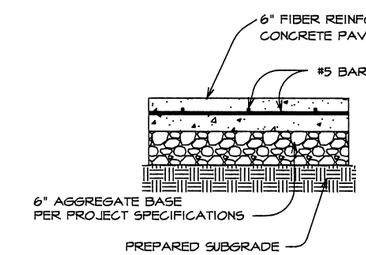

CONCRETE PAD DETAIL
N.T.S.

MSD P-XXXXXXXX MSD BASE MAP XXX

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WILLIAM TAO & ASSOCIATES, INC. — MECHANICAL ENGINEER
WILLIAM TAO & ASSOCIATES, INC. — PLUMBING / FP ENGINEER
WILLIAM TAO & ASSOCIATES, INC. — ELECTRICAL ENGINEER
KPFF CONSULTING ENGINEERS — STRUCTURAL ENGINEER
EDSI - ENGINEERING DESIGN SOURCE — CIVIL ENGINEER
PDS - PLANNING DESIGN STUDIO — LANDSCAPE ARCHITECT

Stanley F. Visocnske
E-13819
Professional Engineer
I HEREBY SPECIFY, PURSUANT TO RSMo. 327.411 THAT THIS DRAWING SHEET IS AUTHENTICATED BY MY SEAL.

PARKWAY SCHOOLS

ROSS ELEMENTARY SCHOOL
BUILDING RENOVATIONS AND SITE IMPROVEMENTS
PARKWAY SCHOOL DISTRICT
Parkway School District Project No. 061601B
1150 Ross Avenue St. Louis, Missouri 63146

TRJ Architects of the Possible
8823 Manchester Road, St. Louis, Missouri 63119 — T: 314-385-6768 F: 314-385-6791 www.trjarchitects.com
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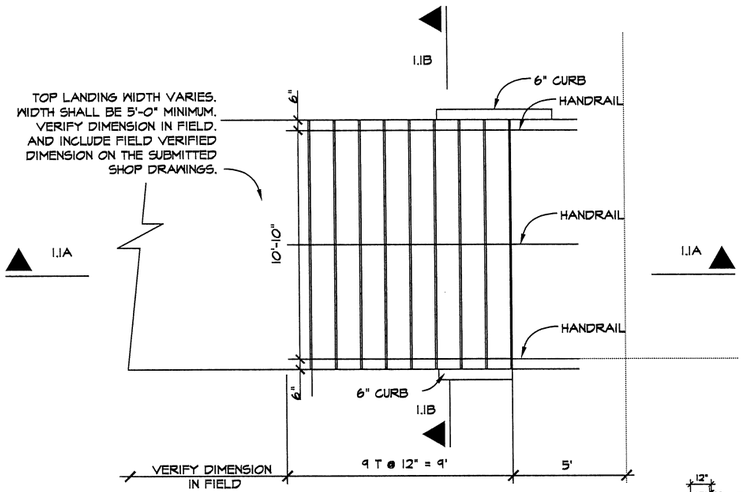
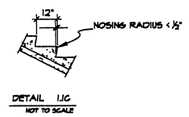
PSD PROJECT NO. 091601B
PROJECT NO. 14-006.15
SHEET NO. C5
DETAILS

EDSI PROJECT #E-14-020.25

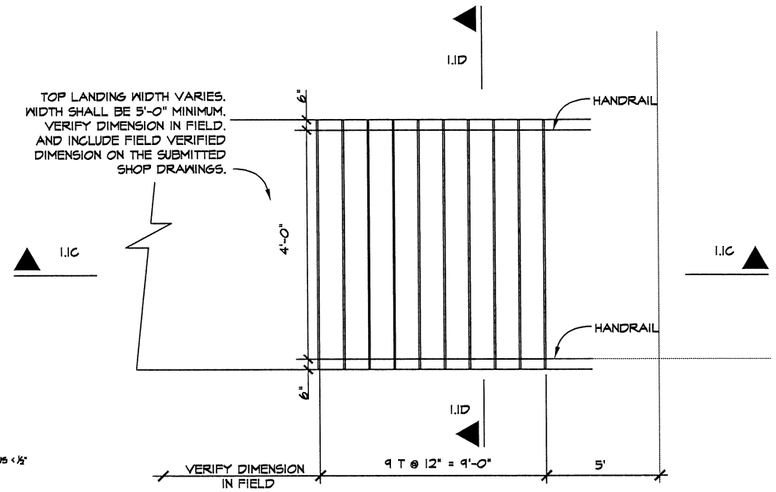


STAIR PLAN (AT ENTRANCE)

NOT TO SCALE

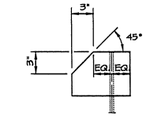


DETAIL 1.1C
NOT TO SCALE

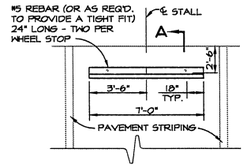


STAIR PLAN (AT PARKING LOT)

NOT TO SCALE



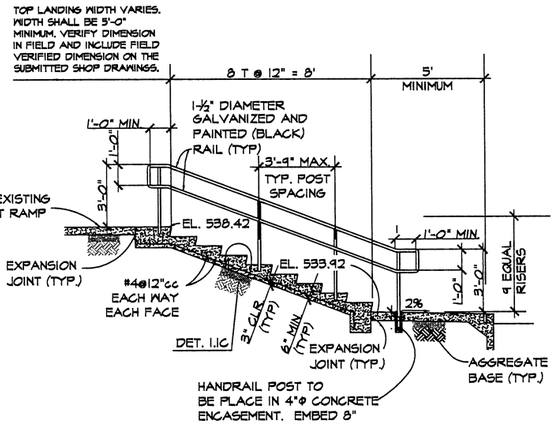
SECTION A



PLAN

PRECAST CONCRETE WHEEL STOP

N.T.S.



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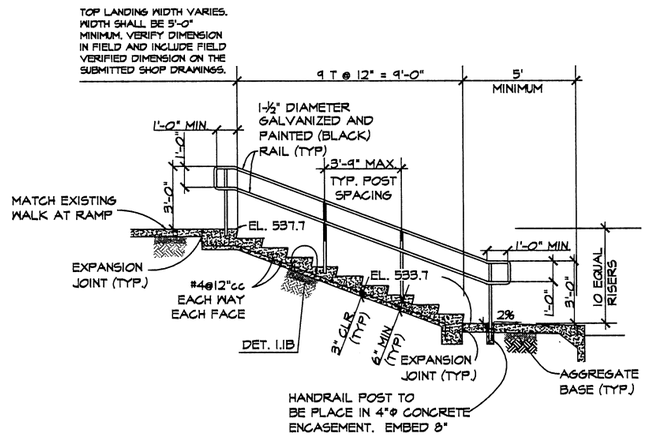

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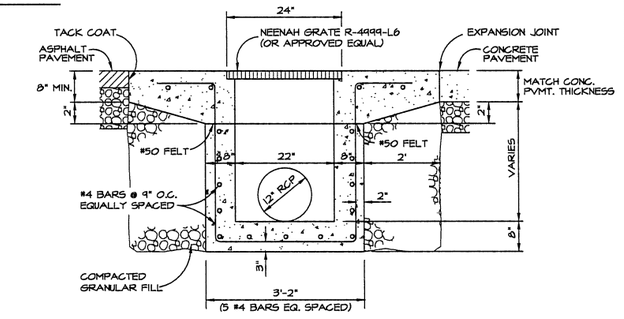
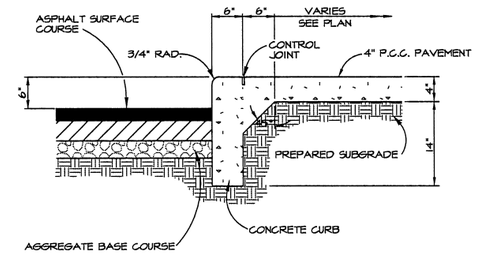


TRENCH DRAIN

N.T.S.



6" INTEGRAL CONCRETE CURB W/ SIDEWALK

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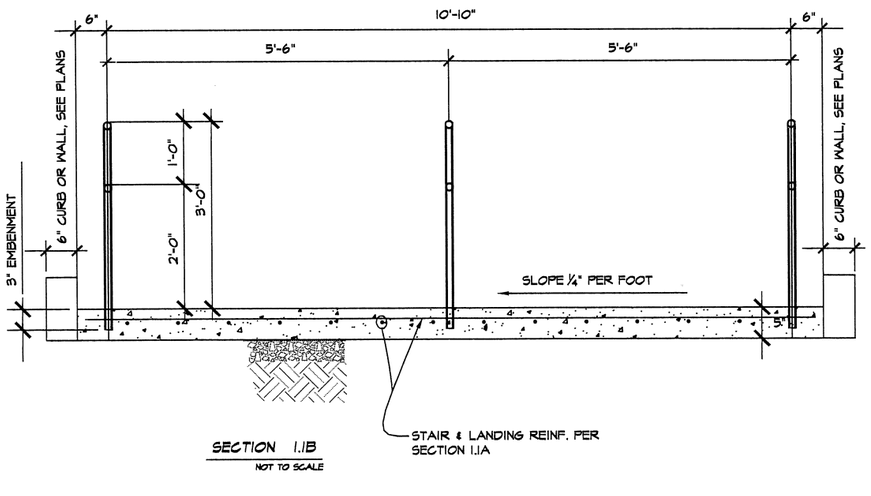

SECTION 1.1B

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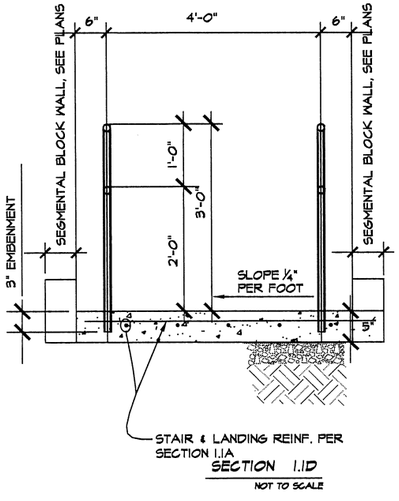

SECTION 1.1D

NOT TO SCALE

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ARCHITECT — TRI. ARCHITECTS
MECHANICAL ENGINEER — WILLIAM TAO & ASSOCIATES, INC.
PLUMBING / FP ENGINEER — WILLIAM TAO & ASSOCIATES, INC.
ELECTRICAL ENGINEER — WILLIAM TAO & ASSOCIATES, INC.
STRUCTURAL ENGINEER — KPFF CONSULTING ENGINEERS
CIVIL ENGINEER — EDSI - ENGINEERING DESIGN SOURCE
LANDSCAPE ARCHITECT — PDS - PLANNING DESIGN STUDIO

Stanley F. Vlasovsky E-18136 Professional Engineer
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PARKWAY SCHOOLS

ROSS ELEMENTARY SCHOOL
BUILDING RENOVATIONS AND SITE IMPROVEMENTS
PARKWAY SCHOOL DISTRICT
Parkway School District Project No. 061601B
1150 Ross Avenue St. Louis, Missouri 63146

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DATE: 12.01.16

REVISIONS

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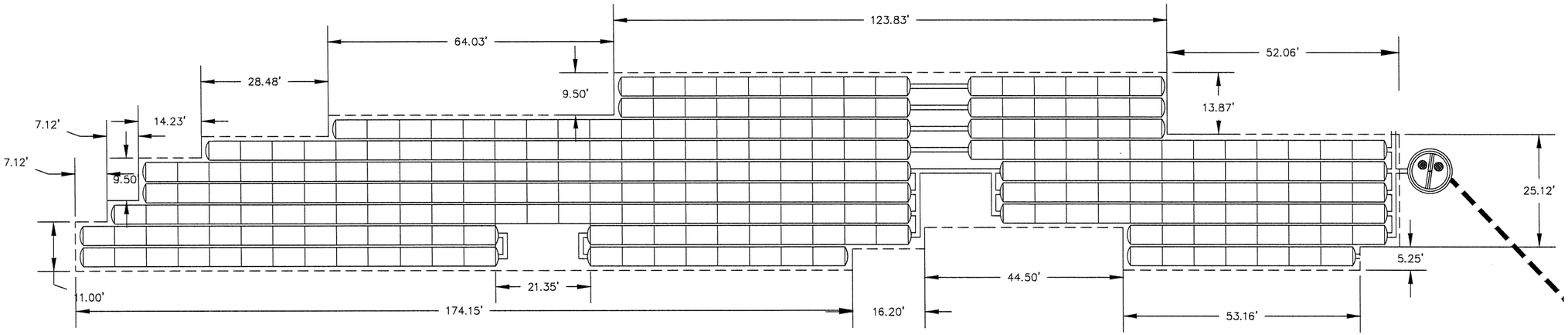
PROJECT NO. 14-006.15

SHEET NO. C6

DETAILS

EDSI PROJECT #E-14-020.25



NOTES

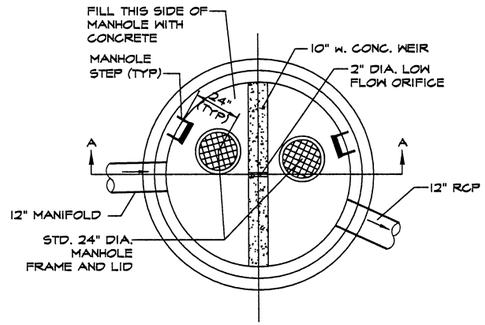
- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH SHEET #7 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.

PROPOSED LAYOUT

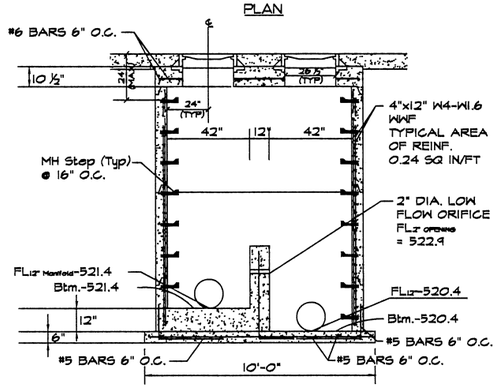
(258) STORMTECH SC-740 CHAMBERS
(40) STORMTECH SC-740 END CAPS
INSTALLED WITH 6" COVER STONE, 6" BASE STONE, 40% STONE VOID
VOLUME AT ELEVATION 522.90: 11,542 CF (BASE STONE EXCLUDED)
TOTAL INSTALLED SYSTEM VOLUME: 21,315 CF (PERIMETER STONE INCLUDED)
AREA OF SYSTEM: 10,144 FT²
PERIMETER OF SYSTEM: 701 FT

STORMWATER CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH SC-740 OR APPROVED EQUAL.
2. CHAMBERS SHALL BE MANUFACTURED FROM VIRGIN POLYPROPYLENE OR POLYETHYLENE RESINS TESTED USING ASTM STANDARDS.
3. CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12 ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCE.
6. ONLY CHAMBERS THAT ARE APPROVED BY THE ENGINEER WILL BE ALLOWED. THE CONTRACTOR SHALL SUBMIT (3 SETS) OF THE FOLLOWING TO THE ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE:
   a. A STRUCTURAL EVALUATION BY A REGISTERED STRUCTURAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12 ARE MET. THE 50-YEAR CREEP MODULUS DATA SPECIFIED IN ASTM F2922 MUST BE USED AS A PART OF THE AASHTO STRUCTURAL EVALUATION TO VERIFY LONG-TERM PERFORMANCE.
7. CHAMBERS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.
8. ALL DESIGN SPECIFICATIONS FOR CHAMBERS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S LATEST DESIGN MANUAL.
9. THE INSTALLATION OF CHAMBERS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S LATEST INSTALLATION INSTRUCTIONS.



PLAN



SECTION A-A

96" DIAMETER OUTLET STRUCTURE
SCALE: NTS

PROPOSED ELEVATIONS

MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	**500.95**
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	**495.45**
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	**494.95**
MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	**494.95**
TOP OF STONE:	524.40
TOP OF CHAMBER:	523.90
12" TOP MANIFOLD INVERT:	522.78
12" BOTTOM MANIFOLD INVERT:	521.45
24" ISOLATOR ROW INVERT:	521.45
BOTTOM OF CHAMBER:	521.40
BOTTOM OF STONE:	520.90

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER:	MARK JOERSZ 636-346-6139 MARK.JOERSZ@ADS-PIPE.COM
ADS SALES REP:	BRIAN SNELSON 618-593-6135 BRIAN.SNELSON@ADS-PIPE.COM
PROJECT NO:	121028

ADVANCED DRAINAGE SYSTEMS, INC.

MSD P-XXXXXXXX MSD BASE MAP XXX

TRJ- ARCHITECTS — ARCHITECT
WILLIAM TAO & ASSOCIATES, INC. — MECHANICAL ENGINEER
WILLIAM TAO & ASSOCIATES, INC. — PLUMBING / FP ENGINEER
WILLIAM TAO & ASSOCIATES, INC. — ELECTRICAL ENGINEER
KPFF CONSULTING ENGINEERS — STRUCTURAL ENGINEER
EDSI - ENGINEERING DESIGN SOURCE — CIVIL ENGINEER
PDS - PLANNING DESIGN STUDIO — LANDSCAPE ARCHITECT

Stanley F. Visnovske
E-3814
Professional Engineer
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PARKWAY SCHOOLS

ROSS
ELEMENTARY SCHOOL
BUILDING RENOVATIONS AND SITE IMPROVEMENTS

PARKWAY SCHOOL DISTRICT
Parkway School District Project No. 061601B

1150 Ross Avenue St. Louis, Missouri 63146

TRJ Architects of the Possible
8812 Manchester Road, St. Louis, Missouri 63119 — T: 314-385-8700, F: 314-385-8701, www.trjarchitects.com

DATE: 12.01.16

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PROJECT NO. 14-006.15

SHEET NO.

C7

DETAILS

EDSI PROJECT #E-14-020.25

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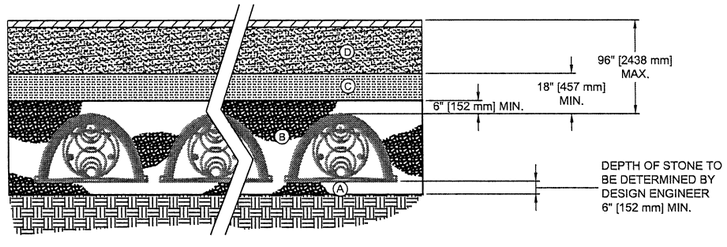
ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 AND SC-310 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO M43 DESIGNATION(1)	COMPACTION/DENSITY REQUIREMENT
D	FILL MATERIAL FOR LAYER D STARTS FROM THE TOP OF THE C LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISH GRADE ABOVE. NOTE THAT PAVEMENT SUB-BASE MAY BE PART OF THIS LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	FILL MATERIAL FOR LAYER C STARTS FROM THE TOP OF THE EMBEDMENT STONE (B LAYER) TO 18" [457 mm] ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUB-BASE MAY BE A PART OF THIS LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, < 35% FINES. MOST PAVEMENT SUB-BASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTION AFTER 12" [305 mm] OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" [152 mm] LIFTS TO A MIN. 95% STANDARD PROCTOR DENSITY (2). ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs [53 kN]. DYNAMIC FORCE NOT TO EXCEED 20,000 lbs [89 kN].
B	EMBEDMENT STONE SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE (A LAYER) TO THE C LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4 - 2 INCH [19 - 51 mm]	3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4 - 2 INCH [19 - 51 mm]	3, 35, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A 95% STANDARD PROCTOR DENSITY(2).

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".

2. AS AN ALTERNATE TO PROCTOR TESTING AND FIELD DENSITY MEASUREMENTS ON OPEN GRADED STONE, STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" [229 mm] (MAX) LIFTS USING TWO FULL COVERAGES WITH AN APPROPRIATE COMPACTOR.



IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF SC-740 CHAMBER SYSTEM

1. STORMTECH SC-740 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 6" (230 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
8. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4-2" (20-50 mm) MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
9. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
10. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
11. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

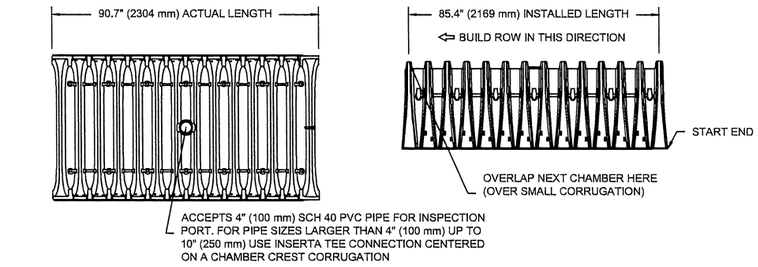
1. STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
2. THE USE OF EQUIPMENT OVER SC-740 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

SC-740 TECHNICAL SPECIFICATION

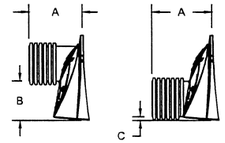
NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 30.0" X 85.4"	(1295 mm X 762 mm X 2169 mm)
CHAMBER STORAGE	45.9 CUBIC FEET	(1.30 m³)
MINIMUM INSTALLED STORAGE*	74.9 CUBIC FEET	(2.12 m³)
WEIGHT	75.0 lbs.	(33.6 kg)

*ASSUMES 6" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS



STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"

PART #	STUB	A	B	C
SC740EPE06T / SC740EPE06TPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	—
SC740EPE06B / SC740EPE06BPC			—	0.5" (13 mm)
SC740EPE08T /SC740EPE08TPC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	—
SC740EPE08B / SC740EPE08BPC			—	0.6" (15 mm)
SC740EPE10T / SC740EPE10TPC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	—
SC740EPE10B / SC740EPE10BPC			—	0.7" (18 mm)
SC740EPE12T / SC740EPE12TPC	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	—
SC740EPE12B / SC740EPE12BPC			—	1.2" (30 mm)
SC740EPE15T / SC740EPE15TPC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	—
SC740EPE15B / SC740EPE15BPC			—	1.3" (33 mm)
SC740EPE18T / SC740EPE18TPC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	—
SC740EPE18B / SC740EPE18BPC			—	1.6" (41 mm)
SC740EPE24B*	24" (600 mm)	18.5" (470 mm)	—	0.1" (3 mm)

ALL STUBS, EXCEPT FOR THE SC740EPE24B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

* FOR THE SC740EPE24B THE 24" (600 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.75" (44 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL

MSD P-XXXXXXXX MSD BASE MAP XXX

PARKWAY SCHOOLS

ROSS
ELEMENTARY SCHOOL
BUILDING RENOVATIONS AND SITE IMPROVEMENTS
PARKWAY SCHOOL DISTRICT
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REVISIONS
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PROJECT NO. 14-006.15
SHEET NO.
C8
DETAILS

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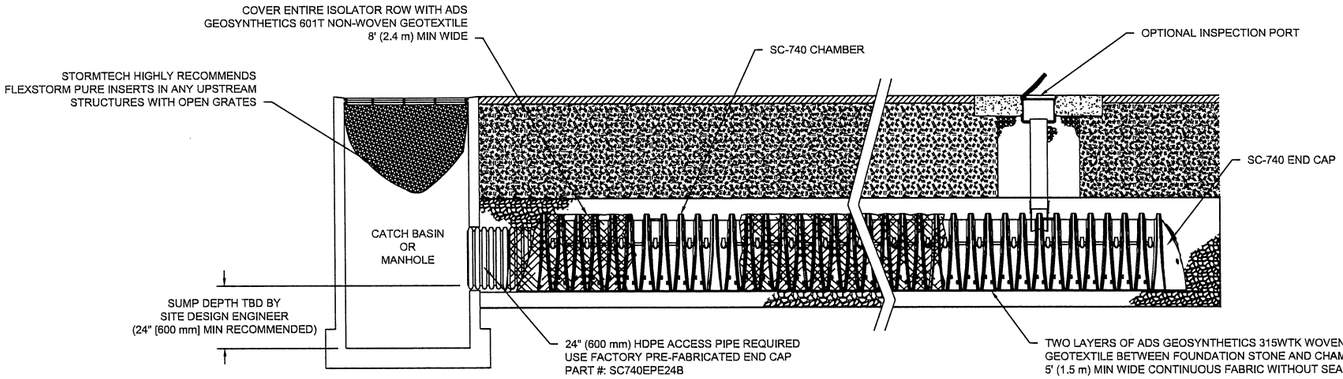
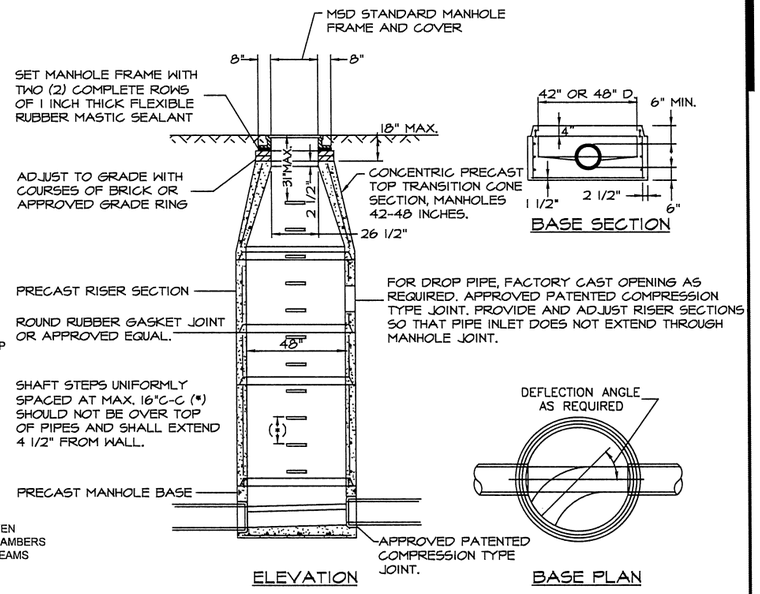


SC-740 ISOLATOR ROW DETAIL
NTS



NOTES:

1) MANHOLE SHALL MEET ASTM C-478 REQUIREMENTS.
2) FLOWLINE ELEVATION OF INCOMING PIPES SHALL BE 1 INCH HIGHER THAN THAT OF OUTGOING PIPE.
3) PRIOR TO FABRICATION, SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL.

PRE-CAST CONCRETE MANHOLE
N.T.S.

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

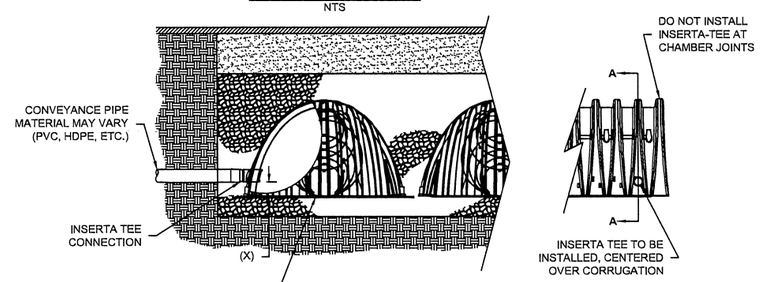
STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

INSERTA TEE DETAIL
NTS



SECTION A-A

SIDE VIEW

CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE OF CHAMBER (X)
SC-310	6" (150 mm)	4" (100 mm)
SC-740	10" (250 mm)	4" (100 mm)
DC-780	10" (250 mm)	4" (100 mm)
MC-3500	12" (300 mm)	6" (150 mm)
MC-4500	12" (300 mm)	8" (200 mm)
INSERTA TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS GASKETED & SOLVENT WELD, N-12, HP STORM, C-900 OR DUCTILE IRON		

NOTE:
PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.

MSD P-XXXXXXXX MSD BASE MAP XXX

TRJ. ARCHITECTS — ARCHITECT
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WILLIAM TAO & ASSOCIATES, INC. — PLUMBING / FP ENGINEER
WILLIAM TAO & ASSOCIATES, INC. — ELECTRICAL ENGINEER
KPFF CONSULTING ENGINEERS — STRUCTURAL ENGINEER
EDSI - ENGINEERING DESIGN SOURCE — CIVIL ENGINEER
PDS - PLANNING DESIGN STUDIO — LANDSCAPE ARCHITECT

Stanley F. Vissovske E-13156 Professional Engineer
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PARKWAY SCHOOLS

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DATE: 11.04.16

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PROJECT NO. 14-006.15

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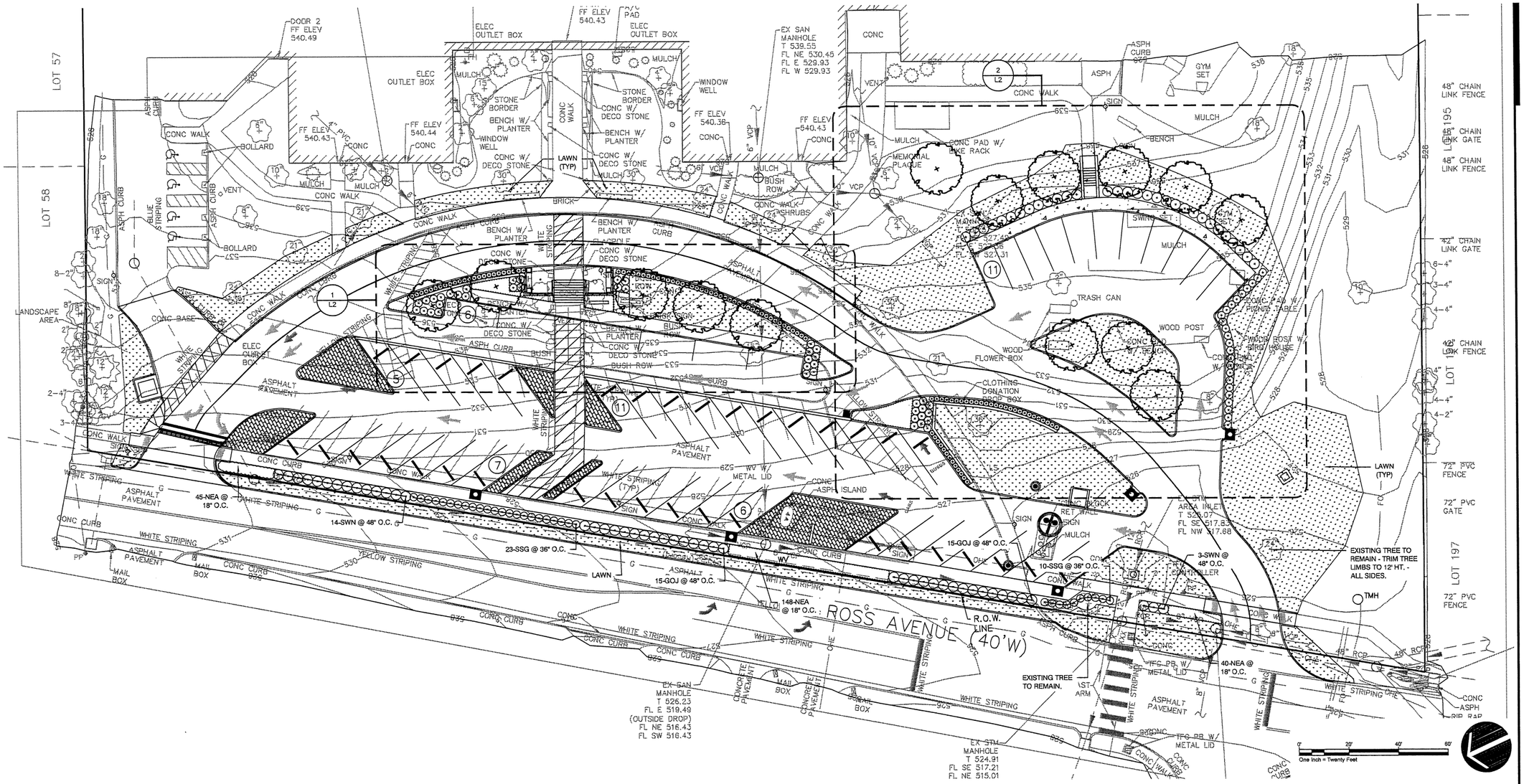

1 / L1 LANDSCAPE PLAN
PLAN

1" = 20' - 0"

GENERAL NOTES:

1. REFER TO DEMOLITION PLAN FOR REMOVAL OF EXISTING VEGETATION.
2. UNLESS OTHERWISE NOTED, ALL NATURAL VEGETATION SHALL BE MAINTAINED WHERE IT DOES NOT INTERFERE WITH CONSTRUCTION. PROTECT EXISTING UTILITIES, STRUCTURES OR VEGETATION FROM DAMAGE. CONTRACTOR SHALL MAINTAIN AND SECURE THE PROJECT SITE TO PROTECT THE PUBLIC FROM INJURY DUE TO WORK AND RELATED MATERIAL.
3. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH OTHER SITE RELATED WORK BEING PERFORMED BY OTHERS. REFER TO CIVIL, STRUCTURAL, BUILDING, AND UTILITY DRAWINGS FOR FURTHER COORDINATION OF WORK TO BE COMPLETED.
4. UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHERS NOT PRESENTLY KNOWN OR SHOWN. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE TO DETERMINE AND VERIFY THE EXISTENCE OF AND EXACT LOCATION OF ALL UTILITIES.
5. LANDSCAPE CONTRACTOR IS ADVISED TO STUDY THE PLANS AND VISIT THE SITE TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS. REPORT ANY DISCREPANCIES IMMEDIATELY TO THE OWNER'S REPRESENTATIVE.
6. LANDSCAPE CONTRACTOR SHALL STAKE THE LOCATIONS OF ALL PROPOSED PLANT MATERIAL AND PLANTING BED EDGES FOR APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
7. ALL PLANT MATERIAL SHALL BE WARRANTED FOR A PERIOD OF 12 MONTHS AFTER ACCEPTANCE BY OWNER.
8. CONTRACTOR SHALL STAKE AND BRACE TREES IMMEDIATELY FOLLOWING INSTALLATION ACCORDING TO PLANS, DETAILS, AND SPECIFICATIONS.
9. ALL PLANTING BED EDGES SHALL BE SPADE CUT UNLESS OTHERWISE INDICATED.
10. CONTRACTOR TO SOD ALL AREAS DISTURBED DUE TO CONSTRUCTION ACTIVITIES.
11. ALL PLANT MATERIAL SHALL BE TAGGED OR OTHERWISE APPROVED BY THE OWNER'S REPRESENTATIVE. APPROVAL IN THE NURSERY DOES NOT INDICATE FINAL ACCEPTANCE.
12. ITEMS SHOWN ON THESE DRAWINGS TAKE PRECEDENCE OVER THE MATERIAL LIST. LANDSCAPE CONTRACTOR SHALL VERIFY ALL QUANTITIES AND CONDITIONS PRIOR TO BIDDING AND IMPLEMENTATION OF THE PLAN. NO SUBSTITUTIONS OF TYPES OR SIZE OF PLANT MATERIAL WILL BE ACCEPTED WITHOUT WRITTEN APPROVAL BY OWNER'S REPRESENTATIVE; INCLUDING BOTANICAL VARIETIES OF PLANT MATERIAL (SUCH AS VARIEGATED VS. NOT VARIEGATED).
13. ALL PLANT MATERIAL SHALL CONFORM TO UPPER RANGE LIMITS FOR CALIPER, HEIGHT AND ROOT BALL DIMENSIONS LISTED IN ANSI Z60.1-2014.

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PROJECT NO.	14-006.17
SHEET NO.	L1

LANDSCAPE PLAN

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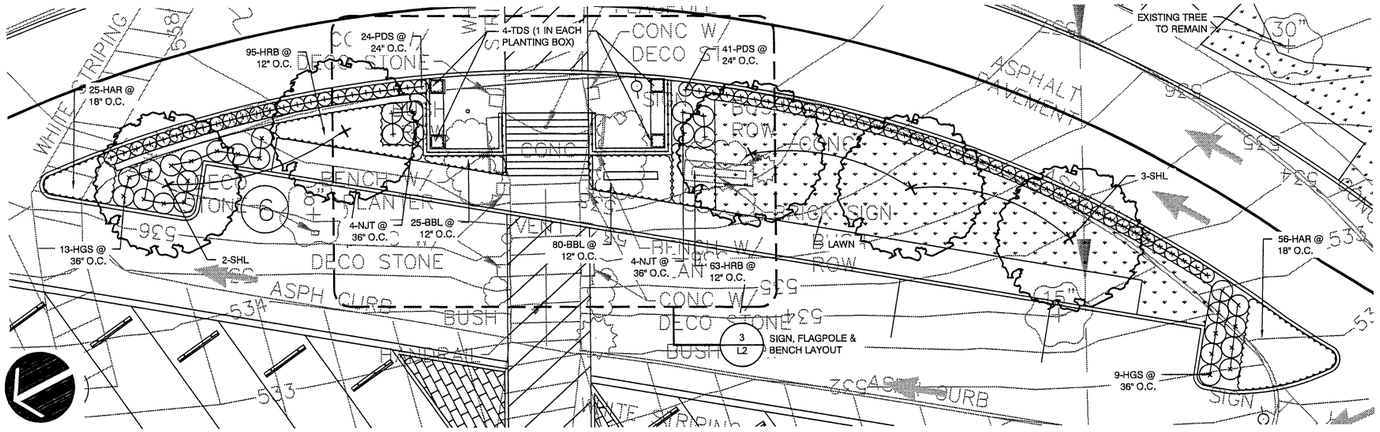
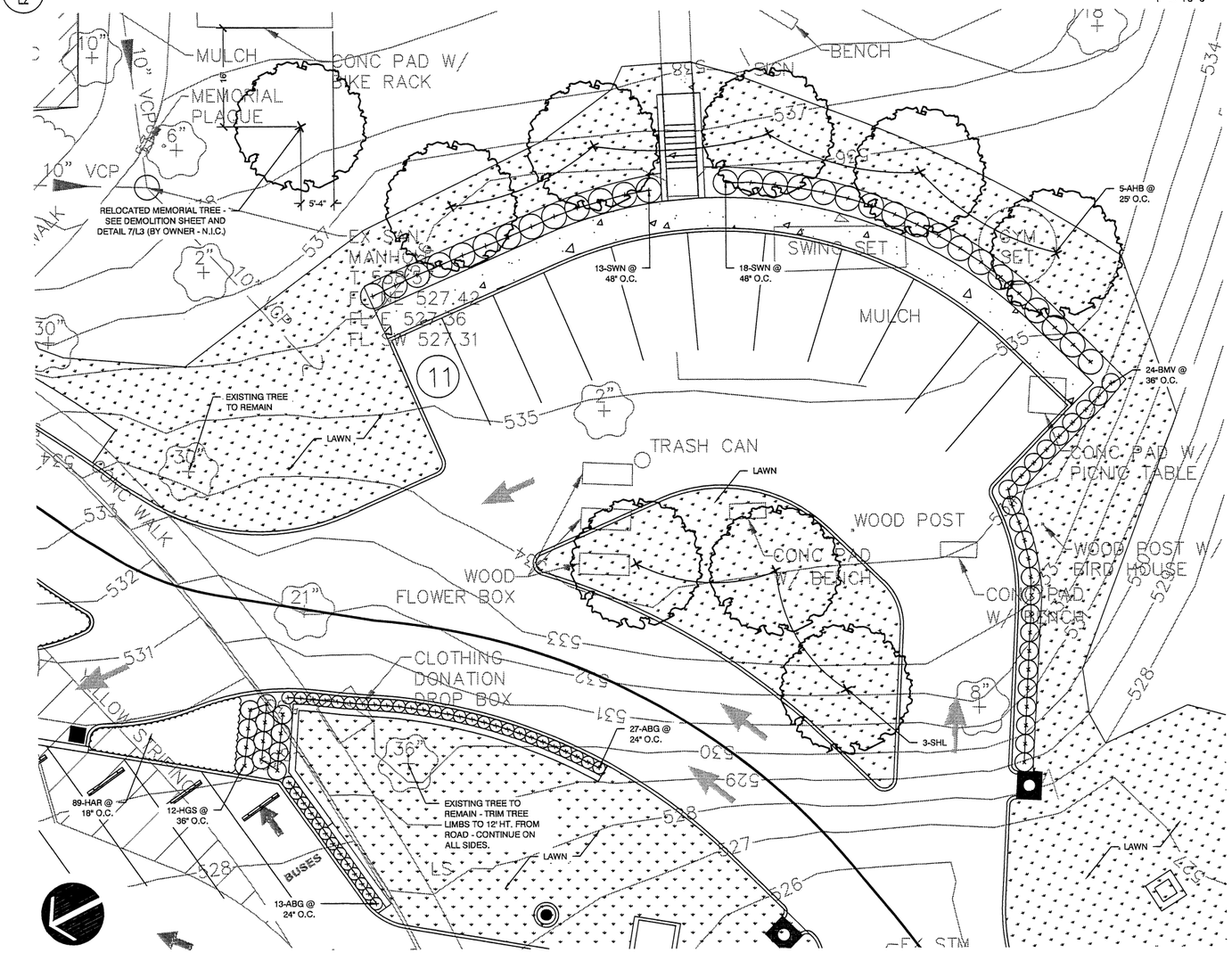


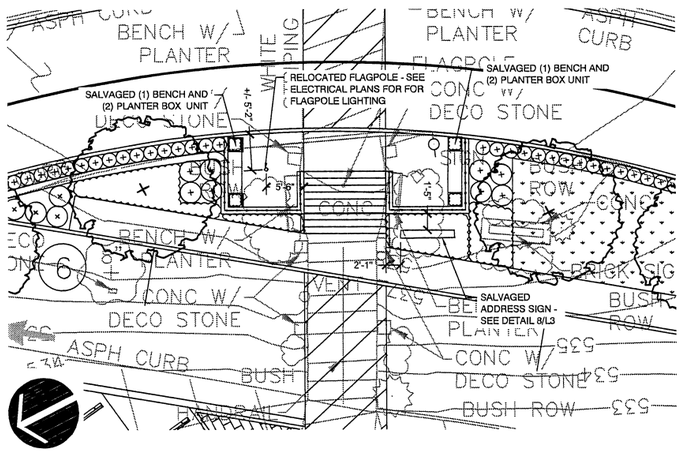
1 L2 LANDSCAPE ENLARGEMENT

1" = 10'-0"



2 L2 LANDSCAPE ENLARGEMENT

1" = 10'-0"



3 L2 SIGN, FLAGPOLE & BENCH LAYOUT

1" = 10'-0"

GENERAL NOTES:

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6. LANDSCAPE CONTRACTOR SHALL STAKE THE LOCATIONS OF ALL PROPOSED PLANT MATERIAL AND PLANTING BED EDGES FOR APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
7. ALL PLANT MATERIAL SHALL BE WARRANTED FOR A PERIOD OF 12 MONTHS AFTER ACCEPTANCE BY OWNER.
8. CONTRACTOR SHALL STAKE AND BRACE TREES IMMEDIATELY FOLLOWING INSTALLATION ACCORDING TO PLANS, DETAILS, AND SPECIFICATIONS.
9. ALL PLANTING BED EDGES SHALL BE SPADE CUT UNLESS OTHERWISE INDICATED.
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LANDSCAPE PLAN

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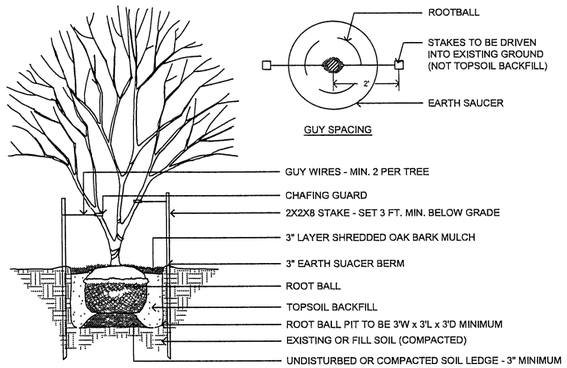
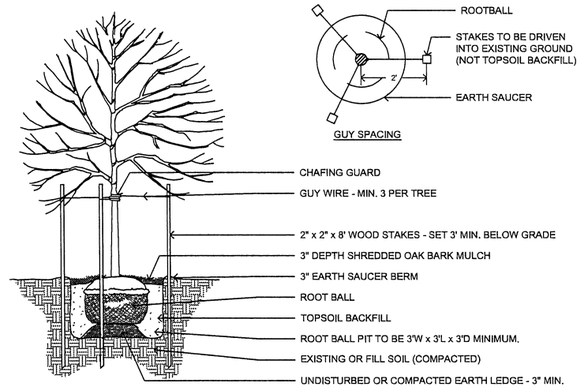
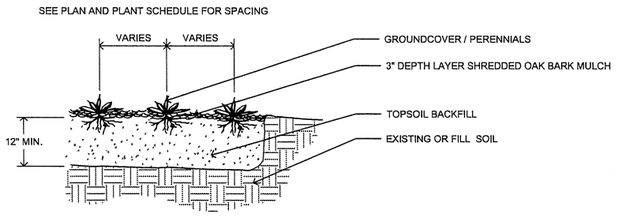


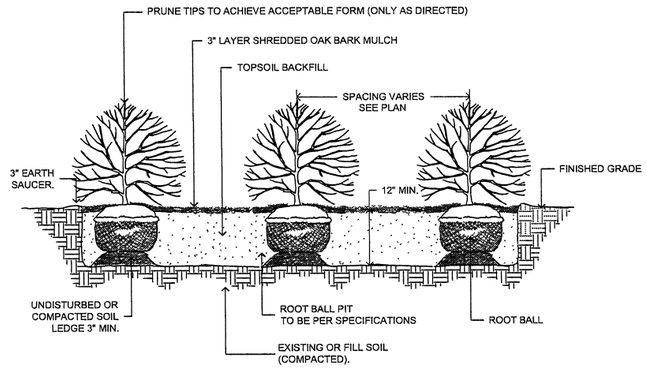
1 L3 ORNAMENTAL TREE PLANTING
PLAN & SECTION NTS



2 L3 CANOPY TREE PLANTING
PLAN & SECTION NTS



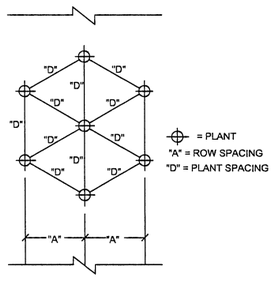
3 L3 GROUNDCOVER AND PERENNIAL PLANTING
SECTION NTS



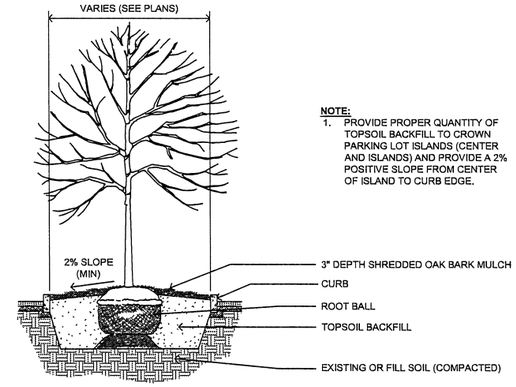
4 L3 DECIDUOUS SHRUB PLANTING
SECTION NTS

FOR USE WITH ALL PLANT TYPES SPACED EQUIDISTANTLY

SPACING "D"	ROW "A"	NO. OF PLANTS	AREA UNIT
10" O.C.	8.66"	1.66	1 sq. ft.
12" O.C.	10.4"	1.15	
15" O.C.	13.0"	7.38	10 sq. ft.
18" O.C.	15.6"	5.12	
24" O.C.	20.8"	2.9	
30" O.C.	26.0"	1.85	
36" O.C.	30.0"	1.28	
4' O.C.	4.33'	4.61	100 sq. ft.
6' O.C.	5.2'	3.2	
8' O.C.	6.93'	1.8	
10' O.C.	8.66'	1.16	

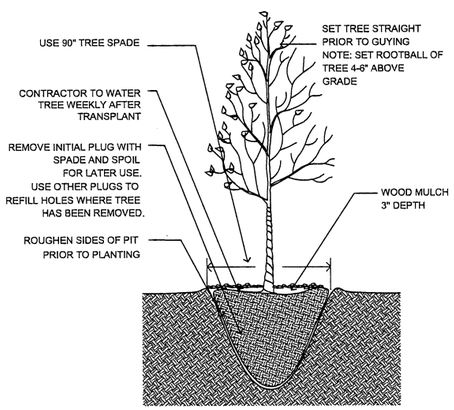


5 L3 PLANT SPACING
DIAGRAM NTS



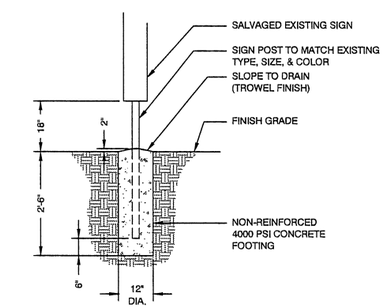
NOTE:
1. PROVIDE PROPER QUANTITY OF TOPSOIL BACKFILL TO CROWN PARKING LOT ISLANDS (CENTER AND ISLANDS) AND PROVIDE A 2% POSITIVE SLOPE FROM CENTER OF ISLAND TO CURB EDGE.

6 L3 PARKING LOT ISLAND PLANTING
SECTION NTS



1. THE LOCATION OF UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES SHOWN ON THE PLANS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHERS NOT PRESENTLY SHOWN OR KNOWN. THE TREE RELOCATION CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING AND VERIFYING THE EXISTENCE OF AND EXACT LOCATION OF ALL UTILITIES.
2. TREE SHALL BE RELOCATED PRIOR TO LEAFING OUT (BUD BREAK) IN THE SPRING. LATEST DATE FOR RELOCATION TO BE ACCOMPLISHED IS FEBRUARY 28, 2017.
3. TREE RELOCATION SHOULD OCCUR WHEN SCHOOL IS NOT IN SESSION OR SCHOOL ACTIVITIES ARE NOT PLANNED ON EITHER A SATURDAY OR SUNDAY. A RELOCATION PLAN, SHOWING EQUIPMENT STAGING AREAS, ACCESS ROUTES AND PATHS SHALL BE SUBMITTED BY THE CONTRACTOR TO THE OWNERS REPRESENTATIVE FOR REVIEW AND APPROVAL PRIOR TO BEGINNING THE RELOCATION WORK. THE OWNERS REPRESENTATIVE SHALL BE NOTIFIED OF THE PLANNED RELOCATION DATE AND TIME 48 HOURS IN ADVANCE OF THE RELOCATION WORK BEING ACCOMPLISHED.
4. TREE SHALL BE RELOCATED AND PLANTED WITHIN 48 HOURS OF THE INITIAL MOVE AND SHALL REMAIN IN THE SPADE MACHINE UNTIL PLANTED.
5. AFTER RELOCATING THE TREE, LOOSEN THE SOIL ALONG THE SEAM BETWEEN THE ROOT BALL AND THE SURROUNDING SOIL OUT TO A RADIUS FROM THE ROOT BALL EDGE EQUAL TO THE DIAMETER OF THE ROOT BALL TO A DEPTH OF 8 - 10 INCHES BY HAND DIGGING TO DISTURB THE SOIL INTERFACE. FILL ANY GAPS BELOW THIS LEVEL WITH LOOSE SOIL.
6. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE TO ENSURE THAT ADEQUATE WATER IS PROVIDED TO THE RELOCATED TREE UNTIL THE DATE OF SUBSTANTIAL COMPLETION ACCEPTANCE. THE CONTRACTOR SHALL ADJUST THE AUTOMATIC IRRIGATION SYSTEM, IF AVAILABLE, AND APPLY ADDITIONAL WATER OR ADJUST FOR LESS WATER USING HOSES AS REQUIRED.
7. HAND WATER ROOT BALL OF THE RELOCATED TREE TO ASSURE THAT THE ROOT BALL HAS MOISTURE ABOVE WILT POINT AND BELOW FIELD CAPACITY. THE RELOCATED TREE SHALL BE INSPECTED WEEKLY BY THE CONTRACTOR FOR SIGNS OF STRESS OR PROBLEMS WITHIN THE FIRST YEAR OF TRANSPLANTING. PERFORM NECESSARY MEASURES FOR SURVIVAL ACCORDING TO CURRENT STANDARDS OF THE INTERNATIONAL SOCIETY OF ARBORICULTURE.
8. THE CONTRACTOR SHALL PROTECT THE RELOCATED TREE FROM DAMAGE DUE TO OPERATIONS BY OTHER CONTRACTORS OR TRESPASSERS. MAINTAIN PROTECTION DURING INSTALLATION UNTIL SUBSTANTIAL COMPLETION ACCEPTANCE. TREAT, REPAIR OR REPLACE DAMAGED WORK IMMEDIATELY.
9. DAMAGE DONE BY THE CONTRACTOR, OR ANY OF THEIR SUB-CONTRACTORS TO THE RELOCATED TREE, INCLUDING ROOTS, TRUNK OR BRANCHES SHALL BE CLEANED, REPAIRED OR PROPERLY PRUNED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER. THE OWNER'S REPRESENTATIVE SHALL DETERMINE WHEN SUCH CLEANING OR REPAIR IS SATISFACTORY.
10. ALL TREE RELOCATION WORK SHALL BE UNDERTAKEN BY A TRAINED TREE RELOCATION CREW UNDER THE SUPERVISION OF A FOREMAN WITH A MINIMUM OF 5 YEARS EXPERIENCE SUPERVISING TREE RELOCATION CREWS.
11. ALL CHEMICAL AND FERTILIZER APPLICATIONS, IF REQUIRED, SHALL BE MADE BY LICENSED APPLICATORS FOR THE TYPE OF CHEMICALS TO BE USED. ALL WORK AND CHEMICAL USE SHALL COMPLY WITH ALL APPLICABLE LOCAL, PROVINCIAL AND FEDERAL REQUIREMENTS.
12. ASSURE THAT HOSES AND WATERING EQUIPMENT AND OTHER MAINTENANCE EQUIPMENT DOES NOT BLOCK PATHS OR BE PLACED IN A MANNER THAT MAY CREATE TRIPPING HAZARDS. USE STANDARD SAFETY WARNING BARRIERS AND OTHER PROCEDURES TO MAINTAIN THE SITE IN A SAFE MANNER FOR VISITORS AT ALL TIMES.
13. ALL WORKERS SHALL WEAR REQUIRED SAFETY EQUIPMENT AND APPAREL APPROPRIATE FOR THE TASKS BEING UNDERTAKEN.
14. THE CONTRACTOR SHALL NOT STORE MAINTENANCE EQUIPMENT AT THE SITE AT TIMES WHEN THEY ARE NOT IN USE UNLESS AUTHORIZED IN WRITING BY THE OWNER'S REPRESENTATIVE.
15. VEHICLES SHALL NOT PARK ON THE SITE INCLUDING WALKS AND LAWN AREAS AT ANY TIME WITHOUT THE OWNER'S REPRESENTATIVE'S WRITTEN PERMISSION.
16. UPDATE THE OWNER'S REPRESENTATIVE MONTHLY TO REVIEW THE STATUS OF THE HEALTH OF THE RELOCATED TREE AND DISCUSS ANY CHANGES THAT ARE NEEDED IN THE MAINTENANCE PROGRAM. AT THE DATE OF SUBSTANTIAL COMPLETION ATTEND A HAND OVER MEETING TO FORMALLY TRANSFER THE RESPONSIBILITIES OF MAINTENANCE TO THE OWNER'S REPRESENTATIVE. PROVIDE ALL INFORMATION ON PAST MAINTENANCE ACTIVITIES AND PROVIDE A LIST OF CRITICAL TASKS THAT WILL BE NEEDED OVER THE NEXT 12 MONTHS.

7 L3 TREE RELOCATION DETAIL (BY OWNER - N.I.C.)
NTS



8 L3 SALVAGED EXISTING ADDRESS SIGN FOOTING
SECTION NTS

I HEREBY SPECIFY, PURSUANT TO RSMo. 327.411 THAT THIS DRAWING SHEET IS AUTHENTICATED BY MY SEAL.

ARCHITECT
MECHANICAL ENGINEER — WILLIAM TAO & ASSOCIATES, INC.
PLUMBING / FP ENGINEER — WILLIAM TAO & ASSOCIATES, INC.
ELECTRICAL ENGINEER — WILLIAM TAO & ASSOCIATES, INC.
STRUCTURAL ENGINEER — KPFF CONSULTING ENGINEERS
CIVIL ENGINEER — EDSI - ENGINEERING DESIGN SOURCE
LANDSCAPE ARCHITECT — PDS - PLANNING DESIGN STUDIO
TRU, ARCHITECTS

PARKWAY SCHOOLS

ROSS ELEMENTARY SCHOOL
BUILDING RENOVATIONS AND SITE IMPROVEMENTS

PARKWAY SCHOOL DISTRICT
Parkway School District Project No. 061601B

1150 Ross Avenue St. Louis, Missouri 63146

TRU Architects of the Possible

9812 Manchester Road, St. Louis, Missouri 63119
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DATE: 12.01.16

REVISIONS

DWG. BY SBT
PSD PROJECT NO. 061601B
PROJECT NO. 14-006.17
SHEET NO.

L3

LANDSCAPE DETAILS

PDS project #1618 | Last saved 11/28/2016 4:13:08 PM by Slabert | Last plotted 11/28/2016 4:14:38 PM

GENERAL NOTES:

1. REFER TO DEMOLITION PLAN FOR REMOVAL OF EXISTING VEGETATION.
2. UNLESS OTHERWISE NOTED, ALL NATURAL VEGETATION SHALL BE MAINTAINED WHERE IT DOES NOT INTERFERE WITH CONSTRUCTION. PROTECT EXISTING UTILITIES, STRUCTURES OR VEGETATION FROM DAMAGE. CONTRACTOR SHALL MAINTAIN AND SECURE THE PROJECT SITE TO PROTECT THE PUBLIC FROM INJURY DUE TO WORK AND RELATED MATERIAL.
3. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH OTHER SITE RELATED WORK BEING PERFORMED BY OTHERS. REFER TO CIVIL, STRUCTURAL, BUILDING, AND UTILITY DRAWINGS FOR FURTHER COORDINATION OF WORK TO BE COMPLETED.
4. UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHERS NOT PRESENTLY KNOWN OR SHOWN. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE TO DETERMINE AND VERIFY THE EXISTENCE OF AND EXACT LOCATION OF ALL UTILITIES.
5. LANDSCAPE CONTRACTOR IS ADVISED TO STUDY THE PLANS AND VISIT THE SITE TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS. REPORT ANY DISCREPANCIES IMMEDIATELY TO THE OWNER'S REPRESENTATIVE.
6. LANDSCAPE CONTRACTOR SHALL STAKE THE LOCATIONS OF ALL PROPOSED PLANT MATERIAL AND PLANTING BED EDGES FOR APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
7. ALL PLANT MATERIAL SHALL BE WARRANTED FOR A PERIOD OF 12 MONTHS AFTER ACCEPTANCE BY OWNER.
8. CONTRACTOR SHALL STAKE AND BRACE TREES IMMEDIATELY FOLLOWING INSTALLATION ACCORDING TO PLANS, DETAILS, AND SPECIFICATIONS.
9. ALL PLANTING BED EDGES SHALL BE SPADE CUT UNLESS OTHERWISE INDICATED.
10. CONTRACTOR TO SOD ALL AREAS DISTURBED DUE TO CONSTRUCTION ACTIVITIES.
11. ALL PLANT MATERIAL SHALL BE TAGGED OR OTHERWISE APPROVED BY THE OWNER'S REPRESENTATIVE. APPROVAL IN THE NURSERY DOES NOT INDICATE FINAL ACCEPTANCE.
12. ITEMS SHOWN ON THESE DRAWINGS TAKE PRECEDENCE OVER THE MATERIAL LIST. LANDSCAPE CONTRACTOR SHALL VERIFY ALL QUANTITIES AND CONDITIONS PRIOR TO BIDDING AND IMPLEMENTATION OF THE PLAN. NO SUBSTITUTIONS OF TYPES OR SIZE OF PLANT MATERIAL WILL BE ACCEPTED WITHOUT WRITTEN APPROVAL BY OWNER'S REPRESENTATIVE; INCLUDING BOTANICAL VARIETIES OF PLANT MATERIAL (SUCH AS VARIEGATED VS. NOT VARIEGATED).
13. ALL PLANT MATERIAL SHALL CONFORM TO UPPER RANGE LIMITS FOR CALIPER, HEIGHT AND ROOT BALL DIMENSIONS LISTED IN ANSI Z60.1-2014.

PLANT SCHEDULE:

KEY	BOTANICAL NAME	COMMON NAME	MISSOURI NATIVE*	SIZE	CONDITION	TOTAL	REMARKS
SHADE TREES							
AHB	*Carpinus caroliniana*	American Hornbeam	Y	3" CAL.	B&B	5	
SHL	*Gleditsia triacanthos f. inermis* 'Skycole' SKYLINE	Skyline Honey Locust	Y	3" CAL.	B&B	8	
EVERGREEN SHRUBS							
GOJ	*Juniperus virginiana* 'Grey Owl'	Grey Owl Juniper	Y	#3	CONT.	30	
SHRUBS							
BMV	*Viburnum dentatum* 'Christom' BLUE MUFFIN	Blue Muffin Viburnum	Y	#3	CONT.	24	
HGS	*Itea virginica* 'Henry's Garnet'	Henry's Garnet Virginia Sweetspire	Y	#3	CONT.	34	
NJT	*Ceanothus americanus*	New Jersey Tea	Y	#3	CONT.	8	
SWN	*Physocarpus opulifolius* 'Seward' SUMMER WINE	Summer Wine Ninebark	Y	#3	CONT.	48	
PERENNIALS							
ABG	Diarrhena americana	American Beakgrain	Y	#1	CONT.	40	
BBL	Liriope muscari 'Big Blue'	Big Blue Lily Turf	N	1 QT	CONT.	105	
HAR	*Heuchera villosa* 'Autumn Bride'	Autumn Bride Hairy Alum Root	Y	1 QT	CONT.	170	
HRB	Penstemon digitalis 'Husker Red'	Husker Red Beardtongue	Y	1 QT	CONT.	158	
NEA	Symphyotrichum novae-angliae 'Purple Dome'	Purple Dome New England Aster	Y	1 QT	CONT.	233	
PDS	*Sporobolus heterolepis*	Prairie Dropseed	Y	#1	CONT.	65	
TDS	*Sporobolus heterolepis* 'Tara'	Tara Prairie Dropseed	Y	#1	CONT.	4	
SSG	*Panicum virgatum* 'Shenandoah'	Shenandoah Switch Grass	Y	#1	CONT.	33	

* INCLUDES CULTIVARS OF MISSOURI NATIVES.

TRJ. ARCHITECTS — ARCHITECT
WILLIAM TAO & ASSOCIATES, INC. — MECHANICAL ENGINEER
WILLIAM TAO & ASSOCIATES, INC. — PLUMBING / FP ENGINEER
WILLIAM TAO & ASSOCIATES, INC. — ELECTRICAL ENGINEER
KPFF CONSULTING ENGINEERS — STRUCTURAL ENGINEER
EDSI - ENGINEERING DESIGN SOURCE — CIVIL ENGINEER
PDS - PLANNING DESIGN STUDIO — LANDSCAPE ARCHITECT

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PARKWAY SCHOOLS

ROSS ELEMENTARY SCHOOL
BUILDING RENOVATIONS AND SITE IMPROVEMENTS
PARKWAY SCHOOL DISTRICT
Parkway School District Project No. 061601B
1150 Ross Avenue — St. Louis, Missouri 63146

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DATE: 12.01.16

REVISIONS

DWG. BY: SBT
PSD PROJECT NO.: 061601B
PROJECT NO.: 14-006.17
SHEET NO.: L4

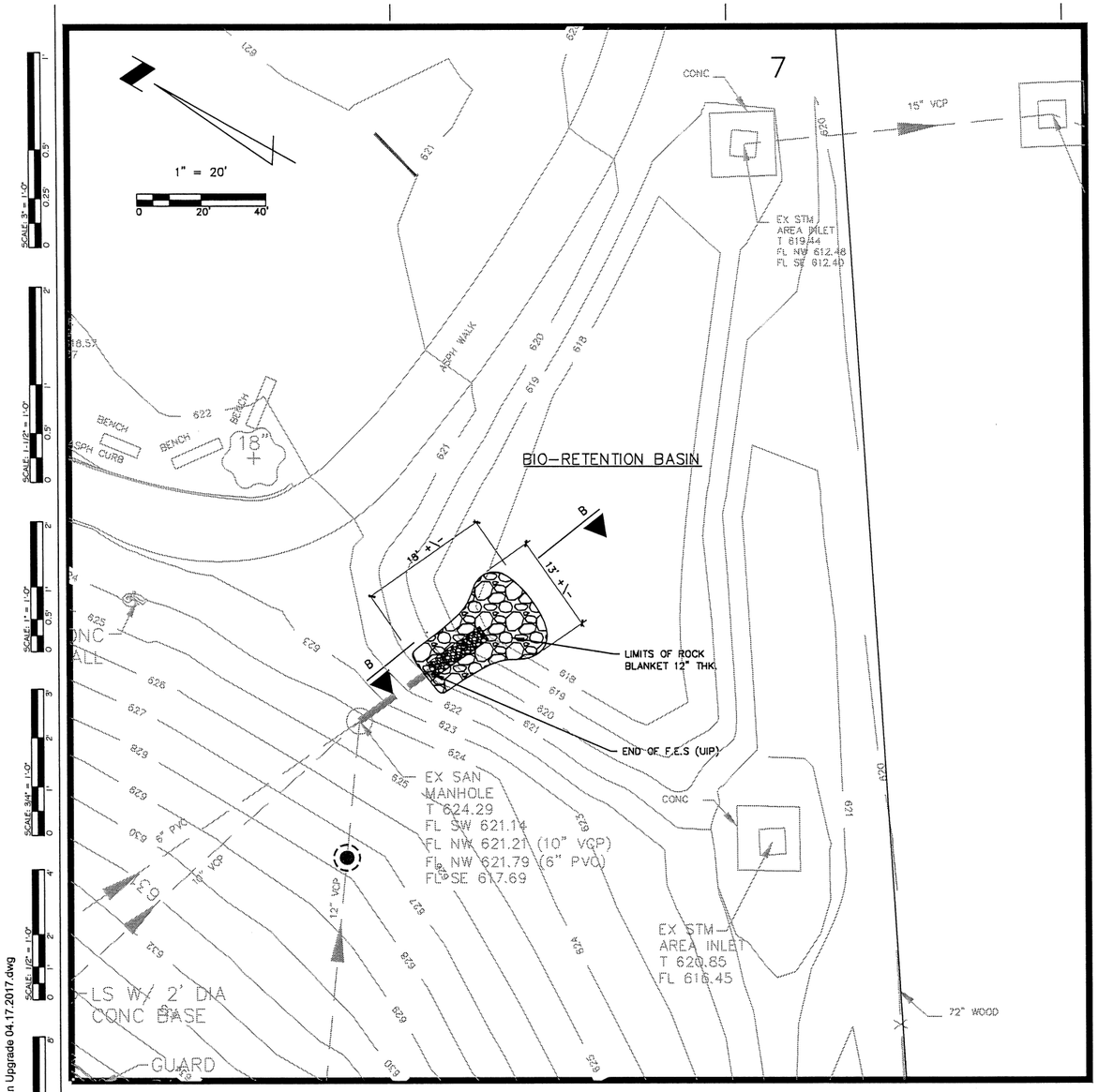
LANDSCAPE SCHEDULE

PDS project #1618 | Last saved 11/28/2016 5:07:38 PM by Stalbert | Last plotted 11/28/2016 5:11:24 PM

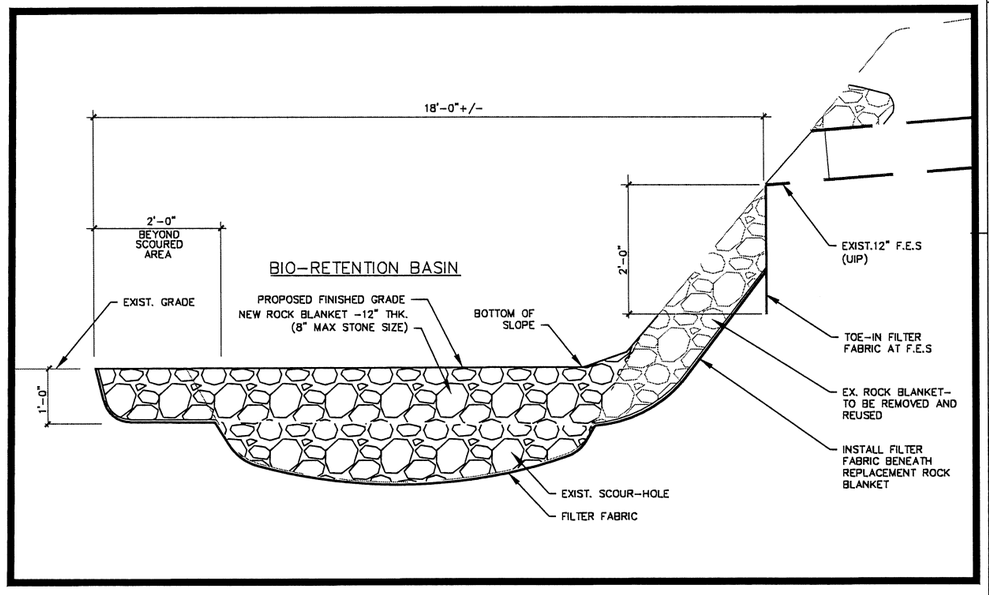
SECTION 4

HENRY ELEMENTARY

BMP ORIGINAL PROJECT INFORMATION



PLAN VIEW
SCALE: 1"= 20



SECTION "BB"

ROCK BLANKET REPAIR CONSTRUCTION NOTES:

1. REMOVE EXIST ROCK BLANKET DOWNHILL OF DISCHARGE END OF 12" F.E.S.
2. EXCAVATE SIDE AND BOTTOM OF BASIN TO ALLOW PLACEMENT OF A 12" THICK ROCK BLANKET AS SHOWN ON DETAIL.
3. PLACE FILTER FABRIC ALONG BOTTOM AND SIDES OF EXCAVATION PRIOR TO PLACING ROCK BLANKET. (PER MANUFACTURES RECOMMENDATIONS.)
4. PLACE ROCK BLANKET TO LIMITS AS SHOWN ON DETAIL.

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Missouri State Certificate of Authority #2009027409

Larson Engineering
Structural Engineer
Consultant Project Number:
Certificate of Authority #2007006032
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Planning Design Studio
Landscape Architect
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Certificate of Authority: 2006001845
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Henry Elementary School
700 Henry Avenue, Ballwin, MO 63011
Parkway Project PN 121501B
Building Additions, Renovations and Site Improvements
Parkway School District
363 N. Woods Mill Rd.
Chesterfield, MO 63017

Project No: 15037

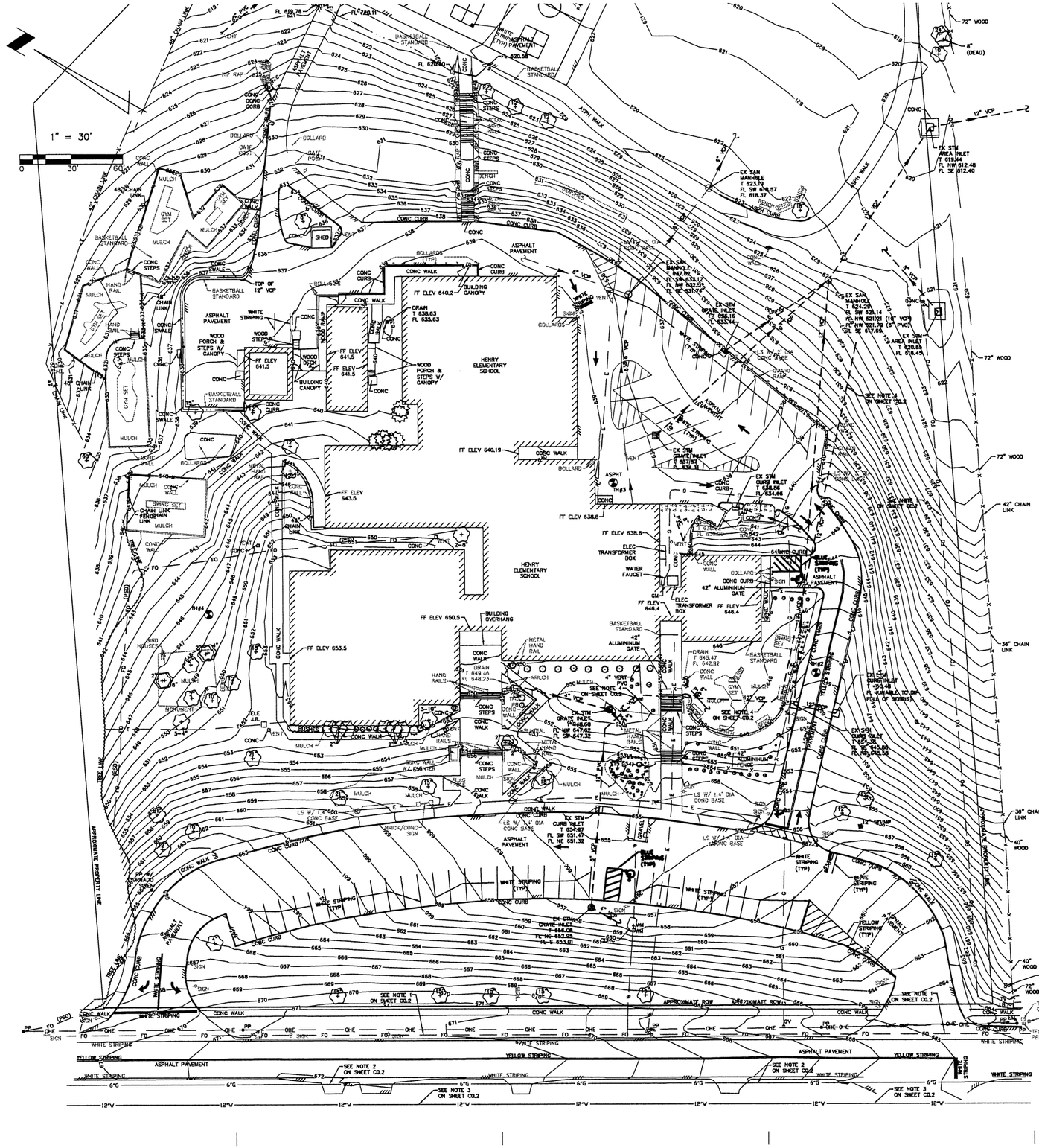
Revisions

Description	Date

DATE: 04/17/2017

Bio-Retention Basin Repair

C1



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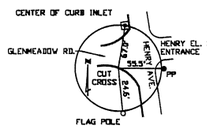
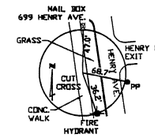
LEGEND

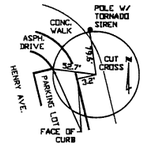
SANITARY SEWER	—	
STORM SEWER	— —	
WATER	— W —	W
UNDERGROUND ELECTRIC	— E —	E
OVERHEAD ELECTRIC	— OHE —	OHE
FIBER OPTIC	— FO —	FO
GAS	— G —	G
COMMUNICATION	— T —	T
STORM MANHOLE	○	WATER MANHOLE ○ WMH
STORM INLET	□	WATER METER ▲ WM
SANITARY MANHOLE	○	WATER VALVE ▲ WV
CLEANOUT	○ VENT	FIRE HYDRANT FH
ELECTRIC MANHOLE	○ EMH	SPRINKLER ○ SPRINKLER
ELECTRIC BREAKER OUTLET BOX	□ ELEC OUTLET BOX	TELEPHONE MANHOLE ○ TMH
ELEC METER	▲ EM	PULL BOX □ PB
GAS VALVE	▲ GV	TRAFFIC SIGNAL CONTROL BOX □ TFC CONTROLLER
PHONE CABLE BOX	□ TELE J.B.	BUSH
ELECTRIC TRANSFORMER BOX	□ ELEC TRANSFORMER BOX	STUMP ★ STUMP
POWER POLE	● PP	TREE
LIGHT STANDARD	☼ LS	BOLLARD ○ BOLLARD
GAS METER	▲ GM	SIGN
GAS VALVE	▲ GV	EDGE OF ASPH PAVEMENT
SMALL DRAIN		EDGE OF CONC PAVEMENT
		FLOW DIRECTION OF SEWER LINE



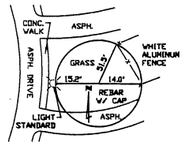
REFERENCE TIE
CONTROL POINT #1
N 1011571.770
E 814482.587
ELEV 665.19
CUT CROSS IN SOUTHERN CURB OF GLENMEADOW DR.; WEST OF INTERSECTION WITH HENRY AVE. IN FRONT OF 515 GLENMEADOW DR.



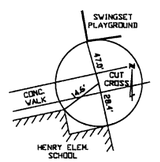
REFERENCE TIE
CONTROL POINT #2
N 1011287.449
E 814255.963
ELEV 670.64
CUT CROSS IN CONCRETE SIDEWALK WEST OF HENRY AVE., IN FRONT OF 699 HENRY AVE.



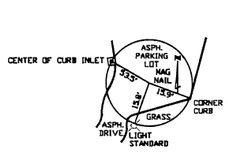
REFERENCE TIE
CONTROL POINT #3
N 1011282.371
E 814423.922
ELEV 662.22
CUT CROSS IN CONCRETE SIDEWALK EAST OF HENRY AVE., IN FRONT OF HENRY ELEMENTARY SCHOOL.



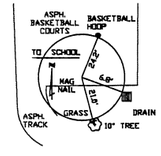
REFERENCE TIE
CONTROL POINT #4
N 1011057.170
E 814564.789
ELEV 654.80
SET REBAR W/ CAP IN FRONT YARD OF HENRY ELEMENTARY SCHOOL;EAST OF ASPHALT DRIVE.



REFERENCE TIE
CONTROL POINT #5
N 1011372.771
E 814373.549
ELEV 652.50
CUT CROSS IN CONC. WALK ON SCHOOL GROUNDS; NORTH OF HENRY ELEMENTARY SCHOOL, SOUTH OF SWINGSET PLAYGROUND.



REFERENCE TIE
CONTROL POINT #6
N 1011129.543
E 814770.624
ELEV 639.60
SET MAG NAIL IN HENRY ELEMENTARY SCHOOL REAR ASPHALT PARKING LOT; SOUTHERN MOST PARKING SPACE



REFERENCE TIE
CONTROL POINT #7
N 1011367.604
E 814968.725
ELEV 621.47
SET MAG NAIL IN SOUTHEAST CORNER OF ASPHALT BASKETBALL COURTS AT HENRY ELEMENTARY SCHOOL

NOTES:

1. APPROXIMATE LOCATION OF FIBER OPTIC CABLE LINE SHOWN PER CHARTER COMMUNICATIONS RECORD DRAWINGS.
2. APPROXIMATE LOCATION OF 6" GAS LINE SHOWN PER LACLEDE GAS RECORD DRAWING 185-41.
3. APPROXIMATE LOCATION OF 12" WATER MAIN LINE SHOWN PER MISSOURI AMERICAN WATER RECORD DRAWING 21R.

THE UNDERGROUND UTILITIES SHOWN HEREON HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND RECORD DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, WHETHER IN SERVICE OR ABANDONED. THE UTILITIES SHOWN WITHIN THE SCHOOL PROPERTY ARE CONSIDERED PRIVATE AND ARE SHOWN FROM AVAILABLE RECORD DOCUMENTS PROVIDED BY THE PARKWAY SCHOOL DISTRICT. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING MISSOURI ONE CALL AND PARKWAY SCHOOL DISTRICT TO VERIFY THE LOCATION OF UNDERGROUND FACILITIES PRIOR TO CONSTRUCTION.

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Civil Engineer
Consultant Project Number:
Certificate of Authority #001523
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St. Louis, MO 63017
636.534.7037 tel
636.537.0275 fax

Henry Elementary School

700 Henry Avenue, Ballwin, MO 63011
Parkway Project PN 121501B
Classroom Additions

Parkway School District
363 N. Woods Mill Rd.
Chesterfield, MO 63017

Project No: 15037

Revisions

Description	Date

NOT FOR CONSTRUCTION

DATE: 11/16/2015

Survey

C0.1

SCALE: 3/16" = 1'-0" (1, 0.5, 0.25, 0)

SCALE: 1/8" = 1'-0" (2, 1, 0.5, 0)

SCALE: 1" = 1'-0" (2, 1, 0.5, 0)

SCALE: 3/4" = 1'-0" (3, 2, 1, 0)

SCALE: 1/2" = 1'-0" (4, 2, 1, 0)

SCALE: 1/4" = 1'-0" (8, 4, 2, 0)

SCALE: 1/8" = 1'-0" (16, 8, 4, 0)

SCALE: 1/16" = 1'-0" (32, 16, 8, 0)

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NOTE:

WHEN THE WORD "CITY" IS USED ON THESE PLANS IT SHALL MEAN THE CITY OF BALLWIN, MISSOURI

GENERAL NOTES:

1. UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THE VERIFICATION OF THE LOCATION OF UNDERGROUND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE LOCATED PRIOR TO ANY GRADING OR CONSTRUCTION OF IMPROVEMENTS.

2. TOPOGRAPHIC SURVEY PREPARED AND FIELD DATA COLLECTED BY EDSI, INC. IN JUNE, JULY, AUGUST, 2015.

3. STORMWATER SHALL BE DISCHARGED AT AN ADEQUATE NATURAL DISCHARGE POINT. SINKHOLES ARE NOT ADEQUATE NATURAL DISCHARGE POINTS.

4. FILLED PLACES INCLUDING TRENCH BACKFILLS, UNDER BUILDINGS, SANITARY SEWER LINES, AND/OR PAVED AREAS SHALL BE COMPACTED IN ACCORDANCE WITH THE SOILS REPORT FOR THIS PROJECT, UNLESS OTHERWISE SPECIFIED.

5. TRENCH BACKFILLS UNDER PAVED AREA SHALL BE GRANULAR BACKFILL, UNLESS OTHERWISE SPECIFIED.

6. CONSTRUCTION AND MATERIALS USED SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE MISSOURI AMERICAN WATER COMPANY, THE SAINT LOUIS COUNTY DEPARTMENT OF HIGHWAYS, AND THE PROJECT SPECIFICATIONS. THE MOST STRINGENT REQUIREMENTS SHALL APPLY.

7. LOCATION AND ELEVATION OF EXISTING INLETS, MANHOLES AND PIPES TO BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION. MANHOLES AND INLET TOPS BUILT WITHOUT ELEVATIONS FURNISHED BY THE ENGINEER WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

8. EXISTING ABOVE & BELOW GROUND UTILITIES TO BE PROTECTED AND USED IN PLACE, UNLESS OTHERWISE SPECIFIED.

9. A *.DWG FILE WILL BE MADE AVAILABLE TO THE CONTRACTOR TO WHOM THE WORK IS AWARDED FOR HIS USE IN SITE LAYOUT.

10. PARKING ON NON-SURFACED AREAS IS PROHIBITED IN ORDER TO ELIMINATE THE CONDITION WHEREBY MUD FROM CONSTRUCTION AND EMPLOYEE VEHICLES IS TRACKED ONTO THE PAVEMENT CAUSING HAZARDOUS ROADWAY AND DRIVING CONDITIONS. CONTRACTOR SHALL KEEP ROAD CLEAR OF MUD AND DEBRIS.

11. THE STREETS SURROUNDING THIS DEVELOPMENT AND ANY STREET USED FOR CONSTRUCTION ACCESS SHALL BE CLEANED THROUGHOUT THE DAY.

12. ALL TRASH AND DEBRIS ON-SITE, EITHER EXISTING OR FROM CONSTRUCTION, MUST BE REMOVED AND LEGALLY DISPOSED OF OFF-SITE.

13. NOTIFY THE CITY DEPARTMENT OF PUBLIC WORKS 48 HOURS PRIOR TO THE COMMENCEMENT OF GRADING AND/OR PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

14. EROSION AND SILTATION CONTROL DEVICES SHALL BE INSTALLED BY THE CONTRACTOR PRIOR TO ANY GRADING AND BE MAINTAINED THROUGHOUT THE PROJECT UNTIL ACCEPTANCE OF THE WORK BY THE OWNER AND/OR CONTROLLING REGULATORY AGENCY (AHJ) AND ADEQUATE VEGETATIVE GROWTH INSURES NO FURTHER EROSION OF THE SOIL. ADDITIONAL SILTATION CONTROL DEVICES MAY BE REQUIRED AS DIRECTED BY THE CITY.

15. WHEN CLEARING AND/OR GRADING OPERATIONS ARE COMPLETED OR SUSPENDED FOR MORE THAN 30 DAYS, ALL NECESSARY PRECAUTIONS SHALL BE TAKEN TO RETAIN SOIL MATERIALS ON SITE. PROTECTIVE MEASURES MAY BE REQUIRED BY THE DIRECTOR OF PUBLIC WORKS / CITY ENGINEER SUCH AS PERMANENT SODDING, PERIODIC WETTING, MULCHING, OR OTHER SUITABLE MEANS.

16. SILTATION DEVICES SHALL BE INSPECTED PERIODICALLY FOR DAMAGE AND FOR THE AMOUNT OF SEDIMENT WHICH HAS ACCUMULATED. REMOVAL OF SEDIMENT WILL BE REQUIRED WHEN IT REACHES 1/2 THE HEIGHT OF THE SILTATION DEVICE.

17. SAWCUT EXISTING PAVEMENT FULL DEPTH TO ASSURE A SMOOTH MATCH BETWEEN THE EXISTING AND NEW PAVEMENT. REMOVE ENOUGH PAVEMENT TO ACCOMMODATE NEW WORK.

18. PROPOSED GRADES SHALL BE WITHIN 0.1 FEET, MORE OR LESS, OF THOSE SHOWN ON THE GRADING PLAN.

19. NO GRADING OR EXCAVATION SHALL OCCUR ON THE SITE UNTIL A PERMIT IS SECURED FROM THE AHJ AND THE SILTATION CONTROL DEVICES INDICATED ARE INSTALLED AND FUNCTIONING.

20. ALL AREAS DISTURBED BY CONSTRUCTION, EXCLUDING PAVED AREAS, SHALL RECEIVE FESCUE SOD WITHIN 30 DAYS FROM THE COMPLETION OF GRADING OPERTIONS AND SHALL BE MAINTAINED FOR A PERIOD OF TWO (2) WEEKS THEREAFTER. SOD PLACEMENT AND MAINTENANCE SHALL CONFORM IN ALL RESPECTS WITH THE PROJECT SPECIFICATIONS.

21. NOTIFY THE OWNER 48 HOURS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

22. NO EXCAVATION SHALL BE MADE SO CLOSE TO THE PROPERTY LINE AS TO ENDANGER ANY ADJOINING PROPERTY OF ANY PUBLIC OR PRIVATE STREET WITHOUT SUPPORTING AND PROTECTING SUCH PUBLIC OR PRIVATE STREET OR PROPERTY FROM SETTLING, CRACKING, OR OTHER DAMAGE.

23. ALL EXCAVATIONS, GRADING, OR FILLING SHALL HAVE A FINISHED GRADE NOT TO EXCEED A FOUR HORIZONTAL TO ONE VERTICAL (4:1) SLOPE UNLESS SPECIFICALLY APPROVED BY THE OWNER.

24. DIMENSIONS ARE TO FACE OF CURB, FACE OF WALL, OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

25. ALL FILLS PLACED UNDER PAVED AREAS, INCLUDING TRENCH BACKFILLS WITHIN AND OFF ROAD RIGHT-OF-WAY, SHALL BE COMPACTED TO 95% PER ASTM D698 FOR THE ENTIRE DEPTH OF THE FILL. COMPACTED GRANULAR BACKFILL IS REQUIRED IN ALL TRENCH EXCAVATION WITHIN THE STREET RIGHT-OF-WAY AND UNDER ALL PAVED AREAS. ALL TESTS SHALL BE PERFORMED UNDER THE DIRECTION OF AND VERIFIED BY A SOILS ENGINEER CONCURRENT WITH GRADING AND BACKFILLING OPERATIONS.

CITY OF BALLWIN STANDARD NOTES:

1. AT LEAST ONCE EVERY WEEK AND AFTER EVERY RAINFALL EVENT OF 0.25 INCHES OR MORE, EROSION AND SILTATION CONTROL DEVICES SHALL BE INSPECTED FOR DAMAGE AND AMOUNT OF SEDIMENTATION ACCUMULATED AND CORRECTIVE ACTIONS TAKEN. REPORTS OF THE INSPECTIONS AND CORRECTIVE ACTIONS SHALL BE PREPARED AND SUBMITTED TO THE CITY WITHIN 5 DAYS OF THE DATE OF THE INSPECTION.

2. TEMPORARY SILTATION CONTROL MEASURES (STRUCTURAL) SHALL BE MAINTAINED UNTIL VEGETATIVE COVER IS ESTABLISHED AT A SUFFICIENT DENSITY TO PROVIDE EROSION CONTROL ON THE SITE.

3. ALL FINISHED GRADES (AREAS NOT TO BE DISTURBED BY FUTURE IMPROVEMENT) IN EXCESS OF 20% SLOPES (5:1) SHALL BE MULCHED AND TACKED AT THE RATE OF 100 POUNDS PER 1,000 SQUARE FEET WHEN SEEDED AS SOON AS POSSIBLE AFTER FINAL PLACEMENT. THIS IS A TEMPORARY CONSTRUCTION CONDITION. THE CONTRACTOR IS REQUIRED TO SOD ALL AREAS DISTURBED BY CONSTRUCTION THAT ARE NOT PAVED OR OCCUPIED BY A STRUCTURE AS A FINAL SITE CONDITION.

4. DEBRIS AND FOUNDATION MATERIAL FROM ANY EXISTING IMPROVEMENT WHICH IS SCHEDULED TO BE DEMOLISHED FOR THIS DEVELOPMENT MUST BE PROPERLY DISPOSED OF OFF-SITE.

5. SHOULD SEDIMENT CONTAINMENT DEVICES FAIL AND SEDIMENT IS TRANSPORTED FROM THE SITE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING THE TRANSPORTED DEBRIS FROM THE AFFECTED PUBLIC AND/OR PRIVATE AREAS. THE DEBRIS MAY BE EITHER SPREAD OUT ON THE SCHOOL DISTRICT PROPERTY OR TRANSPORTED AND DISPOSED OF OFFSITE IN A LEGAL MANNER. THE AFFECTED AREA DAMAGED SHALL BE RESTORED TO THE CONDITIONS THAT EXISTED PRIOR TO THE CONTAINMENT DEVICE FAILURE.

GRADING PERMIT APPLICATION NOTES:

1. CONTRACTOR SHALL STORE ONSITE AN EXTRA 10% OF REQUIRED EROSION AND SILTATION CONTROL DEVICE QUANTITIES FOR EMERGENCIES.

2. SWPPP COMPLIANCE REPORTS TO BE SUBMITTED WEEKLY AND AFTER HEAVY RAINFALL TO BOTH THE CITY AND TO THE OWNER. THE CONTRACTOR SHALL PROVIDE THE NAME AND TELEPHONE NUMBER OF THE PERSON DESIGNATED TO PERFORM THE INSPECTIONS AND PROVIDE THE REPORTS.

POLLUTION PREVENTION PROCEDURES:

1. HANDLING AND DISPOSAL OF HAZARDOUS MATERIALS

DO: PREVENT SPILLS
USE PRODUCTS UP
FOLLOW LABEL DIRECTIONS FOR DISPOSAL
REMOVE LIDS FROM EMPTY BOTTLES AND CANS WHEN DISPOSING IN TRASH
RECYCLE WASTES WHENEVER POSSIBLE

DON'T: POUR WASTE INTO SEWERS OR WATERWAYS ON THE GROUND
POUR WASTE DOWN THE SINK, FLOOR DRAIN OR SEPTIC TANKS
BURY CHEMICALS OR CONTAINERS, OR DISPOSE OF THEM WITH CONSTRUCTION DEBRIS
BURN CHEMICALS OR CONTAINERS
MIX CHEMICALS TOGETHER

2. CONTAINERS SHALL BE PROVIDED FOR COLLECTION OF ALL WASTE MATERIAL INCLUDING CONSTRUCTION DEBRIS, TRASH, PETROLEUM PRODUCTS AND ANY HAZARDOUS MATERIALS TO BE USED ONSITE. ALL WASTE MATERIAL SHALL BE DISPOSED OF AT FACILITIES APPROVED FOR THAT MATERIAL.

3. NO WASTE MATERIALS SHALL BE BURIED ON-SITE.

4. MIXING, PUMPING, TRANSFERRING OR OTHERWISE HANDLING CONSTRUCTION CHEMICALS SUCH AS FERTILIZER, LIME, ASPHALT, CONCRETE DRYING COMPOUNDS, AND ALL OTHER POTENTIALLY HAZARDOUS MATERIALS SHALL BE PERFORMED IN AN AREA AWAY FROM ANY WATERCOURSE, DITCH OR STORM DRAIN.

5. EQUIPMENT FUELING AND MAINTENANCE, OIL CHANGING, ETC. SHALL BE PERFORMED ONLY IN AN AREA DESIGNATED FOR THAT PURPOSE. THE DESIGNATED AREA IS EQUIPPED FOR RECYCLING OIL AND CATCHING SPILLS.

6. CONCRETE WASH WATER SHALL NOT BE ALLOWED TO FLOW DIRECTLY TO STORM SEWERS, STREAMS, DITCHES, LAKES, ETC. WITHOUT BEING TREATED. A SUMP OR PIT SHALL BE CONSTRUCTED TO CONTAIN CONCRETE WASH WATER.

7. IF SUBSTANCES SUCH AS OIL, DIESEL FUEL, HYDRAULIC FLUID, ANTIFREEZE, ETC. ARE SPILLED, LEAKED, OR RELEASED ONTO SOIL, THE SOIL SHALL BE DUG UP AND DISPOSED OF AT A LICENSED SANITARY LANDFILL (NOT A CONSTRUCTION/DEMOLITION DEBRIS LANDFILL). SPILLS ON PAVEMENT SHALL BE ABSORBED WITH SAWDUST, KITTY LITTER OR PRODUCT DESIGNED FOR THAT PURPOSE AND DISPOSED OF AT A LICENSED SANITARY LANDFILL. HAZARDOUS OR INDUSTRIAL WASTES SUCH AS MOST SOLVENTS, GASOLINE, OIL-BASED PAINTS, AND CEMENT CURING COMPOUNDS REQUIRE SPECIAL HANDLING. THESE MATERIALS WILL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH MODNR REQUIREMENTS.

8. STATE LAW REQUIRES THE PARTY RESPONSIBLE FOR A PETROLEUM PRODUCT SPILL IN EXCESS OF 50 GALLONS TO REPORT THE SPILL TO MODNR (537-634-2436) AS SOON AS PRACTICAL AFTER DISCOVERY. FEDERAL LAW REQUIRES THE RESPONSIBLE PARTY TO REPORT ANY RELEASE OF OIL IF IT REACHES OR THREATENS A SEWER, LAKE, CREEK, STREAM, RIVER, GROUNDWATER, WETLAND, OR AREA, LIKE A ROAD DITCH, THE DRAINS INTO ONE OF THE ABOVE.

9. SUFFICIENT TEMPORARY TOILET FACILITIES TO SERVE THE NUMBER OF WORKERS ON THE SITE SHALL BE PROVIDED. THE FACILITIES SHALL BE SERVICED FREQUENTLY TO MAINTAIN A SANITARY CONDITION.

MSD STANDARD CONSTRUCTION:

ALL STORM AND SANITARY SEWER STRUCTURES AND APPURTENANCES TO BE DEDICATED TO MSD, OR TO BE PRIVATE UNDER MSD INSPECTION, SHALL CONFORM TO THE METROPOLITAN ST. LOUIS SEWER DISTRICT, STANDARD CONSTRUCTION SPECIFICATIONS FOR SEWERS AND DRAINAGE FACILITIES, 2008. THAT WILL INCLUDE STANDARD DETAILS SHOWN THEREIN, AND SHALL INCLUDE ALL SUBSEQUENT CHANGES MADE THERETO.

SOME RECENT CHANGES CONCERN PIPE FIELD TESTING AND PERFORMANCE, AND INCLUDE THE FOLLOWING:

PART 4 - PIPE SEWER CONSTRUCTION

SECTION B. PIPE FIELD TESTS, PARAGRAPH 2, REACH INTEGRITY TESTING - DELETE THE FIRST SENTENCE AND THE FOLLOWING REPLACEMENT APPLIES:

ALL SANITARY AND COMBINED SEWERS SHALL SUSTAIN A MAXIMUM LEAKAGE LIMIT OF 100 GALLONS/INCH OF PIPE DIAMETER/MILE OF LINE/DAY, AS REQUIRED BY THE MISSOURI DEPARTMENT OF NATURAL RESOURCES SPECIFICATIONS.

SECTION B, PIPE FIELD TESTS, PARAGRAPH 2, REACH INTEGRITY TESTING, SUBPARAGRAPH C. INFILTRATION/EXFILTRATION TESTING - DELETE THE SIXTH SENTENCE, CONCERNING LEAKAGE LIMITS, AND THE FOLLOWING REPLACEMENT APPLIES:

THE MEASUREMENT OF LEAKAGE SHALL NOT EXCEED 100 GALLONS/INCH OF PIPE DIAMETER/MILE OF LINE/DAY, AS REQUIRED BY THE MISSOURI DEPARTMENT OF NATURAL RESOUCES SPECIFICATIONS.

SECTION B, PIPE FIELD TESTS, PARAGRAPH 4, MANHOLE TESTING, SUBPARAGRAPH A, VACUUM TESTING - AFTER THE FIRST SENTENCE, THE FOLLOWING ADDITION APPLIES:

THE VACUM TEST MUST BE PERFORMED PRIOR TO BACKFILLING AROUND THE MANHOLE UNLESS THE CONTRACTOR PROVIDES DOCUMENTATION FROM THE PRECAST MANHOLE MANUFACTURER STATING THAT THE MANHOLE MAY BE VACUUM TESTED AFTER BACKFILLING HAS TAKEN PLACE. THE CONTRACTOR MUST SUBMIT THIS DOCUMENTATION PRIOR TO BACKFILLING AROUND ANY MANHOLE.

SECTION B, PIPE FIELD TESTS, PARAGRAPH 4, MANHOLE TESTING, SUBPARAGRAPH B, EXFILTRATION TESTING - DELETE THE SECOND SENTENCE, CONCERNING LEAKAGE LIMITS, AND THE FOLLOWING ADDITION APPLIES:

FOR EXFILTRATION TESTING, THE ALLOWABLE LEAKAGE LIMIT IS 100 GALLONS/INCH OF PIPE DIAMETER/MILE OF LINE/DAY WHEN THE AVERAGE HEAD ON THE TEST SECTION IS THREE FEET (3') OF LESS

LEGEND EXISTING

- SANITARY SEWER
- STORM SEWER
- WATER MAIN (W)
- ELECTRIC (E)
- COMMUNICATION (T)
- FIBER OPTIC (FO)
- GAS (G)
- OVERHEAD ELECTRIC (OHE)
- STORM MANHOLE
- STORM INLET
- SANITARY MANHOLE (VENT)
- CLEANOUT
- ELECTRIC MANHOLE (EMH)
- ELECTRIC BREAKER OUTLET BOX (ELEC OUTLET BOX)
- ELEC METER (EM)
- GAS VALVE (GV)
- PHONE CABLE BOX (TELE J.B.)
- ELECTRIC TRANSFORMER BOX (ELEC TRANSFORMER BOX)
- POWER POLE (PP)
- LIGHT STANDARD (LS)
- GAS METER (GM)
- GAS VALVE (GV)
- SMALL DRAIN
- WATER MANHOLE (WMH)
- WATER METER (WM)
- WATER VALVE (WV)
- FIRE HYDRANT (FH)
- SPRINKLER (SPRINKLER)
- TELEPHONE MANHOLE (TMH)
- PULL BOX (PB)
- TRAFFIC SIGNAL CONTROL BOX (TFC CONTROLLER)
- BUSH
- STUMP (STUMP)
- TREE
- BOLLARD
- SIGN
- EDGE OF ASPH PAVEMENT
- EDGE OF CONC PAVEMENT
- FLOW DIRECTION OF SEWER LINE
- TEST HOLE (TH)

LEGEND NEW WORK

- CONTOUR (ELEV)
- SPOT ELEVATION (ELEV)
- STORM SEWER
- SANITARY SEWER
- MANHOLE
- CURB INLET
- GRATE INLET
- WATER LINE (W)
- FIRE HYDRANT
- GAS SERVICE (G)
- ELECTRIC SERVICE (E)
- TELEPHONE SERVICE (T)
- CONCRETE PAVEMENT
- ASPHALT PAVEMENT
- TO BE REMOVED — T.B.R.
- USE IN PLACE — U.I.P.
- ADJUST TO GRADE — A.T.G.
- TO BE REMOVED & REPLACED — T.B.R.&R.
- TO BE PROTECTED — T.B.P.
- TO BE ABANDONED — T.B.A.
- REVOVE ALL SURFACE IMPROVEMENTS
- SILTATION CONTROL
- SAWCUT

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Henry Elementary School

700 Henry Avenue, Ballwin, MO 63011
Parkway Project PN 121501B
Classroom Additions

Parkway School District
363 N. Woods Mill Rd.
Chesterfield, MO 63017

Project No: 15037

Revisions

Description	Date

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DATE: 11/16/2015

Legend and General Notes

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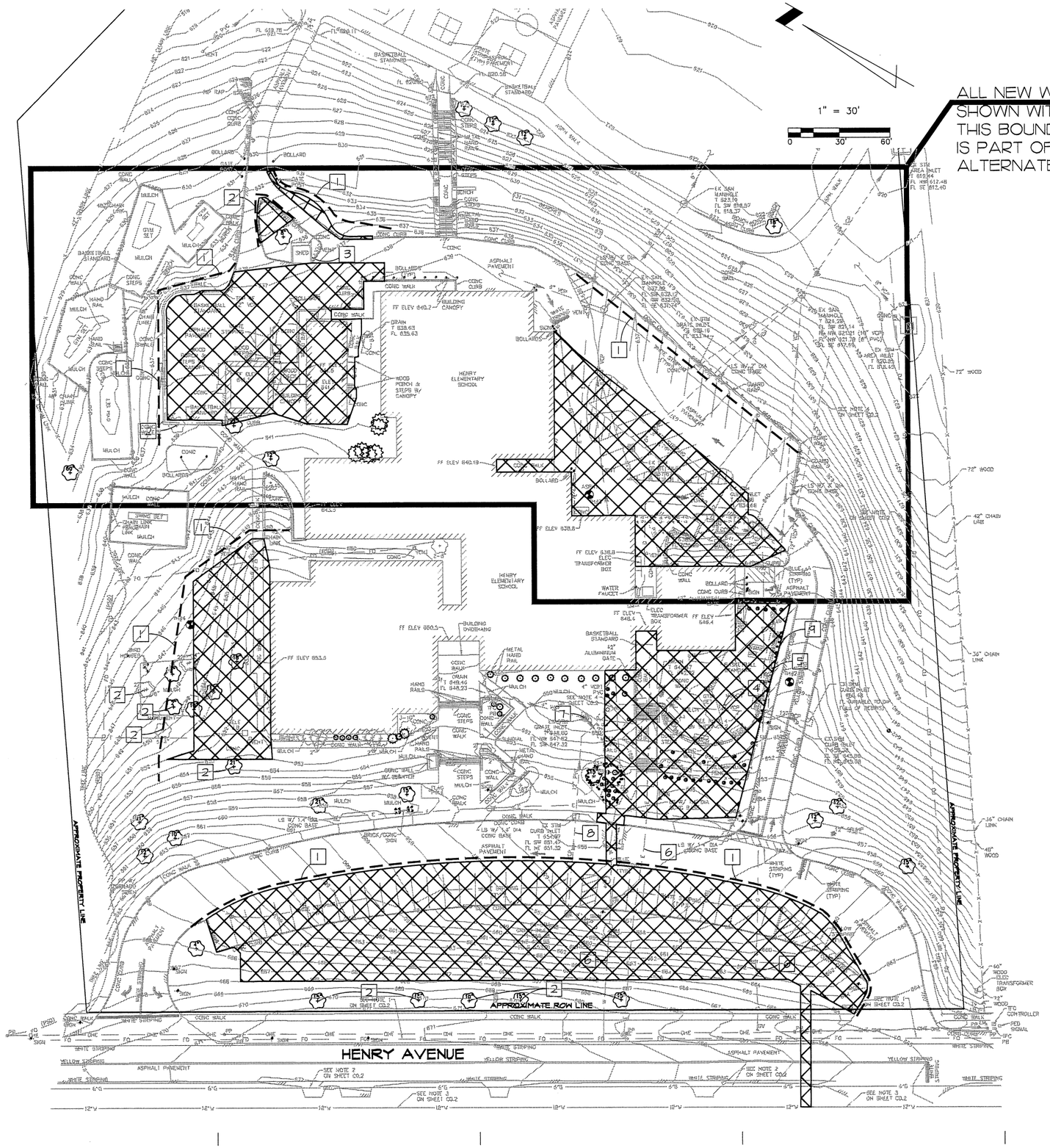

KEYED DEMOLITION NOTES (THIS SHEET ONLY):

1. SILTATION CONTROL. SEE DETAIL ON SHEET C5
2. USE EXISTING TREE IN PLACE AND PROTECT FROM DAMAGE DURING CONSTRUCTION. IF THE TREE IS DAMAGED BY THE CONTRACTOR DURING CONSTRUCTION ACTIVITY, IT SHALL BE REPLACED BY THE CONTRACTOR WITH A TREE OF SIMILAR CALIPER, TYPE AND HEIGHT AT NO COST TO THE OWNER. IN LIEU OF REPLACEMENT, THE CONTRACTOR MAY PROVIDE THE OWNER WITH A WRITTEN REPORT PREPARED AND SIGNED BY A PROFESSIONAL ARBORIST WITH AT LEAST 5 YEARS EXPERIENCE AS AN ARBORIST THAT ASSESS THE CONDITION OF THE TREE AND THE LIKELIHOOD THAT THE TREE WILL SURVIVE AFTER APPLYING RECOMMENDED REPAIRS. THE OWNER SHALL HAVE THE SOLE DISCRETION OF REQUIRING THE CONTRACTOR TO REPLACE THE DAMAGED TREE REGARDLESS OF THE CONTENT AND RECOMMENDATION OF THE ARBORIST'S REPORT.
3. USE EXISTING SHED IN PLACE. PROTECT FROM DAMAGE DURING CONSTRUCTION. IF SHED IS DAMAGED BY THE CONTRACTOR, IT SHALL BE REPLACED AT NO COST TO THE OWNER.
4. RELOCATE EXISTING SEWER LINE. SEE SHEET C2 AND C4 FOR NEW SEWER LOCATION.
5. USE A PORTION OF THE EXISTING WALL IN PLACE (SEE SHEET C2). PROTECT FROM DAMAGE DURING CONSTRUCTION. IF WALL IS DAMAGED BY THE CONTRACTOR DURING CONSTRUCTION ACTIVITY, IT SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE OWNER.
6. EXISTING UNDERGROUND UTILITY LINE SHALL BE REMOVED WHERE IT INTERFERES WITH CONSTRUCTION. CONTRACTOR SHALL REMOVE EXISTING LINE. CONTRACTOR IS NOT ALLOWED TO ABANDONED THE LINE IN PLACE. SEE UTILITY PLAN (C4) FOR NEW LOCATION.
7. CONNECT EXISTING 6"PVC DRAIN LINE TO RELOCATED 12" PVC. SEE UTILITY PLAN (C4) FOR NEW LOCATION.
8. CAP EXISTING 8" PIPE AT INLET. EXISTING LINE RUNNING WESTWARD FROM INLET MAY BE ABANDONED IN PLACE. PIPE SHALL BE FILLED WITH GROUT AND CAPPED ON THE WEST SIDE OF THE EXISTING DRIVEWAY.
9. USE A PORTION OF THE EXISTING FENCE IN PLACE. PROTECT FROM DAMAGE DURING CONSTRUCTION. IF FENCE IS DAMAGED BY THE CONTRACTOR DURING CONSTRUCTION ACTIVITY, IT SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE OWNER.

DEMOLITION PLAN NOTES:

1. WHERE NATURAL VEGETATION IS REMOVED DURING GRADING, VEGETATION SHALL BE RE-ESTABLISHED IN SUCH A DENSITY AS TO PREVENT EROSION.
2. WHEN CLEARING AND/OR GRADING OPERATIONS ARE COMPLETED OR SUSPENDED FOR MORE THAN 5 DAYS IN ANY AREA, THE DISTURBED AREA SHALL BE SEEDED OR OTHERWISE STABILIZED TO SIGNIFICANTLY REDUCE THE ERODABILITY OF THE SOIL. PROTECTIVE MEASURES MAY INCLUDE A COMBINATION OF SEEDING, SODDING, MULCHING OR OTHER SUITABLE MEANS TO PROTECT THE GROUND SURFACE FROM EROSION. ANY ACTION TAKEN TO REDUCE ERODABILITY OTHER THAN SOD SHALL BE A TEMPORARY SOLUTION. THE CONTRACTOR SHALL SOD ALL DISTURBED AREA THAT ARE NOT OCCUPIED BY EITHER PAVEMENT OR STRUCTURE AS REQUIRED BY THE PROJECT SPECIFICATIONS AS A FINAL SITE CONDITION.
3. IF CUT AND FILL OPERATIONS OCCUR DURING A SEASON NOT FAVORABLE FOR IMMEDIATE ESTABLISHMENT OF PERMANENT GROUND COVER, A FAST GERMINATING ANNUAL SUCH AS RYE GRASSES OR SUDAN GRASSES SHALL BE UTILIZED TO RETARD EROSION.
4. ALL TRASH AND DEBRIS ON-SITE, EITHER EXISTING OR FROM CONSTRUCTION, MUST BE REMOVED AND PROPERLY DISPOSED OF OFF-SITE.
5. EROSION AND SILTATION CONTROL SHALL BE INSTALLED PRIOR TO ANY GRADING AND BE MAINTAINED THROUGHOUT THE PROJECT UNTIL ACCEPTANCE OF THE WORK BY THE OWNER AND /OR CONTROLLING REGULATORY AGENCY AND ADEQUATE VEGETATIVE GROWTH INSURES NO FURTHER EROSION OF THE SOIL.
6. STORM WATER PIPES, OUTLETS AND CHANNELS SHALL BE PROTECTED BY SILT BARRIERS AND KEPT FREE OF WASTE AND SILT AT ALL TIMES PRIOR TO FINAL SURFACE STABILIZATION AND/OR PAVING.
7. SILTATION CONTROL DEVICES SHALL BE INSPECTED PERIODICALLY FOR DAMAGE AND FOR THE AMOUNT OF SEDIMENT WHICH HAS ACCUMULATED. REMOVAL OF SEDIMENT WILL BE REQUIRED WHEN IT REACHES 1/2 THE HEIGHT OF THE SILTATION CONTROL DEVICE.
8. ADDITIONAL SILTATION CONTROL MAY BE REQUIRED AS DEEMED NECESSARY BY THE CITY.
9. THE CONTRACTOR SHALL REMOVE ALL SURFACE IMPROVEMENTS INCLUDING, BUT NOT LIMITED TO, PAVEMENT, CURBS, TREES, SIGNS, BOLLARDS, ELETCTRICAL OUTLETS, FENCING, GUARDRAIL, UTILITY COVERS, ETC, WITHIN THE AREA NOTED BY THE LEGEND SYMBOL ▨ ON THIS SHEET. THERE ARE EXCEPTIONS. THE EXCEPTIONS ARE NOTED ON THIS SHEET BY KEYED NOTES OR ABBREVIATIONS.

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DATE: 11/16/2015

Demolition Plan

C1

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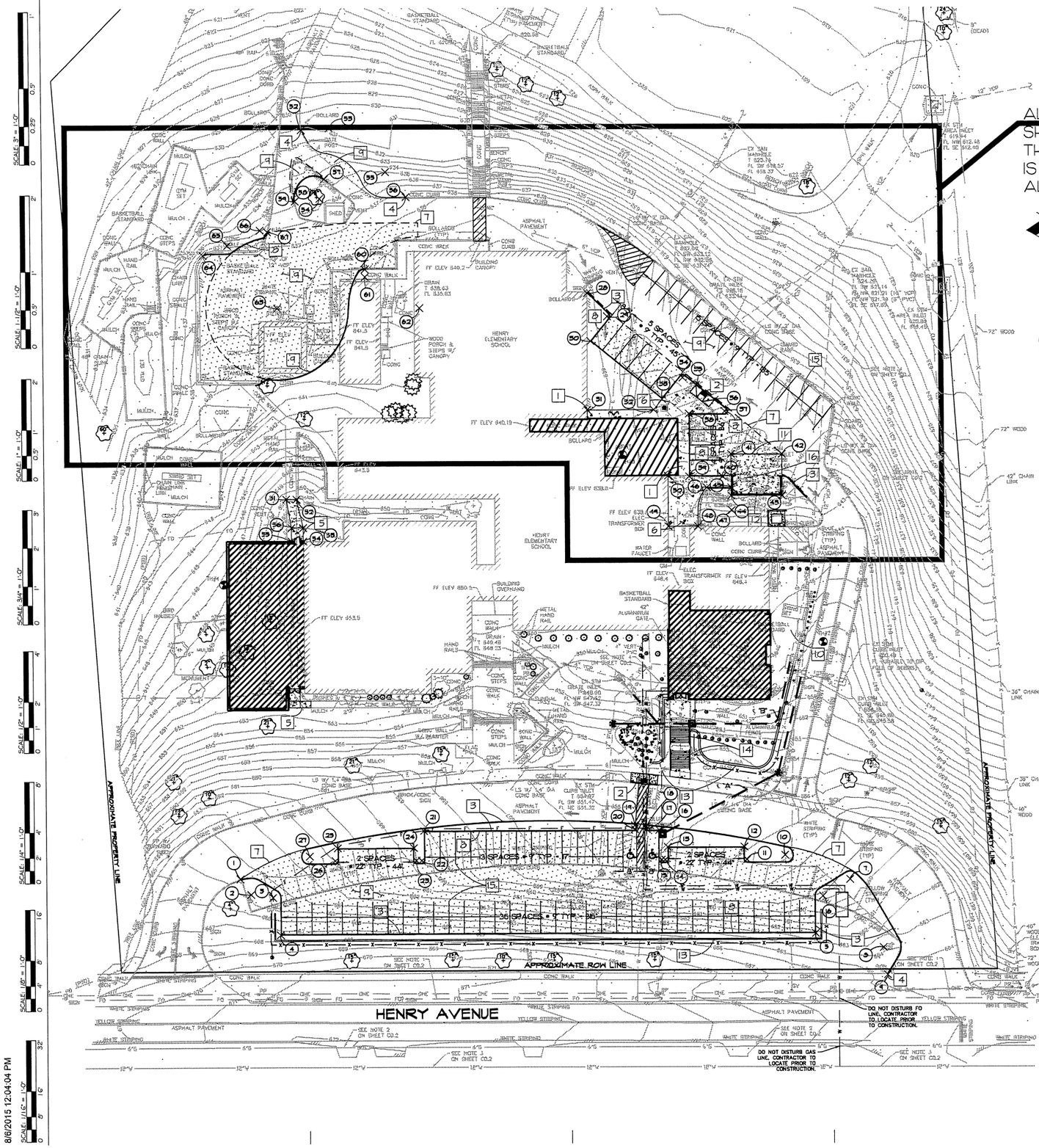

SITE PLAN KEYED NOTES (THIS SHEET ONLY):

1. NEW 5' WIDE CONCRETE SIDEWALK.
2. NEW CONCRETE SIDEWALK RAMP.
3. NEW VERTICAL CONCRETE CURB.
4. NEW CURB TURNDOWN
5. NEW CONCERTE SIDE WALK SEE SHEET C5.
6. NEW CONCRETE SIDEWALK SHALL BE FULL SLAB REPLACEMENT FROM JOINT TO JOINT. (TYP).
7. SAWCUT AND MATCH NEW ASPHALT PAVEMENT TO EXISTING ASPHALT ELEVATION.
8. NEW ASPHALT PAVEMENT AND VERTICAL CONCRETE CURB. SEE DETAIL ON SHEET C5.
9. NEW ASPHALT PAVEMENT
10. OWNER TO REPLACE PLAYING EQUIPMENT AND INSTALL 6" OF PLAYGROUND MULCH. TO MATCH EXISTING MULCH IN PLAYING AREA.
11. PROVIDE CONCRETE PAD AT DUMPSTER PER MODOT SECTION 501. (SEE DETAIL ON SHEET C5)
12. NEW DUMPSTER ENCLOSURE.
13. NEW MODULAR BLOCK RETAINING WALL TO MATCH EXISTING WALL TYPE AND PATTERN.
14. NEW CONCRETE STEPS.
15. NEW 4' WHITE PARKING LOT STRIPING.
16. CONVERT EXISTING CURB INLET TO MANHOLE.

Point Table			
Point #	Raw Description	Northing	Easting
1	START OF NEW CURB	1011255.9325	814367.8071
9	END OF NEW CURB	1010895.7739	814506.8568
2	9.5' RADIUS POINT	1011245.9901	814362.9997
3	4.5' RADIUS POINT	1011233.9322	814367.7368
4	CORNER OF CURB	1011219.1455	814350.7987
5	CORNER OF CURB	1010945.0757	814507.1679
6	4.5' RADIUS POINT	1010952.0405	814528.5311
7	4.5' RADIUS POINT	1010942.7632	814544.9197
8	10' RADIUS POINT	1010905.8552	814519.8177
10	4.5' RADIUS POINT	1010983.1771	814538.3707
11	1.5' RADIUS POINT	1011001.5550	814524.9918
12	CORNER OF CCURB	1011006.5572	814530.7668
13	CORNER OF CURB	1011045.5861	814508.4990
14	1.5; RADIUS POINT	1011043.1859	814501.2395
15	1.5' RADIUS POINT	1011044.9205	814500.2498
16	CORNER OF CURB	1011054.8575	814514.7145
17	0.5' RADIUS POINT	1011061.6091	814511.4377
18	0.5' RADIUS POINT	1011062.4309	814512.8848
19	0.5' RADIUS POINT	1011068.8065	814509.9570
20	0.5' RADIUS POINT	1011067.6803	814507.9738
21	CORNER OF CURB	1011175.4135	814445.9318
22	1.5' RADIUS POINT	1011168.0784	814429.9826
23	1.5' RADIUS POINT	1011170.6804	814428.4981
24	CORNER OF CURB	1011175.6825	814434.2731
25	CORNER OF CURB	1011214.7114	814412.0053
26	1.5' RADIUS POINT	1011212.3112	814404.7458
27	4.5' RADIUS POINT	1011226.8695	814399.5896

Point Table			
Point #	Raw Description	Northing	Easting
28	END OF CURB	1011245.8475	814770.1164
36	EDGE OF HANDICAP RAMP	1011149.9018	814752.1507
29	1.5' RADIUS POINT	1011228.9811	814764.0150
30	CORNER OF CURB	1011230.4124	814746.3725
31	EDGE OF SIDEWALK	1011212.2713	814709.9865
32	EDGE OF SIDEWALK	1011178.0924	814729.5086
33	CORNER OF CURB	1011176.7754	814737.3878
34	1.5' RADIUS POINT	1011172.4142	814754.4008
35	EDGE OF HANDICAP RAMP	1011163.6814	814754.4577
37	1.5' RADIUS POINT	1011141.6645	814749.2500
38	CORNER OF CURB	1011159.0383	814737.6897
39	CORNER OF CURB	1011140.8837	814705.4784
40	END OF CURB	1011123.9400	814715.0726
41	CORNER OF CONC PVMT	1011126.0353	814729.0596
42	CORNER OF CONC PVMT	1011099.9623	814743.8248
43	CORNER OF CONC PVMT	1011087.9408	814722.4477
44	CORNER OF CONC PVMT	1011114.0281	814707.7226
45	EDGE OF SIDEWALK	1011116.3828	814711.9068
46	CORNER OF SIDEWALK	1011128.8123	814704.8551
47	15.5' RADIUS POINT	1011109.6114	814700.2949
48	CORNER OF SIDEWALK	1011122.1388	814682.3310
49	CORNER OF SIDEWALK	1011137.2043	814673.6741
50	CORNER OF SIDEWALK	1011151.8324	814699.6704

Point Table			
Point #	Raw Description	Northing	Easting
51	EDGE OF SIDEWALK	1011341.0986	814576.7060
52	EDGE OF SIDEWALK	1011335.8416	814579.6924
53	EDGE OF SIDEWALK	1011324.3217	814566.9265
54	CORNER OF SIDEWALK	1011320.3964	814559.9619
55	CORNER OF SIDEWALK	1011326.3339	814556.5998
56	EDGE OF SIDEWALK	1011330.2593	814563.5644

Point Table			
Point #	Raw Description	Northing	Easting
57	END OF NEW PVMT	1011439.1444	814771.3136
65	END OF NEW CURB	1011366.6490	814717.9880
58	15' RADIUS POINT	1011425.3904	814780.2693
59	27' RADIUS POINT	1011410.1275	814741.1594
60	15' RADIUS POINT	1011383.9369	814773.9574
61	END OF NEW PVMT	1011366.2287	814766.9366
62	END OF CURB	1011413.2576	814752.6923
63	9.5' RADIUS POINT	1011414.8340	814742.8175
64	END OF CURB	1011421.8840	814732.7028
66	4.5' RADIUS POINT	1011364.4355	814714.0735
67	41.5' RADIUS POINT	1011327.5147	814713.8804
68	42.5 RADIUS POINT	1011400.4456	814672.4496
69	END OF NEW CURB	1011453.6355	814678.0316
70	4.5' RADIUS POINT	1011443.9059	814690.1018
71	4.5' RADIUS POINT	1011431.6476	814707.5278
72	END OF NEW PVMT	1011427.3525	814708.8422

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Henry Elementary School
700 Henry Avenue, Ballwin, MO 63011
Parkway Project PN 121501B
Classroom Additions

Parkway School District
363 N. Woods Mill Rd.
Chesterfield, MO 63017

Project No: 15037

Revisions

Description	Date

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DATE: 11/16/2015

Site Plan

C2

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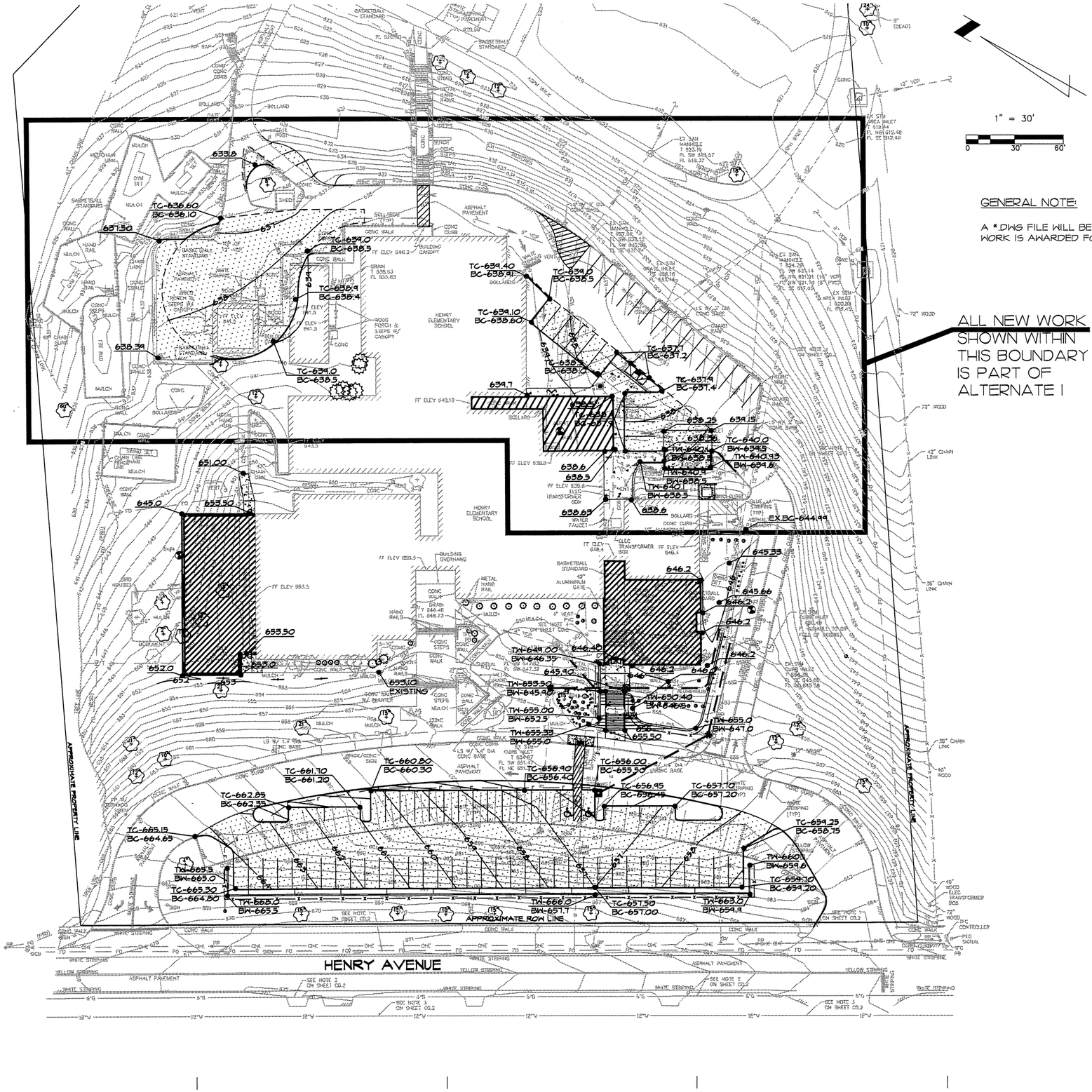

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Grading Plan

C3

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KEYED UTILITY NOTES (THIS SHEET ONLY):

1. NEW SPLIT WATER METER SERVICE VAULT.
2. NEW 6" WATER TAP. TAP OF EXISTING 12" MAIN BY MISSOURI AMERICAN WATER COMPANY (MOAC). CONTRACTOR SHALL CONTACT MOAC AND COORDINATE THE TAP OF THE MAIN AND SETTING OF NEW METER VAULT.
3. CONCRETE THRUST BLOCK
4. CONNECT NEW 3" DOMESTIC WATER SERVICE TO EXISTING DOMESTIC WATER SERVICE LINE.
5. SEE FIRE PROTECTION DRAWINGS FOR CONTINUATION OF FIRE LINE INSIDE OF THE BUILDING.
6. INTERCEPT EXISTING 12" SEWER LINE. CONSTRUCT NEW MANHOLE AND ROUTE NEW 12" PVC UNDER PLAYGROUND AND CONNECT TO EXISTING 12" PVC ON SOUTH SIDE OF NEW ADDITION., SEE ℄"B" PROFILE.
7. NEW 2-GRATE STORM INLET.
8. NEW SINGLE CURB INLET.
9. NEW STORM MANHOLE.
10. NEW 12" RCP, SEE ℄ "A" PROFILE.
11. 5" FREE STANDING STORZ FIRE DEPARTMENT CONNECTION. COORDINATE WITH LOCAL AHJ.
12. 4" FIRE PROTECTION PIPING (UNDERGROUND) EXTENDING FROM FREE-STANDING FIRE DEPARTMENT CONNECTION TO THE SPRINKLER ROOM OF ADDITION "B". COORDINATE THE TRENCH WITH THE INSTALLATION OF THE NEW FIRE MAIN AND THE EXISTING DOMESTIC WATER SUPPLY.
13. NEW 6" PIPE TO CONNECT TO NEW 12" PVC W/ 45° CONNECTION.

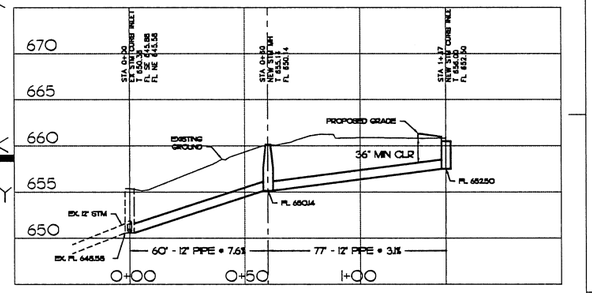
1" = 30'

ALL NEW WORK SHOWN WITHIN THIS BOUNDARY IS PART OF ALTERNATE 1

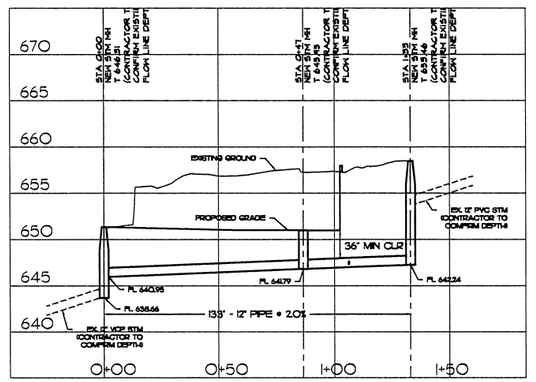
HENRY AVENUE

APPROXIMATE ROW LINE

APPROXIMATE PROPERTY LINE



℄ "A" PROFILE



℄ "B" PROFILE

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Revisions

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Utility Site Plan

C4

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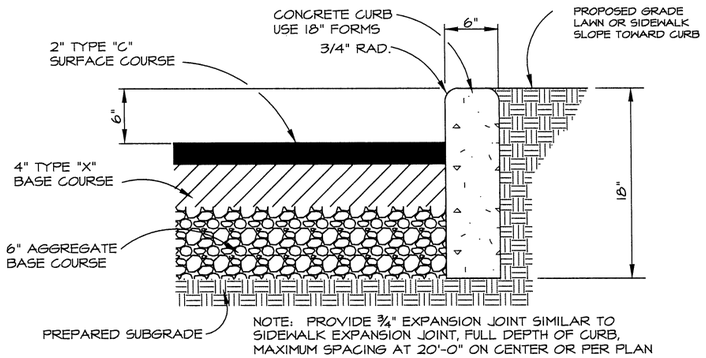
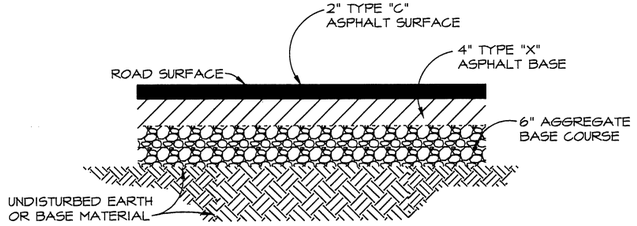
SCALE: 3/64" = 1'-0" | SCALE: 1/32" = 1'-0" | SCALE: 1/16" = 1'-0" | SCALE: 1/8" = 1'-0" | SCALE: 1/4" = 1'-0" | SCALE: 3/8" = 1'-0" | SCALE: 1/2" = 1'-0"



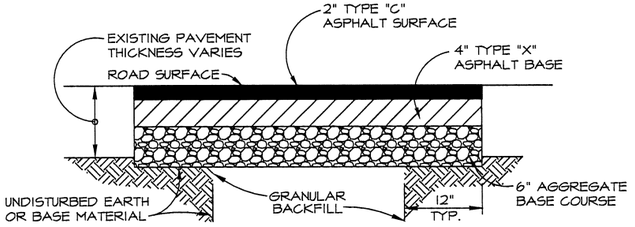
NEW VERTICAL CURB / PAVEMENT DETAIL

N.T.S.



DRIVEWAY PAVEMENT REPLACEMENT SECTION

N.T.S.

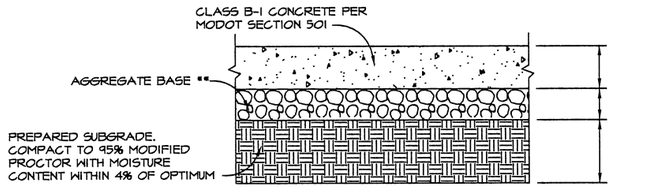


PAVEMENT REPLACEMENT FOR TRENCH SECTION

N.T.S.

NOTE:

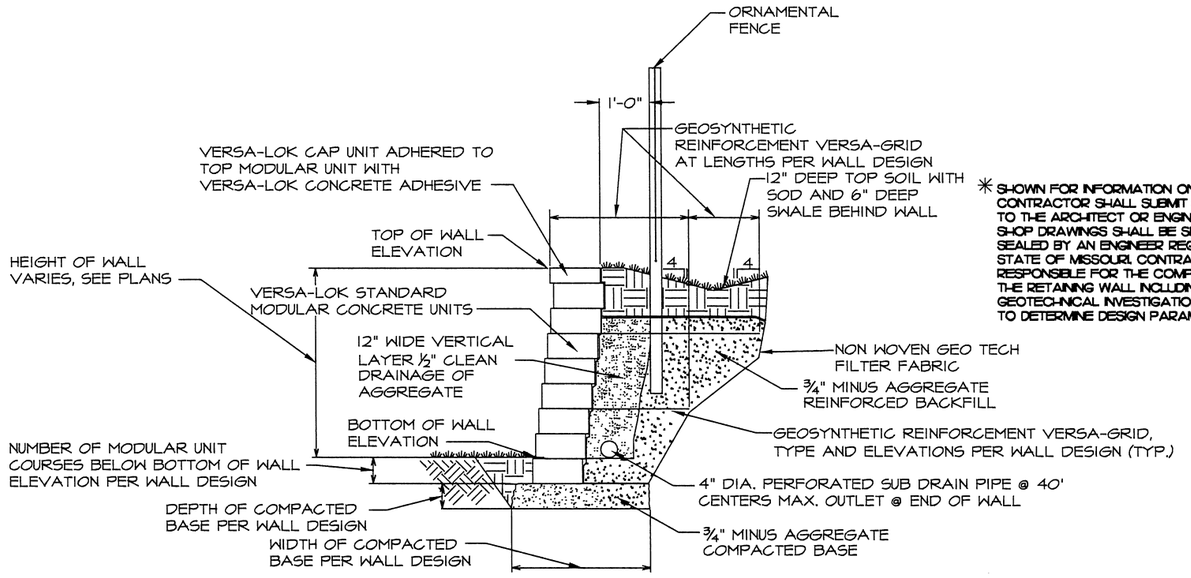
JOINT DETAILS APPY TO ALL CONCRETE PAVING AREAS.



CONCRETE PAVEMENT SECTION

N.T.S.

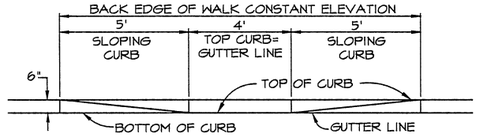
** AGGREGATE BASE SHOULD CONSIST OF MINUS-FRACTION CRUSHED STONE CONFORMING TO MISSOURI TYPE 1 OR TYPE 5 AGGREGATE. MATERIAL LOCALLY REFERRED TO AS 1-INCH MINUS CRUSHED STONE IS ACCEPTABLE EXCEPT THAT THE AMOUNT OF FINES (I.E. MATERIAL PASSING THE NO. 200 SIEVE, BY WEIGHT) MUST BE LIMITED TO 15 PERCENT



✳ SHOWN FOR INFORMATION ONLY. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ARCHITECT OR ENGINEER. SUBMITTED SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY AN ENGINEER REGISTERED IN THE STATE OF MISSOURI. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE DESIGN OF THE RETAINING WALL INCLUDING ANY AND ALL GEOTECHNICAL INVESTIGATIONS NECCESARY TO DETERMINE DESIGN PARAMETERS.

TYPICAL SECTION-SEGMENTAL RETAINING WALL

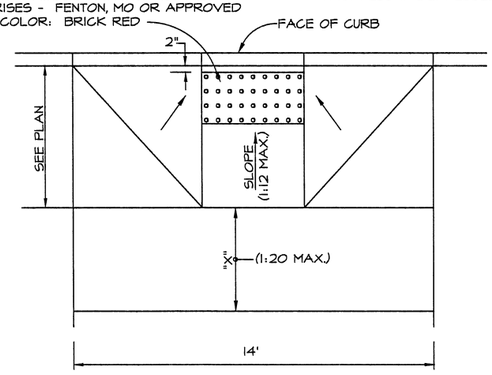
SCALE: NONE (FOR INFORMATION ONLY)



ELEVATION

24" X 48" PREMANUFACTURED IN-LAID DETECTABLE WARNING TRUNCATED DOMES ARMOR-TILE MODULAR SYSTEM BY A.S.P. ENTERPRISES - FENTON, MO OR APPROVED EQUAL. COLOR: BRICK RED

NOTE: MAINTAIN 4" SIDEWALK THICKNESS IN DEPRESSED AREA.

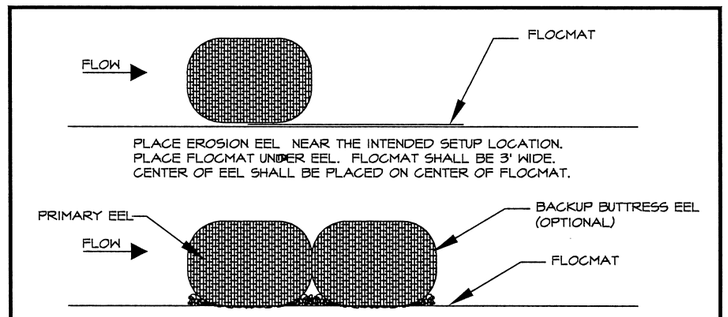


PLAN

NOTE: IF "X" IS LESS THAN 48", FLARED SIDE SLOPE SHALL NOT EXCEED 1:12.

HANDICAP RAMP

N.T.S.



MAINTENANCE:

1. KEEP BAGS FREE OF ACCUMULATED SILT, DEBRIS, ETC., UNTIL THE DISTURBED AREA HAS BEEN ADEQUATELY STABILIZED.

2. REMOVE SEDIMENT AND DEBRIS WHEN ACCUMULATION AFFECTS THE PERFORMANCE OF THE DEVICE, AFTER A RAIN, AND WHEN DIRECTED.

3. REPAIR OR REPLACE DAMAGED DEVICES THAT ARE TORN OR PUNCTURED AS REQUIRED TO MAINTAIN THE INTEGRITY OF THE DEVICE.

SILTATION CONTROL DETAIL

N.T.S.

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Details

C5

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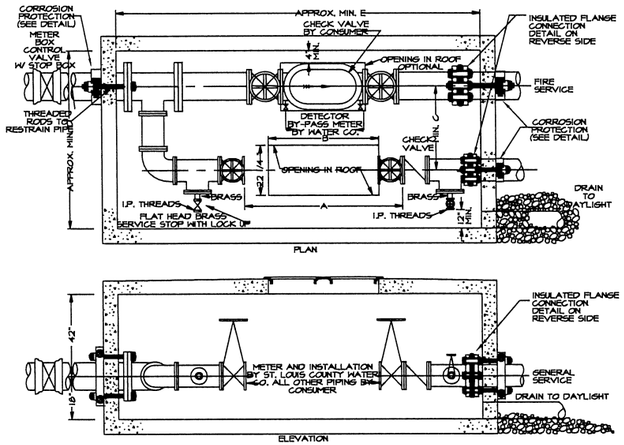


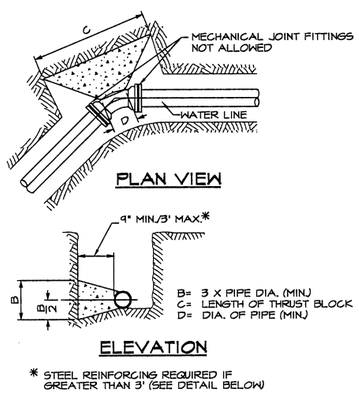
NOTES

GENERAL SERVICE				FIRE SERVICE											
SIZE	BYPASS MIN. SIZE	A	B	1" C	1" D	1" E	2" C	2" D	2" E	4" C	4" D	4" E	6" C	6" D	6" E
IN.	IN.	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN
1 1/2	1	30	22 1/4	38	72	102	38	72	90	50	66	84	21	60	84
2	1	30	22 1/4	38	72	102	38	72	90	50	66	84	21	60	84
3	1 1/2	34	27 1/2	38	84	126	38	78	138	50	72	150	21	72	150
4	1 1/2	34	27 1/2	38	84	162	38	84	162	50	78	138	21	72	138
6	2	60	27 1/2	38	84	174	38	84	174	38	78	174			
8	2	66	27 1/2	37	84	186	37	84	186						

1. VAULT WALLS TO BE OF CONCRETE OR PRECAST CONCRETE.
2. VAULT ROOF TO BE OF REINFORCED CONCRETE WITH OPENING CENTERED OVER GENERAL SERVICE METER.
3. LIDS AND FRAMES OF OPENING TO BE SET IN PLACE, NOT IN CONCRETE.
4. VALVES ON EACH SIDE OF GENERAL METER FOR 1 1/2 " OR 2" SERVICE TO HAVE SCREW ENDS, I.P. THREADS; FOR 3" AND ABOVE, VALVES MUST HAVE FLANGED ENDS & BE IN ALIGNMENT. ALL VALVES MUST BE ADEQUATELY SECURED TO WITHSTAND WATER THRUST WITH METER REMOVED.
5. MINIMUM CLEARANCE OF 2" TO BE PROVIDED BETWEEN GENERAL METER AND DETECTOR CHECK BYPASS METER.
6. DRAINAGE FACILITIES MUST BE PROVIDED, OR BOX OTHERWISE KEPT FREE OF WATER. NO FRENCH DRAINS ALLOWED.
7. SERVICE TO BE RUN AT RIGHT ANGLES FROM METER BOX TO STREET.
8. METAL LADDER TO BE PROVIDED IF CUSTOMER SERVICE SUPERVISOR ALLOWS BOX DEPTH TO EXCEED 6 FEET.
9. D.I. CLASS 52 PIPE MINIMUM,-EXTENDED MIN. 6' FROM OUTLET SIDE OF METER PIT.
10. TYPE "K" OR "L" COPPER ON DOMESTIC,-EXTENDED MIN. 6' FROM OUTLET SIDE OF METER PIT.
11. ANY DEVIATION FROM PIPE DEPTH SHOWN MUST BE APPROVED BY DISTRICT SUPERVISOR PRIOR TO CONSTRUCTION.
12. METER BOX CONTROL VALVE TO BE LOCATED AS NEAR TO METER BOX AS PRACTICAL.
13. BOX TO BE SET WITH TOP OF BOX AT FINISHED GRADE WITH NO EXTENSION ALLOWED.
14. TAPS WILL NOT BE MADE BEFORE METER PIT AND PIPING ARE COMPLETE AND PROPERTY LINE VALVE INSTALLED, UNLESS APPROVED BY CUSTOMER SERVICE SUPERVISOR.

NEW SPLIT METER SERVICE DETAIL

N.T.S.



* STEEL REINFORCING REQUIRED IF GREATER THAN 3' (SEE DETAIL BELOW)

GENERAL NOTES:

1. COVER OVER TOP OF PIPE SHALL BE 42" MINIMUM, 72" MAXIMUM. IF GRADING PLANS RECEIVED BY SLCWC WITH THE REQUEST FOR WATER MAIN LAYOUT, INDICATE ADJUSTMENTS TO EXISTING GRADE, THEN PIPE SHALL BE INSTALLED TO MEET MINIMUM AND MAXIMUM COVER FROM PROPOSED GRADES SHOWN ON SAID PLANS.
2. THRUST BLOCKS SHALL BE BUILT AGAINST UNDISTURBED SOIL WITH ADEQUATE BACKING TO PREVENT MOVEMENT OF FITTING.
3. NO THRUST BLOCKS TO BE PLACED IN SEWER LATERAL DITCHES.
4. THRUST BLOCKING MUST FIT IN EASEMENT.

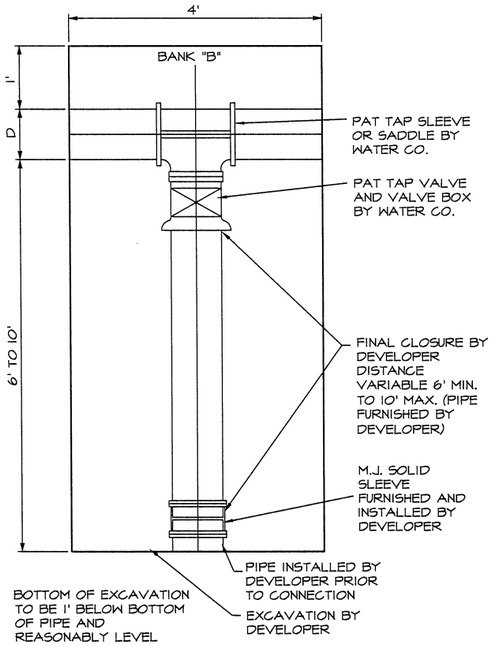
MINIMUM BEARING AREA IN SQUARE FEET*

PIPE SIZE	BENDS (DEGREES) 11-1/4	22-1/2	45	90	TEE	DEAD END
6"	1.0	2.5	4.5	8.0	5.5	5.5

* BEARING AREAS ARE BASED ON SOIL HAVING AN ALLOWABLE SAFE LATERAL BEARING OF 1 TON PER SQUARE FOOT. AREA MUST BE REVISED FOR SOILS WITH A LOWER BEARING CAPACITY.

THRUST BLOCK DETAILS AT HORIZONTAL BENDS

N.T.S.



NOTE: BOTTOM OF EXCAVATION TO BE 1' BELOW BOTTOM OF PIPE AND REASONABLY LEVEL

GENERAL RULES

1) CONNECTIONS TO AC (TRANSITE PIPE) REQUIRE AN EXCAVATION 6 FT. IN WIDTH ALONG THE MAIN. "D" DIMENSION (MAIN SIZE) IS VARIABLE.

2) ALL EXCAVATIONS SHALL COMPLY WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS FOR PROTECTION OF WORKERS.

3) IF PIPE BELL IS EXPOSED IN TAP HOLE OR OTHER OBSTACLES ENCOUNTERED, CALL WATER COMPANY FOR FIELD REVIEW BEFORE COMPLETING EXCAVATION.

4) TAP HOLE SHOULD BE FREE OF WATER AND MUD TO ALLOW SAFE HANDLING OF HEAVY SLEEVES AND TAPPING MACHINE.

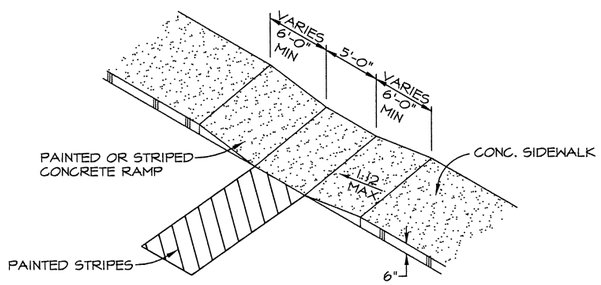
5) TAPS WILL NOT BE MADE BEFORE METER PIT AND PIPING ARE COMPLETE AND PROPERTY LINE VALVE INSTALLED, UNLESS APPROVED BY CUSTOMER SERVICE SUPERVISOR.

6) TAP HOLE MUST BE CLEAN ENOUGH TO REPAIR OR REWRAP ANY DAMAGE TO POLYWRAP.

7) IF OVERDIG ON BANK "B" EXCEEDS 24" PLUMBER IS RESPONSIBLE FOR THRUST BLOCK.

TYPICAL INSTALLATION AT PATENT TAP CONNECTION

N.T.S.



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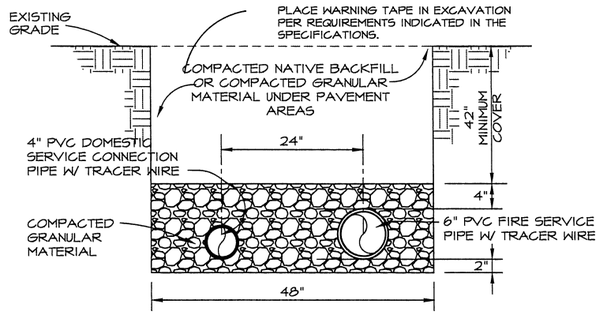
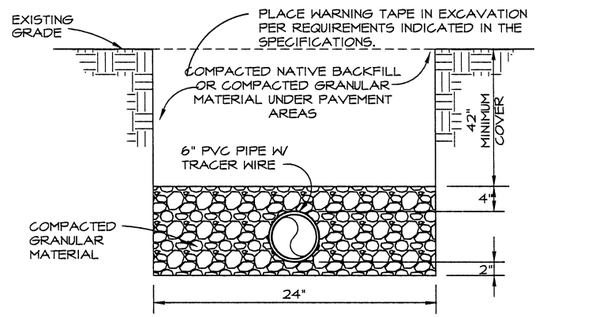


TYPICAL WATER LINE TRENCH SECTION DOUBLE PIPE

N.T.S.



TYPICAL WATER LINE TRENCH SECTION SINGLE PIPE

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Henry Elementary School
700 Henry Avenue, Ballwin, MO 63011
Parkway Project PN 121501B
Classroom Additions

Parkway School District
363 N. Woods Mill Rd.
Chesterfield, MO 63017

Project No: 15037

Revisions

Description	Date

NOT FOR CONSTRUCTION

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DATE: 11/16/2015

Details

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SECTION 5

BELLERIVE ELEMENTARY

BMP ORIGINAL PROJECT INFORMATION

BELLERIVE ELEMENTARY SCHOOL

PARKWAY SCHOOLS

620 Rue De Fleur Dr, Creve Coeur, MO 63141
Parkway Project: PN 151501B
Building Renovations and Site Improvements

BID SET
01/08/2016

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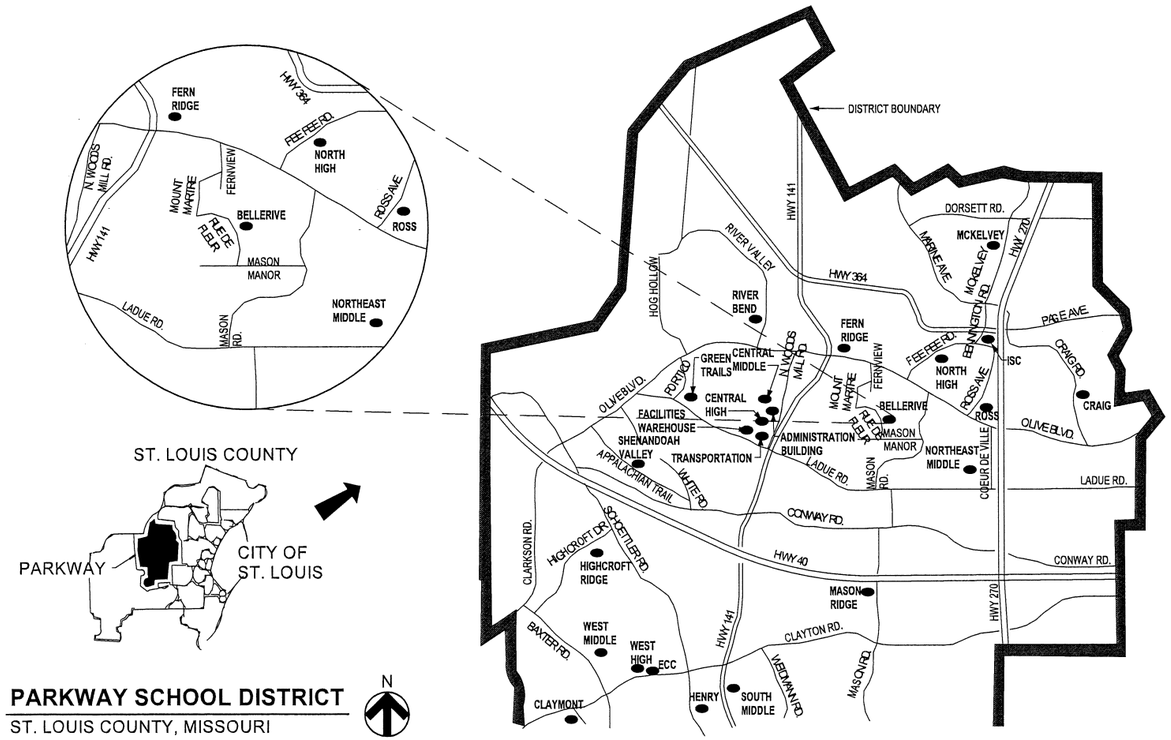
Project Site



PARKWAY SCHOOL DISTRICT
ST. LOUIS COUNTY, MISSOURI

Sheet Index

Sheet Number	Sheet Name
A0.0	Cover Sheet
Civil	
C0	General Notes/Legend
C0.1	Survey
C1	Demolition Plan
C2	Site Plan
C3	Grading Plan
C4	Details
C5	Details
C6	Details
C7	Details
C8	Details
C9	Details
Architectural	
A0.1	Life Safety Plan
A0.2	General Notes & Legends
AD1.0	Asset Protection & Demolition Plan
A1.0	Site Plan
A2.1	Plans
A6.1	Ramp Details
A12.1	Partition Types & Door Schedule
Electrical	
E0.0	Electrical Symbols & Abbreviations
E0.1	Seismic Code Schedule - E
E0.2	Division of Responsibility
E2.0	Lighting Work
E3.0	Power Work
E5.0	Fire Alarm Work

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BELLERIVE ELEMENTARY SCHOOL
620 Rue De Fleur Dr, Creve Coeur, MO 63141
Parkway Project: PN 151501B
Building Renovations and Site Improvements

Parkway School District
363 N. Woods Mill Rd.
Chesterfield, MO 63017

Project No: 151501B

Revisions

Description	Date
BID SET	01/08/2016

Arthur Doerr Bond, III
A-6301

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DATE: 01/08/2016

Cover Sheet

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NOTE:

WHEN THE WORD "CITY" IS USED ON THESE PLANS IT SHALL MEAN THE CITY OF CREVE COEUR, MISSOURI

WHEN THE INITIALS "MSD" ARE USED ON THESE PLANS IT SHALL MEAN THE METROPOLITAN ST. LOUIS SEWER DISTRICT.

GENERAL NOTES:

1. UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THE VERIFICATION OF THE LOCATION OF UNDERGROUND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE LOCATED PRIOR TO ANY GRADING OR CONSTRUCTION OF IMPROVEMENTS.

2. TOPOGRAPHIC SURVEY PREPARED AND FIELD DATA COLLECTED BY EDSI, INC. IN JUNE, 2015.

3. STORMWATER SHALL BE DISCHARGED AT AN ADEQUATE NATURAL DISCHARGE POINT. SINKHOLES ARE NOT ADEQUATE NATURAL DISCHARGE POINTS.

4. FILLED PLACES INCLUDING TRENCH BACKFILLS, UNDER BUILDINGS, SANITARY SEWER LINES, AND/OR PAVED AREAS SHALL BE COMPACTED IN ACCORDANCE WITH THE SOILS REPORT FOR THIS PROJECT, UNLESS OTHERWISE SPECIFIED.

5. TRENCH BACKFILLS UNDER PAVED AREA SHALL BE GRANULAR BACKFILL, UNLESS OTHERWISE SPECIFIED.

6. CONSTRUCTION AND MATERIALS USED SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE MISSOURI AMERICAN WATER COMPANY, THE SAINT LOUIS COUNTY DEPARTMENT OF HIGHWAYS, AND THE PROJECT SPECIFICATIONS. THE MOST STRINGENT REQUIREMENTS SHALL APPLY.

7. LOCATION AND ELEVATION OF EXISTING INLETS, MANHOLES AND PIPES TO BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION. MANHOLES AND INLET TOPS BUILT WITHOUT ELEVATIONS FURNISHED BY THE ENGINEER WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

8. EXISTING ABOVE & BELOW GROUND UTILITIES TO BE PROTECTED AND USED IN PLACE, UNLESS OTHERWISE SPECIFIED.

9. A *.DWG FILE WILL BE MADE AVAILABLE TO THE CONTRACTOR TO WHOM THE WORK IS AWARDED FOR HIS USE IN SITE LAYOUT.

10. PARKING ON NON-SURFACED AREAS IS PROHIBITED IN ORDER TO ELIMINATE THE CONDITION WHEREBY MUD FROM CONSTRUCTION AND EMPLOYEE VEHICLES IS TRACKED ONTO THE PAVEMENT CAUSING HAZARDOUS ROADWAY AND DRIVING CONDITIONS. CONTRACTOR SHALL KEEP ROAD CLEAR OF MUD AND DEBRIS.

11. THE STREETS SURROUNDING THIS DEVELOPMENT AND ANY STREET USED FOR CONSTRUCTION ACCESS SHALL BE CLEANED THROUGHOUT THE DAY.

12. ALL TRASH AND DEBRIS ON-SITE, EITHER EXISTING OR FROM CONSTRUCTION, MUST BE REMOVED AND LEGALLY DISPOSED OF OFF-SITE.

13. NOTIFY THE CITY DEPARTMENT OF PUBLIC WORKS 48 HOURS PRIOR TO THE COMMENCEMENT OF GRADING AND/OR PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

14. EROSION AND SILTATION CONTROL DEVICES SHALL BE INSTALLED BY THE CONTRACTOR PRIOR TO ANY GRADING AND BE MAINTAINED THROUGHOUT THE PROJECT UNTIL ACCEPTANCE OF THE WORK BY THE OWNER AND/OR CONTROLLING REGULATORY AGENCY (AHJ) AND ADEQUATE VEGETATIVE GROWTH INSURES NO FURTHER EROSION OF THE SOIL. ADDITIONAL SILTATION CONTROL DEVICES MAY BE REQUIRED AS DIRECTED BY THE CITY.

15. WHEN CLEARING AND/OR GRADING OPERATIONS ARE COMPLETED OR SUSPENDED FOR MORE THAN 30 DAYS, ALL NECESSARY PRECAUTIONS SHALL BE TAKEN TO RETAIN SOIL MATERIALS ON SITE. PROTECTIVE MEASURES MAY BE REQUIRED BY THE DIRECTOR OF PUBLIC WORKS / CITY ENGINEER SUCH AS PERMANENT SEEDING, PERIODIC WETTING, MULCHING, OR OTHER SUITABLE MEANS.

16. SILTATION DEVICES SHALL BE INSPECTED PERIODICALLY FOR DAMAGE AND FOR THE AMOUNT OF SEDIMENT WHICH HAS ACCUMULATED. REMOVAL OF SEDIMENT WILL BE REQUIRED WHEN IT REACHES 1/2 THE HEIGHT OF THE SILTATION DEVICE.

17. SAWCUT EXISTING PAVEMENT FULL DEPTH TO ASSURE A SMOOTH MATCH BETWEEN THE EXISTING AND NEW PAVEMENT. REMOVE ENOUGH PAVEMENT TO ACCOMMODATE NEW WORK.

18. PROPOSED GRADES SHALL BE WITHIN 0.1 FEET, MORE OR LESS, OF THOSE SHOWN ON THE GRADING PLAN.

19. NO GRADING OR EXCAVATION SHALL OCCUR ON THE SITE UNTIL A PERMIT IS SECURED FROM THE AHJ AND THE SILTATION CONTROL DEVICES INDICATED ARE INSTALLED AND FUNCTIONING.

20. ALL AREAS DISTURBED BY CONSTRUCTION, EXCLUDING PAVED AREAS, SHALL RECEIVE FESCUE SOD WITHIN 30 DAYS FROM THE COMPLETION OF GRADING OPERATIONS AND SHALL BE MAINTAINED FOR A PERIOD OF TWO (2) WEEKS THEREAFTER. SOD PLACEMENT AND MAINTENANCE SHALL CONFORM IN ALL RESPECTS WITH THE PROJECT SPECIFICATIONS.

21. NOTIFY THE OWNER 48 HOURS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

22. NO EXCAVATION SHALL BE MADE SO CLOSE TO THE PROPERTY LINE AS TO ENDANGER ANY ADJOINING PROPERTY OF ANY PUBLIC OR PRIVATE STREET WITHOUT SUPPORTING AND PROTECTING SUCH PUBLIC OR PRIVATE STREET OR PROPERTY FROM SETTLING, CRACKING, OR OTHER DAMAGE.

23. ALL EXCAVATIONS, GRADING, OR FILLING SHALL HAVE A FINISHED GRADE NOT TO EXCEED A FOUR HORIZONTAL TO ONE VERTICAL (4:1) SLOPE UNLESS SPECIFICALLY APPROVED BY THE OWNER.

24. DIMENSIONS ARE TO FACE OF CURB, FACE OF WALL, OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

25. ALL FILLS PLACED UNDER PAVED AREAS, INCLUDING TRENCH BACKFILLS WITHIN AND OFF ROAD RIGHT-OF-WAY, SHALL BE COMPACTED TO 95% PER ASTM D698 FOR THE ENTIRE DEPTH OF THE FILL. COMPACTED GRANULAR BACKFILL IS REQUIRED IN ALL TRENCH EXCAVATION WITHIN THE STREET RIGHT-OF-WAY AND UNDER ALL PAVED AREAS. ALL TESTS SHALL BE PERFORMED UNDER THE DIRECTION OF AND VERIFIED BY A SOILS ENGINEER CONCURRENT WITH GRADING AND BACKFILLING OPERATIONS.

CITY OF CREVE COEUR STANDARD NOTES:

1. AT LEAST ONCE EVERY WEEK AND AFTER EVERY RAINFALL EVENT OF 0.25 INCHES OR MORE, EROSION AND SILTATION CONTROL DEVICES SHALL BE INSPECTED FOR DAMAGE AND AMOUNT OF SEDIMENTATION ACCUMULATED AND CORRECTIVE ACTIONS TAKEN. REPORTS OF THE INSPECTIONS AND CORRECTIVE ACTIONS SHALL BE PREPARED ON APPROPRIATE FORMS AND SUBMITTED TO THE CITY AS REQUIRED.

2. TEMPORARY SILTATION CONTROL MEASURES (STRUCTURAL) SHALL BE MAINTAINED UNTIL VEGETATIVE COVER IS ESTABLISHED AT A SUFFICIENT DENSITY TO PROVIDE EROSION CONTROL ON THE SITE.

3. ALL FINISHED GRADES (AREAS NOT TO BE DISTURBED BY FUTURE IMPROVEMENT) IN EXCESS OF 20% SLOPES (5:1) SHALL BE MULCHED AND TACKED AT THE RATE OF 100 POUNDS PER 1,000 SQUARE FEET WHEN SEEDED AS SOON AS POSSIBLE AFTER FINAL PLACEMENT.

4. DEBRIS AND FOUNDATION MATERIAL FROM ANY EXISTING IMPROVEMENT WHICH IS SCHEDULED TO BE DEMOLISHED FOR THIS DEVELOPMENT MUST BE PROPERLY DISPOSED OF OFF-SITE.

5. SHOULD SEDIMENT CONTAINMENT DEVICES FAIL AND SEDIMENT IS TRANSPORTED FROM THE SITE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING THE TRANSPORTED DEBRIS FROM THE AFFECTED PUBLIC AND/OR PRIVATE AREAS. THE DEBRIS MAY BE EITHER SPREAD OUT ON THE SCHOOL DISTRICT PROPERTY OR TRANSPORTED AND DISPOSED OF OFFSITE IN A LEGAL MANNER. THE AFFECTED AREA DAMAGED SHALL BE RESTORED TO THE CONDITIONS THAT EXISTED PRIOR TO THE CONTAINMENT DEVICE FAILURE.

GRADING PERMIT APPLICATION NOTES:

1. CONTRACTOR SHALL STORE ONSITE AN EXTRA 10% OF REQUIRED EROSION AND SILTATION CONTROL DEVICE QUANTITIES FOR EMERGENCIES.

2. SWPPP COMPLIANCE REPORTS TO BE SUBMITTED WEEKLY AND AFTER HEAVY RAINFALL TO BOTH THE CITY AND OWNER. THE CONTRACTOR SHALL PROVIDE THE NAME AND PHONE NUMBER OF THE PERSON DESIGNATED TO PERFORM THE INSPECTIONS AND PROVIDE THE REPORTS.

POLLUTION PREVENTION PROCEDURES:

1. HANDLING AND DISPOSAL OF HAZARDOUS MATERIALS

DO: PREVENT SPILLS
USE PRODUCTS UP
FOLLOW LABEL DIRECTIONS FOR DISPOSAL
REMOVE LIDS FROM EMPTY BOTTLES AND CANS WHEN DISPOSING IN TRASH
RECYCLE WASTES WHENEVER POSSIBLE

DON'T: POUR WASTE INTO SEWERS OR WATERWAYS ON THE GROUND
POUR WASTE DOWN THE SINK, FLOOR DRAIN OR SEPTIC TANKS
BURY CHEMICALS OR CONTAINERS, OR DISPOSE OF THEM WITH CONSTRUCTION DEBRIS
BURN CHEMICALS OR CONTAINERS
MIX CHEMICALS TOGETHER

2. CONTAINERS SHALL BE PROVIDED FOR COLLECTION OF ALL WASTE MATERIAL INCLUDING CONSTRUCTION DEBRIS, TRASH, PETROLEUM PRODUCTS AND ANY HAZARDOUS MATERIALS TO BE USED ONSITE. ALL WASTE MATERIAL SHALL BE DISPOSED OF AT FACILITIES APPROVED FOR THAT MATERIAL.

3. NO WASTE MATERIALS SHALL BE BURIED ON-SITE.

4. MIXING, PUMPING, TRANSFERRING OR OTHERWISE HANDLING CONSTRUCTION CHEMICALS SUCH AS FERTILIZER, LIME, ASPHALT, CONCRETE DRYING COMPOUNDS, AND ALL OTHER POTENTIALLY HAZARDOUS MATERIALS SHALL BE PERFORMED IN AN AREA AWAY FROM ANY WATERCOURSE, DITCH OR STORM DRAIN.

5. EQUIPMENT FUELING AND MAINTENANCE, OIL CHANGING, ETC. SHALL BE PERFORMED ONLY IN AN AREA DESIGNATED FOR THAT PURPOSE. THE DESIGNATED AREA IS EQUIPPED FOR RECYCLING OIL AND CATCHING SPILLS.

6. CONCRETE WASH WATER SHALL NOT BE ALLOWED TO FLOW DIRECTLY TO STORM SEWERS, STREAMS, DITCHES, LAKES, ETC. WITHOUT BEING TREATED. A SUMP OR PIT SHALL BE CONSTRUCTED TO CONTAIN CONCRETE WASH WATER.

7. IF SUBSTANCES SUCH AS OIL, DIESEL FUEL, HYDRAULIC FLUID, ANTIFREEZE, ETC. ARE SPILLED, LEAKED, OR RELEASED ONTO SOIL, THE SOIL SHALL BE DUG UP AND DISPOSED OF AT A LICENSED SANITARY LANDFILL (NOT A CONSTRUCTION/DEMOLITION DEBRIS LANDFILL). SPILLS ON PAVEMENT SHALL BE ABSORBED WITH SAWDUST, KITTY LITTER OR PRODUCT DESIGNED FOR THAT PURPOSE AND DISPOSED OF AT A LICENSED SANITARY LANDFILL. HAZARDOUS OR INDUSTRIAL WASTES SUCH AS MOST SOLVENTS, GASOLINE, OIL-BASED PAINTS, AND CEMENT CURING COMPOUNDS REQUIRE SPECIAL HANDLING. THESE MATERIALS WILL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH MODNR REQUIREMENTS.

8. STATE LAW REQUIRES THE PARTY RESPONSIBLE FOR A PETROLEUM PRODUCT SPILL IN EXCESS OF 50 GALLONS TO REPORT THE SPILL TO MODNR (537-634-2436) AS SOON AS PRACTICAL AFTER DISCOVERY. FEDERAL LAW REQUIRES THE RESPONSIBLE PARTY TO REPORT ANY RELEASE OF OIL IF IT REACHES OR THREATENS A SEWER, LAKE, CREEK, STREAM, RIVER, GROUNDWATER, WETLAND, OR AREA, LIKE A ROAD DITCH, THE DRAINS INTO ONE OF THE ABOVE.

9. SUFFICIENT TEMPORARY TOILET FACILITIES TO SERVE THE NUMBER OF WORKERS ON THE SITE SHALL BE PROVIDED. THE FACILITIES SHALL BE SERVICED FREQUENTLY TO MAINTAIN A SANITARY CONDITION.

MSD STANDARD CONSTRUCTION:

ALL STORM AND SANITARY SEWER STRUCTURES AND APPURTENANCES TO BE DEDICATED TO MSD, OR TO BE PRIVATE UNDER MSD INSPECTION, SHALL CONFORM TO THE METROPOLITAN ST. LOUIS SEWER DISTRICT, STANDARD CONSTRUCTION SPECIFICATIONS FOR SEWERS AND DRAINAGE FACILITIES, 2009. THAT WILL INCLUDE STANDARD DETAILS SHOWN THEREIN, AND SHALL INCLUDE ALL SUBSEQUENT CHANGES MADE THERETO.

SOME RECENT CHANGES CONCERN PIPE FIELD TESTING AND PERFORMANCE, AND INCLUDE THE FOLLOWING:

PART 4 - PIPE SEWER CONSTRUCTION

SECTION B, PIPE FIELD TESTS, PARAGRAPH 2, REACH INTEGRITY TESTING - DELETE THE FIRST SENTENCE AND THE FOLLOWING REPLACEMENT APPLIES:

ALL SANITARY AND COMBINED SEWERS SHALL SUSTAIN A MAXIMUM LEAKAGE LIMIT OF 100 GALLONS/INCH OF PIPE DIAMETER/MILE OF LINE/DAY, AS REQUIRED BY THE MISSOURI DEPARTMENT OF NATURAL RESOURCES SPECIFICATIONS.

SECTION B, PIPE FIELD TESTS, PARAGRAPH 2, REACH INTEGRITY TESTING, SUBPARAGRAPH C, INFILTRATION/EXFILTRATION TESTING - DELETE THE SIXTH SENTENCE, CONCERNING LEAKAGE LIMITS, AND THE FOLLOWING REPLACEMENT APPLIES:

THE MEASUREMENT OF LEAKAGE SHALL NOT EXCEED 100 GALLONS/INCH OF PIPE DIAMETER/MILE OF LINE/DAY, AS REQUIRED BY THE MISSOURI DEPARTMENT OF NATURAL RESOURCES SPECIFICATIONS.

SECTION B, PIPE FIELD TESTS, PARAGRAPH 4, MANHOLE TESTING, SUBPARAGRAPH A, VACUUM TESTING - AFTER THE FIRST SENTENCE, THE FOLLOWING ADDITION APPLIES:

THE VACUM TEST MUST BE PERFORMED PRIOR TO BACKFILLING AROUND THE MANHOLE UNLESS THE CONTRACTOR PROVIDES DOCUMENTATION FROM THE PRECAST MANHOLE MANUFACTURER STATING THAT THE MANHOLE MAY BE VACUM TESTED AFTER BACKFILLING HAS TAKEN PLACE. THE CONTRACTOR MUST SUBMIT THIS DOCUMENTATION PRIOR TO BACKFILLING AROUND ANY MANHOLE.

SECTION B, PIPE FIELD TESTS, PARAGRAPH 4, MANHOLE TESTING, SUBPARAGRAPH B, EXFILTRATION TESTING - DELETE THE SECOND SENTENCE, CONCERNING LEAKAGE LIMITS, AND THE FOLLOWING ADDITION APPLIES:

FOR EXFILTRATION TESTING, THE ALLOWABLE LEAKAGE LIMIT IS 100 GALLONS/INCH OF PIPE DIAMETER/MILE OF LINE/DAY WHEN THE AVERAGE HEAD ON THE TEST SECTION IS THREE FEET (3') OF LESS

MSD PERMIABLE INTERLOCKING CONCRETE PAVEMENT CONSTRUCTION:

1. THE CONTRACTOR SHALL OBTAIN THE CONCRETE PAVER MANUFACTURER'S CERTIFICATION (PAVEDRAIN) THAT THE PAVING UNITS SUPPLIED TO CONSTRUCT THE PICP HAVE BEEN APPROVED BY MSD AND MEET THE REQUIREMENTS IN ASTM C936. THIS CERTIFICATION SHALL BE PROVIDED TO THE MSD DIVISION INSPECTOR. THE CERTIFICATION SHALL INCLUDE THE MANUFACTURER'S NAME, AND STATE THAT THE PICP SUPPLIED MEETS THE ASTM C936 SPECIFICATIONS, (TESTING SHOULD BE CURRENT WITHIN PREVIOUS 12 MONTHS) AND THAT THE PAVING MATERIALS MEET ALL REQUIREMENTS AS EVALUATED UNDER THE MANUFACTURER'S QUALITY CONTROL PROGRAM.

2. PRIOR TO OBTAINING A CONSTRUCTION PERMIT FROM MSD TO CONSTRUCT THE PERMEABLE INTERLOCKING CONCRETE PAVEMENT (PICP) FOR A GIVEN PROJECT, THE ENGINEER PROVIDING THE AS-BUILT CERTIFICATION SHALL VERIFY THAT THE INSTALLING CONTRACTOR HAS:
   - PAST HISTORY DEMONSTRATING APPLICABLE EXPERIENCE.
   - THE PICP INSTALLATION CONTRACTOR MUST HAVE A CURRENT LEVEL I CERTIFICATE FROM THE INTERLOCKING CONCRETE PAVEMENT INSTITUTE'S CONCRETE PAVER INSTALLER PROGRAM.

3. THE CONTRACTOR SHALL PREVENT AND DIVERT SEDIMENT FROM ENTERING THE SUBBASE AND PAVEMENT SURFACE UNTIL THE TRIBUTARY AREAS ARE DEEMED STABLE BY THE ASSIGNED MSD INSPECTOR.

4. VEHICULAR TRAFFIC SHALL BE PROHIBITED ON THE PICP UNTIL THE SITE IS STABLE TO PREVENT MUD FROM BEING DEPOSITED BY VEHICLES.

5. NO PRODUCT OR MATERIAL SUBSTITUTIONS ARE PERMITTED UNLESS PREVIOUSLY APPROVED BY THE MSD PLAN REVIEW ENGINEER OR BY THE MSD FIELD INSPECTOR ASSIGNED TO THE PROJECT. ALL SUBSTITUTIONS SHALL BE PRESENTED TO MSD THROUGH THE ENGINEER RESPONSIBLE FOR THE DESIGN OF THE PICP SYSTEM.

6. STONE SHOULD BE CLEAN, WASHED, 90 PERCENT FRACTURED FACES WITH A LOS ANGELES ABRASION INDEX OF LESS THAN 40 AND CONFORM TO THE GRADING REQUIREMENTS IN ASTM D448.

7. DO NOT CLEAN THE PAVER SURFACE WITH HIGH-PRESSURE HOSES OR ABRASIVES. WHEN CLEANING IS NECESSARY, COMBINATION CLEANING MACHINES THAT COMBINE A WET SPRAY AND VACUUM PROCESS HAVE BEEN FOUND TO BE EFFECTIVE.

8. A PERMANENT SIGN SHALL BE POSTED WARNING THAT CARE SHOULD BE TAKEN DURING SNOW PLOWING; AND PROHIBIT THE FOLLOWING: RESURFACING, THE USE OF SAND ABRASIVES FOR WINTER TIRE TRACTION, AND THE USE OF POWER WASHERS. MSD SIGN DETAIL CAN BE FOUND AT http://www.stlmsd.com/sites/default/files/engineering/490610.PDF

9. AT COMPLETION OF THE PROJECT, PRIOR TO FINAL DEDICATION, AN AS-BUILT CERTIFICATION, SIGNED AND SEALED BY A MISSOURI PROFESSIONAL ENGINEER, SHALL BE PROVIDED.

LEGEND EXISTING

SANITARY SEWER	
STORM SEWER	
WATER MAIN	W
ELECTRIC	E
COMMUNICATION	T
FIBER OPTIC	FO
GAS	G
OVERHEAD ELECTRIC	OHE
STORM MANHOLE	
STORM INLET	
SANITARY MANHOLE	
CLEANOUT	VENT
ELECTRIC MANHOLE	EMH
ELECTRIC BREAKER OUTLET BOX	ELEC OUTLET BOX
ELEC METER	EM
GAS VALVE	GV
PHONE CABLE BOX	TELE J.B.
ELECTRIC TRANSFORMER BOX	ELEC TRANSFORMER BOX
POWER POLE	PP
LIGHT STANDARD	LS
GAS METER	GM
GAS VALVE	GV
SMALL DRAIN	
WATER MANHOLE	WMH
WATER METER	WM
WATER VALVE	WV
FIRE HYDRANT	FH
SPRINKLER	SPRINKLER
TELEPHONE MANHOLE	TMH
PULL BOX	PB
TRAFFIC SIGNAL CONTROL BOX	TFC CONTROLLER
BUSH	STUMP
STUMP	
TREE	
BOLLARD	BOLLARD
SIGN	
EDGE OF ASPH PAVEMENT	
EDGE OF CONC PAVEMENT	
FLOW DIRECTION OF SEWER LINE	

LEGEND NEW WORK

CONTOUR	ELEV
SPOT ELEVATION	ELEV
STORM SEWER	
SANITARY SEWER	
MANHOLE	
CURB INLET	
GRATE INLET	
WATER LINE	W
FIRE HYDRANT	
GAS SERVICE	G
ELECTRIC SERVICE	E
TELEPHONE SERVICE	T
CONCRETE PAVEMENT	
ASPHALT PAVEMENT	
TO BE REMOVED	T.B.R.
USE IN PLACE	U.I.P.
ADJUST TO GRADE	A.T.G.
TO BE REMOVED & REPLACED	T.B.R.&R.
TO BE PROTECTED	T.B.P.
TO BE ABANDONED	T.B.A.
REMOVE ALL SURFACE IMPROVEMENTS	
SILT FENCE	

NOTE: Underground facilities, structures, and utilities have been plotted from best available records, therefore the relationship between proposed work and existing facilities, structures, and utilities must be considered approximate, and it is the contractors responsibility to determine their exact location and the existance of any not shown.

Stanley F. Visnovske
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Professional Engineer

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BELLERIVE ELEMENTARY SCHOOL
620 Rue De Fleur Dr, Creve Coeur, MO 63141
Parkway Project: PN 151501B
Classroom Security & Parking Lot Reconfigurations

Parkway School District
363 N. Woods Mill Rd.
Chesterfield, MO 63017

Project No: 151501B

Revisions

Description	Date
BID SET	01/08/18

DATE: 01/08/2015

Legend and General Notes

C0

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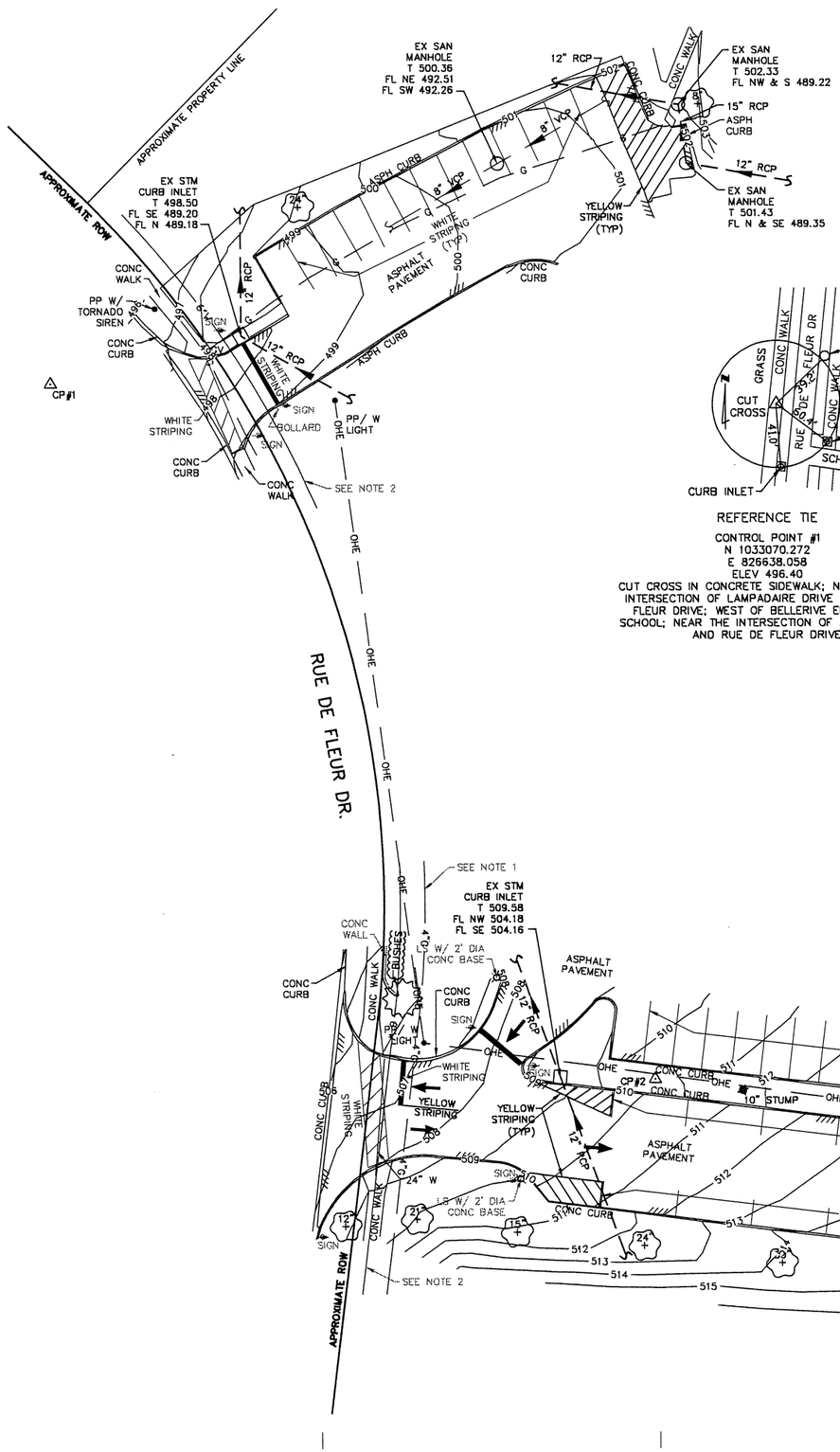
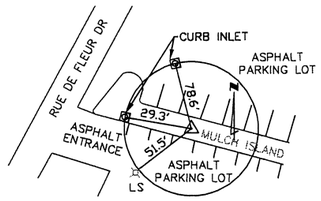


NOTES:

1. APPROXIMATE LOCATION OF 4" GAS LINE SHOWN PER LACLEDE GAS RECORD DRAWING 176-32.
2. APPROXIMATE LOCATION OF 6" WATER MAIN LINE SHOWN PER MISSOURI AMERICAN WATER RECORD DRAWING 17P.

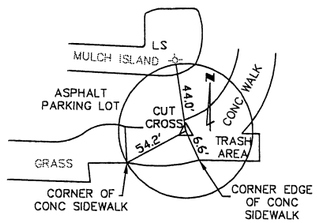
REFERENCE TIE

CONTROL POINT #1
N 1033070.272
E 826638.058
ELEV 496.40
CUT CROSS IN CONCRETE SIDEWALK; NORTHEAST OF INTERSECTION OF LAMPADAIRE DRIVE AND RUE DE FLEUR DRIVE; WEST OF BELLERIVE ELEMENTARY SCHOOL; NEAR THE INTERSECTION OF AMBOIS DRIVE AND RUE DE FLEUR DRIVE.



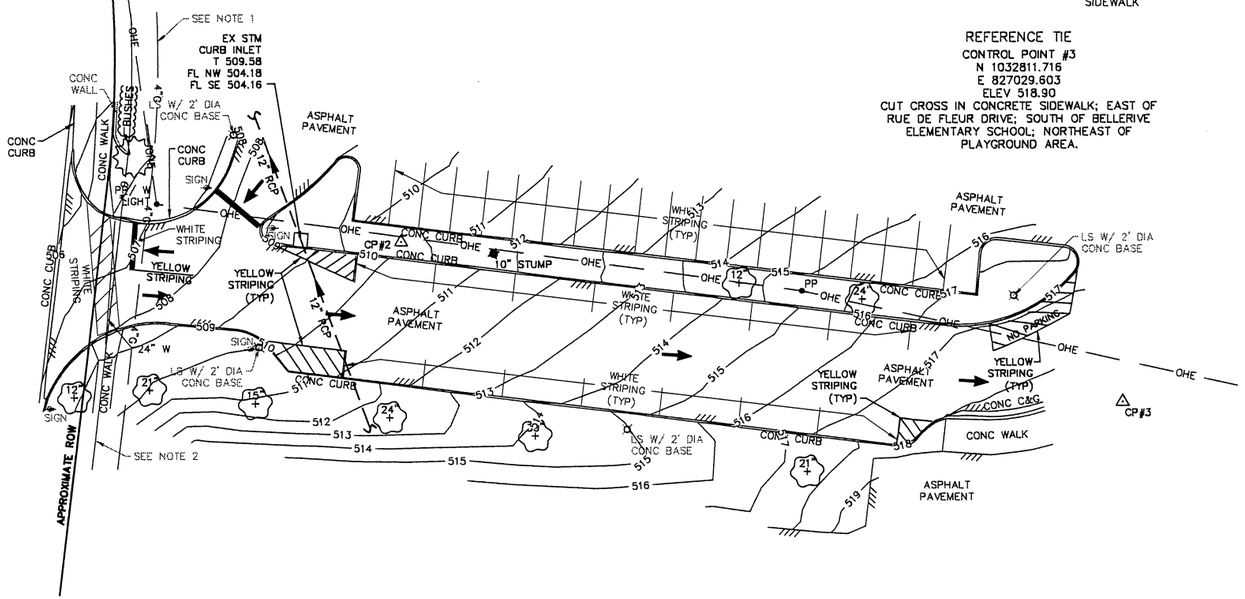
REFERENCE TIE

CONTROL POINT #2
N 1032858.096
E 826821.330
ELEV 510.75
REBAR WITH CAP IN MULCH; NORTHEAST OF LAMPADAIRE DRIVE; SOUTH OF BELLERIVE ELEMENTARY SCHOOL; ACROSS FROM 659 RUE DE FLEUR DRIVE.



REFERENCE TIE

CONTROL POINT #3
N 1032811.716
E 827029.603
ELEV 518.90
CUT CROSS IN CONCRETE SIDEWALK; EAST OF RUE DE FLEUR DRIVE; SOUTH OF BELLERIVE ELEMENTARY SCHOOL; NORTHEAST OF PLAYGROUND AREA.



SCALE 1" = 20'

0 10' 20' 40'

LEGEND

SANITARY SEWER			
STORM SEWER			
WATER	W	W	
UNDERGROUND ELECTRIC	E	E	
OVERHEAD ELECTRIC	OHE	OHE	
FIBER OPTIC	FO	FO	
GAS	G	G	
COMMUNICATION	T	T	

STORM MANHOLE		WATER MANHOLE	WMH
STORM INLET		WATER METER	WM
SANITARY MANHOLE		WATER VALVE	WV
CLEANOUT	VENT	FIRE HYDRANT	FH
ELECTRIC MANHOLE	EMH	SPRINKLER	SPRINKLER
ELECTRIC BREAKER OUTLET BOX	ELEC OUTLET BOX	TELEPHONE MANHOLE	TMH
ELEC METER	EM	PULL BOX	PB
GAS VALVE	GV	TRAFFIC SIGNAL CONTROL BOX	TFC CONTROLLER
PHONE CABLE BOX	TELE J.B.	BUSH	
ELECTRIC TRANSFORMER BOX	ELEC TRANSFORMER BOX	STUMP	STUMP
POWER POLE	PP	TREE	
LIGHT STANDARD	LS	BOLLARD	BOLLARD
GAS METER	GM	SIGN	
GAS VALVE	GV	EDGE OF ASPH PAVEMENT	
SMALL DRAIN		EDGE OF CONC PAVEMENT	
		FLOW DIRECTION OF SEWER LINE	

THE UNDERGROUND UTILITIES SHOWN HEREON HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND RECORD DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, WHETHER IN SERVICE OR ABANDONED. THE UTILITIES SHOWN WITHIN THE SCHOOL PROPERTY ARE CONSIDERED PRIVATE AND ARE SHOWN FROM AVAILABLE RECORD DOCUMENTS PROVIDED BY THE PARKWAY SCHOOL DISTRICT. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING MISSOURI ONE CALL AND PARKWAY SCHOOL DISTRICT TO VERIFY THE LOCATION OF UNDERGROUND FACILITIES PRIOR TO CONSTRUCTION.

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DATE: 01/08/2015

Survey

C0.1

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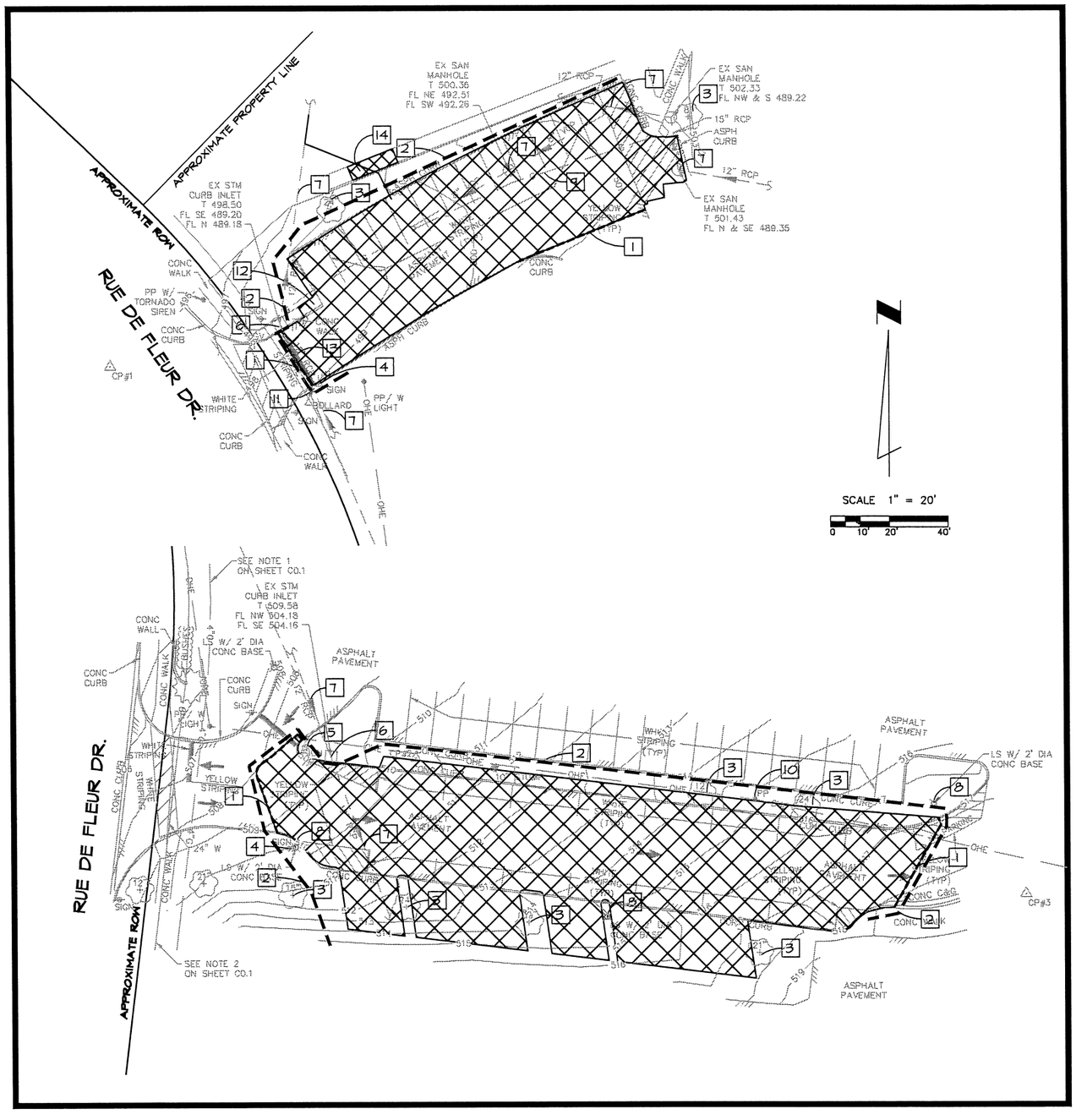

DEMOLITION PLAN NOTES:

1. WHERE NATURAL VEGETATION IS REMOVED DURING GRADING, VEGETATION SHALL BE RE-ESTABLISHED IN SUCH A DENSITY AS TO PREVENT EROSION.
2. WHEN CLEARING AND/OR GRADING OPERATIONS ARE COMPLETED OR SUSPENDED FOR MORE THAN 5 DAYS IN ANY AREA, THE DISTURBED AREA SHALL BE SEEDED OR OTHERWISE STABILIZED TO SIGNIFICANTLY REDUCE THE ERODIBILITY OF THE SOIL. PROTECTIVE MEASURES MAY INCLUDE A COMBINATION OF SEEDING, SODDING, MULCHING OR OTHER SUITABLE MEANS TO PROTECT THE GROUND SURFACE FROM EROSION.
3. IF CUT AND FILL OPERATIONS OCCUR DURING A SEASON NOT FAVORABLE FOR IMMEDIATE ESTABLISHMENT OF PERMANENT GROUND COVER, A FAST GERMINATING ANNUAL SUCH AS RYE GRASSES OR SUDAN GRASSES SHALL BE UTILIZED TO RETARD EROSION.
4. ALL TRASH AND DEBRIS ON-SITE, EITHER EXISTING OR FROM CONSTRUCTION, MUST BE REMOVED AND PROPERLY DISPOSED OF OFF-SITE.
5. EROSION AND SILTATION CONTROL SHALL BE INSTALLED PRIOR TO ANY GRADING AND BE MAINTAINED THROUGHOUT THE PROJECT UNTIL ACCEPTANCE OF THE WORK BY THE OWNER AND /OR CONTROLLING REGULATORY AGENCY AND ADEQUATE VEGETATIVE GROWTH INSURES NO FURTHER EROSION OF THE SOIL.
6. STORM WATER PIPES, OUTLETS AND CHANNELS SHALL BE PROTECTED BY SILT BARRIERS AND KEPT FREE OF WASTE AND SILT AT ALL TIMES PRIOR TO FINAL SURFACE STABILIZATION AND/OR PAVING.
7. SILTATION CONTROL DEVICES SHALL BE INSPECTED PERIODICALLY FOR DAMAGE AND FOR THE AMOUNT OF SEDIMENT WHICH HAS ACCUMULATED. REMOVAL OF SEDIMENT WILL BE REQUIRED WHEN IT REACHES 1/2 THE HEIGHT OF THE SILTATION CONTROL DEVICE.
8. ADDITIONAL SILTATION CONTROL MAY BE REQUIRED AS DEEMED NECESSARY BY THE CITY.
9. THE CONTRACTOR SHALL REMOVE ALL SURFACE IMPROVEMENTS INCLUDING BUT NOT LIMITED TO PAVEMENT, CURBS, TREES, SIGNS, AND SHRUBS WITHIN THE AREA NOTED BY THE LEGEND SYMBOL ▩ ON THIS SHEET. THERE ARE EXCEPTIONS. EXCEPTIONS ARE NOTED BY OTHER NOTES OR BY ABBREVIATIONS NOTED ON THIS SHEET. CURBS ARE A PROMINENT EXCEPTION AS DESCRIBED IN THE KEYED NOTES.

KEYED DEMOLITION NOTES (THIS SHEET ONLY):

1. SAWCUT EXISTING PAVEMENT 2' HORIZONTAL DISTANT FROM THE EXTENT OF THE NEW PAVING. WHEN SAWCUTTING PAVEMENT, SAWCUT PAVEMENT FULL DEPTH TO ASSURE SMOOTH MATCH BETWEEN NEW AND EXISTING PAVEMENT.
2. SILTATION CONTROL. SEE DETAIL ON SHEET C5
3. USE EXISTING TREES AND SHRUBS IN PLACE. PROTECT FROM DAMAGE DURING CONSTRUCTION.
4. PROTECT EXISTING SIGN FROM DAMAGE DURING CONSTRUCTION. AT CONTRACTOR'S OPTION, HE MAY REMOVE AND REPLACE THE EXISTING SIGN IN ITS ORIGINAL LOCATION AT NO ADDITIONAL COST TO THE OWNER. IF SIGN IS DAMAGED DURING REMOVAL, CONTRACTOR SHALL REPLACE THE SIGN WITH ONE OF EQUAL VALUE. THE OWNER SHALL BE SOLELY RESPONSIBLE FOR DETERMINING IF THE REPLACEMENT SIGN IS ACCEPTABLE. CONTRACTOR SHALL ABIDE BY OWNER'S DECISION.
5. REMOVE AND REPLACE EXISTING SIGN. SEE SITE PLAN C2 FOR NEW PLACEMENT.
6. USE EXISTING CURB INLET IN PLACE. PROTECT FROM DAMAGE DURING CONSTRUCTION. IF INLET IS DAMAGED BY THE CONTRACTOR DURING CONSTRUCTION ACTIVITY, IT SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE OWNER.
7. USE UNDERGROUND SEWER LINE AND SEWER STRUCTURE IN PLACE AND PROTECT FROM DAMAGE DURING CONSTRUCTION. SHOULD THE CONTRACTOR DAMAGE THE UNDERGROUND SEWER LINE OR THE STRUCTURE, HE SHALL REPAIR THE DAMAGE AT NO COST TO THE OWNER. PLACE NEW PAVEMENT TO EXISTING TOP OF STRUCTURE ELEVATION.
8. USE EXISTING LIGHT STANDARD IN PLACE AND PROTECT FROM DAMAGE DURING CONSTRUCTION. IF THE LIGHT STANDARD IS DAMAGED BY THE CONTRACTOR DURING CONSTRUCTION ACTIVITY, IT SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE OWNER.
9. USE EXISTING UNDERGROUND UTILITY LINE IN PLACE AND PROTECT FROM DAMAGE DURING CONSTRUCTION. IF DAMAGED BY THE CONTRACTOR DURING CONSTRUCTION ACTIVITY, IT SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE OWNER.
10. PROTECT EXISTING POWER POLE DURING CONSTRUCTION. IF DAMAGED BY THE CONTRACTOR DURING CONSTRUCTION ACTIVITY, IT SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE OWNER.
11. PROTECT EXISTING BOLLARD DURING CONSTRUCTION. IF DAMAGED BY THE CONTRACTOR DURING CONSTRUCTION ACTIVITY, IT SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE OWNER.
12. REMOVE EXISTING CONCRETE SIDEWALK TO NEAREST JOINT.
13. REMOVE SECTION OF 12" PIPE BETWEEN PROPOSED MANHOLE AND EXISTING INLET. ABANDON PIPE SECTION PER MSD STANDARD CONSTRUCTION SPECIFICATIONS. SEE SHEET C5 FOR PROPOSED MANHOLE LOCATION.
14. REMOVE SIDEWALK AS NEEDED FOR OUTLET STRUCTURE INSTALLATION. SEE C3.

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Chesterfield, MO 63017

Project No: 151501B

Revisions

Description	Date
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DATE: 01/08/2015

Demolition Plan

C1

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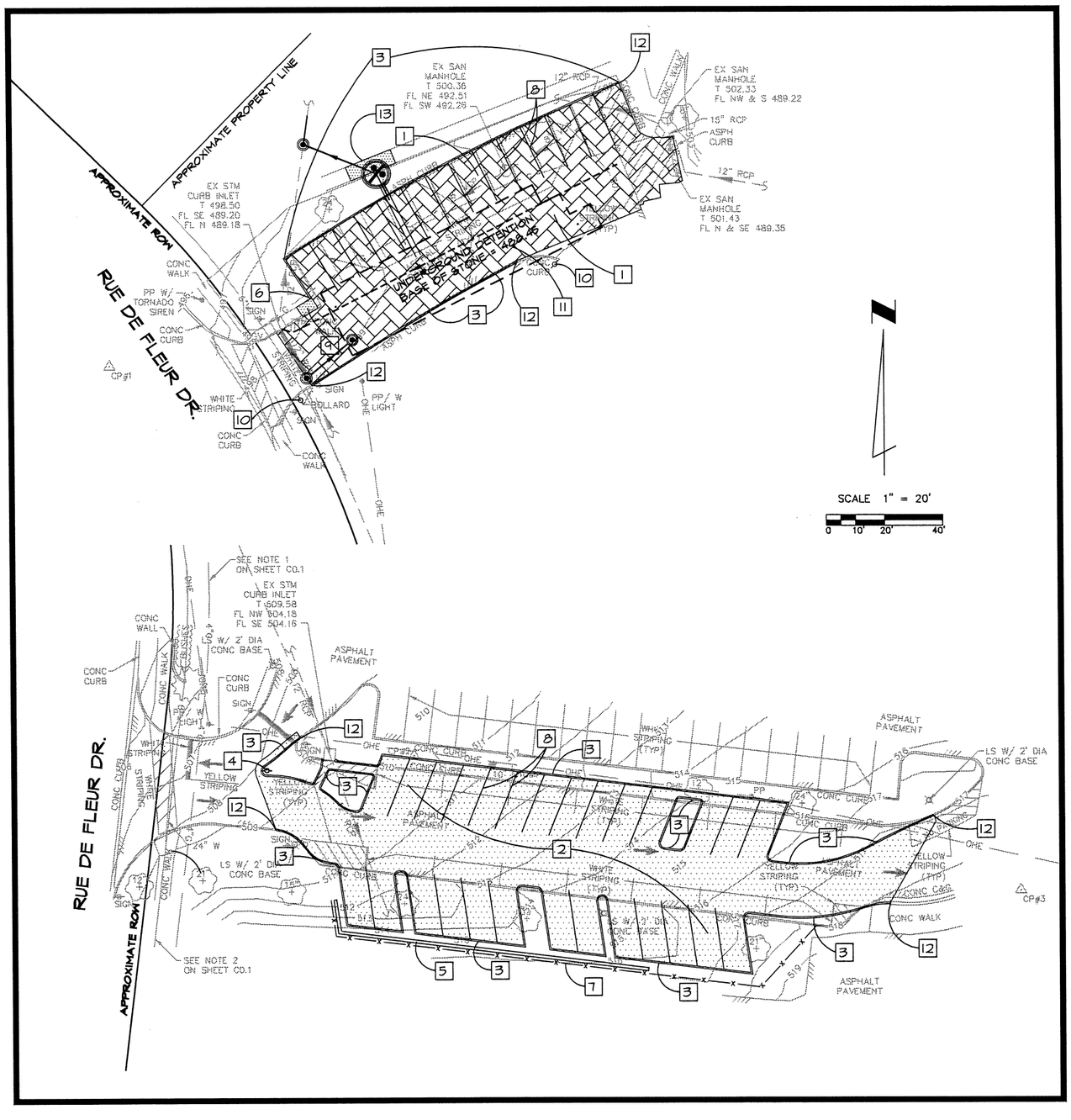

SITE PLAN KEYED NOTES (THIS SHEET ONLY):

1. NEW PAVER (5702 SF TOTAL). SEE DETAIL ON SHEET C9.
2. NEW ASPHALT PAVEMENT. SEE DETAIL ON SHEET C5.
3. NEW CONCRETE CURB. SEE DETAIL ON SHEET C5.
4. RELOCATED SIGN.
5. CONSTRUCT NEW VERSALOCK RETAINING WALL. SEE DETAIL ON SHEET C5.
6. CURB TURNDOWN. SEE DETAIL ON SHEET C5.
7. INSTALL NEW ORNAMENTAL FENCE. SEE DETAIL ON SHEET C5.
8. 9' X 19' TYPICAL PARKING SPACE.
9. REESTABLISH CONCRETE SIDEWALK. REPLACE TO NEAREST JOINT TO ENSURE FULL SLAB REPLACEMENT. SEE DETAIL ON SHEET C5.
10. PERVIOUS INTERLOCKING CONCRETE PAVEMENT SIGN, PER MSD DETAIL (PICP INFORMATION SIGN)
11. UNDERGROUND DETENTION. SEE SHEET C4.
12. MATCH EXISTING CURB.
13. NEW OUTLET STRUCTURE TO BE FLUSH WITH SIDEWALK. SIDEWALK TO BE REPLACED AS NEEDED. SEE DETAIL ON SHEET C5.

GENERAL NOTE:

A *.DWG FILE WILL BE MADE AVAILABLE TO THE CONTRACTOR TO WHOM THE WORK IS AWARDED FOR HIS USE IN SITE LAYOUT.

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Site Plan

C2

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Professional Engineer

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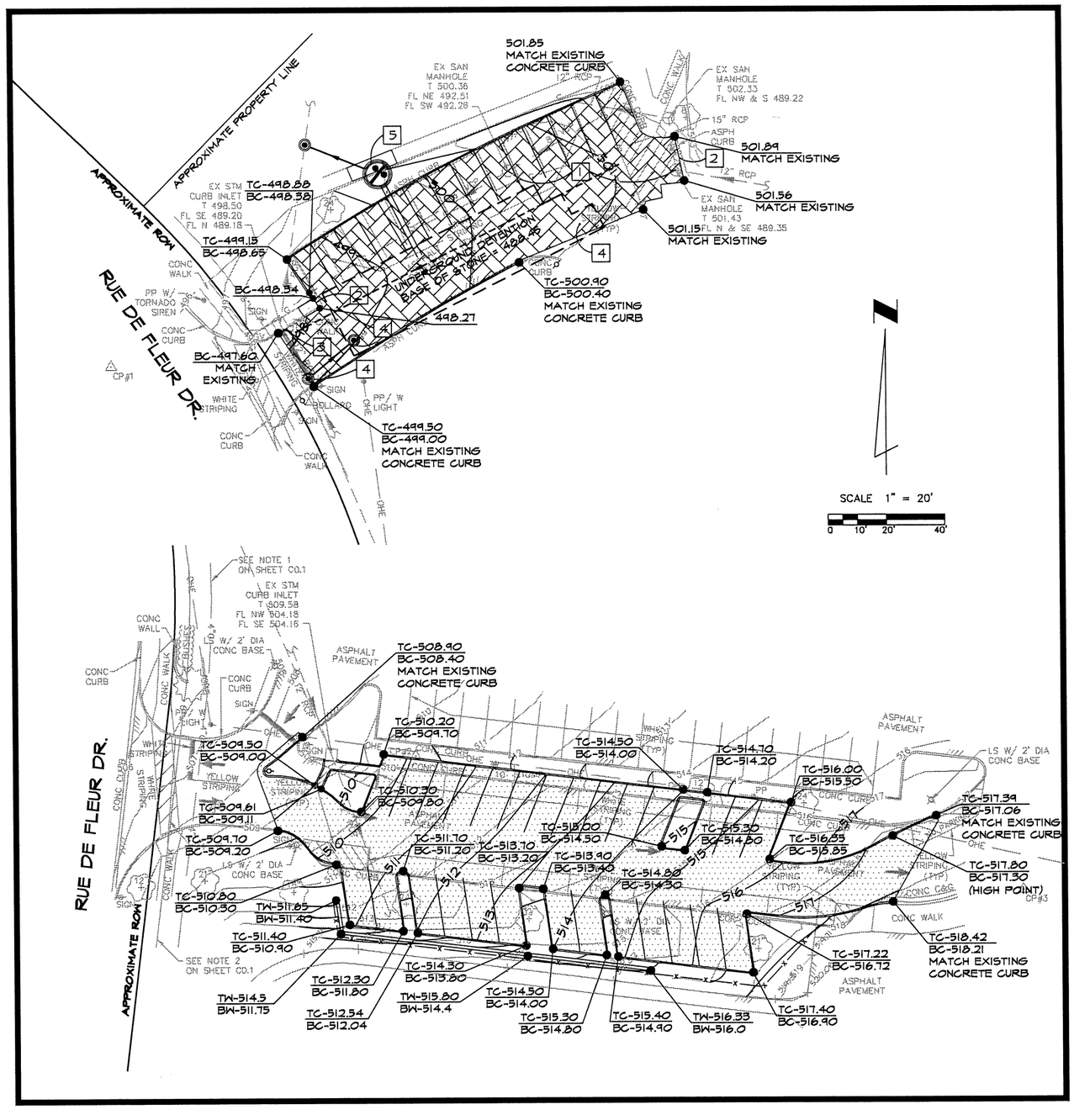

GRADING PLAN KEYED NOTES (THIS SHEET ONLY):

1. PLACE NEW CONCRETE PAVERS TO EXISTING TOP OF SEWER STRUCTURE ELEVATION.
2. PLACE NEW CONCRETE PAVERS TO MATCH EXISTING GRADE OF EXISTING CONCRETE SIDEWALK.
3. PLACE NEW 1' WIDE CONCRETE COLLAR AROUND INLET. SEE DETAIL ON SHEET C9.
4. NEW UTILITY STRUCTURES TO BE FLUSH WITH CONCRETE PAVERS.
5. TOP OF OUTLET STRUCTURE ASSUMED TO BE ELEV 500.0. CONTRACTOR TO SET TOP OF STRUCTURE TO MINIMIZE REGRADING OF SIDEWALK.

GENERAL NOTE:

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Grading Plan

C3

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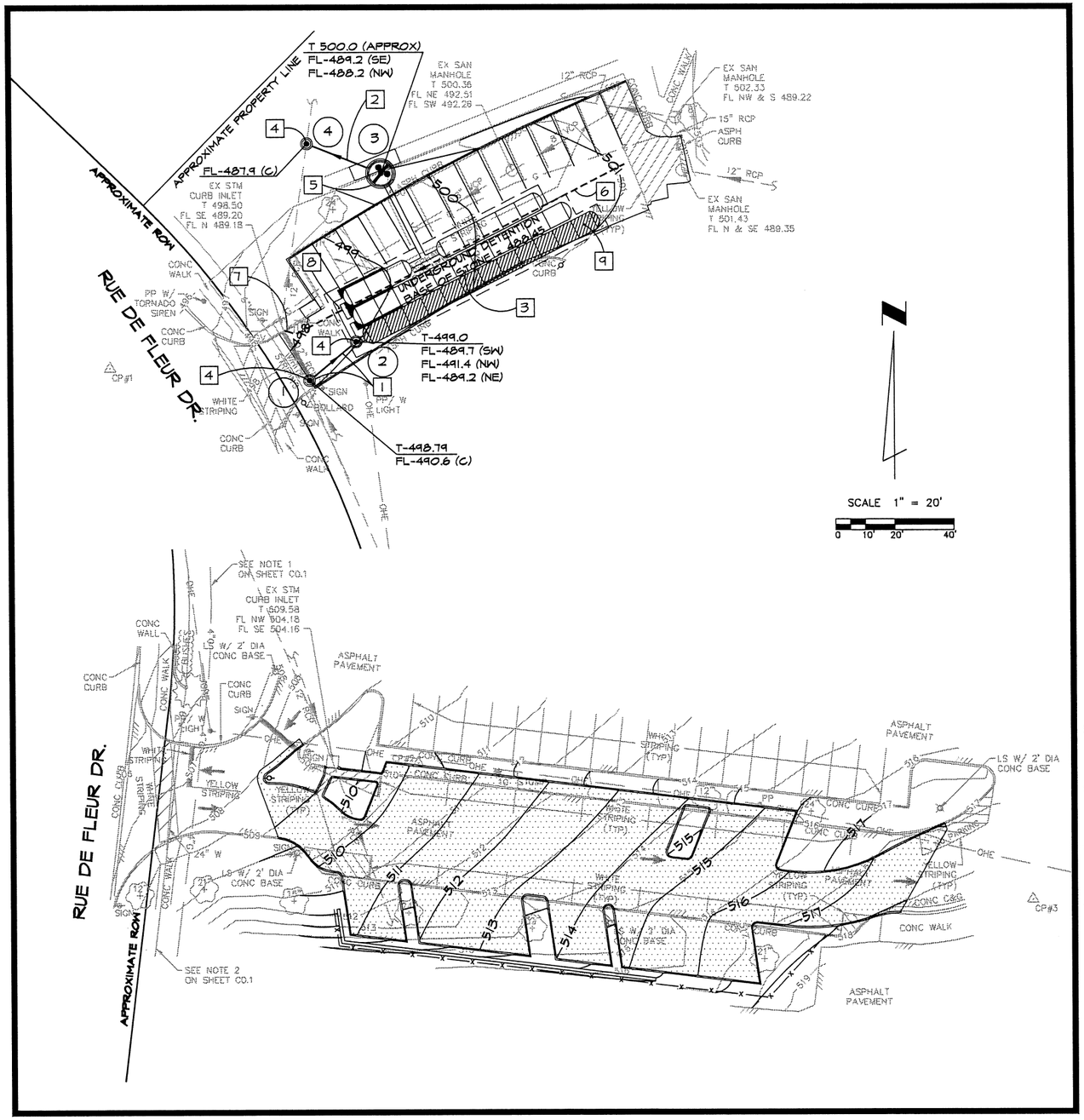
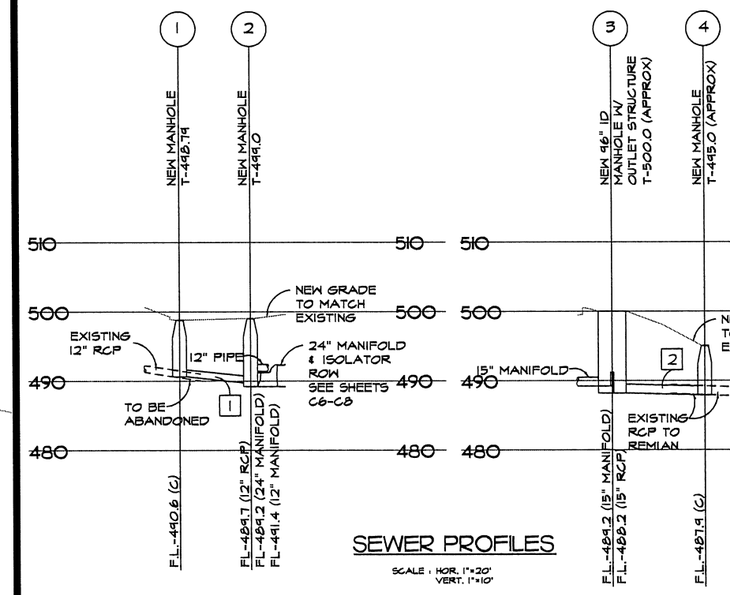


SITE PLAN KEYED NOTES (THIS SHEET ONLY):

1. 12" RCP X 17 LF AT 5.4%. UPSTREAM MANHOLE TO CONNECT TO EXISTING 12" RCP.
2. 15" RCP X 20 LF AT 1.5%.
3. NEW STORMTECH UNDERGROUND DETENTION SYSTEM. SEE DETAILS ON SHEETS C6-C8.
4. NEW 4' ID MANHOLE, SEE DETAIL ON SHEET C8.
5. NEW OUTLET STRUCTURE, SEE DETAIL ON C6.
6. 4" PERFORATED PIPE X 130 LF. SEE DETAIL ON SHEET C9.
7. PERFORATED PIPE TO TERMINATE IN EXISTING CURB INLET. SEE OUTLET STRUCTURE DETAIL ON SHEET C9.
8. OBSERVATION WELL. SEE DETAIL ON SHEET C9.
9. INSPECTION PORT. SEE DETAIL ON SHEET C8.



SEWER PROFILES

SCALE : HOR. 1"=20'
VERT. 1"=10'

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Utility Site Plan

C4

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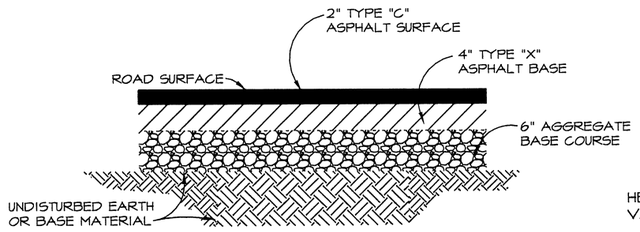

PAVEMENT REPLACEMENT SECTION

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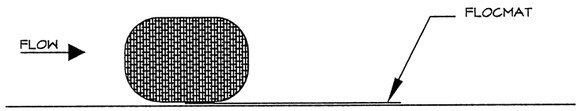
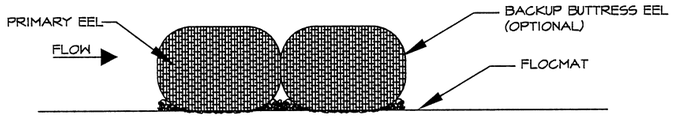


PLACE EROSION EEL NEAR THE INTENDED SETUP LOCATION. PLACE FLOCMAT UNDER EEL. FLOCMAT SHALL BE 3' WIDE. CENTER OF EEL SHALL BE PLACED ON CENTER OF FLOCMAT.



MOVE THE EEL OVER THE FLOCMAT AREA.

PLACE A SECOND EEL ADJACENT TO THE INITIAL EEL LOCATION (DOWNSLOPE) TO PROVIDE ADDITIONAL WEIGHT AS A BUTTRESS (OPTIONAL).

MAINTENANCE:

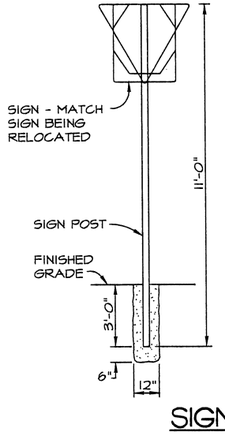
1. KEEP BAGS FREE OF ACCUMULATED SILT, DEBRIS, ETC., UNTIL THE DISTURBED AREA HAS BEEN ADEQUATELY STABILIZED.

2. REMOVE SEDIMENT AND DEBRIS WHEN ACCUMULATION AFFECTS THE PERFORMANCE OF THE DEVICE, AFTER A RAIN, AND WHEN DIRECTED.

3. REPAIR OR REPLACE DAMAGED DEVICES THAT ARE TORN OR PUNCTURED AS REQUIRED TO MAINTAIN THE INTEGRITY OF THE DEVICE.

SILTATION CONTROL DETAIL

N.T.S.



NOTES: (SIGN POST)

1. SIGN POST SHALL HAVE A 2-3/8 INCH OUTSIDE DIAMETER AND BE 11 FEET IN LENGTH. THEY SHALL BE SCH. 40 W A WALL THICKNESS OF 0.065 INCHES. THE INSIDE WALL SHALL BE GALVANIZED OR HAVE A FULL ZINC BASED ORGANIC COATING IN ACCORDANCE WITH ASTM-A513 TO OBTAIN A WEIGHT OF 0.90 OZ. PER SQ. FT. COMMERCIAL ZINC WEIGHT (G90).

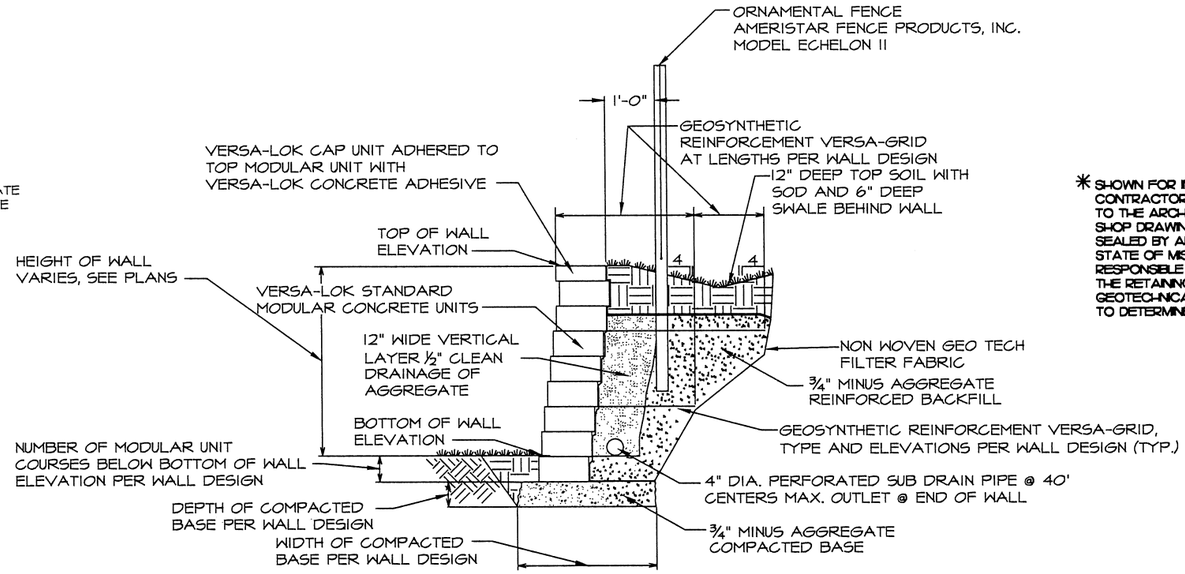
2. SIGNS ARE TO BE MOUNTED A MINIMUM OF 3.5 FEET FROM THE BACK OF CURB WITH A MINIMUM CLEARANCE FROM THE SIDEWALK OF 1.5 FEET.

3. SIGN POST SHALL BE MOUNTED 36 INCHES IN THE GROUND AND BE SET IN A CONCRETE BASE.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF UNDERGROUND UTILITIES AND STRUCTURES SHOWN OR NOT SHOWN PRIOR TO THE PLACEMENT OF SIGN POSTS.

SIGN POST PLACEMENT

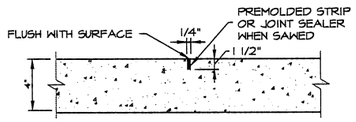
N.T.S.



SEGMENTAL BLOCK RETAINING WALL DETAIL*

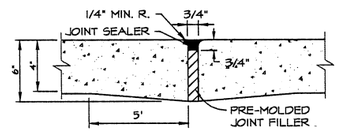
N.T.S.

* SHOWN FOR INFORMATION ONLY. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ARCHITECT OR ENGINEER. SUBMITTED SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY AN ENGINEER REGISTERED IN THE STATE OF MISSOURI. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE DESIGN OF THE RETAINING WALL INCLUDING ANY AND ALL GEOTECHNICAL INVESTIGATIONS NECESSARY TO DETERMINE DESIGN PARAMETERS.



CONTRACTION JOINT

N.T.S.



EXPANSION JOINT

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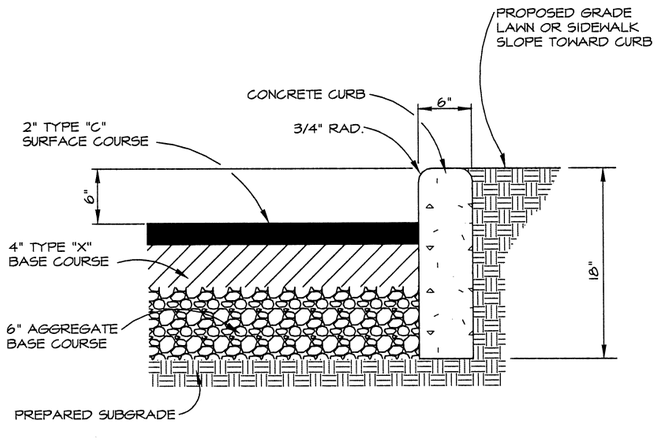
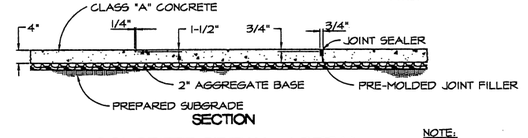


NEW VERTICAL CURB / PAVEMENT DETAIL

N.T.S.

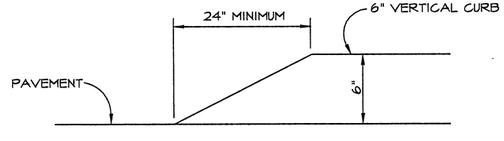


SECTION

CONCRETE SIDEWALK DETAIL

N.T.S.

NOTE:
SEAL ALL JOINTS WITH APPROVED JOINT SEALER



CURB TURNDOWN DETAIL

N.T.S.

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BELLERIVE ELEMENTARY SCHOOL
620 Rue De Fleur Dr, Creve Coeur, MO 63141
Parkway Project: PN 151501B
Classroom Security & Parking Lot Reconfigurations

Parkway School District
363 N. Woods Mill Rd.
Chesterfield, MO 63017

Project No: 151501B

Revisions

Description	Date
BID SET	01/08/16

The Professional Architects seal affixed to this sheet applies only to the material and items shown on this sheet. All drawings, instruments or other documents not exhibiting this seal shall not be considered prepared by this architect, and this architect expressly disclaims any and all responsibility for such plan, drawings or documents not exhibiting this seal.

DATE: 01/08/2015

Details

C5

EDSI PROJECT #E-14-020.14

SCALE: 3/8" = 1'-0" 0 0.25' 0.5' 1'
SCALE: 1 1/2" = 1'-0" 0 0.5' 1' 2'
SCALE: 1" = 1'-0" 0 0.5' 1' 2'
SCALE: 3/4" = 1'-0" 0 1' 2' 3'
SCALE: 1/2" = 1'-0" 0 1' 2' 4'
SCALE: 1/4" = 1'-0" 0 2' 4' 8'
SCALE: 1/8" = 1'-0" 0 4' 8' 16'
SCALE: 1/16" = 1'-0" 0 8' 16' 32'

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STORMWATER CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-3500 OR APPROVED EQUAL.
2. CHAMBERS SHALL BE MADE FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
4. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
5. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
6. CHAMBERS SHALL BE DESIGNED AND ALLOWABLE LOADS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
7. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. THE CHAMBER MANUFACTURER SHALL SUBMIT THE FOLLOWING UPON REQUEST TO THE SITE DESIGN ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE:
   a. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY AASHTO FOR THERMOPLASTIC PIPE.
   b. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET. THE 50 YEAR CREEP MODULUS DATA SPECIFIED IN ASTM F2418 MUST BE USED AS PART OF THE AASHTO STRUCTURAL EVALUATION TO VERIFY LONG-TERM PERFORMANCE.
   c. STRUCTURAL CROSS SECTION DETAIL ON WHICH THE STRUCTURAL EVALUATION IS BASED.
8. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-3500 CHAMBER SYSTEM

1. STORMTECH MC-3500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 9" (230 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
8. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4-2" (20-50 mm) MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
9. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
10. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
11. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

1. STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
2. THE USE OF EQUIPMENT OVER MC-3500 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

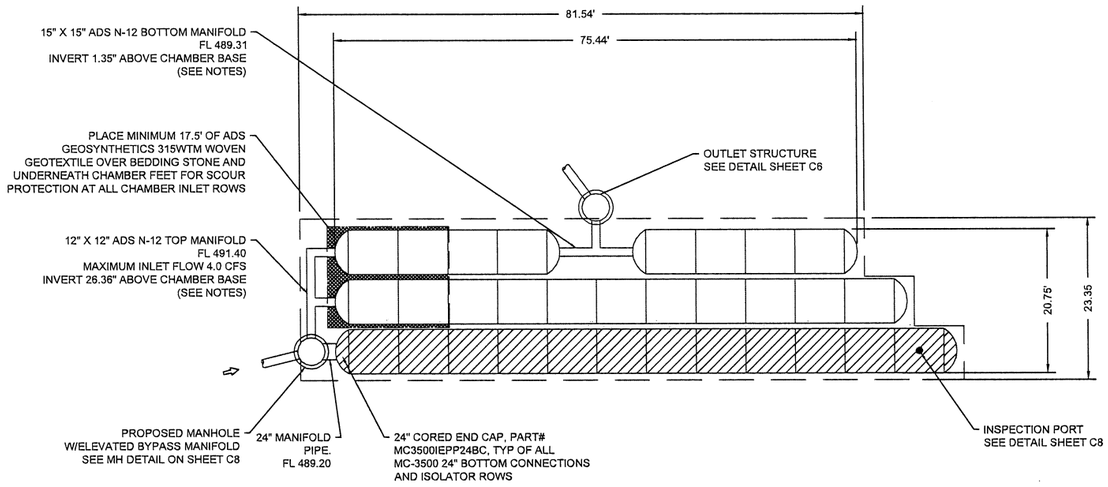
CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

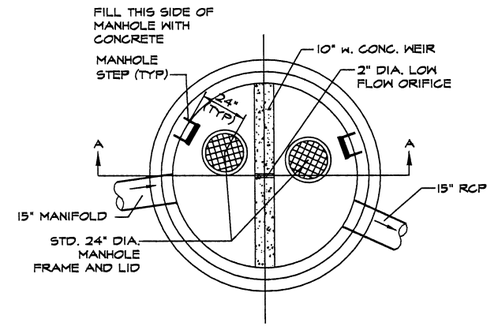
PROPOSED LAYOUT

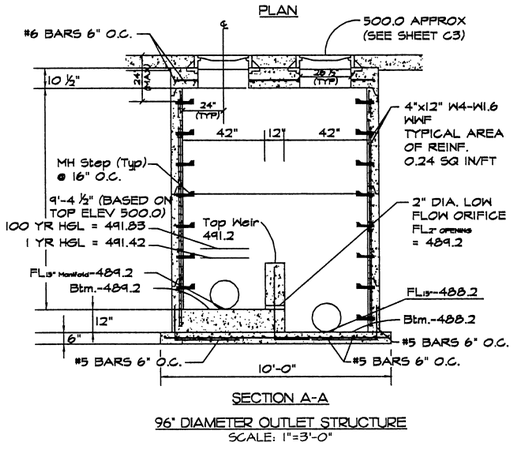
(31) STORMTECH MC-3500 CHAMBERS
(8) STORMTECH MC-3500 END CAPS
INSTALLED WITH 12" COVER STONE, 9" BASE STONE, 40% STONE VOID
VOLUME AT ELEVATION 491.20: 3,128 CF (BASE STONE EXCLUDED)
TOTAL INSTALLED SYSTEM VOLUME: 6,673 CF (PERIMETER STONE INCLUDED)
AREA OF SYSTEM: 2,071 FT²
PERIMETER OF SYSTEM: 224 FT

NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH SHEET #7 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.







SECTION A-A

96" DIAMETER OUTLET STRUCTURE
SCALE: 1"=3'-0"

PROPOSED ELEVATIONS

MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	500.95
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	495.45
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	494.95
MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	494.95
TOP OF STONE:	493.95
TOP OF CHAMBER:	492.95
12" TOP MANIFOLD INVERT:	491.40
12" BOTTOM MANIFOLD INVERT:	489.31
24" ISOLATOR ROW INVERT:	489.37
BOTTOM OF CHAMBER:	489.20
BOTTOM OF STONE:	488.45

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER:	MARK JOERSZ 636-346-6139 MARK.JOERSZ@ADS-PIPE.COM
ADS SALES REP:	BRIAN SNELSON 618-593-6135 BRIAN.SNELSON@ADS-PIPE.COM
PROJECT NO:	121028

ADVANCED DRAINAGE SYSTEMS, INC.

THE SEAL OF STANLEY F. VISNOVSKE ON THIS DRAWING APPLIES ONLY TO THE CIVIL/SITE ENGINEERING SHOWN. IT DOES NOT APPLY, NOR IS ANY RESPONSIBILITY TAKEN FOR GEOTECHNICAL (INCLUDING BUT NOT LIMITED TO SLOPE STABILITY), STRUCTURAL, HVAC, PLUMBING, ELECTRICAL, FIRE PROTECTION, TRAFFIC ENGINEERING, SURVEYING (BOUNDARY AND TOPOGRAPHIC), OR ARCHITECTURAL (BUILDING OR LANDSCAPE).

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BELLERIVE ELEMENTARY SCHOOL
620 Rue De Fleur Dr, Creve Coeur, MO 63141
Parkway Project: PN 151501B
Classroom Security & Parking Lot Reconfigurations

Parkway School District
363 N. Woods Mill Rd.
Chesterfield, MO 63017

Project No: 151501B

Revisions

Description	Date
BID SET	01/08/16

DATE: 01/08/2015

Details

C6

EDSI PROJECT #E-14-020.14

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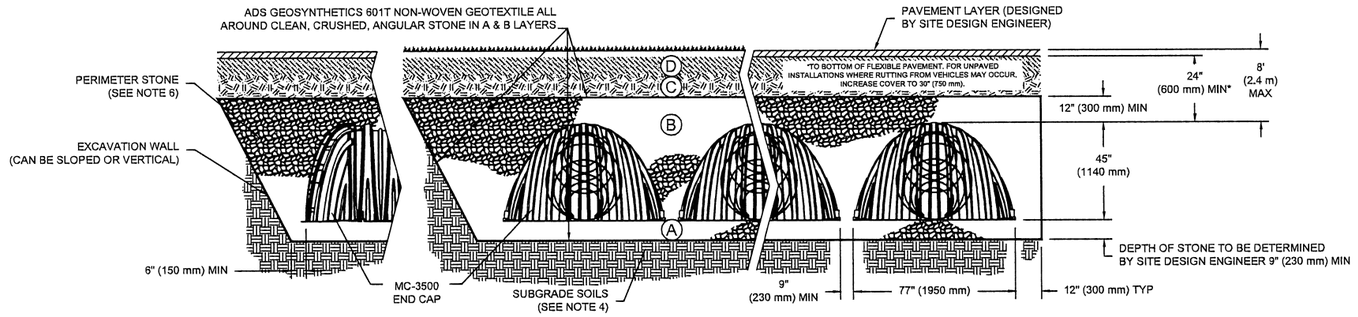
	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. [2 3]

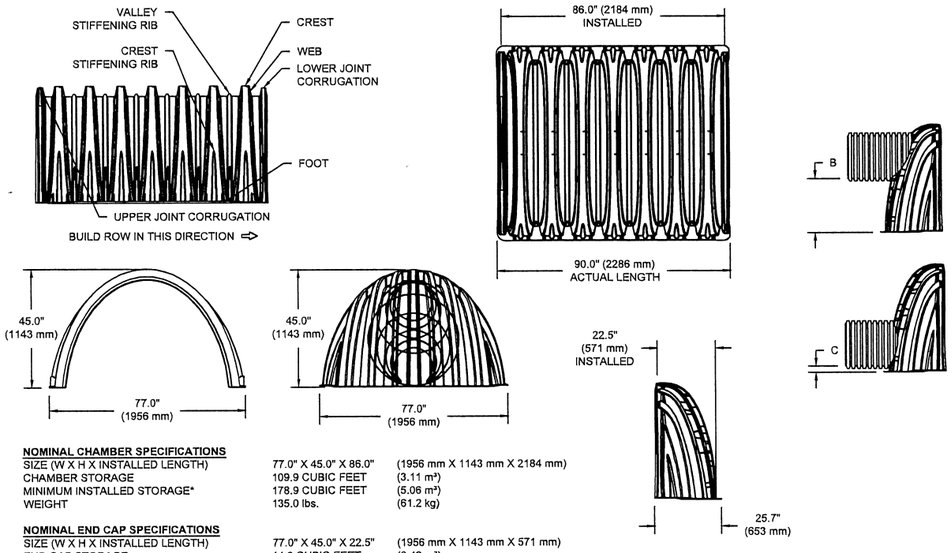
PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.

NOTES:

1. MC-3500 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
4. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
   PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	77.0" X 45.0" X 86.0"	(1956 mm X 1143 mm X 2184 mm)
CHAMBER STORAGE	109.9 CUBIC FEET	(3.11 m³)
MINIMUM INSTALLED STORAGE*	178.9 CUBIC FEET	(5.06 m³)
WEIGHT	135.0 lbs.	(61.2 kg)

NOMINAL END CAP SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	77.0" X 45.0" X 22.5"	(1956 mm X 1143 mm X 571 mm)
END CAP STORAGE	14.9 CUBIC FEET	(0.42 m³)
MINIMUM INSTALLED STORAGE*	46.0 CUBIC FEET	(1.30 m³)
WEIGHT	50.0 lbs.	(22.7 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION AND BETWEEN CHAMBERS, 12" (305 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY

STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"

PART #	STUB	B	C
MC3500IEPP06T	6" (150 mm)	33.21" (844 mm)	---
MC3500IEPP06B		---	0.68" (17 mm)
MC3500IEPP08T	8" (200 mm)	31.16" (791 mm)	---
MC3500IEPP08B		---	0.81" (21 mm)
MC3500IEPP10T	10" (250 mm)	29.04" (738 mm)	---
MC3500IEPP10B		---	0.93" (24 mm)
MC3500IEPP12T	12" (300 mm)	26.36" (670 mm)	---
MC3500IEPP12B		---	1.35" (34 mm)
MC3500IEPP15T	15" (375 mm)	23.39" (594 mm)	---
MC3500IEPP15B		---	1.50" (38 mm)
MC3500IEPP18TC	18" (450 mm)	20.03" (509 mm)	---
MC3500IEPP18BC		---	1.77" (45 mm)
MC3500IEPP24TC	24" (600 mm)	14.48" (368 mm)	---
MC3500IEPP24BC		---	2.06" (52 mm)
MC3500IEPP30BC	30" (750 mm)	---	

NOTE: ALL DIMENSIONS ARE NOMINAL

CUSTOM PRECORED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS.
CUSTOM INVERT LOCATIONS ON THE MC-3500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm)
THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHTEST POSSIBLE FOR THE PIPE SIZE.

MC-3500 TECHNICAL SPECIFICATION

NTS

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636.537.0275 fax

BELLERIVE ELEMENTARY SCHOOL
620 Rue De Fleur Dr, Creve Coeur, MO 63141
Parkway Project: PN 151501B
Classroom Security & Parking Lot Reconfigurations

Parkway School District
363 N. Woods Mill Rd.
Chesterfield, MO 63017

Project No: 151501B

Revisions

Description	Date
BID SET	01/08/16

The Professional Architects seal affixed to this sheet applies only to the statements and items shown on this sheet. All drawings, instruments or other documents prepared by this architect, and the architect expressly disclaims any and all responsibility for such plans, drawings or documents not exhibiting this seal.

DATE: 01/08/2015

Details

C7

EDSI PROJECT #E-14-020.14

SCALE: 3/4" = 1'-0" | SCALE: 1 1/2" = 1'-0" | SCALE: 1" = 1'-0" | SCALE: 3/4" = 1'-0" | SCALE: 1/2" = 1'-0" | SCALE: 1/4" = 1'-0" | SCALE: 1/16" = 1'-0" | SCALE: 1/32" = 1'-0"
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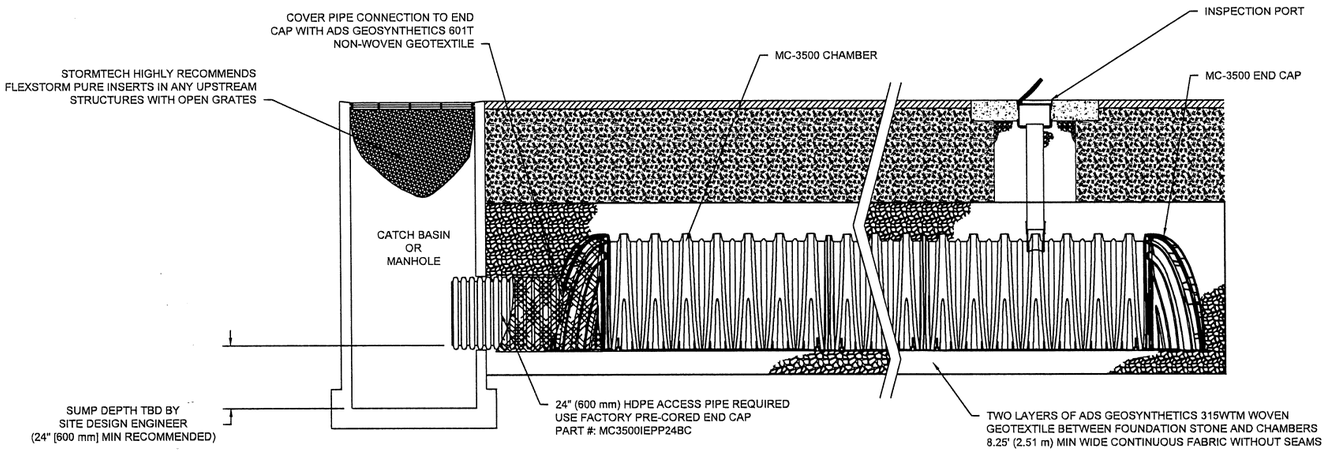
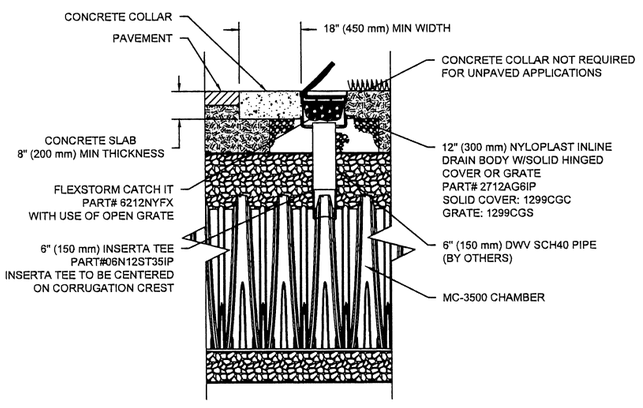


MC-3500 ISOLATOR ROW DETAIL
NTS



MC-3500 6" INSPECTION PORT DETAIL
NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

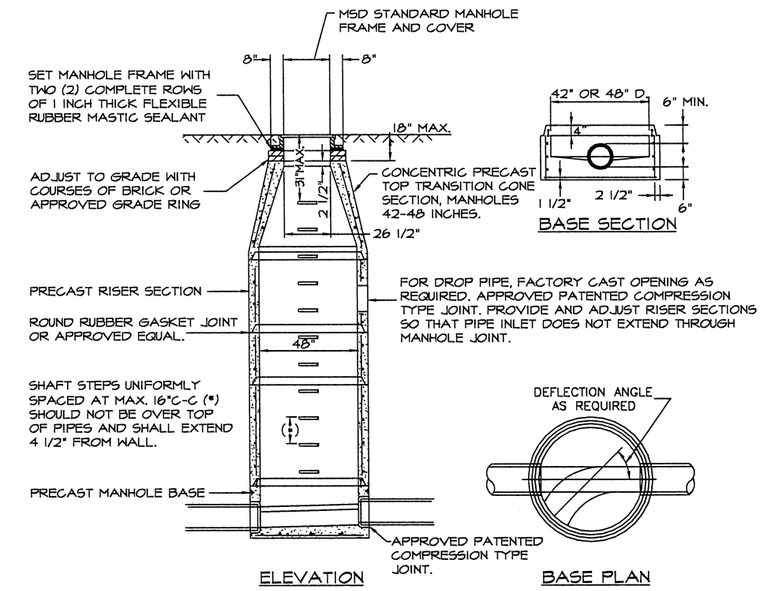
STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

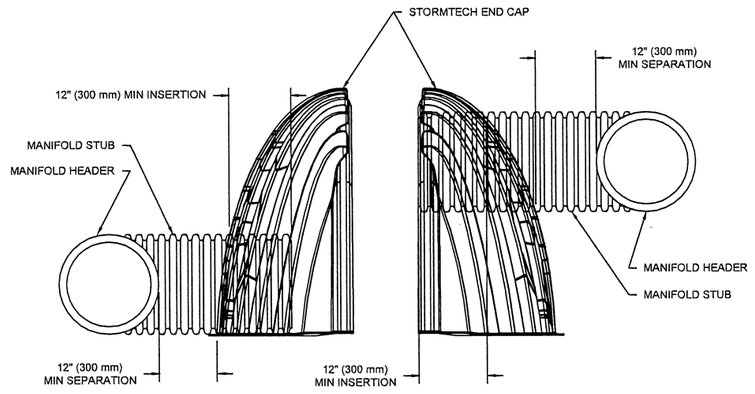
NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



NOTES:
1) MANHOLE SHALL MEET ASTM C-478 REQUIREMENTS.
2) FLOWLINE ELEVATION OF INCOMING PIPES SHALL BE 1 INCH HIGHER THAN THAT OF OUTGOING PIPE.
3) PRIOR TO FABRICATION, SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL.

PRE-CAST CONCRETE MANHOLE
N.T.S.



NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

MC-SERIES END CAP INSERTION DETAIL
NTS

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Chesterfield, MO 63017

Project No: 151501B

Revisions

Description	Date
BID SET	01/08/16

DATE: 01/08/2015

Details

C8

EDSI PROJECT #E-14-020.14

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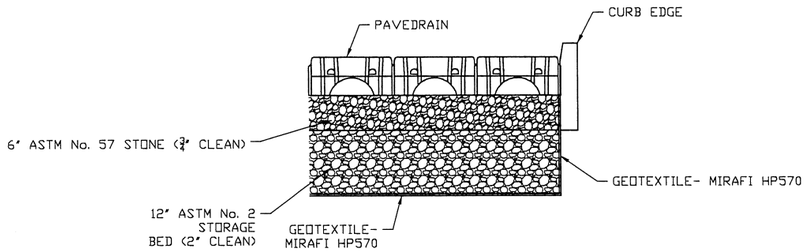
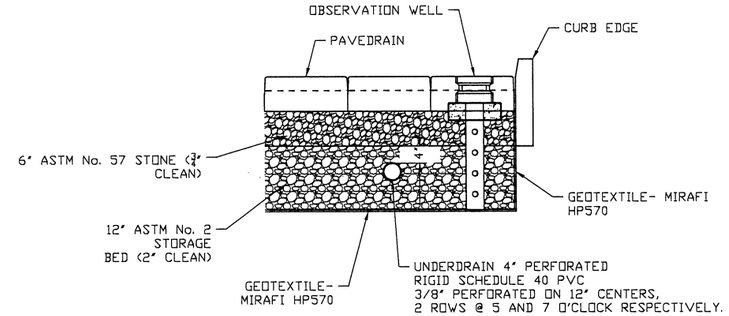
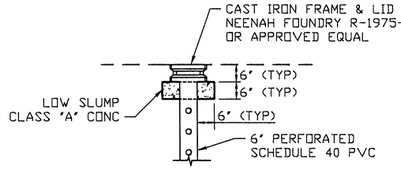


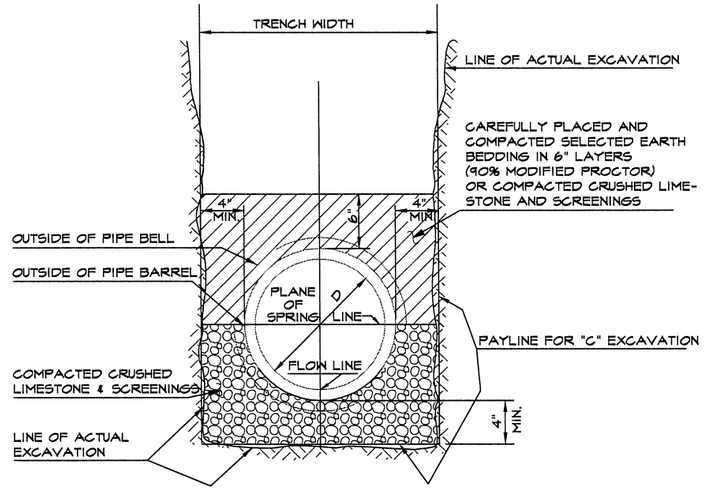
END VIEW



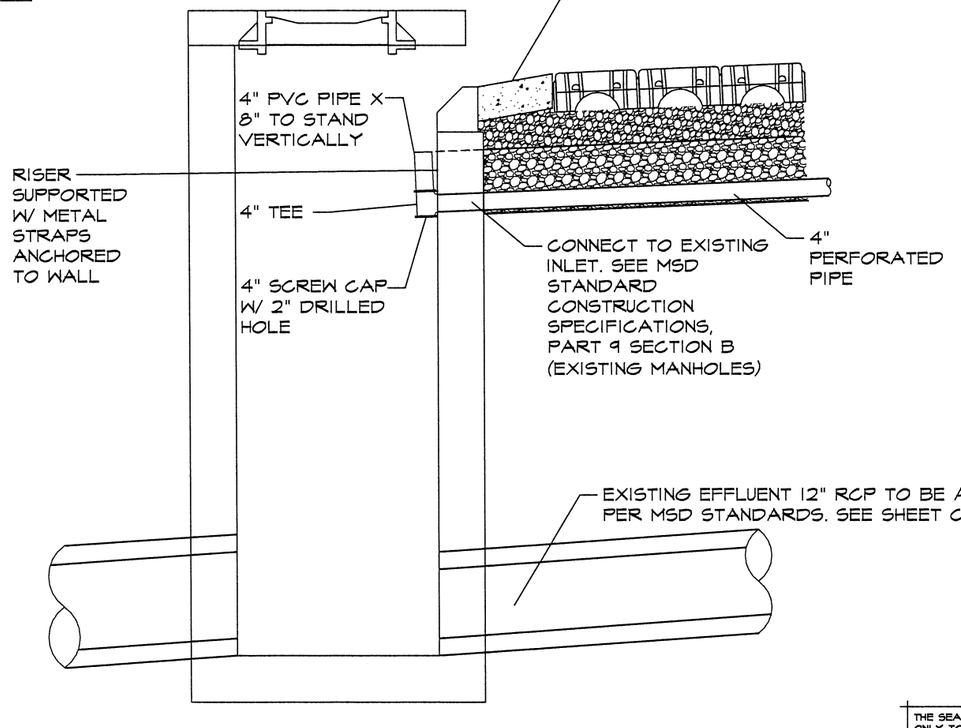
PAVEDRAIN PERMEABLE INTERLOCKING CONCRETE PAVEMENT
TYPICAL SECTION- SIDE VIEW
NTS



OBSERVATION WELL DETAIL



PIPE BEDDING CLASS "C"
REINFORCED CONCRETE PIPE
N.T.S.



EXISTING CURB INLET MODIFICATIONS
N.T.S.

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Revisions

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DATE: 01/08/2015

Details

C9

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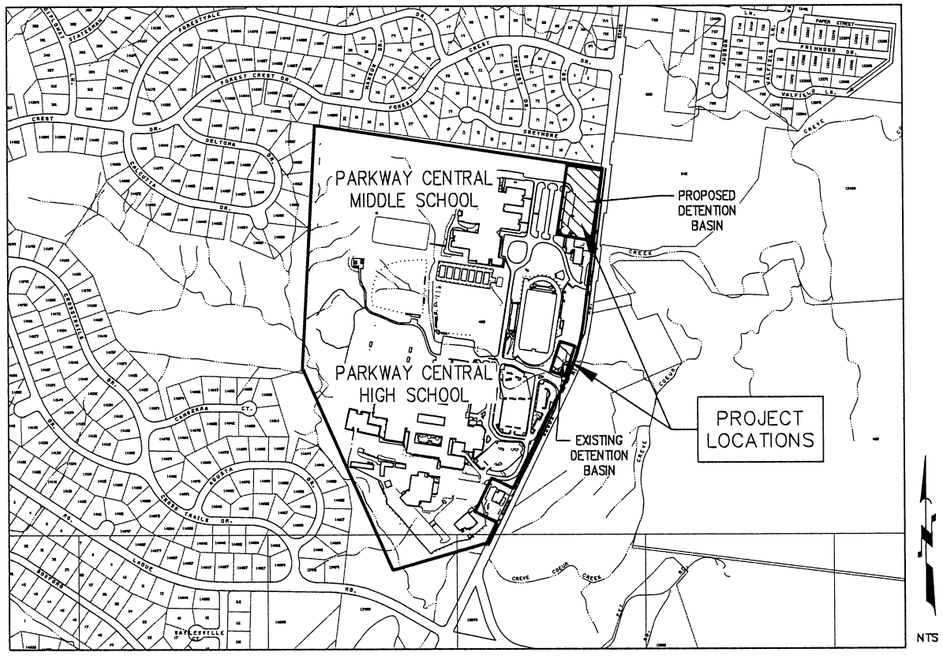
SECTION 6

CENTRAL MIDDLE

BMP ORIGINAL PROJECT INFORMATION

CENTRAL MIDDLE SCHOOL
PSD PROJECT: 400901B
STORMWATER DETENTION BASIN

471 NORTH WOODS MILL
CHESTERFIELD, MISSOURI 63017



GENERAL NOTES

1. ALL DISTURBED AREAS SHALL BE RESTORED WITH TOPSOIL AND SOD.
2. THE CONTRACTOR SHALL ASSUME COMPLETE RESPONSIBILITY FOR CONTROLLING ALL SILTATION AND EROSION WITHIN THE PROJECT AREA. THE CONTRACTOR SHALL USE THE MEANS NECESSARY TO CONTROL SILTATION AND EROSION. CONTROL MEANS AND METHODS SHALL FOLLOW THE SWPPP AND THE CITY OF CHESTERFIELD'S "SEDIMENT & EROSION CONTROL MANUAL". THE OWNER OR THE CITY OF CHESTERFIELD MAY AT THEIR OPTION DIRECT THE CONTRACTOR AS DEEMED FIT TO CONTROL EROSION. CONTROL SHALL COMMENCE WITH LAND DISTURBANCE AND BE MAINTAINED THROUGHOUT THE PROJECT UNTIL ACCEPTANCE OF THE WORK BY BOTH THE CITY OF CHESTERFIELD AND THE OWNER. ALL COST ASSOCIATED WITH EROSION CONTROL SHALL BE INCLUDED IN THE CONTRACTOR'S BID.
3. PROPOSED ELEVATIONS ARE SHOWN TO FINISH PAVEMENT OR GRADE.
4. NOTIFY THE CITY OF CHESTERFIELD DEPARTMENT OF PUBLIC WORKS 48 HOURS PRIOR TO THE COMMENCEMENT OF GRADING OR PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
5. PARKING ON NON-SURFACED AREAS IS PROHIBITED IN ORDER TO ELIMINATE THE CONDITION WHEREBY MUD FROM CONSTRUCTION AND EMPLOYEE VEHICLES IS TRACKED ONTO THE PAVEMENT CAUSING HAZARDOUS ROADWAY AND DRIVING CONDITIONS.
6. THE STREETS SURROUNDING THIS DEVELOPMENT AND ANY STREET USED FOR CONSTRUCTION ACCESS THERETO SHALL BE KEPT FREE FROM MUD AND CONSTRUCTION DEBRIS AND SHALL BE CLEANED THROUGHOUT THE DAY.
7. ALL FILLS PLACED UNDER PROPOSED STORM AND SANITARY SEWER LINES, AND PAVED AREAS, INCLUDING TRENCH BACKFILLS WITHIN AND OFF THE ROAD RIGHT-OF-WAY, SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED BY THE STANDARD ASTM D-1557 FOR THE ENTIRE DEPTH OF THE FILL. COMPACTED GRANULAR BACKFILL IS REQUIRED IN ALL TRENCH EXCAVATION WITHIN THE STREET RIGHT-OF-WAY AND UNDER ALL PAVED AREAS. ALL TESTS SHALL BE PREFORMED UNDER THE DIRECTION OF AND VERIFIED BY A SOILS ENGINEER CONCURRENT WITH GRADING AND BACKFILLING OPERATIONS.
8. SOFT SOILS FROM THE BOTTOM AND BANKS OF ANY EXISTING OR FORMER POND SITES OR TRIBUTARIES, OR ANY SEDIMENT BASINS OR TRAPS SHALL NOT BE PLACE IN PROPOSED PUBLIC RIGHT-OF-WAY LOCATIONS OR IN ANY STORM SEWER LOCATION.
9. ALL TRASH AND DEBRIS ON-SITE, EITHER EXISTING OR FROM CONSTRUCTION, MUST BE REMOVED AND PROPERLY DISPOSED OF OFF-SITE.
10. ANY WELLS, CISTERNS OR SPRINGS, WHICH MAY EXIST ON THIS PROPERTY, SHOULD BE LOCATED AND SEALED IN A MANNER ACCEPTABLE TO THE CITY OF CHESTERFIELD AND MODNR.
11. ALL EXCAVATIONS, GRADING OR FILLING SHALL HAVE A FINISHED GRADE NOT TO EXCEED A 4:1 SLOPE (25%), UNLESS SPECIFICALLY APPROVED OTHERWISE.
12. NO EXCAVATION SHALL BE MADE SO CLOSE TO THE PROPERTY LINE AS TO ENDANGER ANY ADJOINING PROPERTY OF ANY PUBLIC OR PRIVATE STREET WITHOUT SUPPORTING AND PROTECTING SUCH PUBLIC OR PRIVATE STREET OR PROPERTY FROM SETTLING, CRACKING OR OTHER DAMAGE.
13. CONTRACTOR TO PLACE VEHICLE WASHDOWN STATION AT CONSTRUCTION ENTRANCE IN ACCORDANCE WITH ST. LOUIS COUNTY REQUIREMENTS.
14. ANY EXISTING IMPROVEMENTS DAMAGED BY CONSTRUCTION ON THE PROJECT PROPERTY SHALL BE REPLACED IN KIND AT THE CONTRACTORS EXPENSE.
15. EXISTING ASPHALT PAVEMENT SHALL BE REMOVED AND PROPERLY DISPOSED OF OFF-SITE.
16. ALL EXISTING IMPROVEMENTS ARE TO REMAIN UNLESS NOTED OTHERWISE.
17. THE UNDERGROUND UTILITIES SHOWN HEREON ARE TAKEN FROM UTILITY LOCATIONS AS MARKED IN THE FIELD BY DIGRITE AND MAPS OBTAINED FROM LACLEDE GAS COMPANY, METROPOLITAN ST. LOUIS SEWER DISTRICT AND MISSOURI-AMERICAN WATER COMPANY AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319, RSMO.
18. SITE IS SUBJECT TO PRIVATE UTILITY INSTALLATIONS. PRIVATE UTILITY INSTALLATIONS DO NOT APPEAR ON UTILITY BASE MAPS, NOR DOES DIGRITE LOCATE PRIVATE UTILITIES.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING TOPS AND FLOWLINES OF ALL EXISTING SEWERS PRIOR TO COMMENCING WORK AND NOTIFYING THE ENGINEER OF DISCREPANCIES
20. ALL MATERIALS AND WORKMANSHIP ASSOCIATED WITH SITE IMPROVEMENT CONSTRUCTION SHALL CONFORM TO THE LATEST STANDARDS AND SPECIFICATIONS OF THE CITY OF CHESTERFIELD.
21. ALL GRADING AND DRAINAGE SHALL CONFORM TO THE LATEST STANDARDS AND SPECIFICATIONS OF THE CITY OF CHESTERFIELD AND THE METROPOLITAN ST. LOUIS SEWER DISTRICT.
22. ALL SEWER CONSTRUCTION AND MATERIALS TO BE IN ACCORDANCE WITH THE METROPOLITAN ST. LOUIS SEWER DISTRICT STANDARD CONSTRUCTION SPECIFICATIONS FOR SEWERS AND DRAINAGE FACILITIES, 2009.
23. ALL MATERIALS AND WORKMANSHIP ASSOCIATED WITH THE GAS SERVICE SHALL COMPLY WITH THE LATEST STANDARDS AND SPECIFICATIONS OF LACLEDE GAS COMPANY.
24. ALL MATERIALS AND WORKMANSHIP ASSOCIATED WITH THE WATER SERVICE SHALL COMPLY WITH THE LATEST STANDARDS AND SPECIFICATIONS OF MISSOURI AMERICAN WATER COMPANY.
25. ALL MATERIALS AND WORKMANSHIP ASSOCIATED WITH THE PHONE SERVICE SHALL COMPLY WITH THE LATEST STANDARDS AND SPECIFICATIONS OF AT&T DISTRIBUTION.
26. ALL MATERIALS AND WORKMANSHIP ASSOCIATED WITH ELECTRIC SERVICE SHALL COMPLY WITH THE LATEST STANDARDS AND SPECIFICATIONS OF AMERENUE.
27. ALL MATERIALS AND WORKMANSHIP ASSOCIATED WITH CABLE SERVICE SHALL COMPLY WITH THE LATEST STANDARDS AND SPECIFICATIONS OF CHARTER COMMUNICATIONS.

UTILITY CONTACTS

AMEREN UE
1132 LOCUST STREET
ST. LOUIS, MO 63101
314-878-5787

AT&T TRANSMISSION TCG
2315 SALEM RD
1st FLOOR G-11
CONYERS, GA 30013
800-252-1133

MISSOURI-AMERICAN WATER COMPANY
727 CRAIG RD
ST. LOUIS, MO 63131
314-996-2432

CHARTER COMMUNICATIONS
2275 CASSENS DR
FENTON, MO 63026
314-878-5787

AT&T DISTRIBUTION
12930 OLIVE STREET RD, 2nd FLOOR
CREVE COEUR, MO 63141
314-878-5787

XO COMMUNICATIONS
2020 WESTPORT CENTER DRIVE
ST. LOUIS, MO 63146
314-787-7000

PARKWAY SCHOOL DISTRICT
455 N. WOODSMILL ROAD
CHESTERFIELD, MO 63017
314-415-8100

LACLEDE GAS COMPANY
3950 FOREST PARK BLVD
ST. LOUIS, MO 63108
314-658-5417

METROPOLITAN ST. LOUIS SEWER DISTRICT
2350 MARKET ST
ST. LOUIS, MO 63103-2555
314-768-6200

REGULATORY JURISDICTIONS

CITY OF CHESTERFIELD
690 CHESTERFIELD PARKWAY WEST
CHESTERFIELD, MO 63017-0760
636-537-4000

MONARCH FIRE PROTECTION DISTRICT
13725 OLIVE BOULEVARD
CHESTERFIELD, MO 63017
314-514-0900

METROPOLITAN ST. LOUIS SEWER DISTRICT
2350 MARKET ST
ST. LOUIS, MO 63103-2555
314-768-6200

SHEET INDEX

USGS DATUM BENCHMARK

ST. LOUIS COUNTY BENCHMARK #13-124 (ELEVATION 501.82)
STANDARD TABLET STAMPED "30 GEU" NORTHEAST TOWER LEG OF THE SOUTHERN MOST POWERLINE 120' +/- WEST OF 141 AT PARKWAY CENTRAL HIGH SCHOOL.

SITE BENCHMARK

T.B.M. "A" (ELEVATION 509.87)
CUT "L" ON SOUTHWEST CORNER OF CONCRETE PAD OF AT&T PHONE BOX #501.
50' +/- WEST OF CENTERLINE OF WOODS MILL ROAD AND 1000' +/- NORTH OF ENTRANCE TO PARKWAY ADMINISTRATION BUILDING IN NORTHEAST CORNER OF PROPERTY.

LEGEND

- CONTROL POINT
- TBM — TEMPORARY BENCHMARK
- DRAINAGE ARROW
- EXISTING TREE
- EXISTING SHRUB
- CO — EXISTING CLEANOUT
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY MANHOLE
- EXISTING CURB INLET
- EXISTING AREA INLET
- EXISTING GRATE INLET
- EXISTING END OF PIPE
- G — EXISTING GAS VALVE
- EXISTING WATER METER
- W — EXISTING WATER VALVE
- EXISTING SIGN
- EXISTING UTILITY POLE
- EXISTING UTILITY POLE WITH GUYWIRE
- NEW OVERFLOW STRUCTURE
- NEW FLARED END SECTION
- NEW EDGE OF PAVEMENT
- EXISTING EDGE OF PAVEMENT
- EXISTING CURB
- NEW MANUFACTURED MODULAR WALL
- SD — NEW STORM SEWER
- x—x—x — NEW FENCE
- SF — NEW EROSION CONTROL
- SD_x — EXISTING STORM SEWER
- G_x — EXISTING GAS LINE
- E_x — EXISTING ELECTRIC LINE
- C_x — EXISTING TELEPHONE LINE
- SS_x — EXISTING SANITARY SEWER
- CATV — EXISTING CABLE TELEVISION LINE
- FO — EXISTING FIBER OPTIC
- RIGHT OF WAY LINE
- 513 — EXISTING 1' CONTOUR
- 515 — EXISTING 5' CONTOUR
- 512 — PROPOSED 1' CONTOUR
- 515 — PROPOSED 5' CONTOUR
- x 501.92 — EXISTING SPOT ELEVATION
- FL=490.91 — PROPOSED SPOT ELEVATION
- (1) — KEYED NOTE IDENTIFIER
- (1) — EXISTING STORM STRUCTURE IDENTIFIER
- 1 — NEW STORM STRUCTURE IDENTIFIER

ABBREVIATIONS

ASPH	ASPHALT	NW	NORTHWEST
BLDG	BUILDING	PC	POINT OF CURVATURE
BM	BENCHMARK	PNT	POINT
BW	BOTTOM OF WALL	PT	POINT OF TANGENCY
CCP	CORRUGATED PLASTIC PIPE	PVC	POLYVINYL CHLORIDE
CLR	CLEARANCE	PVMT	PAVEMENT
CO	CLEANOUT	R	RADIUS
CMP	CORRUGATED METAL PIPE	RCP	REINFORCED CONCRETE PIPE
CONC	CONCRETE	SAN	SANITARY
DIA	DIAMETER	STM	STORM
EX	EXISTING	SW	SOUTHWEST
ELEV	ELEVATION	T	TOP
FF	FINISH FLOOR	TBM	TEMPORARY BENCHMARK
FG	FINISH GRADE	TC	TOP OF CURB
FH	FIRE HYDRANT	TP	TOP OF PAVEMENT
FL	FLOWLINE	TW	TOP OF WALL
G	GUTTER	TYP	TYPICAL
MAX	MAXIMUM	UIP	USE IN PLACE
ME	MATCH EXISTING	VCP	VITRIFIED CLAY PIPE
MH	MANHOLE	W/	WITH
MIN	MINIMUM	W.	WIDE
NE	NORTHEAST		
NTS	NOT TO SCALE		

MSD P-19772-03 BASE MAP: 17Q

REVISIONS

NO.	DESCRIPTION	BY	DATE

PROJECT: CENTRAL MIDDLE SCHOOL
PSD PROJECT: 400901B
STORMWATER DETENTION BASIN

TITLE: COVER SHEET

CLIENT: PARKWAY SCHOOL DISTRICT
455 North Woods Mill Road
Chesterfield, Missouri 63017
Phone: 314-415-8100 Fax: 314-415-8207

amec

AMEC Earth & Environmental, Inc.
15933 Clayton Road, Suite 215
Ballwin, Missouri 63011
Phone: 636-386-8000 Fax: 636-386-8001
Corp Cert. of Auth. #2002000326

Date:
Brad P. Loomis – Engineer
MO PE-2006019682

ISSUE FOR BID

Proj No. 2008008	REV No. 0
DR: MJR	CHK: BPL
DATE: 05/18//2010	

C-1
SHEET NUMBER

PLOT DATE: 5/18/2010 3:22:40 PM

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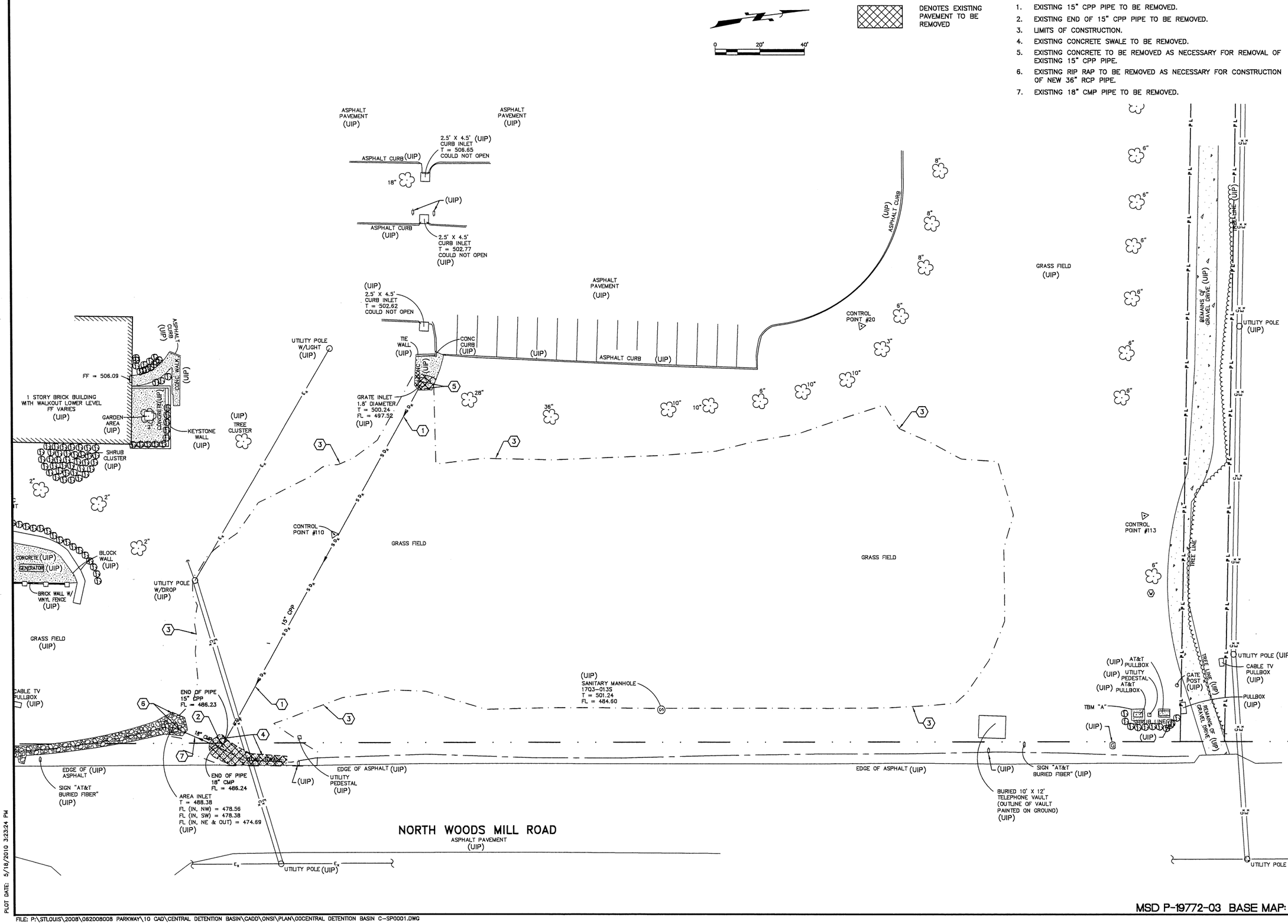

MSD P-19772-03 BASE MAP: 17Q

PLOT DATE: 5/18/2010 3:23:24 PM

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REVISIONS

NO.	DESCRIPTION	BY	DATE

PROJECT:
CENTRAL MIDDLE SCHOOL
PSD PROJECT: 400901B
STORMWATER DETENTION BASIN

TITLE:
DEMOLITION PLAN

CLIENT:
PARKWAY SCHOOL DISTRICT
455 North Woods Mill Road
Chesterfield, Missouri 63017
Phone: 314-415-8100 Fax: 314-415-8207

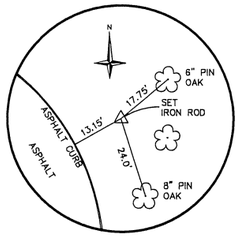
AMEC Earth & Environmental, Inc.
15933 Clayton Road, Suite 215
Ballwin, Missouri 63011
Phone: 636-394-3600 Fax: 636-394-3804
Disciplines: Engineering Corporation
Corp Cert. of Auth. #2002000326

Date:
Brad P. Loomis – Engineer
MO PE-2006019682

ISSUE FOR BID

Proj. No. 2008008	REV No. 0
DR: MJR	CHK: BPL
DATE: 05/18//2010	

C-2
SHEET NUMBER



CONTROL POINT #20
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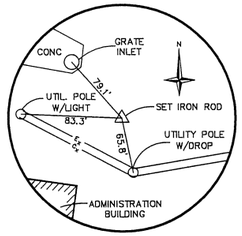
E=819757.2643



CONTROL POINT #110
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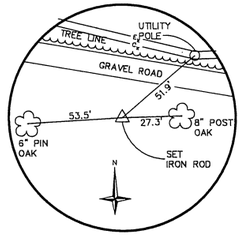

CONTROL POINT #113
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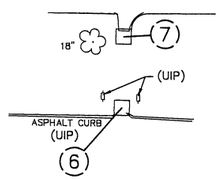


COORDINATE TABLE

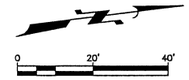
A.	N=1032190.34	E=819800.46	END OF WALL
B.	NOT USED		
C.	N=1032141.27	E=819829.48	PC OF WALL
D.	N=1032129.32	E=819852.55	PT OF WALL
E.	N=1032129.50	E=819854.76	PC OF WALL
F.	N=1032136.41	E=819869.92	PT OF WALL
G.	N=1032141.98	E=819875.62	PC OF WALL
H.	N=1032156.97	E=819882.86	PT OF WALL
I.	N=1032413.47	E=819909.54	ANGLE PNT WALL
J.	N=1032432.58	E=819905.63	ANGLE PNT WALL
K.	N=1032432.12	E=819888.52	END OF WALL
L.	N=1032418.07	E=819885.90	END GRASS SWALE
M.	N=1032224.12	E=819831.79	END GRASS SWALE
N.	N=1032223.38	E=819836.78	PC GRASS SWALE
O.	N=1032200.66	E=819853.62	PT GRASS SWALE
P.	N=1032198.65	E=819853.32	PC GRASS SWALE
Q.	N=1032148.00	E=819865.38	PT / END GRASS SWALE
R.	N=1032189.33	E=819798.74	END OF FENCE
S.	NOT USED		
T.	N=1032140.25	E=819827.76	PC OF FENCE
U.	N=1032127.33	E=819852.71	PT OF FENCE
V.	N=1032127.50	E=819854.92	PC OF FENCE
W.	N=1032134.97	E=819871.31	PT OF FENCE
X.	N=1032140.55	E=819877.02	PC OF FENCE

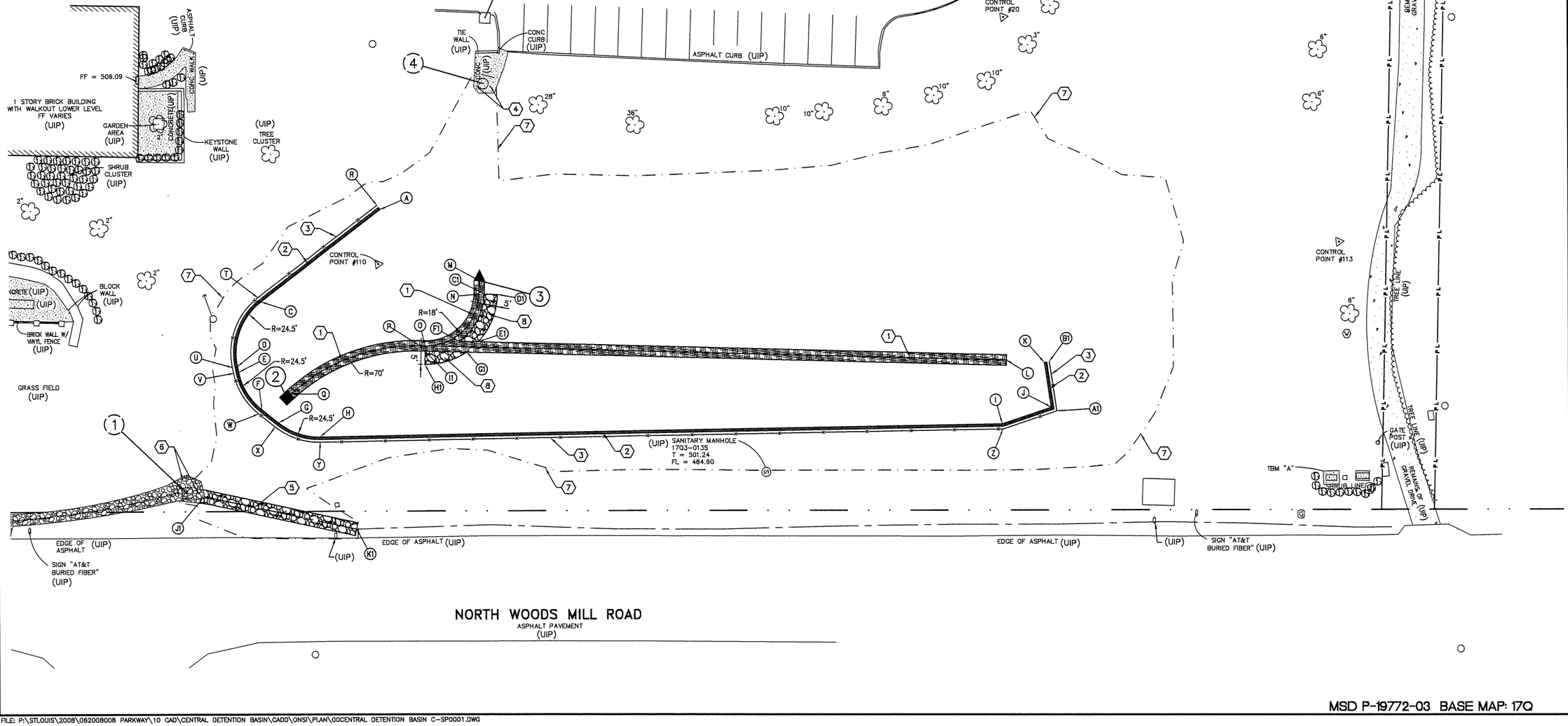
COORDINATE TABLE

Y.	N=1032156.76	E=819884.85	PT OF FENCE
Z.	N=1032413.57	E=819911.56	ANGLE PNT FENCE
A1.	N=1032434.63	E=819907.26	ANGLE PNT FENCE
B1.	N=1032434.11	E=819888.46	END OF FENCE
C1.	N=1032225.35	E=819837.07	ROCK BLANKET
D1.	N=1032230.30	E=819837.80	ROCK BLANKET
E1.	N=1032220.86	E=819854.60	ROCK BLANKET
F1.	N=1032213.46	E=819853.50	ROCK BLANKET
G1.	N=1032215.85	E=819857.90	ROCK BLANKET
H1.	N=1032199.63	E=819860.55	ROCK BLANKET
I1.	N=1032200.36	E=819855.60	ROCK BLANKET
J1.	N=1032110.52	E=819899.64	℄ ROCK SWALE
K1.	N=1032166.21	E=819919.07	℄ ROCK SWALE

KEYED NOTES (#)

1. NEW GRASS SWALE WITH PERMANENT EROSION CONTROL BLANKET (Mirafi–HP570 manufactured by TenCate OR EQUAL). REFER TO DETAIL ON SHT. C–7.
2. NEW MANUFACTURED MODULAR WALL. REFER TO DETAIL ON SHT C–7.
3. NEW 4' HIGH ALUMINUM FENCE. REFER TO DETAIL ON SHT. C–7.
4. EXISTING CONCRETE TO BE RESTORED TO ORIGINAL CONDITION WITH LIKE KIND MATERIALS.
5. NEW ROCK SWALE (MSD #5). REFER TO DETAIL ON SHT. 7.
6. EXISTING RIP RAP TO BE RESTORED TO ORIGINAL CONDITION WITH LIKE KIND MATERIALS.
7. LIMITS OF CONSTRUCTION.
8. NEW ROCK BLANKET (MSD #5). REFER TO DETAIL ON SHT. C–7.





MSD P-19772-03 BASE MAP: 17Q

NO.	DESCRIPTION	BY	DATE

REVISIONS

PROJECT: CENTRAL MIDDLE SCHOOL
PSD PROJECT: 400901B
STORMWATER DETENTION BASIN

TITLE: SITE PLAN

CLIENT: PARKWAY SCHOOL DISTRICT
455 North Woods Mill Road
Chesterfield, Missouri 63017
Phone: 314-415-8100 Fax: 314-415-8207

AMEC Earth & Environmental, Inc.
15933 Clayton Road, Suite 215
Ballwin, Missouri 63011
636-256-3686 Fax: 636-386-3804
Phone: 636-256-3686 Fax: 636-386-3804
Disciplines: Engineering Corporation
Corp Cert. of Auth. #2002000326

Date:
Brad P. Loomis – Engineer
MO PE–2006019682

ISSUE FOR BID

Proj. No. 2008008	REV No. 0
DR: MJR	CHK: BPL
DATE: 05/18//2010	

C-3
SHEET NUMBER

PLOT DATE: 5/18/2010 3:23:54 PM

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KEYED NOTES (#)

1. NEW EROSION CONTROL – FIBER ROLL. REFER TO DETAIL ON SHT. C-7.
2. NEW EROSION CONTROL – INLET PROTECTION. REFER TO DETAIL ON SHT. C-7.
3. LIMITS OF CONSTRUCTION.
4. NEW OUTFALL STRUCTURE. REFER TO DETAIL ON SHT. C-8.
5. EXISTING STORMWATER BMP RESERVE AREA D.B. 18486, PG. 127 (HEREBY ELIMINATED).
6. NEW STORMWATER BMP RESERVE AREA.
7. NEW GRASS SWALE WITH PERMANENT EROSION CONTROL BLANKET (Mirafi–HP570 manufactured by TenCate OR EQUAL). REFER TO DETAIL ON SHT. C-7.
8. NEW 4' HIGH ALUMINUM FENCE. REFER TO DETAIL ON SHT. C-7.
9. NEW ROCK BLANKET (MSD #5). REFER TO DETAIL ON SHT. C-7.

GENERAL NOTES

1. FOR SECTION A–A, B–B, AND C–C REFER TO SHT. C-5.

0 20' 40'

NORTH WOODS MILL ROAD
ASPHALT PAVEMENT
(UIP)

MSD P-19772-03 BASE MAP: 17Q

REVISIONS			
NO.	DESCRIPTION	BY	DATE

PROJECT:
CENTRAL MIDDLE SCHOOL
PSD PROJECT: 400901B
STORMWATER DETENTION BASIN

TITLE:
GRADING PLAN AND UTILITY PLAN

CLIENT:
PARKWAY SCHOOL DISTRICT
455 North Woods Mill Road
Chesterfield, Missouri 63017
Phone: 314-415-8100 Fax: 314-415-8207

AMEC Earth & Environmental, Inc.
15933 Clayton Road, Suite 215
Ballwin, Missouri 63011
Phone: 636-394-3868 Fax: 636-394-3804
Missouri Engineering Firm C-2004
Missouri Engineering Firm Corporation
Corp Cert. of Auth. #2002000328

Date:
Brad P. Loomis – Engineer
MO PE–2006019682

ISSUE FOR BID

Proj. No. 2008008	REV No. 0
DR: MJR	CHK: BPL
DATE: 05/18//2010	

C-4
SHEET NUMBER

PLOT DATE: 5/18/2010 3:24:38 PM

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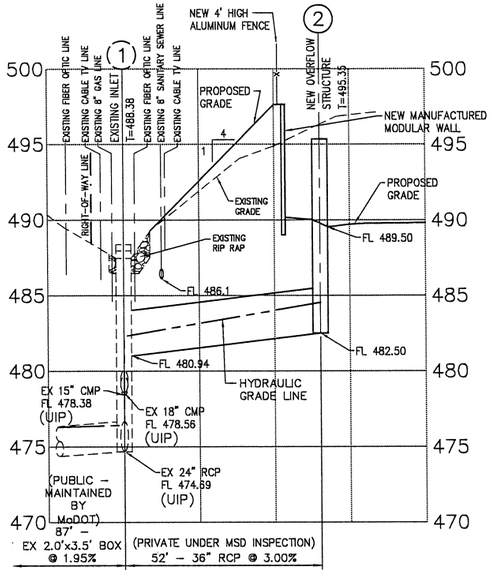
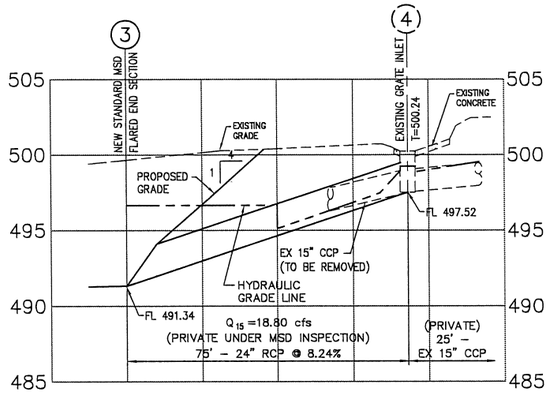


STORM SEWER PROFILE

SCALE: 1"=5' VERT.
1"=20' HORIZ.



STORM SEWER PROFILE

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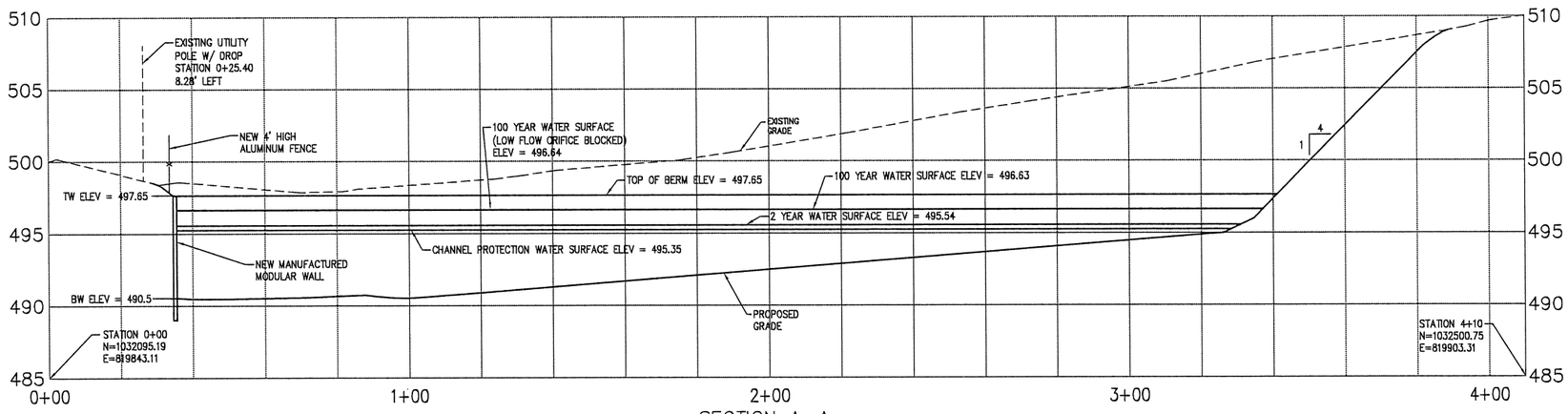
1"=20' HORIZ.



SECTION A–A

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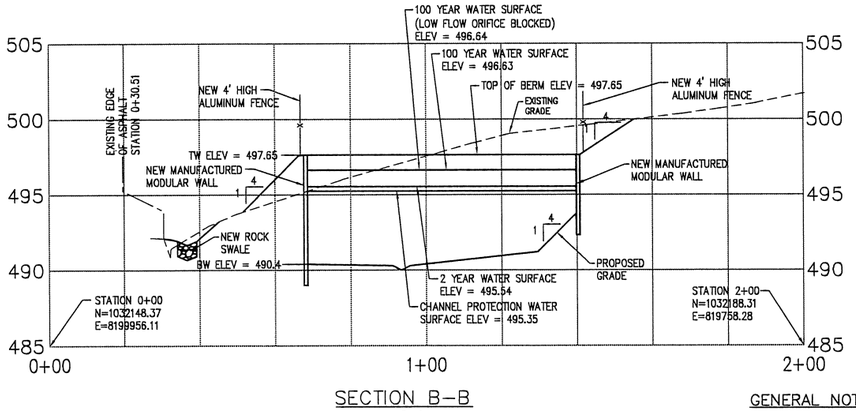

SECTION B–B

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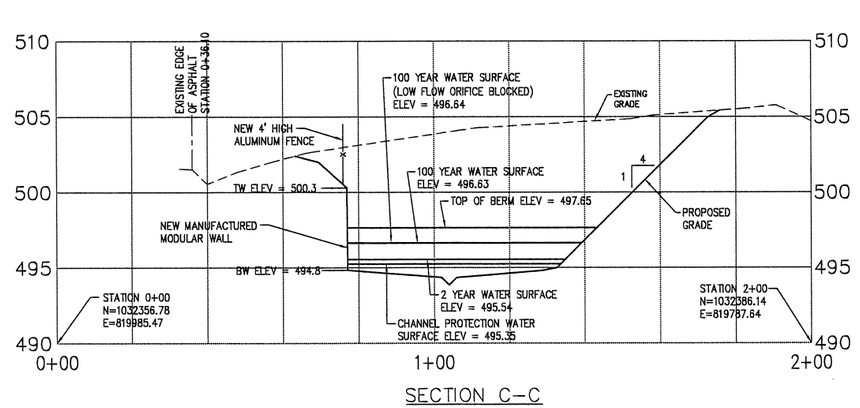

SECTION C–C

SCALE: 1"=5' VERT.
1"=20' HORIZ.

GENERAL NOTES

1. FOR PLAN LOCATION OF SECTION A–A, B–B, AND C–C REFER TO SHT. C–4.

MSD P-19772-03 BASE MAP: 17Q

REVISIONS

NO.	DESCRIPTION	BY	DATE

PROJECT:
CENTRAL MIDDLE SCHOOL
PSD PROJECT: 40090IB
STORMWATER DETENTION BASIN

TITLE:
SEWER PROFILES AND CROSS SECTIONS

CLIENT:
PARKWAY SCHOOL DISTRICT
455 North Woods Mill Road
Chesterfield, Missouri 63017
Phone: 314-415-8100 Fax: 314-415-8207

AMEC Earth & Environmental, Inc.
15933 Clayton Road, Suite 215
Ballwin, Missouri 63011
Phone: 636-386-3800 Fax: 636-386-3804
Missouri Certificate of Authority #2002000328
Corp Cert. of Auth. #2002000328

Date:
Brad P. Loomis – Engineer
MO PE-2006019682

ISSUE FOR BID

Proj. No. 2008008	REV No. 0
DR: MJR	CHK: BPL
DATE: 05/18/2010	

C-5
SHEET NUMBER

PLOT DATE: 5/18/2010 3:26:55 PM

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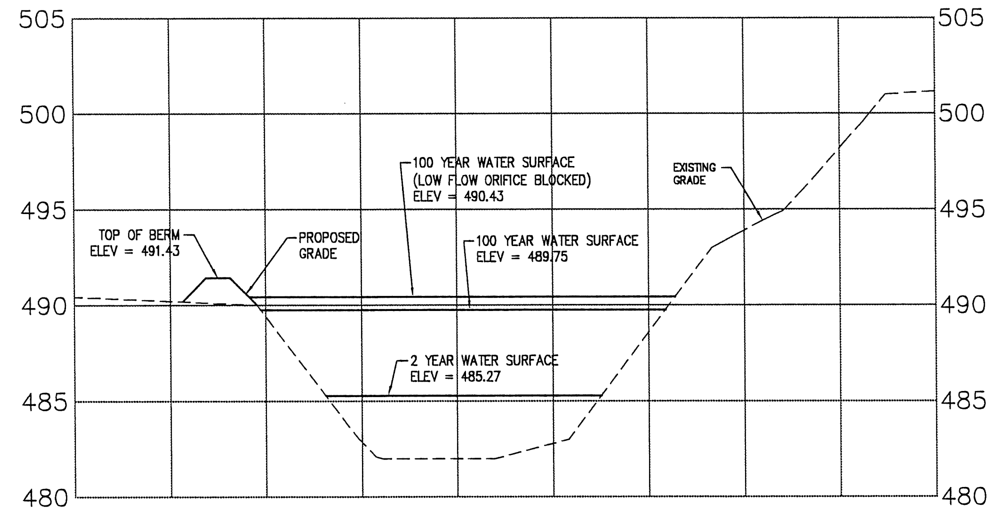

SECTION D–D

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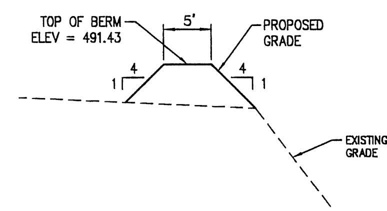
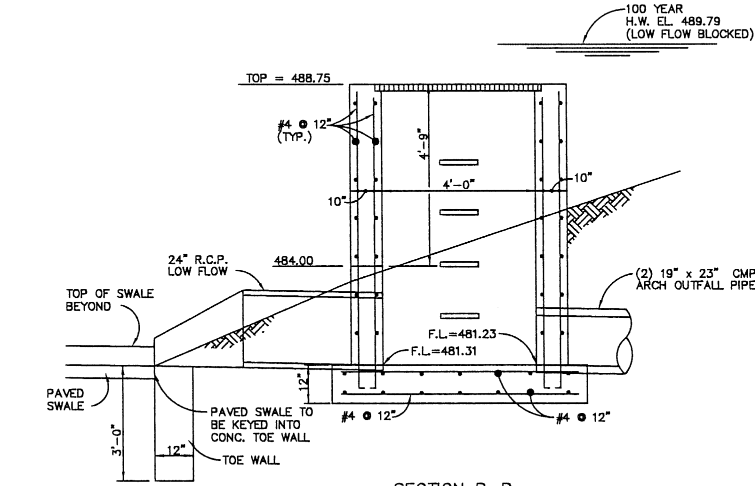
1"=20' HORIZ.



BERM DETAIL

NTS



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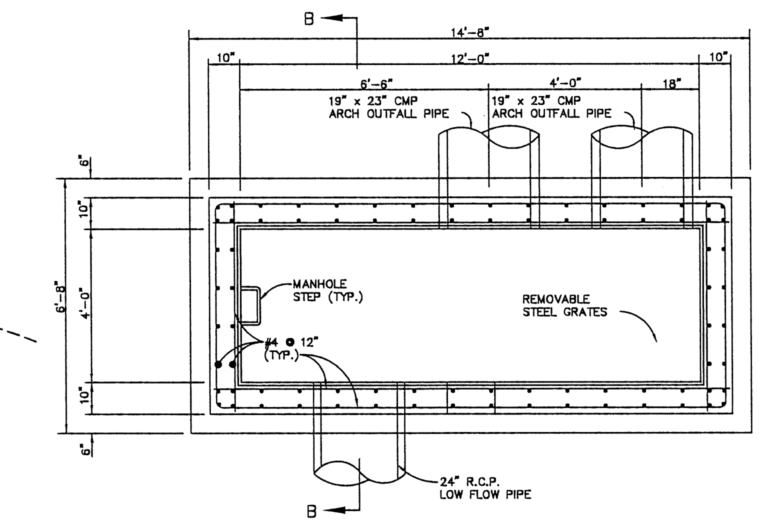

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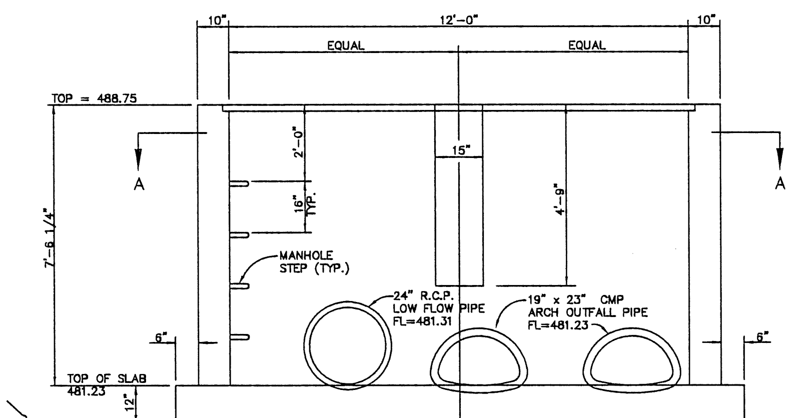
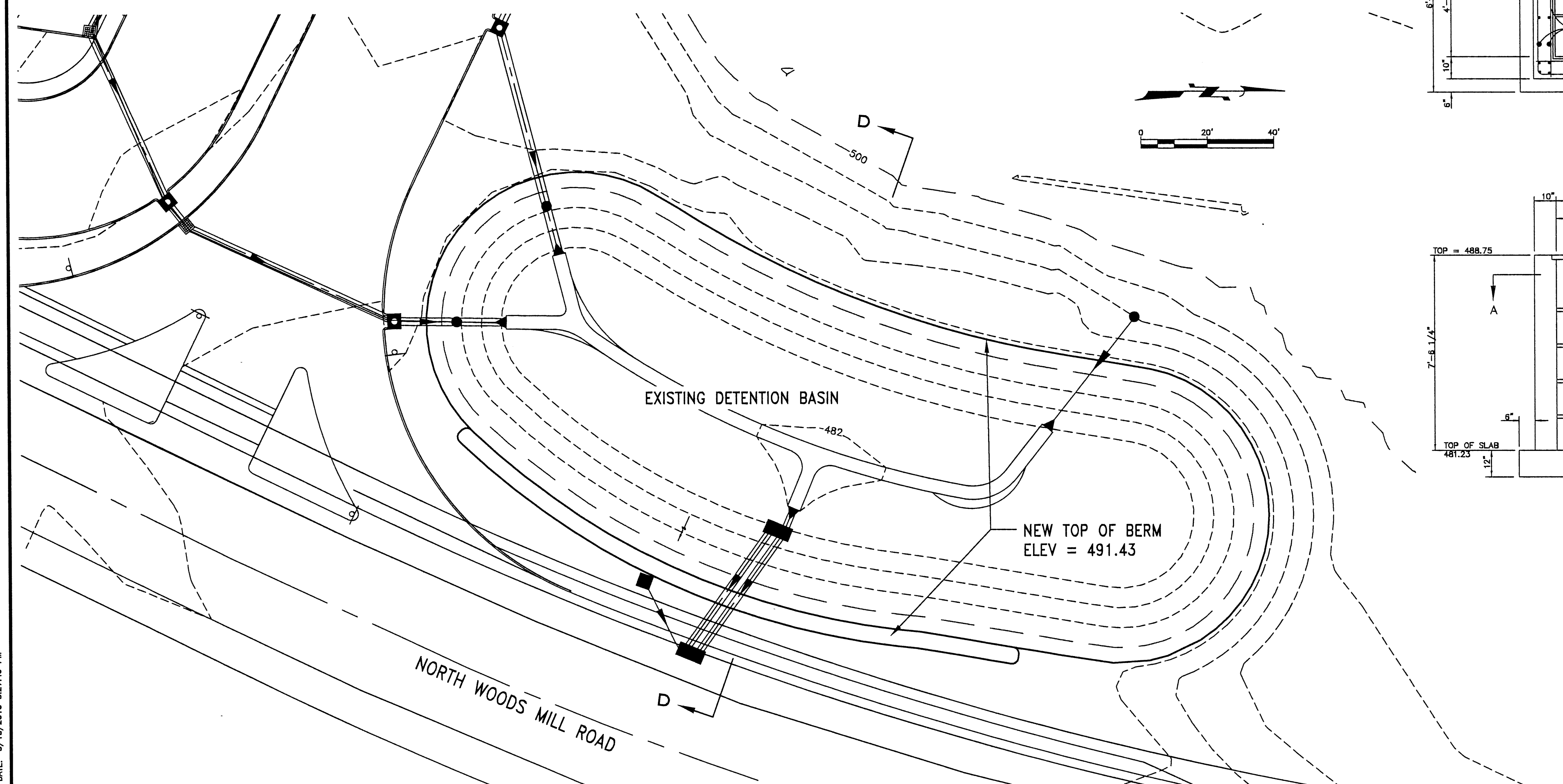


ELEVATION

EXISTING DETENTION BASIN
OVERFLOW STRUCTURE

NTS

(FOR REFERENCE ONLY)



MSD P-19772-03 BASE MAP: 17Q

NO.	DESCRIPTION	BY	DATE
1	MSD REVIEW COMMENTS	AMEC	03/22/2010

REVISIONS

PROJECT: CENTRAL MIDDLE SCHOOL
PSD PROJECT: 400901B
STORMWATER DETENTION BASIN

TITLE: EXISTING DETENTION BASIN

CLIENT: PARKWAY SCHOOL DISTRICT
455 North Woods Mill Road
Chesterfield, Missouri 63017
Phone: 314-415-8100 Fax: 314-415-8207

AMEC Earth & Environmental, Inc.
15933 Clayton Road, Suite 215
Ballwin, Missouri 63011
Phone: 636-386-3800 Fax: 636-386-3804
Discipline: Engineering Corporation
Corp Cert. of Auth. #2002000326

amec

Date:
Brad P. Loomis – Engineer
MO PE-2006019682

ISSUE FOR BID

Proj. No. 2008008	REV No. 0
DR: MJR	CHK: BPL
DATE: 05/18/2010	

C–6

SHEET NUMBER

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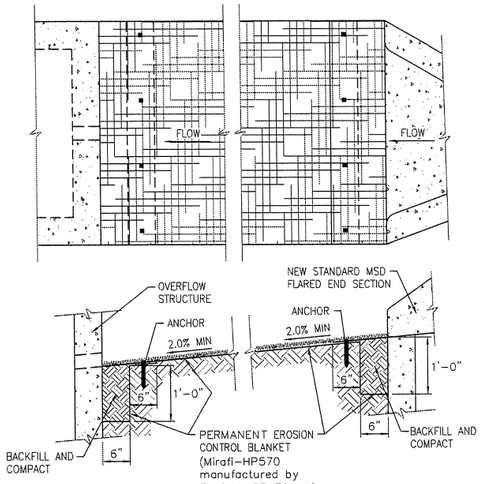
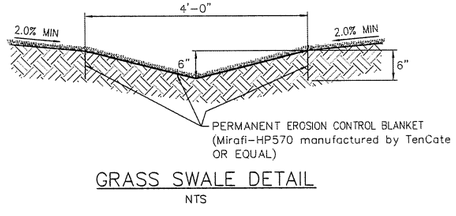


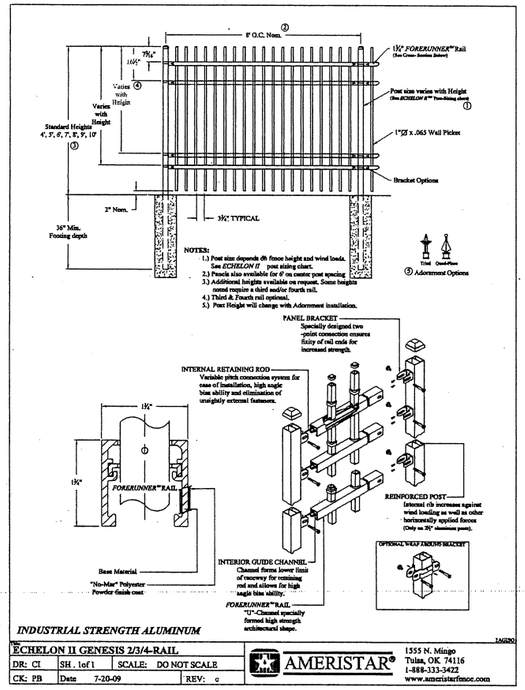
EROSION CONTROL BLANKET INSTALLATION DETAIL

NTS



GRASS SWALE DETAIL

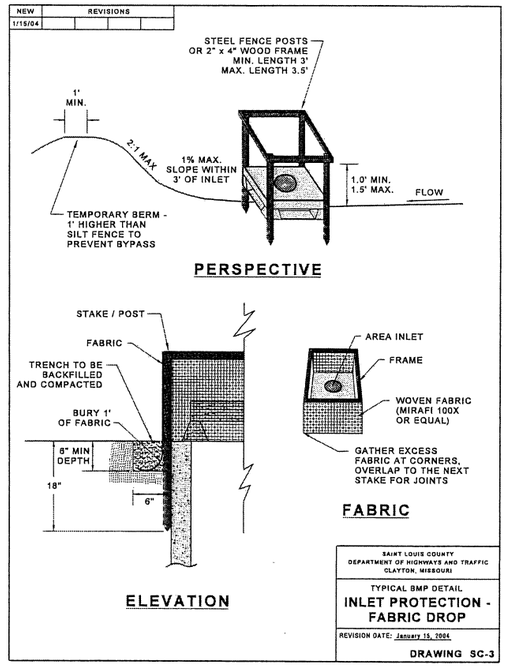
NTS



4' HIGH ALUMINUM FENCE DETAIL

NTS

NEW	REVISIONS
1/15/04	



SAINT LOUIS COUNTY
DEPARTMENT OF HIGHWAYS AND TRAFFIC
CLAYTON, MISSOURI

TYPICAL BMP DETAIL
INLET PROTECTION - FABRIC DROP

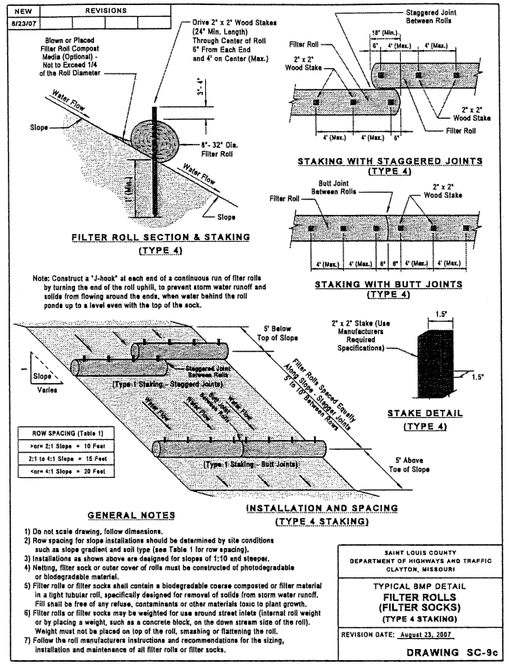
REVISION DATE: January 15, 2004

DRAWING SC-3

EROSION CONTROL INLET PROTECTION (FABRIC DROP) DETAIL

NTS

NEW	REVISIONS
8/23/07	



SAINT LOUIS COUNTY
DEPARTMENT OF HIGHWAYS AND TRAFFIC
CLAYTON, MISSOURI

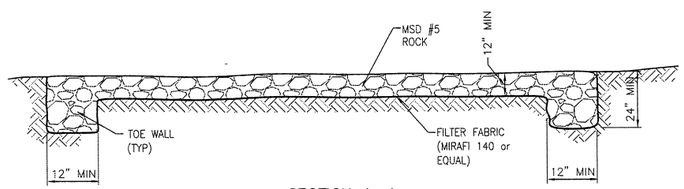
TYPICAL BMP DETAIL
FILTER ROLLS (FILTER SOCKS)
(TYPE 4 STAKING)

REVISION DATE: August 23, 2007

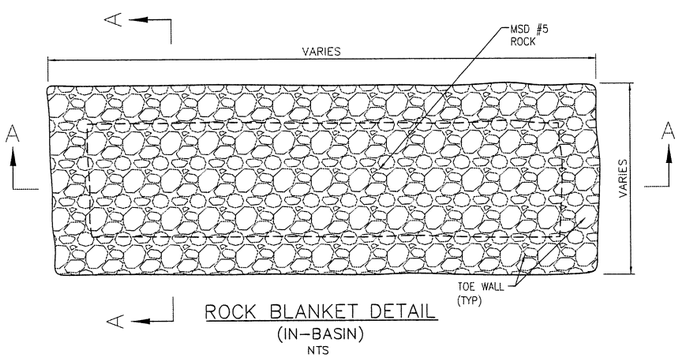
DRAWING SC-9c

EROSION CONTROL FILTER ROLL (FILTER SOCK) DETAIL

NTS

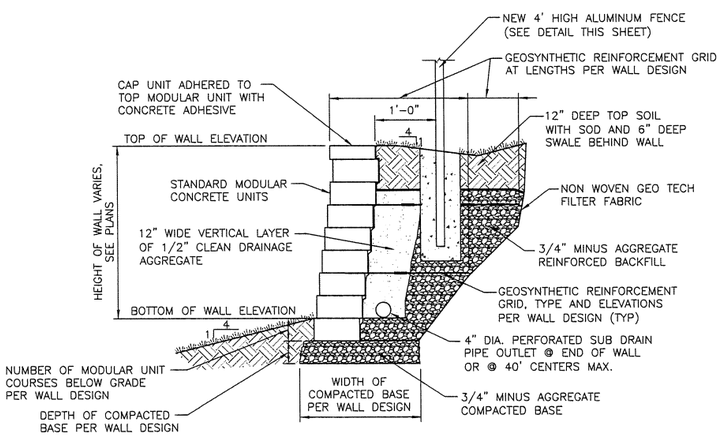


SECTION A–A



ROCK BLANKET DETAIL (IN-BASIN)

NTS



NOTES:

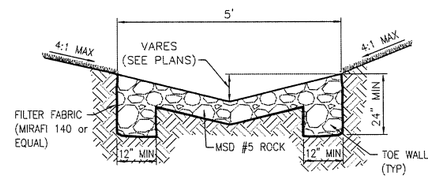
COLOR TO CONFORM TO JOB SPECIFICATIONS.

SEPARATE PERMIT REQUIRED FOR ALL WALLS 48" OR HIGHER.

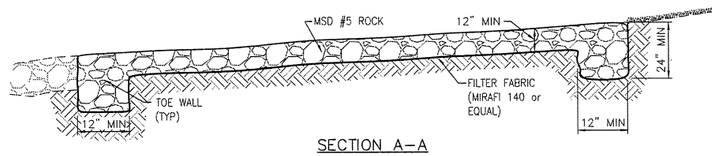
IN AREAS OF FILL AN IMPERMEABLE GEOMEMBRANE LINER SHALL BE INSTALLED.

TYPICAL SECTION – MANUFACTURED MODULAR WALL

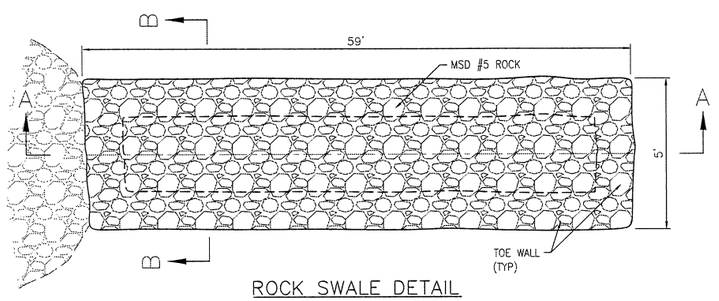
NTS



SECTION B–B



SECTION A–A



ROCK SWALE DETAIL

NTS

MSD P-19772-03 BASE MAP: 17Q

REVISIONS

NO.	DESCRIPTION	BY	DATE

PROJECT:
CENTRAL MIDDLE SCHOOL
PSD PROJECT: 400901B
STORMWATER DETENTION BASIN

TITLE:
SITE DETAILS

CLIENT:
PARKWAY SCHOOL DISTRICT
455 North Woods Mill Road
Chesterfield, Missouri 63017
Phone: 314-415-8100 Fax: 314-415-8207

AMEC Earth & Environmental, Inc.
15933 Clayton Road, Suite 215
Ballwin, Missouri 63011
Phone: 636-386-3000 Fax: 636-386-3804
Missouri Engineering Corporation
Corp Cert. of Auth. #2002000326

amec

Date:
Brad P. Loomis – Engineer
MO PE-2008019682

ISSUE FOR BID

Proj. No. 2008008	REV No. 0
DR: MJR	CHK: BPL
DATE: 05/18/2010	

C-7
SHEET NUMBER

PLOT DATE: 5/19/2010 3:29:57 PM

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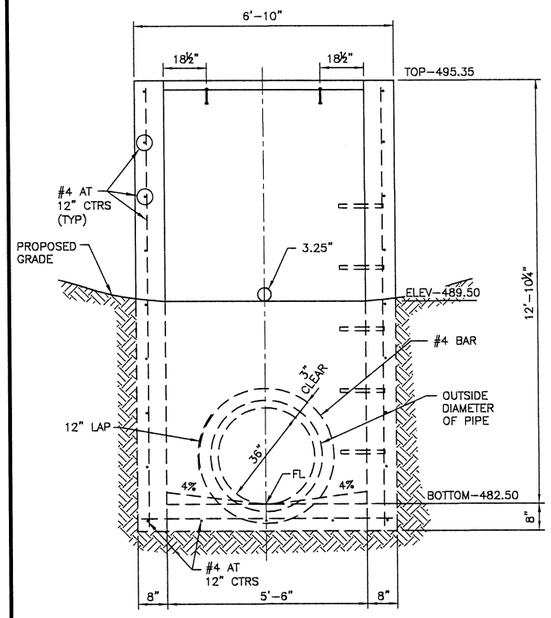
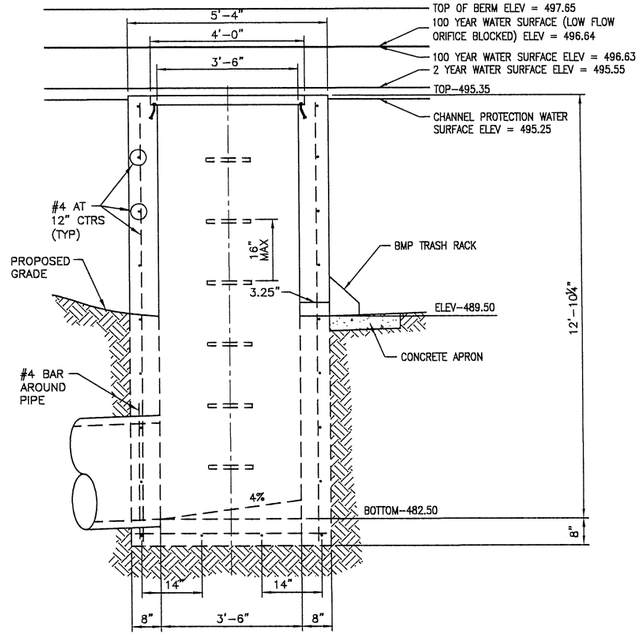
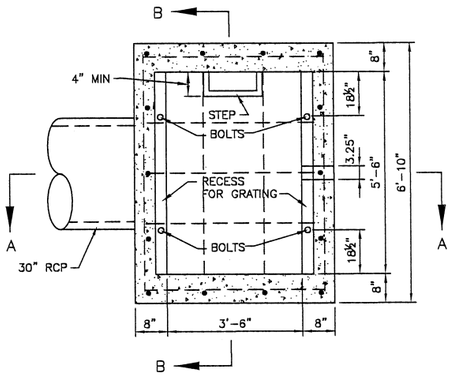


SECTION A-A
NTS



SECTION B-B
NTS

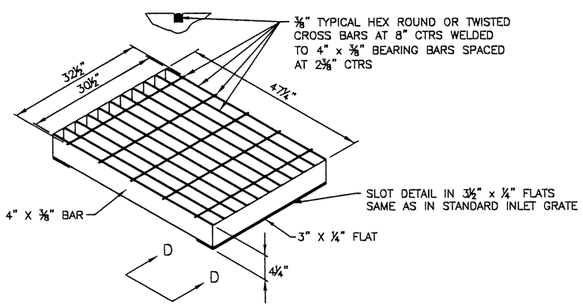
NOTE:
ENGINEER APPROVED SHOP DRAWINGS MUST BE SUBMITTED TO MSD PRIOR TO CONSTRUCTION OF THIS STRUCTURE.



PLAN
NTS

TOP OF BOX = 495.35
LOWEST HOLE = 489.50
INVERT OF OUTLET PIPE = 482.50

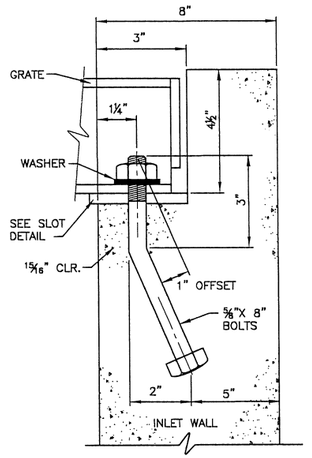
SECTION D-D
NTS



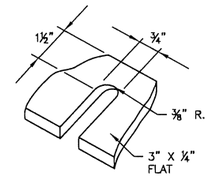
NOTE: 2 GRATES REQUIRED.

CLOSED MESH GRATE
NTS

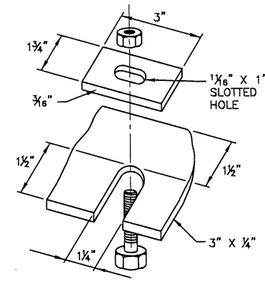
OVERFLOW STRUCTURE DETAILS
NTS



GRATE INSTALLATION DETAIL
NTS



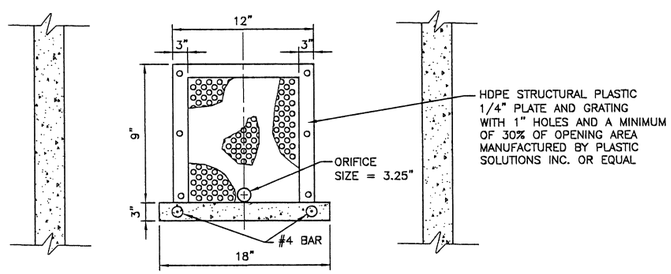
SLOT DETAIL
NTS



ALTERNATE SLOT AND HOLD DOWN PLATE DETAIL
NTS

ISOMETRIC

* SHOWN WITH OPTIONAL PLATE
SECTION



ELEVATION

BMP TRASH RACK
NTS

REVISIONS

NO.	DESCRIPTION	BY	DATE

PROJECT:
CENTRAL MIDDLE SCHOOL
PSD PROJECT: 400901B
STORMWATER DETENTION BASIN

TITLE:
SITE DETAILS

CLIENT:
PARKWAY SCHOOL DISTRICT
455 North Woods Mill Road
Chesterfield, Missouri 63017
Phone: 314-415-8100 Fax: 314-415-8207

AMEC Earth & Environmental, Inc.
15933 Clayton Road, Suite 215
Ballwin, Missouri 63011
Phone: 636-386-3804 Fax: 636-386-3804
Missouri Certificate of Authority #2005000326
Corp Cert. of Auth. #2005000326

Date:
Brad P. Loomis – Engineer
MO PE-2006019682

ISSUE FOR BID

Proj. No. 2006008	REV No. 0
DR: MJR	CHK: BPL
DATE: 05/18/2010	

C-8
SHEET NUMBER

MSD P-19772-03 BASE MAP: 17Q

PLOT DATE: 5/18/2010 3:30:38 PM

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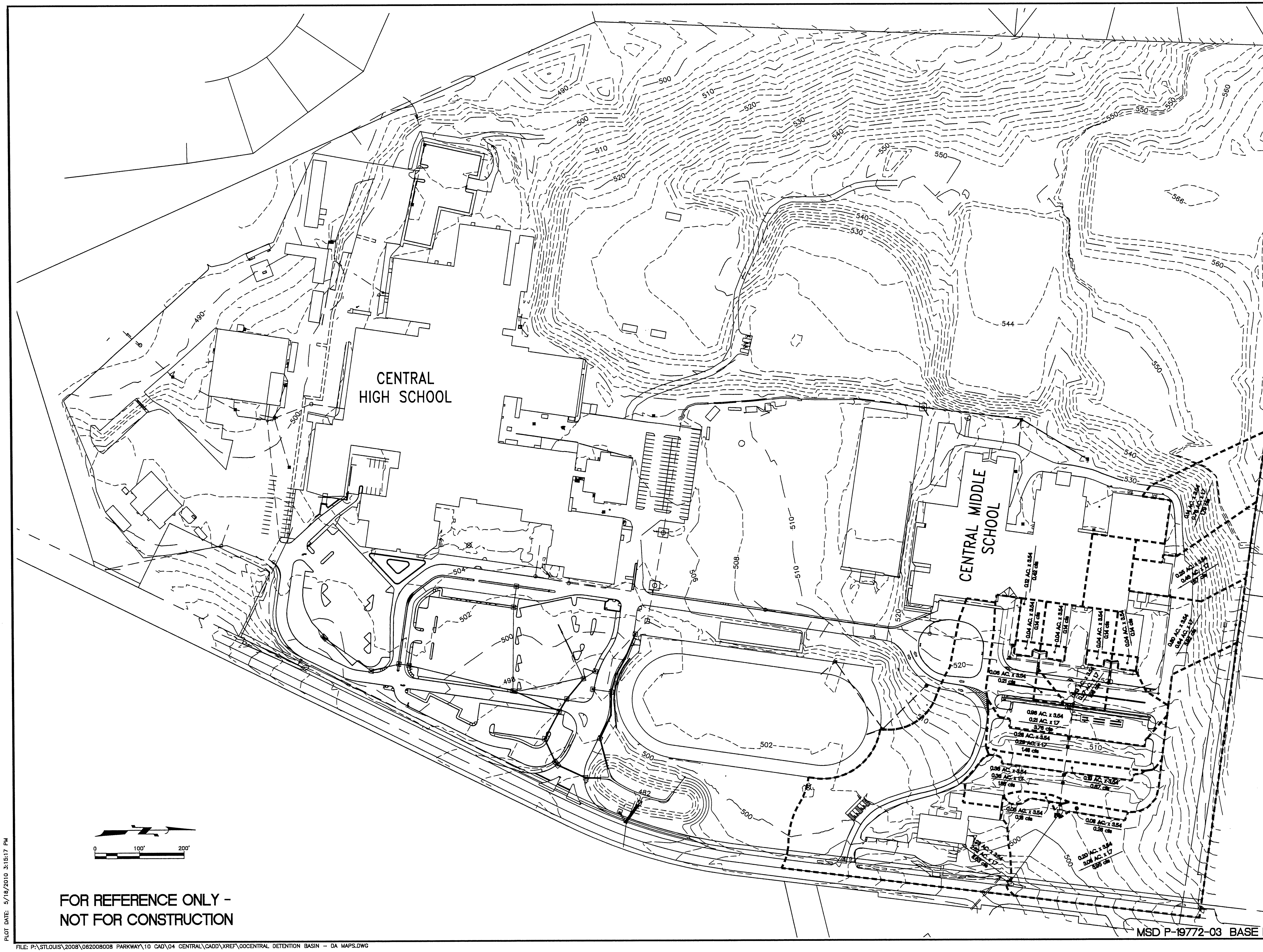


FOR REFERENCE ONLY -
NOT FOR CONSTRUCTION

PLOT SCALE: 1:2.5849
SHEET: ANSI A (8.50 X 11.00 Inches)
PENTABLE: ----
PLOT DATE: 5/18/2010 3:15:17 PM

FILE: P:\STLOUIS\2008\062008008 PARKWAY\10 CAD\04 CENTRAL\CADD\XREF\00CENTRAL DETENTION BASIN - DA MAPS.DWG

REVISIONS

NO.	DESCRIPTION	BY	DATE
1	MSD REVIEW COMMENTS	AMEC	03/22/2010

PROJECT:
CENTRAL MIDDLE SCHOOL
PSD PROJECT: 400901B
STORMWATER DETENTION BASIN

TITLE:
PRE-PROJECT CONDITIONS

CLIENT:
PARKWAY SCHOOL DISTRICT
455 North Woods Mill Road
Chesterfield, Missouri 63017
Phone: 314-415-8100 Fax: 314-415-8207

AMEC Earth & Environmental, Inc.
15933 Clayton Road, Suite 215
Ballwin, Missouri 63011
Phone: 636-386-3800 Fax: 636-386-3804
Discipline: Engineering Corporation
Corp Cert. of Auth. #2002000326

amec

Date: ____________
Brad P. Loomis - Engineer
MO PE-2006019682

ISSUE FOR BID

Proj. No. 2008008	REV No. 0
DR: MJR	CHK: CMS
DATE: 05/18/2010	

DA-1
SHEET NUMBER

FOR REFERENCE ONLY -
NOT FOR CONSTRUCTION

MSD P-19772-03 BASE MAP: 17Q

PLOT SCALE: 1:2.5849
SHEET: ANSI A (8.50 X 11.00 inches)
PENTABLE: ----
PLOT DATE: 5/18/2010 3:14:45 PM

FILE: P:\STLOUIS\2008\082008008 PARKWAY\10 CAD\04 CENTRAL\CADD\XREF\00CENTRAL DETENTION BASIN - DA MAPS.DWG

REVISIONS

NO.	DESCRIPTION	BY	DATE
1	MSD REVIEW COMMENTS	AMEC	03/22/2010

PROJECT:
CENTRAL MIDDLE SCHOOL
PSD PROJECT: 400901B
STORMWATER DETENTION BASIN

TITLE:
POST-PROJECT CONDITIONS

CLIENT:
PARKWAY SCHOOL DISTRICT
455 North Woods Mill Road
Chesterfield, Missouri 63017
Phone: 314-415-8100 Fax: 314-415-8207

AMEC Earth & Environmental, Inc.
15933 Clayton Road, Suite 215
Ballwin, Missouri 63011
Phone: 636-386-3800 Fax: 636-386-3804
Discipline: Engineering Corporation
Corp Cert. of Auth. #2002000326

amec

Date: ____
Brad P. Loomis - Engineer
MO PE-2005019682

ISSUE FOR BID

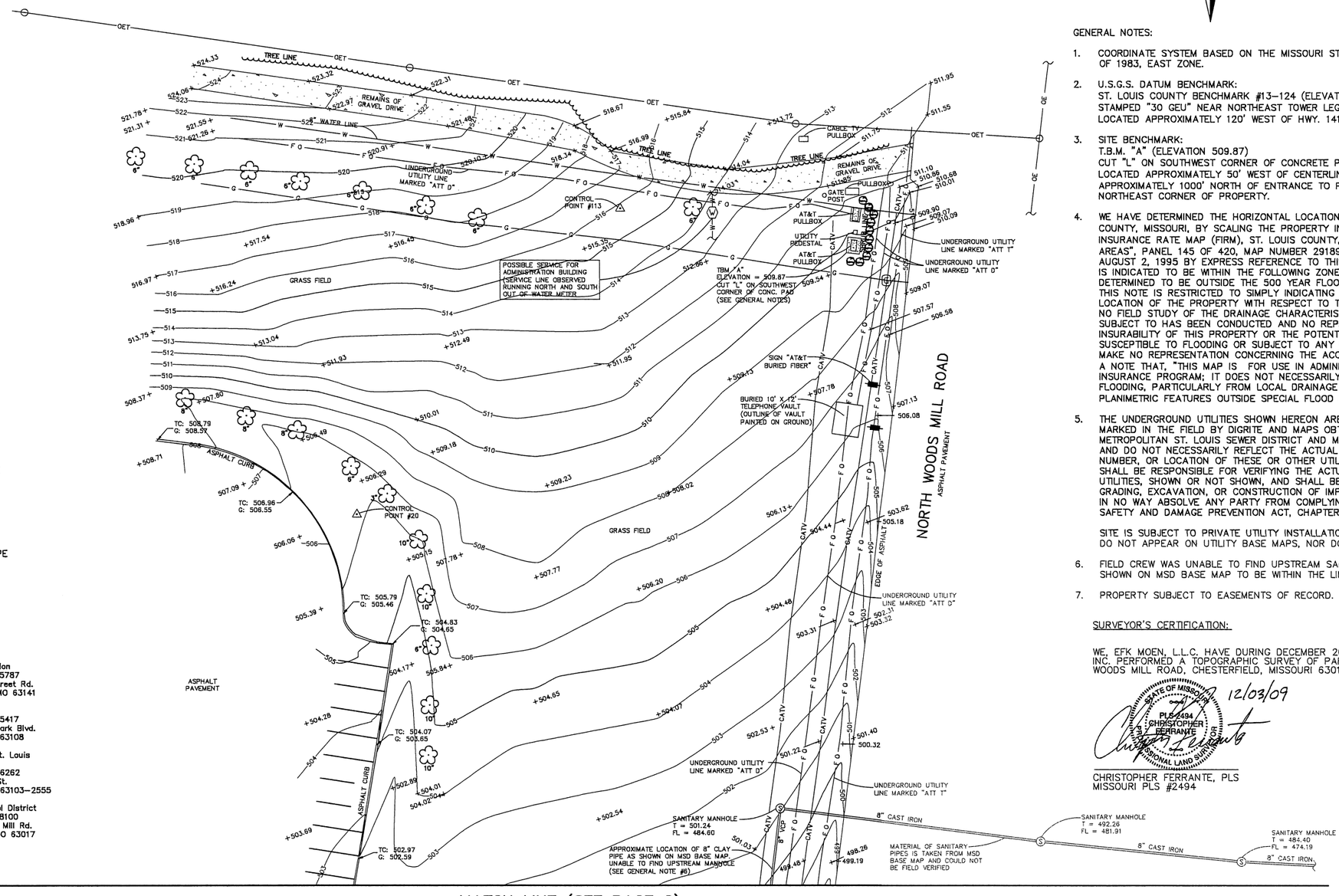
Proj. No. 2008008	REV No. 0
DR: MJR	CHK: BPL
DATE: 05/18/2010	

DA-2
SHEET NUMBER

A TOPOGRAPHIC SURVEY OF
PARKWAY CENTRAL MIDDLE SCHOOL
471 N. WOODS MILL ROAD
CHESTERFIELD, MISSOURI 63017

LEGEND

- BOUNDARY MARK
- CB — CATCH BASIN
- BM — BENCHMARK
- CULVERT END
- CO — CLEANOUT
- E — ELECTRIC MANHOLE
- TRAFFIC MASTER ARM
- FIRE HYDRANT
- G — GAS METER
- G — GAS MANHOLE
- GUY WIRE
- G — GAS VALVE
- HEADWALL END
- SIGN
- — E — BURIED ELEC
- — G — BURIED GAS
- —FO— FIBER OPTIC
- — T — BURIED TELEPHONE
- SHRUB
- LIGHT STANDARD
- MANHOLE INLET
- S — SANITARY MANHOLE
- D — STORM MANHOLE
- TP — TELEPHONE PEDESTAL
- TREE
- TRAFFIC CONTROL BOX
- TRANSMISSION TOWER
- UTILITY POLE
- W — WATER METER
- W — WATER MANHOLE
- W — WATER VALVE
- YARD LIGHT
- CMP — CORRUGATED METAL PIPE
- — W — BURIED WATER
- TC — TOP OF CURB ELEV.
- G — GUTTER ELEVATION
- CPP — CORRUGATED PLASTIC PIPE
- —OE— OVERHEAD ELECTRIC
- —OET— OVERHEAD ELEC. W/TELEPHONE



MATCH LINE (SEE PAGE 2)

N

20 0 20 40 60

Scale In Feet
Scale: 1"= 20'

GENERAL NOTES:

1. COORDINATE SYSTEM BASED ON THE MISSOURI STATE PLANE COORDINATE SYSTEM OF 1983, EAST ZONE.
2. U.S.G.S. DATUM BENCHMARK:
   ST. LOUIS COUNTY BENCHMARK #13–124 (ELEVATION 501.82) STANDARD TABLET STAMPED "30 GEU" NEAR NORTHEAST TOWER LEG OF THE SOUTHERN MOST POWERLINE. LOCATED APPROXIMATELY 120' WEST OF HWY. 141 AT PARKWAY CENTRAL HIGH SCHOOL.
3. SITE BENCHMARK:
   T.B.M. "A" (ELEVATION 509.87)
   CUT "L" ON SOUTHWEST CORNER OF CONCRETE PAD OF AT&T PHONE BOX #501. LOCATED APPROXIMATELY 50' WEST OF CENTERLINE OF WOODS MILL ROAD AND APPROXIMATELY 1000' NORTH OF ENTRANCE TO PARKWAY ADMINISTRATION BUILDING IN NORTHEAST CORNER OF PROPERTY.
4. WE HAVE DETERMINED THE HORIZONTAL LOCATION OF THIS TRACT OF LAND IN ST. LOUIS COUNTY, MISSOURI, BY SCALING THE PROPERTY IN REFERENCE TO THE "FLOOD INSURANCE RATE MAP (FIRM), ST. LOUIS COUNTY, MISSOURI, AND INCORPORATED AREAS", PANEL 145 OF 420, MAP NUMBER 29189C0145 H WITH EFFECTIVE DATE OF AUGUST 2, 1995 BY EXPRESS REFERENCE TO THIS MAP AND ITS LEGEND, THIS TRACT IS INDICATED TO BE WITHIN THE FOLLOWING ZONE: ZONE X – UNSHADED, AREAS DETERMINED TO BE OUTSIDE THE 500 YEAR FLOODPLAIN. THE EVALUATION PROVIDED IN THIS NOTE IS RESTRICTED TO SIMPLY INDICATING THE APPARENT PHYSICAL, HORIZONTAL LOCATION OF THE PROPERTY WITH RESPECT TO THE FEATURES DISPLAYED ON THE MAP. NO FIELD STUDY OF THE DRAINAGE CHARACTERISTICS TO WHICH THIS PROPERTY MAY BE SUBJECT TO HAS BEEN CONDUCTED AND NO REPRESENTATION CONCERNING THE INSURABILITY OF THIS PROPERTY OR THE POTENTIAL OF THIS PROPERTY TO BE SUSCEPTIBLE TO FLOODING OR SUBJECT TO ANY FLOOD HAZARD HAS BEEN MADE. WE MAKE NO REPRESENTATION CONCERNING THE ACCURACY OF THIS FIRM WHICH INCLUDES A NOTE THAT, "THIS MAP IS FOR USE IN ADMINISTERING THE NATIONAL FLOOD INSURANCE PROGRAM; IT DOES NOT NECESSARILY IDENTIFY ALL AREAS SUBJECT TO FLOODING, PARTICULARLY FROM LOCAL DRAINAGE SOURCES OF SMALL SIZE, OR ALL PLANIMETRIC FEATURES OUTSIDE SPECIAL FLOOD HAZARD AREAS."
5. THE UNDERGROUND UTILITIES SHOWN HEREON ARE TAKEN FROM UTILITY LOCATIONS AS MARKED IN THE FIELD BY DIGRITE AND MAPS OBTAINED FROM LACLEDE GAS COMPANY, METROPOLITAN ST. LOUIS SEWER DISTRICT AND MISSOURI–AMERICAN WATER COMPANY AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319, RSMO.

   SITE IS SUBJECT TO PRIVATE UTILITY INSTALLATIONS. PRIVATE UTILITY INSTALLATIONS DO NOT APPEAR ON UTILITY BASE MAPS, NOR DOES DIGRITE LOCATE PRIVATE UTILITIES.
6. FIELD CREW WAS UNABLE TO FIND UPSTREAM SANITARY MANHOLE. SAID MANHOLE IS SHOWN ON MSD BASE MAP TO BE WITHIN THE LIMITS OF THIS TOPOGRAPHIC SURVEY.
7. PROPERTY SUBJECT TO EASEMENTS OF RECORD.

SURVEYOR'S CERTIFICATION:

WE, EFK MOEN, L.L.C. HAVE DURING DECEMBER 2009, BY ORDER OF AMEC INFRASTRUCTURE, INC. PERFORMED A TOPOGRAPHIC SURVEY OF PARKWAY CENTRAL MIDDLE SCHOOL, 471 N. WOODS MILL ROAD, CHESTERFIELD, MISSOURI 63017, AND THE RESULTS ARE SHOWN HEREON.

STATE OF MISSOURI — PLS-2494 — CHRISTOPHER FERRANTE — PROFESSIONAL LAND SURVEYOR — 12/03/09

CHRISTOPHER FERRANTE, PLS
MISSOURI PLS #2494

UTILITY INFORMATION:

Ameren UE
Ph. 314–878–5787
1132 Locust St.
St. Louis, MO 63101

AT&T Transmission TCG
Ph. 800–252–1133
2315 Salem Rd.
1st Floor G–11
Conyers, GA 30013

Missouri American Water Co.
Ph. 314–996–2432
727 Craig Rd.
St. Louis, MO 63131

Charter Communications
Ph. 314–878–5787
2275 Cassens Dr.
Fenton, MO 63026

XO Communications
Ph. 314–787–7000
2020 Westport Center Dr.
St. Louis, MO 63146

AT&T Distribution
Ph. 314–878–5787
12930 Olive Street Rd.
Creve Coeur, MO 63141

Laclede Gas
Ph. 314–658–5417
3950 Forest Park Blvd.
St. Louis, MO 63108

Metropolitan St. Louis Sewer District
Ph. 314–768–6262
2350 Market St.
St. Louis, MO 63103–2555

Parkway School District
Ph. 314–415–8100
455 N. Woods Mill Rd.
Chesterfield, MO 63017

PREPARED BY:
EFK•Moen, LLC
Civil Engineering Design
13523 Barrett Parkway, Suite 250
St. Louis, Missouri 63021
Voice: 314–729–4100
Fax: 314–729–4199

PROJECT NAME: PARKWAY CENTRAL DETENTION

PROJECT NO.: 08058.16 | SHEET 1 OF 2

A TOPOGRAPHIC SURVEY OF
PARKWAY CENTRAL MIDDLE SCHOOL
471 N. WOODS MILL ROAD
CHESTERFIELD, MISSOURI 63017

UTILITY INFORMATION:

Ameren UE
Ph. 314-878-5787
1132 Locust St.
St. Louis, MO 63101

AT&T Transmission TCG
Ph. 800-252-1133
2315 Salem Rd.
1st Floor G-11
Conyers, GA 30013

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12930 Olive Street Rd.
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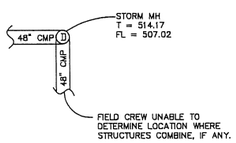
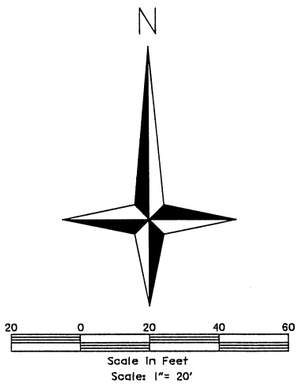
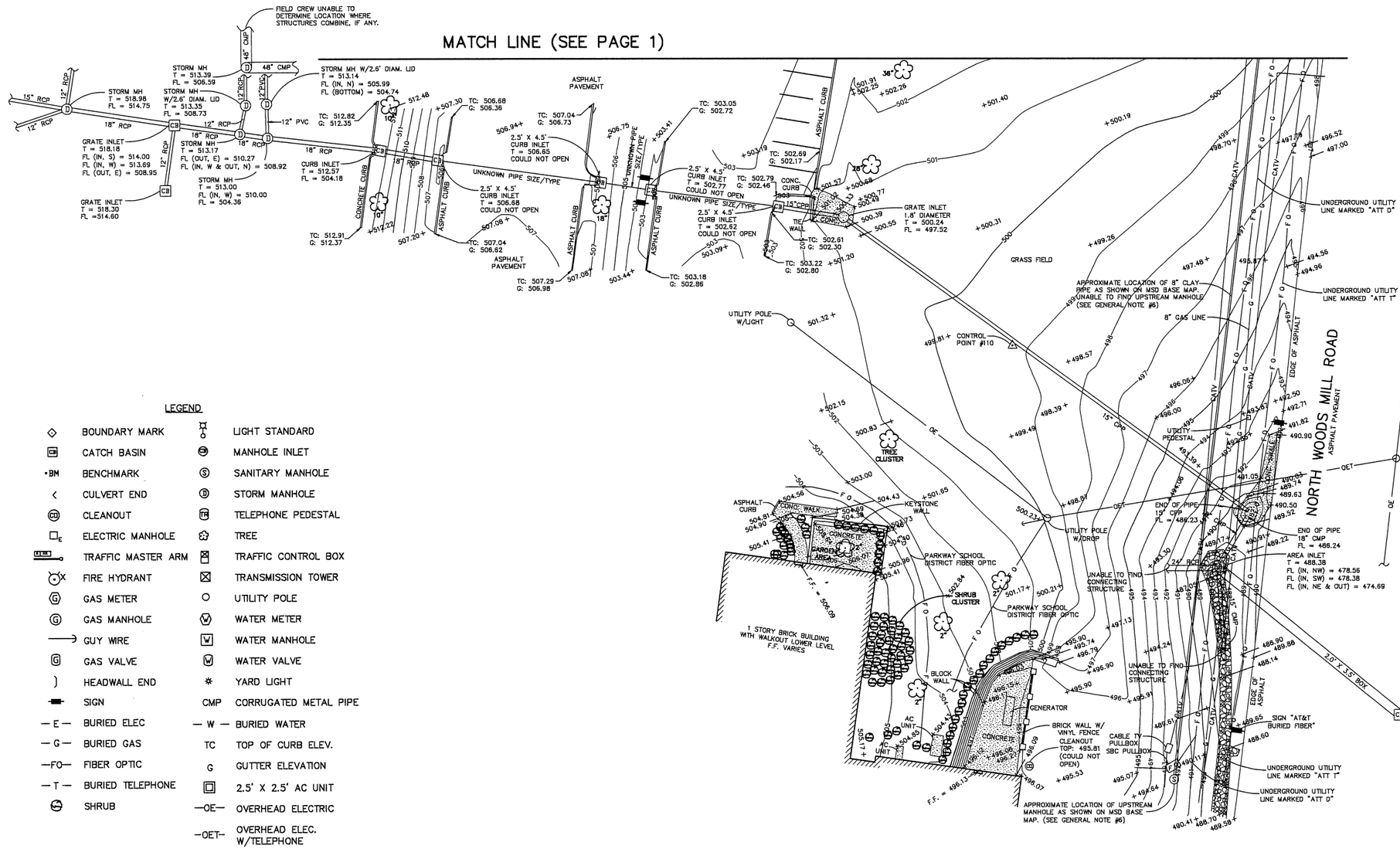
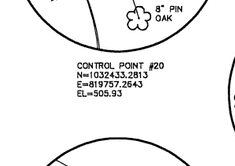
Ph. 314-415-8100
455 N. Woods Mill Rd.
Chesterfield, MO 63017



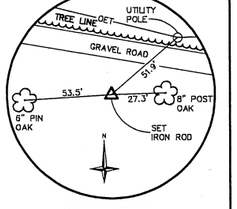




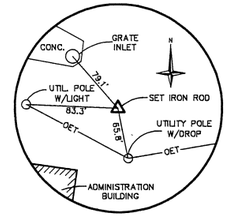
THREE POINT TIES



CONTROL POINT #20
N=1032433.2813
E=819757.2643
EL=505.93



CONTROL POINT #113
N=1032548.457
E=819856.979
EL=516.09



CONTROL POINT #110
N=1032187.0402
E=819820.8917
EL=499.50

LEGEND

◇	BOUNDARY MARK	⚲	LIGHT STANDARD
CB	CATCH BASIN	MH	MANHOLE INLET
BM	BENCHMARK	S	SANITARY MANHOLE
<	CULVERT END	D	STORM MANHOLE
CO	CLEANOUT	TP	TELEPHONE PEDESTAL
E	ELECTRIC MANHOLE	✿	TREE
	TRAFFIC MASTER ARM	⊠	TRAFFIC CONTROL BOX
	FIRE HYDRANT	⊠	TRANSMISSION TOWER
G	GAS METER	○	UTILITY POLE
G	GAS MANHOLE	W	WATER METER
——→	GUY WIRE	W	WATER MANHOLE
G	GAS VALVE	W	WATER VALVE
)	HEADWALL END	✲	YARD LIGHT
▬	SIGN	CMP	CORRUGATED METAL PIPE
— E —	BURIED ELEC	— W —	BURIED WATER
— G —	BURIED GAS	TC	TOP OF CURB ELEV.
—FO—	FIBER OPTIC	G	GUTTER ELEVATION
— T —	BURIED TELEPHONE	▣	2.5' X 2.5' AC UNIT
	SHRUB	—OE—	OVERHEAD ELECTRIC
		—OET—	OVERHEAD ELEC. W/TELEPHONE
		CPP	CORRUGATED PLASTIC PIPE

PREPARED BY:
EFK • Moen, LLC
Civil Engineering Design
13523 Barrett Parkway, Suite 250
St. Louis, Missouri 63021
Voice: 314-729-4100
Fax: 314-729-4199

PROJECT NAME: PARKWAY CENTRAL DETENTION

PROJECT NO.: 08058.16 | SHEET 2 OF 2

SECTION 7

CENTRAL HIGH

BMP ORIGINAL PROJECT INFORMATION

--SCIENCE LAB ADDITION
--SYNTHETIC TURF FIELDS
--MSD PROJECT 20MSD-00501

SAINT LOUIS COUNTY HIGHWAYS AND TRAFFIC NOTES:

1. PROVIDE ADEQUATE OFF-STREET PARKING FOR CONSTRUCTION EMPLOYEES. PARKING ON NON-SURFACED AREAS SHALL BE PROHIBITED IN ORDER TO ELIMINATE THE CONDITION WHEREBY MUD FROM CONSTRUCTION AND EMPLOYEE VEHICLES IS TRACKED ONTO THE PAVEMENT CAUSING HAZARDOUS ROADWAY AND DRIVEWAY CONDITIONS.
2. THE DEVELOPER IS REQUIRED TO PROVIDE ADEQUATE STORM WATER SYSTEMS IN ACCORDANCE WITH ST. LOUIS COUNTY STANDARDS.
3. INTERNAL (PRIVATE) STORM SEWERS WILL REQUIRE A SEPARATE DRAINLAYER PERMIT FROM ST. LOUIS COUNTY DEPARTMENT OF PUBLIC WORKS.

CONTRACTOR PARKING:

EXISTING PAVED ASPHALT PARKING LOT

NOTE: Underground facilities, structures, and utilities have been plotted from best available records, therefore the relationship between proposed work and existing facilities, structures, and utilities must be considered approximate, and it is the contractors responsibility to determine their exact location and the existence of any not shown.

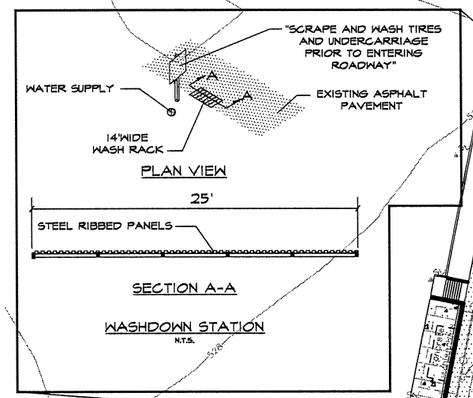
BENCHMARK INFORMATION:

15-124 SQ1.82 - "STANDARD TABLET" stamped "30 SEU 1975 set in Northeast tower leg of Southernmost power line about 120' West of Highway 141 @ Parkway Central High School Parking Lot.

SITE TBM-800 Spike Nail

SCALE: 1"=30'

0 30' 60'



FINISH FLOOR ELEVATIONS
FIRST FLOOR=509.50
SECOND FLOOR=523.50

WASHDOWN STATION

NATATORIUM

GYMNASIUM

BMP DEVICE	ESTIMATED QUANTITY	ESTIMATED UNIT PRICE	ESTIMATED COST
Silt Fence	XXX LF	$X.XX/LF	$X.XX
Sod	XXX SY	$X.XX/LF	$X.XX
Wash Down Station	1 EA	$X/EA	$X.XX
		TOTAL	$X.XX

TOTAL PARCEL AREA:	99 AC
PROJECT AREA:	1.3 AC
IMPERVIOUS PROJECT AREA BEFORE CONSTRUCTION:	
PAVEMENT (Sidewalk and Parking)	0.14 AC
IMPERVIOUS PROJECT AREA AFTER CONSTRUCTION:	
BUILDING	0.40 AC
PAVEMENT (Sidewalk and Parking)	0.40 AC
ESTIMATED EARTHWORK CALCULATIONS (BID PACK 1):	
TOTAL ESTIMATED EXCAVATION	2600 CY
TOTAL ESTIMATED EMBANKMENT	850 CY

LEGEND EXISTING CONDITIONS

CONTOUR --ELEV--
SPOT ELEVATION ELEV
SEWER
FOUND IRON PIPE
GRATE INLET
AREA INLET
DRAIN DR
ROOF DRAIN RD
VENT V
MANHOLE
LIGHT STANDARD
SIGN
CLEANOUT CO
GUY WIRE
POWER POLE PP
WATER VALVE WV
WATER METER WM
SPRINKLER VALVE SV
GAS VALVE GV
GAS METER GM
GAS DRIP GD
FIRE HYDRANT
WATER SPRINKLER
FLAGPOLE
WATER LINE -W-
GAS LINE -G-
OVERHEAD ELECTRIC -OE-
ELECTRIC BOX EB
UNDERGROUND TELEPHONE -UT-
TELEPHONE BOX TB
BUSH
TREE

LEGEND NEW WORK

CONTOUR —ELEV—
SPOT ELEVATION ELEV
STORM SEWER
SANITARY SEWER
MANHOLE
CLEANOUT CO
GRATE INLET
WATER LINE —W—
FIRE HYDRANT
GAS SERVICE —G—
ELECTRIC SERVICE —E—
TELEPHONE SERVICE —T—
CONCRETE PAVEMENT
ASPHALT PAVEMENT
TO BE REMOVED T.B.R.
USE IN PLACE U.I.P.
ADJUST TO GRADE A.T.G.
TO BE REMOVED & REPLACED T.B.R.&R.
TO BE PROTECTED T.B.P.
TO BE ABANDONED T.B.A.
REVOVE ALL SURFACE IMPROVEMENTS
ASPHALT OVERLAY

NOTE:

SEE SURVEY DRAWINGS FOR PARKWAY UTILITY LEGEND

THE SEAL OF STANLEY F. VISNOVSKE ON THIS DRAWING APPLIES ONLY TO THE CIVIL/SITE ENGINEERING SHOWN. IT DOES NOT APPLY, NOR IS ANY RESPONSIBILITY TAKEN FOR GEOTECHNICAL (INCLUDING BUT NOT LIMITED TO SLOPE STABILITY), STRUCTURAL, HVAC, PLUMBING, ELECTRICAL, FIRE PROTECTION, TRAFFIC ENGINEERING, SURVEYING (BOUNDARY AND TOPOGRAPHIC), OR ARCHITECTURAL (BUILDING OR LANDSCAPE).

PB 100 YEARS ®

PARSONS BRINCKERHOFF
1831 CHESTNUT STREET, ST. LOUIS MO. 63103-2225
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GENESIS ENGINEERING
16141 SWINGLY RIDGE ROAD SUITE 300
ST. LOUIS MISSOURI 63017

REV	DESCRIPTION	DATE

BID PACKAGE 2 - FINAL BID DOCUMENTS
Science Renovations / Addition
PARKWAY CENTRAL HIGH SCHOOL
369 NORTH WOODS MILL ROAD
Chesterfield, Missouri 63017

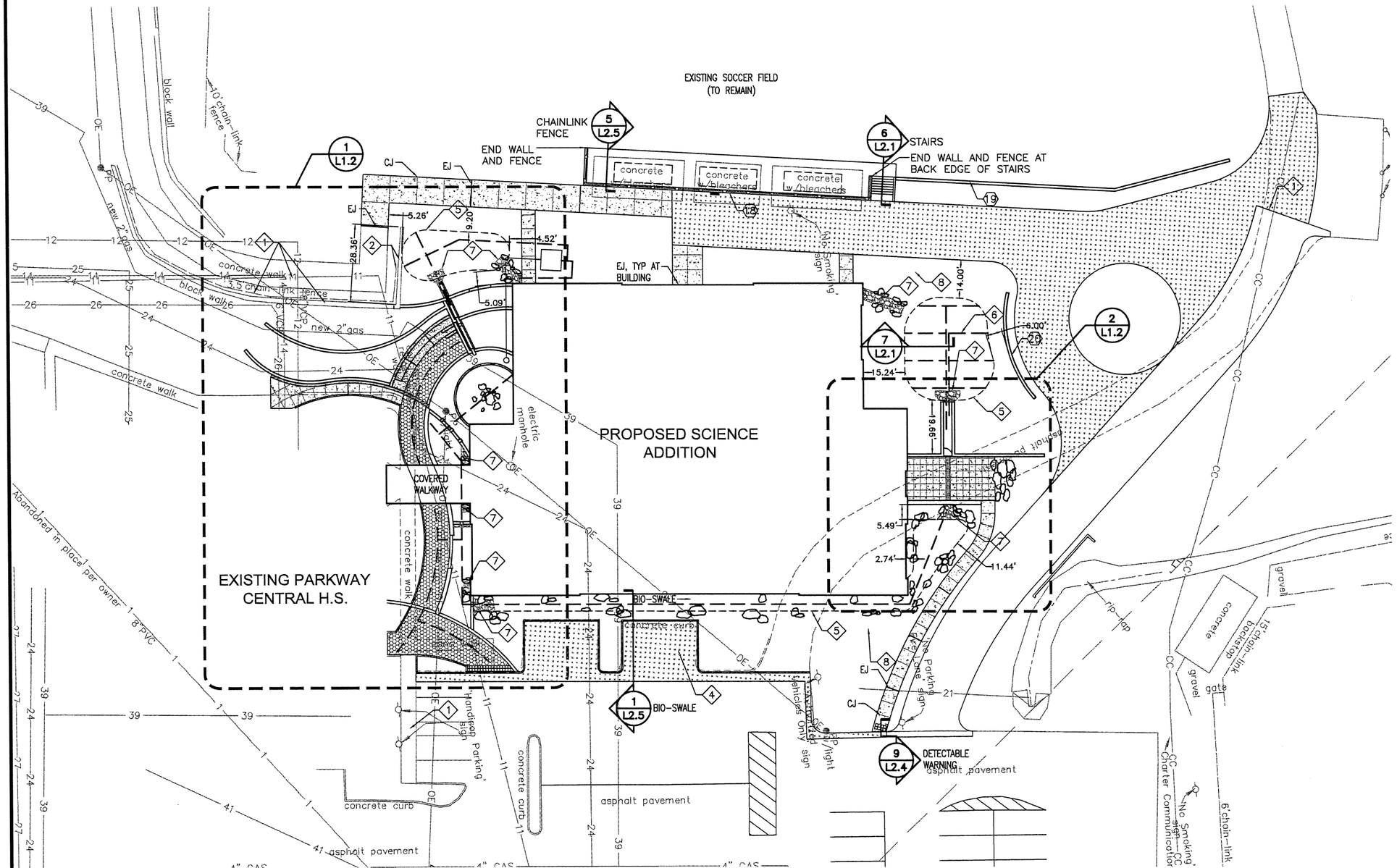
PARKWAY SCHOOL DISTRICT

STATE OF MISSOURI

Name / Number Date
Stanley F. Visnovske, P.E. / 018136
Genesis Engineering, Inc. Corporate Number 2005009462

SHEET CONTENT
STORMWATER POLLUTION PREVENTION PLAN

DATE:	OCTOBER 27, 2009
SCALE:	AS NOTED
DRAWN BY:	SFV
CHECKED BY:	SFV
APPROVED BY:	SFV
PSD PROJECT NUMBER:	PN5008018
PB PROJECT NUMBER:	35998A
SHEET NUMBER:	C3.1



SHEET NOTES

1. UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THE VERIFICATION OF THE LOCATION OF UNDERGROUND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE LOCATED PRIOR TO ANY GRADING OR CONSTRUCTION OF IMPROVEMENTS.
2. UNLESS OTHERWISE INDICATED, ALL CAST-IN-PLACE CONCRETE SITE WALLS SHALL RECEIVE AN INTEGRAL COLOR AND A RUBBED SMOOTH FORM FINISH. COLOR SELECTION BY OWNER'S REPRESENTATIVE FROM MANUFACTURER'S FULL RANGE. HONEYCOMBS, SPALLING, FORM LINES OR OTHER OBJECTIONABLE DISTORTIONS IN THE SURFACE OF THE CONCRETE WILL BE CAUSE FOR REJECTION.
3. SEE L1.2 FOR WALL SCHEDULE.
4. SEE CIVIL FOR SITE DIMENTIONS.

KEY NOTES

1. EXISTING, SEE CIVIL.
2. REMOVE THIS SHORT SECTION OF WALL AND FENCE AND BLEND REMAINING WALL WITH PROPOSED WALL. SEE CIVIL FURTHER INSTRUCTION.
3. RE-ALIGNED DRIVEWAY, SEE CIVIL DRAWINGS.
4. REMOVE AND REPLACE PAVEMENT AS INDICATED, SEE CIVIL DRAWINGS.
5. LIMITS OF BIO-RETENTION SOILS.
6. UNDERDRAIN
7. ROCK REVETMENT AT OUTFALL, SEE DETAIL 6/L2.5
8. ACID NEUTRALIZATION TANK, SEE CIVIL DRAWINGS.

PROPOSED LEGEND

- POROUS PAVERS, DETAIL 9/L2.1
- CONCRETE SIDEWALK, SEE CIVIL DETAILS
- ASPHALT, SEE CIVIL DETAILS
- ROCK REVETMENT
- TRENCH DRAIN
- RETAINING WALL
- UNDERDRAIN
- WALL TYPE SEE PAGE L1.2
- ROCK OUTCROP / BOULDERS

1 DETAIL REFERENCE PLAN

1" = 20'-0"

5 0 10 20

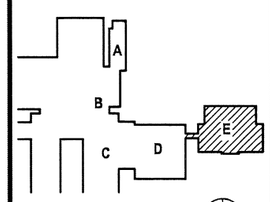
N

LANDSCAPE ABBREVIATIONS

BAR –	STEEL REBAR	FT. –	FOOT / FEET
BW –	BOTTOM OF WALL	MAX. –	MAXIMUM
CJ –	CONTROL JOINT	MIN. –	MINIMUM
CL –	CLEAR	MFG. –	MANUFACTURING
DIA –	DIAMETER	MSD –	METROPOLITAN ST LOUIS SEWER DISTRICT
EF –	EACH FACE		
EJ –	EXPANSION JOINT	R –	RADIUS
EW –	EACH WAY	SCH. –	SCHEDULE
EL. / ELEV.	ELEVATION	TYP. –	TYPICAL
FFE –	FINISH FLOOR ELEVATION	TW –	TOP OF WALL
F.G. –	FINISH GRADE		

GENERAL NOTE

IT IS THE RESPONSIBILITY OF THE PRIME CONTRACTOR TO MAKE SURE THAT HE AND ALL HIS SUBCONTRACTORS COORDINATE THE WORK SHOWN ON THE "L" SERIES DRAWINGS WITH ALL OTHER DRAWINGS OF THE CONSTRUCTION DOCUMENTS. CLAIMS RESULTING FROM LACK OF COORDINATION WILL BE REJECTED. IF INCONSISTENCIES OR CONFLICTING DIRECTION IS DISCOVERED, THE CONTRACTOR SHALL CONTACT THE OWNER'S REPRESENTATIVE IMMEDIATELY.



KEY PLAN

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Science Renovations / Addition
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369 NORTH WOODS MILL ROAD
Chesterfield, Missouri 63017

PARKWAY SCHOOL DISTRICT

STATE OF MISSOURI

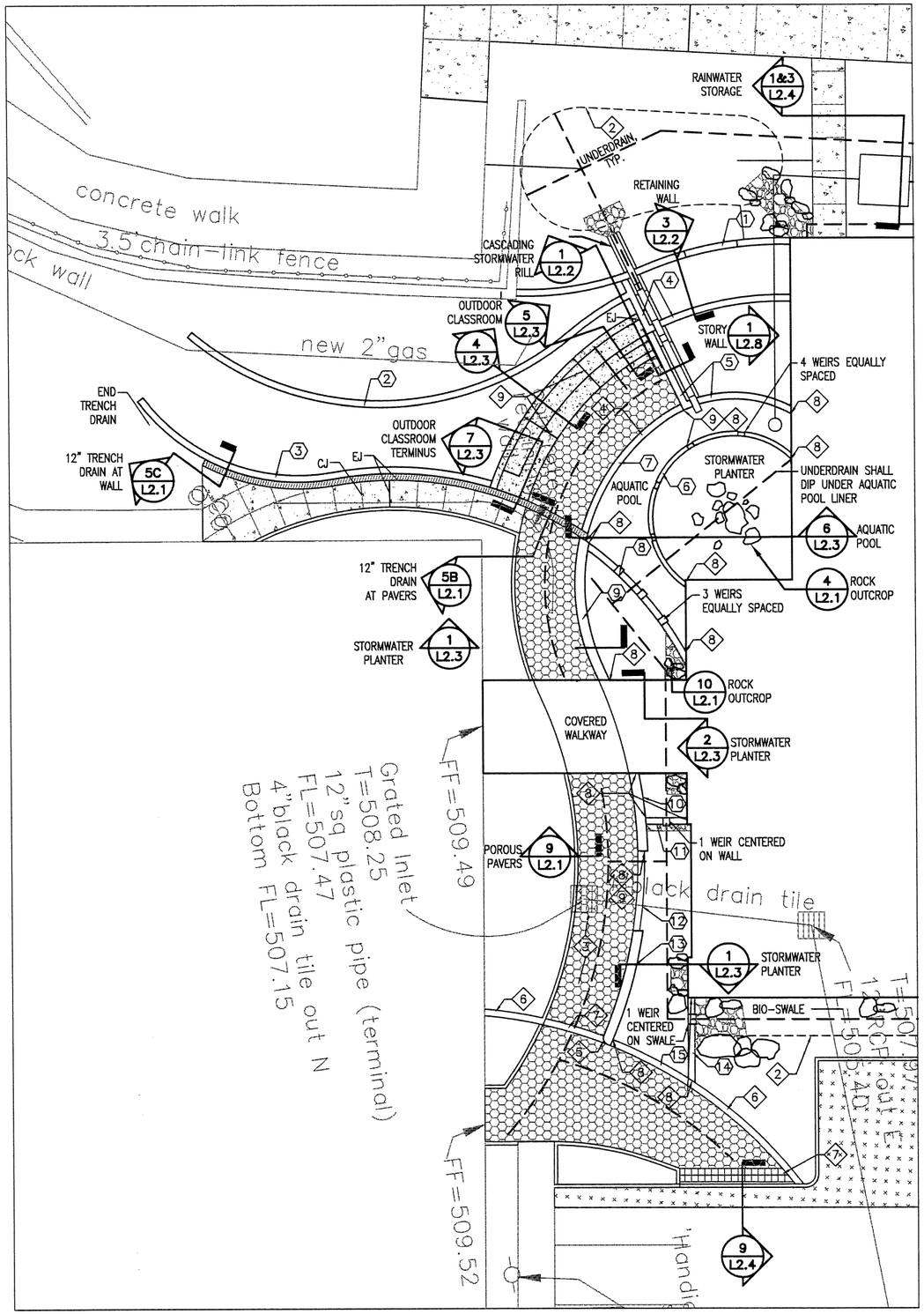
Name / Number	Date
Lann Miller, Landscape Architect / 2002009610 PB Americas, Inc. / 000044	

SHEET CONTENT
DETAIL REFERENCE PLAN

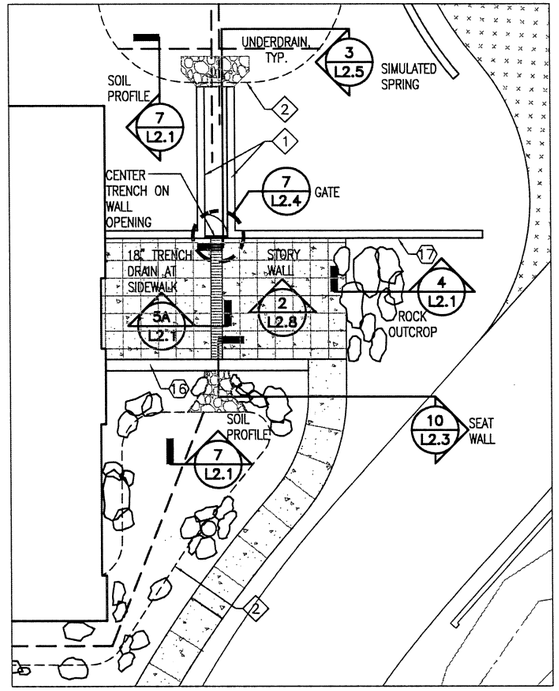
DATE:	OCTOBER 27, 2009
SCALE:	1" = 20'-0"
DRAWN BY:	LEL
CHECKED BY:	HLM
APPROVED BY:	HLM

PSD PROJECT NUMBER: PN5008018
PB PROJECT NUMBER: 35998A

SHEET NUMBER: **L1.1**



1 ENLARGED SITE PLAN
1" = 10'-0"
2.5 0 5 10
N



2 ENLARGED SITE PLAN
1" = 10'-0"
2.5 0 5 10
N

WALL SCHEDULE

WALL NO.	WALL TYPE	DETAIL REFERENCE	COMMENTS
1	SEGMENTAL BLOCK	3 TO 7, 9/L2.2	MANUFACTURER, MODEL AND COLOR SHALL MATCH EXISTING WALL.
2	SEGMENTAL BLOCK	3 – 9/L2.2	SEE NOTE 1 DETAIL 8/L2.2 FOR WALL TYPE.
3	SEGMENTAL BLOCK	3 – 9/L2.2	TYPE SAME AS WALL 2
4	SEGMENTAL BLOCK	3 – 9/L2.2	TYPE SAME AS WALL 2
5	SEGMENTAL BLOCK	3 – 9/L2.2, 8/L2.3	CONCRETE LEVELING PAD REQUIRED, TYPE SAME AS WALL 2
6	CAST–IN–PLACE	6 AND 9/L2.3	AQUATIC POOL AND STORMWATER PLANTER WALLS
7	CAST–IN–PLACE	8/L2.3, SIMILAR	FORMS FOOTING OF WALL 5
8	CAST–IN–PLACE	3/L2.3	–
9	CAST–IN–PLACE	1, 10/L2.3	–
10	CAST–IN–PLACE	1, 10/L2.3	–
11	CAST–IN–PLACE	3/L2.3	–
12	CAST–IN–PLACE	8/L2.3, SIMILAR	–
13	CAST–IN–PLACE	1, 10/L2.3	–
14	CAST–IN–PLACE	3/L2.3	–
15	CAST–IN–PLACE	8/L2.3, SIMILAR	–
16	CAST–IN–PLACE	10/L2.3 & 8/L2.4	–
17	CAST–IN–PLACE	SEE STRUCTURAL	FINISH PER PAGE L2.8
18	CAST–IN–PLACE	11/L2.2	SEE L1.1 FOR LOCATION.
19	SEGMENTAL BLOCK	3 TO 7, 9/L2.2	MANUFACTURER, MODEL AND COLOR SHALL MATCH EXISTING WALL.
20	SEGMENTAL BLOCK	3 TO 7, 9/L2.2	MANUFACTURER, MODEL AND COLOR SHALL MATCH EXISTING WALL.

SHEET NOTES

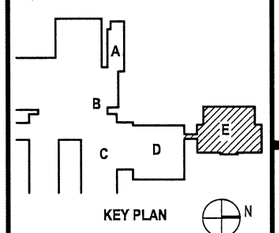
1. SEE L1.1 FOR SHEET NOTES.

KEY NOTES

1. CAST–IN–PLACE CONCRETE WALL, SEE STRUCTURAL DRAWINGS
2. LIMITS OF BIO–RETENTION SOIL PROFILE
3. RUNNING BOND PAVER PATTERN SHALL RUN PARALLEL WITH THIS CURVED SIDEWALK FOR ALL POROUS PAVER SURFACE AREAS, SEE DETAIL 2/L2.5
4. TOP OF CURB SHALL BE 6" ABOVE PAVER FINISH GRADE. HEIGHT OF ALL OTHER CURBS ADJACENT TO POROUS PAVERS SHALL BE AS DETAILED ON 9/L2.1
5. ROUND CORNER OF SEATWALL WITH 12–INCH RADIUS, THIS CORNER ONLY.
6. 12–INCH WIDE CURB, ALL OTHER CURBS ADJACENT TO POROUS PAVERS SHALL BE 6" WIDE.
7. DROP CURB TO BE FLUSH WITH PAVER FINISH GRADE.
8. WATERSTOP, DETAIL 4/L2.4
9. TERMINATE CONCRETE WITH CONSTRUCTION JOINT. CUT ALTERNATE REINFORCING BARS AT JOINT. EXPOSED FACES OF JOINT SHALL RECIEVE 1/4" RADUIS ON EDGES.

PROPOSED LEGEND

- POROUS PAVERS, DETAIL 9/L2.1
- CONCRETE SIDEWALK, SEE CIVIL DETAILS
- ASPHALT, SEE CIVIL DETAILS
- ROCK REVETMENT
- TRENCH DRAIN
- RETAINING WALL
- UNDERDRAIN
- WALL TYPE SEE PAGE L1.2
- ROCK OUTCROP / BOULDERS



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REV	DESCRIPTION	DATE

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Chesterfield, Missouri 63017

PARKWAY SCHOOL DISTRICT
STATE OF MISSOURI

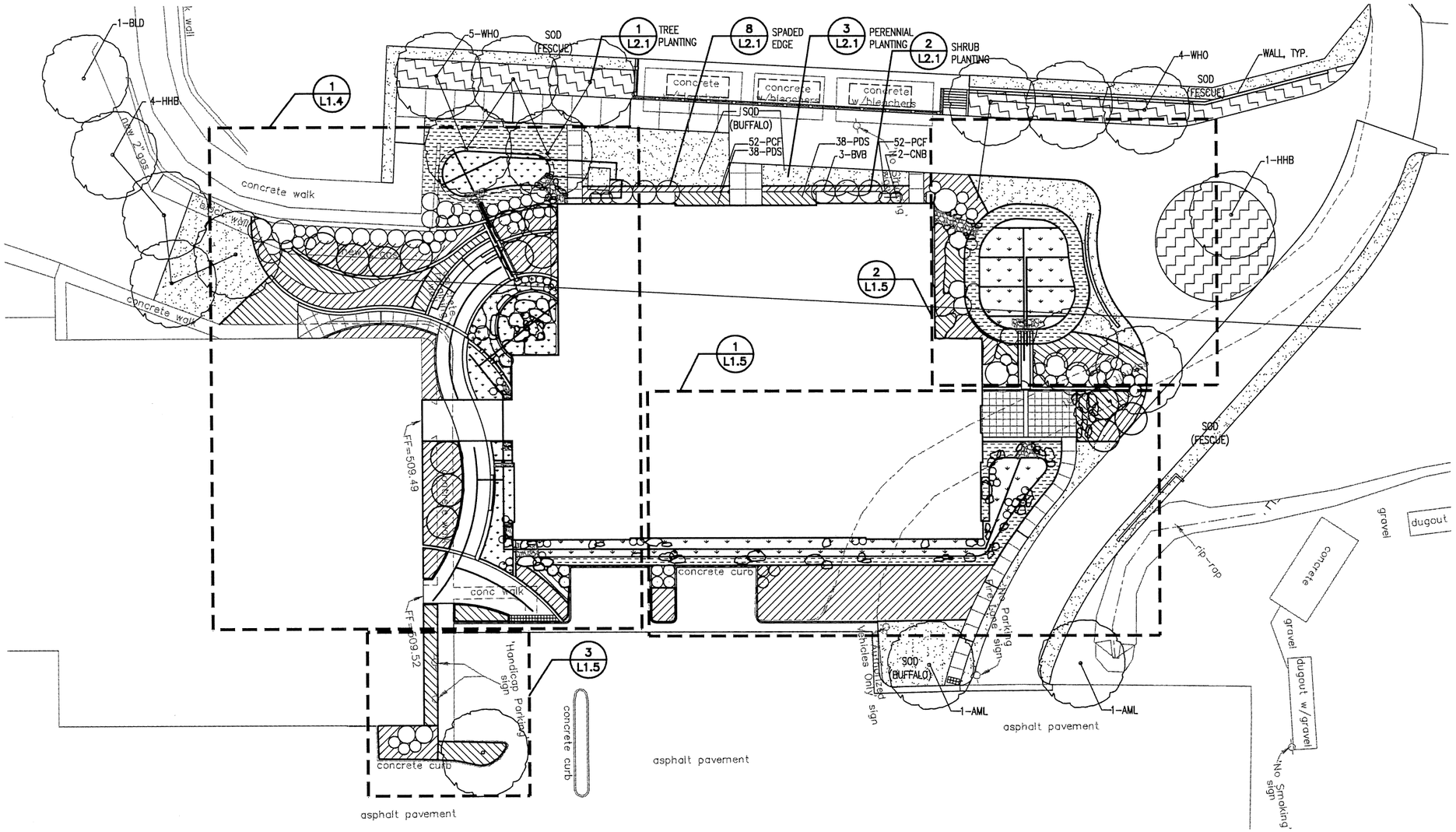
Name / Number	Date
Lenn Miller, Landscape Architect / 2002009610 PB Americas, Inc. / 000044	

SHEET CONTENT
DETAIL REFERENCE PLAN

DATE:	OCTOBER 27, 2009
SCALE:	1" = 20'-0"
DRAWN BY:	LEL
CHECKED BY:	HLM
APPROVED BY:	HLM

PSD PROJECT NUMBER:	PN5008018
PB PROJECT NUMBER:	35998A

SHEET NUMBER: **L1.2**



SHEET NOTES

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2. PLANT SUBSTITUTIONS FOR NATIVE GRASSES AND FORBS SHALL BE SELECTED FROM THE METROPOLITAN SEWER DISTRICT'S "LANDSCAPE GUIDE FOR STORMWATER BEST MANAGEMENT PRACTICE DESIGN". SUBSTITUTIONS SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
3. SEE PAGE L1.4 FOR THE PLANTING SCHEDULE AND THIS PAGE FOR THE NATIVE SEEDING SCHEDULE.
4. SOD SHALL BE LEGACY OR PRESTIGE BUFFALO GRASS SOD OR TURF TYPE FESCUE SOD WHERE INDICATED.
5. THE QUANTITIES SHOWN ON THE PLANTING PLANS SHALL SUPERSEDE QUANTITIES SHOWN ON THE PLANTING SCHEDULE.
6. PREPARE PLANTING BEDS AS DETAILED. ALL PLANTING AREAS, EXCEPT NATIVE PRAIRIE SEEDING AND SODDED AREAS, SHALL BE MULCHED WITH SHREDDED HARDWOOD BARK MULCH UNLESS OTHERWISE DETAILED OR NOTED ON THE DRAWINGS.
7. SOD ALL AREAS DISTURBED BY CONSTRUCTION TO THE LIMITS OF DISTURBANCE. CUT IN SOD WITH EXISTING TURF TO FORM A SEAMLESS TRANSITION.
8. PLANTS SHALL BE NURSERY GROWN AND FREE OF PEST AND DISEASE. PROTECT PLANTINGS FROM DAMAGE AND DRYING OUT UNTIL INSTALLATION.
9. ALL PLANTINGS SHALL BE WATERED AS NEEDED FOR A TOTAL OF 52 WATERING CYCLES FOLLOWING INSTALLATION.
10. INSTALL EROSION CONTROL MAT AT ALL AREAS TO RECEIVE NATIVE PRAIRIE SEED MIX, SC150BN BY NORTH AMERICAN GREEN OR APPROVED EQUAL.

PROPOSED LEGEND

- SHADE TREE
- ORNAMENTAL TREE
- SHRUBS
- BIO-RETENTION AREA (SLOPED HILLSIDES)
- BIO-RETENTION AREA (FLAT BOTTOM) AND BIO-RETENTION SOILS
- NATIVE PRAIRIE SEED MIX
- PERENNIALS / GROUNDCOVER
- AQUATIC POOL
- SOD

NATIVE PRAIRIE SEED MIX TABLE

FORBS (WILDFLOWERS) (RATE = 2oz/1000sf)

QTY (oz)	BOTANICAL NAME	COMMON NAME
0.12	Aster oolentangiensis	SKY BLUE ASTER
0.12	Pensternon albidus	WHITE BEARDTONGUE
0.12	Monarda fistulosa	WILD BERGAMOT
0.12	Rudbeckia hirta	BLACK-EYED SUSAN
0.12	Liatris spicata	BLAZING STAR
0.12	Echinacea pallida	PALE PURPLE CONEFLOWER
0.12	Coreopsis tinctoria	PLAINS COREOPSIS
0.12	Coreopsis lanceolata	TICKSEED COREOPSIS
0.12	Solidago nemoralis	GRAY GOLDENROD
0.12	Castilleja linariaefolia	INDIAN PAINTBRUSH
0.12	Baptisia australis	BLUE INDIGO
0.12	Amorpha canescens	LEAD PLANT
0.12	Asclepias tuberosa	BUTTERFLY MILKWEED
0.12	Physostegia virginiana	OBEDIENT PLANT
0.12	Chamaecrista fasciculata	PARTRIDGE PEA
0.12	Silene regia	ROYAL CATCHFLY
0.12	Pycnanthemum virginianum	SLENDER MOUNTAIN MINT

GRASSES (RATE = 2oz/1000sf)

QTY (oz)	BOTANICAL NAME	COMMON NAME
0.50	Andropogon virginicus	BROOM SEDGE
0.50	Schizchyrum scoparium	LITTLE BLUESTEM
0.50	Bothriochloa saccharoides	WINTER BEARDGRASS
0.50	Bouteloua curtipendula	SIDEOATS GRAMA

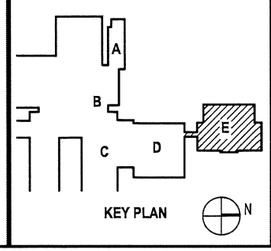
COVER CROP (RATE = 15oz/1000sf)

7.50	Avena sativa	SEED OATS
7.50	Lolium multiflorum	ANNUAL RYE

SEEDING NOTES:

1. MIX GRASSES, FORBS AND COVER CROP WITH A CARRIER OF SAND OR SAWDUST AT A RATE OF 1 PART SEED MIX TO 4 PARTS CARRIER. ADDITIONALY ADD FIVE BULK POUNDS OF GRANULAR MYCORRHIZAE SOIL INOCULANT TO THE MIX. BROADCAST EVENLY IN TWO DIRECTIONS. SEW NATIVE PRAIRIE SEED NO EARLIER THAN DECEMBER 1 AND NO LATER THAN FEBRUARY 15. THE AREA TO RECEIVE NATIVE SEED SHALL BE SPRAYED WITH HERBICIDE TWO TIMES IN THE FALL PRIOR SEEDING AND JUST PRIOR TO THE END OF THE GROWING SEASON. SPRAY ONCE AND ALLOW PLANT MATERIAL TO DIE THEN SPRAY AGAIN. PROTECT OTHER INSTALLED LANDSCAPE PLANTS FROM HERBICIDE.
2. OVERSEED WITH NATIVE SEED MIX 1-YEAR FOLLOWING INITIAL SEEDING. OVERSEED DURING SEEDING PERIOD INDICATED ABOVE.

1 LANDSCAPE PLAN
1" = 20'-0"
5 0 10 20



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PARKWAY SCHOOL DISTRICT
STATE OF MISSOURI

Name / Number Date
Lann Miller, Landscape Architect / 2002009610
PB Americas, Inc. / 000044

SHEET CONTENT
LANDSCAPE PLAN

DATE:	OCTOBER 27, 2009
SCALE:	1" = 20'-0"
DRAWN BY:	LEL
CHECKED BY:	HLM
APPROVED BY:	HLM

PSD PROJECT NUMBER: PN5008018
PB PROJECT NUMBER: 35998A

SHEET NUMBER: **L1.3**

PLANTING SCHEDULE

NATIVE TREES

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE / CONDITION	REMARKS	AS SHOWN / SPACING
ERB	–	Cercis canadensis	EASTERN REDBUD	2" CALIPER B & B	DECIDUOUS MATURE: 25'hx30's	AS SHOWN
CBP	–	Pyrus calleryana 'Cleaveland Select'	CLEAVELAND PEAR	2" CALIPER B & B	DECIDUOUS MATURE: 35'hx20's	20' ON CENTER
HHB	–	Ostrya virginiana	EASTERN HOP HORNBEAM	3" CALIPER B & B	DECIDUOUS MATURE: 35'hx25's	25' ON CENTER
WHO	–	Quercus alba	WHITE OAK	3" CALIPER B & B	DECIDUOUS MATURE: 60'hx45's	25' ON CENTER
BLD	–	Taxodium distichum	BALD CYPRESS	3" CALIPER B & B	DECIDUOUS MATURE: 60'hx45's	AS SHOWN
AML	–	Tilia americana	AMERICAN LINDEN	3" CALIPER B & B	DECIDUOUS MATURE: 65'hx45's	AS SHOWN
HLT	–	Gleditsia Triacanthos var. inermis	HONEYLOCUST	3" CALIPER B & B	DECIDUOUS MATURE: 45'hx45's	AS SHOWN

SHRUBS

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS	PLANT
DSC	–	Rhus copallina v. latifolia 'Morton' PRAIRIE FLAME	DWARF SUMAC	#5 CONTAINER	DECIDUOUS MATURE: 6'hx6's	4' ON CENTER
BTB	–	Cephalanthus occidentalis	BUTTON BUSH	#5 CONTAINER	DECIDUOUS MATURE: 4'hx4's	8' ON CENTER
VWH	–	Hamamelus vernalis	OZARK WITCH HAZEL	#5 CONTAINER	DECIDUOUS MATURE: 12'hx12's	10' ON CENTER
SSJ	–	Hypericum Prolificum	SHRUBBY ST. JOHN'S WORT	#5 CONTAINER	DECIDUOUS MATURE: 4'hx3's	4' ON CENTER
CNB	–	Physocarpus opulifolius	COMMON NINEBARK	#5 CONTAINER	DECIDUOUS MATURE: 6'hx6's	4' ON CENTER
PRW	–	Salix Humilis	PRAIRIE WILLOW	#5 CONTAINER	DECIDUOUS MATURE: 6'hx5's	6' ON CENTER
BVB	–	Viburnum prunifolium	BLACKHAW VIBURNUM	#5 CONTAINER	DECIDUOUS MATURE: 14'hx12's	10' ON CENTER

PERENNIALS : NATIVE GRASSES, SEDGES, RUSHES

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS	PLANT SPACING
BRS	–	Andropogon virginicus	BROOMSEDGE	DEEP CELL PLUG	PERENNIAL MATURE: 1.5'hx1.5's	18" ON CENTER
SOG	–	Bouteloua curtipendula	SIDEOATS GRAMA	DEEP CELL PLUG	PERENNIAL MATURE: 1.5'hx1's	18" ON CENTER BMP GRASS
PLS	–	Carex muskingumensis	PALM SEDGE	DEEP CELL PLUG	PERENNIAL MATURE: 3'hx1.5's	18" ON CENTER
FXS	–	Carex vulpinoidea	FOX SEDGE	DEEP CELL PLUG	PERENNIAL MATURE: 3'hx1.5's	18" ON CENTER
RIO	–	Chasmanthium latifolium	RIVER OATS	DEEP CELL PLUG	PERENNIAL MATURE: 3'hx2.5's	18" ON CENTER
PDS	–	Sporobolus heterolepis	PRAIRIE DROPSEED	DEEP CELL PLUG	PERENNIAL MATURE: 3'hx1.5's	18" ON CENTER
LBS	–	Schizachyrium scoparium	LITTLE BLUESTEM	DEEP CELL PLUG	PERENNIAL MATURE: 3'hx1.5's	18" ON CENTER

PERENNIALS: NATIVE FORBS

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE COND	REMARKS	PLANT SPACING
SBS	–	Amsonia illustris	SHINING BLUE STAR	DEEP CELL PLUG	PERENNIAL MATURE: 4'hx4's	30" ON CENTER
BFM	–	Asclepias Tuberosa	BUTTERFLY MILKWEED	DEEP CELL PLUG	PERENNIAL MATURE: 2'hx2's	18" ON CENTER
NEA	–	Aster novae–angliae	NEW ENGLAND ASTER	DEEP CELL PLUG	PERENNIAL MATURE: 5'hx3's	24" ON CENTER
RTH	–	Chelone obliqua	ROSE TURTLEHEAD	DEEP CELL PLUG	PERENNIAL MATURE: 4'hx1.5's	18" ON CENTER
LLC	–	Coreopsis lanceolata	LANCELEAF COREOPSIS	DEEP CELL PLUG	PERENNIAL MATURE: 1.5'hx1.5's	18" ON CENTER
YGC	–	Echinacea paradoxa	YELLOW CONEFLOWER	DEEP CELL PLUG	PERENNIAL MATURE: 3'hx3's	18" ON CENTER
PCF	–	Echinacea purpurea	PURPLE CONEFLOWER	DEEP CELL PLUG	PERENNIAL MATURE: 2.5'hx1.5's	18" ON CENTER
RSM	–	Eryngium yuccifolium	RATTLESNAKE MASTER	DEEP CELL PLUG	PERENNIAL MATURE: 4.5'hx1.5's	18" ON CENTER
MTF	–	Eupatorium coelestinum	MIST FLOWER	DEEP CELL PLUG	PERENNIAL MATURE: 1.5'hx2's	18" ON CENTER
RSM	–	Hibiscus lasiocarpos	ROSE MALLOW	DEEP CELL PLUG	PERENNIAL MATURE: 5'hx2.5's	18" ON CENTER
BFG	–	Iris virginica	BLUE FLAG IRIS	DEEP CELL PLUG	PERENNIAL MATURE: 3"hx2"s	18" ON CENTER
FRA	–	Isopyrum Biternatum	FALSE RUE ANEMONE	DEEP CELL PLUG	PERENNIAL MATURE: .5'hx1's	18" ON CENTER

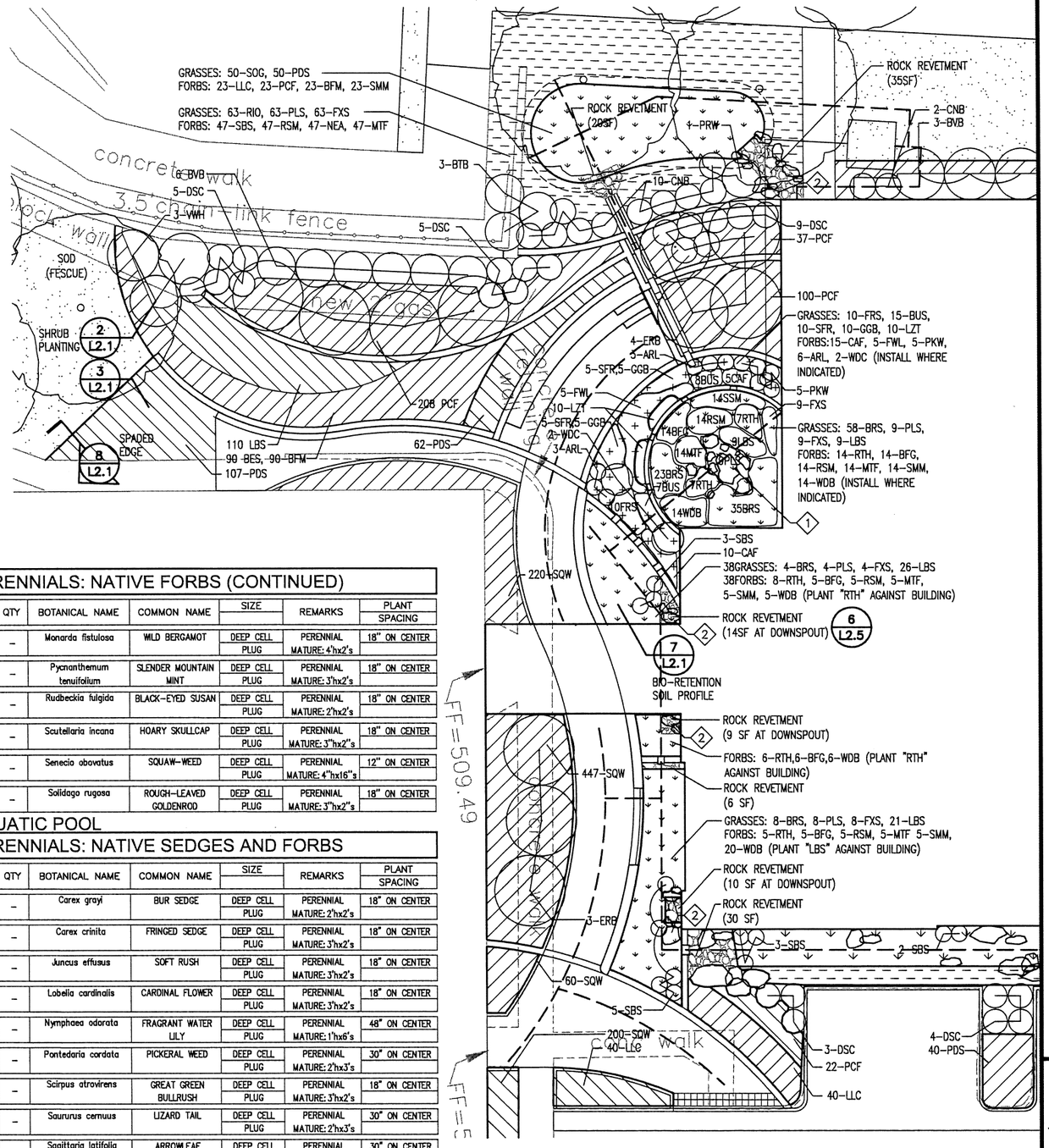
PERENNIALS: NATIVE FORBS (CONTINUED)

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS	PLANT SPACING
WDB	–	Monarda fistulosa	WILD BERGAMOT	DEEP CELL PLUG	PERENNIAL MATURE: 4'hx2's	18" ON CENTER
SMM	–	Pycnanthemum tenuifolium	SLENDER MOUNTAIN MINT	DEEP CELL PLUG	PERENNIAL MATURE: 3'hx2's	18" ON CENTER
BES	–	Rudbeckia fulgida	BLACK–EYED SUSAN	DEEP CELL PLUG	PERENNIAL MATURE: 2'hx2's	18" ON CENTER
HSP	–	Scutellaria incana	HOARY SKULLCAP	DEEP CELL PLUG	PERENNIAL MATURE: 3"hx2"s	18" ON CENTER
SQW	–	Senecio obovatus	SQUAW–WEED	DEEP CELL PLUG	PERENNIAL MATURE: 4"hx16"s	12" ON CENTER
RLG	–	Solidago rugosa	ROUGH–LEAVED GOLDENROD	DEEP CELL PLUG	PERENNIAL MATURE: 3"hx2"s	18" ON CENTER

AQUATIC POOL

PERENNIALS: NATIVE SEDGES AND FORBS

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS	PLANT SPACING
BUS	–	Carex grayi	BUR SEDGE	DEEP CELL PLUG	PERENNIAL MATURE: 2'hx2's	18" ON CENTER
FRS	–	Carex crinita	FRINGED SEDGE	DEEP CELL PLUG	PERENNIAL MATURE: 3'hx2's	18" ON CENTER
SFR	–	Juncus effusus	SOFT RUSH	DEEP CELL PLUG	PERENNIAL MATURE: 3'hx2's	18" ON CENTER
CAF	–	Lobelia cardinalis	CARDINAL FLOWER	DEEP CELL PLUG	PERENNIAL MATURE: 3'hx2's	18" ON CENTER
FWL	–	Nymphaea odorata	FRAGRANT WATER LILY	DEEP CELL PLUG	PERENNIAL MATURE: 1'hx6's	48" ON CENTER
PKW	–	Pontederia cordata	PICKERAL WEED	DEEP CELL PLUG	PERENNIAL MATURE: 2'hx3's	30" ON CENTER
GGB	–	Scirpus atrovirens	GREAT GREEN BULLRUSH	DEEP CELL PLUG	PERENNIAL MATURE: 3'hx2's	18" ON CENTER
LZT	–	Saururus cernuus	LIZARD TAIL	DEEP CELL PLUG	PERENNIAL MATURE: 2'hx3's	30" ON CENTER
ARL	–	Sagittaria latifolia	ARROWLEAF	DEEP CELL PLUG	PERENNIAL MATURE: 4'hx3's	30" ON CENTER
WDC	–	Thalia dealbata	WILD CANNA	DEEP CELL PLUG	PERENNIAL MATURE: 6'hx5's	60" ON CENTER



1 ENLARGED LANDSCAPE PLAN
1" = 10'-0"
2.5 0 5 10

SHEET NOTES

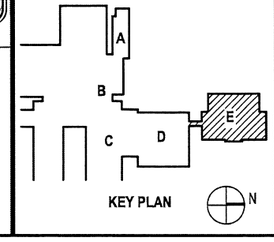
1. CONTAINERS FOR DEEP CELL PLUGS, INDICATED IN THE PLANTING SCHEDULE, SHALL BE A MINIMUM SIZE OF 2" WIDE X 2" LONG X 5" DEEP.
2. THE ROOT MASS OF ALL CONTAINER PLANTS SHALL EXTEND TO THE EDGES OF THE CONTAINER BUT SHALL NOT BE ROOT BOUND.
3. ONE CLEAVELAND PEAR SHALL BE INSTALLED BY THE CONTRACTOR AT LOCATION ON CAMPUS INDICATED BY OWNER.
4. SEE L1.3 FOR OTHER SHEET NOTES.

KEY NOTES

1. ROCK OUTCROP: CENTRAL ROCK SHALL BE 4'–5' X 4'–5' WIDE / LONG MINIMUM X 3'–4' EXPOSED HEIGHT. POSITION CENTER STONE TO INTERCEPT DOWNSPOUT WATER IMPACT, TEST FLOW TRAJECTORY AS REQUIRED. SURROUNDING STONES SHALL VARY IN SIZE FROM 1' TO 2' IN LENGTH / WIDTH WITH VARIED EXPOSED HEIGHTS FROM 0.5' TO 2'. PLANT BETWEEN STONES AS INDICATED. SEE ALSO DETAIL 4/L2.1.
2. ROCK OUTCROP AT DOWNSPOUT OUTFALL, PROVIDE NUMBER OF STONES IN RELATIVE LOCATION SHOWN, VARY SIZES FROM 1' TO 2' IN LENGTH / WIDTH WITH VARIED EXPOSED HEIGHTS FROM 0.5' TO 2'.

PROPOSED LEGEND

- SHADE TREE
- ORNAMENTAL TREE
- SHRUBS
- NATIVE PRAIRIE SEED MIX
- PERENNIALS: BIO–RETENTION AREA (SLOPED HILLSIDES)
- PERENNIALS: BIO–RETENTION AREA (FLAT BOTTOM) AND BIO–RETENTION SOILS
- PERENNIALS
- PERENNIALS
- AQUATIC POOL PERENNIALS
- SOD



KEY PLAN

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18141 SWINGLY RIDGE ROAD SUITE 300
ST. LOUIS MISSOURI 63017

REV	DESCRIPTION	DATE

BID PACKAGE 2 - FINAL BID DOCUMENTS
Science Renovations / Addition
PARKWAY CENTRAL HIGH SCHOOL
369 NORTH WOODS MILL ROAD
Chesterfield, Missouri 63017

PARKWAY SCHOOL DISTRICT
STATE OF MISSOURI

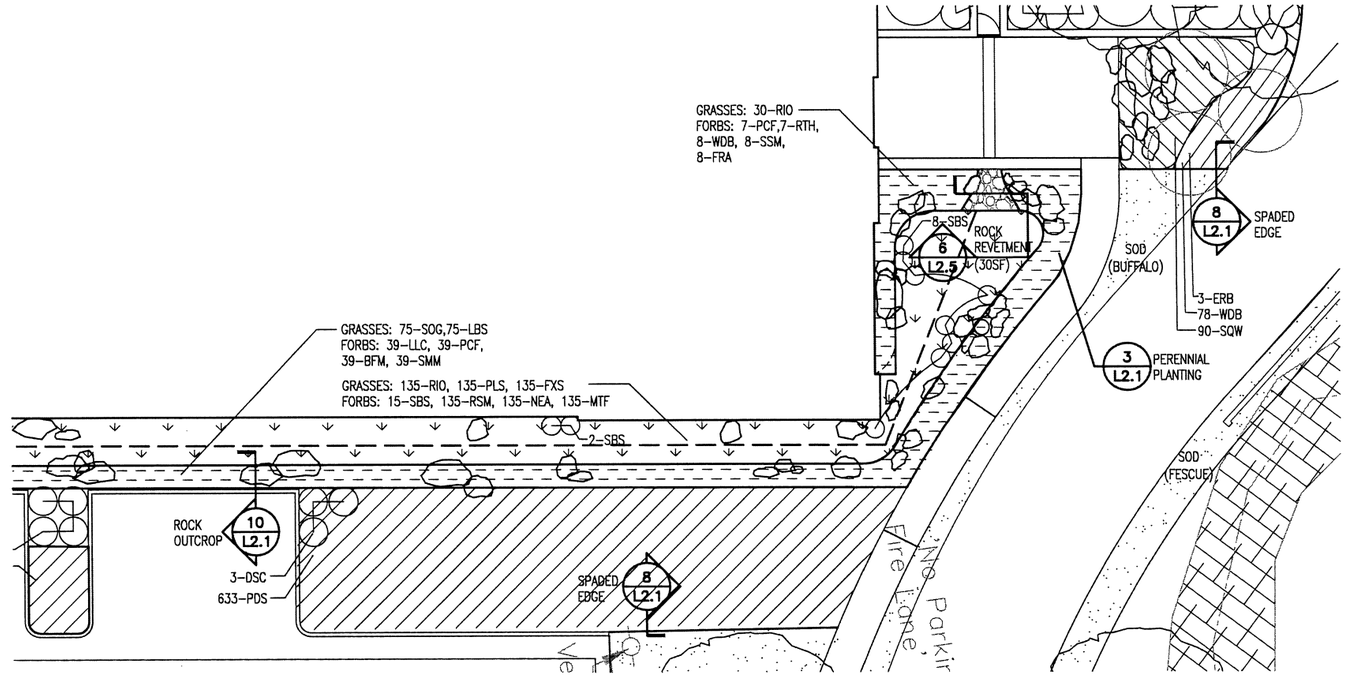
Name / Number — Date
Lenn Miller, Landscape Architect / 2002009610
PB Americas, Inc. / 000044

SHEET CONTENT
ENLARGED LANDSCAPE PLANS

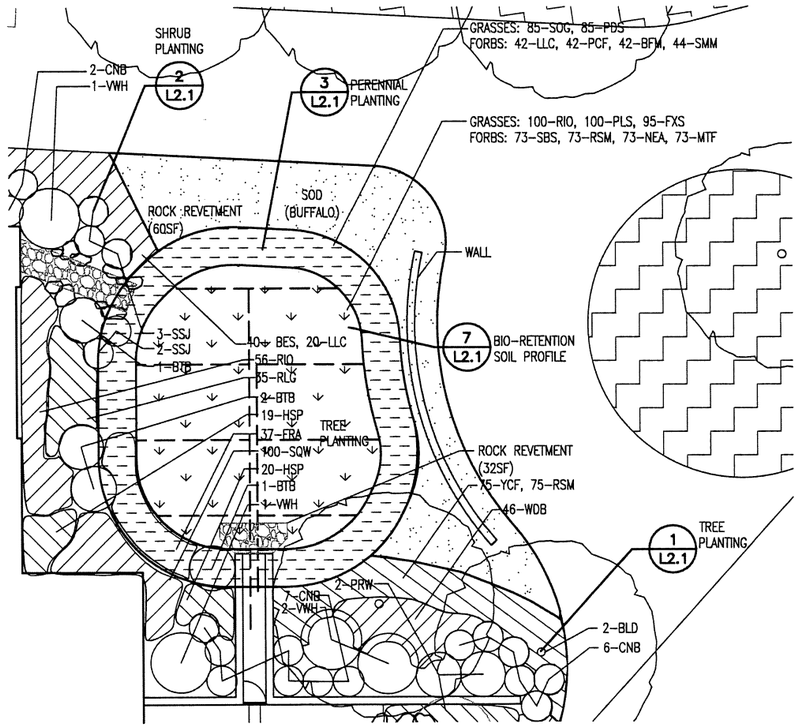
DATE:	OCTOBER 27, 2009
SCALE:	1" = 10'-0"
DRAWN BY:	LEL
CHECKED BY:	HLM
APPROVED BY:	HLM

PSD PROJECT NUMBER: PH500801B
PB PROJECT NUMBER: 35998A

SHEET NUMBER: **L1.4**



1 ENLARGED LANDSCAPE PLAN
1" = 10'-0"
2.5 0 5 10 N



2 ENLARGED LANDSCAPE PLAN
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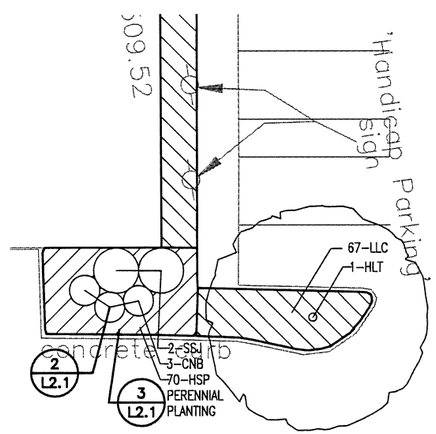


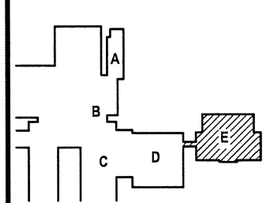
3 ENLARGED LANDSCAPE PLAN
1" = 10'-0"
2.5 0 5 10 N

SHEET NOTES

1. SEE L1.3 FOR SHEET NOTES.

PROPOSED LEGEND

- SHADE TREE
- ORNAMENTAL TREE
- SHRUBS
- NATIVE PRAIRIE SEED MIX
- PERENNIALS: BIO–RETENTION AREA (SLOPED HILLSIDES)
- PERENNIALS: BIO–RETENTION AREA (FLAT BOTTOM) AND BIO–RETENTION SOILS
- PERENNIALS
- PERENNIALS
- AQUATIC POOL PERENNIALS
- SOD



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REV	DESCRIPTION	DATE

BID PACKAGE 2 - FINAL BID DOCUMENTS
Science Renovations / Addition
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369 NORTH WOODS MILL ROAD
Chesterfield, Missouri 63017

PARKWAY SCHOOL DISTRICT
STATE OF MISSOURI

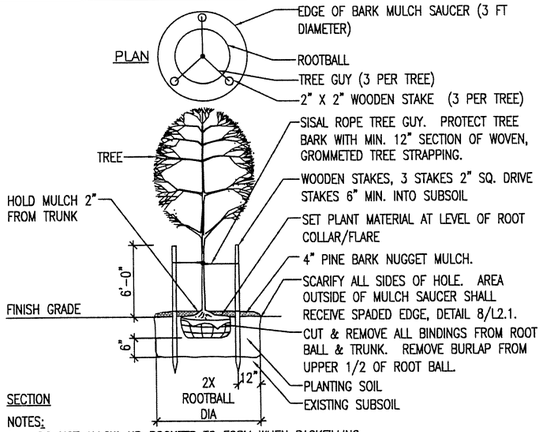
Name / Number	Date
Lenn Miller, Landscape Architect / 2002009610 PB Americas, Inc. / 000044	

SHEET CONTENT
ENLARGED LANDSCAPE PLANS

DATE:	OCTOBER 27, 2009
SCALE:	1" = 10'-0"
DRAWN BY:	LEL
CHECKED BY:	HLM
APPROVED BY:	HLM

PSD PROJECT NUMBER:	PN5008018
PB PROJECT NUMBER:	35998A

SHEET NUMBER: **L1.5**

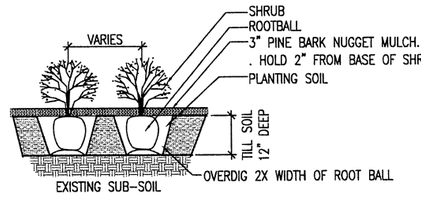


SECTION

NOTES:

1. DO NOT ALLOW AIR POCKETS TO FORM WHEN BACKFILLING.
2. CRACKED OR OTHERWISE DAMAGED ROOT BALLS SHALL BE REJECTED.
3. WATER THOROUGHLY FOLLOWING PLANTING.
4. REMOVE EXCESS DEBRIS FROM AROUND ROOT COLLAR/FLARE PRIOR TO INSTALLATION.
5. TREES SHALL BE PLANTED SO ROOT COLLAR/FLARE IS LEVEL OR SLIGHTLY ABOVE (1" MAX) ADJACENT GRADE.

1 TYPICAL TREE PLANTING
NTS

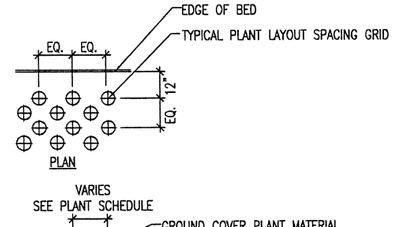


SECTION

NOTES:

1) DO NOT ALLOW AIR POCKETS TO FORM WHEN BACKFILLING.
2) DO NOT DISTURB ROOT BALL WHEN PLANTING.
3) WATER THOROUGHLY FOLLOWING PLANTING.
4) SET PLANT MATERIAL AT ORIGINAL DEPTH.
5) REMOVE CONTAINER OR CUT ALL BURLAP, TWINE & REMOVE FROM UPPER 1/3 OF ROOT BALL.

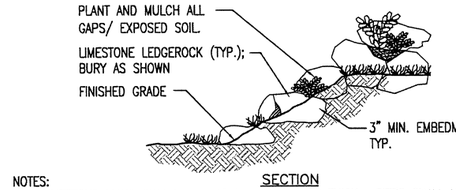
2 TYPICAL SHRUB PLANTING
NTS



NOTES:

1) WATER THOROUGHLY FOLLOWING PLANTING.
2) SEE PLANT SCHEDULE FOR PLANT SPACING.

3 PERENNIAL PLANTING
NTS

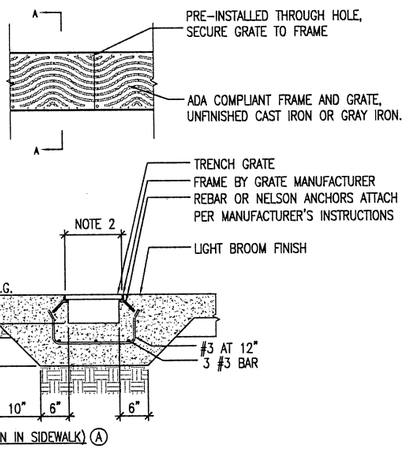


SECTION

NOTES:

1. LIMESTONE LEDGEROCK SHALL BE 8 – 16 INCHES THICK. SIZES SHALL VARY BETWEEN 3 TO 4 FEET WIDE AND 4 TO 7 FEET LONG. PROVIDE A VARIETY OF SIZES SIMILAR TO SIZES SHOWN ON THE PLANTING PLANS. AT LEAST 15% OF THE ROCKS SHALL BE THE LARGEST SIZE IN THE RANGE AND 30% SHALL BE THE MIDDLE OF THE SIZE RANGE. LEDGEROCK SHALL BE WEATHERED LIMESTONE LIGHT TO DARK GRAY COLORATION. PARTIALLY BURY LEDGEROCK INTO GRADE TO LOOK LIKE A ROCK OUTCROPPING. INSTALL RANDOM LEDGEROCKS SIMILAR TO GROUPINGS SHOWN ON PLAN. GROUPS OF STONES SHALL BE OFFET AND STACKED SIMILAR TO THAT SHOWN ON PLANS.
2. FILL VOIDS WITH COMPACTED PLANTING SOIL, PLANT AND MULCH.
3. PROVIDE MOCK-UP OF ROCK OUTCROP FOR APPROVAL BY THE OWNER'S REPRESENTATIVE.

4 ROCK OUTCROP
NTS

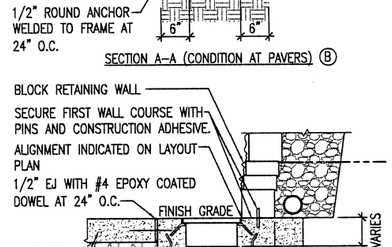


SECTION A–A (CONDITION IN SIDEWALK) Ⓐ

NOTES:

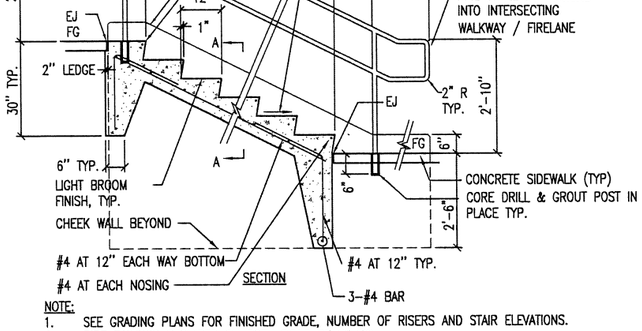
1. INSTALL GRATE PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
2. GRATE WIDTH VARIES, 12" AND 18" SEE LAYOUT PLAN FOR LOCATIONS.
3. GRATE SHALL BE TITLE WAVES MODEL BY URBAN ACCESSORIES OR MARINA MODEL BY IRONSMITH OR APPROVED EQUAL.

5 TRENCH DRAIN
NTS



SECTION A–A (CONDITION AT PAVERS) Ⓑ

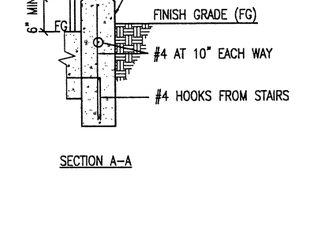
SECTION A–A (CONDITION AT EDGE OF WALL) Ⓒ



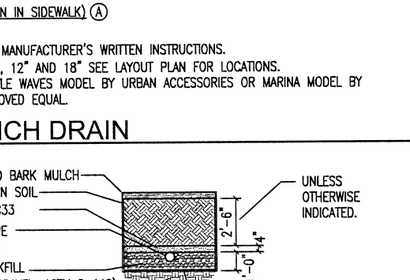
NOTE:

1. SEE GRADING PLANS FOR FINISHED GRADE, NUMBER OF RISERS AND STAIR ELEVATIONS.
2. PIPE RAILINGS REQUIRED ON BOTH SIDES OF STAIRS.

6 STAIRS
NTS



SECTION A–A

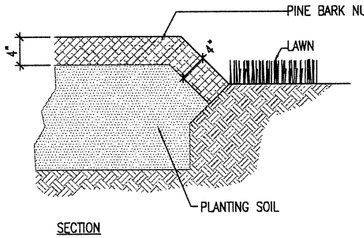


SECTION

NOTES:

1. BIO-RETENTION SOIL, AGGREGATE AND SUBGRADE UNDER AMENDED SOILS SHALL NOT BE COMPACTED. USE ONLY TRACKED EQUIPMENT TO AVOID COMPACTING SUBGRADE AND AMENDED SOILS.
2. INSTALL BIO-RETENTION SOILS IN 12 TO 18 INCH LIFTS.
3. SOILS UPSTREAM OF AREAS RECEIVING THIS DETAIL SHALL BE STABILIZED PRIOR TO INSTALLING AMENDED SOILS SHOWN ABOVE.
4. UNDER DRAIN SHALL HAVE TWO ROWS OF 3/8" DIAMETER DRILLED HOLES AT 18 INCHES ON CENTER TURNED DOWN TOWARD SUB-GRADE.

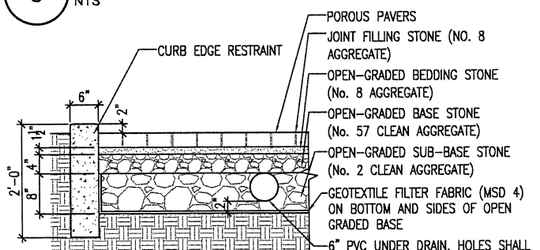
7 BIO-RETENTION SOIL PROFILE
NTS



SECTION

NOTE:
USE THIS DETAIL FOR ALL TREE RINGS AND PLANTINB BED LOCATIONS THAT INTERFACE WITH LAWN AREAS.

8 SPADDED EDGE
NTS



NOTES:

SECTION

1. STONE GRADATIONS SHALL BE PER ASTM D 448.

9 POROUS PAVERS
NTS

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REV	DESCRIPTION	DATE

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Chesterfield, Missouri 63017

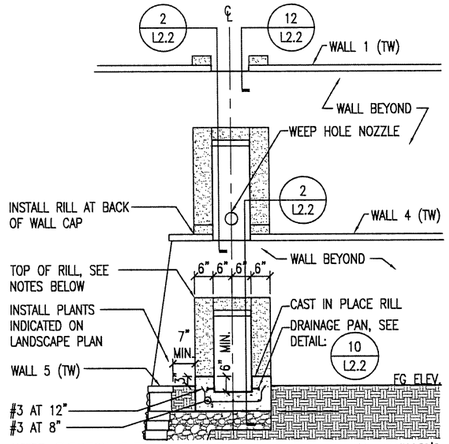
PARKWAY SCHOOL DISTRICT
STATE OF MISSOURI

Name / Number	Date
Lann Miller, Landscape Architect / 2002009610 PB Americas, Inc. / 000044	

SHEET CONTENT
LANDSCAPE DETAILS

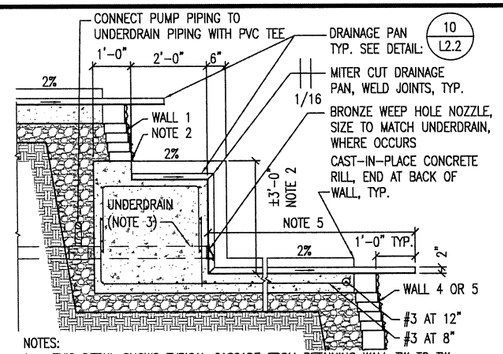
DATE:	OCTOBER 27, 2009
SCALE:	AS SHOWN
DRAWN BY:	LEL
CHECKED BY:	HLM
APPROVED BY:	HLM
PSD PROJECT NUMBER:	P/N50801B
PB PROJECT NUMBER:	35998A

SHEET NUMBER: **L2.1**



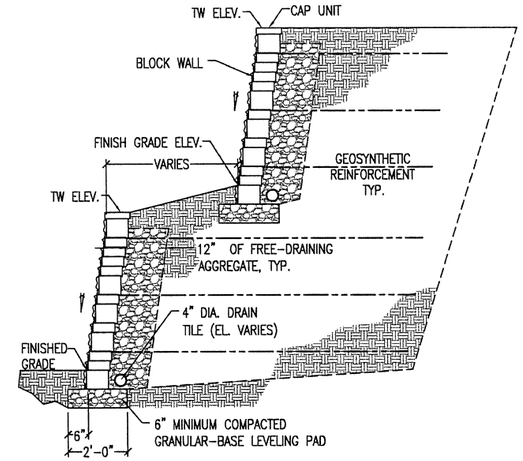
NOTES: ELEVATION AT TOP OF RILLS SHALL ALIGN WITH THE MANUFACTURER'S STANDARD REPEATING WALL PATTERN COURSES.

1 STORM WATER RILL
NTS



NOTES:
1. THIS DETAIL SHOWS TYPICAL CASCADE FROM RETAINING WALL TW TO TW.
2. ELEVATION AT TOP OF RILLS SHALL ALIGN WITH THE MANUFACTURER'S STANDARD UNIT COURSES / REPEATING WALL PATTERN COURSES.
3. UNDERDRAIN SHALL CONNECT TO RAINGARDEN UNDERDRAIN AT SOUTHWEST CORNER OF SCIENCE ADDITION. PIPING FOR RECIRCULATING PUMP IN AQUATIC POOL SHALL CONNECT TO UNDERDRAIN AS SHOWN IN THIS DETAIL.
4. EXPOSED CONCRETE SURFACES OF RILL TO RECEIVE INTEGRAL COLOR AND RUBBED SMOOTH FORM FINISH.
5. REMAINING STEEL PAN LENGTH = 11'-10" ON WALL 5 AND 7'-9" ON WALL 4 FIELD VERIFY ACTUAL LENGTH, SEE 12/L2.2 FOR WALL 1 PAN LENGTH.

2 STORM WATER RILL
NTS



3 TYPICAL BLOCK RETAINING WALL
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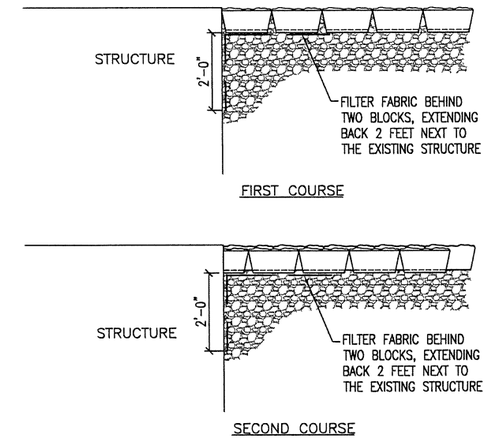
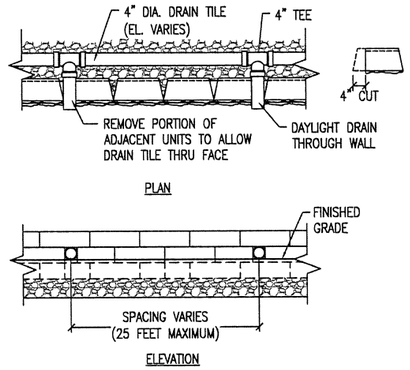
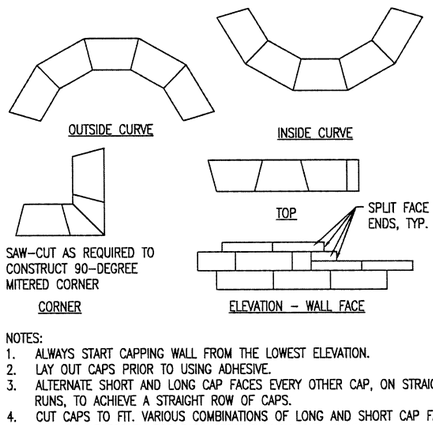


4 WALL ABUTTING STRUCTURE
NTS

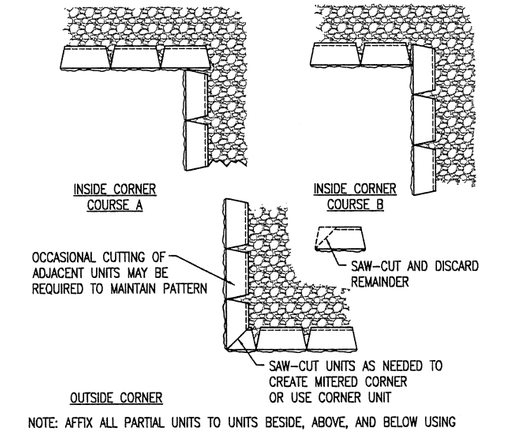


5 WALL DRAIN TILE THROUGH FACE
NTS



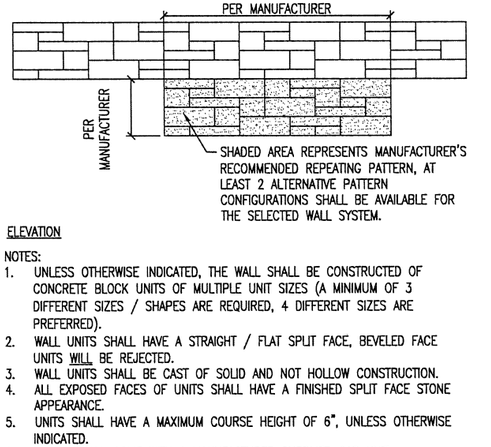
NOTES:
1. ALWAYS START CAPPING WALL FROM THE LOWEST ELEVATION.
2. LAY OUT CAPS PRIOR TO USING ADHESIVE.
3. ALTERNATE SHORT AND LONG CAP FACES EVERY OTHER CAP, ON STRAIGHT RUNS, TO ACHIEVE A STRAIGHT ROW OF CAPS.
4. CUT CAPS TO FIT. VARIOUS COMBINATIONS OF LONG AND SHORT CAP FACES WILL BE NECESSARY FOR RADII GREATER THAN THE MINIMUM.
5. USE EXTERIOR-GRADE CONSTRUCTION ADHESIVE TO SECURE CAPS.

6 WALL CAP UNIT INSTALLATION
NTS



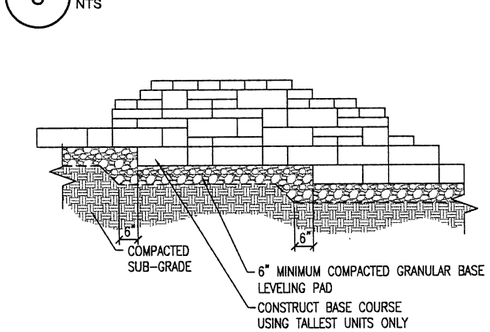
NOTE: AFFIX ALL PARTIAL UNITS TO UNITS BESIDE, ABOVE, AND BELOW USING CONSTRUCTION GRADE ADHESIVE

7 WALL CORNER CONSTRUCTION
NTS

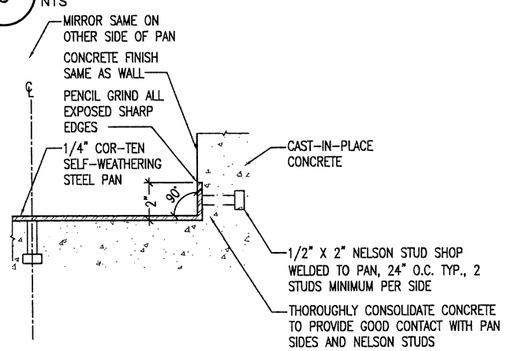


NOTES:
1. UNLESS OTHERWISE INDICATED, THE WALL SHALL BE CONSTRUCTED OF CONCRETE BLOCK UNITS OF MULTIPLE UNIT SIZES (A MINIMUM OF 3 DIFFERENT SIZES / SHAPES ARE REQUIRED, 4 DIFFERENT SIZES ARE PREFERRED).
2. WALL UNITS SHALL HAVE A STRAIGHT / FLAT SPLIT FACE, BEVELED FACE UNITS WILL BE REJECTED.
3. WALL UNITS SHALL BE CAST OF SOLID AND NOT HOLLOW CONSTRUCTION.
4. ALL EXPOSED FACES OF UNITS SHALL HAVE A FINISHED SPLIT FACE STONE APPEARANCE.
5. UNITS SHALL HAVE A MAXIMUM COURSE HEIGHT OF 6", UNLESS OTHERWISE INDICATED.
6. WALLS SHALL COME WITH A MANUFACTURER SUPPLIED CAP UNIT.

8 WALL PATTERN AND UNITS
NTS

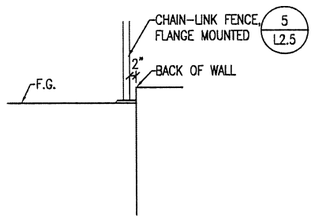


9 WALL LEVELING PAD STEPPING
NTS

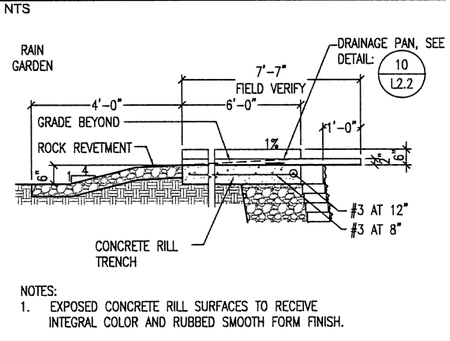


NOTES:
1. PROTECT METAL PAN FROM CONCRETE SPLATTER.
2. PAN BENDS, CUTS AND WELDS SHALL BE SHOP FABRICATED AND DELIVERED TO THE SITE FOR INSTALLATION.
3. COR-TEN SELF-WEATHERING STEEL SHALL BE PER ASTM A588, GRADE B.

10 DRAINAGE PAN
NTS



11 TRENCH / FENCE AT WALL
NTS



NOTES:
1. EXPOSED CONCRETE RILL SURFACES TO RECEIVE INTEGRAL COLOR AND RUBBED SMOOTH FORM FINISH.

12 RILL AT RAIN GARDEN
NTS

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ST. LOUIS MO. 63108
zc Collaborating Disciplines HEIDEMAN ASSOCIATES, INC. A Zell Company
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GENESIS ENGINEERING
18141 SWINGLY RIDGE ROAD SUITE 300
ST. LOUIS MISSOURI 63017

REV	DESCRIPTION	DATE

BID PACKAGE 2 - FINAL BID DOCUMENTS
Science Renovations / Addition
PARKWAY CENTRAL HIGH SCHOOL
369 NORTH WOODS MILL ROAD
Chesterfield, Missouri 63017

PARKWAY SCHOOL DISTRICT
STATE OF MISSOURI

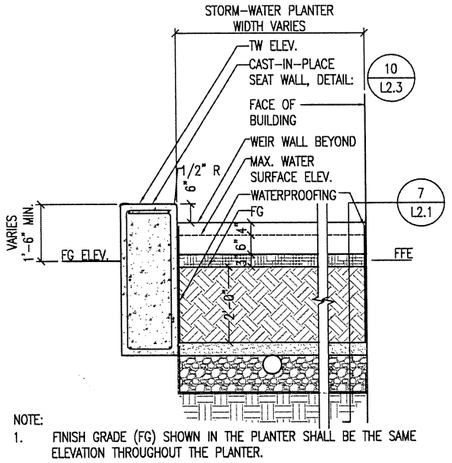
Name / Number Date
Lann Miller, Landscape Architect / 2002009610
PB Americas, Inc. / 000044

SHEET CONTENT
LANDSCAPE DETAILS

DATE:	OCTOBER 27, 2009
SCALE:	AS SHOWN
DRAWN BY:	LEL
CHECKED BY:	HLM
APPROVED BY:	HLM

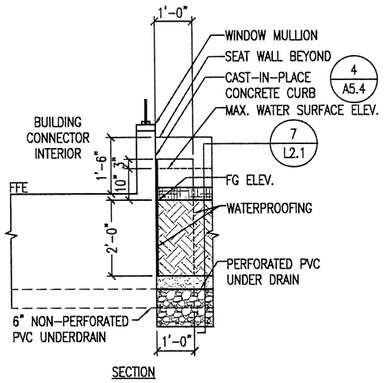
PSD PROJECT NUMBER: PN5008018
PB PROJECT NUMBER: 35998A

SHEET NUMBER: **L2.2**



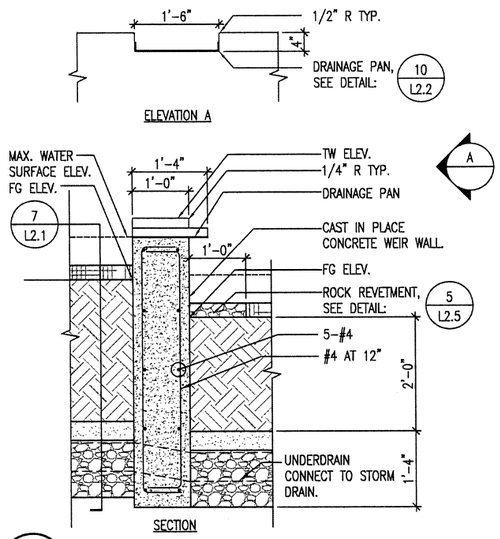
NOTE:
1. FINISH GRADE (FG) SHOWN IN THE PLANTER SHALL BE THE SAME ELEVATION THROUGHOUT THE PLANTER.

1 STORM-WATER PLANTER
NTS



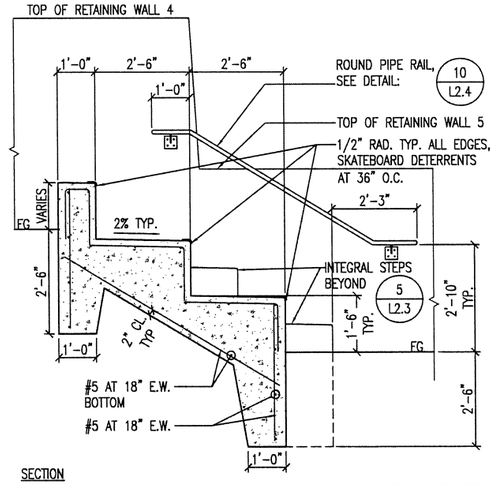
SECTION

2 STORM-WATER PLANTER
NTS



SECTION

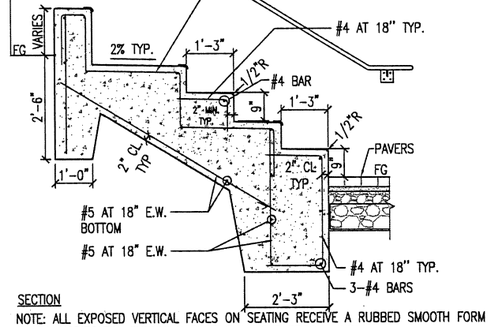
3 WEIR WALL
NTS



SECTION

NOTE: ALL EXPOSED VERTICAL FACES ON SEATING RECEIVE A RUBBED SMOOTH FORM FINISH, HORIZONTAL SURFACES RECEIVE A LIGHT BROOM FINISH.

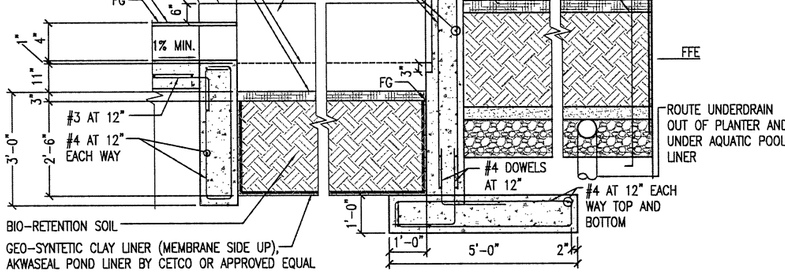
4 OUTDOOR CLASSROOM SEATING
NTS



SECTION

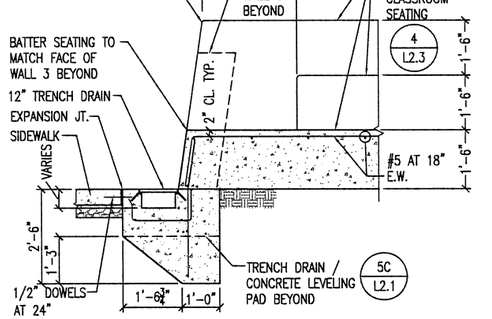
NOTE: ALL EXPOSED VERTICAL FACES ON SEATING RECEIVE A RUBBED SMOOTH FORM FINISH, HORIZONTAL SURFACES RECEIVE A LIGHT BROOM FINISH.

5 OUTDOOR CLASSROOM AT STEPS
NTS

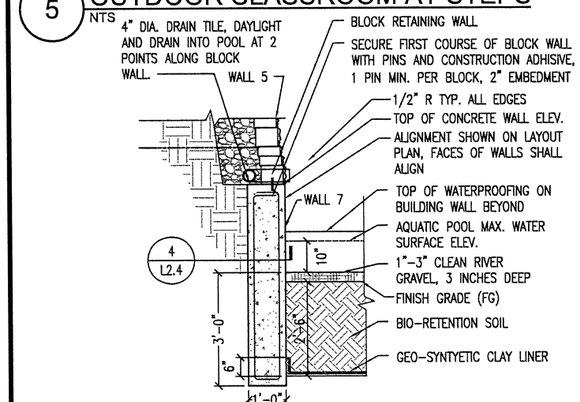


NOTE:
1. ALL EXPOSED SURFACES ON CAST-IN-PLACE CONCRETE WALLS SHALL RECEIVE A RUBBED SMOOTH FORM FINISH.
2. FINISH GRADE (FG) SHOWN IN THE PLANTER SHALL BE THE SAME ELEVATION THROUGHOUT THE PLANTER.

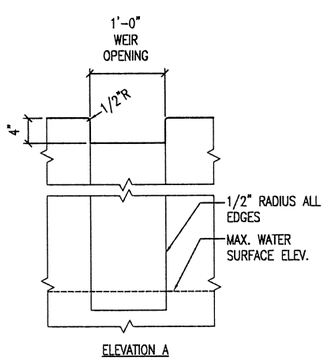
6 AQUATIC POOL
NTS



7 CLASSROOM SEATING TERMINUS
NTS

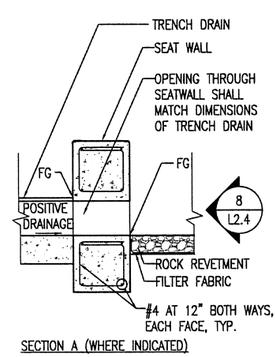


8 AQUATIC POOL WALL
NTS

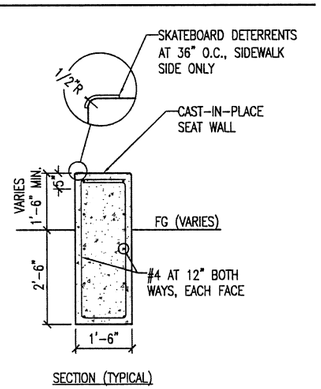


ELEVATION A

9 WEIR AT WALL 6
NTS



SECTION A (WHERE INDICATED)



SECTION (TYPICAL)

10 CONCRETE SEAT WALL
NTS

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GENESIS ENGINEERING
18141 SWINGLY RIDGE ROAD SUITE 300
ST. LOUIS MISSOURI 63017

REV	DESCRIPTION	DATE

BID PACKAGE 2 - FINAL BID DOCUMENTS
Science Renovations / Addition
PARKWAY CENTRAL HIGH SCHOOL
369 NORTH WOODS MILL ROAD
Chesterfield, Missouri 63017

PARKWAY SCHOOL DISTRICT

STATE OF MISSOURI

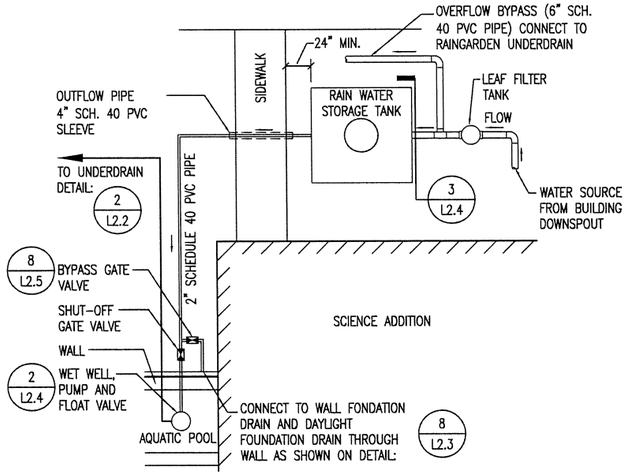
Name / Number	Date
Lenn Miller, Landscape Architect / 2002009610 PB Americas, Inc. / 000044	

SHEET CONTENT
LANDSCAPE DETAILS

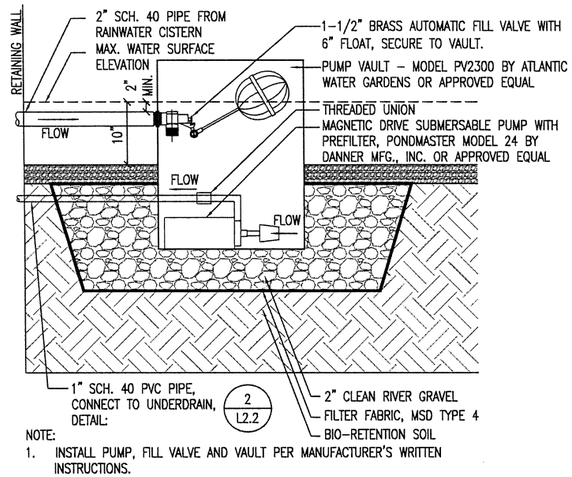
DATE:	OCTOBER 27, 2009
SCALE:	AS SHOWN
DRAWN BY:	LEL
CHECKED BY:	HLM
APPROVED BY:	HLM

PSD PROJECT NUMBER:	PN5008018
PB PROJECT NUMBER:	35998A

SHEET NUMBER: **L2.3**

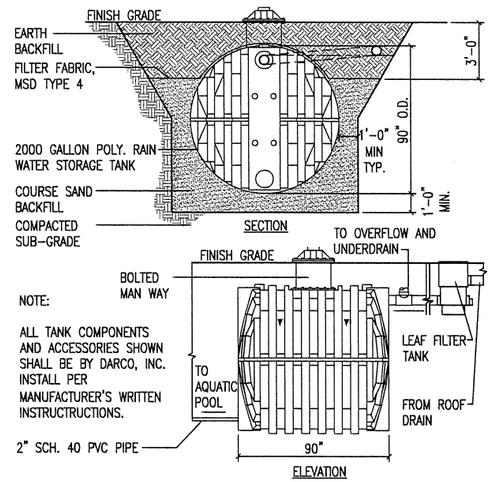


1 RAINWATER STORAGE DIAGRAM
NTS



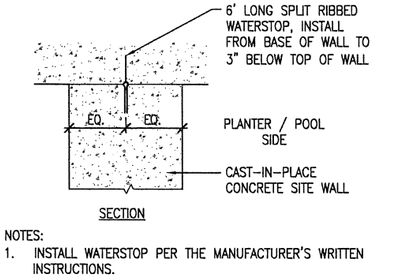
NOTE:
1. INSTALL PUMP, FILL VALVE AND VAULT PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

2 WET WELL, PUMP AND FLOAT VALVE
NTS



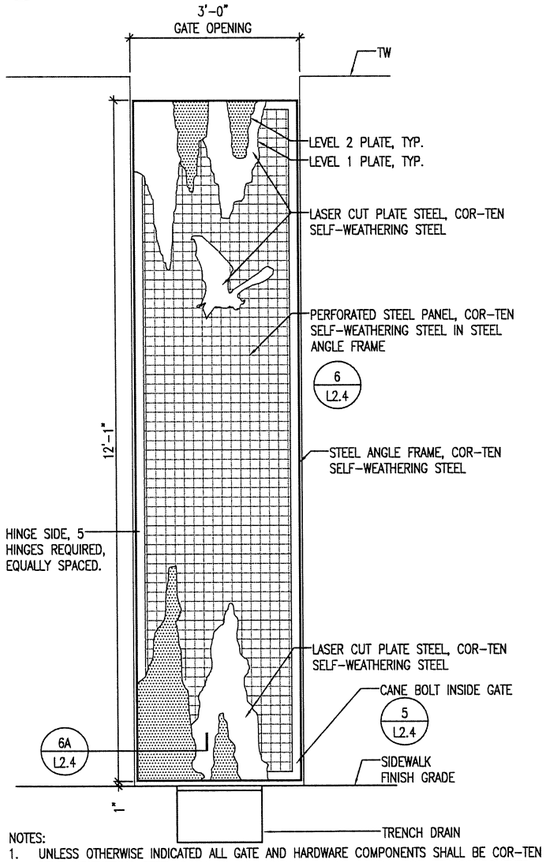
NOTE:
ALL TANK COMPONENTS AND ACCESSORIES SHOWN SHALL BE BY DARCO, INC. INSTALL PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

3 RAIN WATER STORAGE TANK
NTS



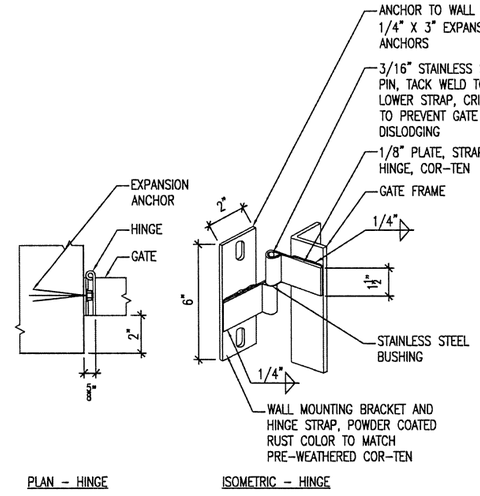
NOTES:
1. INSTALL WATERSTOP PER THE MANUFACTURER'S WRITTEN INSTRUCTIONS.

4 WATER STOP
NTS

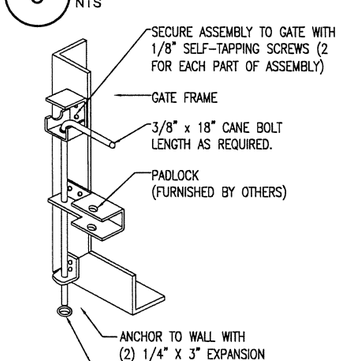


NOTES:
1. UNLESS OTHERWISE INDICATED ALL GATE AND HARDWARE COMPONENTS SHALL BE COR-TEN SELF-WEATHERING STEEL SHALL BE PER ASTM A588, GRADE B. COR-TEN COMPONENTS SHALL BE LASER CUT FROM PLATE STEEL, MACHINE FORMED AND SHOP WELDED.
2. GRIND SMOOTH ALL EXPOSED EDGES.
3. SUBMIT DETAILED SHOP DRAWINGS OF GATE AND HARDWARE FOR APPROVAL PRIOR TO FABRICATION.
4. GATE SHALL SWING AWAY FROM SIDEWALK.

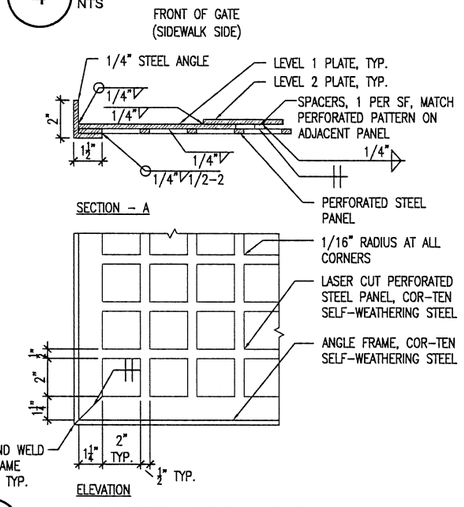
7 SIMULATED SPRING - GATE
NTS

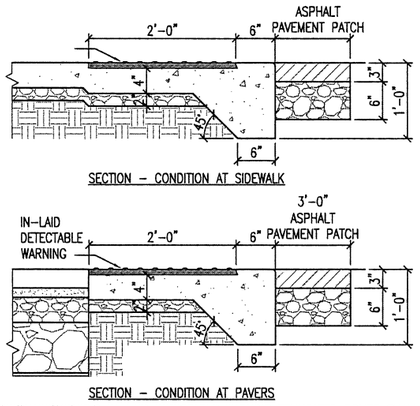


5 SIMULATED SPRING - GATE HARDWARE
NTS



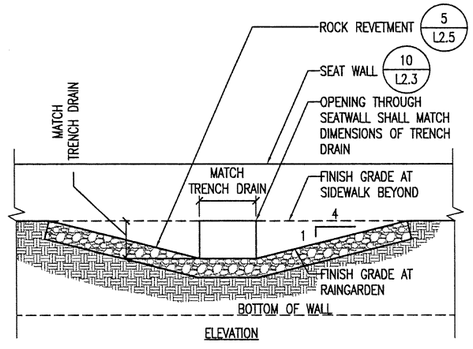
6 SIMULATED SPRING GATE
NTS



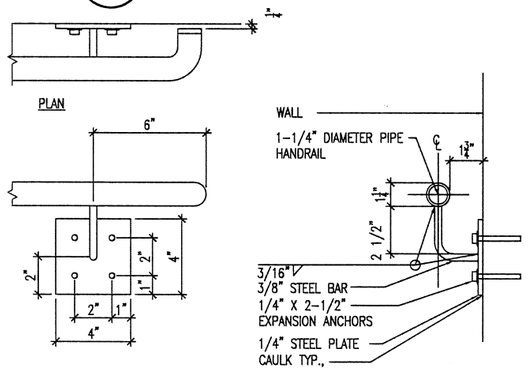


NOTE: PREMANUFACTURED IN-LAID DETECTABLE WARNING TRUNCATED DOMES SHALL BE ARMOR-TILE MODULAR SYSTEM BY A.S.P. ENTERPRISES - FENTON, MO OR APPROVED EQUAL. COLOR: BRICK RED

9 TACTILE WARNING SURFACE
NTS



8 SEAT WALL AT TRENCH DRAIN
NTS



NOTE: PRIME AND PAINT HANDRAIL COMPONENTS BLACK.

10 WALL MOUNTED RAILING
NTS

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St. Louis, Missouri 63021
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GENESIS ENGINEERING
18141 SWINGLY RIDGE ROAD SUITE 300
ST. LOUIS MISSOURI 63017

REV	DESCRIPTION	DATE

BID PACKAGE 2 - FINAL BID DOCUMENTS
Science Renovations / Addition
PARKWAY CENTRAL HIGH SCHOOL
369 NORTH WOODS MILL ROAD
Chesterfield, Missouri 63017

PARKWAY SCHOOL DISTRICT
STATE OF MISSOURI

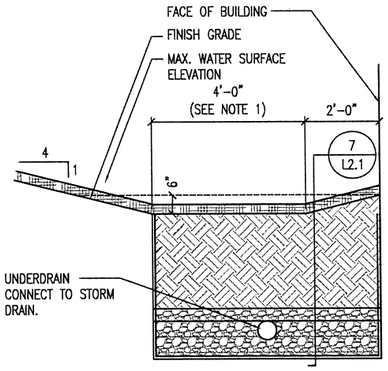
Name / Number — Date
Lenn Miller, Landscape Architect / 2002009610
PB Americas, Inc. / 000044

SHEET CONTENT
LANDSCAPE DETAILS

DATE: OCTOBER 27, 2009
SCALE: AS SHOWN
DRAWN BY: LEL
CHECKED BY: HLM
APPROVED BY: HLM

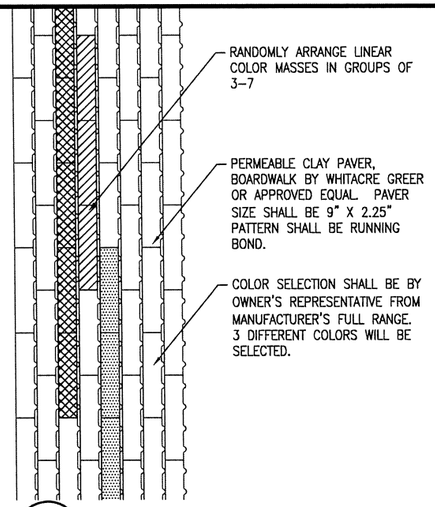
PSD PROJECT NUMBER: PN5008018
PB PROJECT NUMBER: 35998A

SHEET NUMBER: **L2.4**

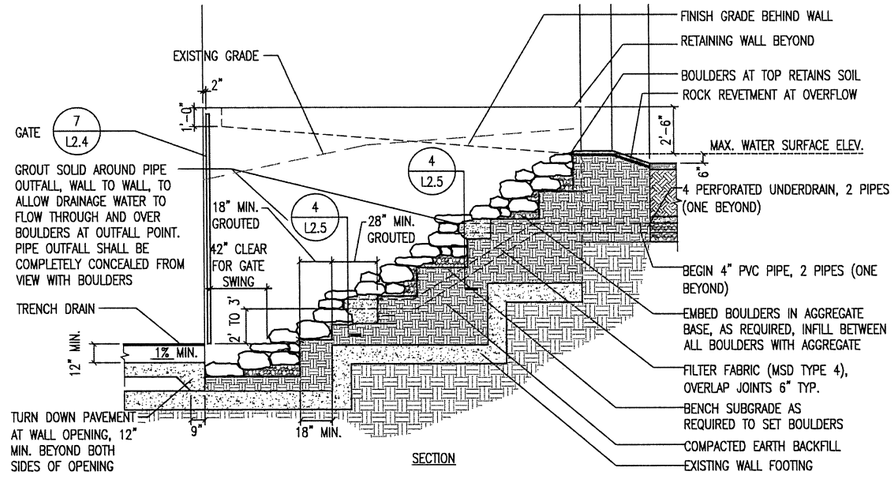


NOTES:
1. BIO-SWALE DRAINS INTO RAINGARDEN AT NORTHEAST CORNER OF BUILDING WIDTH VARIES IN RAIN GARDEN.

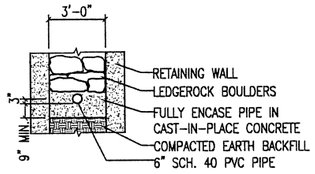
1 BIO-SWALE
NTS



2 PAVER PATTERN
NTS

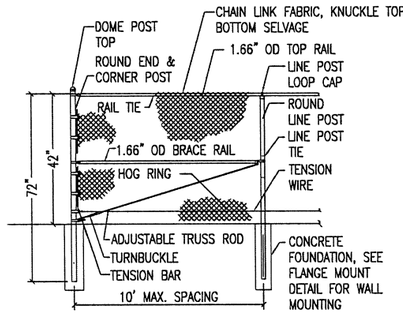


3 SIMULATED SPRING
NTS



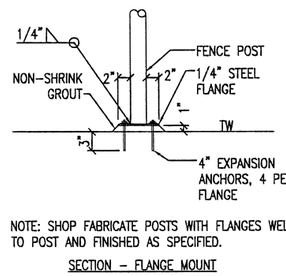
1. SELECT BOULDERS FOR TIGHTEST FIT BETWEEN WALLS AND WITHIN STACKED LAYERS.
2. BOULDERS SHALL VARY IN SIZE FROM 4-12 INCHES IN HEIGHT TO 8-35 INCHES IN WIDTH.
3. BOULDERS SHALL BE WEATHERED LIMESTONE LEDGEROCK, DARK GRAY TO LIGHT BUFF IN COLOR, WITH SURFACE MOSS AND LICHEN INTACT.

4 SIMULATED SPRING
NTS



NOTE: ALL FENCE COMPONENTS SHALL BE GREEN VINYL COATED.

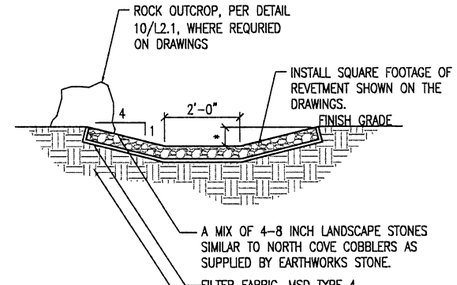
ELEVATION



NOTE: SHOP FABRICATE POSTS WITH FLANGES WELDED TO POST AND FINISHED AS SPECIFIED.

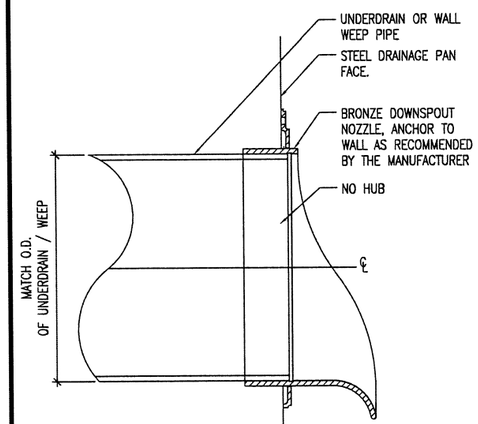
SECTION - FLANGE MOUNT

5 CHAIN-LINK FENCE
NTS

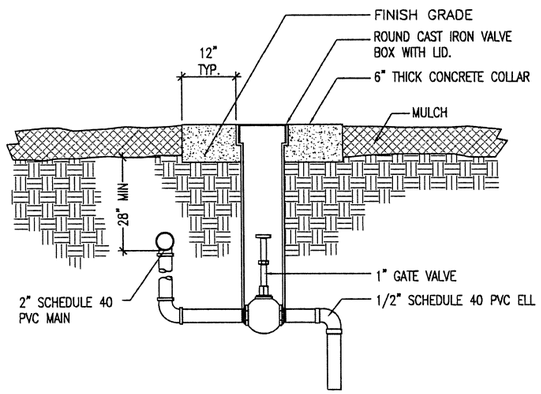


NOTES:
* - 6" DEPTH EXCEPT IN STORMWATER PLANTERS WHICH SHALL BE FLUSH WITH SURROUNDING GRADE.

6 ROCK REVETMENT
NTS



7 WEEP HOLE NOZZEL
NTS



8 GATE VALVE
NTS

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GENESIS ENGINEERING
16141 SWINGLY RIDGE ROAD SUITE 300
ST. LOUIS MISSOURI 63017

REV	DESCRIPTION	DATE

BID PACKAGE 2 - FINAL BID DOCUMENTS
Science Renovations / Addition
PARKWAY CENTRAL HIGH SCHOOL
369 NORTH WOODS MILL ROAD
Chesterfield, Missouri 63017

PARKWAY SCHOOL DISTRICT

STATE OF MISSOURI

Name / Number — Date

Lenn Miller, Landscape Architect / 2002009610
PB Americas, Inc. / 000044

SHEET CONTENT
LANDSCAPE DETAILS

DATE: OCTOBER 27, 2009
SCALE: -
DRAWN BY: -
CHECKED BY: -
APPROVED BY: -

PSD PROJECT NUMBER: PN5008018
PB PROJECT NUMBER: 35998A

SHEET NUMBER: **L2.5**

PARKWAY CENTRAL HIGH SCHOOL

A TRACT OF LAND BEING PART OF KINKEAD ESTATE SUBDIVISION
LOCATED IN US SURVEY 207, TOWNSHIP 45 NORTH, RANGE 5 EAST
OF THE 5TH PRINCIPAL MERIDIAN, CITY OF CHESTERFIELD
ST. LOUIS COUNTY, MISSOURI

PARKWAY SCHOOL DISTRICT
455 North Woods Mill Road Chesterfield, Missouri 63017 (314) 415-8100 (314) 415-8207 Fax

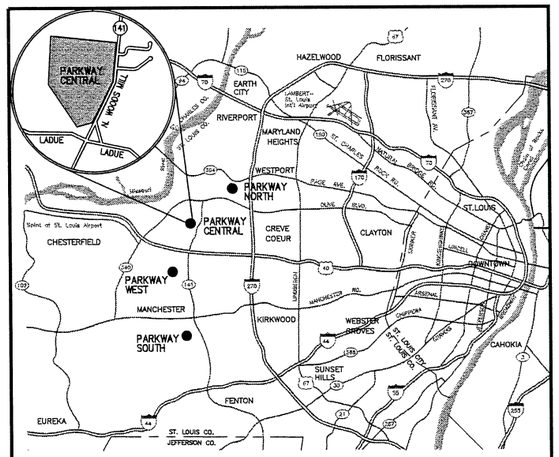
SYNTHETIC TURF FIELD IMPROVEMENTS

LEGEND

ELECTRIC MANHOLE	(E)
EXISTING SANITARY SEWER	
EXISTING STORM SEWER	
EXISTING TREE	14"
EXISTING BUILDING	
EXISTING CONTOUR	533
SPOT ELEVATION	x533.25
EXISTING UTILITIES	G — W — T — E
PROPOSED CONTOUR	530
PROPOSED SPOT	x 530.50
PROPOSED STORM SEWER	
PROPOSED SANITARY SEWER	SS
FIRE HYDRANT	
LIGHT STANDARD	
BUSH	
SIGN	
NOTES PARKING SPACES	(18)
GUY WIRE	
POWER POLE	
WATER MANHOLE	(W)
WATER VALVE	WV
DENOTES RECORD INFORMATION	( )
HANDICAPPED PARKING	
PHONE MANHOLE	(P)
OVERHEAD ELECTRIC	OE
UNDERGROUND TELEPHONE	UT
CONCRETE	CONC
ASPHALT	ASPH
POLYVINYL CHLORIDE	PVC
DENOTES WITH	W/
TRANSFORMER	T
SANITARY	SAN
SWALE	
CHAIN-LINK FENCE	
TRAFFIC FLOW	
SAWCUT	

ABBREVIATIONS

W	– WATER	DB	– DEED BOOK
E	– ELECTRIC	PB	– PLAT BOOK
OE	– OVERHEAD ELECTRIC	PG	– PAGE
UW	– UNDERGROUND ELECTRIC	(_"W)	– RIGHT-OF-WAY WIDTH
G	– GAS	(REC)	– RECORD INFORMATION
T	– TELEPHONE	FT	– FEET
TBR	– TO BE REMOVED	N/F	– NOW OR FORMERLY
TBR & R	– TO BE REMOVED AND REPLACED	FND	– FOUND
UIP	– USE IN PLACE	SQ	– SQUARE
TBA	– TO BE ADJUSTED	CO	– CLEANOUT
BC	– BACK OF CURB	MH	– MANHOLE
FC	– FACE OF CURB	AI	– AREA INLET
TW	– TOP OF WALL	CI	– CURB INLET
BW	– BOTTOM OF WALL	GI	– GRATE INLET
PVMT	– PAVEMENT	YD	– YARD DRAIN
ASPH	– ASPHALT	PVC	– POLYVINYL CHLORIDE PIPE
CONC	– CONCRETE	RCP	– REINFORCED CONCRETE PIPE
GRND	– GROUND	CMP	– CORRUGATED METAL PIPE
FG	– FINISHED GRADE	VCP	– CLAY PIPE
FF	– FINISHED FLOOR	FL	– FLOWLINE
LL	– LOWER LEVEL	TS	– TAILSTAKE
TT	– TOP OF TURF	ELEV, EL	– ELEVATION
TC	– TOP OF CURB	PROP, PR	– PROPOSED
SG	– SUBGRADE	EXIST, EX	– EXISTING
		TYP	– TYPICAL



LOCATION MAP
(NOT TO SCALE)

INDEX

SITE INFORMATION

OWNER	=	PARKWAY SCHOOL DISTRICT
SITE ADDRESS	=	347 NORTH WOODS MILL ROAD CHESTERFIELD, MISSOURI 63017
LOCATOR NUMBER	=	17Q23-0085
EXISTING ZONING	=	"NU" NON-URBAN DISTRICT
FIRE DISTRICT	=	MONARCH FPD
SCHOOL DISTRICT	=	PARKWAY
SEWER DISTRICT	=	METROPOLITAN ST. LOUIS SEWER DIST.
WATER SERVICE	=	MISSOURI AMERICAN WATER
GAS SERVICE	=	LACLEDE GAS
ELECTRIC SERVICE	=	AMEREN UE
PHONE SERVICE	=	SBC/AT&T
FLOOD MAPS	=	29189C0145H
WATERSHED	=	CREVE COUER CREEK
WUNNENBER'S NO.	=	PG. 22, GRID AA-18
MDNR LAND DISTURBANCE PERMIT #	=	MO-R10D713

UTILITY CONTACTS:

CHARTER COMMUNICATION
941 CHARTER COMMONS
TOWN & COUNTRY, MO 63017
ATTN: SARA BISHOP
PHONE: 636.387.6633

AMEREN UE
280 OLD STATE ROAD
ELLISVILLE, MO 63021
ATTN: BRUNO STOPKA
PHONE: 314.992.8902

LACLEDE GAS COMPANY
3950 FOREST PARK AVENUE
ST. LOUIS, MO 63108
ATTN: JIM TRAVIS
PHONE: 314.342.0687

AT&T TELEPHONE COMPANY
402 N. 3RD STREET, 1ST FLOOR
ST. CHARLES, MO 63301
ATTN: KURT MASTERS
PHONE: 636.949.1313

MO. AMERICAN WATER COMPANY
727 CRAIG ROAD
ST. LOUIS, MO 63141
ATTN: MARIANN KLEMME
PHONE: 314.996.2302

ST. LOUIS COUNTY BENCHMARK

#13-124
ELEV.=501.82
"STANDARD TABLET" STAMPED 30 GEU 1975 SET IN NORTHEAST TOWER LEG OF SOUTHERNMOST POWER LINE ABOUT 120' WEST OF HIGHWAY 141 AT PARKWAY CENTRAL HIGH SCHOOL PARKING LOT.

PROPERTY OWNER CERTIFICATION

PARKWAY SCHOOL DISTRIC HEREBY CERTIFIES THAT HE IS FAMILIAR WITH THE SWPPP AND ASSUMES FULL RESPONSIBILITY FOR THE PERFORMANCE AND MAINTENANCE OF THE SWPPP AS STATED ON THE APPROVED PLANS. HE WILL ENSURE THAT ALL CONTRACTORS UNDERSTAND AND ARE FAMILIAR WITH THE SWPPP FOR THE SITE AND THAT EACH CONTRACTOR AGREES TO IMPLEMENT AND PROTECT ELEMENTS OF THE SWPPP AS THEY RELATE TO HIS WORK. PARKWAY SCHOOL DISTRICT ONSITE REPRESENTATIVE SHALL BE RESPONSIBLE FOR THE PERFORMANCE AND MAINTENANCE OF THE SWPPP. IN ADDITION, THE UNDERSIGNED PARKWAY SCHOOL DISTRICT ASSURES THAT ALL CITY PROPERTY OR ROADS WILL BE ADEQUATELY PROTECTED.

J. Scott Bennett
J. SCOTT BENNETT
SCOTT BENNETT – MANAGER OF PLANNING AND ENGINEERING

2/22/11
DATE

PERMITTEE NOTE:

THE PERMITTEE SHALL ASSUME COMPLETE RESPONSIBILITY FOR CONTROLLING ALL SILTATION AND EROSION OF THE PROJECT AREA. THE PERMITTEE SHALL USE WHATEVER MEANS NECESSARY TO CONTROL EROSION AND SILTATION INCLUDING, BUT NOT LIMITED TO, STAKED STRAW BALES AND/OR SILTATION FABRIC FENCES (POSSIBLE METHODS OF CONTROL ARE DETAILED IN THE PLAN). CONTROL SHALL COMMENCE WITH GRADING AND BE MAINTAINED THROUGHOUT THE PROJECT UNTIL ACCEPTANCE OF THE WORK BY THE CITY OF CHESTERFIELD AND MISSOURI DEPARTMENT OF TRANSPORTATION AS NECESSARY. THE PERMITTEE'S RESPONSIBILITIES INCLUDE ALL DESIGN AND IMPLEMENTATION AS REQUIRED TO PREVENT EROSION AND THE DEPOSITING OF SILT. THE CITY OF CHESTERFIELD AND AS REQUIRED BY (STLCO) MAY AT THEIR OPTION DIRECT THE PERMITTEE IN HIS METHODS AS DEEMED FIT TO PROTECT PROPERTY AND IMPROVEMENTS. ANY DEPOSITING OF SILT OR MUD IN NEW OR EXISTING PAVEMENT SHALL BE REMOVED IMMEDIATELY. ANY DEPOSITING OF SILT OR MUD IN NEW OR EXISTING STORM SEWERS OR SWALES SHALL BE REMOVED AFTER EACH RAIN AND AFFECTED AREAS CLEANED TO THE SATISFACTION OF THE CITY OF CHESTERFIELD AND AS REQUIRED BY (STLCO).

OWNER NOTE:

ONCE THE CONTRACTOR DELIVERS THE PROPERTY TO THE OWNER, THE OWNER SHALL BE RESPONSIBLE TO MAINTAIN ANY CONTROL MEASURE THAT IS TO REMAIN AS A PERMANENT STRUCTURE TO CONTROL SILTATION AND EROSION.

CONTRACTOR'S INSURANCE REQUIREMENTS

PRIOR TO OBTAINING A CONSTRUCTION PERMIT FROM THE METROPOLITAN ST. LOUIS SEWER DISTRICT, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE THE DISTRICT WITH A COPY OF AN EXECUTED CERTIFICATE OF INSURANCE INDICATING THAT THE PERMITTEE HAS OBTAINED AND WILL CONTINUE TO CARRY COMMERCIAL GENERAL LIABILITY AND COMPREHENSIVE AUTO LIABILITY INSURANCE. THE REQUIREMENTS AND LIMITS SHALL BE AS STATED IN THE "RULES AND REGULATIONS AND ENGINEERING DESIGN REQUIREMENTS FOR SANITARY AND STORMWATER DRAINAGE FACILITY", SECTION 10.090 (ADDENDUM).

OWNER

PARKWAY SCHOOL DISTRICT
455 N. WOODS MILL ROAD
CHESTERFIELD, MISSOURI 63017
CONTACT: J. SCOTT BENNETT P.E.
PH: (314) 415-8231

PREPARED FOR:

ATG SPORTS
C/O DON BOLINGER, PRESIDENT
1349 MCNUTT ROAD, SUITE D
HERCULANEUM, MO 63048
PHONE: (636) 524-6135
FAX: (636) 933-4994

MISSOURI ONE CALL SYSTEM INC. 1-800-344-7483 STOP-CALL BEFORE YOU DIG

STOCK AND ASSOCIATES CONSULTING ENGINEERS, INC. AND THE UNDERSIGNED ENGINEER HAVE NO RESPONSIBILITY FOR SERVICES PROVIDED BY OTHERS TO IMPLEMENT THE IMPROVEMENTS SHOWN ON THIS PLAN AND ALL OTHER DRAWINGS WHERE THE UNDERSIGNED ENGINEER'S SEAL APPEARS. THE CONSTRUCTION MEANS AND METHODS ARE THE SOLE RESPONSIBILITY OF THE OWNER AND CONTRACTOR. STOCK AND ASSOCIATES CONSULTING ENGINEERS, INC. HAS NO RESPONSIBILITY TO VERIFY FINAL IMPROVEMENTS AS SHOWN ON THIS PLAN UNLESS SPECIFICALLY ENGAGED AND AUTHORIZED TO DO SO BY THE OWNER OR CONTRACTOR.

UTILITY NOTE

UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS, RECORDS AND INFORMATION, AND , THEREFORE DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NON-EXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE FACILITIES, STRUCTURES AND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS. THE UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319 RSMo..

UTILITY LOCATES

MISSOURI ONE-CALL
1 800 344-7483
CITY OF CHESTERFIELD
PUBLIC WORKS
(636) 537-4000

3.) REQUIRED SETS TO MSD 04/1/11
2.) REVISED PER MSD AND CITY COMMENTS 03/16/11
1.) REVISED PER MSD AND CITY COMMENTS 02/21/11

M.S.D. P# 17328-11
BASE MAP # 17-Q

APR. 4, 2011
100% COMPLETE

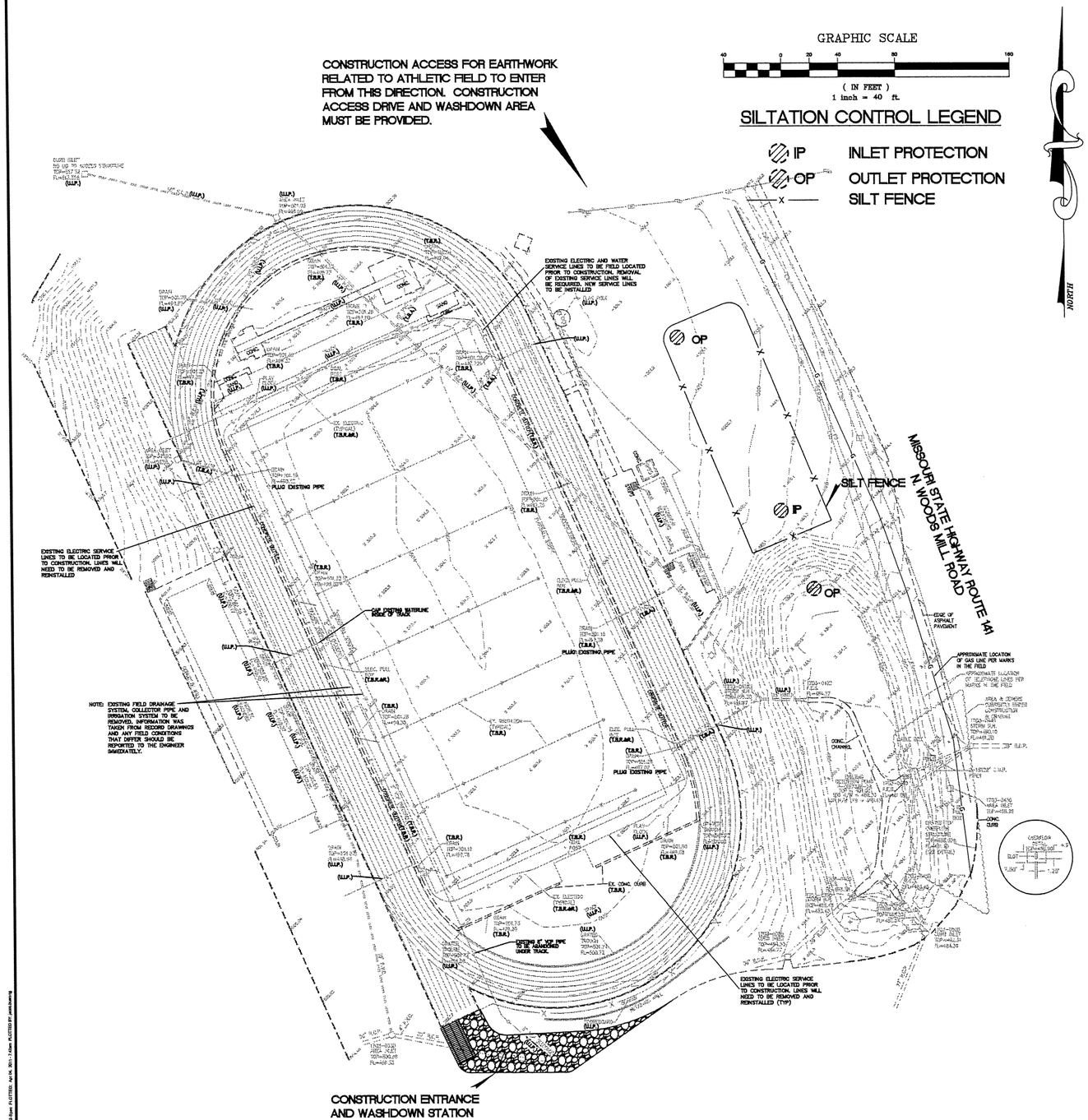
PARKWAY CENTRAL HIGH SCHOOL

TITLE SHEET

STOCK & ASSOCIATES Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530-9100
FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY NUMBER: 000996

DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
J.M.B.	12/15/10	G.M.S.	12/22/10	210-4672	C1 of 10



SILTATION NOTES

1. Inspection of siltation control devices shall take place once every seven days and within 24 hours of any 0.5"/24 hour rain event. Any siltation control in need of repair shall occur immediately.
2. Any disturbed areas which will remain unworked for 5 days or more shall be stabilized with seeding and mulching per specifications within 5 days. If seasonal conditions prohibit seeding, mulching or matting shall be used.
3. All slopes or drainage channels, once constructed to final grade, shall be seeded and mulched per specifications within seven (7) days.
4. Straw bales shall be installed immediately around each storm sewer structure once final construction of each individual structure is complete.
5. All siltation control devices shall remain in place until upslope areas have been permanently stabilized.

Siltation Control Schedule Implementation

1. Perimeter siltation control and construction entrances to be installed.
2. Begin placing aggregate base in parking areas once area has reached final grade to prevent erosion.
3. Place silt catrol around each storm sewer structure as it is completed.
4. Immediately seed areas upon reaching final grade that are to be permanently seeded.

Temporary Access Roads and Parking Areas Specifications

1. Temporary roads shall follow the contour of the natural terrain to the extent possible. Slopes should not exceed 10 percent.
2. Grades should be sufficient to provide drainage, but should not exceed 4 percent.
3. Roadbeds shall be at least 24 feet wide.
4. All cuts and fills shall be 3:1 or flatter to the extent possible.
5. Drainage ditches shall be provided as needed.
6. The roadbed or parking surface shall be cleared of all vegetation, roots and other objectionable material.
7. A 10—inch course of 2" MINUS aggregate shall be applied immediately after grading or the completion of utility installation within the right—of—way. Filter fabric may be applied to the roadbed for additional stability in accordance with fabric manufacturer's specifications.

Vegetation

All roadside ditches, cuts, fills and disturbed areas adjacent to parking areas and roads shall be stabilized with appropriate temporary or permanent vegetation according to the applicable standards and specifications.

Maintenance

Both temporary and permanent roads and parking areas may require periodic top dressing with new gravel. Seeded areas adjacent to the roads and parking areas should be checked periodically to ensure that a vigorous stand of vegetation is maintained. Roadside ditches and other drainage structures should be checked regularly to ensure that they do not become clogged with silt or other debris.

Silt Fence Specifications

1. Silt Fence to be woven geotextile fabric Mirafi 100X or equal.
2. Fabric to be supported by metal tee post with spade base spaced on 5' centers or per approved manufactures recommendations.
3. Fabric shall be entrenched and backfilled. A trench shall be excavated a minimum of 6 inches deep for the length of the fence. The excavated soil shall be backfilled against the fence. See detail this sheet.
4. Fence height shall be a minimum of 2 feet in height, with the fabric installed on the fence on the upstream side.
5. Silt fences shall be used only on sheet flow conditions.
6. Silt fences and inlet protection shall be installed around all storm sewer structures.

Maintenance

1. Silt fence barriers shall be inspected immediately after each rainfall and at least daily during prolonged rainfall.
2. Close attention shall be paid to the repair of damaged barriers, end runs and undercutting beneath barriers.
3. Necessary repairs to barriers or replacement of fences shall be accomplished promptly.
4. Sediment deposits should be removed after each rainfall. They must be removed when the level of deposition reaches approximately one—half the height of the barrier.
5. Any sediment deposits remaining in place after the silt fence barrier is no longer required shall be dressed to conform to the existing grade, prepared and seeded.

Straw Bale Siltation Control Specifications

Sheet Flow Applications

1. Bales shall be placed in a single row, lengthwise on the contour, with both ends of adjacent bales tightly abutting one another.
2. All bales shall be either wire—bound or string—tied. Straw bales shall be installed so that buildings are oriented around the sides rather than along the tops and bottoms of the bales (in order to prevent deterioration of the bindings). See detail this sheet.
3. The barrier shall be entrenched and backfilled. A trench shall be excavated the width of a bale and the length of the proposed barrier to a minimum depth of 4 inches. After the bales are staked and chinked, the excavated soil shall be backfilled against the barrier. Backfill soil shall conform to the ground level on the downhill and shall be built up to 4 inches against the uphill side of the barrier.
4. Each bale shall be securely anchored by at least two stakes or rebars driven through the bale. The first stake in each bale shall be driven toward the previously laid bale to force the bales together. Stakes or rebars shall be driven deep enough into the ground to securely anchor the bales.
5. The gaps between bales shall be chinked (filled by wedging) with straw to prevent water from escaping between the bales. (Loose straw scattered over the area immediately uphill from a straw bale barrier tends to increase barrier efficiency).
6. Inspection shall be frequent and repair or replacement shall be made promptly as needed.
7. Straw bale barriers shall be removed when they have served their usefulness, but not before the upslope areas have been permanently stabilized.

Channel Flow Applications

1. Bales shall be placed in a single row, lengthwise, oriented perpendicular to the contour, with ends of adjacent bales tightly abutting one another.
2. The barrier shall be extended to such a length that the bottoms of the end bales are higher in elevation than the top of the lowest middle bale to assure that sediment—laden runoff will flow either through or over the barrier but not around it.

Maintenance

1. Straw bale barriers shall be inspected immediately after each rainfall and at least daily during prolonged rainfall.
2. Close attention shall be paid to the repair of damaged fence, end runs and undercutting beneath fence.
3. Necessary repairs to barriers or replacement of silt fence shall be accomplished promptly.
4. Sediment deposits should be removed after each rainfall. They must be removed when the level of deposition reaches approximately one—half the height of the barrier.
5. Any sediment deposits remaining in place after the straw bale barrier is no longer required shall be dressed to conform to the existing grade, prepared and seeded.

3.) REQUIRED SETS TO MSD 04/1/11
2.) REVISED PER MSD AND CITY COMMENTS 03/16/11
1.) REVISED PER MSD AND CITY COMMENTS 02/21/11

M.S.D. P# 17328—11
BASE MAP # 17—Q

APR. 4, 2011
100% COMPLETE

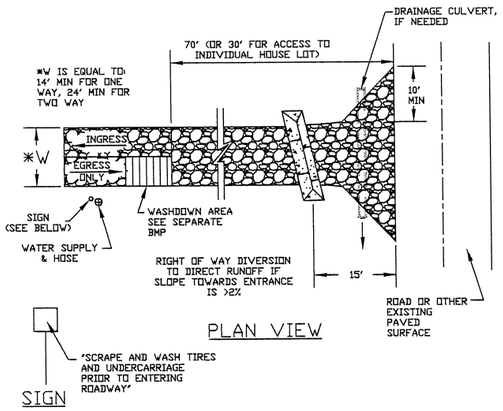
GEORGE M. STOCK E—25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

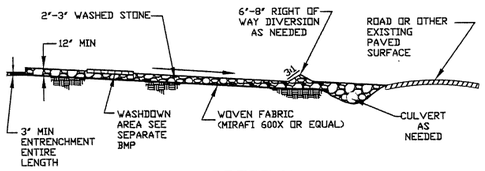
PARKWAY CENTRAL HIGH SCHOOL

EXISTING CONDITIONS/DEMO/SWPPP SHEET

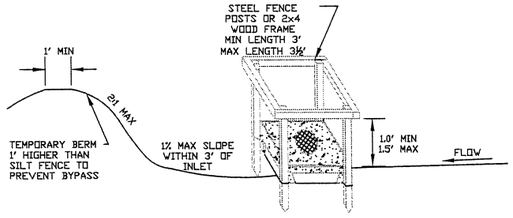
STOCK & ASSOCIATES
Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530-9100
FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

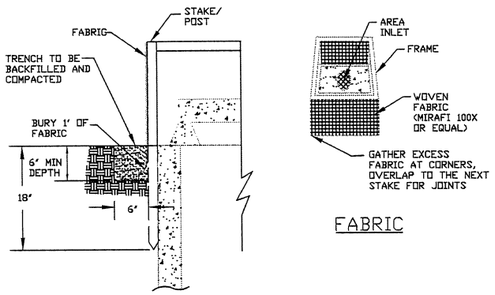
DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
J.M.B.	12/15/10	G.M.S.	12/22/10	210—4672	C2 of 10



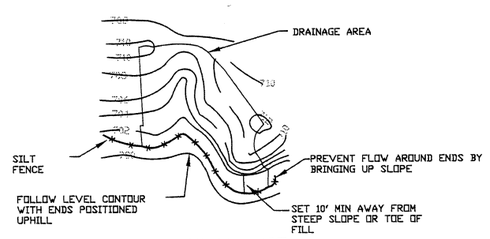


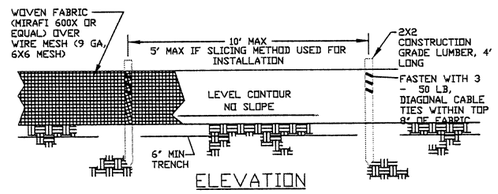
CONSTRUCTION ENTRANCE

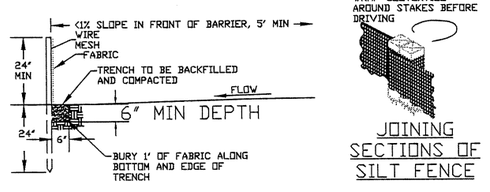




INLET PROTECTION

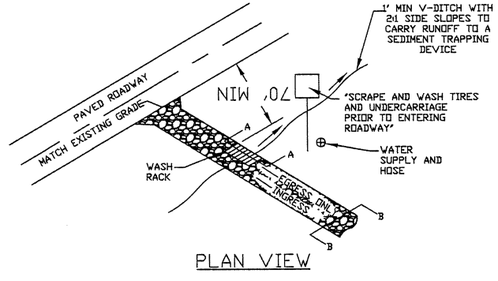


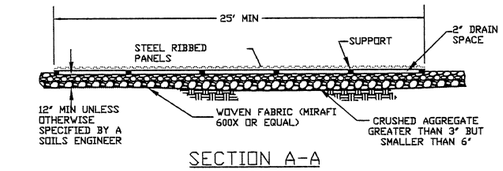


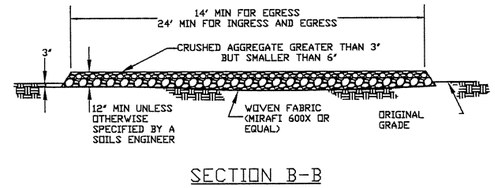


NOTE: IF FABRIC IS INSTALLED BY EQUIPMENT DESIGNED TO SLICE INTO THE GROUND, THE TRENCH IS NOT NEEDED

SILT FENCE







WASHDOWN STATION

Category: SEDIMENT CAPTURE
Use Group: TEMPORARY
ISSUED 6-1-09

SILT FENCE

PHYSICAL DESCRIPTION:

A fence constructed of woven filter fabric and wire mesh stretched between posts and entrenched in the ground designed to pond stormwater runoff and cause sediment to settle out.

WHERE BMP IS TO BE INSTALLED:

Installed along slopes, at base of slopes, and around perimeter of site as final barrier to sediment being carried off site. Spacing of fence along slopes is relative to slope:

CONDITIONS FOR EFFECTIVE USE OF BMP:

Type of Flow: Sheet flow only
Contributing Slope Length: 30 foot maximum for 3:1 slopes
50 foot maximum for slopes between 3:1 and 10:1
100 foot maximum for slopes under 10%.

WHEN BMP IS TO BE INSTALLED:

Prior to disturbance of natural vegetation and at intervals during construction of fill slopes

INSTALLATION/CONSTRUCTION PROCEDURES:

- ✓ Drive post for fence line
- ✓ Dig trench to required dimensions in front of posts for fabric burial
- ✓ Attach wire mesh to posts
- ✓ Attach fabric to posts, allowing required length below ground level to run fabric along bottom of trench
- ✓ Backfill and compact soil in trench to protect and anchor fabric

Alternate Construction – Install fence by slicing it into ground with specialized equipment
Install posts at reduced spacing indicated on detail

O&M PROCEDURES:

- ✓ Inspect at least every two weeks and after every storm
- ✓ Remove sediment buildup deeper than ½ the fence height or 12", whichever is less
- ✓ Replace torn of clogged fabric; repair loose fabric
- ✓ Repair unstable or broken posts
- ✓ Stabilize any areas susceptible to undermining
- ✓ Extend fence or add additional row(s) of fence if necessary to provide adequate protection

SITE CONDITIONS FOR REMOVAL:

After permanent vegetation of slope is established. Remove fence, regrade trench area and vegetate.

TYPICAL DETAIL: SC-8

SILT FENCE SC-8

Category: TRACKING CONTROL
Use Group: TEMPORARY
ISSUED 6-1-09

CONSTRUCTION ENTRANCE

PHYSICAL DESCRIPTION:

A stabilized entrance to a construction site designed to minimize the amount of sediment tracked from the site on vehicles and equipment. Stabilization generally consists of aggregate over fabric. Mud and sediment fall off of tires as they travel along the stabilized entrance; however, additional measures in the form of a washdown area should also be included on site. The stabilized entrance also distributes the axle load of vehicles over a larger area; thereby mitigating the rutting impact vehicles normally have on unpaved areas.

WHERE BMP IS TO BE INSTALLED:

At locations where it is safe for construction vehicles and equipment to access existing streets – preferably at location of future streets or drives.

CONDITIONS FOR EFFECTIVE USE OF BMP:

Drainage: Ditches or pipes, if needed, sized for 15 year, 20 minute storm; HGL 6" below surface of entrance

WHEN BMP IS TO BE INSTALLED:

First order of work, along with washdown area, prior to vehicles or equipment accessing unpaved areas.

INSTALLATION/CONSTRUCTION PROCEDURES:

- ✓ Grade and compact area of construction entrance
- ✓ Install culvert under entrance if needed to maintain positive drainage
- ✓ Place fabric and cover with aggregate, forming diversion across entrance if needed to direct runoff away from roadway
- ✓ See Washdown Station BMP for additional steps

O&M PROCEDURES:

- ✓ Immediately remove any mud or debris tracked onto paved surfaces
- ✓ Remove sediment and clods of dirt from construction entrance continuously
- ✓ Replace rock if necessary to maintain clean surface
- ✓ Repair settled areas

SITE CONDITIONS FOR REMOVAL:

Remove when vehicles and equipment will no longer access unpaved areas

TYPICAL DETAIL: TC-1

CONSTRUCTION ENTRANCE TC-1

Category: TRACKING CONTROL
Use Group: TEMPORARY
ISSUED 6-1-09

WASHDOWN STATION

PHYSICAL DESCRIPTION:

An area located at construction entrances designed to wash sediment from the tires and undercarriage of exiting vehicles and prevent sediment from being tracked onto existing roadways.

WHERE BMP IS TO BE INSTALLED:

Across or immediately adjacent to exit paths from unpaved construction sites.

CONDITIONS FOR EFFECTIVE USE OF BMP:

Drainage: Downstream BMP sized to treat dirty runoff from washdown station

WHEN BMP IS TO BE INSTALLED:

First order of work, along with construction entrance, prior to vehicles or equipment accessing unpaved areas.

INSTALLATION/CONSTRUCTION PROCEDURES:

- ✓ Grade and compact area for drainage under washdown pad
- ✓ Install steel-ribbed plate on frame or other support to allow a 2" drain space
- ✓ Grade and vegetate downstream BMP (v-ditch shown on detail)
- ✓ Install water supply and hose
- ✓ Post sign in advance of station indicating that all exiting vehicles and equipment must use station prior to exiting site

O&M PROCEDURES:

- ✓ Remove sediment daily
- ✓ Repair settled areas
- ✓ Replace rock if necessary to maintain clean surface

SITE CONDITIONS FOR REMOVAL:

Remove when vehicles and equipment will no longer access unpaved areas

TYPICAL DETAIL: TC-4

WASHDOWN STATION TC-4

3.) REQUIRED SETS TO MSD 04/1/11
2.) REVISED PER MSD AND CITY COMMENTS 03/16/11
1.) REVISED PER MSD AND CITY COMMENTS 02/21/11

M.S.D. P# 17328-11
BASE MAP # 17-Q

APR. 4, 2011
100% COMPLETE

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

PARKWAY CENTRAL HIGH SCHOOL

SWPPP DETAILS

STOCK & ASSOCIATES
Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530-9100
FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

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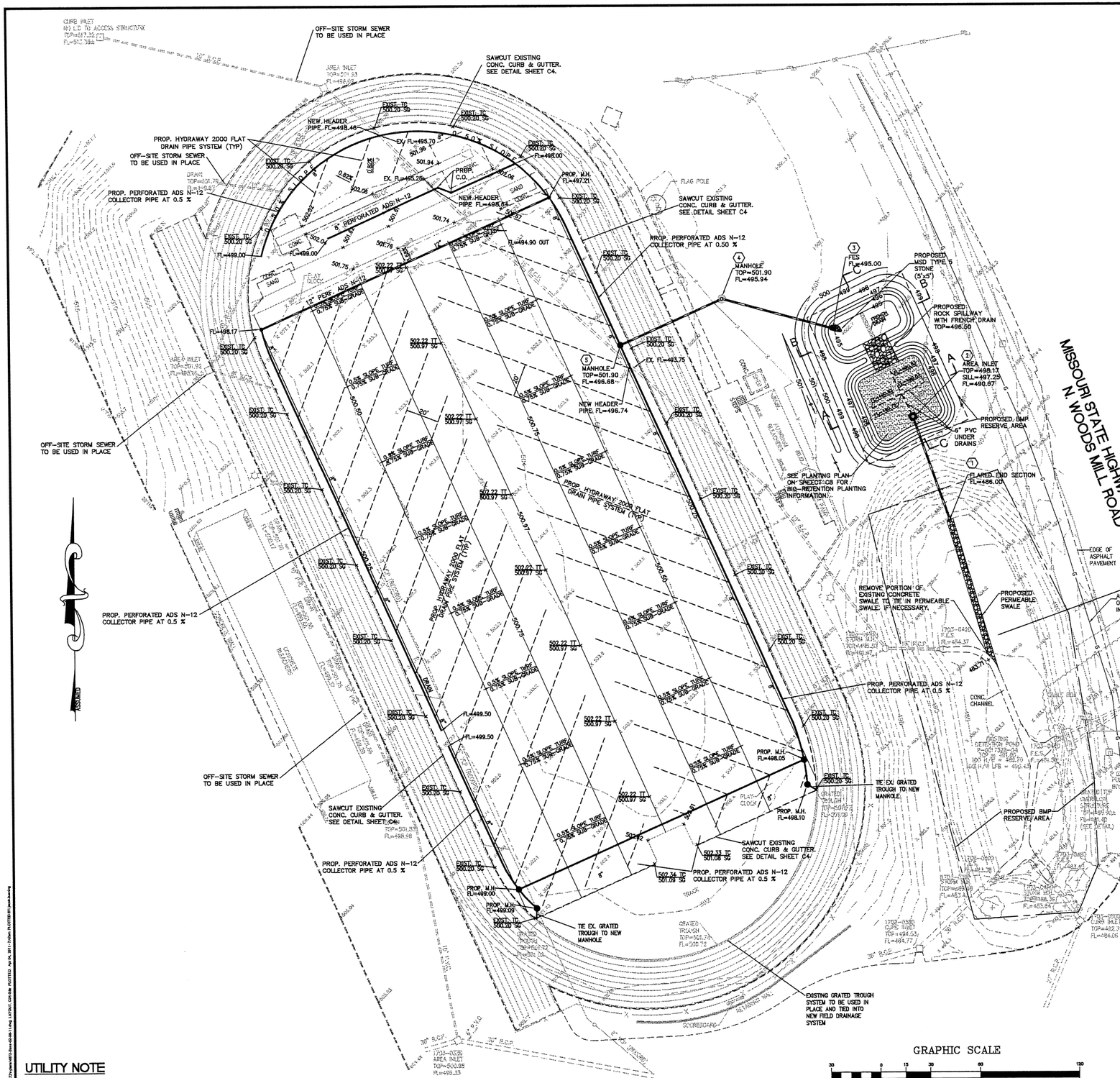

HAUL ROUTE

Route:
1. START NORTH ON ROYAL CREST COURT TOWARDS SOUTH OUTER FORTH ROAD.
2. TURN RIGHT ON SOUTH OUTER FORTY ROAD.
3. MERGE ONTO I-64 EAST
4. TAKE MO-141 EXIT 22
5. TURN LEFT ONTO MO-141 NORTH WOODS MILL ROAD. CONTINUE TO FOLLOW MO-141 NORTH.
6. TURN RIGHT ONTO OLIVE BLVD.
7. TAKE THE THIRD LEFT ONTO CREVE COEUR MILL ROAD.
8. STAY STRAIGHT TO GO ONTO MARYLAND HEIGHTS EXPRESSWAY.
9. TURN RIGHT ONTO CREVE COEUR MILL ROAD.
10. END AT FRED WEBER LAND FILL.

CONSTRUCTION SITE RUNOFF SHALL NOT FLOW INTO THE WATER QUALITY BMP(S). ALL STORMWATER FLOW TO THE WATER QUALITY BMP(S) SHALL BE DIVERTED, PLUGGED, OR DISCONNECTED UNTIL THE CONSTRUCTION SITE IS STABLE AND THE MSD DEDICATION INSPECTOR PROVIDES APPROVAL TO PLACE THE BMP(S) ONLINE.

NOTES:
1. PROPOSED FIELD UNDERDRAIN SYSTEM PER MANUFACTURER.
2. GEOTECHNICAL ENGINEER SHALL BE PRESENT TO INSPECT SUBGRADE AND CONFIRM ADEQUACY FOR PLACEMENT OF ROCK FIELD BASE.
3. CONTRACTOR SHALL VERIFY UNDERDRAIN SYSTEM LAYOUT, SPACING, PIPE SIZE AND INSTALLATION PROCEDURE PRIOR TO COMMENCING CONSTRUCTION.
4. CONTOURS SHOWN WITHIN TRACK ARE TO FIELD SUBGRADE.
5. EXISTING LONG JUMP TRACK AND PITS TO BE USED IN PLACE.
6. EXISTING DETENTION BASIN TO BE USED IN PLACE.

EARTHWORK NOTES

Bulk Cut.....8,391.....± CUBIC YARDS

Bulk Fill.....0.....± CUBIC YARDS (0% SHRINKAGE)

Net.....8,391 (CUT).....± CUBIC YARDS

THE ENGINEER HAS CALCULATED THE ABOVE QUANTITIES OF EARTHWORK TO BE REGARDED AS AN ESTIMATE OF THE BULK MOVEMENT OR REDISTRIBUTION OF SOILS ON THIS PROJECT. AS AN ESTIMATE, THESE QUANTITIES ARE INTENDED FOR GENERAL USE, AND THE ENGINEER ASSUMES NO LIABILITY FOR COST OVERRUNS DUE TO EXCESS EXCAVATED MATERIALS OR SHORTAGES OF FILL.

THE QUANTITIES ESTIMATED FOR EACH OF THE IMPROVEMENT ITEMS LISTED ABOVE ARE BASED UPON THE HORIZONTAL AND VERTICAL LOCATION OF THE IMPROVEMENTS AS PROPOSED ON THE SITE ENGINEERING PLANS PREPARED BY STOCK AND ASSOCIATES CONSULTING ENGINEERS.

THE ENGINEER'S EARTHWORK ESTIMATE DOES NOT INCLUDE ANY OF THE FOLLOWING ITEMS REQUIRING EARTHWORK THAT MAY BE NECESSARY FOR COMPLETION OF THE PROJECT: MISCELLANEOUS UNDERGROUND CONDUITS, INCLUDING SEWER LINES AND WATER MAINS LESS THAN TWENTY-FOUR INCHES IN DIAMETER, STANDARD MANHOLES; PROCESS OR TRANSFER PIPING; ELECTRICAL OR TELEPHONE CONDUITS OR DUCT BANKS; BASES FOR LIGHT STANDARDS; BUILDING FOOTINGS AND FOUNDATIONS, RETAINING WALL BACKFILL, ETC.

THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACTUAL SIZE OF THE FIELD EXCAVATIONS MADE FOR THE INSTALLATION OF UNDERGROUND STRUCTURES, AND AS SUCH, THE ACTUAL QUANTITIES OF EARTHWORK FROM SUCH ITEMS MAY VARY FROM THE ESTIMATE SHOWN ABOVE.

THE ENGINEER ASSUMES NO RESPONSIBILITY FOR COSTS INCURRED DUE TO REMOVAL OF UNSUITABLE MATERIAL WHICH MUST BE REMOVED FROM SITE.

THE ENGINEER HAS MADE THE FOLLOWING ASSUMPTIONS IN THE ABOVE STATED QUANTITIES:

PROPOSED GRADING TO THE SUBGRADE ("SG") ELEVATIONS NOTED ON THE PLAN. PROPOSED CONTOURS REFLECT SUBGRADE ELEVATIONS
EXCAVATION FOR NEW COLLECTOR PIPES RUNNING ALONG INTERIOR OF TRACK IS "NOT" INCLUDED IN CUT NUMBERS.
0% SHRINKAGE
TOPSOIL REMOVAL INCLUDED
EARTHWORK QUANTITIES INCLUDE STORMWATER QUALITY BASIN.

IT IS THE RESPONSIBILITY OF THE GRADING CONTRACTOR TO PERFORM AN INDEPENDENT EARTHWORK ANALYSIS PRIOR TO SUBMISSION OF BID. IN THE EVENT A DISCREPANCY EXISTS THE GRADING CONTRACTOR SHALL NOTIFY ENGINEER OF DISCREPANCY PRIOR TO SUBMISSION OF BID.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO REMOVE AND/OR EXPORT ANY AND ALL MATERIALS NEEDED TO COMPLETE THE FINISHED GRADES AND ELEVATIONS AS SHOWN ON THE "SITE GRADING PLAN" SHEET C4.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN "ALL" GEOTECHNICAL INVESTIGATIONS FROM THE "OWNER". CONTRACTOR SHALL REVIEW AND FAMILIARIZE THEMSELVES WITH RECOMMENDATIONS AS OUTLINED BY THE PROJECT GEOTECHNICAL ENGINEER AND INCORPORATE IT IN THEIR PROPOSED SCOPE OF WORK.

RE-USE OF EXISTING STOCKPILE MATERIALS AND EXCAVATION SPOILS ON-SITE SHALL BE VERIFIED AND COORDINATED WITH THE PROJECT GEOTECHNICAL ENGINEER.

CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ANY ROCK ENCOUNTERED. CONTRACTOR SHOULD FAMILIARIZE THEMSELVES WITH ALL THE GEOTECHNICAL REPORTS AVAILABLE AND REVIEW THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.

AFTER CONTRACTOR RECEIVES AWARD AND NOTICE TO PROCEED (NTP), CONTRACTOR SHALL FIELD VERIFY EXISTING TOPOGRAPHY AND PERFORM EARTHWORK ANALYSIS PRIOR TO COMMENCING GRADING TO RE-CONFIRM BID QUANTITIES.

UTILITY NOTE

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3.) REQUIRED SETS TO MSD 04/1/11
2.) REVISED PER MSD AND CITY COMMENTS 03/16/11
1.) REVISED PER MSD AND CITY COMMENTS 02/21/11

M.S.D. P# 17328-11
BASE MAP # 17-Q

APR. 4, 2011
100% COMPLETE

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

PARKWAY CENTRAL HIGH SCHOOL

SITE AND GRADING PLAN

STOCK & ASSOCIATES
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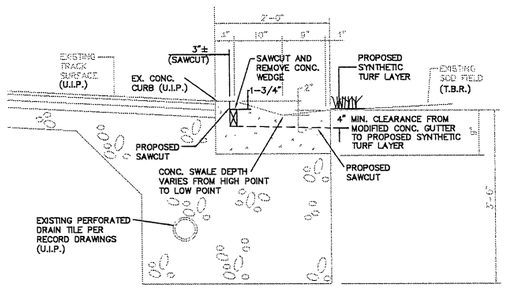
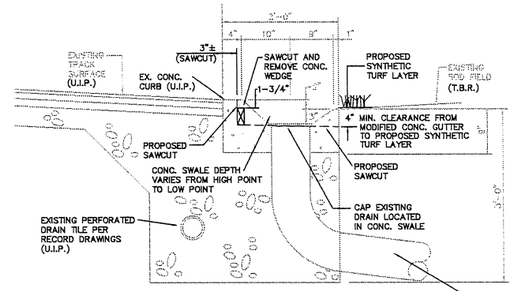
DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
J.M.B.	12/15/10	G.M.S.	12/22/10	210-4672	C4 of 10



NOTE: EXISTING CONCRETE GUTTER SHOWN ABOVE WAS TAKEN FROM THE RECORD DRAWINGS PROVIDED BY PARKWAY.

EXISTING CONCRETE GUTTER MODIFICATION GUTTER HIGH POINT (TYP)

(N.T.S.)

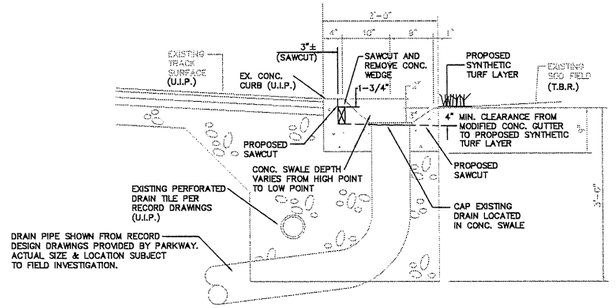


NOTE: EXISTING CONCRETE GUTTER SHOWN ABOVE WAS TAKEN FROM THE RECORD DRAWINGS PROVIDED BY PARKWAY.

DRAIN PIPE SHOWN FROM RECORD DESIGN DRAWINGS PROVIDED BY PARKWAY. ACTUAL SIZE & LOCATION SUBJECT TO FIELD INVESTIGATION.

EXISTING CONCRETE GUTTER MODIFICATION GUTTER LOW POINT - UNDER FIELD CONNECTION (TYP)

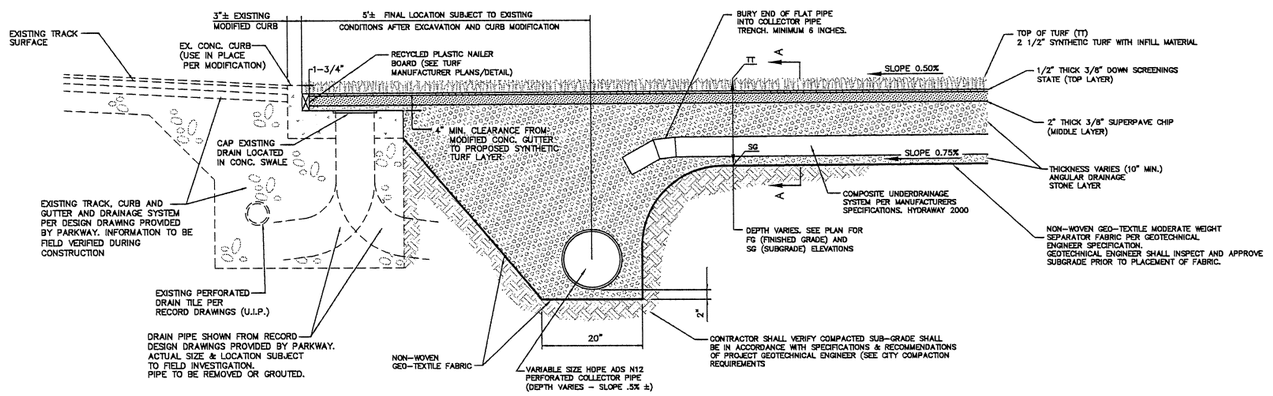
(N.T.S.)



NOTE: EXISTING CONCRETE GUTTER SHOWN ABOVE WAS TAKEN FROM THE RECORD DRAWINGS PROVIDED BY PARKWAY.

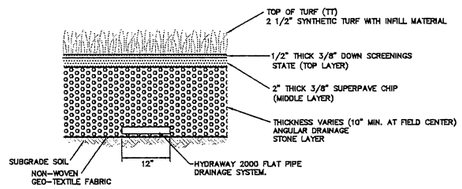
EXISTING CONCRETE GUTTER MODIFICATION GUTTER LOW POINT - UNDER TRACK CONNECTION (TYP)

(N.T.S.)



TYPICAL SECTION THROUGH FIELD

(N.T.S.)



SUBSURFACE DRAINAGE IN FIELD DETAIL A-A

(N.T.S.)

UTILITY NOTE

UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS, RECORDS AND INFORMATION, AND , THEREFORE DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NON-EXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE FACILITIES, STRUCTURES AND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS. THE UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319 RSMo..

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M.S.D. P# 17328-11
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APR. 4, 2011
100% COMPLETE

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY NUMBER: 000996

PARKWAY CENTRAL HIGH SCHOOL

FIELD DETAILS SHEET

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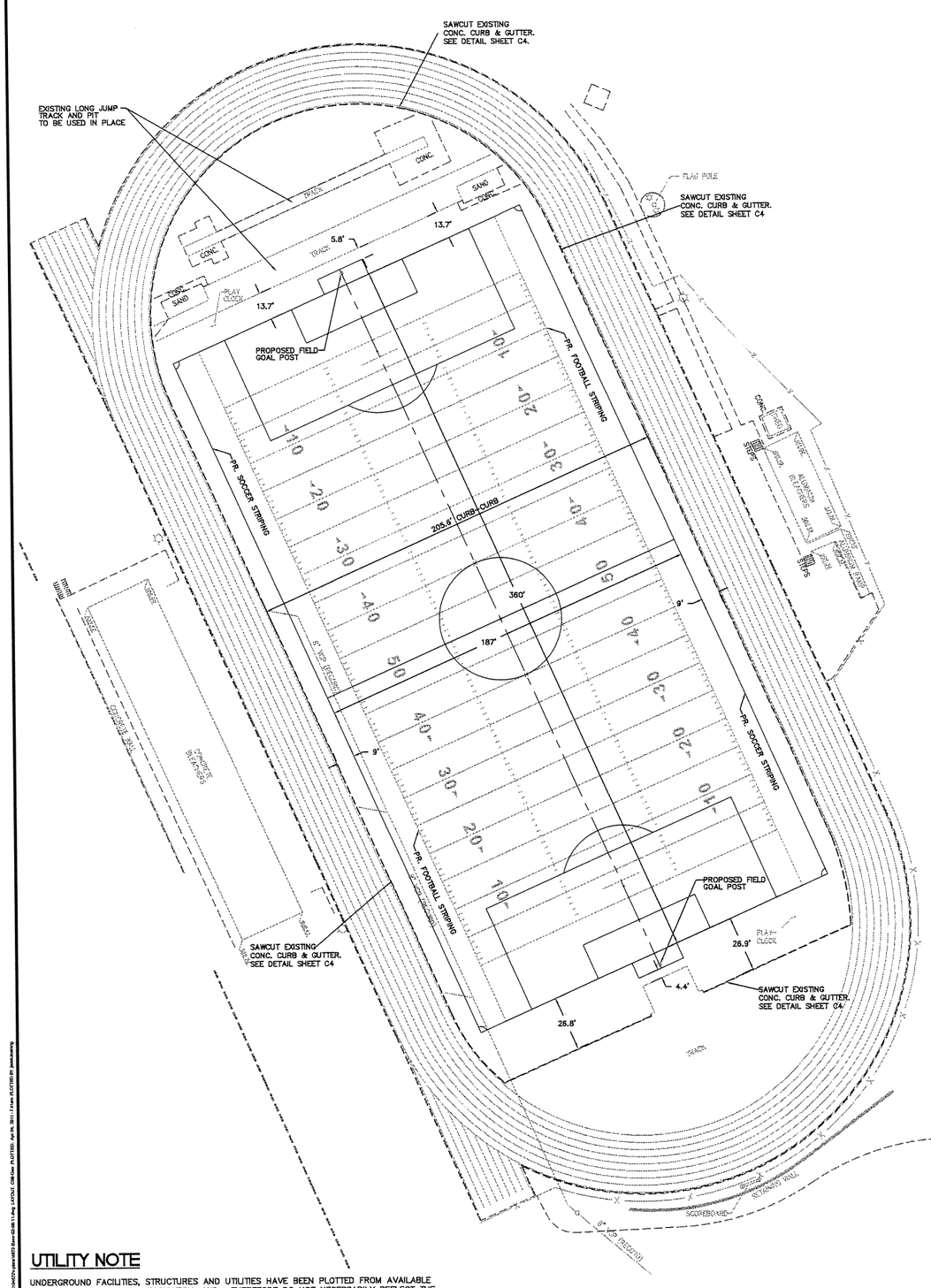
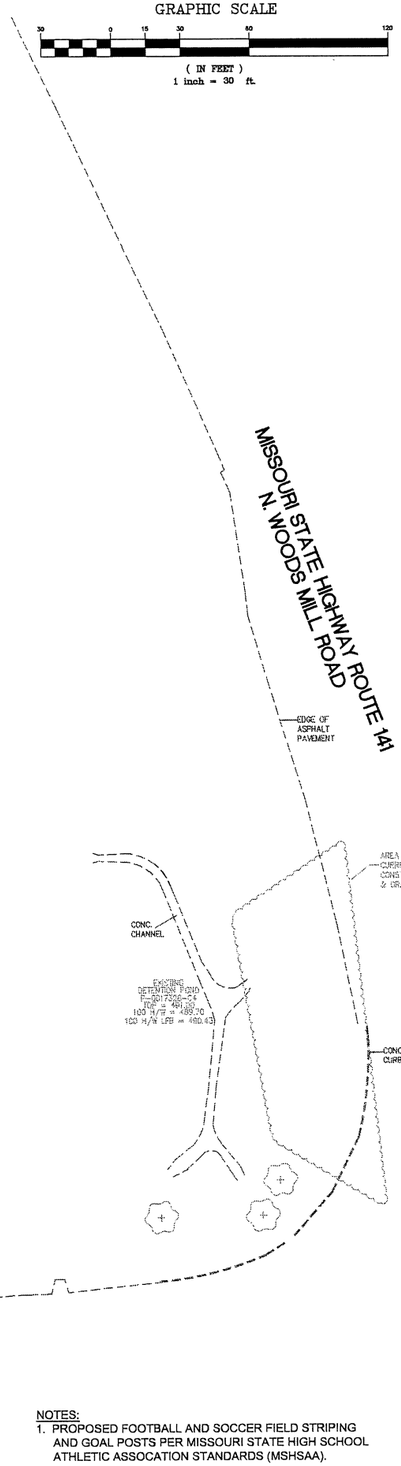
J.M.B.	12/15/10	G.M.S.	12/22/10	210-4672	C5 of 10



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.



GENERAL NOTES:

1.) ALL UTILITIES SHOWN HAVE BEEN LOCATED BY THE ENGINEER FROM AVAILABLE RECORDS. THEIR LOCATION SHOULD BE CONSIDERED APPROXIMATE. THE CONTRACTOR HAS THE RESPONSIBILITY TO NOTIFY ALL UTILITY COMPANIES, PRIOR TO CONSTRUCTION, TO HAVE EXISTING UTILITIES FIELD LOCATED.

2.) GRADING CONTRACTOR SHALL INSTALL SILTATION CONTROL PRIOR TO STARTING THE GRADING. ADDITIONAL SILTATION CONTROL DEVICES SHALL BE INSTALLED AS DIRECTED BY CITY OF CHESTERFIELD.

3.) ALL MATERIALS AND METHODS OF CONSTRUCTION TO MEET THE CURRENT STANDARDS AND SPECIFICATIONS OF CITY OF CHESTERFIELD AND THE METROPOLITAN ST. LOUIS SEWER DISTRICT (MSD).

4.) GRADING & STORM WATER PER 2009 M.S.D. STANDARD CONSTRUCTION SPECIFICATIONS AND DETAILS.

5.) ALL GRADED AREAS SHALL BE PROTECTED FROM EROSION BY EROSION CONTROL DEVICES AND/OR SEEDING AND MULCHING.

6.) ALL FILLS AND BACKFILLS SHALL BE MADE OF SELECTED EARTH MATERIALS, FREE FROM BROKEN MASONRY, ROCK, FROZEN EARTH, RUBBISH, ORGANIC MATERIAL AND DEBRIS.

7.) GRADING CONTRACTOR SHALL KEEP EXISTING ROADWAYS CLEAN OF MUD AND DEBRIS AT ALL TIMES.

8.) NO GRADE SHALL EXCEED 3:1 SLOPE, EXCEPT AS NOTED AND APPROVED PER GEOTECHNICAL ENGINEER.

9.) ALL LANDSCAPE AREAS TO BE FILLED WITH A MINIMUM OF 6" OF TOPSOIL

10.) ALL LANDSCAPED AREAS DISTURBED BY OFF-SITE WORK SHALL BE IMMEDIATELY SEEDED OR SODDED.

11.) ADEQUATE TEMPORARY OFF-STREET PARKING FOR CONSTRUCTION EMPLOYEES SHALL BE PROVIDED. PARKING ON NON-SURFACED AREAS SHALL BE PROHIBITED IN ORDER TO ELIMINATE THE CONDITION WHEREBY MUD FROM CONSTRUCTION AND EMPLOYEES' VEHICLES IS TRACKED ONTO THE PAVEMENT CAUSING HAZARDOUS ROADWAY AND DRIVEWAY CONDITIONS

12.) ALL PUBLIC SEWER CONSTRUCTION MUST CONFORM TO 2009 M.S.D. "STANDARD CONSTRUCTION SPECIFICATIONS AND DETAILS"

13.) THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM SURVEY AND AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, NUMBER OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UTILITIES, SHOWN OR NOT SHOWN, AND SAID UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319, RSMO.

14.) CLEARING TECHNIQUES THAT RETAIN EXISTING VEGETATION TO THE MAXIMUM EXTENT PRACTICABLE SHALL BE USED AND THE TIME PERIOD FOR DISTURBED AREAS TO BE WITHOUT VEGETATIVE COVER SHALL BE MINIMIZED TO THE EXTENT PRACTICAL.

15.) THE DEVELOPER IS ADVISED THAT UTILITY COMPANIES WILL REQUIRE COMPENSATION FOR RELOCATION OF THEIR UTILITY FACILITIES WITHIN PUBLIC ROAD RIGHT-OF-WAY. UTILITY RELOCATION COST SHALL BE CONSIDERED THE DEVELOPER'S RESPONSIBILITY.

16.) THE DEVELOPER SHOULD ALSO BE AWARE OF EXTENSIVE DELAYS IN UTILITY COMPANY RELOCATION AND ADJUSTMENTS. SUCH DELAYS WILL NOT CONSTITUTE A CAUSE TO ALLOW OCCUPANCY PRIOR TO COMPLETION OF IMPROVEMENTS.

17.) AREAS SHALL BE SEEDED AFTER CLEARING AND GRUBBING WHEN NO ACTIVITY WILL OCCUR WITHIN THIRTY (30) DAYS.

18.) ALL OFFSITE PROPERTY OWNERS SHALL BE GIVEN 48 HOURS NOTICE IN ADVANCE OF ANY WORK.

19.) ANY DISTURBED OFF SITE PROPERTY (i.e. BUSHES, FENCES, MAILBOXES, etc.) SHALL BE REPLACED IN KIND, AT THE DEVELOPER'S EXPENSE.

20.) ALL PROPOSED UTILITIES TO BE LOCATED UNDERGROUND.

21.) ALL SIDEWALKS TO BE CONSTRUCTED TO ST. LOUIS COUNTY ADA STANDARDS.

22.) DRIVEWAYS AND ENTRANCES PER ST. LOUIS COUNTY STANDARDS.

23.) SITE SIGNAGE SHALL COMPLY WITH CITY OF CHESTERFIELD SIGN ORDINANCE.

24.) STORMWATER SHALL BE DISCHARGED AT AN ADEQUATE NATURAL DISCHARGE POINT. SINKHOLES ARE NOT ADEQUATE NATURAL DISCHARGE POINTS.

25.) IT IS NOT WARRANTED THAT THIS PLAT CONTAINS COMPLETE INFORMATION REGARDING EASEMENTS, RESERVATIONS, RESTRICTIONS, RIGHTS-OF-WAY, BUILDING LINES, AND OTHER ENCUMBRANCES. FOR COMPLETE INFORMATION, A TITLE OPINION OR COMMITMENT FOR TITLE INSURANCE SHOULD BE OBTAINED.

26.) THIS PLAN IS SUBJECT TO ALL LOCAL, STATE AND FEDERAL REGULATIONS. THERE HAS BEEN NO WETLAND DELINEATION, GEOTECHNICAL INVESTIGATION OR ENVIRONMENTAL DATA PROVIDED TO THIS ENGINEER PRIOR TO DESIGNING THIS PLAN.

27.) FOOTBALL AND SOCCER FIELD STRIPING PER MISSOURI STATE HIGH SCHOOL ATHLETIC ASSOCATIONS REGULATIONS.

28.) SOCCER FIELD STRIPING TO BE HELD MINIMUM OF 9 FEET FROM EDGE OF INNER CURBERS INSIDE OF RUNNING TRACK.

29.) INTERNAL (PRIVATE) STORM SEWERS WILL REQUIRE A SEPARATE DRAINLAYER PERMIT FROM ST. LOUIS COUNTY DEPARTMENT OF PUBLIC WORKS.

30.) TRUCKS SHALL NOT EXCEED POSTED WEIGHT LIMITS FOR ST. LOUIS COUNTY BRIDGES DURING HAUL OPERATIONS.

31.) SEDIMENT SHALL BE WASHED FROM ALL VEHICLES AT WASHDOWN STATION PRIOR TO LEAVING SITE. NO TRACKING OF MUD ONTO COUNTY ROADS SHALL BE ALLOWED.

32.) EXISTING INFORMATION SHOWN ON THE PLANS IS A COMBINATION OF RECORD DRAWINGS PROVIDED BY PARKWAY AND AN ACTUAL FIELD SURVEY PERFORMED BY STOCK AND ASSOCIATES. THE TOPOGRAPHIC SURVEY PROVIDED GROUND ELEVATIONS AND LOCATIONS OF EXISTING (VISIBLE) IMPROVEMENTS. RECORD DRAWINGS WERE USED TO SHOW UNDERGROUND UTILITIES AND DRAINAGE SYSTEMS THAT COULD NOT BE VERIFIED FROM THE SURFACE. CONTRACTOR SHOULD USE CAUTION DURING CONSTRUCTION AND REPORT ANY FINDINGS THAT ARE NOT SHOWN ON THE PLAN TO THE ENGINEER IMEDIATELY.

33.) NO GRADING SHALL OCCER ON THE SITE UNTIL A GRADING PERMIT IS ISSUED.

STORM SEWER NOTES

1.) ALL SEWER CONSTRUCTION AND MATERIALS TO BE IN ACCORDANCE WITH THE METROPOLITAN ST. LOUIS SEWER DISTRICT STANDARD CONSTRUCTION SPECIFICATIONS FOR SEWERS AND DRAINAGE FACILITIES, 2009.

2.) ALL CONCRETE SHALL BE REINFORCED, AND CONFORM TO A.S.T.M. DESIGNATION C76-80 CLASS III UNLESS NOTED.

3.) TYPE "C" BEDDING PER M.S.D. AND ST. LOUIS COUNTY STANDARDS IS REQUIRED FOR PIPES IN ROCK.

4.) ALL TRENCHES UNDER AREAS TO BE PAVED AND UNDER EXISTING PAVING SHALL BE GRANULARLY FILLED WITH 3/4" MINUS CRUSHED LIMESTONE ONLY. BACKFILL SHALL BE PLACED IN ACCORDANCE WITH M.S.D. AND ST. LOUIS COUNTY STANDARDS.

5.) ALL TRENCH BACKFILLS UNDER PAVEMENT WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE GRANULAR BACKFILLED. TRENCH BACKFILLS UNDER PAVED AREAS, OUTSIDE OF PUBLIC RIGHT-OF-WAY SHALL BE GRANULAR BACKFILL IN LIEU OF THE EARTH BACKFILL COMPACTED TO 90 PERCENT OF THE MODIFIED AASHTO T-180 COMPACTION TEST A.S.T.M. D-1557.

6.) JETTING IS NOT AN ACCEPTABLE METHOD OF ACHIEVING BACKFILL COMPACTION. ALL BACKFILL MATERIAL SHALL BE MECHANICALLY COMPACTED TO AT LEAST 95 PERCENT OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY.

7.) FOR SEWER PIPE (STORM, SANITARY AND COMBINED) WITH A DESIGN GRADE LESS THAN ONE PERCENT (1%), VERIFICATION OF THE PIPE GRADE WILL BE REQUIRED FOR EACH INSTALLED REACH OF SEWER, PRIOR TO ANY SURFACE RESTORATION OR INSTALLATION OF ANY SURFACE IMPROVEMENTS. THE CONTRACTOR'S FIELD SUPERVISOR WILL BE REQUIRED TO PROVIDE DAILY DOCUMENTATION VERIFYING THAT THE AS-BUILT PIPE GRADE MEETS THE DESIGN GRADE THROUGH THE SUBMITTAL OF SIGNED CUT SHEETS TO THE MSD INSPECTOR UPON REQUEST.

FIELD SURVEYED VERIFICATION MUST BE MADE UNDER THE DIRECTION OF A LICENSED LAND SURVEYOR OR REGISTERED ENGINEER. THE CONTRACTOR WILL BE REQUIRED TO REMOVE AND REPLACE ANY SEWER REACH HAVING AN AS-BUILT GRADE WHICH IS FLATTER THAN THE DESIGN GRADE BY MORE THAN 0.1%. SEWERS WITH GRADE GREATER THAN THE DESIGN SLOPE MAY BE LEFT IN PLACE, PROVIDED NO OTHER SEWER GRADE IS REDUCED BY THIS VARIANCE IN THE AS-BUILT GRADE.

MSD ALSO RESERVES THE RIGHT TO REQUIRE THE CONTRACTOR TO REMOVE AND REPLACE ANY SEWER (AT ANY TIME PRIOR TO CONSTRUCTION APPROVAL) FOR WHICH THE AS-BUILT GRADE DOES NOT COMPLY WITH THE GRADE TOLERANCE STATED IN THE ABOVE PARAGRAPH.

THE SEWER CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COSTS ASSOCIATED WITH THE FIELD VERIFICATION OF THE SEWER GRADE, OR REMOVAL AND REPLACEMENT OF THE SEWER PIPE OR ASSOCIATED APPURTENANCES.

8.) MAINTENANCE OF THE SEWERS DESIGNATED AS "PUBLIC" SHALL BE THE RESPONSIBILITY OF THE METROPOLITAN ST. LOUIS SEWER DISTRICT UPON DEDICATION OF THE SEWERS TO THE DISTRICT.

9.) STRUCTURES NOTED TO BE ADJUSTED TO FINISH GRADE SHALL BE ADJUSTED BY EITHER REMOVAL OR PLACEMENT OF GRADE RINGS, BRICK WORK, OR MORTAR BEDDING BY SUCH METHODS AS APPROVED BY M.S.D. "STANDARD CONSTRUCTION SPECIFICATIONS", 2009. AND ST. LOUIS COUNTY SPECIFICATIONS FOR STORM SEWERS.

10.) SOILS ENGINEER WILL VERIFY THAT ALL COMPRESSIBLE MATERIAL HAS BEEN REMOVED PRIOR TO FILL PLACEMENT AND THAT ALL FILL UNDER SANITARY AND STORM SEWER LINES CONSTRUCTED ABOVE ORIGINAL GRADE, HAS BEEN COMPACTED TO 90% OF "MODIFIED PROCTOR." FILL IS TO BE PLACED IN A MAXIMUM OF 9" LIFTS. TESTS SHALL BE TAKEN AT A MAXIMUM OF 50 FOOT INTERVALS ALONG THE ROUTE OF THE PIPE, AT A MAXIMUM OF 2 FEET VERTICALLY, AND LATERALLY ON EACH SIDE OF THE PIPE AT A DISTANCE EQUAL TO THE DEPTH OF FILL OVER THE PIPE. A COPY OF THESE RESULTS WILL BE SUBMITTED TO MSD PRIOR TO CONSTRUCTION.

DEMOLITION NOTES

1.) THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY COMPANY PRIOR TO BEGINNING ANY WORK THAT WILL AFFECT AN EXISTING UTILITY.

2.) REMOVAL AND/OR ABANDONEMENT OF EXISTING SEWERS SHALL BE IN ACCORDANCE WITH THE STANDARD CONSTRUCTION SPECIFICATIONS FOR SEWER AND DRAINAGE FACILITIES OF THE METROPOLITAN ST. LOUIS SEWER DISTRICT, LATEST EDITION.

3.) REMOVAL OF PAVEMENT, CURB & GUTTER, SIDEWALKS, ETC. SHALL BE TO THE NEAREST EXISTING JOINT OR SAWCUT AT LIMITS OF REMOVAL.

4.) CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT THE EXISTING TRACK SURFACE DURING EXCAVATION AND REMOVAL OF THE EXISTING CONCRETE CURB AND GUTTER, AND DURING FIELD EXCAVATION AND HAUL OPERATIONS.

5.) CONSTRUCTION DEBRIS, INCLUDING BUT NOT LIMITED TO, CONDUIT, PIPES, FITTINGS, VALVES, WIRES AND OTHER DEBRIS TO BE REMOVED, SHALL BE DISPOSED OF OFF-SITE, AND IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

6.) CONTRACTOR TO PROVIDE ALL NECESSARY FENCING, BARRICADES, SIGNAGE, ETC. FOR PEDESTRIAN SAFETY DURING SITE DEMOLITION ACTIVITIES.

7.) CONTRACTOR TO REMOVE EXISTING 4" UNDERDRAIN SYSTEM LOCATED IN FIELD.

8.) CONTRACTOR TO RECONNECT EXISTING DRAIN LINES UNDER TRACK TO THE PROPOSED STORM SEWER COLLECTOR PIPE.

9.) CONTRACTOR TO REMOVE EXISTING IRRIGATION SYSTEM LOCATED WITHIN THE FIELD.

10.) CONTRACTOR TO CAP IRRIGATION SUPPLY LINE INSIDE TRACK.

11.) CONTRACTOR TO REMOVE EXISTING FIELD GOAL POSTS AND FOUNDATION.

12.) CONTRACTOR TO REMOVE AND REPLACE EXISTING ELECTRICAL CONDUIT, WIRING, JUNCTION BOXES, AND APPURTENANCES AS NEEDED FOR FIELD CONSTRUCTION.

13.) CONTRACTOR TO FULL DEPTH SAWCUT AND REMOVE EXISTING CONCRETE CURB AND GUTTER INSIDE THE TRACK AS SHOWN ON THE PLANS.

14.) CONTRACTOR TO REMOVE DRAINS IN EXISTING INNER CURB AND GUTTER. DRAIN LINES TO BE PLUGGED WITH CONCRETE.

15.) EXISTING TRACKS, SAND TRAPS, FLAGPOLES, GAME CLOCKS, ETC. LOCATED WITHIN THE ENDS OF THE FIELD AREAS TO BE USED IN PLACE. CONTRACTOR TO INSTALL TURF NAILER BOARD TO ACCOMMODATE TURF INSTALLATION.

UTILITY NOTE

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NOTES:
1. PROPOSED FOOTBALL AND SOCCER FIELD STRIPING AND GOAL POSTS PER MISSOURI STATE HIGH SCHOOL ATHLETIC ASSOCATION STANDARDS (MSHSAA).

2. PROPOSED FIELD LOGO, END ZONE LETTERING AND STRIPING COLORS TO BE COORDINATED WITH PARKWAY SCHOOL DISTRICT.

M.S.D. P# 17328-11

BASE MAP # 17-Q

APR. 4, 2011
100% COMPLETE

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

3.) REQUIRED SETS TO MSD 04/1/11
2.) REVISED PER MSD AND CITY COMMENTS 03/16/11
1.) REVISED PER MSD AND CITY COMMENTS 02/21/11

PARKWAY CENTRAL HIGH SCHOOL

SITE GEOMETRIC PLAN/SPECIFICATIONS

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DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
J.M.B.	12/15/10	G.M.S.	12/22/10	210-4672	C6 of 10

Project name:	*Parkway Central High School*			Calculated By:	*J.E.R.*		15 year - 20 minute																											
Project number:	*210-4672*			Checked By:	*G.M.S.*		*Bend Coefficients:*																											
Project Location:	*Chesterfield, Missouri*			Date:	*12/23/2010*		5° = 0.06	20° = 0.24	35° = 0.4	50° = 0.50	65° = 0.57	80° = 0.65																						
							10° = 0.11	25° = 0.30	40° = 0.43	55° = 0.52	70° = 0.60	85° = 0.67																						
	LINE		FLOW LINE ELEVATIONS				15° = 0.18	30° = 0.35	45° = 0.47	60° = 0.55	75° = 0.62	90° = 0.70																						
															HEAD LOSS						Hydraulic Elevations											
Structure	Upper	Lower	Upper	Lower	Length	Flowline	Pipe Size	Full Flow	Total (Q)	Mean Full Flow	Bend	Curve	Velocity	QVs	Pipe Coef.	Hr	Junction	Bend	Curve	Total	Upper F.L	Lower H.E.	Lower H.E	Structure Upper	TOP Structure	Free Board	Structure
Number	structure	structure	structure	Structure	(ft)	Grade ft/ft	(ins.)	Cap. (cfs)	(cfs)	Vel.(V) (ft/s)	Coef.	Coef.	Head (V_h) (ft)	(ft^3/s)	(n)	(ft)	(ft)	(ft)	(ft)	H_{tot}	+ Dia.	+Hr		H.E. + H_{tot}	Elevation		Number
5	5	4	496.68	495.94	68.06	0.0109	15	6.75	8.04	6.55	0.00	0.00	0.67	5.36	0.013	1.05	0.00	0.00	0.00	0.00	497.93	499.45	498.40	499.45	501.75	2.30	5
4	4	3	495.94	495.00	70.88	0.0133	15	7.46	8.04	6.55	0.45	0.00	0.67	5.36	0.013	1.10	0.00	0.30	0.00	0.30	497.19	498.10	497.00	498.40	501.90	3.50	4
3	3		495.00																CPv ELEVATION					497.00			3
2	2	1	490.67	486.00	65.70	0.0711	15	17.27	8.04	5.21	0.00	0.00	0.42	3.39	0.013	0.64	0.00	0.00	0.00	0.00	491.92	491.07	490.43	491.92	497.25	5.33	2
1	1		486.00																100 YR LFB ELEVATION					490.43			1

MEAN FULL FLOW VELOCV = Q_{ACT}/A_{PIPE}

FRICTION LOSS (H_f) : $Hf = 2.87\ n^2\ (LV^2/d^{1.33})$

VELOCITY HEAD : $V_h = V^2/2g$

JUNCTION LOSES (JUNC.) = $[Q_{out}Vh_{out} - Sum\ (Q_{in}V_{in})]x1.33/[Q_{out}]$

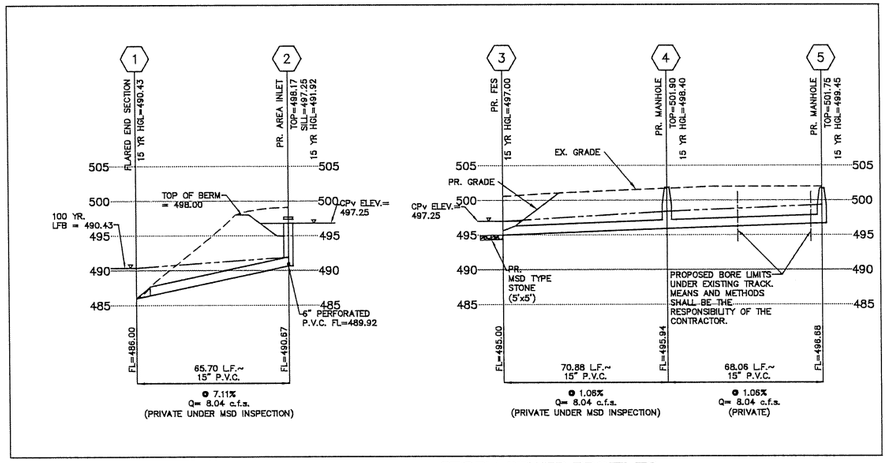
BEND LOSES (BEND) = (V_h^2) * ANGLE COEFFICIENT

CURVE LOSS=V_h*CURVE COEFFICIENT

Note(s):

Revisions 2/14/2011
3/14/2011

Note:
1. IF MORE THAN ONE INCOMING LINE, CALC. EACH BEND LOSS AND ADD TOGETHER.
2. NO STRUCTURE LOSES TO BE CALCULATED AT A DROP
3. IF $QV_{h(in)} > QV_{h(out)}$ NO JUNCTION LOSES TO BE CALCULATED.



STORM SEWER PROFILES

SCALE: 1" = 30' HORIZ
1" = 10' VERT

AREA INLET #2 CAPACITY

$Q = Cd \times A \times \sqrt{(2Xg)(h)}$

WHERE:
Q = DISCHARGE (c.f.s.)
Cd = COEFFICIENT OF DISCHARGE (Cd=0.61)
A = CROSS-SECTIONAL AREA OF FLOW AT THE ORIFICE ENTRANCE (SQ. FT.) (ONE SIDE)
g = ACCELERATION OF GRAVITY (g=32.2 ft/sec^2)
h = DRIVING HEAD (Ft), MEASURED FROM THE CENTROID OF THE ORIFICE AREA TO THE WATER SURFACE.
FOR 6" OF PONDING AT THE INLET, h=0.50'

$Q = Cd \times A \times \sqrt{(2Xg)(h)}$

$Q = 0.61 \times 5.67\ ft^2 \times \sqrt{(2)(32.2\ ft/sec^2)(0.50')}$

Q = 19.63 c.f.s./ AREA INLET (OPEN 4 SIDES)

Q(100) = (2.2 Ac.) x (2.29) + (1.42 Ac.) x (4.77) = 11.81 CFS
11.81 CFS < 19.63 CFS, THEREFORE INLET HAS SUFFICIENT CAPACITY.

UTILITY CONFLICT NOTE:

CONTRACTOR SHALL VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF EXISTING UTILITIES AND SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY POTENTIAL UNDERGROUND UTILITY CONFLICT AT THE TIME OF EXCAVATION.

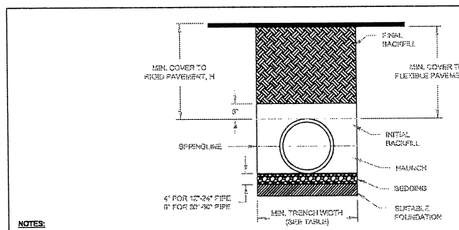
LINETYPE LEGEND

EXISTING GRADE.....
PROPOSED GRADE...
15 YR HYDRAULIC GRADE...
100 YR HYDRAULIC GRADE...
PROPOSED PAVEMENT....
GRANULAR BACKFILL.....
COMPACTED FILL.....

CONSTRUCTION NOTES:

1. ALL R.C.P. SHALL BE CLASS III UNLESS NOTED OTHERWISE.
2. ALL P.V.C. SHALL BE SDR 35 UNLESS NOTED OTHERWISE.
3. ENGINEER APPROVED SHOP DRAWINGS MUST BE SUBMITTED TO MSD FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. OF SEWER STRUCTURES.

NOTE: ALL SEWERS SHOWN ON THIS SHEET SHALL BE "PRIVATE" UNLESS NOTED OTHERWISE.



NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-900mm).
5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
4"	21"
6"	23"
8"	25"
10"	28"
12"	30"
15"	34"
18"	39"
24"	46"
30"	58"
36"	64"
42"	72"
48"	80"
54"	88"
60"	96"

MINIMUM RECOMMENDED COVER BASED ON VECHICLE LOADING CONDITIONS

PIPE DIAM.	SURFACE LIVE LOADING CONDITION H-25	HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48"	12"	48"
54" - 60"	24"	60"

* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

MINIMUM RECOMMENDED COVER BASED ON RAILWAY LOADING CONDITIONS

PIPE DIAM.	COOPER E-80**
UP TO 24"	24"
30"-36"	36"
42"-60"	48"

** COVER IS MEASURED FROM TOP OF PIPE TO BOTTOM OF RAILWAY TIE.
*** E-80 COVER REQUIREMENTS, ARE ONLY APPLICABLE TO ASTM F 2306 PIPE.

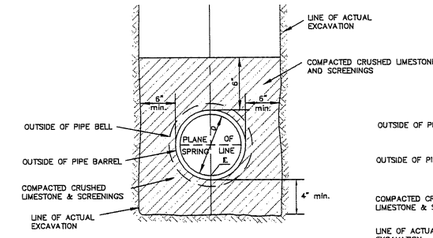
#	ADDED E-80 INFORMATION	TJR	09/20/07	
REV.	DESCRIPTION	BY	MM/DD/YY	CHKD

TYPICAL TRENCH DETAIL

DRAWING NUMBER: STD-101

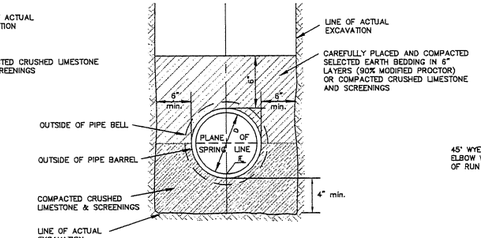
ADS
4640 TRUEMAN BLVD
HILLIARD, OHIO 43026

DWN: CDS
DES:
CHK: 10/15/08
SCALE: NTS
SHEET: 1 OF 1



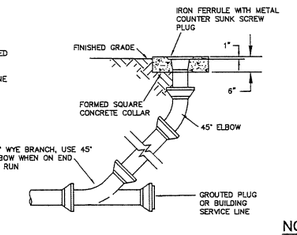
PIPE BEDDING CLASS 'C'

(FOR ALL PIPE EXCEPT REINFORCED CONCRETE PIPE)



PIPE BEDDING CLASS 'C'

(MODIFIED FOR REINFORCED CONCRETE PIPE)



CLEANOUT

(n.t.s.)

NOTES:

1. THE REMOVAL AND REPLACEMENT, OR REHABILITATION OF EXISTING SEWER STRUCTURES WILL BE DETERMINED BY THE MSD FIELD INSPECTOR. IF THE STRUCTURE IS DETERMINED TO REMAIN IN PLACE THEN THE TOP SHALL BE ADJUSTED TO GRADE IF NECESSARY.

H.D.P.E. STORM SEWER NOTE:

CONTRACTOR SHALL READ AND FOLLOW SPECIFIC INSTALLATION REQUIREMENTS OF H.D.P.E. PIPE MANUFACTURER BASED UPON PIPE TYPE UTILIZED AND FOLLOW ASTM D-2321 INSTALLATION PROCEDURES AS DIRECTED BY THE ON SITE SUPERVISING GEOTECHNICAL ENGINEER
GEOTECHNICAL ENGINEER SHALL INSPECT INSTALLATIONS TO CONFIRM PROPER INSTALLATION (BEDDING, BACKFILL, COVER, etc) AND CONFIRM SAID INSTALLATION PROCEDURE BASED UPON ON-SITE SOIL TYPE AT PIPE INSTALLATION LOCATIONS ON PROJECT.
IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL SAID RECOMMENDATIONS FOR PROPER INSTALLATION OF H.D.P.E. PIPE SYSTEM INSTALLED.

H.D.P.E. STORM SEWER NOTES:
(IF PERMISSIBLE BY LOCAL AUTHORITY)

1.) STORM SEWER PIPE DESIGNATED AS HIGH DENSITY POLYETHYLENE (H.D.P.E.) SHALL HAVE WATER TIGHT GASKETED JOINTS WITH RUBBER O-RING GASKETS MEETING ASTM F477. O-RING GASKET SHALL BE INSTALLED ON THE SPIGOT END OF PIPE.

2.) 12" TO 36" PIPE SHALL CONFORM TO THE AASHTO M294 CLASSIFICATION "TYPE S" AND 42" TO 48" SHALL CONFORM TO AASHTO MP8-95 CLASSIFICATION "TYPE D."

3.) ALL PIPE JOINTS SHALL CONSIST OF BELL AND SPIGOT JOINING SYSTEM WITH THE BELL COVERING TWO PIPE CORRUGATIONS AS RECOMMENDED IN AASHTO M294.

4.) PIPE MANUFACTURED FOR THIS SPECIFICATION SHALL COMPLY WITH THE REQUIREMENTS FOR TEST METHODS, DIMENSIONS AND MARKINGS FOUND IN AASHTO DESIGNATIONS M252 AND M294. PIPE AND FITTINGS SHALL BE MADE FROM VIRGIN PE COMPOUNDS WHICH CONFORM WITH THE REQUIREMENTS OF CELL CLASS 335420C AS DEFINED AND DESCRIBED IN ASTM D3350.

H.D.P.E. STORM SEWER NOTES CONT'D:
(IF PERMISSIBLE BY LOCAL AUTHORITY)

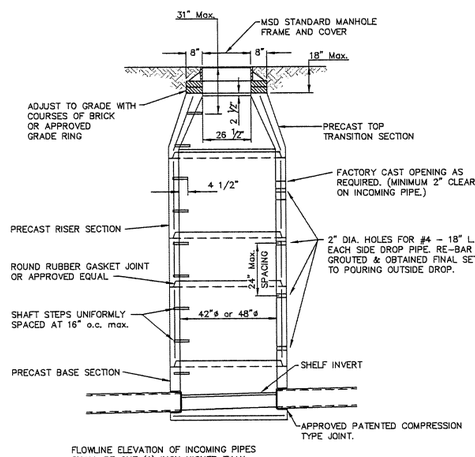
5.) FITTINGS MAY BE EITHER MOLDED OR FABRICATED AND SHALL CONFORM TO THE REQUIREMENTS AASHTO M252 AND M294. THE FITTINGS SHALL NOT REDUCE OR IMPAIR THE OVERALL INTEGRITY OR FUNCTION OF THE PIPE LINE. ONLY FITTINGS SUPPLIED OR RECOMMENDED BY THE PIPE MANUFACTURER SHALL BE USED.

6.) INSTALLATION OF THE PIPE SPECIFIED ABOVE SHALL BE IN ACCORDANCE WITH THE ASTM RECOMMENDED PRACTICE D2321.

7.) BOTH BELL AND SPIGOT (WITH O-RING GASKET) ENDS OF THE PIPE SHALL BE LUBRICATED AS RECOMMENDED BY MANUFACTURER AND INSERTED TO THE HOMING MARK ON THE SPIGOT END OF THE PIPE.

8.) MINIMUM RECOMMENDED TRENCH WIDTH SHALL BE NOT LESS THAN THE GREATER OF EITHER PIPE OUTSIDE DIAMETER PLUS 16 INCHES OR THE PIPE OUTSIDE DIAMETER TIMES 1.25, PLUS 12 INCHES AS OUTLINED HEREIN:

NOMINAL PIPE DIAMETER	MINIMUM TRENCH WIDTH
8" (200mm)	26"
10" (250mm)	28"
12" (300mm)	30"
15" (375mm)	34"
18" (450mm)	39"
24" (600mm)	48"
30" (750mm)	56"
36" (900mm)	64"
42" (1050mm)	72"
48" (1200mm)	80"
54" (1350mm)	88"
60" (1500mm)	96"

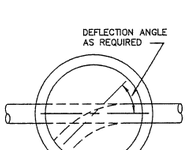


FLOWLINE ELEVATION OF INCOMING PIPES SHALL BE ONE (1) INCH HIGHER THAN THAN THAT OF OUTGOING PIPE.

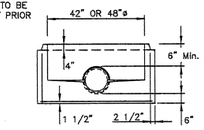
SEE A.S.T.M. C-478 FOR MIN. STEEL REQUIREMENTS.

PRECAST MANHOLE

(n.t.s.)

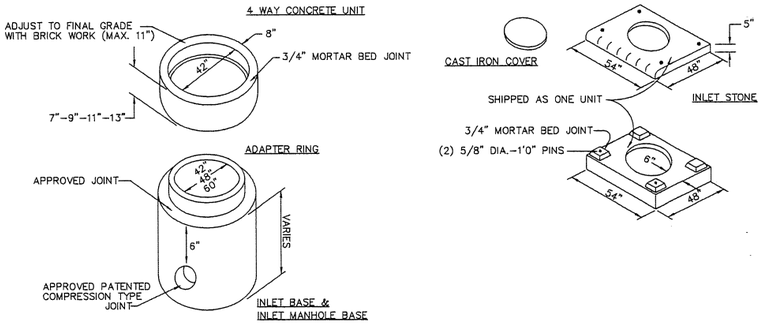


MANHOLE BASE PLAN



BASE SECTION

ALL DETAILS SHOWN ON THIS SHEET ARE FOR THE CONVENIENCE OF THE CONTRACTOR. THE DETAILS ARE TO BE VERIFIED PER MSD'S STANDARD CONSTRUCTION SPECIFICATIONS, 2009. ALL METHODS, MEANS AND MATERIALS SHALL CONFORM TO MSD CURRENT STANDARD CONSTRUCTION SPECIFICATION, 2009.



PRECAST AREA INLET DETAIL

(n.t.s.)

3.) REQUIRED SETS TO MSD 04/1/11
2.) REVISED PER MSD AND CITY COMMENTS 03/16/11
1.) REVISED PER MSD AND CITY COMMENTS 02/21/11

M.S.D. P# 17328-11
BASE MAP # 17-Q

APR. 4, 2011
100% COMPLETE

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY NUMBER: 000996

PARKWAY CENTRAL HIGH SCHOOL

STORM SEWER PROFILES/DETAILS/HYDRAULICS

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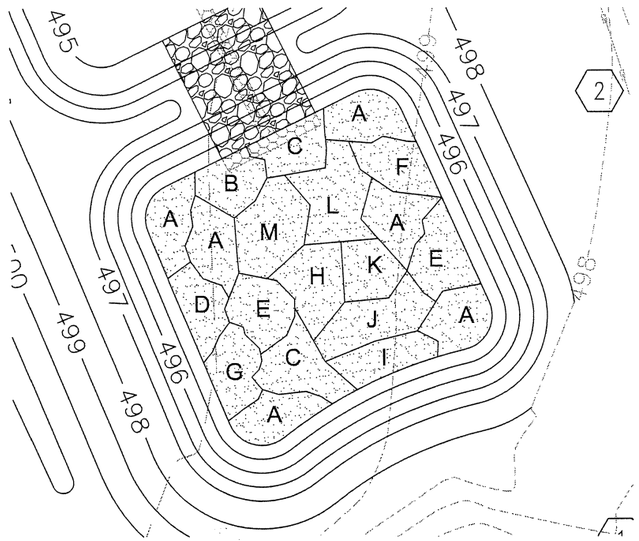
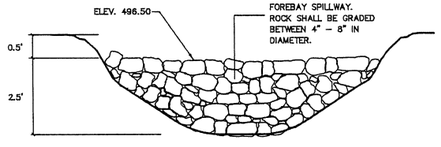
J.M.B.	12/15/10	G.M.S.	12/22/10	210-4672	C7 of 10



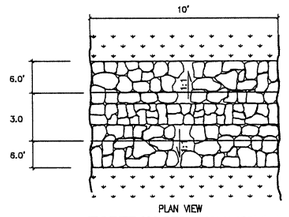
BIO-RETENTION PLANTING PLAN

SCALE: 1" = 10'

PLANTING SCHEDULE						
PLANT DESIGNATOR	QUANTITY	BOTANICAL NAME	COMMON NAME	TYPE	"O" SPACING	SIZE
				GRASSES/SEDGES		
A	166	ANDROPOGON GERARDII	BIG BLUESTEM	GRASSES/SEDGES	1.50	2" PLUG
B	32	CAREX GRAYI	BUR SEDGE	GRASSES/SEDGES	1.50	2" PLUG
C	72	CAREX SHORTIANA	SHORTS SEDGE	GRASSES/SEDGES	1.50	2" PLUG
D	31	CHASMANTHIUM LATIFOLIUM	RIVER OATS	GRASSES/SEDGES	1.50	2" PLUG
E	72	SPOROBOLUS HETEROLEPIS	PRAIRIE DROPSEED	FORBS	1.50	2" PLUG
F	32	COREOPSIS LANCEOLATA	LANCELEAF COREOPSIS	FORBS	1.50	2" PLUG
G	34	ECHINACEA PALLIDA	PALE PURPLE CONEFLOWER	FORBS	1.50	2" PLUG
H	41	ERYNGIUM YUCCIFOLIUM	RATTLESNAKE MASTER	FORBS	1.50	2" PLUG
I	32	PYCNANTHEMUM TENUIFOLIUM	SLENDER MOUNTAIN MINT	FORBS	1.50	2" PLUG
J	47	EUPATORIUM COELESTINUM	MIST FLOW; WILD AGERATUM	FORBS	1.50	2" PLUG
K	30	SOLIDAGO RUGOSA	ROUGH-LEAVED GOLDENROD	FORBS	1.50	2" PLUG
L	63	ZIZIA AUREA	GOLDEN ALEXANDER	FORBS	1.50	2" PLUG
M	51	ECHINACEA PURPUREA	PURPLE CONEFLOWER	FORBS	1.50	2" PLUG



ELEVATION VIEW

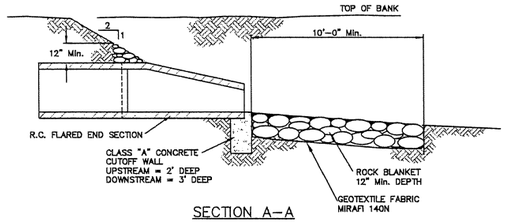


PLAN VIEW

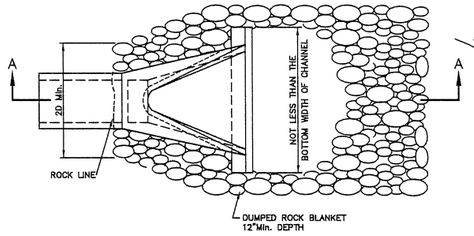
FOREBAY SPILLWAY DETAIL

N.T.S.

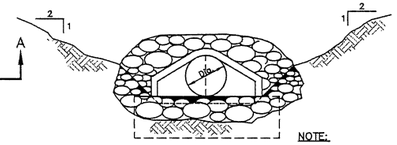
NOTE: FOREBAY SPILLWAY SHALL BE INSPECTED ANNUALLY. ROCKS SHALL BE REMOVED AND REPLACED IF FOULING OCCURS.



SECTION A–A



PLAN VIEW

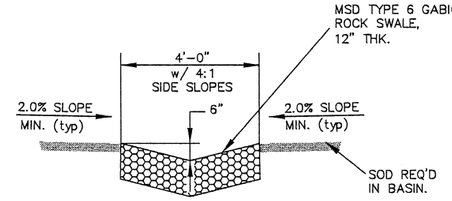


END VIEW

NOTE:
TO BE USED AT INTAKE AND DISCHARGE END OF PIPE. GRADE OF ROCK BLANKET TO BE ADJUSTED ACCORDINGLY.

FLARED END SECTION DETAIL

(n.t.s.)



PERMEABLE SWALE - DETENTION BASIN AREA

(n.t.s.)

Planting, Water and Mulch Requirements for Stormwater BMPs

Table 3: Planting, Water and Mulch Requirements

Water Availability	Required Planting Period	Minimum Container Size	Water Requirement First 3 Weeks*	Water Requirement After 3 Weeks*	Maximum Mulch Depth****
No ability to water after	Late Feb. – April only	2.25" x 3.75" or larger	Water each plug immediately		1.5 for plugs
Manual watering with standard sprinkler	Late Feb. – Early June	4.5" x 5" (quart) or larger in summer & fall	1" (60 min) every 4 days	1" (60 min) every 7 days until plants established***	1.5" for plugs
Automatic irrigation (set to water more frequently than normal during first two months after planting)	Late Feb. – Early Oct.	2.25" x 3.75" (plug) or larger in spring 4.5" x 5" (quart) or larger in summer & fall	1" (60 min) every 4 days in spring and fall 1" (60 min) every 3 days in summer	1" (60 min) every 7 days until plants established***	1.5" for plugs 2.5" for quarts

*This water amount includes natural rainfall. If you get a ½ inch of natural rain then you will need to add a ½ inch of water to meet the 1 inch requirement.

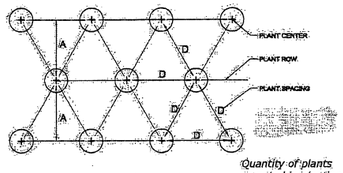
**Requires transport of water to the planting site in large containers and pouring enough water onto each plant (after planting) to moisten the entire planting pit.

***Plants are established when roots have grown out of the container soil and into the native soil by 3-5 inches. This normally takes 3-4 months for most perennials and grasses and up to 6-7 months for trees and shrubs.

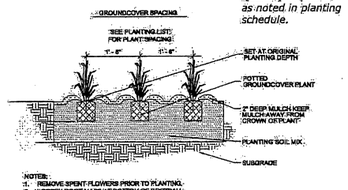
****Shredded leaf compost is recommended for use with perennials and grasses. Shredded bark mulch is recommended for tree and shrub plantings at a depth of 3 inches.

SPACING "O"	ROW "A"	NUMBER OF PLANTS/SQ. FT.
30"	26"	180
24"	20.8"	28
18"	15.6"	450
15"	13.0"	640
12"	10.4"	1,00
10"	8.66"	1,44
9"	7.85"	2,25

NOTE: PLANT QUANTITIES WERE DETERMINED BY MULTIPLYING AREA (SQ. FT.) BY NUMBER OF PLANTS/SQ. FT. FOR REQUIRED SPACING.



Quantity of plants as noted in planting schedule.



NOTES:
1. REMOVE SPENT FLOWERS PRIOR TO PLANTING.
2. LOOSEN ROOT MASS AT BOTTOM OF ROOTBALL.
3. TOP OF ROOTBALL STRIPPED OF ½" SURFACE GROWING MEDIA AND COVERED WITH ½" LANDSCAPE BED MIX PLUS SURFACE MULCH.

Plant Spacing Plan

N.T.S.

Planting Detail Courtesy of Ted Spaid SWT Design, St. Louis, MO

Figure 9

3.) REQUIRED SETS TO MSD 04/1/11
2.) REVISED PER MSD AND CITY COMMENTS 03/16/11
1.) REVISED PER MSD AND CITY COMMENTS 02/21/11

M.S.D. P# 17328–11

BASE MAP # 17–Q

APR. 4, 2011
100% COMPLETE

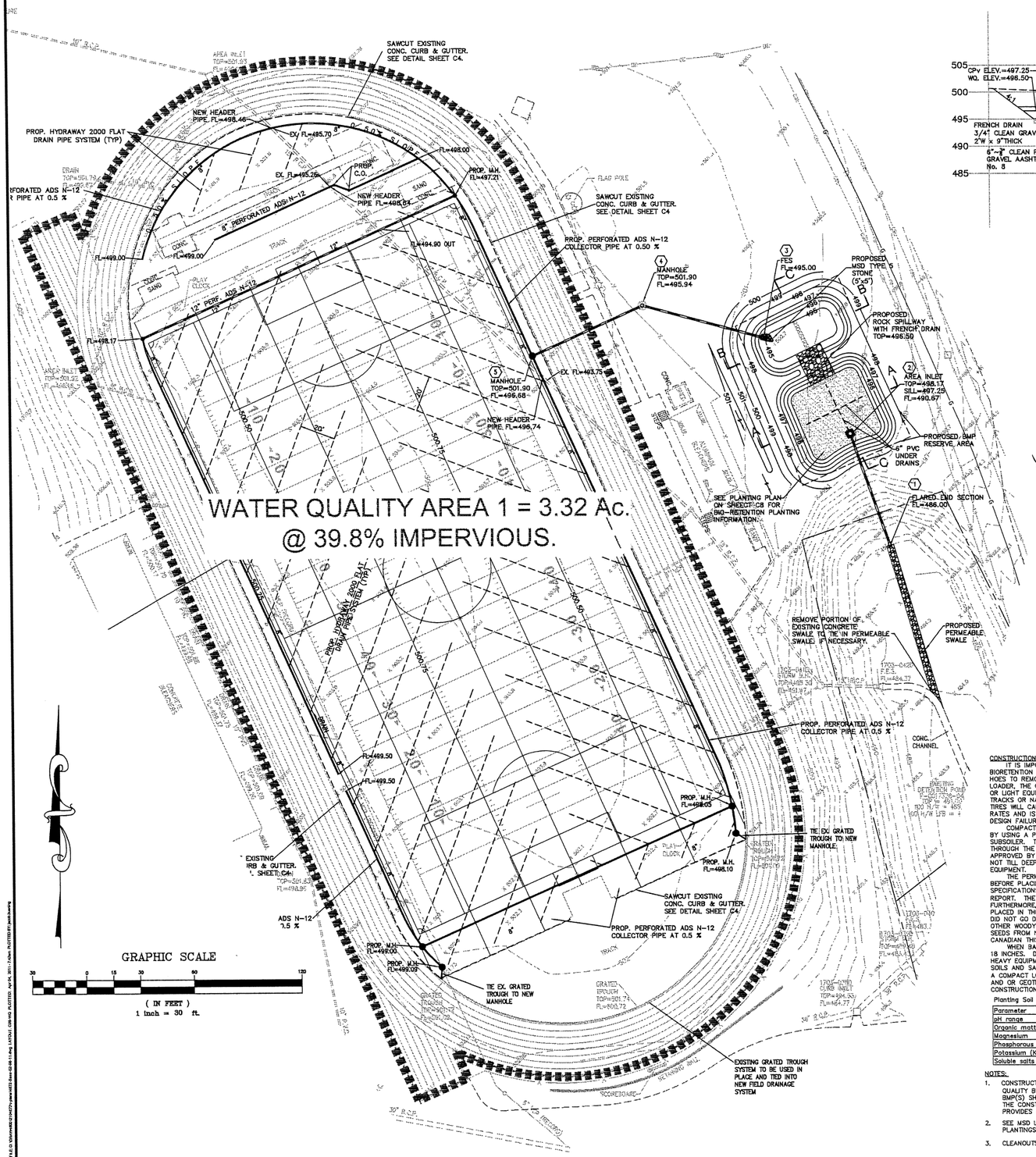
PARKWAY CENTRAL HIGH SCHOOL

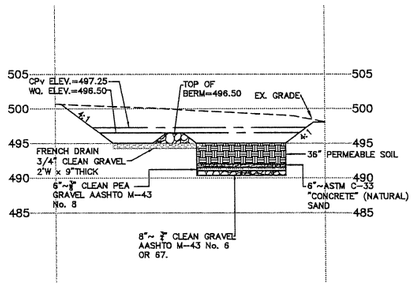
SEWER DETAILS AND PLANTING PLAN

STOCK & ASSOCIATES
Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530-9100
FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
J.M.B.	12/15/10	G.M.S.	12/22/10	210–4672	C8 of 10





SECTION C-C

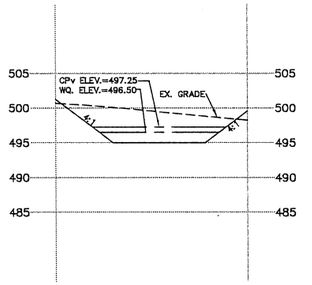
SCALE: 1" = 30' HORIZ.
SCALE: 1" = 10' VERT.

BMP/STORMWATER CREDIT SUMMARY TABLE				
AREA	AREA (Ac.)	BMP	WQv REQUIRED (C.F.)	WQv PROVIDED (C.F.)
1	3.32	BIORETENTION (F-6)	5,603	6,275
TOTAL	3.32			

LAND AREA DISTURBED = 2.11 Ac.
LAND AREA TRIBUTARY TO BIO-RETENTION = 3.32 Ac.

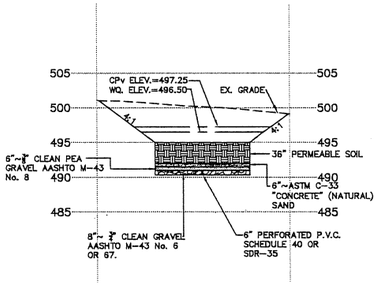
PREVIOUSLY UNTREATED AREA FOR FUTURE CREDIT = 1.21 Ac. @ 100% IMPERVIOUS (TRACK)

ANY FUTURE LAND DISTURBANCE AND/OR INCREASE IN IMPERVIOUS AREA ON THIS SITE PLAN MAY REQUIRE ADDITIONAL STORM WATER MANAGEMENT PER MSD REGULATIONS IN PLACE AT THAT TIME (INCLUDING TOTAL LAND DISTURBANCE AND/OR IMPERVIOUSNESS ADDED ON THIS PLAN P-17328-11)



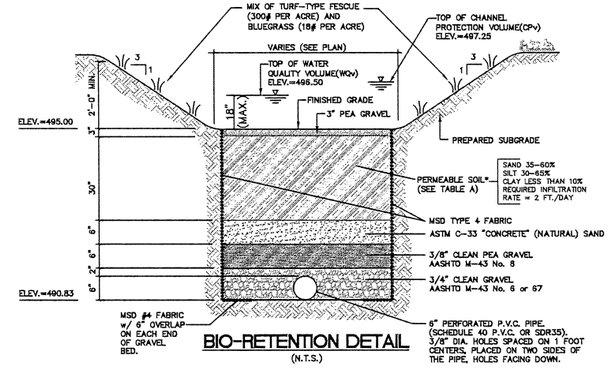
SECTION A-A

SCALE: 1" = 30' HORIZ.
SCALE: 1" = 10' VERT.



SECTION B-B

SCALE: 1" = 30' HORIZ.
SCALE: 1" = 10' VERT.



BIO-RETENTION DETAIL

(N.T.S.)

CONSTRUCTION NOTES:
IT IS IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF THE BIORETENTION AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF BIORETENTION AREAS ARE EXCAVATED USING A LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT. OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.

COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS A CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO REFRACTURE THE SOIL PROFILE THROUGH THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE DESIGN OR GEOTECHNICAL ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.

THE PERMEABLE SOIL USED IN THE BIORETENTION FACILITY SHOULD BE TESTED BEFORE PLACING IT IN THE FIELD TO ENSURE IT MEETS THE PERFORMANCE SPECIFICATIONS OUTLINED IN THE PLANS AND STORMWATER MANAGEMENT FACILITIES REPORT. THE PERMEABLE SOIL MUST HAVE AN INFILTRATION RATE OF 2 FEET/DAY. FURTHERMORE, AND INFILTRATION TEST MUST BE PERFORMED ONCE THE SOIL IS PLACED IN THE BIORETENTION FACILITY TO CONFIRM THAT THE INFILTRATION RATE DID NOT GO DOWN. THE SOIL SHOULD BE FREE OF STONES, STUMPS, ROOTS OR OTHER WOODY MATERIAL OVER 1 INCH IN DIAMETER. FOR BEST RESULTS, BRUSH OR SEEDS FROM NOXIOUS WEEDS, SUCH AS JOHNSON GRASS, MUGWORT, NUTSEDGE AND CANADIAN THISTLE SHOULD NOT BE PRESENT IN THE SOILS.

WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS OF 12 TO 18 INCHES. DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS. THE LANDSCAPER AND OR GEOTECHNICAL ENGINEER SHOULD BE PRESENT ON SITE DURING THE CONSTRUCTION OF THE BIORETENTION FACILITIES TO ENSURE QUALITY CONTROL.

Planting Soil Characteristics

Parameter	Value
pH range	5.2 to 8.00
Organic matter	1.5 to 5.0%
Magnesium	35 lbs. per acre, minimum
Phosphorous (P2O5)	75 lbs. per acre, minimum
Potassium (K2O)	85 lbs. per acre, minimum
Soluble salts	≤ 500 ppm

NOTES:
1. CONSTRUCTION SITE RUNOFF SHALL NOT FLOW INTO THE WATER QUALITY BMP(S). ALL STORMWATER FLOW TO THE WATER QUALITY BMP(S) SHALL BE DIVERTED, PLUGGED, OR DISCONNECTED UNTIL THE CONSTRUCTION SITE IS STABLE AND THE MSD DEDICATION INSPECTOR PROVIDES APPROVAL TO PLACE THE BMP(S) ONLINE.
2. SEE MSD LANDSCAPE GUIDELINES FOR ADDITIONAL DETAILS ON PLANTINGS IN BIORETENTION AREAS.
3. CLEANOUTS TOP ELEVATION TO BE 6" ABOVE TOP OF FILTER SURFACE.

M.S.D. P# 17328-11
BASE MAP # 17-Q

APR. 4, 2011
100% COMPLETE

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY NUMBER: 000996

3.) REQUIRED SETS TO MSD 04/1/11
2.) REVISED PER MSD AND CITY COMMENTS 03/16/11
1.) REVISED PER MSD AND CITY COMMENTS 02/21/11

PARKWAY CENTRAL HIGH SCHOOL

WATER QUALITY PLAN

STOCK & ASSOCIATES
Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005
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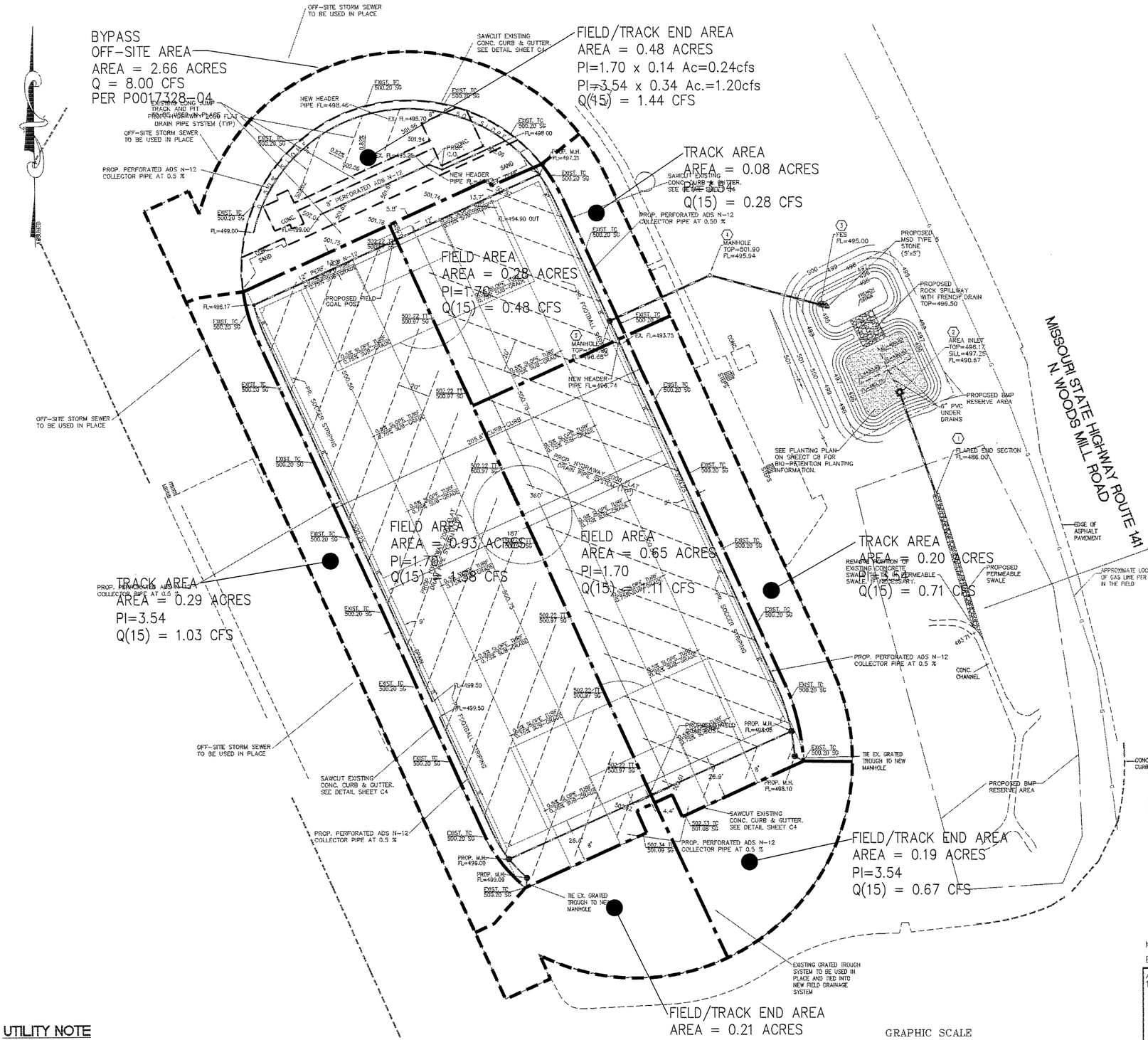
FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
J.M.B.	12/15/10	G.M.S.	12/22/10	210-4672	C9 of 10



DIFFERENTIAL RUNOFF CALCULATIONS:

TOTAL DISTURBED AREA	= 2.11 Acres ±
EXISTING RUNOFF	= 2.00 Ac. x 1.70 = 3.40 cfs = 0.11 Ac. x 3.54 = 0.39 cfs = 3.79 cfs
PROPOSED RUNOFF	= 2.00 Ac. x 1.70 = 3.40 cfs = 0.11 Ac. x 3.54 = 0.39 cfs = 3.79 cfs
DIFFERENTIAL	= 3.79 - 3.79 = 0 cfs

FOR INFORMATION PURPOSES ONLY.
DRAWING NOT FOR CONSTRUCTION.

UTILITY NOTE

UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS, RECORDS AND INFORMATION, AND , THEREFORE DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NON-EXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE FACILITIES, STRUCTURES AND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS. THE UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319 RSMo..

3.) REQUIRED SETS TO MSD 04/1/11
2.) REVISED PER MSD AND CITY COMMENTS 03/16/11
1.) REVISED PER MSD AND CITY COMMENTS 02/21/11

M.S.D. P# 17328-11
BASE MAP # 17-Q

APR. 4, 2011
100% COMPLETE

PARKWAY CENTRAL HIGH SCHOOL

DRAINAGE AREA MAP

STOCK & ASSOCIATES
Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530-9100
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e-mail: general@stockassoc.com
Web: www.stockassoc.com

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
J.M.B.	12/15/10	G.M.S.	12/22/10	210-4672	C10 of 10

PARKWAY CENTRAL
MIDDLE SCHOOL

TENNIS COURTS
(ASPHALT)

ASPHALT

CONC WALK

BLEACHERS

72" CHAIN LINK FENCE

CONC CURB

ASPH PVMT

DA7

DA8

DENOTES AREA OF
PROJECT MAINTENANCE

DENOTES AREA OF
PROJECT DISTURBANCE

Drainage Area Table / Runoff Calculations

Drainage Area	Land Use / Percent Impervious	15yr/20min PI Factor	Post-Development DA (acres)	Post-Dev. 15yr/20min Runoff (cfs)
DA1	Pavement / 100%	3.54	0.050	0.176
	Grass / 5%	1.70	0.055	0.095
			Subtotal	**0.271**
DA2	Pavement / 100%	3.54	0.136	0.481
	Grass / 5%	1.70	0.003	0.006
			Subtotal	**0.487**
DA3	Pavement / 100%	3.54	0.000	0.000
	Grass / 5%	1.70	0.086	0.146
			Subtotal	**0.146**
DA4	Pavement / 100%	3.54	0.006	0.022
	Grass / 5%	1.70	0.009	0.016
			Subtotal	**0.038**
DA5	Pavement / 100%	3.54	0.103	0.364
	Building / 100%	4.20	0.024	0.100
	Grass / 5%	1.70	0.000	0.000
			Subtotal	**0.464**
DA6	Pavement / 100%	3.54	0.066	0.235
	Building / 100%	4.20	0.024	0.102
	Grass / 5%	1.70	0.000	0.000
			Subtotal	**0.337**
DA7 (BMP)	Pavement / 100%	3.54	0.668	2.364
	Building / 100%	4.20	0.087	0.365
	Grass / 5%	1.70	0.470	0.800
			Subtotal	**3.529**
DA8	Grass / 5%	1.70	0.059	0.100
			Subtotal	**0.100**
			Total	**5.372**

NOTE: ALL DRAINAGE AREAS ASSOCIATED WITH THIS PROJECT ARE TRIBUTARY TO EXISTING DETENTION BASIN 1 TO THE EAST OF THE FOOTBALL FIELD AS SHOWN ON SHEET C10.1.1.

Cumulative Site Stormwater Summary

Project Number	Water Quality						Differential Runoff	
	Disturbed Area (Ac)		Treated Area (Ac)		Δ Treated Area (Ac)		Differential Runoff (cfs)	Project Determination
	Pervious	Impervious	Pervious	Impervious	Pervious	Impervious		
20MSD-00057	0.080	0.050	0.000	0.000	0.080	0.050	0.121	Analysis provided to show basin 1 is sized for increase therefore, no additional detention needed.
20MSD-00425	0.029	0.028	0.000	0.000	0.029	0.028	0.034	Per MSD, no detention required due to such a small increase. Differential included in 20MSD-00501.
20MSD-00501	0.322	0.229	0.473	0.755	-0.151	-0.526	0.411	Detention and channel protection provided as part of this project.
				Future Credit	-0.043	-0.448		

0 20' 40'

FOR REFERENCE ONLY -
NOT FOR CONSTRUCTION

2 20MSD-00501 BASEMAP: 17Q

ISSUANCE

NO.	DATE	DESCRIPTION
CD #2	05/26/21	City/MSD Comments, Gas line reloc.

FGM ARCHITECTS
10 S. Broadway, Suite 1150
St. Louis, MO 63102
Phone: 314.439.1601
Fax: 314.439.1602
Missouri State Certificate of Authority #000311

wood.
15933 Clayton Road, Suite 215
Ballwin, Missouri 63011
Phone: 636-200-5100
Fax: 636-402-3005
Discipline: Engineering Corporation
Corporate Certificate Of Authority: #2002000326

PROFESSIONAL SEAL
STATE OF MISSOURI
STUART M. HAW III
NUMBER E-22997
REGISTERED PROFESSIONAL ENGINEER
10/30/2020
Stuart M. Haw III, PE
MO E-22997
EXPIRATION DATE: 12/31/21

DATE	10/30/20
DRAWN	MJR
CHECKED	SJM
APPROVED	SMH

wood. Corporate Certificate of Authority #2002000326

CENTRAL HIGH SCHOOL
CONCESSION STAND SITE IMPROVEMENTS
PARKWAY SCHOOLS

PROJECT LOCATION:
369 N Woods Mill Rd.
Chesterfield, MO 63017

OWNER:
Administrative Office
455 N. Woods Mill Rd.
Chesterfield, Missouri 63017

BMP DRAINAGE AREA MAP

SHEET NO.
C10.1.0

PSD PROJECT #: PN502002B
FGM JOB #: 20-2857.01

5/26/2021 11:26 AM
P:\StLouis\2019\325199001 Parkway\10-CAD\325199011 Central High\03-PLAN\FB - Concession Stands\50200[illegible]01C-Conc.Stands.dwg

SECTION 8

WEST HIGH

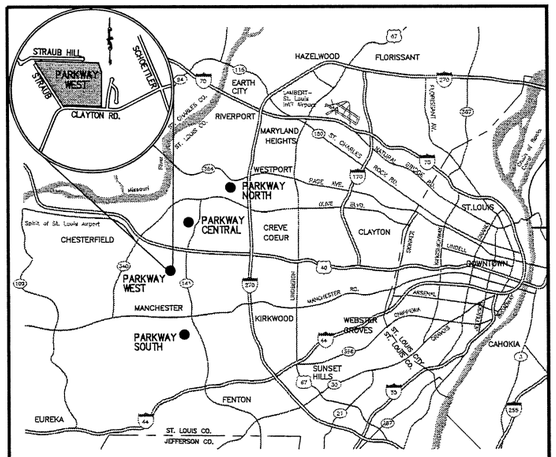
BMP ORIGINAL PROJECT INFORMATION

PARKWAY WEST HIGH SCHOOL

15653 CLAYTON ROAD
CHESTERFIELD, MISSOURI

PARKWAY SCHOOL DISTRICT
455 North Woods Mill Road Chesterfield, Missouri 63017 (314) 415-8100 (314) 415-8207 Fax

SYNTHETIC TURF FIELD IMPROVEMENTS



LOCATION MAP
(NOT TO SCALE)

INDEX

LEGEND

ELECTRIC MANHOLE (E)
EXISTING SANITARY SEWER
EXISTING STORM SEWER
EXISTING TREE (12")
EXISTING BUILDING
EXISTING CONTOUR 533
SPOT ELEVATION x 533.25
EXISTING UTILITIES G-W-T-E
PROPOSED CONTOUR 530
PROPOSED SPOT x 530.50
PROPOSED STORM SEWER
PROPOSED SANITARY SEWER SS
FIRE HYDRANT
LIGHT STANDARD
BUSH
SIGN
NOTES PARKING SPACES (18)
GUY WIRE
POWER POLE
WATER MANHOLE (W)
WATER VALVE
DENOTES RECORD INFORMATION ( )
HANDICAPPED PARKING
PHONE MANHOLE (P)
OVERHEAD ELECTRIC OE
UNDERGROUND TELEPHONE UT
CONCRETE CONC
ASPHALT ASPH
POLYVINYL CHLORIDE PVC
DENOTES WITH W/
TRANSFORMER T
SANITARY SAN
SWALE
CHAIN-LINK FENCE
TRAFFIC FLOW
SAWCUT

ABBREVIATIONS

W	- WATER	DB	- DEED BOOK
E	- ELECTRIC	PB	- PLAT BOOK
OE	- OVERHEAD ELECTRIC	PG	- PAGE
UW	- UNDERGROUND ELECTRIC	(_'W)	- RIGHT-OF-WAY WIDTH
G	- GAS	(REC)	- RECORD INFORMATION
T	- TELEPHONE	FT	- FEET
TBR	- TO BE REMOVED	N/F	- NOW OR FORMERLY
TBR & R	- TO BE REMOVED AND REPLACED	FND	- FOUND
UIP	- USE IN PLACE	SQ	- SQUARE
TBA	- TO BE ADJUSTED	CO	- CLEANOUT
BC	- BACK OF CURB	MH	- MANHOLE
FC	- FACE OF CURB	AI	- AREA INLET
TW	- TOP OF WALL	CI	- CURB INLET
BW	- BOTTOM OF WALL	GI	- GRATE INLET
PVMT	- PAVEMENT	YD	- YARD DRAIN
ASPH	- ASPHALT	PVC	- POLYVINYL CHLORIDE PIPE
CONC	- CONCRETE	RCP	- REINFORCED CONCRETE PIPE
GRND	- GROUND	CMP	- CORRUGATED METAL PIPE
FG	- FINISHED GRADE	VCP	- CLAY PIPE
FF	- FINISHED FLOOR	FL	- FLOWLINE
LL	- LOWER LEVEL	TS	- TAILSTAKE
TT	- TOP OF TURF	ELEV, EL	- ELEVATION
TC	- TOP OF CURB	PROP, PR	- PROPOSED
SG	- SUBGRADE	EXIST, EX	- EXISTING
		TYP	- TYPICAL

SITE INFORMATION

OWNER	=	PARKWAY SCHOOL DISTRICT
SITE ADDRESS	=	14653 CLAYTON ROAD CHESTERFIELD, MISSOURI 63011
LOCATOR NUMBER	=	20R21-0046
EXISTING ZONING	=	-
FIRE DISTRICT	=	METRO WEST
SCHOOL DISTRICT	=	PARKWAY
SEWER DISTRICT	=	METROPOLITAN ST. LOUIS SEWER DIST.
WATER SERVICE	=	MISSOURI AMERICAN WATER
GAS SERVICE	=	LACLEDE GAS
ELECTRIC SERVICE	=	AMEREN UE
PHONE SERVICE	=	SBC/AT&T
FLOOD MAPS	=	29189C0256H
WATERSHED	=	CREVE COUER CREEK
WUNNENBERG'S	=	PAGE 32 AND 33
MDNR LAND DISTURBANCE PERMIT #	=	MO-R10D714

UTILITY CONTACTS:

CHARTER COMMUNICATION
941 CHARTER COMMONS
TOWN & COUNTRY, MO 63017
ATTN: SARA BISHOP
PHONE: 636.387.6633

AMEREN UE
280 OLD STATE ROAD
ELLISVILLE, MO 63021
ATTN: BRUNO STOPKA
PHONE: 314.992.8902

LACLEDE GAS COMPANY
3950 FOREST PARK AVENUE
ST. LOUIS, MO 63108
ATTN: KELI KRAMER
PHONE: 314.342.0678

AT&T TELEPHONE COMPANY
14780 MANCHESTER ROAD
BALLWIN, MO 63011
ATTN: MARK ADAMS
PHONE: 636.256.1514

MO. AMERICAN WATER COMPANY
727 CRAIG ROAD
ST. LOUIS, MO 63141
ATTN: MARIANN KLEMME
PHONE: 314.996.2302

PROPERTY OWNER CERTIFICATION

PARKWAY SCHOOL DISTRIC HEREBY CERTIFIES THAT HE IS FAMILIAR WITH THE SWPPP AND ASSUMES FULL RESPONSIBILITY FOR THE PERFORMANCE AND MAINTENANCE OF THE SWPPP AS STATED ON THE APPROVED PLANS. HE WILL ENSURE THAT ALL CONTRACTORS UNDERSTAND AND ARE FAMILIAR WITH THE SWPPP FOR THE SITE AND THAT EACH CONTRACTOR AGREES TO IMPLEMENT AND PROTECT ELEMENTS OF THE SWPPP AS THEY RELATE TO HIS WORK. PARKWAY SCHOOL DISTRICT ONSITE REPRESENTATIVE SHALL BE RESPONSIBLE FOR THE PERFORMANCE AND MAINTENANCE OF THE SWPPP. IN ADDITION, THE UNDERSIGNED PARKWAY SCHOOL DISTRICT ASSURES THAT ALL CITY PROPERTY OR ROADS WILL BE ADEQUATELY PROTECTED.

J. SCOTT BENNETT
SCOTT BENNETT - MANAGER OF PLANNING AND ENGINEERING

3/22/11
DATE

PERMITTEE NOTE:

THE PERMITTEE SHALL ASSUME COMPLETE RESPONSIBILITY FOR CONTROLLING ALL SILTATION AND EROSION OF THE PROJECT AREA. THE PERMITTEE SHALL USE WHATEVER MEANS NECESSARY TO CONTROL EROSION AND SILTATION INCLUDING, BUT NOT LIMITED TO, STAKED STRAW BALES AND/OR SILTATION FABRIC FENCES (POSSIBLE METHODS OF CONTROL ARE DETAILED IN THE PLAN). CONTROL SHALL COMMENCE WITH GRADING AND BE MAINTAINED THROUGHOUT THE PROJECT UNTIL ACCEPTANCE OF THE WORK BY THE CITY OF CHESTERFIELD AND ST. LOUIS COUNTY HIGHWAY DEPARTMENT AS NECESSARY. THE PERMITTEE'S RESPONSIBILITIES INCLUDE ALL DESIGN AND IMPLEMENTATION AS REQUIRED TO PREVENT EROSION AND THE DEPOSITING OF SILT. THE CITY OF CHESTERFIELD AND AS REQUIRED BY (STLCO) MAY AT THEIR OPTION DIRECT THE PERMITTEE IN HIS METHODS AS DEEMED FIT TO PROTECT PROPERTY AND IMPROVEMENTS. ANY DEPOSITING OF SILT OR MUD ON NEW OR EXISTING PAVEMENT SHALL BE REMOVED IMMEDIATELY. ANY DEPOSITING OF SILT OR MUD IN NEW OR EXISTING STORM SEWERS OR SWALES SHALL BE REMOVED AFTER EACH RAIN AND AFFECTED AREAS CLEANED TO THE SATISFACTION OF THE CITY OF CHESTERFIELD AND AS REQUIRED BY (STLCO).

OWNER NOTE:

ONCE THE CONTRACTOR DELIVERS THE PROPERTY TO THE OWNER, THE OWNER SHALL BE RESPONSIBLE TO MAINTAIN ANY CONTROL MEASURE THAT IS TO REMAIN AS A PERMANENT STRUCTURE TO CONTROL SILTATION AND EROSION.

CONTRACTOR'S INSURANCE REQUIREMENTS

PRIOR TO OBTAINING A CONSTRUCTION PERMIT FROM THE METROPOLITAN ST. LOUIS SEWER DISTRICT, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE THE DISTRICT WITH A COPY OF AN EXECUTED CERTIFICATE OF INSURANCE INDICATING THAT THE PERMITTEE HAS OBTAINED AND WILL CONTINUE TO CARRY COMMERCIAL GENERAL UABILITY AND COMPREHENSIVE AUTO LIABILITY INSURANCE. THE REQUIREMENTS AND LIMITS SHALL BE AS STATED IN THE "RULES AND REGULATIONS AND ENGINEERING DESIGN REQUIREMENTS FOR SANITARY AND STORMWATER DRAINAGE FACILITY", SECTION 10.090 (ADDENDUM).

OWNER

PARKWAY SCHOOL DISTRICT
455 N. WOODS MILL ROAD
CHESTERFIELD, MISSOURI 63017
CONTACT: J. SCOTT BENNETT P.E.
PH: (314) 415-8231

PREPARED FOR:

ATG SPORTS
C/O DON BOLINGER, PRESIDENT
1349 MCNUTT ROAD, SUITE D
HERCULANEUM, MO 63048
PHONE: (636) 524-6135
FAX: (636) 933-4994

MISSOURI ONE-CALL
1-800-344-7483

ST. LOUIS COUNTY BENCHMARK

#12-84 ELEV.=648.77
"L" ON TOP OF THE NORTH BRICK ENTRANCE MARKER ON THE NORTHWEST CORNER; 40' NORTH OF THE CENTERLINE OF HILL TRAIL DRIVE.

UTILITY NOTE:

UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS, RECORDS AND INFORMATION, AND , THEREFORE DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NON-EXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE FACILITIES, STRUCTURES AND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS. THE UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319 RSMo.

STOCK AND ASSOCIATES CONSULTING ENGINEERS, INC. AND THE UNDERSIGNED ENGINEER HAVE NO RESPONSIBILITY FOR SERVICES PROVIDED BY OTHERS TO IMPLEMENT THE IMPROVEMENTS SHOWN ON THIS PLAN AND ALL OTHER DRAWINGS WHERE THE UNDERSIGNED ENGINEER'S SEAL APPEARS. THE CONSTRUCTION MEANS AND METHODS ARE THE SOLE RESPONSIBILITY OF THE OWNER AND CONTRACTOR. STOCK AND ASSOCIATES CONSULTING ENGINEERS, INC. HAS NO RESPONSIBILITY TO VERIFY FINAL IMPROVEMENTS AS SHOWN ON THIS PLAN UNLESS SPECIFICALLY ENGAGED AND AUTHORIZED TO DO SO BY THE OWNER OR CONTRACTOR.

M.S.D. P# 19460-01
BASE MAP # 20-R
MAY. 5, 2011
100% COMPLETE

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY NUMBER: 000996

3.) REVISED PER MSD COMMENTS 05/05/11
2.) REVISED PER MSD COMMENTS 04/19/11
1.) REVISED PER CITY AND MSD COMMENTS 02/21/11

PARKWAY WEST HIGH SCHOOL

TITLE SHEET

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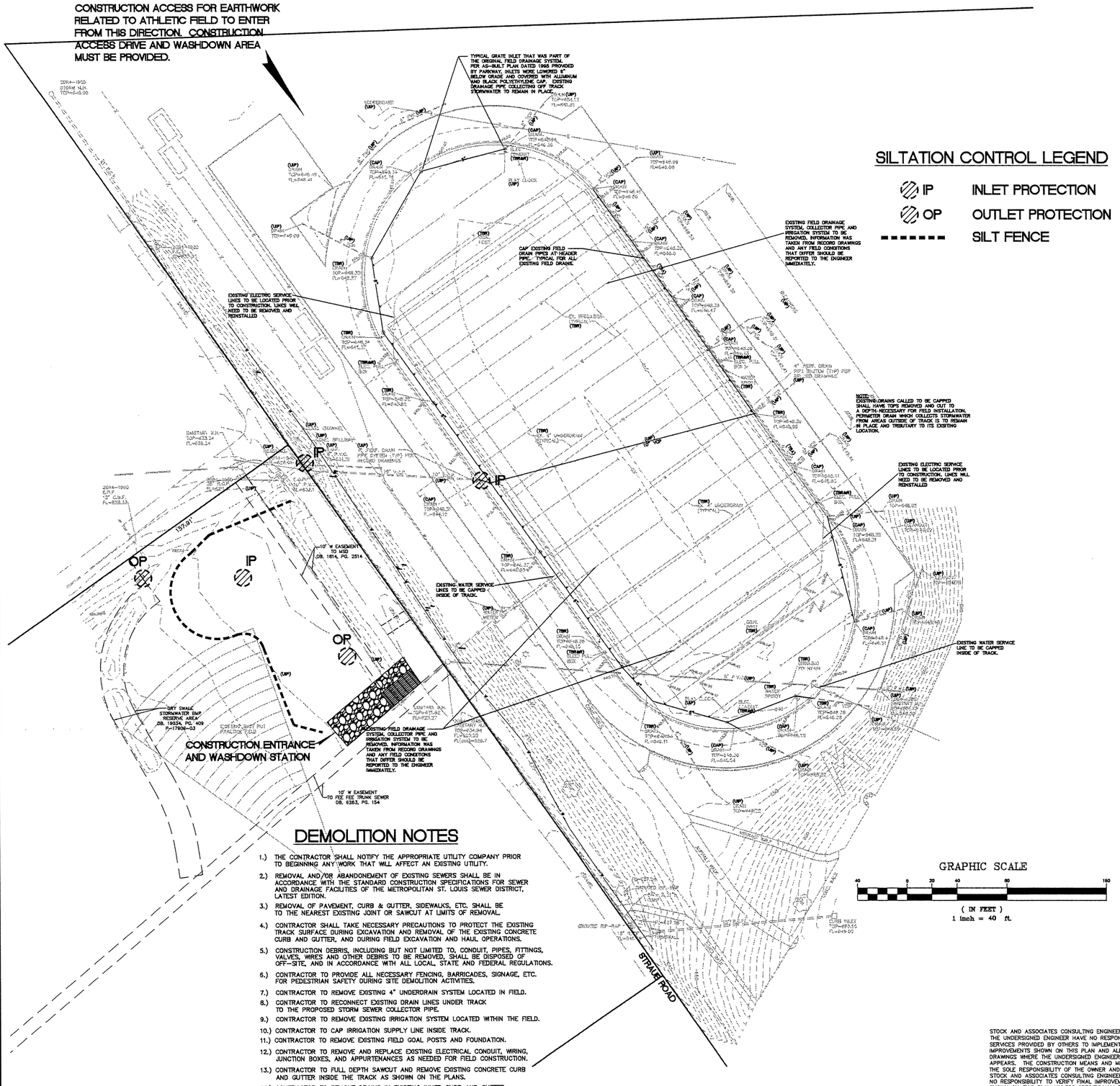
T.P.S.	12/22/2010	G.M.S.	12/22/2010	210-4673	C1



SILTATION CONTROL LEGEND

- IP — INLET PROTECTION
- OP — OUTLET PROTECTION
- ------- — SILT FENCE

DEMOLITION NOTES

1.) THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY COMPANY PRIOR TO BEGINNING ANY WORK THAT WILL AFFECT AN EXISTING UTILITY.

2.) REMOVAL AND/OR ABANDONEMENT OF EXISTING SEWERS SHALL BE IN ACCORDANCE WITH THE STANDARD CONSTRUCTION SPECIFICATIONS FOR SEWER AND DRAINAGE FACILITIES OF THE METROPOLITAN ST. LOUIS SEWER DISTRICT, LATEST EDITION.

3.) REMOVAL OF PAVEMENT, CURB & GUTTER, SIDEWALKS, ETC. SHALL BE TO THE NEAREST EXISTING JOINT OR SAWCUT AT LIMITS OF REMOVAL.

4.) CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT THE EXISTING TRACK SURFACE DURING EXCAVATION AND REMOVAL OF THE EXISTING CONCRETE CURB AND GUTTER, AND DURING FIELD EXCAVATION AND HAUL OPERATIONS.

5.) CONSTRUCTION DEBRIS, INCLUDING BUT NOT LIMITED TO, CONDUIT, PIPES, FITTINGS, VALVES, WIRES AND OTHER DEBRIS TO BE REMOVED, SHALL BE DISPOSED OF OFF-SITE, AND IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

6.) CONTRACTOR TO PROVIDE ALL NECESSARY FENCING, BARRICADES, SIGNAGE, ETC. FOR PEDESTRIAN SAFETY DURING SITE DEMOLITION ACTIVITIES.

7.) CONTRACTOR TO REMOVE EXISTING 4" UNDERDRAIN SYSTEM LOCATED IN FIELD.

8.) CONTRACTOR TO RECONNECT EXISTING DRAIN LINES UNDER TRACK TO THE PROPOSED STORM SEWER COLLECTOR PIPE.

9.) CONTRACTOR TO REMOVE EXISTING IRRIGATION SYSTEM LOCATED WITHIN THE FIELD.

10.) CONTRACTOR TO CAP IRRIGATION SUPPLY LINE INSIDE TRACK.

11.) CONTRACTOR TO REMOVE EXISTING FIELD GOAL POSTS AND FOUNDATION.

12.) CONTRACTOR TO REMOVE AND REPLACE EXISTING ELECTRICAL CONDUIT, WIRING, JUNCTION BOXES, AND APPURTENANCES AS NEEDED FOR FIELD CONSTRUCTION.

13.) CONTRACTOR TO FULL DEPTH SAWCUT AND REMOVE EXISTING CONCRETE CURB AND GUTTER INSIDE THE TRACK AS SHOWN ON THE PLANS.

14.) CONTRACTOR TO REMOVE DRAINS IN EXISTING INNER CURB AND GUTTER. DRAIN LINES TO BE PLUGGED WITH CONCRETE.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)

1 inch = 40 ft.

SILTATION NOTES

1. Inspection of siltation control devices shall take place once every seven days and within 24 hours of any 0.5"/24 hour rain event. Any siltation control in need of repair shall occur immediately.
2. Any disturbed areas which will remain unworked for 5 days or more shall be stabilized with seeding and mulching per specifications within 5 days. If seasonal conditions prohibit seeding, mulching or matting shall be used.
3. All slopes or drainage channels, once constructed to final grade, shall be seeded and mulched per specifications within seven (7) days.
4. Straw bales shall be installed immediately around each storm sewer structure once final construction of each individual structure is complete.
5. All siltation control devices shall remain in place until upslope areas have been permanently stabilized.

Siltation Control Schedule Implementation

1. Perimeter siltation control and construction entrances to be installed.
2. Begin placing aggregate base in parking areas once area has reached final grade to prevent erosion.
3. Place silt cotrol around each storm sewer structure as it is completed.
4. Immediately seed areas upon reaching final grade that are to be permanently seeded.

Temporary Access Roads and Parking Areas Specifications

1. Temporary roads shall follow the contour of the natural terrain to the extent possible. Slopes should not exceed 10 percent.
2. Grades should be sufficient to provide drainage, but should not exceed 4 percent.
3. Roadbeds shall be at least 24 feet wide.
4. All cuts and fills shall be 3:1 or flatter to the extent possible.
5. Drainage ditches shall be provided as needed.
6. The roadbed or parking surface shall be cleared of all vegetation, roots and other objectionable material.
7. A 10-inch course of 2" MINUS aggregate shall be applied immediately after grading or the completion of utility installation within the right-of-way. Filter fabric may be applied to the roadbed for additional stability in accordance with fabric manufacturer's specifications.

Vegetation

All roadside ditches, cuts, fills and disturbed areas adjacent to parking areas and roads shall be stabilized with appropriate temporary or permanent vegetation according to the applicable standards and specifications.

Maintenance

Both temporary and permanent roads and parking areas may require periodic top dressing with new gravel. Seeded areas adjacent to the roads and parking areas should be checked periodically to ensure that a vigorous stand of vegetation is maintained. Roadside ditches and other drainage structures should be checked regularly to ensure that they do not become clogged with silt or other debris.

Silt Fence Specifications

1. Silt Fence to be woven geotextile fabric Mirafi 100X or equal.
2. Fabric to be supported by metal tee post with spade base spaced on 5' centers or per approved manufactures recommendations.
3. Fabric shall be entrenched and backfilled. A trench shall be excavated a minimum of 6 inches deep for the length of the fence. The excavated soil shall be backfilled against the fence. See detail this sheet.
4. Fence height shall be a minimum of 2 feet in height, with the fabric installed on the fence on the upstream side.
5. Silt fences shall be used only on sheet flow conditions.
6. Silt fences and inlet protection shall be installed around all storm sewer structures.

Maintenance

1. Silt fence barriers shall be inspected immediately after each rainfall and at least daily during prolonged rainfall.
2. Close attention shall be paid to the repair of damaged barriers, end runs and undercutting beneath barriers.
3. Necessary repairs to barriers or replacement of fences shall be accomplished promptly.
4. Sediment deposits should be removed after each rainfall. They must be removed when the level of deposition reaches approximately one-half the height of the barrier.
5. Any sediment deposits remaining in place after the silt fence barrier is no longer required shall be dressed to conform to the existing grade, prepared and seeded.

Straw Bale Siltation Control Specifications

Sheet Flow Applications

1. Bales shall be placed in a single row, lengthwise on the contour, with both ends of adjacent bales tightly abutting one another.
2. All bales shall be either wire-bound or string-tied. Straw bales shall be installed so that buildings are oriented around the sides rather than along the tops and bottoms of the bales (in order to prevent deterioration of the bindings). See detail this sheet.
3. The barrier shall be entrenched and backfilled. A trench shall be excavated the width of a bale and the length of the proposed barrier to a minimum depth of 4 inches. After the bales are staked and chinked, the excavated soil shall be backfilled against the barrier. Backfill soil shall conform to the ground level on the downhill and shall be built up to 4 inches against the uphill side of the barrier.
4. Each bale shall be securely anchored by at least two stakes or rebars driven through the bale. The first stake in each bale shall be driven toward the previously laid bale to force the bales together. Stakes or rebars shall be driven deep enough into the ground to securely anchor the bales.
5. The gaps between bales shall be chinked (filled by wedging) with straw to prevent water from escaping between the bales. (Loose straw scattered over the area immediately uphill from a straw bale barrier tends to increase barrier efficiency).
6. Inspection shall be frequent and repair or replacement shall be made promptly as needed.
7. Straw bale barriers shall be removed when they have served their usefulness, but not before the upslope areas have been permanently stabilized.

Channel Flow Applications

1. Bales shall be placed in a single row, lengthwise, oriented perpendicular to the contour, with ends of adjacent bales tightly abutting one another.
2. The barrier shall be extended to such a length that the bottoms of the end bales are higher in elevation than the top of the lowest middle bale to assure that sediment-laden runoff will flow either through or over the barrier but not around it.

Maintenance

1. Straw bale barriers shall be inspected immediately after each rainfall and at least daily during prolonged rainfall.
2. Close attention shall be paid to the repair of damaged fence, end runs and undercutting beneath fence.
3. Necessary repairs to barriers or replacement of silt fence shall be accomplished promptly.
4. Sediment deposits should be removed after each rainfall. They must be removed when the level of deposition reaches approximately one-half the height of the barrier.
5. Any sediment deposits remaining in place after the straw bale barrier is no longer required shall be dressed to conform to the existing grade, prepared and seeded.

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PARKWAY WEST HIGH SCHOOL

EXISITNG CONDITIONS/DEMO/SWPPP

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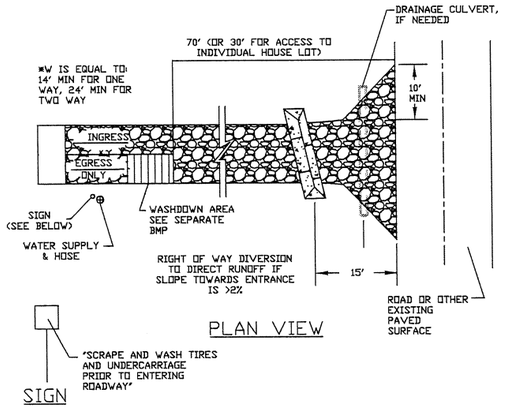
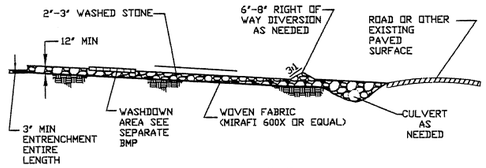
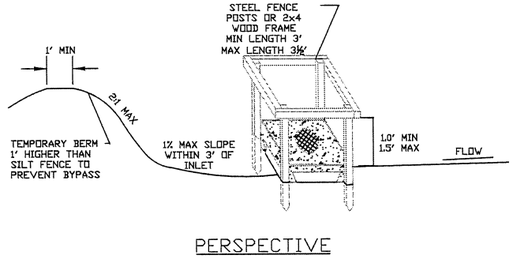
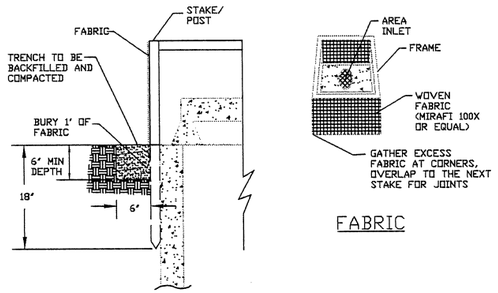


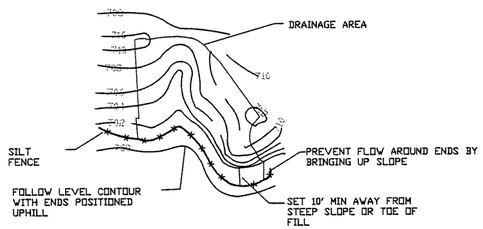


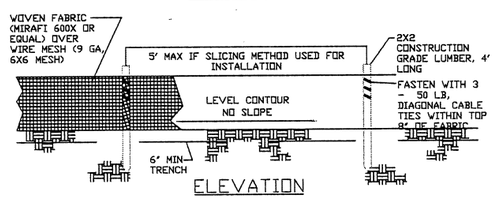
CONSTRUCTION ENTRANCE

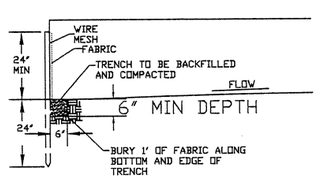




INLET PROTECTION

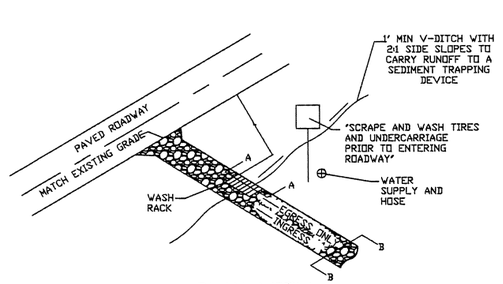


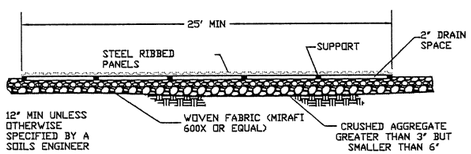


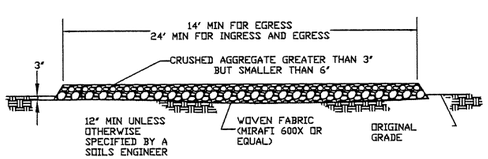


NOTE: IF FABRIC IS INSTALLED BY EQUIPMENT DESIGNED TO SLICE INTO THE GROUND, THE TRENCH IS NOT NEEDED

SILT FENCE







WASHDOWN STATION

Category: SEDIMENT CAPTURE
Use Group: TEMPORARY
ISSUED 6-1-03

SILT FENCE

PHYSICAL DESCRIPTION:

A fence constructed of woven filter fabric and wire mesh stretched between posts and entrenched in the ground designed to pond stormwater runoff and cause sediment to settle out.

WHERE BMP IS TO BE INSTALLED:

Installed along slopes, at base of slopes, and around perimeter of site as final barrier to sediment being carried off site. Spacing of fence along slopes is relative to slope:

CONDITIONS FOR EFFECTIVE USE OF BMP:

Type of Flow: Sheet flow only
Contributing Slope Length: 30 foot maximum for 3:1 slopes
50 foot maximum for slopes between 3:1 and 10:1
100 foot maximum for slopes under 10%.

WHEN BMP IS TO BE INSTALLED:

Prior to disturbance of natural vegetation and at intervals during construction of fill slopes

INSTALLATION/CONSTRUCTION PROCEDURES:

- ✓ Drive post for fence line
- ✓ Dig trench to required dimensions in front of posts for fabric burial
- ✓ Attach wire mesh to posts
- ✓ Attach fabric to posts, allowing required length below ground level to run fabric along bottom of trench
- ✓ Backfill and compact soil in trench to protect and anchor fabric

Alternate Construction – Install fence by slicing it into ground with specialized equipment
Install posts at reduced spacing indicated on detail

O&M PROCEDURES:

- ✓ Inspect at least every two weeks and after every storm
- ✓ Remove sediment buildup deeper than ½ the fence height or 12", whichever is less
- ✓ Replace torn of clogged fabric; repair loose fabric
- ✓ Repair unstable or broken posts
- ✓ Stabilize any areas susceptible to undermining
- ✓ Extend fence or add additional row(s) of fence if necessary to provide adequate protection

SITE CONDITIONS FOR REMOVAL:

After permanent vegetation of slope is established. Remove fence, regrade trench area and vegetate.

TYPICAL DETAIL: SC-8

SILT FENCE SC-8

Category: TRACKING CONTROL
Use Group: TEMPORARY
ISSUED 6-1-03

CONSTRUCTION ENTRANCE

PHYSICAL DESCRIPTION:

A stabilized entrance to a construction site designed to minimize the amount of sediment tracked from the site on vehicles and equipment. Stabilization generally consists of aggregate over fabric. Mud and sediment fall off of tires as they travel along the stabilized entrance; however, additional measures in the form of a washdown area should also be included on site. The stabilized entrance also distributes the axle load of vehicles over a larger area; thereby mitigating the rutting impact vehicles normally have on unpaved areas.

WHERE BMP IS TO BE INSTALLED:

At locations where it is safe for construction vehicles and equipment to access existing streets – preferably at location of future streets or drives.

CONDITIONS FOR EFFECTIVE USE OF BMP:

Drainage: Ditches or pipes, if needed, sized for 15 year, 20 minute storm; HGL 6" below surface of entrance

WHEN BMP IS TO BE INSTALLED:

First order of work, along with washdown area, prior to vehicles or equipment accessing unpaved areas.

INSTALLATION/CONSTRUCTION PROCEDURES:

- ✓ Grade and compact area of construction entrance
- ✓ Install culvert under entrance if needed to maintain positive drainage
- ✓ Place fabric and cover with aggregate, forming diversion across entrance if needed to direct runoff away from roadway
- ✓ See Washdown Station BMP for additional steps

O&M PROCEDURES:

- ✓ Immediately remove any mud or debris tracked onto paved surfaces
- ✓ Remove sediment and clods of dirt from construction entrance continuously
- ✓ Replace rock if necessary to maintain clean surface
- ✓ Repair settled areas

SITE CONDITIONS FOR REMOVAL:

Remove when vehicles and equipment will no longer access unpaved areas

TYPICAL DETAIL: TC-1

CONSTRUCTION ENTRANCE TC-1

Category: TRACKING CONTROL
Use Group: TEMPORARY
ISSUED 6-1-03

WASHDOWN STATION

PHYSICAL DESCRIPTION:

An area located at construction entrances designed to wash sediment from the tires and undercarriage of exiting vehicles and prevent sediment from being tracked onto existing roadways.

WHERE BMP IS TO BE INSTALLED:

Across or immediately adjacent to exit paths from unpaved construction sites.

CONDITIONS FOR EFFECTIVE USE OF BMP:

Drainage: Downstream BMP sized to treat dirty runoff from washdown station

WHEN BMP IS TO BE INSTALLED:

First order of work, along with construction entrance, prior to vehicles or equipment accessing unpaved areas.

INSTALLATION/CONSTRUCTION PROCEDURES:

- ✓ Grade and compact area for drainage under washdown pad
- ✓ Install steel-ribbed plate on frame or other support to allow a 2" drain space
- ✓ Grade and vegetate downstream BMP (v-ditch shown on detail)
- ✓ Install water supply and hose
- ✓ Post sign in advance of station indicating that all exiting vehicles and equipment must use station prior to exiting site

O&M PROCEDURES:

- ✓ Remove sediment daily
- ✓ Repair settled areas
- ✓ Replace rock if necessary to maintain clean surface

SITE CONDITIONS FOR REMOVAL:

Remove when vehicles and equipment will no longer access unpaved areas

TYPICAL DETAIL: TC-4

WASHDOWN STATION TC-4

3.) REVISED PER MSD COMMENTS 05/05/11
2.) REVISED PER MSD AND CITY COMMENTS 04/19/11
1.) REVISED PER MSD AND CITY COMMENTS 02/21/11

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PARKWAY WEST HIGH SCHOOL

SWPPP DETAILS

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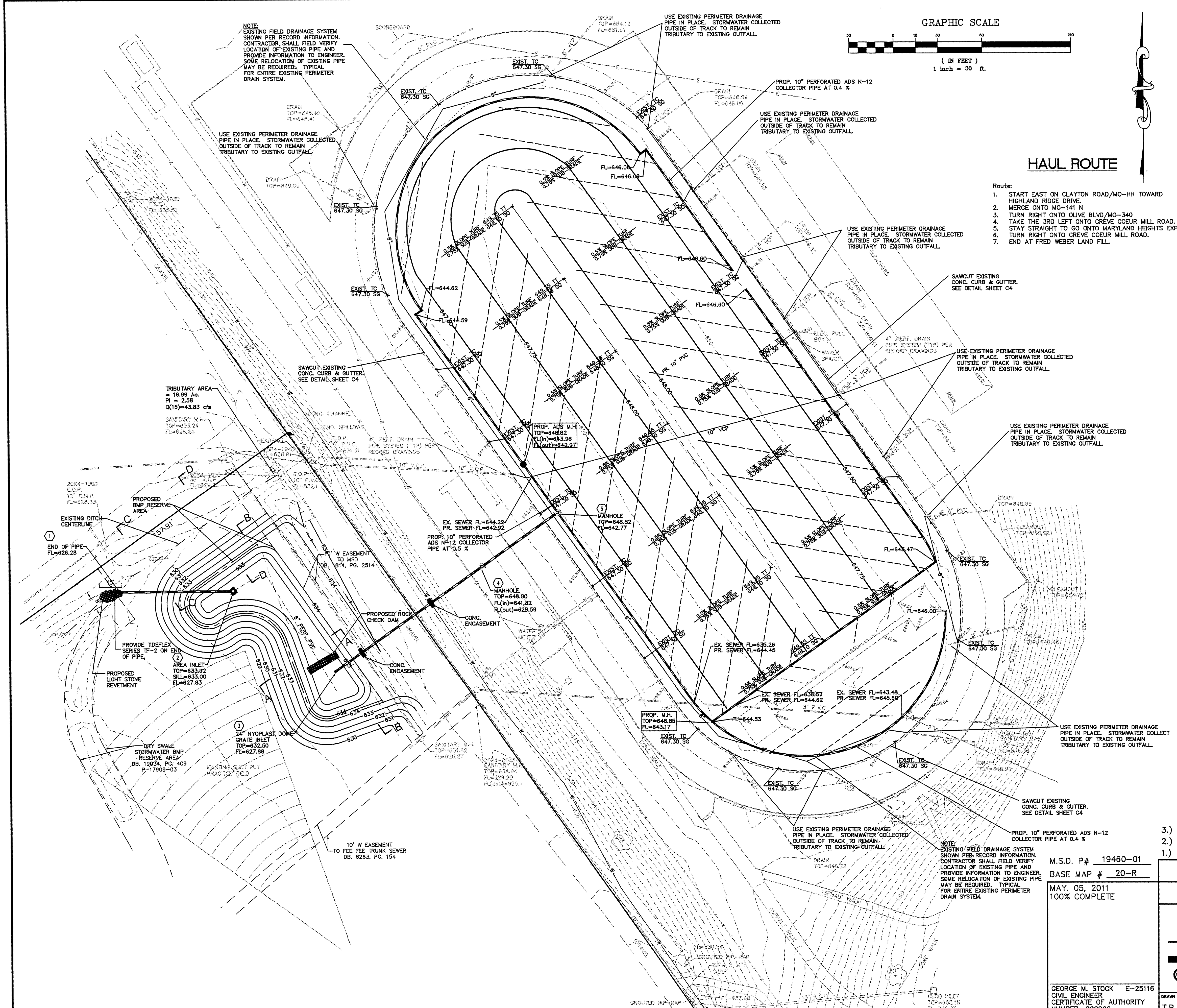

HAUL ROUTE

Route:

1. START EAST ON CLAYTON ROAD/MO-HH TOWARD HIGHLAND RIDGE DRIVE.
2. MERGE ONTO MO-141 N
3. TURN RIGHT ONTO OLIVE BLVD/MO-340
4. TAKE THE 3RD LEFT ONTO CREVE COEUR MILL ROAD.
5. STAY STRAIGHT TO GO ONTO MARYLAND HEIGHTS EXPRESSWAY.
6. TURN RIGHT ONTO CREVE COEUR MILL ROAD.
7. END AT FRED WEBER LAND FILL.

EARTHWORK NOTES

Bulk Cut.....7,710.............................± CUBIC YARDS

Bulk Fill.....9,90.............................± CUBIC YARDS (0% SHRINKAGE)

Net.............6,720.............................± CUBIC YARDS

THE ENGINEER HAS CALCULATED THE ABOVE QUANTITIES OF EARTHWORK TO BE REGARDED AS AN ESTIMATE OF THE BULK MOVEMENT OR REDISTRIBUTION OF SOILS ON THIS PROJECT. AS AN ESTIMATE, THESE QUANTITIES ARE INTENDED FOR GENERAL USE, AND THE ENGINEER ASSUMES NO LIABILITY FOR COST OVERRUNS DUE TO EXCESS EXCAVATED MATERIALS OR SHORTAGES OF FILL.

THE QUANTITIES ESTIMATED FOR EACH OF THE IMPROVEMENT ITEMS LISTED ABOVE ARE BASED UPON THE HORIZONTAL AND VERTICAL LOCATION OF THE IMPROVEMENTS AS PROPOSED ON THE SITE ENGINEERING PLANS PREPARED BY STOCK AND ASSOCIATES CONSULTING ENGINEERS.

THE ENGINEER'S EARTHWORK ESTIMATE DOES NOT INCLUDE ANY OF THE FOLLOWING ITEMS REQUIRING EARTHWORK THAT MAY BE NECESSARY FOR COMPLETION OF THE PROJECT: MISCELLANEOUS UNDERGROUND CONDUITS, INCLUDING SEWER LINES AND WATER MAINS LESS THAN TWENTY-FOUR INCHES IN DIAMETER, STANDARD MANHOLES; PROCESS OR TRANSFER PIPING; ELECTRICAL OR TELEPHONE CONDUITS OR DUCT BANKS; BASES FOR LIGHT STANDARDS; BUILDING FOOTINGS AND FOUNDATIONS, RETAINING WALL BACKFILL, ETC.

THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACTUAL SIZE OF THE FIELD EXCAVATIONS MADE FOR THE INSTALLATION OF UNDERGROUND STRUCTURES, AND AS SUCH, THE ACTUAL QUANTITIES OF EARTHWORK FROM SUCH ITEMS MAY VARY FROM THE ESTIMATE SHOWN ABOVE.

THE ENGINEER ASSUMES NO RESPONSIBILITY FOR COSTS INCURRED DUE TO REMOVAL OF UNSUITABLE MATERIAL. AT THIS TIME THERE HAS NOT BEEN ANY GEOTECHNICAL INVESTIGATION.

THE ENGINEER HAS MADE THE FOLLOWING ASSUMPTIONS IN THE ABOVE STATED QUANTITIES:

- PROPOSED GRADING TO THE SUBGRADE ("SG") ELEVATIONS NOTED ON THE PLAN.
- PROPOSED CONTOURS REFLECT SUBGRADE ELEVATIONS
- EXCAVATION FOR NEW COLLECTOR PIPES RUNNING ALONG INETERIOR OF TRACT IS "NOT" INCLUDED IN CUT NUMBERS
- TOPSOIL REMOVAL "IS" INCLUDED IN OVERALL CUT NUMBER
- 0% SHRINKAGE

IT IS THE RESPONSIBILITY OF THE GRADING CONTRACTOR TO PERFORM AN INDEPENDENT EARTHWORK ANALYSIS PRIOR TO SUBMISSION OF BID. IN THE EVENT A DISCREPANCY EXISTS THE GRADING CONTRACTOR SHALL NOTIFY ENGINEER OF DISCREPANCY PRIOR TO SUBMISSION OF BID.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO REMOVE AND/OR EXPORT ANY AND ALL MATERIALS NEEDED TO COMPLETE THE FINISHED GRADES AND ELEVATIONS AS SHOWN ON THE ENGINEER'S GRADING PLAN.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN "ALL" GEOTECHNICAL INVESTIGATIONS FROM THE "OWNER". CONTRACTOR SHALL REVIEW AND FAMILIARIZE THEMSELVES WITH RECOMMENDATIONS AS OUTLINED BY THE PROJECT GEOTECHNICAL ENGINEER AND INCORPORATE IT IN THEIR PROPOSED SCOPE OF WORK.

CONSTRUCTION SITE RUNOFF SHALL NOT FLOW INTO THE WATER QUALITY BMP(S). ALL STORMWATER FLOW TO THE WATER QUALITY BMP(S) SHALL BE DIVERTED, PLUGGED, OR DISCONNECTED UNTIL THE CONSTRUCITON SITE IS STABLE AND THE MSD DEDICATION INPSECTOR PROVIDES APPROVAL TO PLACE THE BMP(S) ONLINE.

NOTES:

1. PROPOSED FIELD UNDERDRAIN SYSTEM PER MANUFACTURER.
2. GEOTECHNICAL ENGINEER SHALL BE PRESENT TO INSPECT SUBGRADE AND CONFIRM ADEQUACY FOR PLACEMENT OF ROCK FIELD BASE.
3. CONTRACTOR SHALL VERIFY UNDERDRAIN SYSTEM LAYOUT, SPACING, PIPE SIZE AND INSTALLATION PROCEDURE PRIOR TO COMMENCING CONSTRUCTION.
4. PROPOSED CONTOURS SHOWN ARE TO FIELD SUBGRADE.
5. EXISTING LONG JUMP TRACK AND PITS TO BE USED IN PLACE.
6. SEE SHEET C8 FOR DITCH SECTIONS AND CALCULATIONS.

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SITE AND GRADING PLAN

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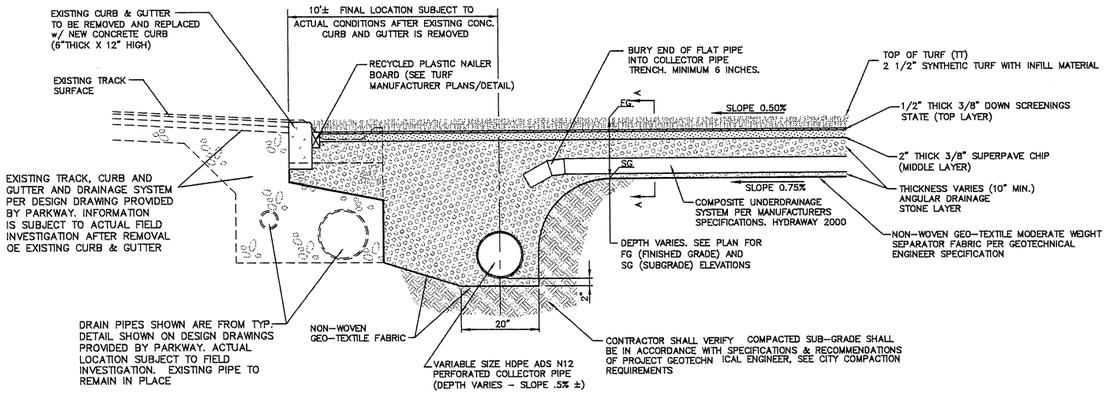
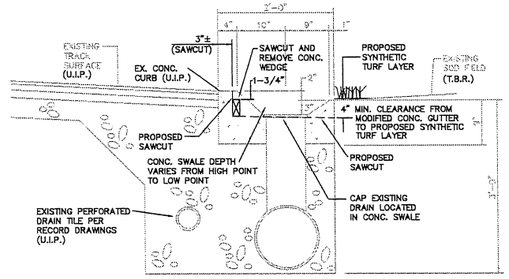
DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
T.P.S.	12/22/2010	G.M.S.	12/22/2010	210-4673	C4



TYPICAL SECTION THROUGH FIELD (EAST SIDE)

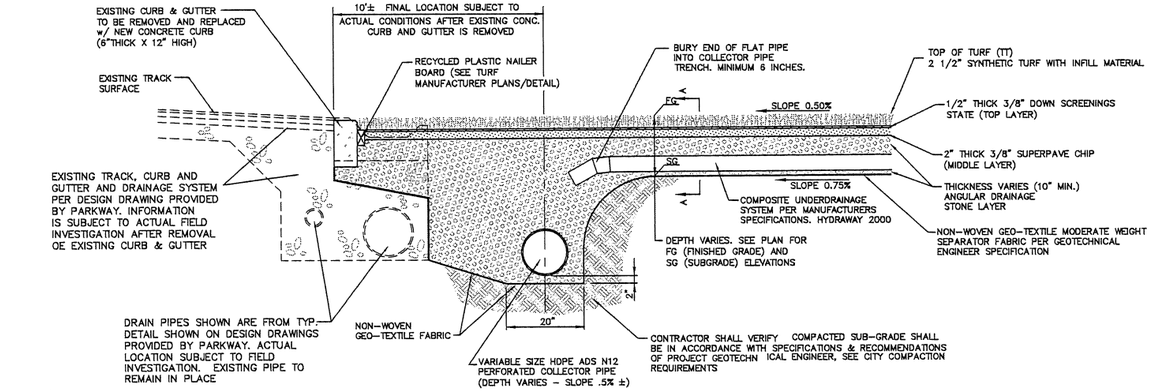
(N.T.S.)



NOTE: EXISTING CONCRETE GUTTER SHOWN ABOVE WAS TAKEN FROM THE RECORD DRAWINGS PROVIDED BY PARKWAY.

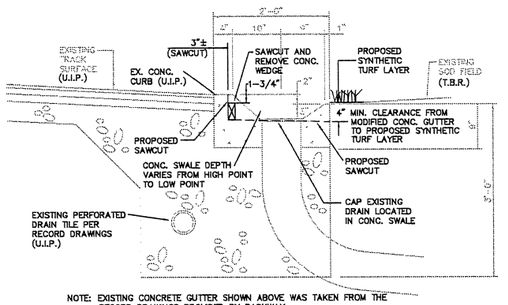
(EAST SIDE OF FIELD) EXISTING CONCRETE GUTTER MODIFICATION GUTTER LOW POINT (TYP)

(N.T.S.)



TYPICAL SECTION THROUGH FIELD (WEST SIDE)

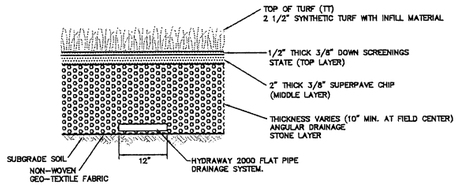
(N.T.S.)



NOTE: EXISTING CONCRETE GUTTER SHOWN ABOVE WAS TAKEN FROM THE RECORD DRAWINGS PROVIDED BY PARKWAY.

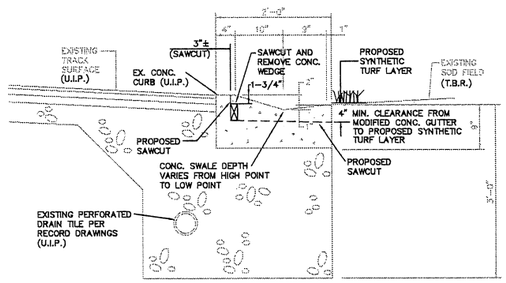
(WEST SIDE OF FIELD) EXISTING CONCRETE GUTTER MODIFICATION GUTTER LOW POINT (TYP)

(N.T.S.)



SUBSURFACE DRAINAGE IN FIELD DETAIL A-A

(N.T.S.)



NOTE: EXISTING CONCRETE GUTTER SHOWN ABOVE WAS TAKEN FROM THE RECORD DRAWINGS PROVIDED BY PARKWAY.

EXISTING CONCRETE GUTTER MODIFICATION GUTTER HIGH POINT (TYP)

(N.T.S.)

3.) REVISED PER MSD COMMENTS 05/05/11
2.) REVISED PER MSD AND CITY COMMENTS 04/19/11
1.) REVISED PER MSD AND CITY COMMENTS 02/21/11

M.S.D. P# 19460-01
BASE MAP # 20-R

MAY. 05, 2011
100% COMPLETE

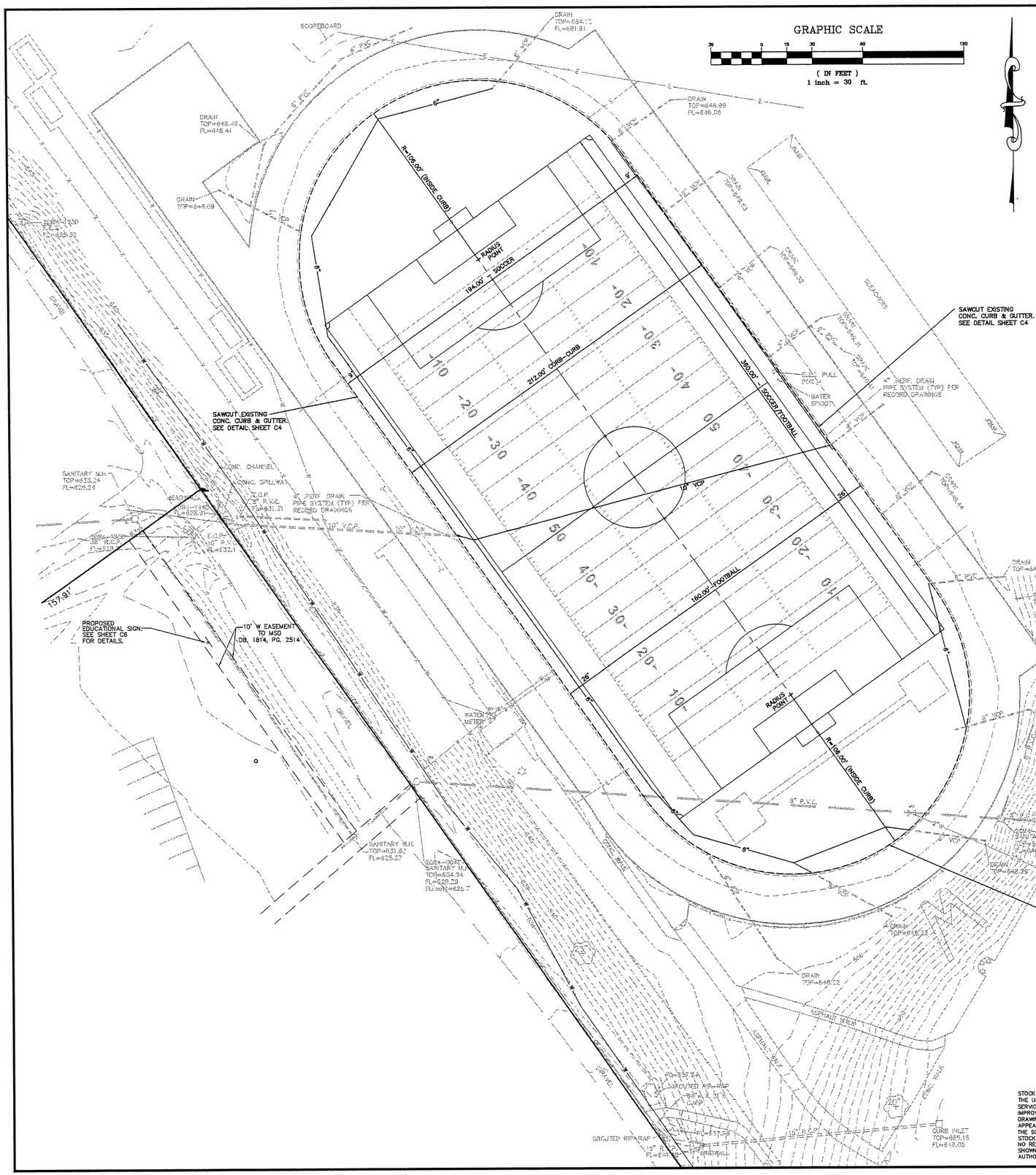
GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY NUMBER: 000996

PARKWAY WEST HIGH SCHOOL

FIELD DETAILS

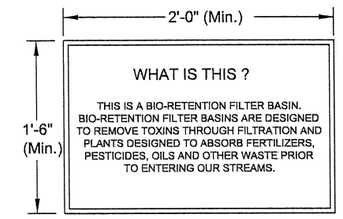
STOCK & ASSOCIATES
Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530-9100
FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
T.P.S.	12/22/2010	G.M.S.	12/22/2010	210-4673	C5



SITE NOTES:

1. PROPOSED FOOTBALL AND SOCCER FIELD STRIPING AND GOAL POSTS PER MISSOURI STATE HIGH SCHOOL ATHLETIC ASSOCATION STANDARDS (MSHSAA).
2. PROPOSED FIELD LOGO, END ZONE LETTERING AND STRIPING COLORS TO BE COORDINATED WITH PARKWAY SCHOOL DISTRICT.



EDUCATIONAL SIGN DETAIL

NOTE: EDUCATIONAL SIGN TO BE PROVIDED BY OWNER.

STORM SEWER NOTES

1.) ALL SEWER CONSTRUCTION AND MATERIALS TO BE IN ACCORDANCE WITH THE METROPOLITAN ST. LOUIS SEWER DISTRICT STANDARD CONSTRUCTION SPECIFICATIONS FOR SEWERS AND DRAINAGE FACILITIES, 2009.

2.) ALL CONCRETE SHALL BE REINFORCED, AND CONFORM TO A.S.T.M. DESIGNATION C76-80 CLASS III UNLESS NOTED.

3.) TYPE "C" BEDDING PER M.S.D. AND ST. LOUIS COUNTY STANDARDS IS REQUIRED FOR PIPES IN ROCK.

4.) ALL TRENCHES UNDER AREAS TO BE PAVED AND UNDER EXISTING PAVING SHALL BE GRANULARLY FILLED WITH 3/4" MINUS CRUSHED LIMESTONE ONLY. BACKFILL SHALL BE PLACED IN ACCORDANCE WITH M.S.D. AND ST. LOUIS COUNTY STANDARDS.

5.) ALL TRENCH BACKFILLS UNDER PAVEMENT WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE GRANULAR BACKFILLED. TRENCH BACKFILLS UNDER PAVED AREAS, OUTSIDE OF PUBLIC RIGHT-OF-WAY SHALL BE GRANULAR BACKFILL IN LIEU OF THE EARTH BACKFILL COMPACTED TO 90 PERCENT OF THE MODIFIED AASHTO T-180 COMPACTION TEST A.S.T.M. D-1557.

6.) JETTING IS NOT AN ACCEPTABLE METHOD OF ACHIEVING BACKFILL COMPACTION. ALL BACKFILL MATERIAL SHALL BE MECHANICALLY COMPACTED TO AT LEAST 95 PERCENT OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY.

7.) FOR SEWER PIPE (STORM, SANITARY AND COMBINED) WITH A DESIGN GRADE LESS THAN ONE PERCENT (1%), VERIFICATION OF THE PIPE GRADE WILL BE REQUIRED FOR EACH INSTALLED REACH OF SEWER, PRIOR TO ANY SURFACE RESTORATION OR INSTALLATION OF ANY SURFACE IMPROVEMENTS. THE CONTRACTOR'S FIELD SUPERVISOR WILL BE REQUIRED TO PROVIDE DAILY DOCUMENTATION VERIFYING THAT THE AS-BUILT PIPE GRADE MEETS THE DESIGN GRADE THROUGH THE SUBMITTAL OF SIGNED CUT SHEETS TO THE MSD INSPECTOR UPON REQUEST.

FIELD SURVEYED VERIFICATION MUST BE MADE UNDER THE DIRECTION OF A LICENSED LAND SURVEYOR OR REGISTERED ENGINEER. THE CONTRACTOR WILL BE REQUIRED TO REMOVE AND REPLACE ANY SEWER REACH HAVING AN AS-BUILT GRADE WHICH IS FLATTER THAN THE DESIGN GRADE BY MORE THAN 0.1%. SEWERS WITH GRADE GREATER THAN THE DESIGN SLOPE MAY BE LEFT IN PLACE, PROVIDED NO OTHER SEWER GRADE IS REDUCED BY THIS VARIANCE IN THE AS-BUILT GRADE.

MSD ALSO RESERVES THE RIGHT TO REQUIRE THE CONTRACTOR TO REMOVE AND REPLACE ANY SEWER (AT ANY TIME PRIOR TO CONSTRUCTION APPROVAL) FOR WHICH THE AS-BUILT GRADE DOES NOT COMPLY WITH THE GRADE TOLERANCE STATED IN THE ABOVE PARAGRAPH.

THE SEWER CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COSTS ASSOCIATED WITH THE FIELD VERIFICATION OF THE SEWER GRADE, OR REMOVAL AND REPLACEMENT OF THE SEWER PIPE OR ASSOCIATED APPURTENANCES.

8.) MAINTENANCE OF THE SEWERS DESIGNATED AS "PUBLIC" SHALL BE THE RESPONSIBILITY OF THE METROPOLITAN ST. LOUIS SEWER DISTRICT UPON DEDICATION OF THE SEWERS TO THE DISTRICT.

9.) STRUCTURES NOTED TO BE ADJUSTED TO FINISH GRADE SHALL BE ADJUSTED BY EITHER REMOVAL OR PLACEMENT OF GRADE RINGS, BRICK WORK, OR MORTAR BEDDING BY SUCH METHODS AS APPROVED BY M.S.D. "STANDARD CONSTRUCTION SPECIFICATIONS", 2009, AND ST. LOUIS COUNTY SPECIFICATIONS FOR STORM SEWERS.

10.) SOILS ENGINEER WILL VERIFY THAT ALL COMPRESSIBLE MATERIAL HAS BEEN REMOVED PRIOR TO FILL PLACEMENT AND THAT ALL FILL, UNDER SANITARY AND STORM SEWER LINES CONSTRUCTED ABOVE ORIGINAL GRADE, HAS BEEN COMPACTED TO 90% OF "MODIFIED PROCTOR." FILL IS TO BE PLACED IN A MAXIMUM OF 9" LIFTS. TESTS SHALL BE TAKEN AT A MAXIMUM OF 50 FOOT INTERVALS ALONG THE ROUTE OF THE PIPE, AT A MAXIMUM OF 2 FEET VERTICALLY, AND LATERALLY ON EACH SIDE OF THE PIPE AT A DISTANCE EQUAL TO THE DEPTH OF FILL OVER THE PIPE. A COPY OF THESE RESULTS WILL BE SUBMITTED TO MSD PRIOR TO CONSTRUCTION.

GENERAL NOTES:

1.) ALL UTILITIES SHOWN HAVE BEEN LOCATED BY THE ENGINEER FROM AVAILABLE RECORDS. THEIR LOCATION SHOULD BE CONSIDERED APPROXIMATE. THE CONTRACTOR HAS THE RESPONSIBILITY TO NOTIFY ALL UTILITY COMPANIES, PRIOR TO CONSTRUCTION, TO HAVE EXISTING UTILITIES FIELD LOCATED.

2.) GRADING CONTRACTOR SHALL INSTALL SILTATION CONTROL PRIOR TO STARTING THE GRADING. ADDITIONAL SILTATION CONTROL DEVICES SHALL BE INSTALLED AS DIRECTED BY THE CITY OF CHESTERFIELD.

3.) ALL MATERIALS AND METHODS OF CONSTRUCTION TO MEET THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF CHESTERFIELD AND THE METROPOLITAN ST. LOUIS SEWER DISTRICT (MSD).

4.) GRADING & STORM WATER PER 2009 M.S.D. STANDARD CONSTRUCTION SPECIFICATIONS AND DETAILS.

5.) ALL GRADED AREAS SHALL BE PROTECTED FROM EROSION BY EROSION CONTROL DEVICES AND/OR SEEDING AND MULCHING.

6.) ALL FILLS AND BACKFILLS SHALL BE MADE OF SELECTED EARTH MATERIALS, FREE FROM BROKEN MASONRY, ROCK, FROZEN EARTH, RUBBISH, ORGANIC MATERIAL AND DEBRIS.

7.) GRADING CONTRACTOR SHALL KEEP EXISTING ROADWAYS CLEAN OF MUD AND DEBRIS AT ALL TIMES.

8.) NO GRADE SHALL EXCEED 3:1 SLOPE, EXCEPT AS NOTED AND APPROVED PER GEOTECHNICAL ENGINEER.

9.) ALL LANDSCAPE AREAS TO BE FILLED WITH A MINIMUM OF 6" OF TOPSOIL

10.) ALL LANDSCAPED AREAS DISTURBED BY OFF-SITE WORK SHALL BE IMMEDIATELY SEEDED OR SODDED.

11.) ADEQUATE TEMPORARY OFF-STREET PARKING FOR CONSTRUCTION EMPLOYEES SHALL BE PROVIDED. PARKING ON NON-SURFACED AREAS SHALL BE PROHIBITED IN ORDER TO ELIMINATE THE CONDITION WHEREBY MUD FROM CONSTRUCTION AND EMPLOYEES' VEHICLES IS TRACKED ONTO THE PAVEMENT CAUSING HAZARDOUS ROADWAY AND DRIVEWAY CONDITIONS

12.) ALL PUBLIC SEWER CONSTRUCTION MUST CONFORM TO 2009 M.S.D. "STANDARD CONSTRUCTION SPECIFICATIONS AND DETAILS"

13.) THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM SURVEY AND AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, NUMBER OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UTILITIES, SHOWN OR NOT SHOWN, AND SAID UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319, RSMO.

14.) CLEARING TECHNIQUES THAT RETAIN EXISTING VEGETATION TO THE MAXIMUM EXTENT PRACTICABLE SHALL BE USED AND THE TIME PERIOD FOR DISTURBED AREAS TO BE WITHOUT VEGETATIVE COVER SHALL BE MINIMIZED TO THE EXTENT PRACTICAL.

15.) THE DEVELOPER IS ADVISED THAT UTILITY COMPANIES WILL REQUIRE COMPENSATION FOR RELOCATION OF THEIR UTILITY FACILITIES WITHIN PUBLIC ROAD RIGHT-OF-WAY. UTILITY RELOCATION COST SHALL BE CONSIDERED THE DEVELOPER'S RESPONSIBILITY.

16.) THE DEVELOPER SHOULD ALSO BE AWARE OF EXTENSIVE DELAYS IN UTILITY COMPANY RELOCATION AND ADJUSTMENTS. SUCH DELAYS WILL NOT CONSTITUTE A CAUSE TO ALLOW OCCUPANCY PRIOR TO COMPLETION OF IMPROVEMENTS.

17.) AREAS SHALL BE SEEDED AFTER CLEARING AND GRUBBING WHEN NO ACTIVITY WILL OCCUR WITHIN THIRTY (30) DAYS.

18.) ALL OFFSITE PROPERTY OWNERS SHALL BE GIVEN 48 HOURS NOTICE IN ADVANCE OF ANY WORK.

19.) ANY DISTURBED OFF SITE PROPERTY (i.e. BUSHES, FENCES, MAILBOXES, etc..) SHALL BE REPLACED IN KIND, AT THE DEVELOPER'S EXPENSE.

20.) ALL PROPOSED UTILITIES TO BE LOCATED UNDERGROUND.

21.) ALL SIDEWALKS TO BE CONSTRUCTED TO ST. LOUIS COUNTY ADA STANDARDS.

22.) DRIVEWAYS AND ENTRANCES PER ST. LOUIS COUNTY STANDARDS.

23.) SITE SIGNAGE SHALL COMPLY WITH ST. LOUIS COUNTY SIGN ORDINANCE.

24.) STORMWATER SHALL BE DISCHARGED AT AN ADEQUATE NATURAL DISCHARGE POINT. SINKHOLES ARE NOT ADEQUATE NATURAL DISCHARGE POINTS.

25.) IT IS NOT WARRANTED THAT THIS PLAT CONTAINS COMPLETE INFORMATION REGARDING EASEMENTS, RESERVATIONS, RESTRICTIONS, RIGHTS-OF-WAY, BUILDING LINES, AND OTHER ENCUMBRANCES. FOR COMPLETE INFORMATION, A TITLE OPINION OR COMMITMENT FOR TITLE INSURANCE SHOULD BE OBTAINED.

26.) THIS PLAN IS SUBJECT TO ALL LOCAL, STATE AND FEDERAL REGULATIONS. THERE HAS BEEN NO WETLAND DELINEATION, GEOTECHNICAL INVESTIGATION OR ENVIRONMENTAL DATA PROVIDED TO THIS ENGINEER PRIOR TO DESIGNING THIS PLAN.

27.) FOOTBALL AND SOCCER FIELD STRIPING PER MISSOURI STATE HIGH SCHOOL ATHLETIC ASSOCATIONS REGULATIONS.

28.) SOCCER FIELD STRIPING TO BE HELD MINIMUM OF 9 FEET FROM EDGE OF INNER CURBERS INSIDE OF RUNNING TRACK.

29.) INTERNAL (PRIVATE) STORM SEWERS WILL REQUIRE A SEPARATE DRAINLAYER PERMIT FROM ST. LOUIS COUNTY DEPARTMENT OF PUBLIC WORKS.

30.) TRUCKS SHALL NOT EXCEED POSTED WEIGHT LIMITS FOR ST. LOUIS COUNTY BRIDGES DURING HAUL OPERATIONS.

31.) SEDIMENT SHALL BE WASHED FROM ALL VEHICLES AT WASHDOWN STATION PRIOR TO LEAVING SITE. NO TRACKING OF MUD ONTO COUNTY ROADS SHALL BE ALLOWED.

32.) EXISTING INFORMATION SHOWN ON THE PLANS IS A COMBINATION OF RECORD DRAWINGS PROVIDED BY PARKWAY AND AN ACTUAL FIELD SURVEY PERFORMED BY STOCK AND ASSOCIATES. THE TOPOGRAPHIC SURVEY PROVIDED GROUND ELEVATIONS AND LOCATIONS OF EXISTING (VISIBLE) IMPROVEMENTS. RECORD DRAWINGS WERE USED TO SHOW UNDERGROUND UTILITIES AND DRAINAGE SYSTEMS THAT COULD NOT BE VERIFIED FROM THE SURFACE. CONTRACTOR SHOULD USE CAUTION DURING CONSTRUCTION AND REPORT ANY FINDINGS THAT ARE NOT SHOWN ON THE PLAN TO THE ENGINEER IMEDIATELY.

33.) NO GRADING SHALL OCCER ON THE SITE UNTIL A GRADING PERMIT IS ISSUED.

3.) REVISED PER MSD COMMENTS 05/05/11
2.) REVISED PER MSD AND CITY COMMENTS 04/19/11
1.) REVISED PER MSD AND CITY COMMENTS 02/21/11

M.S.D. P# 19460-01
BASE MAP # 20-R

MAY. 05, 2011
100% COMPLETE

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY NUMBER: 000996

PARKWAY WEST HIGH SCHOOL

SITE GEOMETRICS / SPECIFICATIONS

STOCK & ASSOCIATES
Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530-9100
FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
T.P.S.	12/22/2010	G.M.S.	12/22/2010	210-4673	C6

Project name:	Parkway West High School	Calculated By:	J.M.R.
Project number:	210-4673	Checked By:	G.M.S.
Project Location:	Chesterfield, Missouri	Date:	12/28/2010

15 year - 2 minute

Bend Coefficients:

5^0 = 0.06	20^0 = 0.24	35^0 = 0.4	50^0 = 0.53	65^0 = 0.57	80^0 = 0.65
10^0 = 0.11	25^0 = 0.30	40^0 = 0.43	55^0 = 0.52	70^0 = 0.60	85^0 = 0.67
15^0 = 0.18	30^0 = 0.35	45^0 = 0.47	60^0 = 0.55	75^0 = 0.62	90^0 = 0.70

Revisions: 02/21/11
4/18/2011

Structure Number	Upper structure	Lower structure	FLOW LINE ELEVATIONS Upper structure	Lower Structure	Length (ft)	Flowline Grade (ft/ft)	Pipe Size (in.)	Full Flow Cap. (cfs)	Total (Q) (cfs)	Mean Full Flow Vel.(V) (ft/s)	Bend Coef.	Curve Coef.	Velocity Head (Vh) (ft)	QVh (ft^3/s)	Pipe Coef. (n)	HEAD LOSS Ht (ft)	Junction (ft)	Bend (ft)	Curve (ft)	Total H_{tot}	Hydraulic Elevations Upper F.L. + Dia.	Lower H.E. +Ht	Lower H.E.	Structure Upper H.E. + H_{tot}	TOP Structure Elevation	Free Board	Structure Number
5	5	4	642.77	641.82	63.25	0.0150	15	7.94	7.53	6.14	0.00	0.00	0.58	4.40	0.013	0.86	0.00	0.01	0.00	0.00	644.02	643.95	643.07	644.02	648.82	4.80	5
4	4	3	629.09	627.88	122.12	0.0099	15	6.45	7.53	6.14	0.00	0.00	0.58	4.40	0.013	1.66	0.00	0.03	0.00	0.00	630.34	635.16	633.50	635.16	640.00	3.84	4
3	3		627.88																		CPv ELEVATION			633.50			3
2	2	1	627.83	626.28	30.42	0.0505	15	8.99	7.53	6.14	0.00	0.00	0.58	4.40	0.013	1.09	0.00	0.01	0.00	0.00	629.08	629.21	628.12	629.21	632.25	3.04	2
1	1		626.28																		15 yr ditch W.S.			628.12			1

MEAN FULL FLOW VELOCITY: $V = Q_{act}/A_{PIPE}$

FRICTION LOSS (H_f): $Hf = 2.87\ n^2\ (LV^2/d^{1.33})$

VELOCITY HEAD: $V_h = V^2/2g$

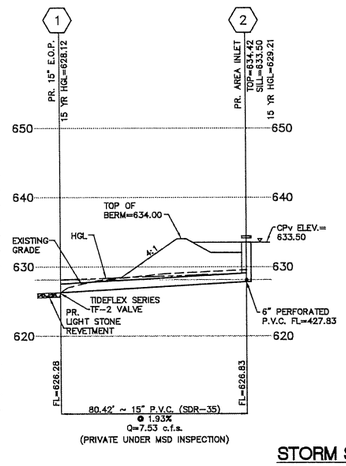
JUNCTION LOSSES (JUNC.) = $[Q_{out}Vh_{out} - Sum\ (Q_{in}V_{in})]x1.33/[Q_{out}]$

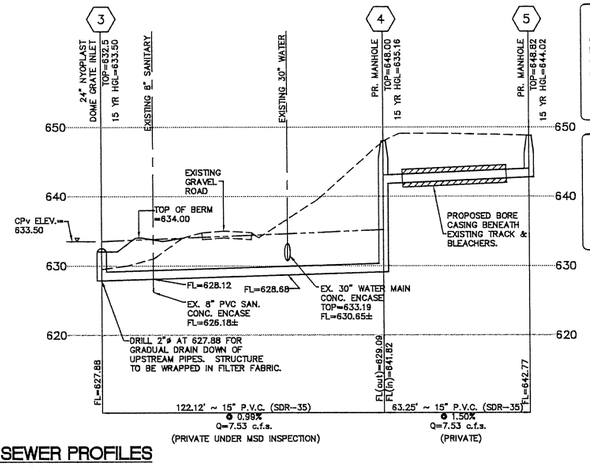
BEND LOSSES (BEND) = (Δ^0) * ANGLE COEFFICIENT

CURVE LOSS=V_h*CURVE COEFFICIENT

Note: 1. IF MORE THAN ONE INCOMING LINE, CALC. EACH BEND LOSS AND ADD TOGETHER.
2. NO STRUCTURE LOSES TO BE CALCULATED AT A DROP
3. IF $QV_{hbnd} > QV_{hbndb}$ NO JUNCTION LOSES TO BE CALCULATED.

Note(s):





STORM SEWER PROFILES

SCALE: 1" = 30' HORIZ
1" = 10' VERT

UTILITY CONFLICT NOTE:

CONTRACTOR SHALL VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF EXISTING UTILITIES AND SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY POTENTIAL UNDERGROUND UTILITY CONFLICT AT THE TIME OF EXCAVATION.

LINETYPE LEGEND

- EXISTING GRADE.....
- PROPOSED GRADE...
- 15 YR HYDRAULIC GRADE...
- 100 YR HYDRAULIC GRADE...
- PROPOSED PAVEMENT....
- GRANULAR BACKFILL.....
- COMPACTED FILL.....

AREA INLET #2 CAPACITY

$Q = Cd \times A \times \sqrt{(2)(g)(h)}$

WHERE:
Q = DISCHARGE (c.f.s.)
Cd = COEFFICIENT OF DISCHARGE (Cd=0.61)
A = CROSS-SECTIONAL AREA OF FLOW AT THE ORIFICE ENTRANCE (SQ. FT.) (ONE SIDE)
g = ACCELERATION OF GRAVITY (g=32.2 ft/sec^2)
h = DRIVING HEAD (ft), MEASURED FROM THE CENTROID OF THE ORIFICE AREA TO THE WATER SURFACE.
FOR 6" OF PONDING AT THE INLET, h=0.50'

$Q = Cd \times A \times \sqrt{(2)(g)(h)}$

$Q = 0.61 \times 5.67\ ft^2 \times \sqrt{(2)(32.2\ ft/sec^2)(0.50')}$

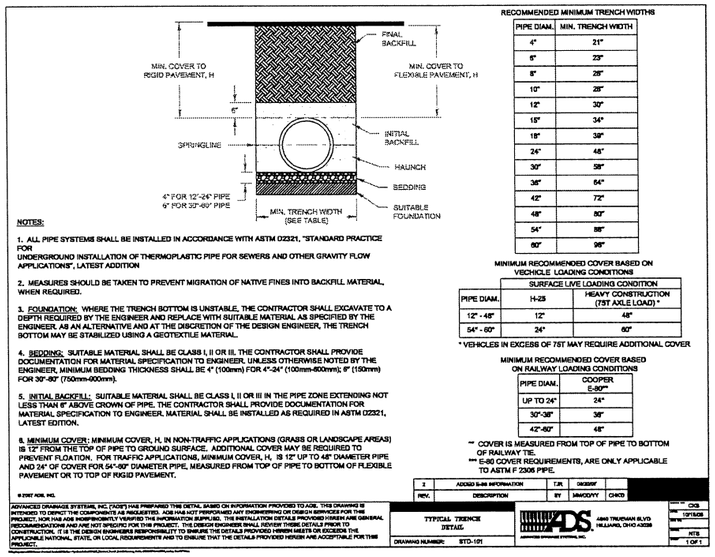
Q = 19.63 c.f.s./ AREA INLET (OPEN 4 SIDES)

Q(100) = (2.3 Ac.) x (2.29) + (1.02 Ac.) x (4.77) = 10.13 CFS
10.13 CFS < 19.63 CFS, THEREFORE INLET HAS SUFFICIENT CAPACITY.

CONSTRUCTION NOTES:

1. ALL R.C.P. SHALL BE CLASS III UNLESS NOTED OTHERWISE.
2. ALL P.V.C. SHALL BE SDR 35 UNLESS NOTED OTHERWISE.
3. ENGINEER APPROVED SHOP DRAWINGS MUST BE SUBMITTED TO MSD FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. OF SEWER STRUCTURES.

NOTE: ALL SEWERS SHOWN ON THIS SHEET SHALL BE "PRIVATE" UNLESS NOTED OTHERWISE.



NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER, AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER, UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-600mm).
5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

ADVANCED DRAINAGE SYSTEMS, INC. ("ADS") HAS PREPARED THIS DETAIL BASED ON INFORMATION PROVIDED TO ADS. THIS DRAWING IS INTENDED TO DEPICT THE COMPONENTS AS REQUESTED. ADS HAS NOT PERFORMED ANY ENGINEERING OR OTHER DESIGN SERVICES FOR THE PROJECT, NOR HAS ADS MONITORED OR OTHERWISE VERIFIED THE INFORMATION SUPPLIED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR GENERAL CONFORMITY TO GOOD AND ACCEPTED CONSTRUCTION PRACTICES AND ARE NOT SPECIFIC FOR THIS PROJECT. THE CONTRACTOR SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND OWNER TO ENSURE THE DETAILS PROVIDED HEREIN MEETS OR EXCEEDS THE APPLICABLE NATIONAL, STATE OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THIS PROJECT.

REV.	DESCRIPTION	BY	MM/DD/YY	CHKD
3	ADDED S-DR INFORMATION	T.R.	04/20/07	

TYPICAL TRENCH DETAIL

DRAWING NUMBER: STD-101

ADS 4640 TRUEMAN BLVD. HILLIARD, OHIO 43026

DWN: CKD:
SCALE: 1/2"=1'-0"
DATE:
SHT #: 1 OF 1

RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
4"	21"
6"	23"
8"	25"
10"	28"
12"	30"
15"	34"
18"	38"
24"	46"
30"	58"
36"	64"
42"	72"
48"	80"
54"	88"
60"	96"

MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS

PIPE DIAM.	SURFACE LIVE LOADING CONDITION H-25	HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48"	12"	48"
54" - 60"	24"	60"

* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

MINIMUM RECOMMENDED COVER BASED ON RAILWAY LOADING CONDITIONS

PIPE DIAM.	COOPER E-80**
UP TO 24"	24"
30"-36"	36"
42"-60"	48"

** COVER IS MEASURED FROM TOP OF PIPE TO BOTTOM OF RAILWAY TIE.
*** E-80 COVER REQUIREMENTS, ARE ONLY APPLICABLE TO ASTM F 2306 PIPE.

H.D.P.E. STORM SEWER NOTE:

CONTRACTOR SHALL READ AND FOLLOW SPECIFIC INSTALLATION REQUIREMENTS OF H.D.P.E. PIPE MANUFACTURER BASED UPON PIPE TYPE UTILIZED AND FOLLOW ASTM D-2321 INSTALLATION PROCEDURES AS DIRECTED BY THE ON SITE SUPERVISING GEOTECHNICAL ENGINEER
GEOTECHNICAL ENGINEER SHALL INSPECT INSTALLATIONS TO CONFIRM PROPER INSTALLATION (BEDDING, BACKFILL, COVER, etc) AND CONFIRM SAID INSTALLATION PROCEDURE BASED UPON ON-SITE SOIL TYPE AT PIPE INSTALLATION LOCATIONS ON PROJECT.
IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL SAID RECOMMENDATIONS FOR PROPER INSTALLATION OF H.D.P.E. PIPE SYSTEM INSTALLED.

H.D.P.E. STORM SEWER NOTES:
(IF PERMISSIBLE BY LOCAL AUTHORITY)

1.) STORM SEWER PIPE DESIGNATED AS HIGH DENSITY POLYETHYLENE (H.D.P.E.) SHALL HAVE WATER TIGHT GASKETED JOINTS WITH RUBBER O-RING GASKETS MEETING ASTM F477. O-RING GASKET SHALL BE INSTALLED ON THE SPIGOT END OF PIPE.

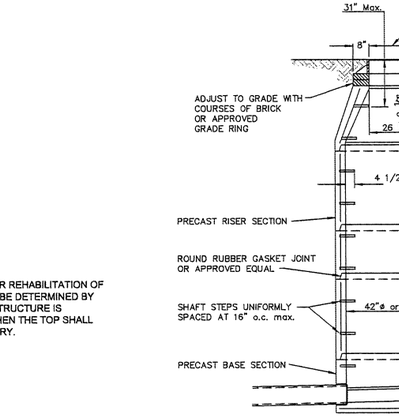
2.) 12" TO 36" PIPE SHALL CONFORM TO THE AASHTO M294 CLASSIFICATION "TYPE S" AND 42" TO 48" SHALL CONFORM TO AASHTO MP6-95 CLASSIFICATION "TYPE D."

3.) ALL PIPE JOINTS SHALL CONSIST OF BELL AND SPIGOT JOINING SYSTEM WITH THE BELL COVERING TWO PIPE CORRUGATIONS AS RECOMMENDED IN AASHTO M294.

4.) PIPE MANUFACTURED FOR THIS SPECIFICATION SHALL COMPLY WITH THE REQUIREMENTS FOR TEST METHODS, DIMENSIONS AND MARKINGS FOUND IN AASHTO DESIGNATIONS M252 AND M294. PIPE AND FITTINGS SHALL BE MADE FROM VIRGIN PE COMPOUNDS WHICH CONFORM WITH THE REQUIREMENTS OF CELL CLASS 335420C AS DEFINED AND DESCRIBED IN ASTM D3350.

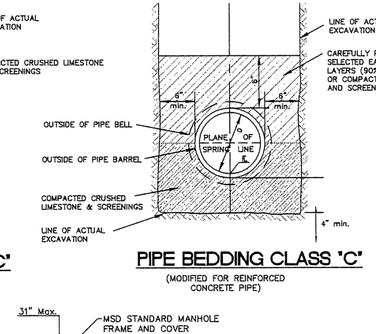
UTILITY NOTE:

UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS, RECORDS AND INFORMATION, AND , THEREFORE DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NON-EXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE FACILITIES, STRUCTURES AND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS. THE UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319 RSMo.



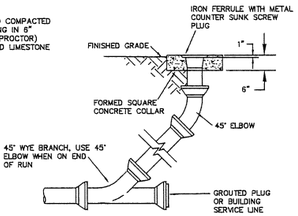
PIPE BEDDING CLASS "C"

(FOR ALL PIPE EXCEPT REINFORCED CONCRETE PIPE)



PIPE BEDDING CLASS "C"

(MODIFIED FOR REINFORCED CONCRETE PIPE)



CLEANOUT

(n.t.s.)

Series TF-2

- 100% elastomer construction
- Will not rust or corrode
- Will not warp or freeze open or shut
- Custom-built to customer specifications
- Low cracking pressure, low backflow
- Prevents backflow

Materials of Construction
Elastomer, Hytrel®, Buna-N, EPDM, Viton®.

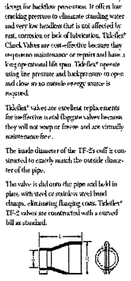
Mounting Bands
300-or 316 Stainless steel.

The Tide-flex® Check Valve is a revolutionary design for backflow prevention. It offers low cracking pressure to eliminate standing water and very low headloss that is not affected by rust, corrosion or lack of lubrication. Tide-flex® Check Valves are cost-effective because they require no maintenance or repairs and have a long operational life span. Tide-flex® operates using line pressure and backpressure to open and close so no outside energy source is required.

Tide-flex® valves are excellent replacements for ineffective metal flapgate valves because they will not warp or freeze and are virtually maintenance-free.

The inside diameter of the TF-2S cuff is constructed to exactly match the outside diameter of the pipe.

The valve is slid onto the pipe and held in place with stock or stainless steel band clamps, eliminating flanging costs. Tide-flex® TF-2 valves are constructed with a curved lip as standard.



Pipe O.D.	Length	ISO Height	C-K Length
1/2	2	1 1/2	1/2
3/4	2	1	1
1	2	1	1
1 1/2	2	1	1 1/2
2	2	1	2
2 1/2	2	1	2
3	2	1	2
4	4	2	4
5	4	2	4 1/2
6	4	2	5
8	6	3	7
10	8	4	9
12	10	5	11
14	12	6	13
15	12	6	13
16	12	6	14
18	14	7	16
20	16	8	18
21	16	8	18
22	16	8	19
24	18	9	21
26	20	10	23
27	20	10	23
28	20	10	24
30	22	11	26
32	24	12	28
33	24	12	28
34	24	12	29
36	26	13	31
38	28	14	33
39	28	14	33
40	28	14	34
42	30	15	36
44	32	16	38
45	32	16	38
46	32	16	39
48	34	17	41
50	36	18	43
51	36	18	43
52	36	18	44
54	38	19	46
56	40	20	48
57	40	20	48
58	40	20	49
60	42	21	51
62	44	22	53
63	44	22	53
64	44	22	54
66	46	23	56
68	48	24	58
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88	60	30	74
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93	64	32	78
94	64	32	79
96	66	33	81
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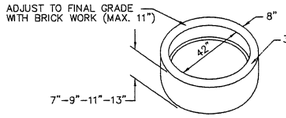
190	128	64	159
192	130	65	161



PRECAST MANHOLE

(n.t.s.)

NOTES:
1. THE REMOVAL AND REPLACEMENT, OR REHABILITATION OF EXISTING SEWER STRUCTURES WILL BE DETERMINED BY THE MSD FIELD INSPECTOR. IF THE STRUCTURE IS DETERMINED TO REMAIN IN PLACE THEN THE TOP SHALL BE ADJUSTED TO GRADE IF NECESSARY.

H.D.P.E. STORM SEWER NOTES CONT'D:
(IF PERMISSIBLE BY LOCAL AUTHORITY)

5.) FITTINGS MAY BE EITHER MOLDED OR FABRICATED AND SHALL CONFORM TO THE REQUIREMENTS AASHTO M252 AND M294. THE FITTINGS SHALL NOT REDUCE OR IMPAIR THE OVERALL INTEGRITY OR FUNCTION OF THE PIPE LINE. ONLY FITTINGS SUPPLIED OR RECOMMENDED BY THE PIPE MANUFACTURER SHALL BE USED.

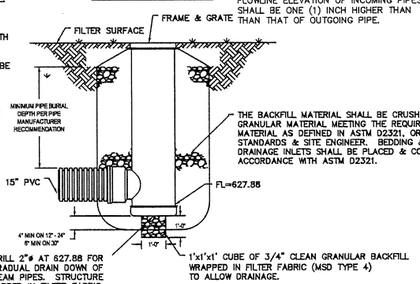
6.) INSTALLATION OF THE PIPE SPECIFIED ABOVE SHALL BE IN ACCORDANCE WITH THE ASTM RECOMMENDED PRACTICE D2321.

7.) BOTH BELL AND SPIGOT (WITH O-RING GASKET) ENDS OF THE PIPE SHALL BE LUBRICATED AS RECOMMENDED BY MANUFACTURER AND INSERTED TO THE HOMING MARK ON THE SPIGOT END OF THE PIPE.

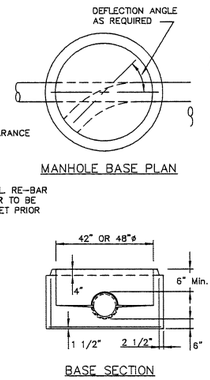
8.) MINIMUM RECOMMENDED TRENCH WIDTH SHALL BE NOT LESS THAN THE GREATER OF EITHER PIPE OUTSIDE DIAMETER PLUS 16 INCHES OR THE PIPE OUTSIDE DIAMETER TIMES 1.25, PLUS 12 INCHES AS OUTLINED HEREIN:

NOMINAL PIPE DIAMETER	MINIMUM TRENCH WIDTH
8" (200mm)	28"
10" (250mm)	28"
12" (300mm)	30"
15" (375mm)	34"
18" (450mm)	39"
24" (600mm)	48"
30" (750mm)	56"
36" (900mm)	64"
42" (1050mm)	72"
48" (1200mm)	80"
54" (1350mm)	88"
60" (1500mm)	96"

24" DRAIN BASIN



STORM STRUCTURE #3 DETAIL



MANHOLE BASE PLAN

BASE SECTION

PRECAST AREA INLET DETAIL

(n.t.s.)

ALL DETAILS SHOWN ON THIS SHEET ARE FOR THE CONVENIENCE OF THE CONTRACTOR. THE DETAILS ARE TO BE VERIFIED PER MSD'S STANDARD CONSTRUCTION SPECIFICATIONS, 2009. ALL METHODS, MEANS AND MATERIALS SHALL CONFORM TO MSD CURRENT STANDARD CONSTRUCTION SPECIFICATION, 2009.

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

M.S.D. P# 19460-01
BASE MAP # 20-R

MAY. 05, 2011
100% COMPLETE

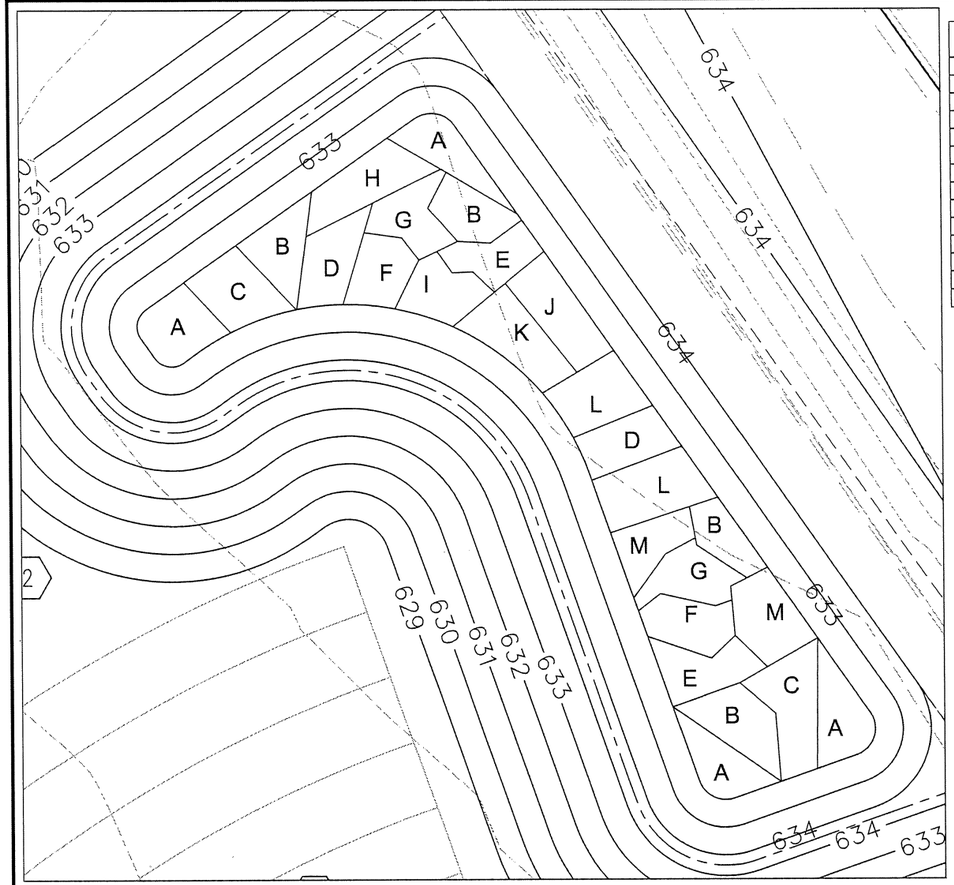
3.) REVISED PER MSD COMMENTS 05/05/11
2.) REVISED PER MSD AND CITY COMMENTS 04/19/11
1.) REVISED PER MSD AND CITY COMMENTS 02/21/11

PARKWAY WEST HIGH SCHOOL

STORM SEWER PROFILES/DETAILS/HYDRAULICS

STOCK & ASSOCIATES
Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530-9100
FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
T.P.S.	12/22/2010	G.M.S.	12/22/2010	210-4673	C7



BIO-RETENTION PLANTING PLAN

SCALE: 1" = 10'

PLANT DESIGNATOR	QUANTITY	BOTANICAL NAME	COMMON NAME	TYPE	"D" SPACING	SIZE
				GRASSES/SEDGES		
A	161	ANDROPOGON GERARDII	BIG BLUESTEM	GRASSES/SEDGES	1.50	2" PLUG
B	149	CAREX GRAYI	BUR SEDGE	GRASSES/SEDGES	1.50	2" PLUG
C	70	CAREX SHORTIANA	SHORTS SEDGE	GRASSES/SEDGES	1.50	2" PLUG
D	83	CHASMANTHIUM LATIFOLIUM	RIVER OATS	GRASSES/SEDGES	1.50	2" PLUG
E	76	SPOROBOLUS HETEROLEPIS	PRAIRIE DROPSEED	FORBS	1.50	2" PLUG
F	76	COREOPSIS LANCEOLATA	LANCELEAF COREOPSIS	FORBS	1.50	2" PLUG
G	79	ECHINACEA PALLIDA	PALE PURPLE CONEFLOWER	FORBS	1.50	2" PLUG
H	51	ERYNGIUM YUCCIFOLIUM	RATTLESNAKE MASTER	FORBS	1.50	2" PLUG
I	38	PYCNANTHEMUM TENUIFOLIUM	SLENDER MOUNTAIN MINT	FORBS	1.50	2" PLUG
J	52	EUPATORIUM COELESTINUM	MIST FLOW; WILD AGERATUM	FORBS	1.50	2" PLUG
K	52	SOLIDAGO RUGOSA	ROUGH-LEAVED GOLDENROD	FORBS	1.50	2" PLUG
L	193	ZIZIA AUREA	GOLDEN ALEXANDER	FORBS	1.50	2" PLUG
M	82	ECHINACEA PURPUREA	PURPLE CONEFLOWER	FORBS	1.50	2" PLUG

MSD Landscape Guide for Stormwater Best Management Practices

Planting, Water and Mulch Requirements for Stormwater BMPs

Table 3: Planting, Water and Mulch Requirements

Water Availability	Required Planting Period	Minimum Container Size	Water Requirement First 3 Weeks*	Water Requirement After 3 Weeks*	Maximum Mulch Depth****
No ability to water after	Late Feb. – April only	2.25" x 3.75" or larger	Water each plug immediately		1.5 for plugs
Manual watering with standard sprinkler	Late Feb. – Early June	4.5" x 5" (quart) or larger in summer & fall	1" (60 min) every 4 days	1" (60 min) every 7 days until plants established***	1.5" for plugs
Automatic irrigation (set to water more frequently than normal during first two months after planting)	Late Feb. – Early Oct.	2.25" x 3.75" (plug) or larger in spring 4.5" x 5" (quart) or larger in summer & fall	1" (60 min) every 4 days in spring and fall 1" (60 min) every 3 days in summer	1" (60 min) every 7 days until plants established***	1.5" for plugs 2.5" for quarts

*This water amount includes natural rainfall. If you get a ½ inch of natural rain then you will need to add a ½ inch of water to meet the 1 inch requirement.

**Requires transport of water to the planting site in large containers and pouring enough water onto each plant (after planting) to moisten the entire planting pit.

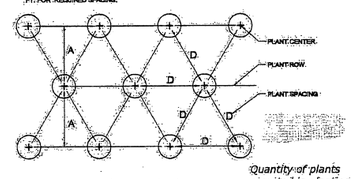
***Plants are established when roots have grown out of the container soil and into the native soil by 3-5 inches. This normally takes 3-4 months for most perennials and grasses and up to 6-7 months for trees and shrubs.

****Shredded leaf compost is recommended for use with perennials and grasses. Shredded bark mulch is recommended for tree and shrub plantings at a depth of 3 inches.

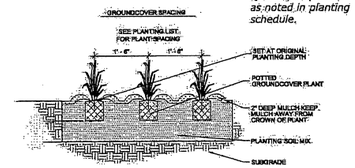
17

SPACING "D"	ROW "A"	NUMBER OF PLANTS/SQ. FT.
30"	26"	.160
24"	20.8"	.225
18"	15.6"	.400
16"	13.9"	.540
12"	10.4"	1.00
10"	8.66"	1.44
8"	6.93"	2.25

NOTE: PLANT QUANTITIES WERE DETERMINED BY MULTIPLYING AREA (SQ. FT.) BY NUMBER OF PLANTS/SQ. FT. FOR REQUIRED SPACING.



Quantity of plants as noted in planting schedule.



NOTES:
1. REMOVE SPENT FLOWERS PRIOR TO PLANTING.
2. LOOSEN ROOT MASS AT BOTTOM OF ROOTBALL.
3. TOP OF ROOTBALL STRIPPED OF ½" SURFACE GROWING MEDIA AND COVERED WITH ½" LANDSCAPE BED MIX PLUS SURFACE MULCH.

Plant Spacing Plan

N.T.S. Planting Detail Courtesy of Ted Spaid SWT Design, St. Louis, MO

Figure 9

MSD Landscape Guide for Stormwater Best Management Practices 18

FIND DEPTH OF WATER AND WIDTH OF THE CHANNEL:

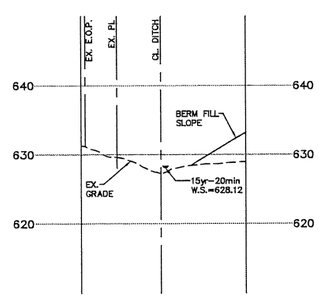
INPUT:

Q =	(cfs)	Top Of bank Elevation =	
Stream Slope=	(ft/ft)	Bot. Elevation =	
n =		Side Slope:	
W (Bottom width) =	(ft)	Horizontal (H) =	
		Vertical (V)=	

OUTPUT:

Depth =	0.86 (ft)	Water Surface Width =	12.27 (ft)
Velocity =	7.17 (ft/sec)	$R^{2/3}$ =	0.62
Water Surface Elev.=	628.12	Perimeter =	12.41 (ft)
Free Board=	0.92 (ft)	Cross section Area =	6.11 (ft^2)

DITCH SECTION C-C CALCULATIONS



DITCH SECTION C-C

SCALE 1" = 30'

FIND DEPTH OF WATER AND WIDTH OF THE CHANNEL:

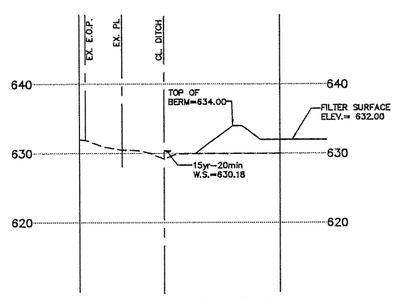
INPUT:

Q =	(cfs)	Top Of bank Elevation =	
Stream Slope=	(ft/ft)	Bot. Elevation =	
n =		Side Slope:	
W (Bottom width) =	(ft)	Horizontal (H) =	
		Vertical (V)=	

OUTPUT:

Depth =	1.00 (ft)	Water Surface Width =	14.00 (ft)
Velocity =	5.48 (ft/sec)	$R^{2/3}$ =	0.68
Water Surface Elev.=	630.18	Perimeter =	14.17 (ft)
Free Board=	0.46 (ft)	Cross section Area =	8.00 (ft^2)

DITCH SECTION D-D CALCULATIONS



DITCH SECTION D-D

SCALE 1" = 30'

3.) REVISED PER MSD COMMENTS 05/05/11
2.) REVISED PER MSD AND CITY COMMENTS 04/19/11
1.) REVISED PER MSD AND CITY COMMENTS 02/21/11

M.S.D. P# 19460-01

BASE MAP # 20-R

MAY. 05, 2011
100% COMPLETE

PARKWAY WEST HIGH SCHOOL

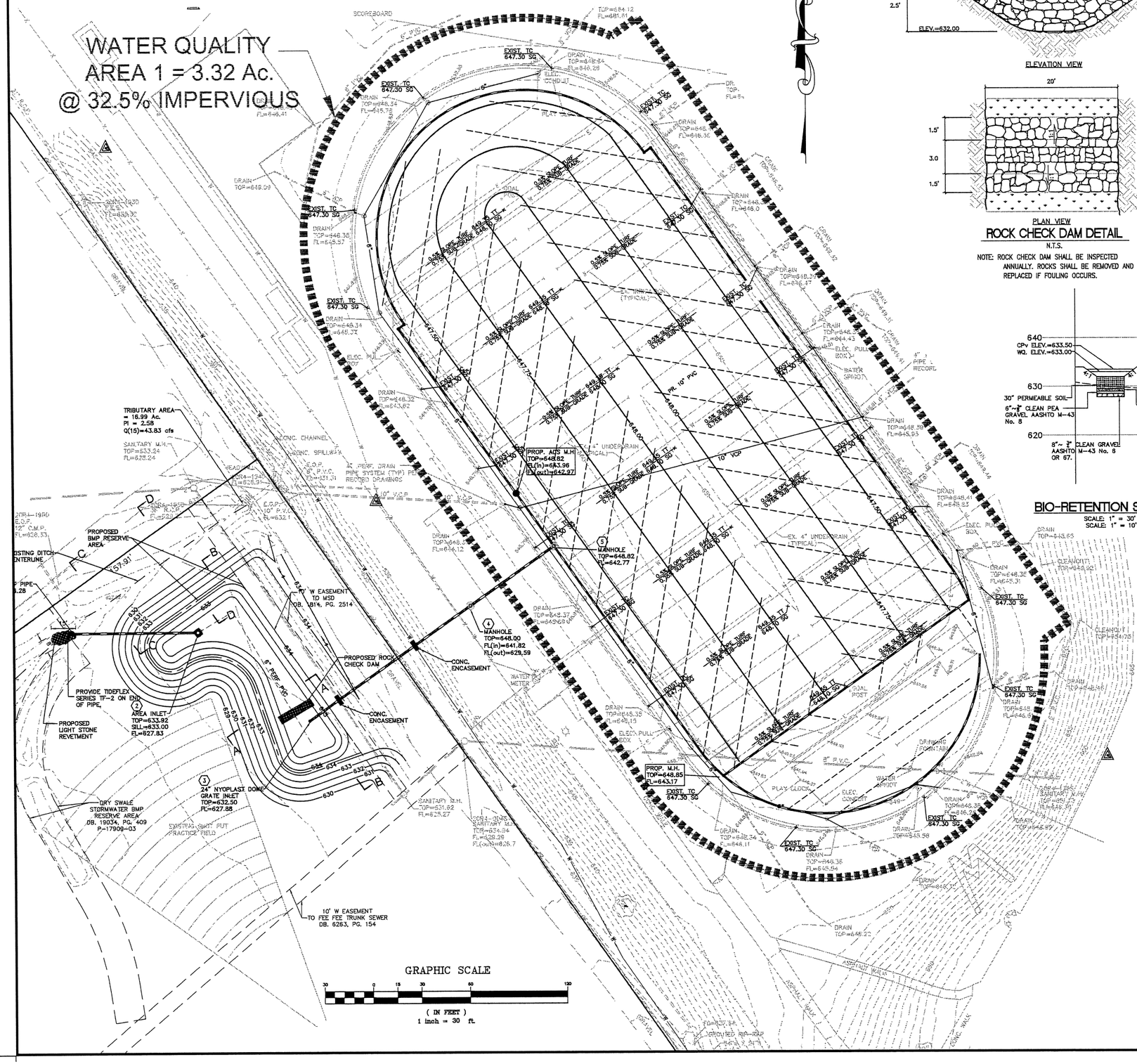
PLANTING PLAN

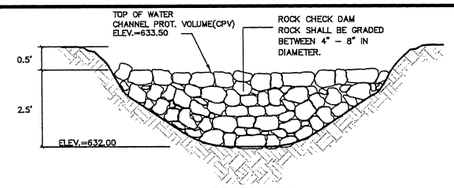
STOCK & ASSOCIATES Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530-9100
FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
T.P.S.	12/22/2010	G.M.S.	12/22/2010	210-4673	C8

WATER QUALITY
AREA 1 = 3.32 Ac.
@ 32.5% IMPERVIOUS

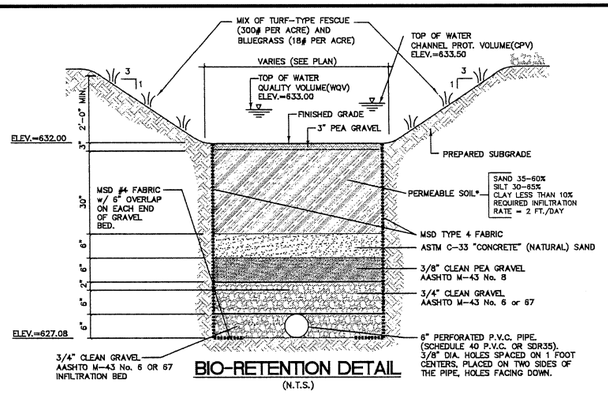




ROCK CHECK DAM DETAIL

N.T.S.

NOTE: ROCK CHECK DAM SHALL BE INSPECTED ANNUALLY. ROCKS SHALL BE REMOVED AND REPLACED IF FOULING OCCURS.



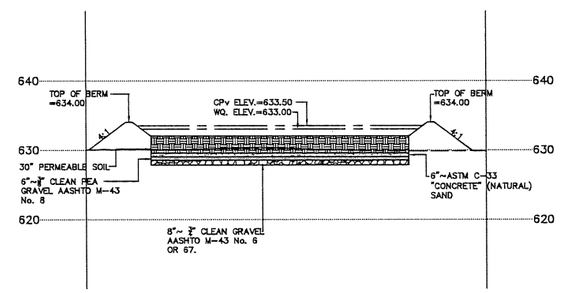
BIO-RETENTION DETAIL

(N.T.S.)

ANY FUTURE LAND DISTURBANCE AND/OR INCREASE IN IMPERVIOUS AREA ON THIS SITE PLAN MAY REQUIRE ADDITIONAL STORM WATER MANAGEMENT PER MSD REGULATIONS IN PLACE AT THAT TIME (INCLUDING TOTAL LAND DISTURBANCE AND/OR IMPERVIOUSNESS ADDED ON THIS PLAN P-19460-01)

BIO-RETENTION SECTION A-A

SCALE: 1" = 30' HORIZ.
SCALE: 1" = 10' VERT.



BIO-RETENTION SECTION B-B

SCALE: 1" = 30' HORIZ.
SCALE: 1" = 10' VERT.

CONSTRUCTION NOTES:

IT IS IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF THE BIORETENTION AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF BIORETENTION AREAS ARE EXCAVATED USING A LOADER, THE CONTRACTOR SHOULD USE MOE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.

COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS A CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO REFRACTURE THE SOIL PROFILE THROUGH THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE DESIGN OR GEOTECHNICAL ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.

THE PERMEABLE SOIL USED IN THE BIORETENTION FACILITY SHOULD BE TESTED BEFORE PLACING IT IN THE FIELD TO ENSURE IT MEETS THE PERFORMANCE SPECIFICATIONS OUTLINED IN THE PLANS AND STORMWATER MANAGEMENT FACILITIES REPORT. THE PERMEABLE SOIL MUST HAVE AN INFILTRATION RATE OF 2 FEET/DAY. FURTHERMORE, AND INFILTRATION TEST MUST BE PERFORMED ONCE THE SOIL IS PLACED IN THE BIORETENTION FACILITY TO CONFIRM THAT THE INFILTRATION RATE DID NOT GO DOWN. THE SOIL SHOULD BE FREE OF STONES, STUMPS, ROOTS OR OTHER WOODY MATERIAL OVER 1 INCH IN DIAMETER. FOR THE BEST RESULTS, BRUSH OR SEEDS FROM NOXIOUS WEEDS, SUCH AS JOHNSON GRASS, MUGWORT, NUTSEDGE AND CANADIAN THISTLE SHOULD NOT BE PRESENT IN THE SOILS.

WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS OF 12 TO 18 INCHES. DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS. THE LANDSCAPER AND OR GEOTECHNICAL ENGINEER SHOULD BE PRESENT ON SITE DURING THE CONSTRUCTION OF THE BIORETENTION FACILITIES TO ENSURE QUALITY CONTROL.

Planting Soil Characteristics

Parameter	Value
pH range	5.2 to 8.00
Organic matter	1.5 to 5.0%
Magnesium	35 lbs. per acre, minimum
Phosphorous (P205)	75 lbs. per acre, minimum
Potassium (K20)	85 lbs. per acre, minimum
Soluble salts	≤ 500 ppm

NOTES:

1. CONSTRUCTION SITE RUNOFF SHALL NOT FLOW INTO THE WATER QUALITY BMP(S). ALL STORMWATER FLOW TO THE WATER QUALITY BMP(S) SHALL BE DIVERTED, PLUGGED, OR DISCONNECTED UNTIL THE CONSTRUCTION SITE IS STABLE AND THE MSD DEDICATION INSPECTOR PROVIDES APPROVAL TO PLACE THE BMP(S) ONLINE.
2. SEE MSD LANDSCAPE GUIDELINES FOR ADDITIONAL DETAILS ON PLANTINGS IN BIORETENTION AREAS.
3. CLEANOUTS TOP ELEVATION TO BE 6" ABOVE MULCH SURFACE.

BMP/STORMWATER CREDIT SUMMARY TABLE

AREA	AREA (Ac.)	BMP	WQv REQUIRED (C.F.)	WQv PROVIDED (C.F.)
1	3.32	BIORETENTION (F-6)	4,706	5,552
TOTAL	3.32			

LAND AREA DISTURBED = 2.34 Ac.
LAND AREA TRIBUTARY TO BIO-RETENTION = 3.32 Ac.

PREVIOUSLY UNTREATED AREA FOR FUTURE CREDIT
= 0.98 Ac. @ 100% IMPERVIOUS (TRACK)

3.) REVISED PER MSD COMMENTS 05/05/11
2.) REVISED PER MSD AND CITY COMMENTS 04/19/11
1.) REVISED PER MSD AND CITY COMMENTS 02/21/11

M.S.D. P# 19460-01
BASE MAP # 20-R

MAY. 05, 2011
100% COMPLETE

PARKWAY WEST HIGH SCHOOL

WATER QUALITY PLAN

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

STOCK & ASSOCIATES
Consulting Engineers, Inc.

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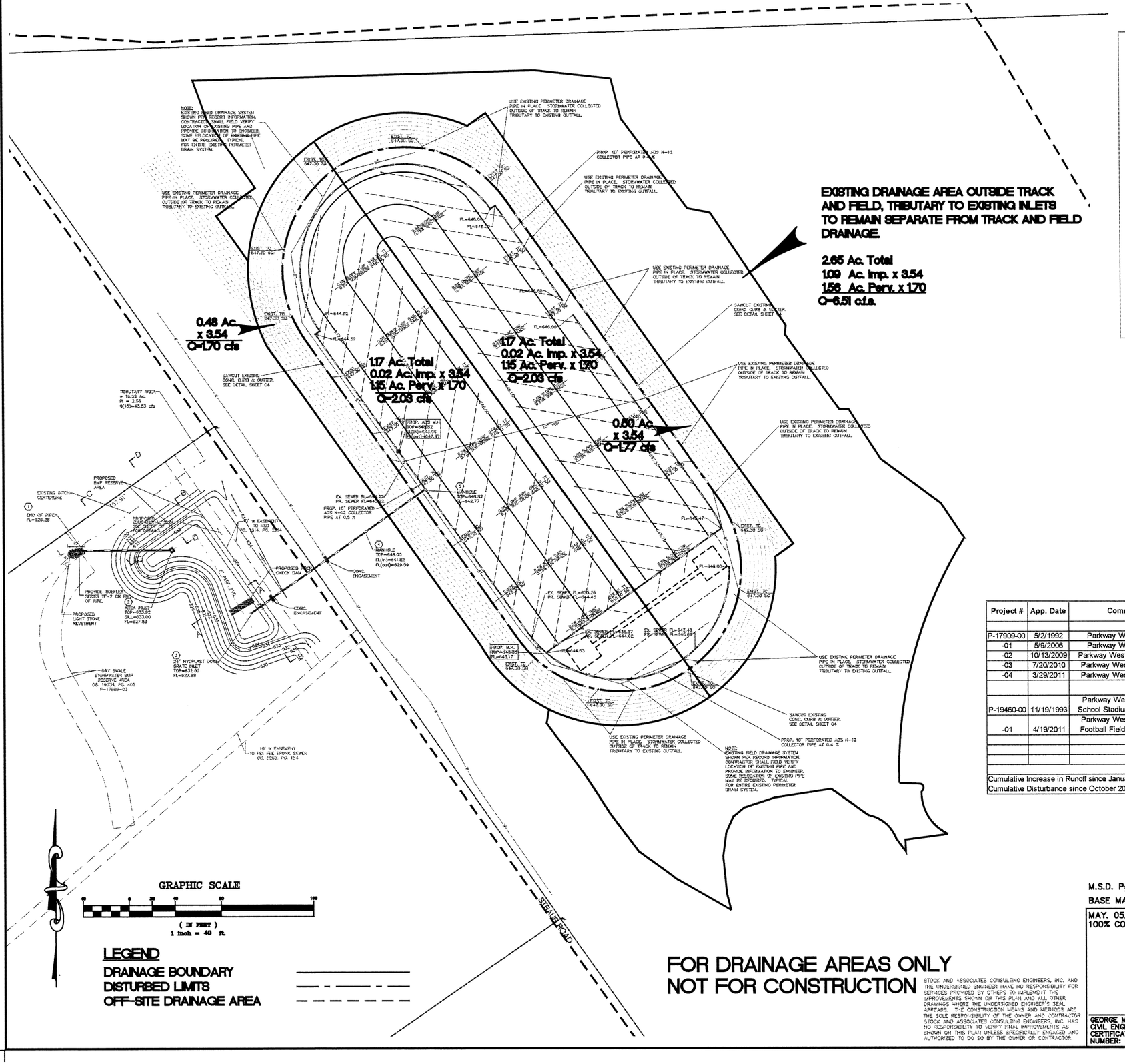
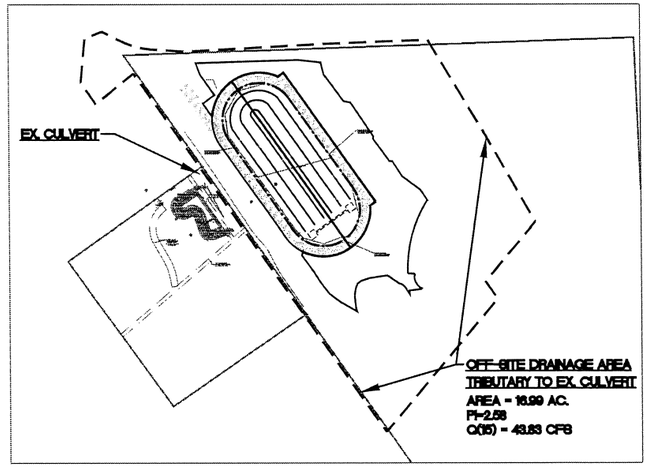
Web: www.stockassoc.com

DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
T.P.S.	12/22/2010	G.M.S.	12/22/2010	210-4673	C9





OFF-SITE DRAINAGE AREA

SCALE: 1" = 200'

DIFFERENTIAL RUNOFF CALCULATIONS:

TOTAL DISTURBED AREA	= 2.35 Acres ±
EXISTING RUNOFF	= 2.12 Ac. x 1.70 = 3.60 cfs = 0.23 Ac. x 3.54 = 0.81 cfs = 4.41 cfs
PROPOSED RUNOFF	= 2.12 Ac. x 1.70 = 3.60 cfs = 0.23 Ac. x 3.54 = 0.81 cfs = 4.41 cfs
DIFFERENTIAL	= 4.41 - 4.41 = 0.00 cfs

Stormwater Management Tracking Data

Project #	App. Date	Comments	Add. Imp. Area (Acres)	Diff. Runoff	Qp Provided (Y/N)	Dist. Area (Acres)	WQv Provided (Y/N)	CPv Provided (Y/N)
P-17909-00	5/2/1992	Parkway West Stadium						
-01	5/9/2006	Parkway West Stadium						
-02	10/13/2009	Parkway West Tennis Courts						
-03	7/20/2010	Parkway West High School			N	4.89	Y	Waived
-04	3/29/2011	Parkway West High School						
P-19460-00	11/19/1993	Parkway West Senior High School Stadium Concessions						
-01	4/19/2011	Parkway West High School Football Field Improvements	0.00	0.00	N	2.35	Y	Y
Cumulative Increase in Runoff since January 2000				0.00				
Cumulative Disturbance since October 2006						7.24		

FOR DRAINAGE AREAS ONLY
NOT FOR CONSTRUCTION

3.) REVISED PER MSD COMMENTS 05/05/11
2.) REVISED PER MSD AND CITY COMMENTS 04/19/11
1.) REVISED PER MSD AND CITY COMMENTS 02/21/11

M.S.D. P# 19460-01
BASE MAP # 20-R

MAY. 05, 2011
100% COMPLETE

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

PARKWAY WEST HIGH SCHOOL

DRAINAGE AREA MAP

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Web: www.stockassoc.com

DRAWN BY	DATE	CHECKED BY	DATE	JOB NUMBER	SHEET
T.P.S.	12/22/2010	G.M.S.	12/22/2010	210-4673	C10

SECTION 9

NORTH HIGH

BMP ORIGINAL PROJECT INFORMATION

--FINE ARTS ADDITION
--SYNTHETIC TURF FIELDS

PARKWAY™
SCHOOLS
HIGHER EXPECTATIONS.
BRIGHTER FUTURES.

NORTH HIGH SCHOOL
FINE ARTS RENOVATIONS

12860 Fee Fee Road
Creve Coeur, MO 63146

Project Number: 561201B

for

Parkway Schools
Facilities Department
363 North Woods Mill Road, Chesterfield, MO 63017

CERTIFICATION OF RESPONSIBILITY

I hereby specify, pursuant to RSMo327.411 that the documents intended to be authenticated by my seal are limited to:

Drawings:
A0.0, A0.1, A0.2, D1.0, D1.1, A1.0, A1.1, A2.0, A3.0, A3.1, A3.2, A3.3, A3.4, A3.5, A4.0, A6.0, A6.1, A7.0, A8.0, A9.0
Specifications:
000110, 024100, 031000, 03200, 033000, 035400, 051200, 053100, 054000, 061000, 072100, 072400, 074413, 075213, 076200, 077100, 078100, 078400, 079005, 079513, 081213, 081416, 083100, 084313, 087100, 088000, 092113, 095100, 096500, 096800, 096813, 099000, 102601, 104400, 316329
Therefore, because I did not prepare nor supervise drawings or specifications not listed above, I hereby disclaim any responsibility for all other drawings, specifications, estimates, reports or other documents or instruments relating to and intended to be used for any part or parts of the:

Project: FINE ARTS RENOVATIONS

Location: NORTH HIGH SCHOOL, CREVE COEUR, MO

Professional Seal

Signature and Date

CERTIFICATION OF RESPONSIBILITY

I hereby specify, pursuant to RSMo327.411 that the documents intended to be authenticated by my seal are limited to:

Drawings:
S1.1, S1.2, S1.3, S1.4, S1.5, S2.1, S2.2, S3.1, S3.2, S4.1, S4.2, S5.1

Specifications:
031000, 03200, 033000, 035400, 051200, 053100, 054000

Therefore, because I did not prepare nor supervise drawings or specifications not listed above, I hereby disclaim any responsibility for all other drawings, specifications, estimates, reports or other documents or instruments relating to and intended to be used for any part or parts of the:

Project: FINE ARTS RENOVATIONS

Location: NORTH HIGH SCHOOL, CREVE COEUR, MO

Professional Seal

Signature and Date

CERTIFICATION OF RESPONSIBILITY

I hereby specify, pursuant to RSMo327.411 that the documents intended to be authenticated by my seal are limited to:

Drawings:
P001, P002, P101, P201, M001, M101, M102, M201, M301, E0.1, E1.1, E1.2, E1.3
Specifications:
220548, 220719, 221005, 221006, 230593, 230713, 233100, 233300, 233700, 237413, 260501, 260519, 260529, 260534, 260537, 260553, 262726, 265100, 275117, 283100
Therefore, because I did not prepare nor supervise drawings or specifications not listed above, I hereby disclaim any responsibility for all other drawings, specifications, estimates, reports or other documents or instruments relating to and intended to be used for any part or parts of the:

Project: FINE ARTS RENOVATIONS

Location: NORTH HIGH SCHOOL, CREVE COEUR, MO

Professional Seal

Signature and Date

CERTIFICATION OF RESPONSIBILITY

I hereby specify, pursuant to RSMo327.411 that the documents intended to be authenticated by my seal are limited to:

Drawings:
C-1, C-2, C-3, C-4, C-5, C-6, DA-1, DA-2, SWPPP-1, SUV-1
Specifications:

Therefore, because I did not prepare nor supervise drawings or specifications not listed above, I hereby disclaim any responsibility for all other drawings, specifications, estimates, reports or other documents or instruments relating to and intended to be used for any part or parts of the:

Project: FINE ARTS RENOVATIONS

Location: NORTH HIGH SCHOOL, CREVE COEUR, MO

Professional Seal

Signature and Date

BOZOIAN GROUP ARCHITECTS L.L.C.

PERMIT DOCUMENTS - ISSUED FOR CONSTRUCTION
03/11/2013

A

AB	ACOUSTICAL BOARD
ACM	ASBESTOS CONTAINING MATERIAL
ACT	ACOUSTICAL TILE OR CEILING
ACTR	RATED ACOUSTICAL CEILING
ACWP	ACOUSTICAL WALL PANEL
AD	AREA DRAIN
ADA	AMERICANS W/ DISABILITIES ACT
ADD	ADDENDA
ADJ	ADJUSTABLE OR ADJACENT
AFF	ABOVE FINISH FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
ALT	ALTERNATE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
AP	ACOUSTICAL PANEL OR ACCESS PANEL
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL

B

BD	BOARD
BITUM	BITUMINOUS
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM OR BENCH MARK
BO	BOTTOM OF
BOT	BOTTOM
BOW	BOTTOM OF WALL
BRG	BEARING
BSMT	BASEMENT

C

C	COLOR
CAB	CABINET
CC	CENTER TO CENTER
CD	CONSTRUCTION DOCUMENTS
CFCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED
CFMF	COLD-FORMED METAL FRAMING
CI	CAST IRON
CJ	CONTROL JOINT
CL	CENTER LINE
CLG	CEILING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONSTR	CONSTRUCTION
CONTR	CONTRACTOR
CORR	CORRIDOR
CPT	CARPET
CS	COUNTERSINK
CSMT	CASEMENT
CT OR C TILE	CERAMIC TILE
CTR	CENTER
CW	COLD WATER

D

D	DRAIN
DBL	DOUBLE
DEPT	DEPARTMENT
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIM	DIMENSION
DISP	DISPENSER
DLO	DAY LIGHT OPENING
DN	DOWN
DO	DOOR OPENING
DR	DOOR
DS	DOWN SPOUT
DTL	DETAIL
DWG(S)	DRAWING(S)
DWL	DOWEL

E

EA	EACH
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
EMER	EMERGENCY
ENCL	ENCLOSURE
ENGR	ENGINEER
EQ	EQUAL
EQUIP	EQUIPMENT
EWC	ELECTRICAL WATER COOLER
EX OR EXIST	EXISTING
EXH	EXHAUST
EXT	EXTERIOR

F

FA	FIRE ALARM
FAB	FABRIC
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FH	FIRE HYDRANT
FIN	FINISH
FIN FL	FINISH FLOOR
FIN GR	FINISH GRADE
FLR	FLOOR
FNDN OR FNDTN	FOUNDATION
FP	FIRE PROTECTION
FR	FIRE RESISTANT OR FIRE RETARDANT
FRMG	FRAMING
FRP	FIBER REINFORCED PLASTIC
FRTP	FIRE RETARDANT TREATED PLYWOOD
FRTW	FIRE RETARDANT TREATED WOOD
FS	FOOD SERVICE OR FULL SIZE
FT	FOOT OR FEET
FTG	FOOTING
FURN	FURNISH
FV	FIELD VERIFY

G

GA	GAUGE
GALV	GALVANIZED
GB	GYPSUM BOARD
GC	GENERAL CONTRACTOR
GFRC	GLASS FIBER REINFORCED CONCRETE
GL	GLASS
GLZ	GLAZED
GR	GRADE
GYP BD	GYPSUM BOARD

H

HAZMAT	HAZARDOUS MATERIALS
HB	HOSE BIB
HC	HANDICAP OR HOLLOW CORE
HDWD	HARDWOOD
HDWR	HARDWARE
HM	HOLLOW METAL
HP	HIGH POINT
HT	HEIGHT
HW	HOT WATER

I

ICC	INTERNATIONAL CODE COUNCIL
ID	INSIDE DIAMETER
IN	INCH
INSUL	INSULATION
INT	INTERIOR

J

JAN	JANITOR
JC	JANITOR'S CLOSET
JST	JOIST
JT	JOINT

K

KIT	KITCHEN

L

LAB	LABORATORY
LAM	LAMINATE
LAV	LAVATORY
LDRY	LAUNDRY
LG	LENGTH
LKR	LOCKER
LP	LOW POINT

M

MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MDF	MEDIUM DENSITY FIBERBOARD
MECH	MECHANICAL
MEP	MECHANICAL ELECTRICAL PLUMBING
MEPFP	MECHANICAL ELECTRICAL PLUMBING FIRE PROTECTION
MFR	MANUFACTURER
MGR	MANAGER
MH	MANHOLE OR MAGNETIC HOLD OPEN
MIN	MINIMUM
MISC	MISCELLANEOUS
MLDG	MOLDING
MO	MASONRY OPENING
MOD	MODIFIED
MTD	MOUNTED
MTL	METAL
MUL	MULLION

N

NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NE	NORTHEAST
NO	NUMBER
NOM	NOMINAL
NRC	NOISE REDUCTION COEFFICIENT
NS	NON-SLIP
NTS	NOT TO SCALE
NW	NORTHWEST

O

OA	OVERALL
OC	ON CENTER
OCC	OCCUPANT
OD	OUTSIDE DIAMETER OR OVERFLOW DRAIN
OF	OUTSIDE FACE OR OVERFLOW
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED OWNER INSTALLED
OG	OBSCURE GLAZING
OH	OVERHEAD
OPNG	OPENING
OPP	OPPOSITE

P

PLAM	PLASTIC LAMINATE
PART BD	PARTICLE BOARD
PARTN	PARTITION
PC	PRECAST
PL	PLATE
PLS OR PLAS	PLASTER
PLY WD	PLYWOOD
PNL	PANEL
PNT	PAINT
PR	PAIR
PREFAB	PREFABRICATED
PREFIN	PREFINISHED
PT	PRESSURE TREATED OR PAINT OR POINT
PTD	PAINTED
PVC	POLYVINYL CHLORIDE

R

R	RADIUS OR RISER OR RATED
RAD	RADIUS
RA	RETURN AIR
RB	RUBBER
RBM	REINFORCED BRICK MASONRY
RCMU	REINFORCED CONCRETE MASONRY UNIT
RCP	REFLECTED CEILING PLAN
RD	ROOD DRAIN
RE OR REF	REFER OR REFER TO
REBAR	REINFORCEMENT BAR
REINF	REINFORCED OR REINFORCING
REQD	REQUIRED
RFG	ROOFING
RLCD	RELOCATED
RM	ROOM
RMN	REMAIN
RMVD	REMOVED
RO	ROUGH OPENING
RP	RESIN PANEL
RPL	REPLACE
RT	RESILIENT TILE

S

S	SPANDREL
SA	SUPPLY AIR
SAB	SOUND ATTENUATION BLANKET
SC	SOLID CORE
SCHED	SCHEDULE
SE	SOUTHEAST
SHR	SHOWER
SHT	SHEET
SIM	SIMILAR
SPEC	SPECIFICATION
SPF	SOLID POLYMER FINISH
SPR	SPRINKLER
SQ	SQUARE
SS	STAINLESS STEEL
SSM	SOLID SURFACE MATERIAL
ST	STAIN
STC	SOUND TRANSMISSION CLASS
STD	STANDARD
STL	STEEL
STOR	STORAGE
STR	STRUCTURAL OR STRUCTURE
STRFRNT	STOREFRONT
SUSP	SUSPENDED
SW	SOUTHWEST
SWC	SOLID WOOD CORE
SYM	SYMMETRICAL

T

T	TREAD OR TEMPERED
T & G	TONGUE & GROOVE
TBD	TO BE DETERMINED
TBS	TO BE SELECTED
TCP	TERRA COTTA PANEL
TEL	TELEPHONE
TEMP	TEMPERED
TH	THICK OR THICKNESS
TO	TOP OF
TOB	TOP OF BEAM
TOC	TOP OF CONCRETE OR TOP OF CURB
TOF	TOP OF FOOTING
TOJ	TOP OF JOIST
TOM	TOP OF MASONRY
TOS	TOP OF STEEL
TOW	TOP OF WALL
TR WD	TREATED WOOD
TR FN	TROWEL FINISHED
TRZ	TERRAZZO
TS	TUBE STEEL
TV	TELEVISION
TYP	TYPICAL

U

UL	UNDERWRITERS LABORATORY
UCR	UNDER COUNTER REFRIGERATOR
UNO	UNLESS NOTED OTHERWISE
UON	UNLESS OTHERWISE NOTED

V

V	VINYL
VAR	VARIES
VAT	VINYL ASBESTOS TILE
VB	VINYL BASE
VERT	VERTICAL
VEST	VESTIBULE
VCT	VINYL COMPOSITION TILE
VIF	VERIFY IN FIELD
VP	VINYL PANEL
VR	VAPOR RETARDER
VWC	VINYL WALL COVERING

W

W/	WITH
WH	WATER HEATER
WC	WATER CLOSET OR WALL COVERING
WD	WOOD
WK	WORK
WNDW	WINDOW
W/O	WITHOUT
WP	WORK POINT OR WATER PROOF OR WATERPROOFING
	WOOD PANEL
WR	WATER RESISTANT
WT	WEIGHT
WV	WOOD VENEER
WWF	WELDED WIRE FABRIC

GRAPHIC SYMBOLS

ANGLE

CENTERLINE

CHANNEL

PLUS OR MINUS

DIAMETER

PERPENDICULAR

SQUARE INCHES

ARCHITECTURAL PLAN, ELEVATION, OR SECTION KEYED NOTE

ARCHITECTURAL REFLECTED CEILING PLAN KEYED NOTE

DEMOLITION KEYED NOTE (INDICATED BY NUMBER)

REVISION

TOILET ACCESSORY

WINDOW TYPE

DOOR NUMBER

ROOM NAME AND NUMBER

CEILING HEIGHT AFF

PARTITION TYPE (INDICATED BY LETTER FOLLOWED BY A NUMBER)

PLAN NORTH SYMBOL

EXTERIOR ELEVATION

INTERIOR ELEVATION

WALL OR BUILDING SECTION

ENLARGED PLAN OR DETAIL REFERENCE

LINE OF HIDDEN OR OVERHEAD CONSTRUCTION, OR CONSTRUCTION TO BE REMOVED ON DEMO PLAN

CENTERLINE OR FLOOR LINE IN SECTION, ELEVATION, OR PLAN

EXISTING CONSTRUCTION TO REMAIN (UNLESS OTHERWISE NOTED)

EXISTING CONSTRUCTION TO BE REMOVED OR RELOCATED (UNLESS OTHERWISE NOTED)

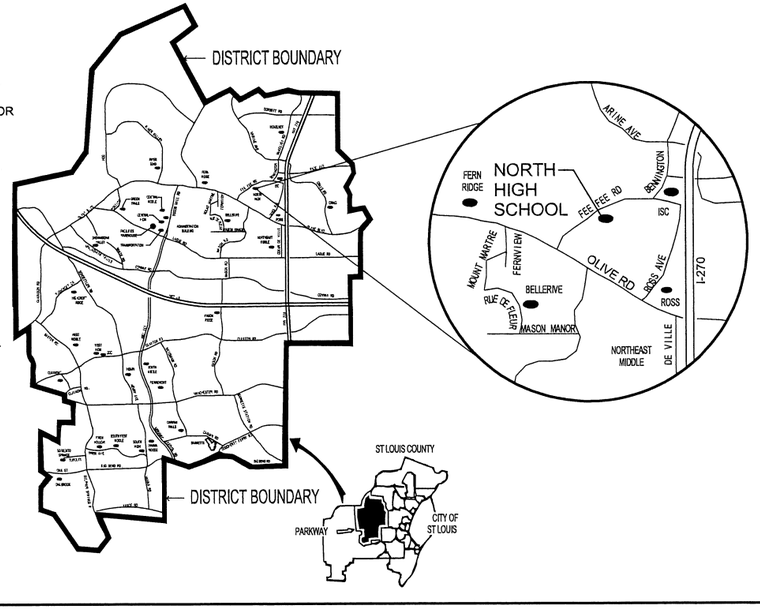
NEW CONSTRUCTION

FINISH FLOOR OR FINISH GRADE ELEVATION

GRAPHIC SCALE

FURNITURE OR EQUIPMENT -NOT IN CONTRACT

LOCATION MAP



LIST OF ALTERNATES:

DEDUCTIVE ALTERNATE NUMBER ONE:
REMOVE FROM THE PROJECT SCOPE ALL WORK INSIDE ROOM 1523, INCLUDING THE CREATION OF ROOM 1523A.

PHASING:

ALL SPACES IN THE EXISTING BUILDING SHALL BE APPROVED FOR OCCUPANCY PRIOR TO THE BEGINNING OF THE 2013/2014 SCHOOL YEAR. TEMPORARY DUST PARTITION LOCATIONS SHOWN ON THE PLAN WILL HAVE TO BE ADJUSTED PRIOR TO THE BEGINNING OF THE SCHOOL YEAR TO ALLOW ACCESS TO ALL EXISTING SPACES AND TO CONTROL CONSTRUCTION DUST (COORDINATE WITH OWNER).

PROVIDE TEMPORARY WEATHER PROTECTION AS NEEDED TO PROTECT THE EXISTING CLASSROOM SPACES FROM THE ELEMENTS. THE DRAWINGS INDICATE PROPOSED TEMPORARY EXTERIOR WALL LOCATIONS AND DETAILS.

THE TRANSITION BETWEEN TEMPORARY AND PERMANENT OPENINGS, PARTITIONS, ETC AND ALL REMAINING WORK IN EXISTING SPACES SHALL BE DONE OUTSIDE OF SCHOOL HOURS.

PERMANENT PARTITIONS THAT ALSO SERVE AS TEMPORARY WEATHER PARTITIONS (BORDER BETWEEN ADDITION AND EXISITNG BUILDING) MAY, AT THE CONTRACTOR'S OPTION, EITHER HAVE OPENINGS FRAMED AND INFILLED, OR HAVE OPENINGS CUT OUT OF THE PARTITIONS AND FRAMED DURING THE CONVERSION WHEN THE ADDITION IS ENCLOSED AND DRY.

DRAWING INDEX

Katherine R. Bozoian
Architect, 005179

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Project Number: 561201B

NORTH HIGH SCHOOL
FINE ARTS RENOVATIONS
Parkway School District

12860 Fee Fee Road
St. Louis, MO 63146

PERMIT DOCUMENTS - ISSUED FOR CONSTRUCTION

ABBREVIATIONS, SYMBOLS, INDEX, & LOCATION MAP

REVISIONS

NO.	DESCRIPTION	DATE

03/11/2013

A0.0

GENERAL NOTES

1. ALL DISTURBED AREAS SHALL BE RESTORED WITH TOPSOIL AND SOD.
2. THE CONTRACTOR SHALL ASSUME COMPLETE RESPONSIBILITY FOR CONTROLLING ALL SILTATION AND EROSION OF THE PROJECT AREA. THE CONTRACTOR SHALL USE THE MEANS NECESSARY TO CONTROL SILTATION AND EROSION. CONTROL MEANS AND METHODS SHALL FOLLOW ST. LOUIS COUNTY "SEDIMENT & EROSION CONTROL MANUAL" AND REQUIREMENTS OF THE ORDINARY LAND DISTURBANCE PERMIT. THE OWNER OR ST. LOUIS COUNTY MAY AT THEIR OPTION DIRECT THE CONTRACTOR AS DEEMED FIT TO CONTROL EROSION. CONTROL SHALL COMMENCE WITH LAND DISTURBANCE AND BE MAINTAINED THROUGHOUT THE PROJECT UNTIL ACCEPTANCE OF THE WORK BY BOTH ST. LOUIS COUNTY AND THE OWNER. ALL COST ASSOCIATED WITH EROSION CONTROL SHALL BE INCLUDED IN THE CONTRACTOR'S BID.
3. PROPOSED ELEVATIONS ARE SHOWN TO FINISH PAVEMENT OR GRADE.
4. NOTIFY THE ST. LOUIS COUNTY DEPARTMENT OF PUBLIC WORKS 48 HOURS PRIOR TO THE COMMENCEMENT OF GRADING OR PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
5. ALL TRASH AND DEBRIS ON-SITE, EITHER EXISTING OR FROM CONSTRUCTION, MUST BE REMOVED AND PROPERLY DISPOSED OF OFF-SITE.
6. NO EXCAVATION SHALL BE MADE SO CLOSE TO THE PROPERTY LINE AS TO ENDANGER ANY ADJOINING PROPERTY OF ANY PUBLIC OR PRIVATE STREET WITHOUT SUPPORTING AND PROTECTING SUCH PUBLIC OR PRIVATE STREET OR PROPERTY FROM SETTLING, CRACKING OR OTHER DAMAGE.
7. CONTRACTOR TO PLACE VEHICLE WASHDOWN STATION AT CONSTRUCTION ENTRANCE IN ACCORDANCE WITH ST. LOUIS COUNTY REQUIREMENTS.
8. ANY EXISTING IMPROVEMENTS DAMAGED BY CONSTRUCTION ON THE PROJECT PROPERTY SHALL BE REPLACED IN KIND AT THE CONTRACTORS EXPENSE.
9. DURING CONSTRUCTION THERE SHALL BE NO TRUCK TRAFFIC BETWEEN 7:30 A.M AND 8:40 A.M. AND BETWEEN 2:30 P.M. AND 3:30 P.M.
10. ALL EXISTING IMPROVEMENTS ARE TO REMAIN UNLESS NOTED OTHERWISE.
11. THE UNDERGROUND UTILITIES SHOWN HEREON ARE TAKEN FROM UTILITY LOCATIONS AS MARKED IN THE FIELD BY DIGRITE AND MAPS OBTAINED FROM LACLEDE GAS COMPANY, METROPOLITAN ST. LOUIS SEWER DISTRICT AND MISSOURI-AMERICAN WATER COMPANY AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319, RSMO.
12. SITE IS SUBJECT TO PRIVATE UTILITY INSTALLATIONS. PRIVATE UTILITY INSTALLATIONS DO NOT APPEAR ON UTILITY BASE MAPS, NOR DOES DIGRITE LOCATE PRIVATE UTILITIES.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING TOPS AND FLOWLINES OF ALL EXISTING SEWERS PRIOR TO COMMENCING WORK AND NOTIFY THE ENGINEER OF DISCREPANCIES.
14. ALL MATERIALS AND WORKMANSHIP ASSOCIATED WITH SITE IMPROVEMENT CONSTRUCTION SHALL CONFORM TO THE LATEST STANDARDS AND SPECIFICATIONS OF ST. LOUIS COUNTY.
15. ALL GRADING AND DRAINAGE SHALL CONFORM TO THE LATEST STANDARDS AND SPECIFICATIONS OF ST. LOUIS COUNTY AND THE METROPOLITAN ST. LOUIS SEWER DISTRICT.
16. ALL SEWERS AND STRUCTURES SHALL BE IN ACCORDANCE WITH THE METROPOLITAN ST. LOUIS SEWER DISTRICT STANDARD CONSTRUCTION SPECIFICATIONS FOR SEWER AND DRAINAGE FACILITIES, 2009.
17. ALL MATERIALS AND WORKMANSHIP ASSOCIATED WITH THE GAS SERVICE SHALL COMPLY WITH THE LATEST STANDARDS AND SPECIFICATIONS OF LACLEDE GAS COMPANY.
18. ALL MATERIALS AND WORKMANSHIP ASSOCIATED WITH THE WATER SERVICE SHALL COMPLY WITH THE LATEST STANDARDS AND SPECIFICATIONS OF MISSOURI AMERICAN WATER COMPANY.
19. ALL MATERIALS AND WORKMANSHIP ASSOCIATED WITH THE PHONE SERVICE SHALL COMPLY WITH THE LATEST STANDARDS AND SPECIFICATIONS OF AT&T DISTRIBUTION.
20. ALL MATERIALS AND WORKMANSHIP ASSOCIATED WITH ELECTRIC SERVICE SHALL COMPLY WITH THE LATEST STANDARDS AND SPECIFICATIONS OF AMERENUE.
21. ALL MATERIALS AND WORKMANSHIP ASSOCIATED WITH CABLE SERVICE SHALL COMPLY WITH THE LATEST STANDARDS AND SPECIFICATIONS OF CHARTER COMMUNICATIONS.
22. INSTALLATION OF LANDSCAPING AND ORNAMENTAL ENTRANCE MONUMENT OR IDENTIFICATION SIGNAGE CONSTRUCTION, IF SHOWN ON PLANS, SHALL BE REVIEWED BY THE DEPARTMENT OF HIGHWAYS AND TRAFFIC FOR SIGHT DISTANCE CONSIDERATIONS AND APPROVED PRIOR TO INSTALLATION OR CONSTRUCTION.
23. ALL STORM WATER SHALL BE DISCHARGED AT AN ADEQUATE NATURAL DISCHARGE POINT.
24. INTERIM STORM WATER DRAINAGE CONTROL IN THE FORM OF SILTATION CONTROL MEASURES ARE REQUIRED.
25. THE DEVELOPER IS REQUIRED TO PROVIDE ADEQUATE STORM WATER SYSTEMS IN ACCORDANCE WITH ST. LOUIS COUNTY AND MSD STANDARDS.
26. ADDITIONAL SILTATION CONTROL SHALL BE INSTALLED AS REQUIRED BY ST. LOUIS COUNTY DEPARTMENT OF HIGHWAYS AND TRAFFIC.
27. ALL OFFSITE PROPERTY OWNERS SHALL BE GIVEN NOTICE 48 HOURS IN ADVANCE OF ANY WORK.
28. ANY DISTURBED OFF SITE PROPERTY (I.E. BUSHES, FENCES, MAILBOXES, ETC.) SHALL BE REPLACED, IN LIKE KIND, AT THE DEVELOPERS EXPENSE.
29. PROVIDE ADEQUATE OFF-STREET PARKING FOR CONSTRUCTION EMPLOYEES. PARKING ON NON-SURFACED AREAS SHALL BE PROHIBITED IN ORDER TO ELIMINATE THE CONDITION WHEREBY MUD FROM CONSTRUCTION AND EMPLOYEE VEHICLES IS TRACKED ONTO THE PAVEMENT CAUSING HAZARDOUS ROADWAY AND DRIVEWAY CONDITIONS.
30. ALL EXCAVATIONS, GRADING OR FILLING SHALL HAVE A FINISHED GRADE NOT TO EXCEED A 4:1 SLOPE (25%), UNLESS SPECIFICALLY APPROVED OTHERWISE. NO SLOPE SHALL EXCEED 3:1 MAXIMUM.
31. ALL DISTURBED EARTH AREAS WITHIN ST. LOUIS COUNTY RIGHT-OF-WAY SHALL BE SODDED.
32. INTERNAL (PRIVATE) STORM SEWERS WILL REQUIRE SEPARATE DRAINLAYERS PERMIT FROM ST. LOUIS COUNTY DEPARTMENT OF PUBLIC WORKS.
33. SEDIMENT SHALL BE WASHED FROM ALL VEHICLES AT WASHDOWN STATION PRIOR TO LEAVING SITE. MUD TRACKED ONTO COUNTY ROADS SHALL BE REMOVED AND KEPT CLEAN AT ALL TIMES.

UTILITY CONTACTS

AMEREN UE
1132 LOCUST STREET
ST. LOUIS, MISSOURI 63101
314-878-5787

AT&T DISTRIBUTION
12930 OLIVE STREET ROAD
CREVE COEUR, MO 63141
314-878-5787

MISSOURI-AMERICAN WATER COMPANY
727 CRAIG RD
ST. LOUIS, MO 63131
314-996-2432

CHARTER COMMUNICATIONS
2275 CASSENS DR
FENTON, MO 63026
314-878-5787

LACLEDE GAS COMPANY
3950 FOREST PARK BLVD
ST. LOUIS, MO 63108
314-658-5417

METROPOLITAN ST. LOUIS SEWER DISTRICT
2350 MARKET ST
ST. LOUIS, MO 63103-2555
314-768-6200

CITY OF ST. LOUIS WATER DIVISION
1640 S. KINGSHIGHWAY
ST. LOUIS, MO 63110
314-633-9000

MCI
7000 WESTON PARKWAY
CARY, NC 27513
919-677-9109

LEVEL 3 COMMUNICATIONS
1025 ELDORADO BOULEVARD
BROOMFIELD, CO 80021
800-441-0223

EDWARD JONES
12555 MANCHESTER ROAD
ST. LOUIS, MO 63131
314-515-2000

STORMWATER MANAGEMENT NOTE:

ANY FUTURE LAND DISTURBANCE AND/OR INCREASE IN IMPERVIOUS AREA ON THIS SITE MAY REQUIRE ADDITIONAL STORM WATER MANAGEMENT PER MSD REGULATIONS IN PLACE AT THAT TIME (INCLUDING TOTAL LAND DISTURBANCE AND/OR IMPERVIOUSNESS ADDED ON THIS PLAN P-11600-10).

DETENTION FOR ANY FURTHER DEVELOPMENT SHALL INCLUDE THESE IMPROVEMENTS AS WELL. BMP PROPOSED UNDER MSD P-11600-09 (SYNTHETIC TURF FIELD IMPROVEMENTS) SHALL ACCOUNT FOR THIS DEVELOPMENT.

STORMWATER MANAGEMENT - WATER QUALITY NOTE
LAND AREA DISTURBED = 0.24 ACRES
ANY FURTHER DEVELOPMENT SHALL INCLUDE THESE IMPROVEMENTS AS WELL

ΔQ = 0.14 cfs

USGS DATUM BENCHMARK

ST. LOUIS COUNTY BENCHMARK #8-164 (ELEVATION 528.81)
ALUMINUM TABLET SET IN SOUTHWEST END ON TOP OF
RETAINING WALL: 335' NORTHEAST OF WILLOWWYCK DRIVE
AND 34' NORTHWEST OF CENTERLINE OF FEE FEE ROAD.

SITE BENCHMARK

T.B.M. "A" (ELEVATION 523.53)
CUT SQUARE SOUTH SIDE OF CONCRETE BASE OF FLAGPOLE AT
THE MAIN ENTRANCE OF PARKWAY NORTH HIGH SCHOOL AND AT
THE NORTHWEST CORNER OF TENNIS COURTS.

REGULATORY JURISDICTIONS

CREVE COEUR PROTECTION DISTRICT
11221 OLIVE BOULEVARD
CREVE COEUR, MO 63141
314-432-6670

ST. LOUIS COUNTY DEPARTMENT OF PUBLIC WORKS
41 S. CENTRAL AVENUE, 6TH FLOOR
CLAYTON, MO 63105
314-615-5184

METROPOLITAN ST. LOUIS SEWER DISTRICT
2350 MARKET STREET
ST. LOUIS, MO 63103-2555
314-768-6200

LEGEND

- CONTROL POINT
- TBM — TEMPORARY BENCHMARK
- DRAINAGE ARROW
- EXISTING TREE
- EXISTING BUSH
- EXISTING SIGN
- NEW SIGN
- EDGE OF EXISTING PAVEMENT
- EDGE OF NEW PAVEMENT
- EXISTING CURB
- NEW CURB
- X — EXISTING FENCE
- X — NEW FENCE
- SF — NEW EROSION CONTROL
- LIMITS OF CONSTRUCTION
- T_X — EXISTING OVERHEAD TELEPHONE LINE
- E_X — EXISTING OVERHEAD ELECTRIC LINE
- TU_X — EXISTING UNDERGROUND TELEPHONE LINE
- EU_X — EXISTING UNDERGROUND ELECTRIC LINE
- G_X — EXISTING GAS LINE
- W_X — EXISTING WATER LINE
- SD_X — EXISTING STORM SEWER
- SS_X — EXISTING SANITARY LINE
- SS — PROPOSED SANITARY LINE
- (S) — PROPOSED SANITARY MANHOLE
- (S) — EXISTING SANITARY MANHOLE
- (D) — EXISTING STORM MANHOLE
- (D) — EXISTING GRATED MANHOLE
- PB — EXISTING ELECTRIC PULLBOX
- UP — EXISTING UTILITY POLE
- UP — EXISTING UTILITY POLE WITH LIGHT
- (W) — EXISTING WATER VALVE
- (G) — EXISTING GAS METER
- 624 — EXISTING 1' CONTOUR
- 625 — EXISTING 5' CONTOUR
- (624) — PROPOSED 1' CONTOUR
- (625) — PROPOSED 5' CONTOUR
- x 601.92 — EXISTING SPOT ELEVATION
- (#) — KEYED NOTE IDENTIFIER
- (A) — COORDINATE IDENTIFIER
- TP 601.62 — PROPOSED SPOT ELEVATION

ABBREVIATIONS

ASPH	ASPHALT	P.B.	PLAT BOOK
ATG	ADJUST TO GRADE	PC	POINT OF CURVATURE
BM	BENCHMARK	PCC	POINT OF COMPOUND CURVATURE
BOC	BACK OF CURB	PGS.	PAGES
CI	CURB INLET	PT	POINT OF TANGENCY
CLR	CLEARANCE	PVMT	PAVEMENT
CONC	CONCRETE	R	RADIUS
ELEV	ELEVATION	RCP	REINFORCED CONCRETE PIPE
EOP	EDGE OF PAVEMENT	T	TOP
EX	EXISTING	TBM	TEMPORARY BENCHMARK
FG	FINISH GRADE	TBR	TO BE REMOVED
FL	FLOWLINE	TBREL	TO BE RELOCATED
FOC	FACE OF CURB	TBR&R	TO BE REMOVED AND REPLACED
G	GUTTER	TC	TOP OF CURB
HC	HANDICAPPED	TP	TOP OF PAVEMENT
LS	LIGHT STANDARD	TR	TO REMAIN
MAX	MAXIMUM	TYP	TYPICAL
ME	MATCH EXISTING	UIP	USE IN PLACE
MH	MANHOLE	UP	UTILITY POLE
MIN	MINIMUM	VCP	VITRIFIED CLAY PIPE
NTS	NOT TO SCALE		
PB	ELECTRIC PULLBOX		

MSD P-11600-XX BASE MAP: 16P

REVISIONS

NO.	DESCRIPTION	BY	DATE

PROJECT:
PARKWAY WEST HIGH SCHOOL
PSD PROJECT: 561201B
FINE ARTS RENOVATIONS

TITLE:
GENERAL NOTES

CLIENT:
PARKWAY SCHOOL DISTRICT
455 North Woods Mill Road
Chesterfield, Missouri 63017
Phone: 314-415-8100 Fax: 314-415-8207

AMEC Earth & Environmental, Inc.
13933 Gaylon Road, Suite 215
Ballwin, Missouri 63011
Phone: 636-386-3804 Fax: 636-386-3804
Design Professional In Responsible Charge
Corp Cert. of Auth. #2002000328

Date:
Brad P. Loomis - Engineer
MO PE-2006019682

ISSUE FOR BID

Proj. No. 2006006	REV No. 0
DR: MJR	CHK: BPL
DATE: 3/4/13	

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SHEET NUMBER

PLOT DATE: 3/11/2013 8:34:39 AM

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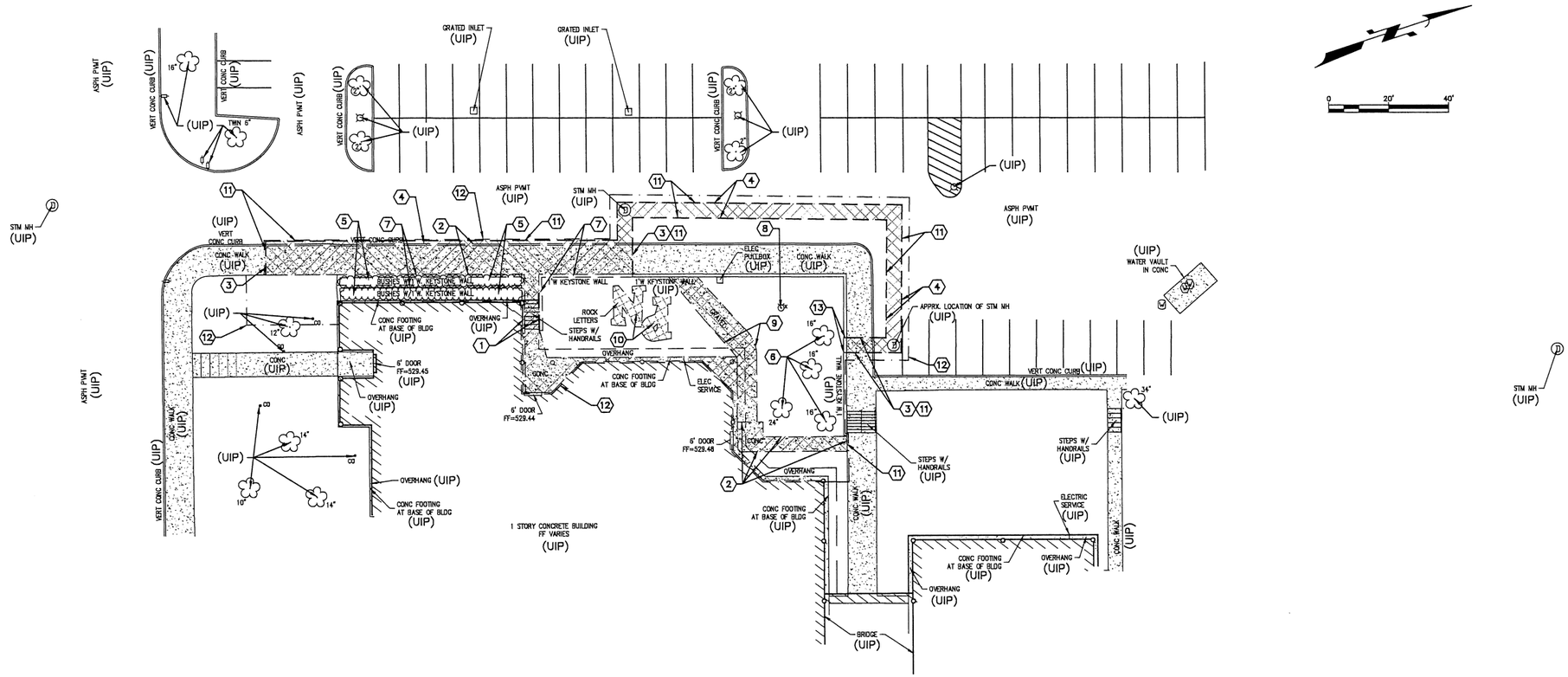

KEYED NOTES (#)

1. EXISTING CONCRETE STAIRS AND HANDRAILS TO BE REMOVED
2. EXISTING CONCRETE WALK TO BE REMOVED.
3. REMOVE CONCRETE WALK TO NEAREST JOINT.
4. EXISTING ASPHALT PAVEMENT TO BE REMOVED.
5. EXISTING BUSHES TO BE REMOVED.
6. EXISTING TREE TO BE REMOVED.
7. EXISTING KEYSTONE WALL TO BE REMOVED. BLOCKS TO SALVAGED AND USED FOR PROPOSED MODULAR BLOCK WALL.
8. EXISTING FIRE HYDRANT TO BE REMOVED AND RELOCATED. REFER TO SITE PLAN.
9. EXISTING GRAVEL TO BE REMOVED.
10. EXISTING GRAVEL LETTERS (P and N) TO BE REMOVED.
11. SAWCUT LINE.
12. LIMITS OF CONSTRUCTION.
13. CONTRACTOR TO REMOVED AND REPLACED EXISTING KEYSTONE WALL IN THIS AREA TO ORIGINAL CONDITIONS FOR CONSTRUTION OF NEW 6" PVC PIPE.

DENOTES PAVEMENT TO BE REMOVED

MSD P-11600-XX BASE MAP: 16P

REVISIONS

NO.	DESCRIPTION	BY	DATE

PROJECT:
PARKWAY WEST HIGH SCHOOL
PSD PROJECT: 561201B
FINE ARTS RENOVATIONS

TITLE
DEMOLITION SHEET

CLIENT:
PARKWAY SCHOOL DISTRICT
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Discipline: Engineering Corporation
Corp Cert. of Auth. #2002000328

Date
Brad F. Loomis - Engineer
MO PE-2006019662

ISSUE FOR BID

Proj. No. 2009008	REV No. 0
DR MJR	CHK BPL
DATE 3/4/13	

C2.0
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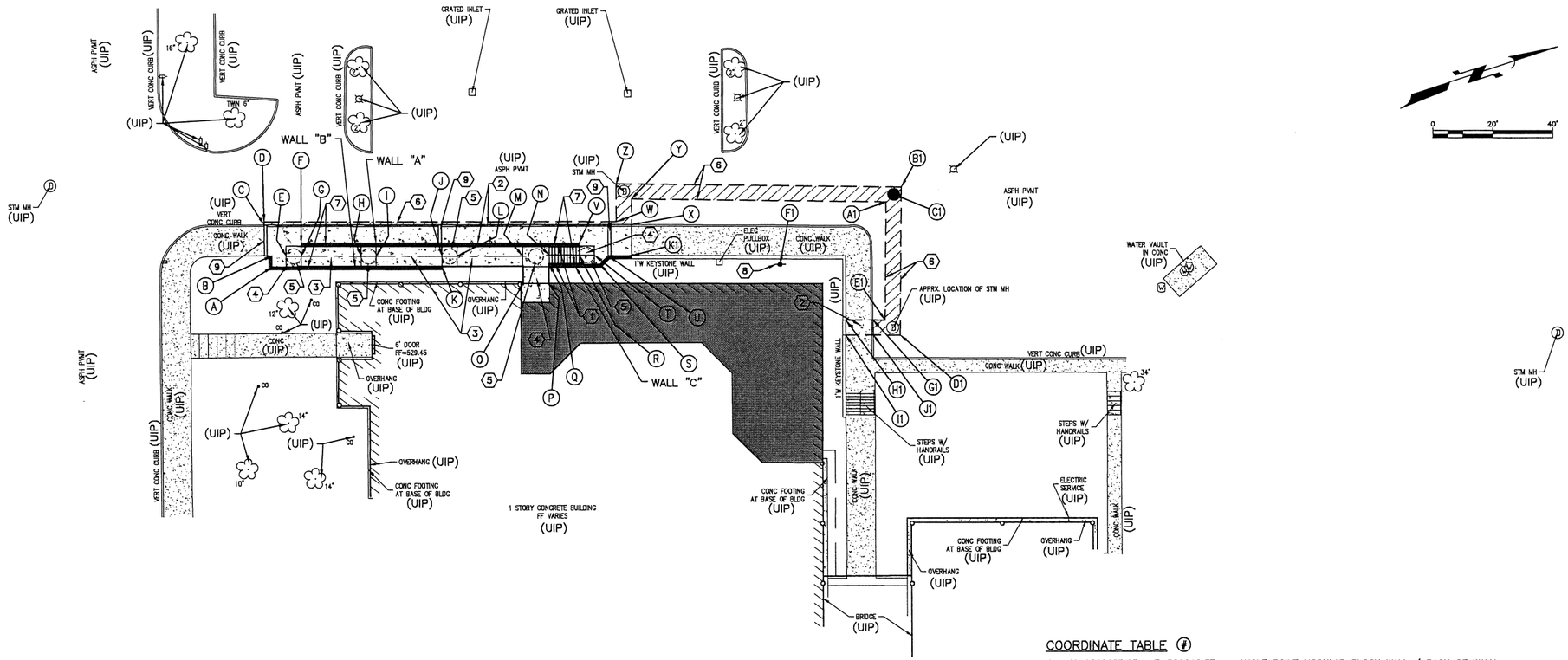

KEYED NOTES

1. NEW CONCRETE STAIRS AND HANDRAILS. REFER TO DETAILS ON SHTS. C8.0 AND C7.0. REFER TO SHT. C4.0 FOR ℄ PROFILE.
2. NEW CONCRETE WALK WITH INTEGRAL CURB. REFER TO DETAIL ON SHT. C8.0.
3. NEW CONCRETE RAMP AND HANDRAILS. REFER TO DETAIL ON SHT. C8.0 AND C7.0. REFER TO SHT. C4.0 FOR ℄ PROFILE. SEE HANDRAIL INSET SHT. C7.0.
4. NEW CONCRETE WALK. REFER TO DETAIL ON SHT. C8.0.
5. 5' DIA. TURNING CIRCLE.
6. NEW HEAVY DUTY ASPHALT PAVEMENT. REFER TO DETAIL ON SHT. C8.0.
7. NEW MANUFACTURED MODULAR WALL. REFER TO DETAIL ON SHT. C8.0. REFER TO SHT C4.0 FOR PROFILES.
8. RELOCATED FIRE HYDRANT.
9. NEW TRENCH DRAIN SYSTEM (ABT,INC. PolyDrain WITH #2501 DUCTILE IRON COVER) OR EQUAL.

COORDINATE TABLE

A.	N=1040185.03	E=829019.37	ANGLE POINT MODULAR BLOCK WALL / BACK OF WALK
B.	N=1040181.16	E=829015.94	END OF MODULAR BLOCK WALL / EDGE OF WALK
C.	N=1040186.96	E=829005.41	SAWCUT / FACE OF WALK
D.	N=1040187.27	E=829004.46	SAWCUT / EDGE OF ASPHALT
E.	N=1040190.67	E=829017.63	℄ LANDING
F.	N=1040196.80	E=829014.99	END OF MODULAR BLOCK WALL / EDGE OF WALK
G.	N=1040195.42	E=829019.19	℄ RAMP / ℄ LANDING
H.	N=1040214.42	E=829025.43	℄ RAMP / ℄ LANDING
I.	N=1040219.17	E=829026.19	℄ RAMP / ℄ LANDING
J.	N=1040240.07	E=829033.85	℄ RAMP / ℄ LANDING
K.	N=1040239.01	E=829037.10	END OF MODULAR BLOCK WALL
L.	N=1040244.83	E=829035.41	℄ RAMP / ℄ LANDING
M.	N=1040265.73	E=829042.28	℄ RAMP / ℄ LANDING
N.	N=1040274.23	E=829044.63	℄ RAMP / ℄ LANDING / EXPANSION JOINT & EDGE OF TOE WALL
O.	N=1040262.91	E=829050.85	EDGE OF WALK
P.	N=1040271.28	E=829053.60	EDGE OF WALK
Q.	N=1040273.29	E=829047.48	END OF MODULAR BLOCK WALL / EDGE OF WALK
R.	N=1040283.73	E=829047.75	℄ STAIRS / ℄ LANDING / EXPANSION JOINT & EDGE OF TOE WALL
S.	N=1040289.23	E=829052.62	ANGLE POINT MODULAR BLOCK WALL / BACK OF WALK
T.	N=1040288.48	E=829049.31	℄ LANDING
U.	N=1040292.78	E=829050.90	END OF MODULAR BLOCK WALL / BACK OF WALK
V.	N=1040284.98	E=829043.95	END OF MODULAR BLOCK WALL / EDGE OF WALK
W.	N=1040298.89	E=829041.03	SAWCUT / EDGE OF ASPHALT
X.	N=1040303.33	E=829043.53	SAWCUT / FACE OF WALK
Y.	N=1040305.99	E=829035.43	SAWCUT
Z.	N=1040302.76	E=829029.31	SAWCUT
A1.	N=1040386.34	E=829062.71	SAWCUT
B1.	N=1040392.68	E=829059.59	SAWCUT
C1.	N=1040389.51	E=829061.15	NEW MANHOLE
D1.	N=1040376.84	E=829106.25	SAWCUT
E1.	N=1040373.70	E=829099.94	SAWCUT
F1.	N=1040346.25	E=829071.43	RELOCATED FIRE HYDRANT
G1.	N=1040369.90	E=829098.69	SAWCUT / FACE OF WALK
H1.	N=1040361.22	E=829095.82	SAWCUT / BACK OF WALK
I1.	N=1040359.65	E=829100.57	SAWCUT / BACK OF WALK
J1.	N=1040368.44	E=829103.47	SAWCUT / FACE OF WALK
K1.	N=1040300.12	E=829053.30	END OF MODULAR BLOCK WALL / BACK OF WALK

MSD P-11600-XX BASE MAP: 16P

REVISIONS

NO.	DESCRIPTION	BY	DATE

PROJECT: PARKWAY WEST HIGH SCHOOL
PSD PROJECT: 561201B
FINE ARTS RENOVATIONS

TITLE: PLAN SHEET

CLIENT: PARKWAY SCHOOL DISTRICT
455 North Woods Mill Road
Chesterfield, Missouri 63017
Phone: 314-415-8100 Fax: 314-415-8207

AMEC Earth & Environmental, Inc.
15933 Clayton Road, Suite 215
Ballwin, Missouri 63011
Phone: 636-394-3232 Fax: 636-394-3904
Discipline: Engineering Corporation
Corp Cert. of Auth. #2002003328

amec

Date: Brad P. Loomis - Engineer
MO PE-2006019682

ISSUE FOR BID

Proj. No. 2008008	REV No. 0
DR: MJR	CHK: BPL
DATE: 3/4/13	

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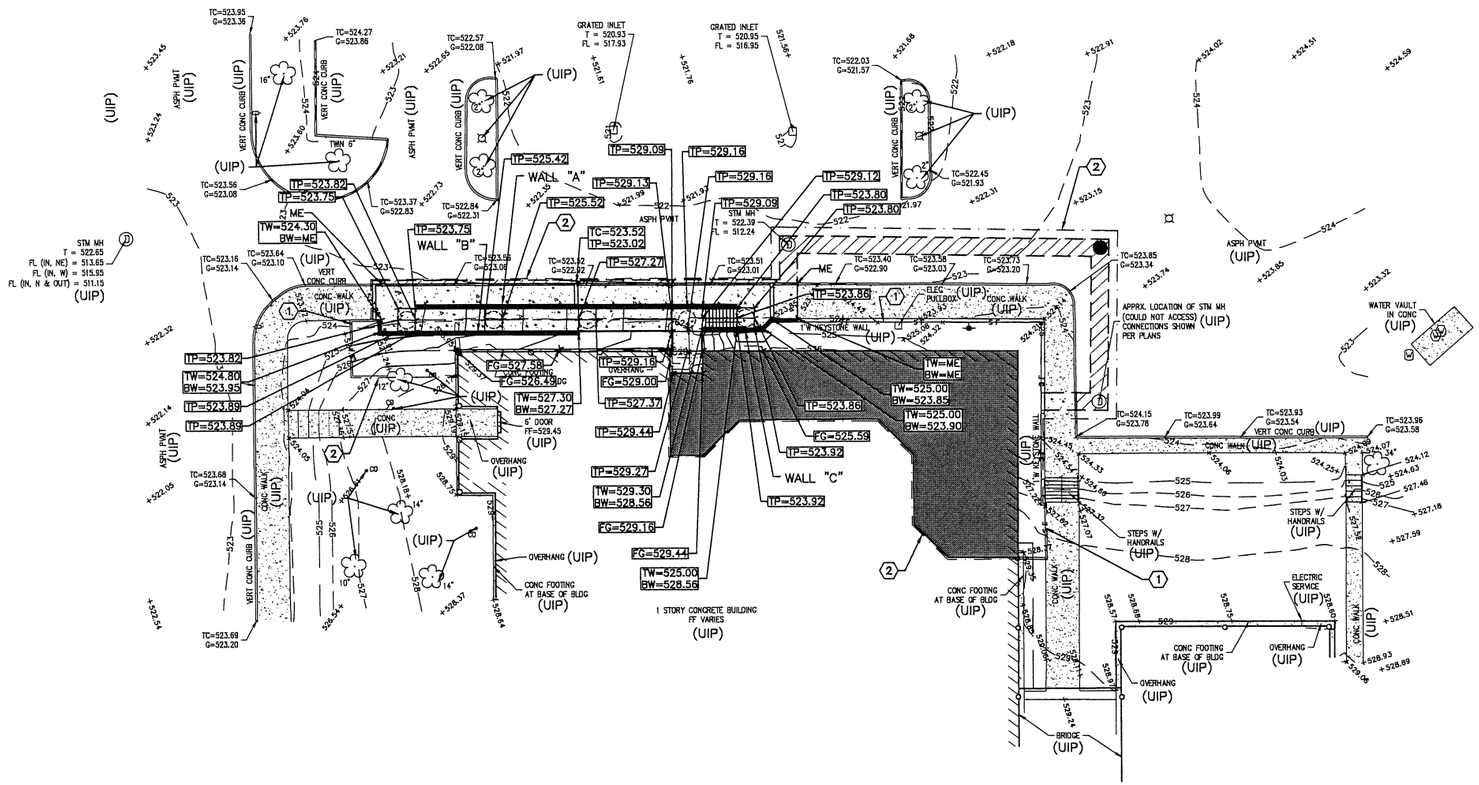
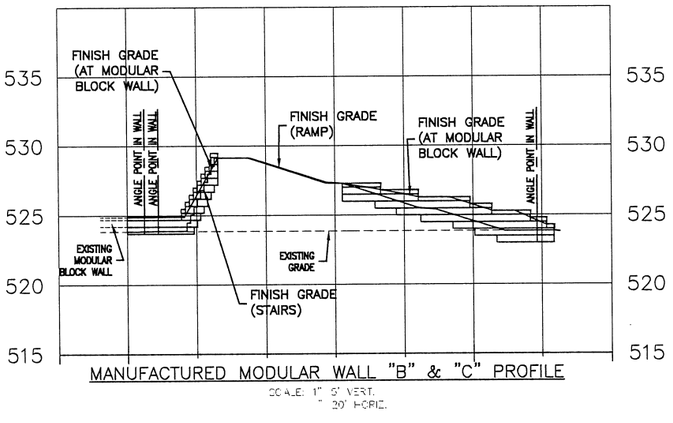


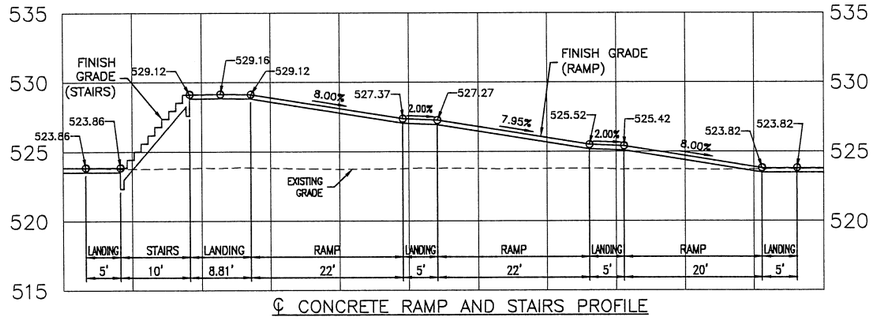
KEYED NOTES (#)

1. EROSION CONTROL – FIBER ROLL. REFER TO DETAIL ON THIS SHT.
2. LIMITS OF CONSTRUCTION.



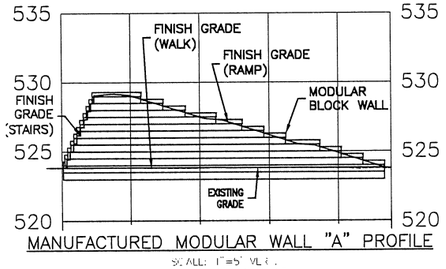
MANUFACTURED MODULAR WALL "B" & "C" PROFILE

SCALE: 1" = 5' VERT.
1" = 20' HORIZ.



℄ CONCRETE RAMP AND STAIRS PROFILE

SCALE: 1"=5' VERT.
1"=10' HORIZ.



MANUFACTURED MODULAR WALL "A" PROFILE

SCALE: 1"=5' VERT.
1"=20' HORIZ.

EROSION CONTROL FILTER ROLL (FILTER SOCK) DETAIL

NTS

MSD P-11600-XX BASE MAP: 16P

PLOT DATE: 3/11/2013 8:34:51 AM

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REVISIONS

NO.	DESCRIPTION	BY	DATE

PROJECT: PARKWAY WEST HIGH SCHOOL
PSD PROJECT: 561201B
FINE ARTS RENOVATIONS
PLAN AND PROFILE

TITLE: GRADING PLAN

CLIENT: PARKWAY SCHOOL DISTRICT
455 North Woods Mill Road
Chesterfield, Missouri 63017
Phone: 314-415-8100 Fax: 314-415-8207

AMEC Earth & Environmental, Inc.
15933 Clayton Road, Suite 215
Ballwin, Missouri 63011
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Discipline: Engineering Corporation
Corp Cert. of Auth. #2002000328

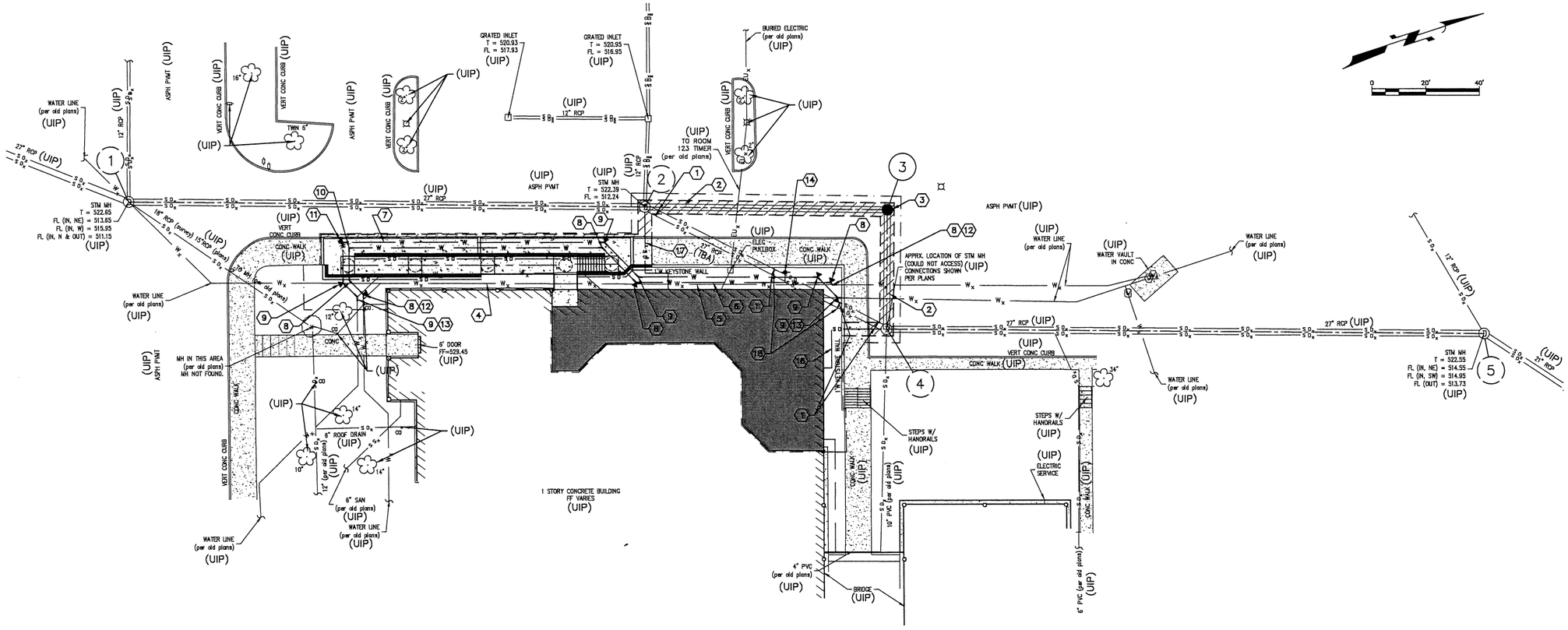
Date
Brad P. Loomis - Engineer
MO PE-2006019682

ISSUE FOR BID

Proj. No. 2008008	REV No. 0
DR: MJR	CHK: BPL
DATE: 3/4/13	

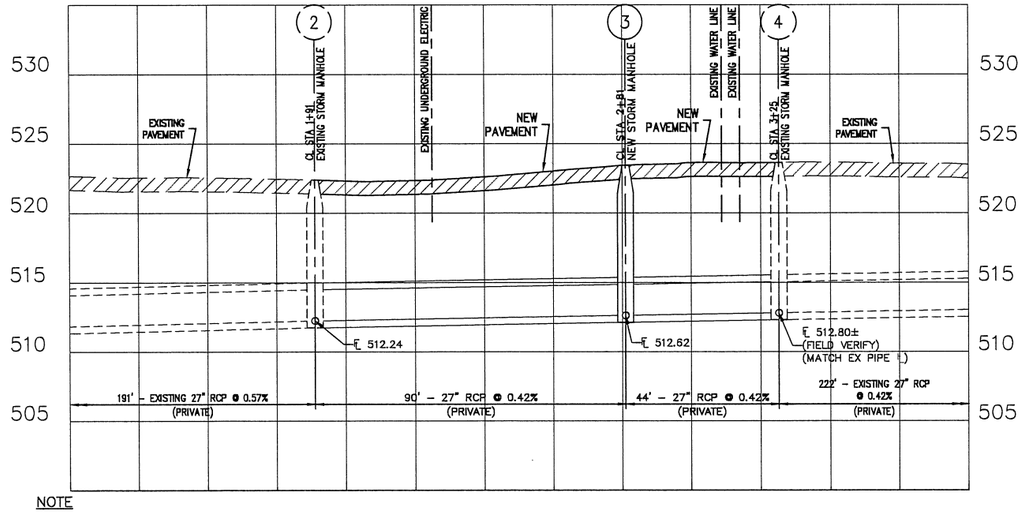
C4.0

SHEET NUMBER



KEYED NOTES ⟨#⟩

1. EXISTING 27" RCP TO BE PLUGGED AND GROUTED FULL.
2. NEW 27" STORM LINE. CONNECT TO EXISTING MANHOLE.
3. NEW STORM MANHOLE. REFER TO STORM PROFILE THIS SHT.
4. EXISTING 4" WATER LINE TO BE REMOVED.
5. EXISTING 8" WATER LINE TO BE REMOVED.
6. NEW 4" WATER LINE.
7. NEW 8" WATER LINE.
8. NEW 45° BEND – 4". SEE THRUST BLOCK DETAIL ON SHT. C6.0.
9. NEW 45° BEND – 8". SEE THRUST BLOCK DETAIL ON SHT. C6.0.
10. NEW 90° BEND – 4". SEE THRUST BLOCK DETAIL ON SHT. C6.0.
11. NEW 90° BEND – 8". SEE THRUST BLOCK DETAIL ON SHT. C6.0.
12. CONNECT TO EXISTING 4" WATER LIINE. NOTIFY OWNER 48 HOURS PRIOR TO MAKING NEW CONNECTION.
13. CONNECT TO EXISTING 8" WATER LIINE. NOTIFY OWNER 48 HOURS PRIOR TO MAKING NEW CONNECTION.
14. RELOCATED FIRE HYDRANT.
15. LIMITS OF CONSTRUCTION.
16. 36 LF OF NEW 6" PVC @ 2.00% MIN. CONNECT FROM BUILDING TO MANHOLE.
17. 37 LF OF NEW 6" PVC @ 2.00% MIN. CONNECT FROM BUILDING TO MANHOLE.
18. REMOVE 27 LF OF EXISTING 27" RCP. BACKFILL WITH CLEAN SOIL.



NOTE

1. THE REMOVAL AND REPLACEMENT, OR REHABILITATION OF EXISTING MANHOLES 2 AND 4 WILL BE DETERMINED BY THE MSD FIELD INSPECTOR. IF THE STRUCTURE IS DETERMINED TO REMAIN IN PLACE, THEN THE TOP SHALL BE ADJUSTED TO GRADE, IF NEEDED.

STORM PROFILE
SCALE: 1"=5' VERT.
1"=20' HORIZ.

MSD P-11600-XX BASE MAP: 16P

REVISIONS

NO.	DESCRIPTION	BY	DATE

PROJECT:
PARKWAY WEST HIGH SCHOOL
PSD PROJECT: 561201B
FINE ARTS RENOVATIONS
PLAN AND PROFILE

TITLE:
UTILITY PLAN

CLIENT:
PARKWAY SCHOOL DISTRICT
455 North Woods Mill Road
Chesterfield, Missouri 63017
Phone: 314-415-8100 Fax: 314-415-8207

AMEC Earth & Environmental, Inc.
15933 Clayton Road, Suite 215
Ballwin, Missouri 63011
Phone: 636-394-3600 Fax: 636-386-3904
Discipline: Engineering Corporation
Corp. Cert. of Auth. #2002000328

Date:
Brad P. Loomis - Engineer
MO PE-2008019682

ISSUE FOR BID

Proj. No. 2008008	REV No. 0
DR MJR	CHK: BPL
DATE: 3/4/13	

C5.0
SHEET NUMBER

PLOT DATE: 3/11/2013 8:34:55 AM

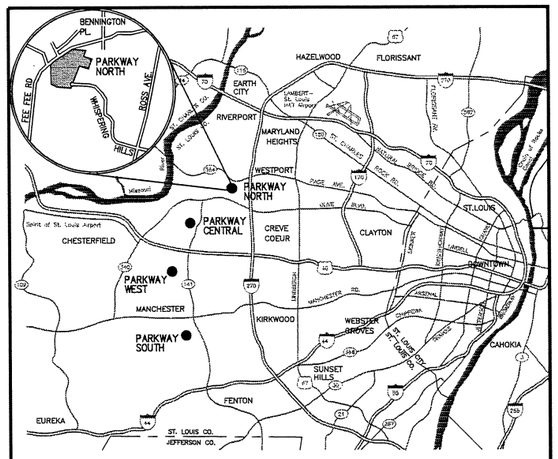
FILE: P:\STLOUIS\2011\0820111002-PARKWAY\10-CAD\XX-NORTH HIGH-EA SURVEY\ONSITE\PLAN\56-NORTH HIGH (RAMP) - C-SP0001.DWG

PARKWAY NORTH HIGH SCHOOL

A TRACT OF LAND BEING PART OF US SURVEY NO. 1929
AND FRACTIONAL SECTIONS 32 AND 33
TOWNSHIP 46 NORTH, RANGE 5 EAST
ST. LOUIS COUNTY, MISSOURI

PARKWAY SCHOOL DISTRICT
455 North Woods Mill Road Chesterfield, Missouri 63017 (314) 415-8100 (314) 415-8207 Fax

SYNTHETIC TURF FIELD IMPROVEMENTS



LOCATION MAP
(NOT TO SCALE)

INDEX

LEGEND

ELECTRIC MANHOLE (E)
EXISTING SANITARY SEWER
EXISTING STORM SEWER
EXISTING TREE (12")
EXISTING BUILDING
EXISTING CONTOUR 533
SPOT ELEVATION 532.25
EXISTING UTILITIES G—W—T—E
PROPOSED CONTOUR 530
PROPOSED SPOT 530.50
PROPOSED STORM SEWER
PROPOSED SANITARY SEWER SS
FIRE HYDRANT
LIGHT STANDARD
BUSH
SIGN
NOTES PARKING SPACES (18)
GUY WIRE
POWER POLE
WATER MANHOLE (W)
WATER VALVE
DENOTES RECORD INFORMATION ( )
HANDICAPPED PARKING
PHONE MANHOLE (P)
OVERHEAD ELECTRIC OE
UNDERGROUND TELEPHONE UT
CONCRETE CONC
ASPHALT ASPH
POLYVINYL CHLORIDE PVC
DENOTES WITH W/
TRANSFORMER T
SANITARY SAN
SWALE
CHAIN-LINK FENCE
TRAFFIC FLOW
SAWCUT

ABBREVIATIONS

W	– WATER	DB	– DEED BOOK
E	– ELECTRIC	PB	– PLAT BOOK
OE	– OVERHEAD ELECTRIC	PG	– PAGE
UW	– UNDERGROUND ELECTRIC	(_'W)	– RIGHT-OF-WAY WIDTH
G	– GAS	(REC)	– RECORD INFORMATION
T	– TELEPHONE	FT	– FEET
TBR	– TO BE REMOVED	N/F	– NOW OR FORMERLY
TBR & R	– TO BE REMOVED AND REPLACED	FND	– FOUND
UIP	– USE IN PLACE	SQ	– SQUARE
TBA	– TO BE ADJUSTED	CO	– CLEANOUT
BC	– BACK OF CURB	MH	– MANHOLE
FC	– FACE OF CURB	AI	– AREA INLET
TW	– TOP OF WALL	CI	– CURB INLET
BW	– BOTTOM OF WALL	GI	– GRATE INLET
PVMT	– PAVEMENT	YD	– YARD DRAIN
ASPH	– ASPHALT	PVC	– POLYVINYL CHLORIDE PIPE
CONC	– CONCRETE	RCP	– REINFORCED CONCRETE PIPE
GRND	– GROUND	CMP	– CORRUGATED METAL PIPE
FG	– FINISHED GRADE	VCP	– CLAY PIPE
FF	– FINISHED FLOOR	FL	– FLOWLINE
LL	– LOWER LEVEL	TS	– TAILSTAKE
TT	– TOP OF TURF	ELEV, EL	– ELEVATION
TC	– TOP OF CURB	PROP, PR	– PROPOSED
SG	– SUBGRADE	EXIST, EX	– EXISTING
TBM	– TO BE MODIFIED	TYP	– TYPICAL

SITE INFORMATION

OWNER	=	PARKWAY SCHOOL DISTRICT
SITE ADDRESS	=	12860 FEE FEE ROAD ST. LOUIS, MISSOURI 63146
LOCATOR NUMBER	=	16P64-0404
EXISTING ZONING	=	"R-2"
FIRE DISTRICT	=	CREVE COEUR FIRE PROTECTION
SCHOOL DISTRICT	=	PARKWAY
SEWER DISTRICT	=	METROPOLITAN ST. LOUIS SEWER DIST.
WATER SERVICE	=	MISSOURI AMERICAN WATER
GAS SERVICE	=	LACLEDE GAS
ELECTRIC SERVICE	=	AMEREN UE
PHONE SERVICE	=	SBC/AT&T
FLOOD MAPS	=	29189C0153H / 29189C0161H
WATERSHED	=	CREVE COUER CREEK
WUNNENBERG'S	=	PAGE 23 GRID X-16

UTILITY CONTACTS:

CHARTER COMMUNICATION
941 CHARTER COMMONS
TOWN & COUNTRY, MO 63017
ATTN: SARA BISHOP
PHONE: 636.387.6633

AMEREN UE
12121 DORSETT ROAD
MARYLAND HEIGHTS, MO 63043
ATTN: RANDY HUNT
PHONE: 314.344.9504

LACLEDE GAS COMPANY
3950 FOREST PARK AVENUE
ST. LOUIS, MO 63108
ATTN: JIM TRAVIS
PHONE: 314.342.0687

AT&T TELEPHONE COMPANY
402 N 3RD
ST. CHARLES, MO 63301
ATTN: MIKE WRIGHT
PHONE: 314.949.1301

MO. AMERICAN WATER COMPANY
727 CRAIG ROAD
ST. LOUIS, MO 63141
ATTN: MARIANN KELMME
PHONE: 314.569.3972

CREVE COEUR FIRE PROTECTION DISTRICT
ADMINISTRATIVE DISTRICT
11221 OLIVE BLVD
CREVE COEUR, MO 63141-7652
ATTN: ARTHUR OSTEREICH, FIRE MARSHAL
PHONE: 314.432.5570

PERMITTEE NOTE:

THE PERMITTEE SHALL ASSUME COMPLETE RESPONSIBILITY FOR CONTROLLING ALL SILTATION AND EROSION OF THE PROJECT AREA. THE PERMITTEE SHALL USE WHATEVER MEANS NECESSARY TO CONTROL EROSION AND SILTATION INCLUDING, BUT NOT LIMITED TO, STAKED STRAW BALES AND/OR SILTATION FABRIC FENCES (POSSIBLE METHODS OF CONTROL ARE DETAILED IN THE PLAN). CONTROL SHALL COMMENCE WITH GRADING AND BE MAINTAINED THROUGHOUT THE PROJECT UNTIL ACCEPTANCE OF THE WORK BY ST. LOUIS COUNTY AND MISSOURI DEPARTMENT OF TRANSPORTATION AS NECESSARY. THE PERMITTEE'S RESPONSIBILITIES INCLUDE ALL DESIGN AND IMPLEMENTATION AS REQUIRED TO PREVENT EROSION AND THE DEPOSITING OF SILT. ST. LOUIS COUNTY AND AS REQUIRED BY (MODOT) MAY AT THEIR OPTION DIRECT THE PERMITTEE IN HIS METHODS AS DEEMED FIT TO PROTECT PROPERTY AND IMPROVEMENTS. ANY DEPOSITING OF SILT OR MUD ON NEW OR EXISTING PAVEMENT SHALL BE REMOVED IMMEDIATELY. ANY DEPOSITING OF SILT OR MUD IN NEW OR EXISTING STORM SEWERS OR SWALES SHALL BE REMOVED AFTER EACH RAIN AND AFFECTED AREAS CLEANED TO THE SATISFACTION OF ST. LOUIS COUNTY AND AS REQUIRED BY (MODOT).

OWNER NOTE:

ONCE THE CONTRACTOR DELIVERS THE PROPERTY TO THE OWNER, THE OWNER SHALL BE RESPONSIBLE TO MAINTAIN ANY CONTROL MEASURE THAT IS TO REMAIN AS A PERMANENT STRUCTURE TO CONTROL SILTATION AND EROSION.

CONTRACTOR'S INSURANCE REQUIREMENTS

PRIOR TO OBTAINING A CONSTRUCTION PERMIT FROM THE METROPOLITAN ST. LOUIS SEWER DISTRICT, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE THE DISTRICT WITH A COPY OF AN EXECUTED CERTIFICATE OF INSURANCE INDICATING THAT THE PERMITTEE HAS OBTAINED AND WILL CONTINUE TO CARRY COMMERCIAL GENERAL LIABILITY AND COMPREHENSIVE AUTO LIABILITY INSURANCE. THE REQUIREMENTS AND LIMITS SHALL BE AS STATED IN THE "RULES AND REGULATIONS AND ENGINEERING DESIGN REQUIREMENTS FOR SANITARY AND STORMWATER DRAINAGE FACILITY", SECTION 10.090 (ADDENDUM).

OWNER

PARKWAY SCHOOL DISTRICT
455 N. WOODS MILL ROAD
CHESTERFIELD, MISSOURI 63017
CONTACT: J. SCOTT BENNETT P.E.
PH: (314) 415-8231

PREPARED FOR:

ATG SPORTS
C/O DON BOLINGER, PRESIDENT
1349 MCNUTT ROAD, SUITE D
HERCULANEUM, MO 63048
PHONE: (636) 524-6135
FAX: (636) 933-4994

MISSOURI ONE-CALL
1-800-344-7483

MISSOURI DEPT. OF NATURAL RESOURCES

PERMIT NO. – MO-R10D711
EXPIRATION DATE: FEBRUARY 7, 2012

ST. LOUIS COUNTY BENCHMARK

8-166 ELEV. ELEV.=479.20 — "SQ" ON S.E. CORNER OF HEADWALL OF CREEK CULVERT; 59' EAST OF CENTERLINE OF FEE FEE ROAD AND 470' SOUTH OF SEVEN PINES DRIVE

SITE BENCHMARK

8-166 ELEV. ELEV.=479.20 — "SQ" ON S.E. CORNER OF HEADWALL OF CREEK CULVERT; 59' EAST OF CENTERLINE OF FEE FEE ROAD AND 470' SOUTH OF SEVEN PINES DRIVE

UTILITY NOTE:

UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS, RECORDS AND INFORMATION, AND , THEREFORE DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NON-EXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE FACILITIES, STRUCTURES AND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS. THE UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319 RSMo.

STOCK AND ASSOCIATES CONSULTING ENGINEERS, INC. AND THE UNDERSIGNED ENGINEER HAVE NO RESPONSIBILITY FOR SERVICES PROVIDED BY OTHERS TO IMPLEMENT THE IMPROVEMENTS SHOWN ON THIS PLAN AND ALL OTHER DRAWINGS WHERE THE UNDERSIGNED ENGINEER'S SEAL APPEARS. THE CONSTRUCTION MEANS AND METHODS ARE THE SOLE RESPONSIBILITY OF THE OWNER AND CONTRACTOR. STOCK AND ASSOCIATES CONSULTING ENGINEERS, INC. HAS NO RESPONSIBILITY TO VERIFY FINAL IMPROVEMENTS AS SHOWN ON THIS PLAN UNLESS SPECIFICALLY ENGAGED AND AUTHORIZED TO DO SO BY THE OWNER OR CONTRACTOR.

H.T. # 1873
M.S.D. P# 11600-09
BASE MAP # 16-P

March 7, 2011

100% COMPLETE

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

2. 2011-03-04 – REVISED PER MSD AND COUNTY COMMENTS
1. 2011-02-21 – REVISED PER MSD AND COUNTY COMMENTS

PARKWAY NORTH HIGH SCHOOL

TITLE SHEET

STOCK & ASSOCIATES
Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530-9100
FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
T.P.S.	12/22/2010	G.M.S.	12/22/2010	210-4670	C1

DEMOLITION NOTES

1.) THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY COMPANY PRIOR TO BEGINNING ANY WORK THAT WILL AFFECT AN EXISTING UTILITY.

2.) REMOVAL AND/OR ABANDONEMENT OF EXISTING SEWERS SHALL BE IN ACCORDANCE WITH THE STANDARD CONSTRUCTION SPECIFICATIONS FOR SEWER AND DRAINAGE FACILITIES OF THE METROPOLITAN ST. LOUIS SEWER DISTRICT, LATEST EDITION.

3.) REMOVAL OF PAVEMENT, CURB & GUTTER, SIDEWALKS, ETC. SHALL BE TO THE NEAREST EXISTING JOINT OR SAWCUT AT LIMITS OF REMOVAL.

4.) CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT THE EXISTING TRACK SURFACE DURING EXCAVATION AND REMOVAL OF THE EXISTING CONCRETE CURB AND GUTTER, AND DURING FIELD EXCAVATION AND HAUL OPERATIONS.

5.) CONSTRUCTION DEBRIS, INCLUDING BUT NOT LIMITED TO, CONDUIT, PIPES, FITTINGS, VALVES, WIRES AND OTHER DEBRIS TO BE REMOVED, SHALL BE DISPOSED OF OFF-SITE, AND IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

6.) CONTRACTOR TO PROVIDE ALL NECESSARY FENCING, BARRICADES, SIGNAGE, ETC. FOR PEDESTRIAN SAFETY DURING SITE DEMOLITION ACTIVITIES.

7.) CONTRACTOR TO REMOVE EXISTING 4" UNDERDRAIN SYSTEM LOCATED IN FIELD.

8.) CONTRACTOR TO RECONNECT EXISTING DRAIN LINES UNDER TRACK TO THE PROPOSED STORM SEWER COLLECTOR PIPE.

9.) CONTRACTOR TO REMOVE EXISTING IRRIGATION SYSTEM LOCATED WITHIN THE FIELD.

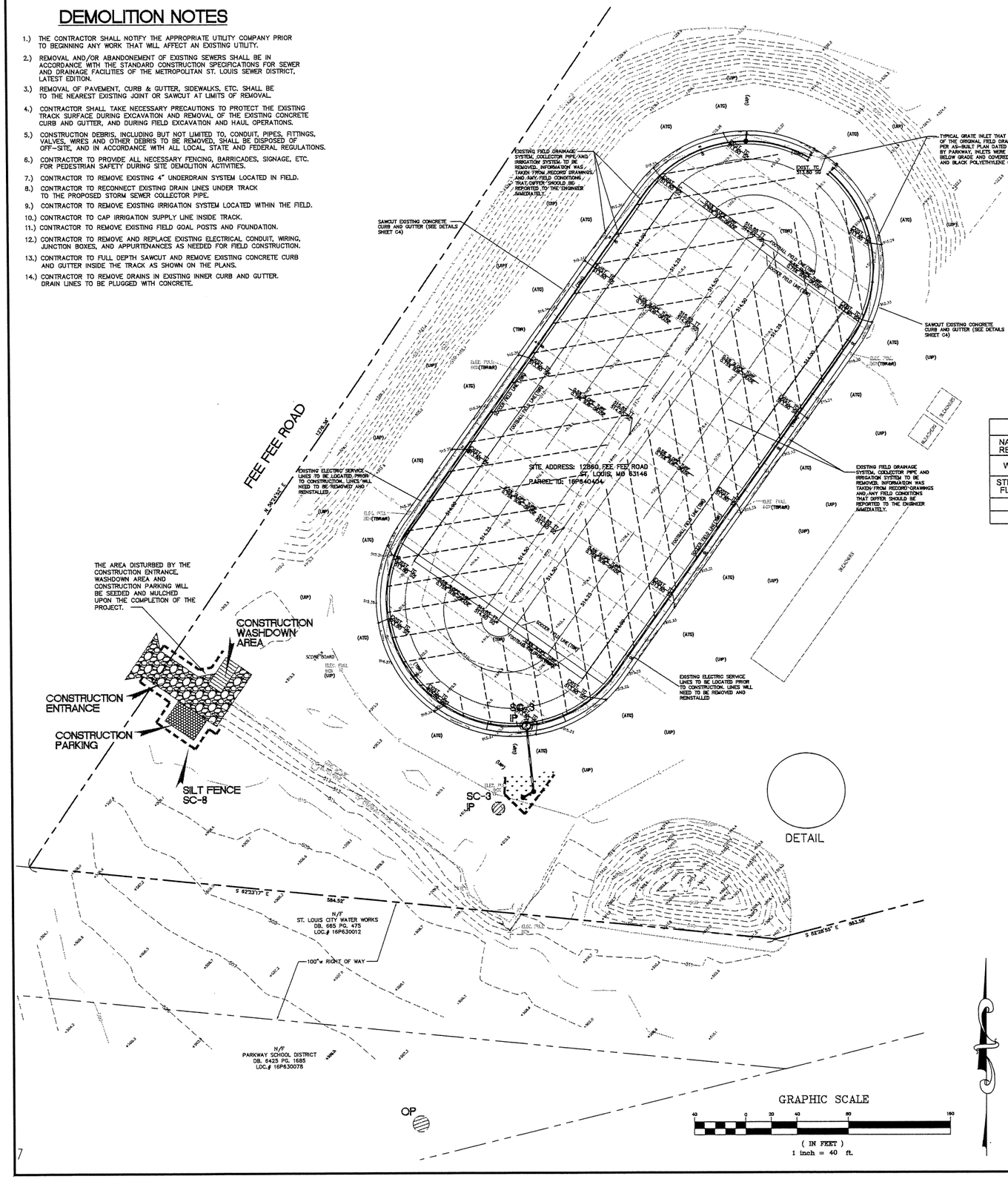
10.) CONTRACTOR TO CAP IRRIGATION SUPPLY LINE INSIDE TRACK.

11.) CONTRACTOR TO REMOVE EXISTING FIELD GOAL POSTS AND FOUNDATION.

12.) CONTRACTOR TO REMOVE AND REPLACE EXISTING ELECTRICAL CONDUIT, WIRING, JUNCTION BOXES, AND APPURTENANCES AS NEEDED FOR FIELD CONSTRUCTION.

13.) CONTRACTOR TO FULL DEPTH SAWCUT AND REMOVE EXISTING CONCRETE CURB AND GUTTER INSIDE THE TRACK AS SHOWN ON THE PLANS.

14.) CONTRACTOR TO REMOVE DRAINS IN EXISTING INNER CURB AND GUTTER. DRAIN LINES TO BE PLUGGED WITH CONCRETE.



HAUL ROUTE

Trucks: = Tandem
Loads Per Day: = 60 loads/day
Days of Operation: = 14 days
Quantity of material = 8,398 c.y. (Excavated material)
Weight: 54,000 lbs.
Destination: Fred Weber Quarry, Maryland Heights

Total mileage = 6.9 miles (one way)

Total mileage on County Streets = 4.3 miles

Route:

1. START NORTHEAST ON FEE FEE ROAD TOWARD BENNINGTON PLACE
2. TURN LEFT AT BENNINGTON PLACE
3. TURN LEFT TO MERGE ONTO MO-364 W
4. TAKE THE EXIT TOWARDS MARYLAND HEIGHTS EXPRESSWAY
5. TURN RIGHT ONTO MARYLAND HEIGHTS EXPRESSWAY
6. TURN RIGHT ONTO RIVERPORT DRIVE.
7. END AT FRED WEBER QUARRY/LAND FILL.

Note: Trucks shall not exceed posted weight limits for St. Louis County bridges during haul operations.

SILTATION CONTROL LEGEND

- OP — OUTLET PROTECTION
- IP — INLET PROTECTION
- SILT FENCE
- CONSTRUCTION ENTRANCE
- CONSTRUCTION WASHDOWN AREA
- CONSTRUCTION PARKING
- SEEDING, FERTILIZING AND MULCHING

B.M.P. SCHEDULE
(APPROX.-CONTRACTOR SHALL VERIFY)

TYPE	BMP	QUANTITY	10% SURPLUS	TOTAL
CONSTRUCTION ENTRANCE (8" TYPE 5 AGGREGATE)	TC-1	296 S.Y.	-	296 S.Y.
WASHDOWN STATION	TC-4	NOTE 1	-	NOTE 1
CONSTRUCTION PARKING (8" TYPE 5 AGGREGATE)	-	57 S.Y.	-	57 S.Y.
INLET PROTECTION	SC-3	2 EA.	-	2 EA.
SILT FENCE	SC-8	265 L.F.	30 L.F.	295 L.F.
SEEDING, FERTILIZING AND MULCHING	N.A.	541 S.Y.	-	541 S.Y.

NOTE 1: WASHDOWN STATION IS INCIDENTAL TO CONSTRUCTION ENTRANCE

PERMANENT SEEDING, FERTILIZING and MULCHING

LOCATION	SEEDING			FERTILIZER NUTRIENT				MULCH
	AREA		QUANTITY	QUANTITY				QUANTITY
	MIXTURE #2 (ACRE)	MIXTURE #2 (SQ. FT.)	MIXTURE #2 (POUND)	NITROGEN (POUND)	PHOSPHATE (POUND)	POTASSIUM (POUND)	LIME-ENH (POUND)	METHOD 1 (TON)
SLOPES LESS THAN 3:1	0.11	4,869	24	5	8	8	66	0.28

NOTE:
Mulch (Method 1): Straw mulch with tacking agent.

EXISTING SITE RESOURCES SUMMARY TABLE

NATURAL RESOURCE	PRESENCE?	ADDITIONAL INFORMATION
WETLANDS	NO	NONE IDENTIFIED ON SITE.
STREAMS AND FLOODPLAIN	NO	NONE IDENTIFIED ON SITE.
KARST	NO	NOT IDENTIFIED ON SITE.
PONDS	NO	NONE IDENTIFIED ON SITE.

B. M. P. INSTALLATION AND CONSTRUCTION SEQUENCE

1. Install construction road & washdown station. (March 2011)
2. Excavate and haul off field and BMP spoils. (March 2011)
3. Construction of turf field and underdrain system. (April 2011)
4. Seeding/mulching of disturbed areas (April 2011)
5. All on going maintenance & inspection shall be in accordance w/ St. Louis County

(Timelines are approximate & to be verified by Contractor, School District & City)

ST. LOUIS COUNTY NOTES

1.) INTERIM STORMWATER DRAINAGE CONTROL IN THE FORM OF SILTATION CONTROL MEASURES ARE REQUIRED.

2.) THE DEVELOPER IS REQUIRED TO PROVIDE ADEQUATE STORMWATER SYSTEMS IN ACCORDANCE WITH ST. LOUIS COUNTY AND MSD STANDARDS.

3.) INTERNAL (PRIVATE) STORM SEWERS WILL REQUIRE A SEPARATE DRAINLAYER PERMIT FROM ST. LOUIS COUNTY DEPARTMENT OF PUBLIC WORKS.

4.) ALL CONSTRUCTION SHALL BE PER MOST CURRENT DETAILS LOCATED IN THE ST. LOUIS COUNTY DESIGN CRITERIA MANUAL AND/OR THE SEDIMENT AND EROSION CONTROL MANUAL.

5.) ANY LAND CLEARING, CONSTRUCTION, OR DEVELOPMENT INVOLVING THE MOVEMENT OF EARTH SHALL BE IN ACCRODANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN, AND THE PERSON ISSUED A LAND DISTURBANCE PERMIT ASSUMES AND ACKNOWLEDGES RESPONSIBILITY FOR COMPLIANCE WITH THE ST. LOUIS COUNTY LAND DISTURBANCE CODE AND THE APPROVED STORMWATER POLLUTION PREVENTION PLAN AT THE SITE OF THE PERMITTED ACTIVITY.

6.) PRIOR TO THE ISSUANCE OF A MAJOR LAND DISTURBANCE PERMIT, AN APPLICATION FOR A MAJOR LAND DISTURBANCE PERMIT MUST BE MAKE THROUGH PAC. A LAND DISTURBANCE ESCROW MUST BE APPROVED BY THE ST. LOUIS COUNTY DEPARTMENT OF PLANNING. A SPECIAL INSPECTOR MUST BE APPROVED BY THE ST. LOUIS COUNTY DEPARTMENT OF PUBLIC WORKS.

7.) PRIOR TO ANY MAJOR LAND DISTURBANCE ACTIVITY, A LAND DISTURBANCE PERMIT FROM THE STATE OF MISSOURI DEPARTMENT OF NATURAL RESOURCES WILL BE REQUIRED.

8.) ALL WORK WITHIN ST. LOUIS COUNTY RIGHT OF WAY SHALL BE TO COUNTY STANDARDS.

9.) INTERIM STORM WATER DRAINAGE CONTROL IN THE FORM OF SILTATION CONTROL MEASURES ARE REQUIRED.

10.) THE DEVELOPER IS REQUIRED TO PROVIDE ADEQUATE STORM WATER SYSTEMS IN ACCORDANCE WITH ST. LOUIS COUNTY AND M.S.D. STANDARDS.

11.) ALL DISTURBED EARTH AREAS WITHIN ST. LOUIS COUNTY RIGHT-OF-WAY SHALL BE SODDED.

12.) ADDITIONAL SILTATION CONTROL SHALL BE INSTALLED AS REQUIRED BY THE ST. LOUIS COUNTY DEPARTMENT OF HIGHWAYS AND TRAFFIC.

13.) ALL CONSTRUCTION SHALL BE PER MOST CURRENT DETAILS LOCATED IN THE ST. LOUIS COUNTY DESIGN CRITERIA MANUAL AND/OR THE SEDIMENT AND EROSION CONTROL MANUAL.

14.) 24-HOUR EMERGENCY CONTACT INFORMATION:
CONTACT: J. SCOTT BENNETT, P.E. - PARKWAY SCHOOL DISTRICT
455 N. WOODS MILL ROAD
CHESTERFIELD, MISSOURI 63017
PH: 314-415-8231 (24-HOUR)

CONTACT: ANDREW DIXON - STOCK & ASSOCIATES
257 CHESTERFIELD BUSINESS PARKWAY
CHESTERFIELD, MISSOURI 63005
PH: 636-530-9100

TOTAL AREA : 2.35 Ac.

TOTAL AREA DISTURBED: BY GRADING: 2.35 Acs.±

EXISTING SITE RUNOFF COEFFICIENT: 0.49
PROPSED SITE RUNOFF COEFFICIENT: 0.49
HYDROLOGIC SOIL GROUP: D

NOTE

SWPPP INSPECTIONS MUST BE SCHEDULED AT LEAST ONCE PER WEEK AND NO LATER THAN 48 HOURS AFTER A RAINFALL THAT CAUSES STORMWATER RUNOFF TO OCCUR ON-SITE.

H.T. # 1873
M.S.D. P# 11600-09
BASE MAP # 16-P

March 7, 2011

100% COMPLETE

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY NUMBER: 000996

2. 2011-03-04 - REVISED PER MSD AND COUNTY COMMENTS
1. 2011-02-21 - REVISED PER MSD AND COUNTY COMMENTS

PARKWAY NORTH HIGH SCHOOL

EXISITNG CONDITIONS/DEMO/SWPPP

STOCK & ASSOCIATES
Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530-9100
FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
T.P.S.	12/22/2010	G.M.S.	12/22/2010	210-4670	C2

NON-SEDIMENT POLLUTION CONTROL

PHYSICAL DESCRIPTION:

Control measures designed to prohibit chemicals, hazardous materials, solid waste and construction debris from polluting stormwater. Pollutants carried in solution or as surface films on runoff will be carried through most erosion control and sediment capture BMP's. Keeping substances like fuel, oil, asphalt, paint, solvents, fertilizer, soil additives, concrete wash water, solid waste and construction debris from polluting runoff can be accomplished to a large extent through good housekeeping on the site and following the manufacturer's recommendations for disposal.

WHERE BMP IS TO BE INSTALLED:

Collection, storage and fueling areas should be located onsite in an area that does not receive a substantial amount of runoff from upland areas and does not drain directly to lakes, creeks, streams, rivers, sewers, groundwater, wetlands, or road ditches.

CONDITIONS FOR EFFECTIVE USE OF BMP:

- ✓ Reduction in pollutants depends heavily on how construction personnel perform their duties. An effective management system requires training and signage to promote proper storage, handling and disposal of materials. Follow up observations of actions and inspection of storage areas by management personnel is also required.
- ✓ Plans should contain notes clearly stating requirements for addressing potential pollutants
- ✓ Fueling areas and storage areas for hazardous materials should be protected by berms or other means of catching leaks or spills

WHEN BMP IS TO BE INSTALLED:

Immediately following installation of construction entrance and wash station

INSTALLATION/CONSTRUCTION PROCEDURES:

- ✓ Place waste receptacles near area of work
- ✓ Construct protective berm or other devices around fueling and hazardous materials storage areas
- ✓ Install appropriate signage
- ✓ Post guidelines for proper handling, storage and disposal of materials, and emergency spill cleanup on site

O&M PROCEDURES:

- ✓ Inspect activities on regular basis
- ✓ Inspect storage areas and control devices at least every two weeks and after every storm
- ✓ Make necessary corrections and repairs

SEEDING

PHYSICAL DESCRIPTION:

Establishment of vegetation by spreading grass seed designed to protect exposed soil from erosion by eliminating direct impact of precipitation and slowing overland flow rates. Once established, the vegetative cover will also filter pollutants from the runoff.

WHERE BMP IS TO BE INSTALLED:

Exposed soil after a phase of rough or finish grading has been completed, or areas where no activity will occur for 30 days

CONDITIONS FOR EFFECTIVE USE OF BMP:

Type of Flow:	Sheet flow
Contributing Slope Length:	30 foot maximum for 3:1 slopes 50 foot maximum for slope between 3:1 and 10:1 100 foot maximum for slopes under 10%
Minimum Rates:	See attached chart(s)
Acceptable Dates:	See attached chart

WHEN BMP IS TO BE INSTALLED:

Immediately after rough or finished grading is completed

INSTALLATION/CONSTRUCTION PROCEDURES:

- ✓ Install upstream BMP's to protect area to be seeded
- ✓ Rough grade area and remove all debris larger than 1 inch in diameter and concentrated areas of smaller debris
- ✓ Install stabilization grids, if needed
- ✓ Mix soil amendments (lime, fertilizer, etc.) into top 3"-6" of soil as needed
- ✓ Plant seed ¼ - ½ inch deep
- ✓ Roll lightly to firm surface
- ✓ Cover seeded area with mulch unless seeding completed during optimum spring and summer dates
- ✓ Install additional stabilization (netting, bonded fiber matrix, etc.) as required
- ✓ Water immediately – enough to soak 4 inches into soil without causing runoff

SITE CONDITIONS FOR REMOVAL:

Maintain practices until all construction on the site has been completed

TYPICAL DETAILS:

General pollution prevention notes attached

O&M PROCEDURES:

- ✓ Inspect every week and after every storm
- ✓ Protect area from vehicular and foot traffic
- ✓ Reseed areas that have not sprouted within 21 days of planting.
- ✓ Repair damaged or eroded areas and reseed and stabilize as needed
- ✓ Do not mow until 4 inches of growth occurs
- ✓ During the first 4 months, mow no more than 1/3 the grass height
- ✓ Refertilize during 2nd growing season

SITE CONDITIONS FOR REMOVAL:

Does not require removal, but temporary seeding can be removed immediately prior to work returning to an area

TYPICAL DETAILS:

Minimum seeding rates and acceptable dates for work attached

POLLUTION PREVENTION PROCEDURES

1) **HANDLING AND DISPOSAL OF HAZARDOUS MATERIALS**

DO:
- Prevent spills
- Use products up
- Follow label directions for disposal
- Remove lids from empty bottles and cans when disposing in trash
- Recycle wastes whenever possible

DON'T:
- Don't pour waste into sewers or waterways on the ground
- Don't pour waste down the sink, floor drain or septic tanks
- Don't bury chemicals or containers, or dispose of them with construction debris
- Don't burn chemicals or containers
- Don't mix chemicals together

2) Containers shall be provided for collection of all waste material including construction debris, trash, petroleum products and any hazardous materials to be used onsite. All waste material shall be disposed of at facilities approved for that material.

3) No waste materials shall be buried on-site.

4) Mixing, pumping, transferring or otherwise handling construction chemicals such as fertilizer, lime, asphalt, concrete drying compounds, and all other potentially hazardous materials shall be performed in an area away from any watercourse, ditch or storm drain.

5) Equipment fueling and maintenance, oil changing, etc., shall be performed only in an area designated for that purpose. The designated area is equipped for recycling oil and catching spills.

6) Concrete wash water shall not be allowed to flow directly to storm sewers, streams, ditches, lakes, etc without being treated. A sump or pit shall be constructed to contain concrete wash water.

7) If substances such as oil, diesel fuel, hydraulic fluid, antifreeze, etc. are spilled, leaked, or released onto soil, the soil shall be dug up and disposed of at a licensed sanitary landfill (not a construction/demolition debris landfill). Spills on pavement shall be absorbed with sawdust, kitty litter or product designed for that purpose and disposed of at a licensed sanitary landfill. Hazardous or industrial wastes such as most solvents, gasoline, oil-based paints, and cement curing compounds require special handling. These materials will be removed from the site and recycled or disposed of in accordance with MoDNR requirements.

8) State law requires the party responsible for a petroleum product spill in excess of 50 gallons to report the spill to Missouri Department of Natural Resources (MoDNR) at (537) 834-2436, as soon as practical after discovery. Federal law requires the responsible party to report any release of oil if it reaches or threatens a sewer, lake, creek, stream, river, groundwater, wetland, or area, like a road ditch, that drains into one of the above

SEEDING REQUIREMENTS

Dates for Seeding

Permanent Seeding	Dec	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Tall Fescue			O	O	O				O	O			
Smooth Brome			O	O	O				O	O			
Fescue & Brome			O	O	O	O			O	O			
Fescue, Rye & Bluegrass	A	A	O	O	O	P	P	P	O	O	P	P	A

Temporary Seeding	Dec	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Rye or Sudan	A	A	O	O	O	O	O	O	O	O	O	A	A
Oats		A	O	O	O	O	O	O	O	O			

O= Optimum seeding dates
A= Acceptable seeding dates
P= Permitted seeding dates with reseeding 2 months later - Initially mix 60% of seed and 75% of fertilizer. Reseed with additional 75% seed and remaining fertilizer.

Minimum Fertilizer and Seeding Rates

Permanent Seeding*	Fertilizer Recommendations (pounds per acre)	Seeding Rate (pounds per acre)
Tall Fescue	300	7.0
Smooth Brome	200	4.8
Mixture # 1	250	5.7
Mixture # 2	210	4.8

Mixture # 1 = Tall Fescue @ 150 pounds per acre and Brome @ 100 pounds per acre.
Mixture # 2 = Tall Fescue @ 100 pounds per acre; Perennial Rye grass @ 100 pounds per acre; and Kentucky Blue grass @ 10 pounds per acre.
* = Seeding rate for slopes in excess of 20% (5:1), shall be 10 pounds per 1000 sq. ft.

Temporary Seeding	Fertilizer Recommendations (pounds per acre)	Seeding Rate (pounds per acre)
Rye or Sudan	100	3.5
Oats	200	2.5

Fertilizer	Fertilizer Recommendations (pounds per acre)	Lime Recommendations (pounds per acre)
Nitrogen	45	30
Phosphate	85	30
Potassium	85	30
Lime - ENM	600	600

ENM= Effective neutralizing material per State evaluation of crushed rock.

INLET PROTECTION - FABRIC DROP

PHYSICAL DESCRIPTION:

A woven fabric barrier braced around an area inlet designed to prevent sediment from entering the storm sewer. Shallow temporary ponding during and after rainfall should be expected.

WHERE BMP IS TO BE INSTALLED:

At inlets designed to drain a small gently sloping area with maximum grade of 5%. Overflow capacity is limited on standard area inlets.

CONDITIONS FOR EFFECTIVE USE OF BMP:

Type of Flow:	Shallow sheet flow
Contributing Area:	Maximum of 2 cfs flowing to inlet

WHEN BMP IS TO BE INSTALLED:

Immediately after placement of inlet.

INSTALLATION/CONSTRUCTION PROCEDURES:

- ✓ Backfill, compact and uniformly grade area around inlet
- ✓ Construct downstream berm, if required. Rock bags or sand bags may be used to construct berm.
- ✓ Drive posts or wood frame close to inlet sill so overflow will fall directly on the structure and not on unprotected soil
- ✓ Dig trench around inlet for fabric to be buried
- ✓ Cut required length of fabric from one roll to eliminate joints. Fasten fabric tightly around posts/frame to enhance stability.
- ✓ Backfill and compact trench.

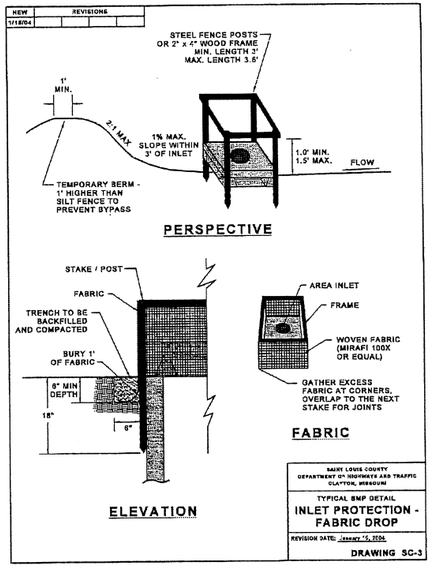
O&M PROCEDURES:

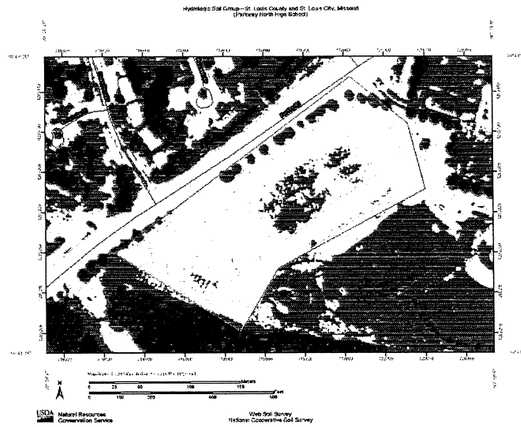
- ✓ Inspect every week and after every storm
- ✓ Remove trash accumulation and sediment once it reaches depth of 6" at inlet.
- ✓ Replace loose, torn or clogged fabric
- ✓ Repair any erosion or settlement of temporary berm downstream of inlet

SITE CONDITIONS FOR REMOVAL:

Remove after contributing drainage areas have been adequately stabilized. Restore area to grade and vegetate.

TYPICAL DETAIL: SC-3





Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — St. Louis County and St. Louis City, Missouri				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
9022A	Urban land-Harvester complex, 3 to 8 percent slopes	D	8.4	100.0%
Totals for Area of Interest			8.4	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows.

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition
Component Percent Cutoff: None Specified
Tie-break Rule: Lower

Natural Resources Conservation Service — Web Soil Survey — National Cooperative Soil Survey

H.T. # 1873
M.S.D. P# 11600-09
BASE MAP # 16-P

March 7, 2011

100% COMPLETE

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

2. 2011-03-04 – REVISED PER MSD AND COUNTY COMMENTS
1. 2011-02-21 – REVISED PER MSD AND COUNTY COMMENTS

PARKWAY NORTH HIGH SCHOOL

SWPPP DETAILS

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Web: www.stockassoc.com

DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
T.P.S.	12/22/2010	G.M.S.	12/22/2010	210-4670	C3

SILT FENCE

PHYSICAL DESCRIPTION:

A fence constructed of woven filter fabric and wire mesh stretched between posts and entrenched in the ground designed to pond stormwater runoff and cause sediment to settle out.

WHERE BMP IS TO BE INSTALLED:

Installed along slopes, at base of slopes, and around perimeter of site as final barrier to sediment being carried off site. Spacing of fence along slopes is relative to slope:

CONDITIONS FOR EFFECTIVE USE OF BMP:

Type of Flow:	Sheet flow only
Contributing Slope Length:	30 foot maximum for 3:1 slopes 50 foot maximum for slopes between 3:1 and 10:1 100 foot maximum for slopes under 10%.

WHEN BMP IS TO BE INSTALLED:

Prior to disturbance of natural vegetation and at intervals during construction of fill slopes

INSTALLATION/CONSTRUCTION PROCEDURES:

- ✓ Drive post for fence line
- ✓ Dig trench to required dimensions in front of posts for fabric burial
- ✓ Attach wire mesh to posts
- ✓ Attach fabric to posts, allowing required length below ground level to run fabric along bottom of trench
- ✓ Backfill and compact soil in trench to protect and anchor fabric

Alternate Construction: Install fence by slicing it into ground with specialized equipment
Install posts at reduced spacing indicated on detail

O&M PROCEDURES:

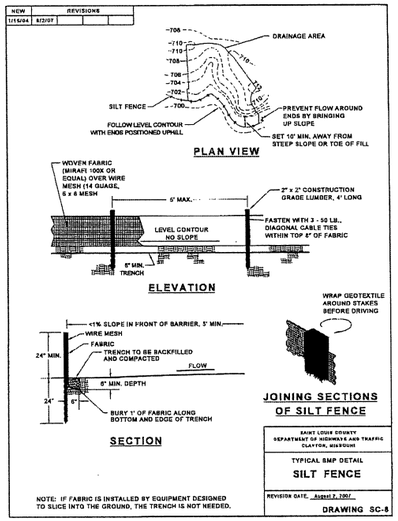
- ✓ Inspect every week and after every storm
- ✓ Remove sediment buildup deeper than ½ the fence height or 12", whichever is less
- ✓ Replace torn of clogged fabric; repair loose fabric
- ✓ Repair unstable or broken posts
- ✓ Stabilize any areas susceptible to undermining
- ✓ Extend fence or add additional row(s) of fence if necessary to provide adequate protection

SITE CONDITIONS FOR REMOVAL:

After permanent vegetation of slope is established. Remove fence, regrade trench area and vegetate.

TYPICAL DETAIL: SC-8

NEW	REVISIONS			
1/15/04	8/2/07			



NOTE: IF FABRIC IS INSTALLED BY EQUIPMENT DESIGNED TO SLICE INTO THE GROUND, THE TRENCH IS NOT NEEDED.

SAINT LOUIS COUNTY
DEPARTMENT OF HIGHWAYS AND TRAFFIC
CLAYTON, MISSOURI

TYPICAL BMP DETAIL
SILT FENCE

REVISION DATE: August 7, 2007

DRAWING SC-8

MULCHING

PHYSICAL DESCRIPTION:

A layer of organic material designed to protect exposed soil or freshly seeded areas from erosion by eliminating direct impact of precipitation and slowing overland flow rates. Mulch materials may include, but are not limited to, such things as grass, hay, straw, wood chips, wood fibers, and shredded bark.

WHERE BMP IS TO BE INSTALLED:

Typically installed on seeded areas for temporary use, and in landscaped areas for permanent use

CONDITIONS FOR EFFECTIVE USE OF BMP:

Type of Flow:	Sheet flow only
Slopes:	See attached chart for types of mulch acceptable as a function of slope length and steepness
Mulching Rates:	See attached table

WHEN BMP IS TO BE INSTALLED:

Immediately after grading landscaped areas or seeding other areas

INSTALLATION/CONSTRUCTION PROCEDURES:

- ✓ Install upstream BMP's to protect area to be mulched
- ✓ Rough grade area and remove all debris larger than 1 inch if area is to be vegetated and mowed in the future, larger than 2 inches if area is to be permanently mulched
- ✓ If area is to be seeded, follow requirements of Seeding BMP
- ✓ Spread mulch and anchor by punching it into the ground, using netting, peg and twine, or tacking with liquid binder

O&M PROCEDURES:

- ✓ Inspect every week and after every storm until adequate vegetation is established; annually for permanent mulch
- ✓ Protect from vehicular and foot traffic
- ✓ Repair damaged, degraded or eroded areas – reseed as needed and replace mulch

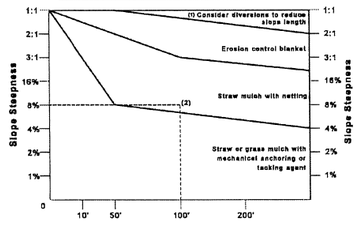
SITE CONDITIONS FOR REMOVAL:

Temporary mulch should be removed when adequate vegetation is established

TYPICAL DETAILS:

Type of mulch required for various slopes and application rates attached

MULCH SELECTION AS A FUNCTION OF SLOPE



(1) For slopes steeper than 1:1, consider building a diversion above slope to divert water.
(2) Example: An 8% slope, 100 feet long, requires straw mulch with netting

GENERAL MULCH RECOMMENDATIONS TO PROTECT FROM SPLASH AND SHEET FLOW

Material	Rate Per Acre	Requirements	Notes
Straw	2 to 2.5 tons	Dry, unchopped unweathered; avoid weeds	Spread by hand or machine; must be tacked or tied down
Wood Fiber or Wood Cellulose	0.5 to 1 ton		Use with hydro seeder; may be used in lock straw. Do not use in hot, dry weather.
Wood Chips	5 to 6 tons	Air dry. Add nitrogen fertilizer at 12 lb per ton	Apply with blower, chip handler, or by hand. Not for fine turf areas.
Bark	36 cu. yds.	Air dry, shredded, or hammermilled; or chips	Apply with mulch blower, chip handler or by hand Do not use asphalt tack.

CONSTRUCTION ENTRANCE

PHYSICAL DESCRIPTION:

A stabilized entrance to a construction site designed to minimize the amount of sediment tracked from the site on vehicles and equipment. Stabilization generally consists of aggregate over fabric. Mud and sediment fall off of tires as they travel along the stabilized entrance; however, additional measures in the form of a washdown area should also be included on site. The stabilized entrance also distributes the axle load of vehicles over a larger area; thereby mitigating the rutting impact vehicles normally have on unpaved areas.

WHERE BMP IS TO BE INSTALLED:

At locations where it is safe for construction vehicles and equipment to access existing streets – preferably at location of future streets or drives.

CONDITIONS FOR EFFECTIVE USE OF BMP:

Drainage:	Ditches or pipes, if needed, sized for 15 year, 20 minute storm; HGL 6" below surface of entrance

WHEN BMP IS TO BE INSTALLED:

First order of work, along with washdown area, prior to vehicles or equipment accessing unpaved areas.

INSTALLATION/CONSTRUCTION PROCEDURES:

- ✓ Grade and compact area of construction entrance
- ✓ Install culvert under entrance if needed to maintain positive drainage
- ✓ Place fabric and cover with aggregate, forming diversion across entrance if needed to direct runoff away from roadway
- ✓ See Washdown Station BMP for additional steps

O&M PROCEDURES:

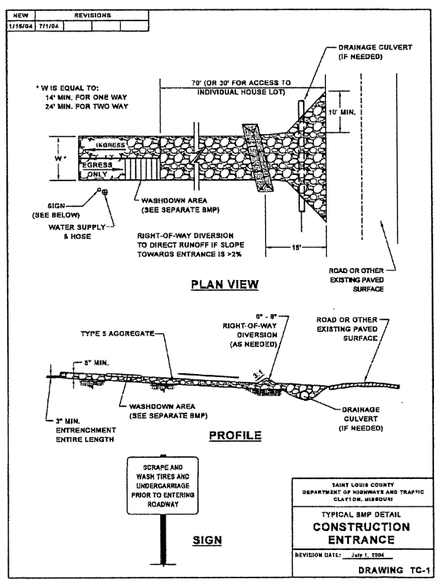
- ✓ Immediately remove any mud or debris tracked onto paved surfaces
- ✓ Remove sediment and clods of dirt from construction entrance continuously
- ✓ Replace rock if necessary to maintain clean surface
- ✓ Repair settled areas

SITE CONDITIONS FOR REMOVAL:

Remove when vehicles and equipment will no longer access unpaved areas

TYPICAL DETAIL: TC-1

NEW	REVISIONS			
1/15/04	7/1/04			



SAINT LOUIS COUNTY
DEPARTMENT OF HIGHWAYS AND TRAFFIC
CLAYTON, MISSOURI

TYPICAL BMP DETAIL
CONSTRUCTION ENTRANCE

REVISION DATE: June 1, 2004

DRAWING TC-1

WASHDOWN STATION

PHYSICAL DESCRIPTION:

An area located at construction entrances designed to wash sediment from the tires and undercarriage of exiting vehicles and prevent sediment from being tracked onto existing roadways.

WHERE BMP IS TO BE INSTALLED:

Across or immediately adjacent to exit paths from unpaved construction sites.

CONDITIONS FOR EFFECTIVE USE OF BMP:

Drainage:	Downstream BMP sized to treat dirty runoff from washdown station

WHEN BMP IS TO BE INSTALLED:

First order of work, along with construction entrance, prior to vehicles or equipment accessing unpaved areas.

INSTALLATION/CONSTRUCTION PROCEDURES:

- ✓ Grade and compact area for drainage under washdown pad
- ✓ Install steel-ribbed plate on frame or other support to allow a 2" drain space
- ✓ Grade and vegetate downstream BMP (v-ditch shown on detail)
- ✓ Install water supply and hose
- ✓ Post sign in advance of station indicating that all exiting vehicles and equipment must use station prior to exiting site

O&M PROCEDURES:

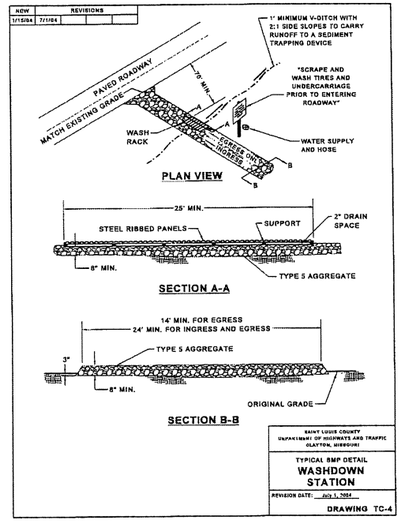
- ✓ Remove sediment daily
- ✓ Repair settled areas
- ✓ Replace rock if necessary to maintain clean surface

SITE CONDITIONS FOR REMOVAL:

Remove when vehicles and equipment will no longer access unpaved areas

TYPICAL DETAIL: TC-4

NEW	REVISIONS			
1/1/04	7/1/04			



SAINT LOUIS COUNTY
DEPARTMENT OF HIGHWAYS AND TRAFFIC
CLAYTON, MISSOURI

TYPICAL BMP DETAIL
WASHDOWN STATION

REVISION DATE: July 1, 2004

DRAWING TC-4

H.T. # 1873
M.S.D. P# 11600–09
BASE MAP # 16–P

March 7, 2011

100% COMPLETE

GEORGE M. STOCK E–25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

2. 2011–03–04 – REVISED PER MSD AND COUNTY COMMENTS
1. 2011–02–21 – REVISED PER MSD AND COUNTY COMMENTS

PARKWAY NORTH HIGH SCHOOL

SWPPP DETAILS

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DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
T.P.S.	12/22/2010	G.M.S.	12/22/2010	210–4670	C4

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

FEE FEE ROAD

N 52°24'59" E 1278.38'

S 62°23'17" E 584.52'

S 62°28'55" E 863.58'

N/F
ST. LOUIS CITY WATER WORKS
DB. 665 PG. 475
LOC.# 16P630012

CONNECT EX. 8" STORM PIPE TO NEW MANHOLE

PROP. M.H.
TOP=515.35
FL=511.50

EXIST. TC 513.80 SG

FL=511.70

FL=512.90

SAWCUT EXISTING CONCRETE CURB AND GUTTER (SEE DETAILS SHEET C4)

DRAIN 1
PROP. PERFORATED ADS N-12 COLLECTOR PIPE AT 0.4 %. SEE SHEET C6 FOR MORE DETAILS.

DRAIN 2
PROP. PERFORATED ADS N-12 COLLECTOR PIPE AT 0.725 %. SEE SHEET C6 FOR MORE DETAILS.

SAWCUT EXISTING CONCRETE CURB AND GUTTER (SEE DETAILS SHEET C4)

PROP. HYDRAWAY 2000 FLAT DRAIN PIPE SYSTEM (TYP)

CHANNEL PROTECTION AREA
7.00 FT. WIDE THE ENTIRE LENGTH OF THE UNDERDRAIN PIPE. CpV PROVIDED = 8,599 C.F. SEE SHEET C6 FOR MORE DETAILS.

WATER QUALITY TREATMENT AREA
7.00 FT. WIDE
WQV PROVIDED = 4,289 C.F.
SEE SHEET C6 FOR MORE DETAILS.

PROP. M.H.
TOP=515.35
FL=504.00

PROP. M.H.
TOP=515.45
FL=503.30

PROP. M.H.
TOP=515.45
FL=503.17±

SCOREBOARD

ELEC. PULL BOX

BLEACHERS

DETAIL

NOTES:

1. PROPOSED FIELD UNDERDRAIN SYSTEM PER MANUFACTURER.
2. GEOTECHNICAL ENGINEER SHALL BE PRESENT TO INSPECT SUBGRADE AND CONFIRM ADEQUACY FOR PLACEMENT OF ROCK FIELD BASE.
3. CONTRACTOR SHALL VERIFY UNDERDRAIN SYSTEM LAYOUT, SPACING, PIPE SIZE AND INSTALLATION PROCEDURE PRIOR TO COMMENCING CONSTRUCTION.
4. PROPOSED CONTOURS SHOWN ARE TO FIELD SUBGRADE.
5. EXISTING LONG JUMP TRACK AND PITS TO BE USED IN PLACE.

EARTHWORK NOTES

Bulk Cut 8,368 ± CUBIC YARDS

Bulk Fill ± CUBIC YARDS (0% SHRINKAGE)

Net 8,368 ± CUBIC YARDS

THE ENGINEER HAS CALCULATED THE ABOVE QUANTITIES OF EARTHWORK TO BE REGARDED AS AN ESTIMATE OF THE BULK MOVEMENT OR REDISTRIBUTION OF SOILS ON THIS PROJECT. AS AN ESTIMATE, THESE QUANTITIES ARE INTENDED FOR GENERAL USE, AND THE ENGINEER ASSUMES NO LIABILITY FOR COST OVERRUNS DUE TO EXCESS EXCAVATED MATERIALS OR SHORTAGES OF FILL.

THE QUANTITIES ESTIMATED FOR EACH OF THE IMPROVEMENT ITEMS LISTED ABOVE ARE BASED UPON THE HORIZONTAL AND VERTICAL LOCATION OF THE IMPROVEMENTS AS PROPOSED ON THE SITE ENGINEERING PLANS PREPARED BY STOCK AND ASSOCIATES CONSULTING ENGINEERS.

THE ENGINEER'S EARTHWORK ESTIMATE DOES NOT INCLUDE ANY OF THE FOLLOWING ITEMS REQUIRING EARTHWORK THAT MAY BE NECESSARY FOR COMPLETION OF THE PROJECT: MISCELLANEOUS UNDERGROUND CONDUITS, INCLUDING SEWER LINES AND WATER MAINS LESS THAN TWENTY-FOUR INCHES IN DIAMETER, STANDARD MANHOLES; PROCESS OR TRANSFER PIPING; ELECTRICAL OR TELEPHONE CONDUITS OR DUCT BANKS; BASES FOR LIGHT STANDARDS; BUILDING FOOTINGS AND FOUNDATIONS, RETAINING WALL BACKFILL, ETC.

THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACTUAL SIZE OF THE FIELD EXCAVATIONS MADE FOR THE INSTALLATION OF UNDERGROUND STRUCTURES, AND AS SUCH, THE ACTUAL QUANTITIES OF EARTHWORK FROM SUCH ITEMS MAY VARY FROM THE ESTIMATE SHOWN ABOVE.

THE ENGINEER ASSUMES NO RESPONSIBILITY FOR COSTS INCURRED DUE TO REMOVAL OF UNSUITABLE MATERIAL AT THIS TIME THERE HAS NOT BEEN ANY GEOTECHNICAL INVESTIGATION.

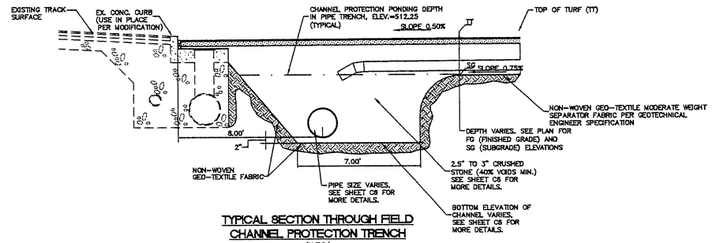
THE ENGINEER HAS MADE THE FOLLOWING ASSUMPTIONS IN THE ABOVE STATED QUANTITIES:

- PROPOSED GRADING TO THE SUBGRADE ("SG") ELEVATIONS NOTED ON THE PLAN.
- PROPOSED CONTOURS REFLECT SUBGRADE ELEVATIONS
- EXCAVATION FOR NEW COLLECTOR PIPES RUNNING ALONG INETERIOR OF TRACT IS "NOT" INCLUDED IN CUT NUMBERS
- TOPSOIL REMOVAL "IS" INCLUDED IN OVERALL CUT NUMBER
- 0% SHRINKAGE
- EXCAVATION FOR CHANNEL PROTECTION TRENCH "IS' INCLUDED IN OVERALL CUT NUMBER

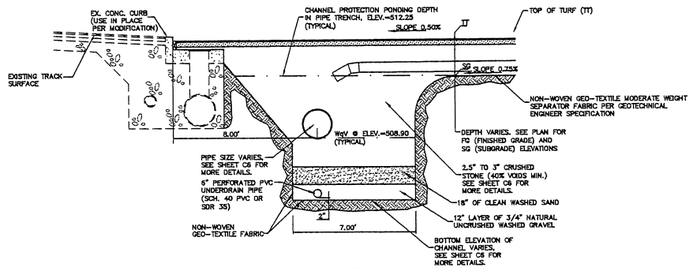
IT IS THE RESPONSIBILITY OF THE GRADING CONTRACTOR TO PERFORM AN INDEPENDENT EARTHWORK ANALYSIS PRIOR TO SUBMISSION OF BID. IN THE EVENT A DISCREPANCY EXISTS THE GRADING CONTRACTOR SHALL NOTIFY ENGINEER OF DISCREPANCY PRIOR TO SUBMISSION OF BID.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO REMOVE AND/OR EXPORT ANY AND ALL MATERIALS NEEDED TO COMPLETE THE FINISHED GRADES AND ELEVATIONS AS SHOWN ON THE ENGINEER'S GRADING PLAN.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN "ALL" GEOTECHNICAL INVESTIGATIONS FROM THE "OWNER". CONTRACTOR SHALL REVIEW AND FAMILIARIZE THEMSELVES WITH RECOMMENDATIONS AS OUTLINED BY THE PROJECT GEOTECHNICAL ENGINEER AND INCORPORATE IT IN THEIR PROPOSED SCOPE OF WORK.



TYPICAL SECTION THROUGH FIELD
CHANNEL PROTECTION TRENCH
(N.T.S.)



TYPICAL SECTION THROUGH FIELD
CHANNEL PROTECTION AND SAND FILTER TRENCH
(N.T.S.)

H.T. # 1873
M.S.D. P# 11600-09
BASE MAP # 16-P

March 7, 2011

100% COMPLETE

2. 2011-03-04 – REVISED PER MSD AND COUNTY COMMENTS
1. 2011-02-21 – REVISED PER MSD AND COUNTY COMMENTS

PARKWAY NORTH HIGH SCHOOL

SITE AND GRADING PLAN

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e-mail: general@stockassoc.com
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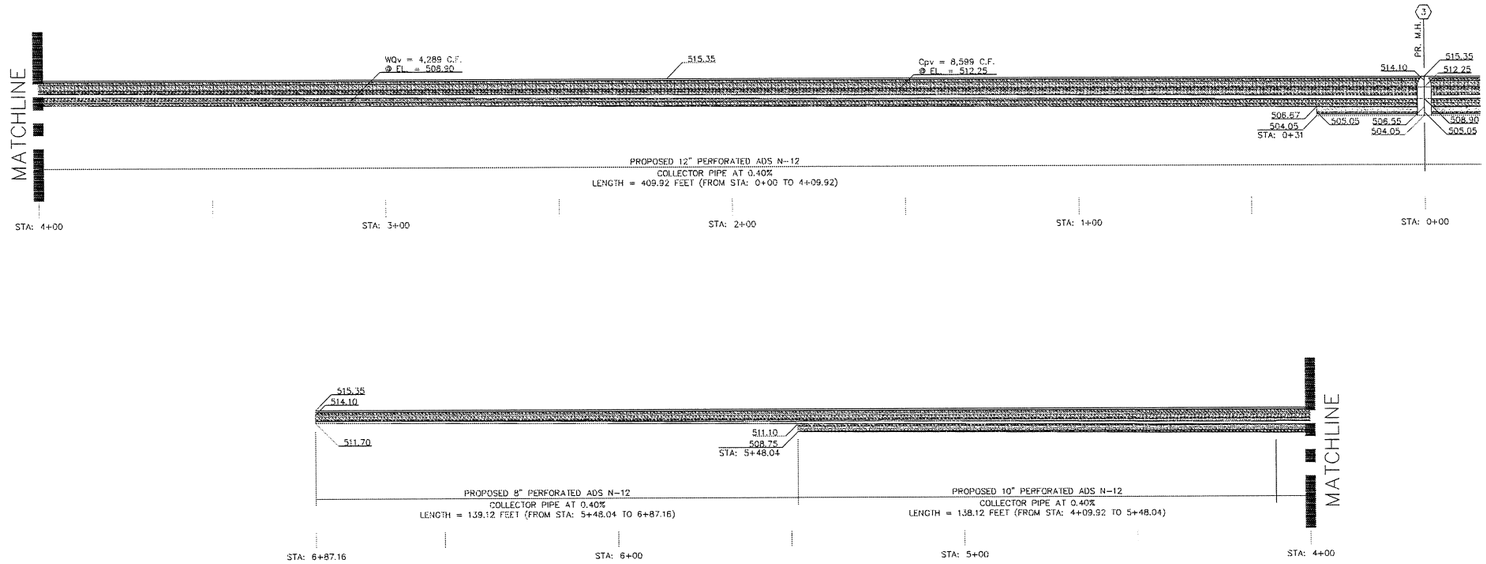
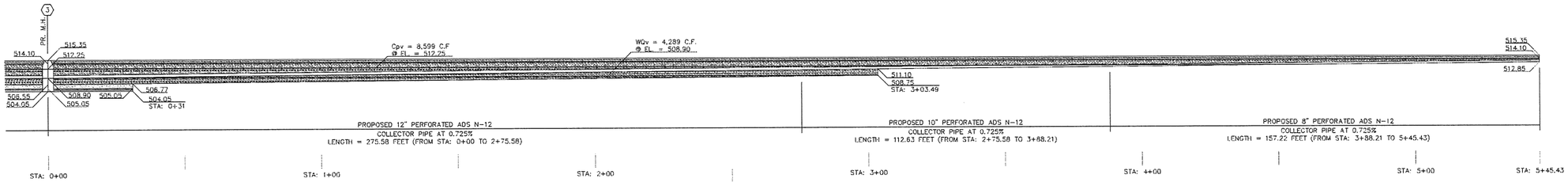
GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
T.P.S.	12/22/2010	G.M.S.	12/22/2010	210-4670	C5



DRAIN 1 – PROFILE

SCALE: 1"=20' H
1"=20' V



DRAIN 2 – PROFILE

SCALE: 1"=20' H
1"=20' V

H.T. # 1873
M.S.D. P# 11600-09
BASE MAP # 16-P
March 7, 2011
100% COMPLETE

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

2. 2011-03-04 – REVISED PER MSD AND COUNTY COMMENTS
1. 2011-02-21 – REVISED PER MSD AND COUNTY COMMENTS

PARKWAY NORTH HIGH SCHOOL

FIELD DETAILS

STOCK & ASSOCIATES
Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530-9100
FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

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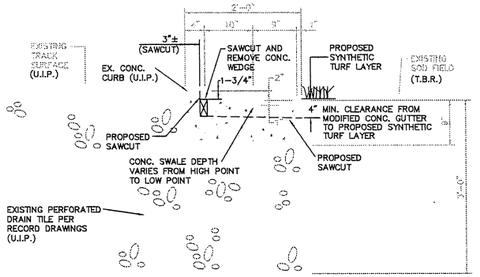
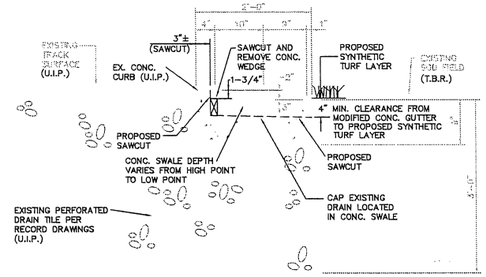
T.P.S.	12/22/2010	G.M.S.	12/22/2010	210-4670	C6



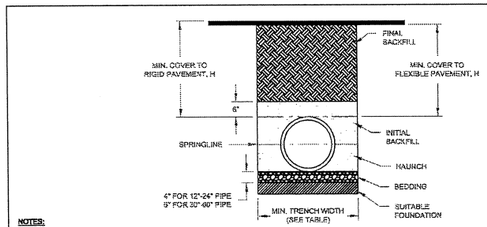
NOTE: EXISTING CONCRETE GUTTER SHOWN ABOVE WAS TAKEN FROM THE RECORD DRAWINGS PROVIDED BY PARKWAY.

EXISTING CONCRETE GUTTER MODIFICATION
GUTTER HIGH POINT (TYP)
(N.T.S.)



NOTE: EXISTING CONCRETE GUTTER SHOWN ABOVE WAS TAKEN FROM THE RECORD DRAWINGS PROVIDED BY PARKWAY.

EXISTING CONCRETE GUTTER MODIFICATION
GUTTER LOW POINT (TYP)
(N.T.S.)



NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION

2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.

3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER, AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.

4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-900mm).

5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
4"	21"
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
42"	72"
48"	80"
54"	88"
60"	96"

MINIMUM RECOMMENDED COVER BASED ON VECHICLE LOADING CONDITIONS

PIPE DIAM.	SURFACE LIVE LOADING CONDITION: H-25	SURFACE LIVE LOADING CONDITION: HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48"	12"	48"
54" - 60"	24"	60"

* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

MINIMUM RECOMMENDED COVER BASED ON RAILWAY LOADING CONDITIONS

PIPE DIAM.	COOPER E-80**
UP TO 24"	24"
30"-36"	36"
42"-60"	48"

** COVER IS MEASURED FROM TOP OF PIPE TO BOTTOM OF RAILWAY TIE.
*** E-80 COVER REQUIREMENTS, ARE ONLY APPLICABLE TO ASTM F 2306 PIPE.

NO.	DESCRIPTION	BY	MM/DD/YY	CHK'D
3	ADDED E-80 INFORMATION	TJR	09/28/07	

ADVANCED DRAINAGE SYSTEMS, INC. (ADS®) HAS PREPARED THIS DETAIL BASED ON INFORMATION PROVIDED TO ADS. THIS DRAWING IS INTENDED TO ASSIST THE CONSTRUCTION TRADE WHO REFERS TO IT IN THEIR BID PREPARATION AND IN THE PERFORMANCE OF THEIR WORK. ADS ASSUMES NO RESPONSIBILITY WHATSOEVER FOR THE INFORMATION SUPPLIED. THE INSTALLATION DETAILS PROVIDED HEREIN ARE GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT. THE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION. IT IS THE DESIGN ENGINEERS RESPONSIBILITY TO ENSURE THE DETAILS PROVIDED HEREIN MEETS OR EXCEEDS THE APPLICABLE NATIONAL, STATE, OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THIS PROJECT.

TYPICAL TRENCH DETAIL — DRAWING NUMBER: STD-101

ADS — 4640 TRUEMAN BLVD. HILLIARD, OHIO 43026

CKD: 10/1/1998 — N.T.S. — 1 OF 1

H.D.P.E. STORM SEWER NOTE:

CONTRACTOR SHALL READ AND FOLLOW SPECIFIC INSTALLATION REQUIREMENTS OF H.D.P.E. PIPE MANUFACTURER BASED UPON PIPE TYPE UTILIZED AND FOLLOW ASTM D-2321 INSTALLATION PROCEDURES AS DIRECTED BY THE ON SITE SUPERVISING GEOTECHNICAL ENGINEER
GEOTECHNICAL ENGINEER SHALL INSPECT INSTALLATIONS TO CONFIRM PROPER INSTALLATION (BEDDING, BACKFILL, COVER, etc) AND CONFIRM SAID INSTALLATION PROCEDURE BASED UPON ON-SITE SOIL TYPE AT PIPE INSTALLATION LOCATIONS ON PROJECT.
IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL SAID RECOMMENDATIONS FOR PROPER INSTALLATION OF H.D.P.E. PIPE SYSTEM INSTALLED.

H.D.P.E. STORM SEWER NOTES:
(IF PERMISSIBLE BY LOCAL AUTHORITY)

1.) STORM SEWER PIPE DESIGNATED AS HIGH DENSITY POLYETHYLENE (H.D.P.E.) SHALL HAVE WATER TIGHT GASKETED JOINTS WITH RUBBER O-RING GASKETS MEETING ASTM F477. O-RING GASKET SHALL BE INSTALLED ON THE SPIGOT END OF PIPE.

2.) 12" TO 36" PIPE SHALL CONFORM TO THE AASHTO M294 CLASSIFICATION "TYPE S" AND 42" TO 48" SHALL CONFORM TO AASHTO MP6-95 CLASSIFICATION "TYPE D."

3.) ALL PIPE JOINTS SHALL CONSIST OF BELL AND SPIGOT JOINING SYSTEM WITH THE BELL COVERING TWO PIPE CORRUGATIONS AS RECOMMENDED IN AASHTO M294.

4.) PIPE MANUFACTURED FOR THIS SPECIFICATION SHALL COMPLY WITH THE REQUIREMENTS FOR TEST METHODS, DIMENSIONS AND MARKINGS FOUND IN AASHTO DESIGNATIONS M252 AND M294. PIPE AND FITTINGS SHALL BE MADE FROM VIRGIN PE COMPOUNDS WHICH CONFORM WITH THE REQUIREMENTS OF CELL CLASS 335420C AS DEFINED AND DESCRIBED IN ASTM D3350.

H.D.P.E. STORM SEWER NOTES CONT'D:
(IF PERMISSIBLE BY LOCAL AUTHORITY)

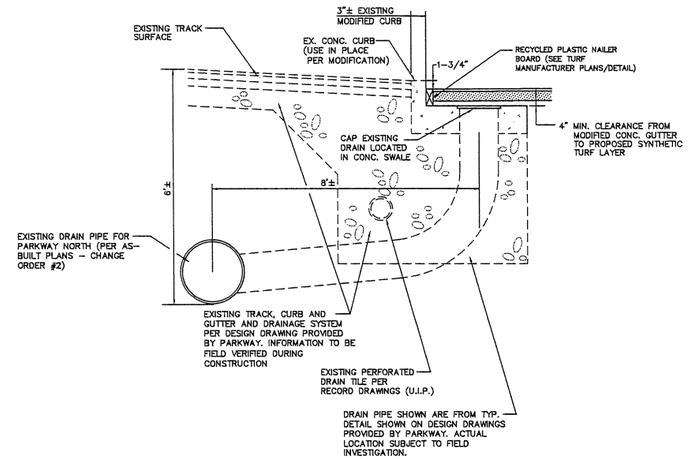
5.) FITTINGS MAY BE EITHER MOLDED OR FABRICATED AND SHALL CONFORM TO THE REQUIREMENTS AASHTO M252 AND M294. THE FITTINGS SHALL NOT REDUCE OR IMPAIR THE OVERALL INTEGRITY OR FUNCTION OF THE PIPE LINE. ONLY FITTINGS SUPPLIED OR RECOMMENDED BY THE PIPE MANUFACTURER SHALL BE USED.

6.) INSTALLATION OF THE PIPE SPECIFIED ABOVE SHALL BE IN ACCORDANCE WITH THE ASTM RECOMMENDED PRACTICE D2321.

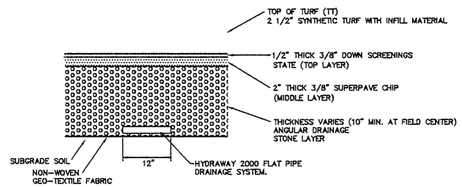
7.) BOTH BELL AND SPIGOT (WITH O-RING GASKET) ENDS OF THE PIPE SHALL BE LUBRICATED AS RECOMMENDED BY MANUFACTURER AND INSERTED TO THE HOMING MARK ON THE SPIGOT END OF THE PIPE.

8.) MINIMUM RECOMMENDED TRENCH WIDTH SHALL BE NOT LESS THAN THE GREATER OF EITHER PIPE OUTSIDE DIAMETER PLUS 16 INCHES OR THE PIPE OUTSIDE DIAMETER TIMES 1.25, PLUS 12 INCHES AS OUTLINED HEREIN:

NOMINAL PIPE DIAMETER	MINIMUM TRENCH WIDTH
8" (200mm)	26"
10" (250mm)	28"
12" (300mm)	30"
15" (375mm)	34"
18" (450mm)	39"
24" (600mm)	48"
30" (750mm)	56"
36" (900mm)	64"
42" (1050mm)	72"
48" (1200mm)	80"
54" (1350mm)	88"
60" (1500mm)	96"



TYPICAL SECTION THROUGH FIELD AT TRACK LOCATION
(N.T.S.)



SUBSURFACE DRAINAGE IN FIELD DETAIL A-A
(N.T.S.)

H.T. # 1873
M.S.D. P# 11600-09
BASE MAP # 16-P

March 7, 2011

100% COMPLETE

GEORGE M. STOCK E-25116
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CERTIFICATE OF AUTHORITY NUMBER: 000996

STOCK AND ASSOCIATES CONSULTING ENGINEERS, INC. AND THE UNDERSIGNED ENGINEER HAVE NO RESPONSIBILITY FOR SERVICES PROVIDED BY OTHERS TO IMPLEMENT THE IMPROVEMENTS SHOWN ON THIS PLAN AND ALL OTHER DRAWINGS WHERE THE UNDERSIGNED ENGINEER'S SEAL APPEARS. THE CONSTRUCTION MEANS AND METHODS ARE THE SOLE RESPONSIBILITY OF THE OWNER AND CONTRACTOR. STOCK AND ASSOCIATES CONSULTING ENGINEERS, INC. HAS NO RESPONSIBILITY TO VERIFY FINAL IMPROVEMENTS AS SHOWN ON THIS PLAN UNLESS SPECIFICALLY ENGAGED AND AUTHORIZED TO DO SO BY THE OWNER OR CONTRACTOR.

2. 2011-03-04 - REVISED PER MSD AND COUNTY COMMENTS
1. 2011-02-21 - REVISED PER MSD AND COUNTY COMMENTS

PARKWAY NORTH HIGH SCHOOL

FIELD DETAILS

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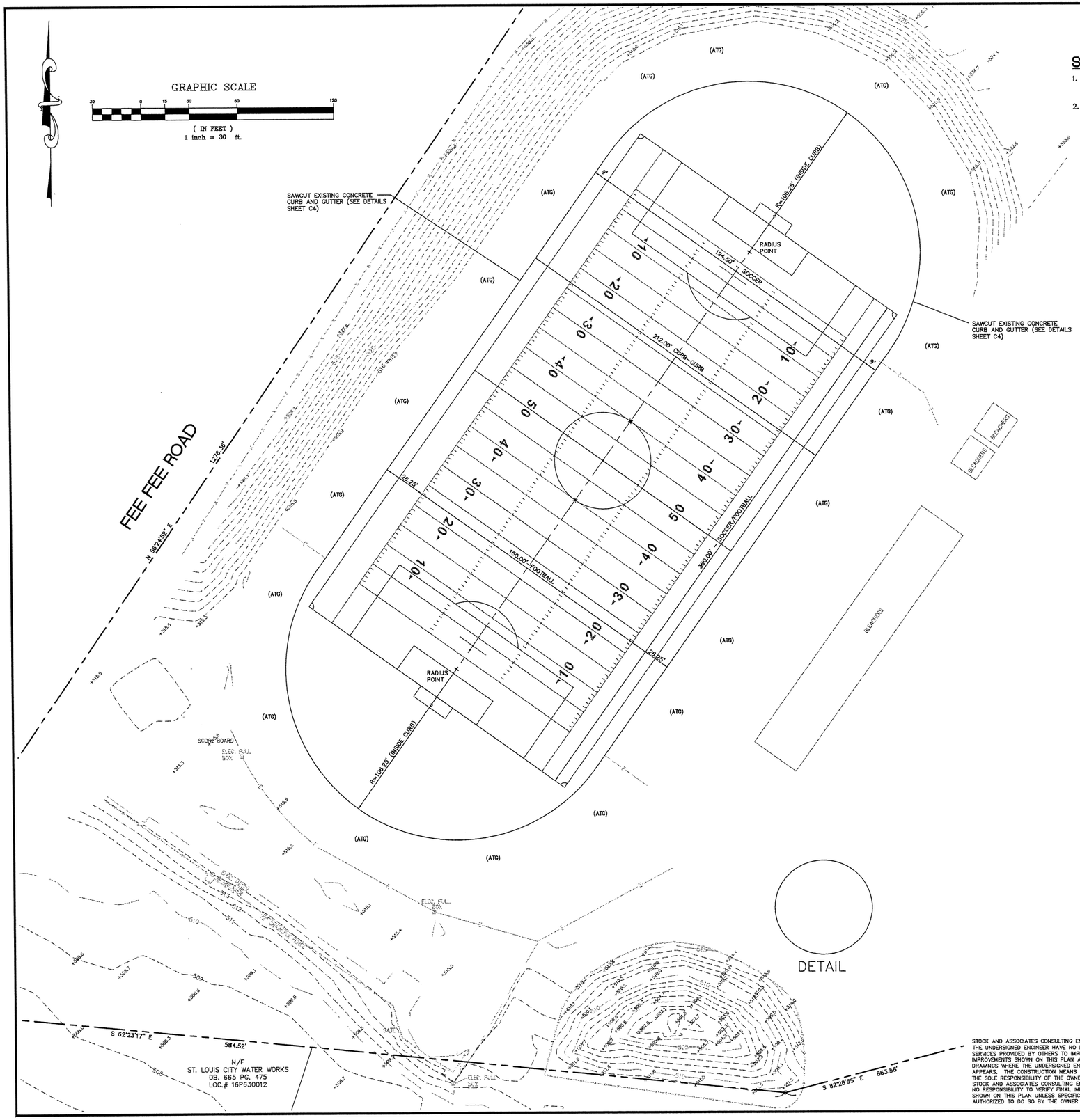

SITE NOTES:

1. PROPOSED FOOTBALL AND SOCCER FIELD STRIPING AND GOAL POSTS PER MISSOURI STATE HIGH SCHOOL ATHLETIC ASSOCATION STANDARDS (MSHSAA).
2. PROPOSED FIELD LOGO, END ZONE LETTERING AND STRIPING COLORS TO BE COORDINATED WITH PARKWAY SCHOOL DISTRICT.

STORM SEWER NOTES

1.) ALL MEANS AND METHODS OF CONSTRUCTION FOR STORM SEWERS SHALL BE IN ACCORDANCE WITH M.S.D. "STANDARD CONSTRUCTION SPECIFICATIONS FOR SEWERS AND DRAINAGE FACILITIES", 2009.

2.) ALL CONCRETE SHALL BE REINFORCED, AND CONFORM TO A.S.T.M. DESIGNATION C76–80 CLASS III UNLESS NOTED.

3.) TYPE "C" BEDDING PER M.S.D. AND ST. LOUIS COUNTY STANDARDS IS REQUIRED FOR PIPES IN ROCK.

4.) ALL TRENCHES UNDER AREAS TO BE PAVED AND UNDER EXISTING PAVING SHALL BE GRANULARLY FILLED WITH 3/4" MINUS CRUSHED LIMESTONE ONLY. BACKFILL SHALL BE PLACED IN ACCORDANCE WITH M.S.D. AND ST. LOUIS COUNTY STANDARDS.

5.) ALL TRENCH BACKFILLS UNDER PAVEMENT WITHIN THE PUBLIC RIGHT–OF–WAY SHALL BE GRANULAR BACKFILLED. TRENCH BACKFILLS UNDER PAVED AREAS, OUTSIDE OF PUBLIC RIGHT–OF–WAY SHALL BE GRANULAR BACKFILL IN LIEU OF THE EARTH BACKFILL COMPACTED TO 90 PERCENT OF THE MODIFIED AASHTO T–180 COMPACTION TEST A.S.T.M. D–1557.

6.) JETTING IS NOT AN ACCEPTABLE METHOD OF ACHIEVING BACKFILL COMPACTION. ALL BACKFILL MATERIAL SHALL BE MECHANICALLY COMPACTED TO AT LEAST 95 PERCENT OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY.

7.) FOR SEWER PIPE (STORM, SANITARY AND COMBINED) WITH A DESIGN GRADE LESS THAN ONE PERCENT (1%), VERIFICATION OF THE PIPE GRADE WILL BE REQUIRED FOR EACH INSTALLED REACH OF SEWER, PRIOR TO ANY SURFACE RESTORATION OR INSTALLATION OF ANY SURFACE IMPROVEMENTS. THE CONTRACTOR'S FIELD SUPERVISOR WILL BE REQUIRED TO PROVIDE DAILY DOCUMENTATION VERIFYING THAT THE AS–BUILT PIPE GRADE MEETS THE DESIGN GRADE THROUGH THE SUBMITTAL OF SIGNED CUT SHEETS TO THE MSD INSPECTOR UPON REQUEST.

FIELD SURVEYED VERIFICATION MUST BE MADE UNDER THE DIRECTION OF A LICENSED LAND SURVEYOR OR REGISTERED ENGINEER. THE CONTRACTOR WILL BE REQUIRED TO REMOVE AND REPLACE ANY SEWER REACH HAVING AN AS–BUILT GRADE WHICH IS FLATTER THAN THE DESIGN GRADE BY MORE THAN 0.1%. SEWERS WITH GRADE GREATER THAN THE DESIGN SLOPE MAY BE LEFT IN PLACE, PROVIDED NO OTHER SEWER GRADE IS REDUCED BY THIS VARIANCE IN THE AS–BUILT GRADE.

MSD ALSO RESERVES THE RIGHT TO REQUIRE THE CONTRACTOR TO REMOVE AND REPLACE ANY SEWER (AT ANY TIME PRIOR TO CONSTRUCTION APPROVAL) FOR WHICH THE AS–BUILT GRADE DOES NOT COMPLY WITH THE GRADE TOLERANCE STATED IN THE ABOVE PARAGRAPH.

THE SEWER CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COSTS ASSOCIATED WITH THE FIELD VERIFICATION OF THE SEWER GRADE, OR REMOVAL AND REPLACEMENT OF THE SEWER PIPE OR ASSOCIATED APPURTENANCES.

8.) MAINTENANCE OF THE SEWERS DESIGNATED AS "PUBLIC" SHALL BE THE RESPONSIBILITY OF THE METROPOLITAN ST. LOUIS SEWER DISTRICT UPON DEDICATION OF THE SEWERS TO THE DISTRICT.

9.) STRUCTURES NOTED TO BE ADJUSTED TO FINISH GRADE SHALL BE ADJUSTED BY EITHER REMOVAL OR PLACEMENT OF GRADE RINGS, BRICK WORK, OR MORTAR BEDDING BY SUCH METHODS AS APPROVED BY M.S.D. "STANDARD CONSTRUCTION SPECIFICATIONS", 2009. AND ST. LOUIS COUNTY SPECIFICATIONS FOR STORM SEWERS.

10.) SOILS ENGINEER WILL VERIFY THAT ALL COMPRESSIBLE MATERIAL HAS BEEN REMOVED PRIOR TO FILL PLACEMENT AND THAT ALL FILL UNDER SANITARY AND STORM SEWER LINES CONSTRUCTED ABOVE ORIGINAL GRADE, HAS BEEN COMPACTED TO 90% OF "MODIFIED PROCTOR." FILL IS TO BE PLACED IN A MAXIMUM OF 9" LIFTS. TESTS SHALL BE TAKEN AT A MAXIMUM OF 50 FOOT INTERVALS ALONG THE ROUTE OF THE PIPE, AT A MAXIMUM OF 2 FEET VERTICALLY, AND LATERALLY ON EACH SIDE OF THE PIPE AT A DISTANCE EQUAL TO THE DEPTH OF FILL OVER THE PIPE. A COPY OF THESE RESULTS WILL BE SUBMITTED TO MSD PRIOR TO CONSTRUCTION.

GENERAL NOTES:

1.) ALL UTILITIES SHOWN HAVE BEEN LOCATED BY THE ENGINEER FROM AVAILABLE RECORDS. THEIR LOCATION SHOULD BE CONSIDERED APPROXIMATE. THE CONTRACTOR HAS THE RESPONSIBILITY TO NOTIFY ALL UTILITY COMPANIES, PRIOR TO CONSTRUCTION, TO HAVE EXISTING UTILITIES FIELD LOCATED.

2.) GRADING CONTRACTOR SHALL INSTALL SILTATION CONTROL PRIOR TO STARTING THE GRADING. ADDITIONAL SILTATION CONTROL DEVICES SHALL BE INSTALLED AS DIRECTED BY ST. LOUIS COUNTY.

3.) ALL MATERIALS AND METHODS OF CONSTRUCTION TO MEET THE CURRENT STANDARDS AND SPECIFICATIONS OF ST. LOUIS COUNTY AND THE METROPOLITAN ST. LOUIS SEWER DISTRICT (MSD).

4.) GRADING & STORM WATER PER 2009 M.S.D. STANDARD CONSTRUCTION SPECIFICATIONS AND DETAILS.

5.) ALL GRADED AREAS SHALL BE PROTECTED FROM EROSION BY EROSION CONTROL DEVICES AND/OR SEEDING AND MULCHING.

6.) ALL FILLS AND BACKFILLS SHALL BE MADE OF SELECTED EARTH MATERIALS, FREE FROM BROKEN MASONRY, ROCK, FROZEN EARTH, RUBBISH, ORGANIC MATERIAL AND DEBRIS.

7.) GRADING CONTRACTOR SHALL KEEP EXISTING ROADWAYS CLEAN OF MUD AND DEBRIS AT ALL TIMES.

8.) NO GRADE SHALL EXCEED 3:1 SLOPE, EXCEPT AS NOTED AND APPROVED PER GEOTECHNICAL ENGINEER.

9.) ALL LANDSCAPE AREAS TO BE FILLED WITH A MINIMUM OF 6" OF TOPSOIL

10.) ALL LANDSCAPED AREAS DISTURBED BY OFF–SITE WORK SHALL BE IMMEDIATELY SEEDED OR SODDED.

11.) ADEQUATE TEMPORARY OFF–STREET PARKING FOR CONSTRUCTION EMPLOYEES SHALL BE PROVIDED. PARKING ON NON–SURFACED AREAS SHALL BE PROHIBITED IN ORDER TO ELIMINATE THE CONDITION WHEREBY MUD FROM CONSTRUCTION AND EMPLOYEES' VEHICLES IS TRACKED ONTO THE PAVEMENT CAUSING HAZARDOUS ROADWAY AND DRIVEWAY CONDITIONS

12.) ALL PUBLIC SEWER CONSTRUCTION MUST CONFORM TO 2009 M.S.D. "STANDARD CONSTRUCTION SPECIFICATIONS AND DETAILS"

13.) THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM SURVEY AND AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, NUMBER OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UTILITIES, SHOWN OR NOT SHOWN, AND SAID UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319, RSMO.

14.) CLEARING TECHNIQUES THAT RETAIN EXISTING VEGETATION TO THE MAXIMUM EXTENT PRACTICABLE SHALL BE USED AND THE TIME PERIOD FOR DISTURBED AREAS TO BE WITHOUT VEGETATIVE COVER SHALL BE MINIMIZED TO THE EXTENT PRACTICAL.

15.) THE DEVELOPER IS ADVISED THAT UTILITY COMPANIES WILL REQUIRE COMPENSATION FOR RELOCATION OF THEIR UTILITY FACILITIES WITHIN PUBLIC ROAD RIGHT–OF–WAY. UTILITY RELOCATION COST SHALL BE CONSIDERED THE DEVELOPER'S RESPONSIBILITY.

16.) THE DEVELOPER SHOULD ALSO BE AWARE OF EXTENSIVE DELAYS IN UTILITY COMPANY RELOCATION AND ADJUSTMENTS. SUCH DELAYS WILL NOT CONSTITUTE A CAUSE TO ALLOW OCCUPANCY PRIOR TO COMPLETION OF IMPROVEMENTS.

17.) AREAS SHALL BE SEEDED AFTER CLEARING AND GRUBBING WHEN NO ACTIVITY WILL OCCUR WITHIN THIRTY (30) DAYS.

18.) ALL OFFSITE PROPERTY OWNERS SHALL BE GIVEN 48 HOURS NOTICE IN ADVANCE OF ANY WORK.

19.) ANY DISTURBED OFF SITE PROPERTY (i.e. BUSHES, FENCES, MAILBOXES, etc..) SHALL BE REPLACED IN KIND, AT THE DEVELOPER'S EXPENSE.

20.) ALL PROPOSED UTILITIES TO BE LOCATED UNDERGROUND.

21.) ALL SIDEWALKS TO BE CONSTRUCTED TO ST. LOUIS COUNTY ADA STANDARDS.

22.) DRIVEWAYS AND ENTRANCES PER ST. LOUIS COUNTY STANDARDS.

23.) SITE SIGNAGE SHALL COMPLY WITH ST. LOUIS COUNTY SIGN ORDINANCE.

24.) STORMWATER SHALL BE DISCHARGED AT AN ADEQUATE NATURAL DISCHARGE POINT. SINKHOLES ARE NOT ADEQUATE NATURAL DISCHARGE POINTS.

25.) IT IS NOT WARRANTED THAT THIS PLAT CONTAINS COMPLETE INFORMATION REGARDING EASEMENTS, RESERVATIONS, RESTRICTIONS, RIGHTS–OF–WAY, BUILDING LINES, AND OTHER ENCUMBRANCES. FOR COMPLETE INFORMATION, A TITLE OPINION OR COMMITMENT FOR TITLE INSURANCE SHOULD BE OBTAINED.

26.) THIS PLAN IS SUBJECT TO ALL LOCAL, STATE AND FEDERAL REGULATIONS. THERE HAS BEEN NO WETLAND DELINEATION, GEOTECHNICAL INVESTIGATION OR ENVIRONMENTAL DATA PROVIDED TO THIS ENGINEER PRIOR TO DESIGNING THIS PLAN.

27.) FOOTBALL AND SOCCER FIELD STRIPING PER MISSOURI STATE HIGH SCHOOL ATHLETIC ASSOCATIONS REGULATIONS.

28.) SOCCER FIELD STRIPING TO BE HELD MINIMUM OF 9 FEET FROM EDGE OF INNER CURBERS INSIDE OF RUNNING TRACK.

29.) INTERNAL (PRIVATE) STORM SEWERS WILL REQUIRE A SEPARATE DRAINLAYER PERMIT FROM ST. LOUIS COUNTY DEPARTMENT OF PUBLIC WORKS.

30.) TRUCKS SHALL NOT EXCEED POSTED WEIGHT LIMITS FOR ST. LOUIS COUNTY BRIDGES DURING HAUL OPERATIONS.

31.) SEDIMENT SHALL BE WASHED FROM ALL VEHICLES AT WASHDOWN STATION PRIOR TO LEAVING SITE. NO TRACKING OF MUD ONTO COUNTY ROADS SHALL BE ALLOWED.

32.) EXISTING INFORMATION SHOWN ON THE PLANS IS A COMBINATION OF RECORD DRAWINGS PROVIDED BY PARKWAY AND AN ACTUAL FIELD SURVEY PERFORMED BY STOCK AND ASSOCIATES. THE TOPOGRAPHIC SURVEY PROVIDED GROUND ELEVATIONS AND LOCATIONS OF EXISTING (VISIBLE) IMPROVMENTS. RECORD DRAWINGS WERE USED TO SHOW UNDERGROUND UTILITES AND DRAINAGE SYSTEMS THAT COULD NOT BE VERIFIED FROM THE SURFACE. CONTRACTOR SHOULD USE CAUTION DURING CONSTRUCTION AND REPORT ANY FINDINGS THAT ARE NOT SHOWN ON THE PLAN TO THE ENGINEER IMEDIATELY.

33.) NO GRADING SHALL OCCER ON THE SITE UNTIL A GRADING PERMIT IS ISSUED.

H.T. # 1873
M.S.D. P# 11600–09
BASE MAP # 16–P

March 7, 2011

100% COMPLETE

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CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

2. 2011–03–04 – REVISED PER MSD AND COUNTY COMMENTS
1. 2011–02–21 – REVISED PER MSD AND COUNTY COMMENTS

PARKWAY NORTH HIGH SCHOOL

SITE GEOMETRICS / SPECIFICATIONS

STOCK & ASSOCIATES
Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530–9100
FAX (636) 530–9130
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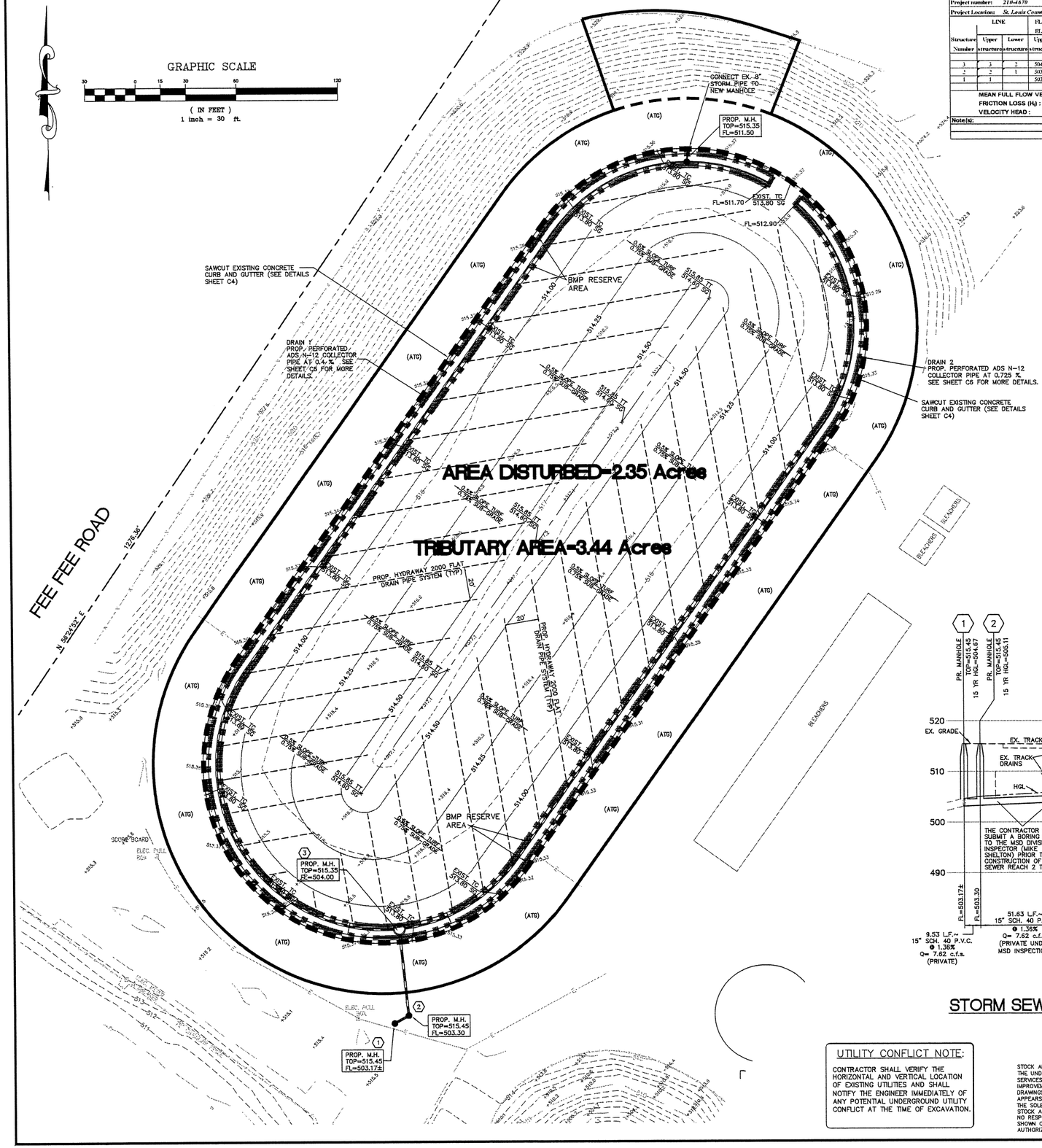
DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
T.P.S.	12/22/2010	G.M.S.	12/22/2010	210–4670	C8

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.



Project name:	Parkway North High School	Calculated By:	E.A.F.
Project number:	210-4670	Checked By:	G.M.S.
Project Location:	St. Louis County, Missouri	Date:	2/18/2011

15 year - 20 minute

Head Coefficients:

5° - 0.06	20° - 0.24	35° - 0.4	50° - 0.50	65° - 0.57	80° - 0.65	
10° = 0.11	25° = 0.30	40° = 0.43	55° = 0.52	70° = 0.60	85° = 0.67	
15° - 0.18	30° - 0.35	45° - 0.47	60° - 0.55	75° - 0.62	90° - 0.70	

Structure Number	Upper structure	Lower structure	FLOW LINE ELEVATIONS Upper structure	Lower structure	Length (ft)	Headline Grade ft/ft	Pipe Size (in.)	Full Flow Cap. (cfs)	Total (Q) (cfs)	Mean Full Flow Vel.(V) (ft/s)	Bend Coef.	Curve Coef.	Velocity Head (V_h) (ft)	QV$_h$ (ft^3/s)	Pipe Coef. (n)	HEAD LOSS Eir (ft)	Junction (ft)	Bend (ft)	Curve (ft)	Total H_{tot}	Hydraulic Elevations Upper H.G. + Dia.	Lower H.G. +Ht	Lower H.G.	Structure Upper H.E. + H_{tot}	TOP Structure Elevation	Free Board	Structure Number
3	3	2	504.00	503.30	51.63	0.0136	15	8.91	7.62	6.21	0.00	0.00	0.60	4.56	0.011	0.51	0.60	0.00	0.00	0.60	505.25	505.63	505.11	506.22	515.35	9.13	3
2	2	1	503.30	503.17	9.53	0.0136	15	8.94	7.62	6.21	0.58	0.00	0.60	4.56	0.011	0.09	0.00	0.35	0.00	0.35	504.55	504.76	504.67	505.11	515.45	10.34	2
1	1		503.17																				ASSUME TOP OF PIPE	504.67			1

MEAN FULL FLOW VELOCITY $= Q_{ACT}/A_{PIPE}$

FRICTION LOSS (H_f) : $Hf = 2.87\ n^2\ (LV^2/d^{1.33})$

VELOCITY HEAD : $V_h = V^2/2g$

JUNCTION LOSES (JUNC.) = [$Q_{out}V_{hout}$ - Sum ($Q_{in}V_{in}$)]x1.33/[Q_{out}]

BEND LOSES (BEND) = (V^2) * ANGLE COEFFICIENT

CURVE LOSS=V_h*CURVE COEFFICIENT

Note(s):

Note:
1. IF MORE THAN ONE INCOMING LINE, CALC. EACH BEND LOSS AND ADD TOGETHER.
2. NO STRUCTURE LOSES TO BE CALCULATED AT A DROP
3. IF $QV_{IN(tot)} > QV_{Hout}$, NO JUNCTION LOSES TO BE CALCULATED.

Revisions:

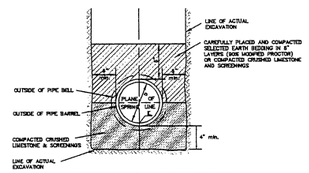
Stormwater Management Tracking Data

Project #	App. Date	Comments	Add. Imp. Area (Acres)	Diff. Runoff	Qp Provided (Y/N)	Dist. Area (Acres)	WQv Provided (Y/N)	CPv Provided (Y/N)
P-11600-00	9/8/1982	Parkway North Sr. High School						
-01	7/31/1986	Parkway North Sr. High School						
-02	10/16/1991	Parkway North Sr. High School						
-03		Dead 02/05/2000						
-04	6/2/2000	Parkway North Sr. High School						
-05	8/30/2000	New Athletic Field/Detention Basin	0.00	0.00	Y			
-06	3/30/2001	Challenge Course	0.00	0.00	N			
-07	6/18/2004	Parkway North Sr. High School						
-08	3/17/2010	Parkway North Sr. High School						
-09		Synthetic Turf Field	0.00	0.00	N	2.35	Y	Y
-10	2/18/2011	Sanitary Sewer Replacement	0.00	0.00	N	0.04	N	N
Cumulative increase in Runoff since January 2000				0.00				
Cumulative Disturbance since October 2006						2.39		

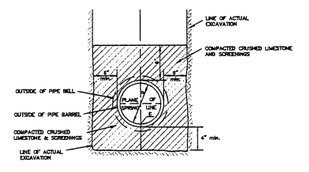
LIMITS OF DISTURBANCE:
THE CONTRACTOR SHALL STAY WITHIN THE LIMITS OF DISTURBANCE AS SHOWN ON THE PLANS AND MINIMIZE DISTURBANCE WITHIN THE WORK AREA WHEREVER POSSIBLE.

STORMWATER MANAGEMENT – WATER QUALITY NOTE
LAND AREA DISTURBED = 2.35 Ac.
LAND AREA TRIBUTARY TO SAND FILTER = 3.44 Ac.
PREVIOUSLY UNTREATED AREA FOR FUTURE CREDIT = 0.96 Ac. @ 100 IMPERVIOUS (TRACK) AND 0.13 Ac. @ 5% IMPERVIOUS (GRASS)

ANY FUTURE LAND DISTURBANCE AND/OR INCREASE IN IMPERVIOUS AREA ON THIS SITE MAY REQUIRE ADDITIONAL STORM WATER MANAGEMENT PER MSD REGULATIONS IN PLACE AT THAT TIME. (INCLUDING TOTAL LAND DISTURBANCE OR IMPERVIOUSNESS ADDED ON THIS PLAN, P-11600-09)



PIPE BEDDING CLASS "C"
(MODIFIED FOR REINFORCED CONCRETE PIPE)



PIPE BEDDING CLASS "C"
(FOR ALL PIPE EXCEPT REINFORCED CONCRETE PIPE)

PIPE BEDDING DETAILS
(n.t.s.)

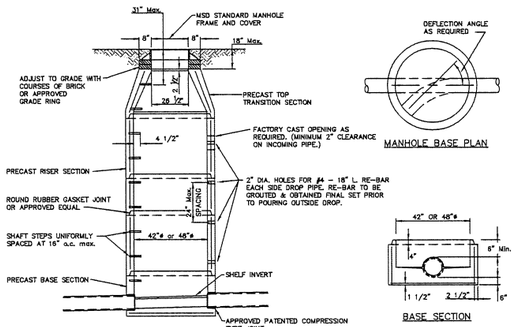
STORM SEWER PROFILE
SCALE: 1"=30' H
1"=10' V

ENGINEER APPROVED SHOP DRAWINGS WITH SIGNED AND SEALED HS 20 CALCULATIONS MUST BE SUBMITTED TO MSD FOR REVIEW PRIOR TO THE CONSTRUCTION OF STRUCTURE #3.
MSD CONTACT: MIKE SHELTON (314) 768-6387.

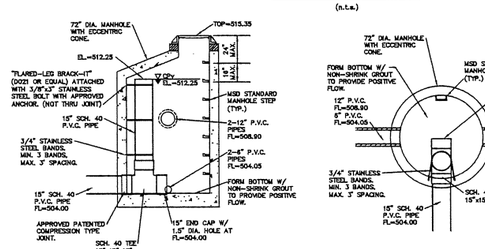
LINETYPE LEGEND
EXISTING GRADE.....
PROPOSED GRADE.....
15 YR HYDRAULIC GRADE...
PROPOSED PAVEMENT.....
GRANULAR BACKFILL.....
COMPACTED FILL.....

BMP/STORM WATER CREDIT SUMMARY TABLE

Area	Acres	Description of Area	BMP	Stormwater Credit	WQv Reduction Type (1 of 3 Types)	WQv Required (Cu. Ft.)	WQv Provided (Cu. Ft.)
1	3.44	SYNTHETIC TURF & TRACK	SAND FILTER	-	654	4,286	4,289
Total	3.44						



PRECAST MANHOLE
(n.t.s.)



STRUCTURE #3 DETAIL
SCALE: 1"=5'

UTILITY CONFLICT NOTE:
CONTRACTOR SHALL VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF EXISTING UTILITIES AND SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY POTENTIAL UNDERGROUND UTILITY CONFLICT AT THE TIME OF EXCAVATION.

H.T. # 1873
M.S.D. P# 11600-09
BASE MAP # 16-P

March 7, 2011

100% COMPLETE

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY NUMBER: 000996

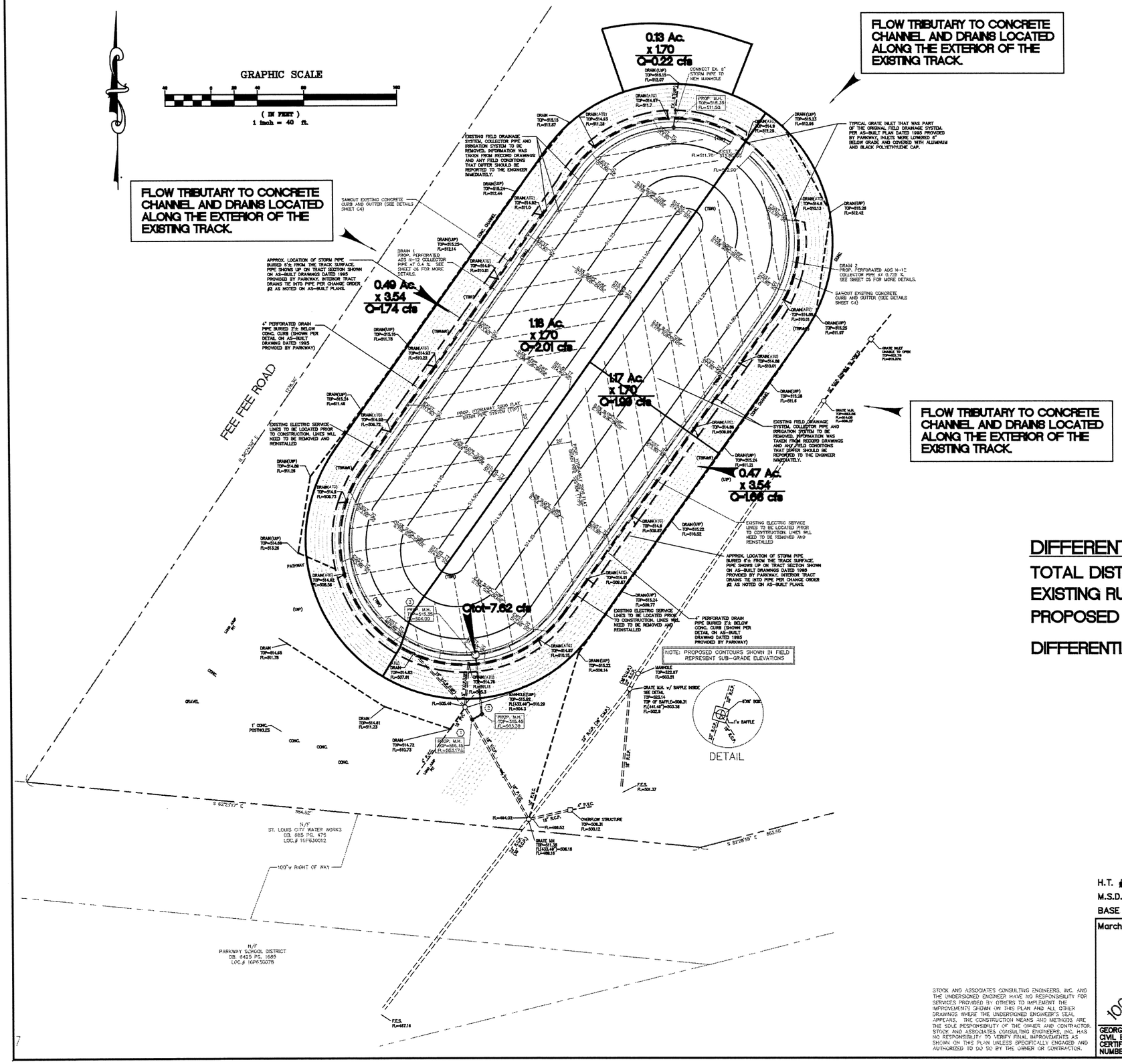
2. 2011-03-04 – REVISED PER MSD AND COUNTY COMMENTS
1. 2011-02-21 – REVISED PER MSD AND COUNTY COMMENTS

PARKWAY NORTH HIGH SCHOOL

WATER QUALITY PLAN / DETAILS

STOCK & ASSOCIATES
Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530-9100
FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
T.P.S.	12/22/2010	G.M.S.	12/22/2010	210-4670	C9



DIFFERENTIAL RUNOFF CALCULATIONS:

TOTAL DISTURBED AREA	= 2.35 Acres ±
EXISTING RUNOFF	= 2.35 Ac. x 1.70 = 4.00 cfs
PROPOSED RUNOFF	= 2.35 Ac. x 1.70 = 4.00 cfs
DIFFERENTIAL	= 4.00 - 4.00 = 0 cfs

FOR DRAINAGE AREAS ONLY
NOT FOR CONSTRUCTION

H.T. # 1873
M.S.D. P# 11600-09
BASE MAP # 16-P

March 7, 2011

100% COMPLETE

GEORGE M. STOCK E-25116
CIVIL ENGINEER
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STOCK AND ASSOCIATES CONSULTING ENGINEERS, INC. AND THE UNDERSIGNED ENGINEER HAVE NO RESPONSIBILITY FOR SERVICES PROVIDED BY OTHERS TO IMPLEMENT THE IMPROVEMENTS SHOWN ON THIS PLAN AND ALL OTHER DRAWINGS WHERE THE UNDERSIGNED ENGINEER'S SEAL APPEARS. THE CONSTRUCTION MEANS AND METHODS ARE THE SOLE RESPONSIBILITY OF THE OWNER AND CONTRACTOR. STOCK AND ASSOCIATES CONSULTING ENGINEERS, INC. HAS NO RESPONSIBILITY TO VERIFY FINAL IMPROVEMENTS AS SHOWN ON THIS PLAN UNLESS SPECIFICALLY ENGAGED AND AUTHORIZED TO DO SO BY THE OWNER OR CONTRACTOR.

2. 2011-03-04 - REVISED PER MSD AND COUNTY COMMENTS
1. 2011-02-21 - REVISED PER MSD AND COUNTY COMMENTS

PARKWAY NORTH HIGH SCHOOL

DRAINAGE AREA MAP

STOCK & ASSOCIATES
Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530-9100
FAX (636) 530-9130
e-mail: generals@stockassoc.com
Web: www.stockassoc.com

DRAWN BY	DATE	CHECKED BY	DATE	JOB NUMBER	SHEET
T.P.S.	12/22/2010	G.M.S.	12/22/2010	210-4670	C10

SECTION 10

SOUTH HIGH

BMP ORIGINAL PROJECT INFORMATION

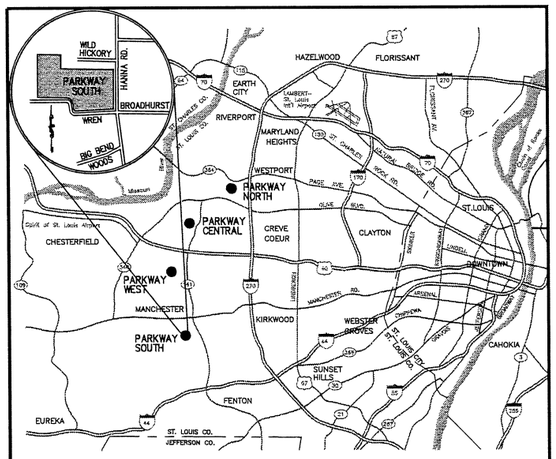
PARKWAY SOUTH HIGH SCHOOL

A TRACT OF LAND BEING PART OF HAUHART HOME PLACE SUBDIVISION
BEING OF LOTS 17,18 & 23 AND PARTS OF LOTS 19 & 20 & CANARY DRIVE VACATED PART
LOCATED IN SECTION 1, TOWNSHIP 44 NORTH, RANGE 5 EAST
CITY OF MANCHESTER, ST. LOUIS COUNTY, MISSOURI

PARKWAY SCHOOL DISTRICT

455 North Woods Mill Road Chesterfield, Missouri 63017 (314) 415-8100 (314) 415-8207 Fax

SYNTHETIC TURF FIELD IMPROVEMENTS



LOCATION MAP
(NOT TO SCALE)

LEGEND

ELECTRIC MANHOLE	(E)
EXISTING SANITARY SEWER	
EXISTING STORM SEWER	
EXISTING TREE	12"
EXISTING BUILDING	
EXISTING CONTOUR	533
SPOT ELEVATION	+533.25
EXISTING UTILITIES	G—W—T—E
PROPOSED CONTOUR	530
PROPOSED SPOT	×530.50
PROPOSED STORM SEWER	
PROPOSED SANITARY SEWER	SS
FIRE HYDRANT	
LIGHT STANDARD	
BUSH	
SIGN	
NOTES PARKING SPACES	(18)
GUY WIRE	
POWER POLE	
WATER MANHOLE	(W)
WATER VALVE	WV
DENOTES RECORD INFORMATION	( )
HANDICAPPED PARKING	
PHONE MANHOLE	(P)
OVERHEAD ELECTRIC	OE
UNDERGROUND TELEPHONE	UT
CONCRETE	CONC
ASPHALT	ASPH
POLYVINYL CHLORIDE	PVC
DENOTES WITH	W/
TRANSFORMER	T
SANITARY	SAN
SWALE	
CHAIN-LINK FENCE	
TRAFFIC FLOW	
SAWCUT	
FLOODWAY	

ABBREVIATIONS

W	– WATER	DB	– DEED BOOK
E	– ELECTRIC	PB	– PLAT BOOK
OE	– OVERHEAD ELECTRIC	PG	– PAGE
UW	– UNDERGROUND ELECTRIC	(_'W)	– RIGHT-OF-WAY WIDTH
G	– GAS	(REC)	– RECORD INFORMATION
T	– TELEPHONE	FT	– FEET
TBR	– TO BE REMOVED	N/F	– NOW OR FORMERLY
TBR & R	– TO BE REMOVED AND REPLACED	FND	– FOUND
UIP	– USE IN PLACE	SQ	– SQUARE
TBA	– TO BE ADJUSTED	CO	– CLEANOUT
BC	– BACK OF CURB	MH	– MANHOLE
FC	– FACE OF CURB	AI	– AREA INLET
TW	– TOP OF WALL	CI	– CURB INLET
BW	– BOTTOM OF WALL	GI	– GRATE INLET
PVMT	– PAVEMENT	YD	– YARD DRAIN
ASPH	– ASPHALT	PVC	– POLYVINYL CHLORIDE PIPE
CONC	– CONCRETE	RCP	– REINFORCED CONCRETE PIPE
GRND	– GROUND	CMP	– CORRUGATED METAL PIPE
FG	– FINISHED GRADE	VCP	– CLAY PIPE
FF	– FINISHED FLOOR	FL	– FLOWLINE
LL	– LOWER LEVEL	TS	– TAILSTAKE
TT	– TOP OF TURF	ELEV, EL	– ELEVATION
TC	– TOP OF CURB	PROP, PR	– PROPOSED
SG	– SUBGRADE	EXIST, EX	– EXISTING
		TYP	– TYPICAL

INDEX

SITE INFORMATION

OWNER	=	PARKWAY SCHOOL DISTRICT
SITE ADDRESS	=	801 HANNA ROAD MANCHESTER, MISSOURI 63021
LOCATOR NUMBER	=	24Q43-0171
EXISTING ZONING	=	"R-3" RESIDENTIAL
SETBACKS:		FRONT YARD SETBACK = 20 FEET SIDE YARD SETBACK = 8 FEET REAR YARD SETBACK = 15 FEET
FIRE DISTRICT	=	WEST COUNTY EMS
SCHOOL DISTRICT	=	PARKWAY
SEWER DISTRICT	=	METROPOLITAN ST. LOUIS SEWER DIST.
WATER SERVICE	=	MISSOURI AMERICAN WATER
GAS SERVICE	=	LACLEDE GAS
ELECTRIC SERVICE	=	AMEREN UE
PHONE SERVICE	=	SBC/AT&T
FLOOD MAPS	=	29189C0259H
WATERSHED	=	FISHPOT CREEK
WUNNENBERG'S NO.	=	PG. 33, GRID AA-25

UTILITY CONTACTS:

CHARTER COMMUNICATION
941 CHARTER COMMONS
TOWN & COUNTRY, MO 63017
ATTN: SARA BISHOP
PHONE: 636.387.6633

AMEREN UE
12121 DORSETT ROAD
MARYLAND HEIGHTS, MO 63043
ATTN: RANDY HUNT
PHONE: 314.344.9504

LACLEDE GAS COMPANY
3950 FOREST PARK AVENUE
ST. LOUIS, MO 63108
ATTN: KELI KRAMER
PHONE: 314.342.0678

AT&T TELEPHONE COMPANY
14780 MANCHESTER ROAD
BALLWIN, MO 63011
ATTN: MARK ADAMS
PHONE: 636.256.1514

MO. AMERICAN WATER COMPANY
727 CRAIG ROAD
ST. LOUIS, MO 63141
ATTN: MARIANN KLEMME
PHONE: 314.569.3972

SITE BENCHMARK

#1
ELEV.=510.27
"CUT CROSS" ON SIDEWALK BETWEEN RUNNING TRACK AND BLEACHERS LOCATED APPROXIMATELY AT 50-YARD LINE OF FIELD.

ST. LOUIS COUNTY BENCHMARK

#17-66
ELEV.=494.87
"L" ON THE NORTH EDGE OF THE CONCRETE DRIVEWAY TO HOUSE #1301 WESTBROOKE LANE; 38' WEST OF THE CENTERLINE OF WESTBROOKE MEADOWS LANE AND 70' SOUTH OF THE CENTERLINE OF BIG BEND ROAD.

PERMITTEE NOTE:

THE PERMITTEE SHALL ASSUME COMPLETE RESPONSIBILITY FOR CONTROLLING ALL SILTATION AND EROSION OF THE PROJECT AREA. THE PERMITTEE SHALL USE WHATEVER MEANS NECESSARY TO CONTROL EROSION AND SILTATION INCLUDING, BUT NOT LIMITED TO, STAKED STRAW BALES AND/OR SILTATION FABRIC FENCES (POSSIBLE METHODS OF CONTROL ARE DETAILED IN THE PLAN). CONTROL SHALL COMMENCE WITH GRADING AND BE MAINTAINED THROUGHOUT THE PROJECT UNTIL ACCEPTANCE OF THE WORK BY THE CITY OF MANCHESTER AND MISSOURI DEPARTMENT OF TRANSPORTATION AS NECESSARY. THE PERMITTEE'S RESPONSIBILITIES INCLUDE ALL DESIGN AND IMPLEMENTATION AS REQUIRED TO PREVENT EROSION AND THE DEPOSITING OF SILT. THE CITY OF MANCHESTER AND AS REQUIRED BY (STLCO) MAY AT THEIR OPTION DIRECT THE PERMITTEE IN HIS METHODS AS DEEMED FIT TO PROTECT PROPERTY AND IMPROVEMENTS. ANY DEPOSITING OF SILT OR MUD ON NEW OR EXISTING PAVEMENT SHALL BE REMOVED IMMEDIATELY. ANY DEPOSITING OF SILT OR MUD IN NEW OR EXISTING STORM SEWERS OR SWALES SHALL BE REMOVED AFTER EACH RAIN AND AFFECTED AREAS CLEANED TO THE SATISFACTION OF THE CITY OF MANCHESTER AND AS REQUIRED BY (STLCO).

OWNER NOTE:

ONCE THE CONTRACTOR DELIVERS THE PROPERTY TO THE OWNER, THE OWNER SHALL BE RESPONSIBLE TO MAINTAIN ANY CONTROL MEASURE THAT IS TO REMAIN AS A PERMANENT STRUCTURE TO CONTROL SILTATION AND EROSION.

CONTRACTOR'S INSURANCE REQUIREMENTS

PRIOR TO OBTAINING A CONSTRUCTION PERMIT FROM THE METROPOLITAN ST. LOUIS SEWER DISTRICT, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE THE DISTRICT WITH A COPY OF AN EXECUTED CERTIFICATE OF INSURANCE INDICATING THAT THE PERMITTEE HAS OBTAINED AND WILL CONTINUE TO CARRY COMMERCIAL GENERAL LIABILITY AND COMPREHENSIVE AUTO LIABILITY INSURANCE. THE REQUIREMENTS AND LIMITS SHALL BE AS STATED IN THE "RULES AND REGULATIONS AND ENGINEERING DESIGN REQUIREMENTS FOR SANITARY AND STORMWATER DRAINAGE FACILITY", SECTION 10.090 (ADDENDUM).

OWNER

PARKWAY SCHOOL DISTRICT
455 N. WOODS MILL ROAD
CHESTERFIELD, MISSOURI 63017
CONTACT: J. SCOTT BENNETT P.E.
PH: (314) 415-8231

PREPARED FOR:

ATG SPORTS
C/O DON BOLINGER, PRESIDENT
1349 MCNUTT ROAD, SUITE D
HERCULANEUM, MO 63048
PHONE: (636) 524-8135
FAX: (636) 933-4994

MISSOURI ONE CALL SYSTEM INC
1-800-344-7483
STOP-CALL BEFORE YOU DIG!

STOCK AND ASSOCIATES CONSULTING ENGINEERS, INC. AND THE UNDERSIGNED ENGINEER HAVE NO RESPONSIBILITY FOR SERVICES PROVIDED BY OTHERS TO IMPLEMENT THE IMPROVEMENTS SHOWN ON THIS PLAN AND ALL OTHER DRAWINGS WHERE THE UNDERSIGNED ENGINEER'S SEAL APPEARS. THE CONSTRUCTION MEANS AND METHODS ARE THE SOLE RESPONSIBILITY OF THE OWNER AND CONTRACTOR. STOCK AND ASSOCIATES CONSULTING ENGINEERS, INC. HAS NO RESPONSIBILITY TO VERIFY FINAL IMPROVEMENTS AS SHOWN ON THIS PLAN UNLESS SPECIFICALLY ENGAGED AND AUTHORIZED TO DO SO BY THE OWNER OR CONTRACTOR.

MISSOURI DEPT. OF NATURAL RESOURCES

PERMIT NO. – MO-R10D712
EXPIRATION DATE: FEBRUARY 7, 2012

UTILITY NOTE

UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS, RECORDS AND INFORMATION, AND , THEREFORE DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NON-EXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE FACILITIES, STRUCTURES AND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS. THE UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319 RSMo..

UTILITY LOCATES

MISSOURI ONE-CALL
1 800 344-7483
CITY OF MANCHESTER
PUBLIC WORKS
(636) 227-1385

S.U.P. # 12-295-A1
H.& T. # 1872
M.S.D. P# 11236-16
BASE MAP # 24-Q

MAR. 7, 2011

100% COMPLETE

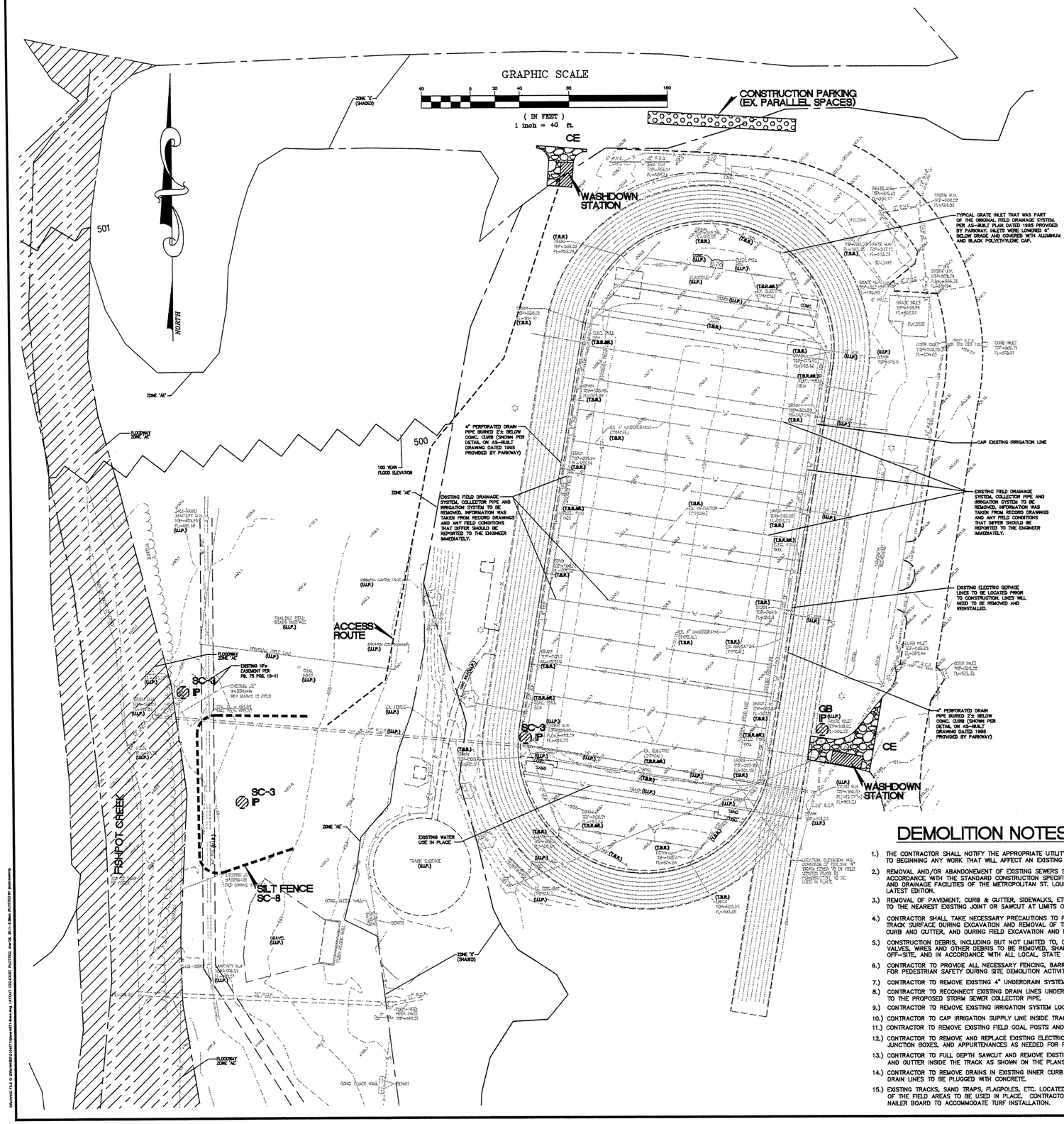
GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

2 2011-03-07 REVISED PER MSD, COUNTY COMMENTS
1 2011-02-21 REVISED PER MSD, COUNTY COMMENTS

PARKWAY SOUTH HIGH SCHOOL
TITLE SHEET

STOCK & ASSOCIATES
Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530-9100
FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

DRAWN BY:	DATE:	CHECKED BY:	DATED:	JOB NUMBER:	SHEET:
J.M.B.	12/17/10	G.M.S.	12/22/10	210-4671	C1 of 11



HAUL ROUTE

Trucks: = Tandem
Loads Per Day: = 60 loads/day
Days of Operation: = 11 days
Quantity of material = 6,250 c.y. (Excavated material)
Weight: 54,000 lbs.
Destination: Fred Weber Quarry, Maryland Heights

Total mileage = 14.0 miles (one way)
Total mileage on County Streets = 5.2 miles

Route:

1. START SOUTH ON HANNA ROAD TOWARDS BIG BEND ROAD.
2. TURN LEFT ON BIG BEND ROAD.
3. MERGE NORTH ON TO HIGHWAY 141 NORTH.
4. TAKE MO-141 NORTH TO OLIVE BLVD.
5. TURN RIGHT ON TO OLIVE BLVD.
6. TURN LEFT ON TO FEE FEE ROAD.
7. TURN LEFT ON TO BENNINGTON PLACE DR.
8. MERGE WEST ON TO HIGHWAY 364 (PAGE AVE.).
9. EXIT HIGHWAY 364 ON TO MARYLAND HEIGHTS EXPRESSWAY.
9. TURN RIGHT ONTO RIVERPORT DRIVE.
10. END AT FRED WEBER QUARRY/LAND FILL.

Note: Trucks shall not exceed posted weight limits for St. Louis County bridge during haul operations.

LEGEND

FLOODWAY

SILTATION CONTROL LEGEND

- IP — INLET PROTECTION
- SILT FENCE
- CONSTRUCTION ENTRANCE
- CONSTRUCTION WASHDOWN AREA
- CONSTRUCTION PARKING

BMP QUANTITIES
(APPROX.–CONTRACTOR SHALL VERIFY)

TYPE	BMP	QUANTITY	10% SURPLUS	TOTAL	UNIT
CONSTRUCTION ENTRANCE	TC-1	2	–	2	EACH
WASHDOWN STATION	TC-4	2	–	2	EACH
INLET PROTECTION	SC-3	3	–	3	EACH
INLET PROTECTION	GB	1	–	1	EACH
SILT FENCE	SC-8	285	30	315	FOOT

B.M.P. INSTALLATION AND CONSTRUCTION SEQUENCE

1. Install construction road & washdown station. (March 2011)
2. Excavate and haul off field and BMP spoils. (March 2011)
3. Construction of turf field and underdrain system. (April 2011)
4. Seeding/mulching of disturbed areas (April 2011)
5. All on going maintenance & inspection shall be in accordance w/ City of Manchester.

(Timelines are approximate & to be verified by Contractor, School District & City)

EXISTING SITE RESOURCES SUMMARY TABLE		
NATURAL RESOURCE	PRESENCE?	ADDITIONAL INFORMATION
WETLANDS	NO	NONE IDENTIFIED ON SITE.
STREAMS AND FLOODPLAIN	YES	FISHPOT CREEK 100-YEAR FLOODPLAIN LOCATED ON SITE. LIMITS SHOWN ON PLAN. EXCAVATION FOR BMP BELOW EXISTING FLOODPLAIN
KARST	NO	NOT IDENTIFIED ON SITE.
PONDS	NO	NONE IDENTIFIED ON SITE.

EXISTING SITE CONSISTS OF NATURAL GRASS FLOODPLAIN AND EXISTING ATHLETIC FIELD OUTSIDE FLOODPLAIN LIMITS

TOTAL AREA : 3.62 Ac.

TOTAL AREA DISTURBED: BY GRADING: 2.56 Ac±

EXISTING SITE RUNOFF COEFFICIENT: 0.49
PROPSED SITE RUNOFF COEFFICIENT: 0.49
HYDROLOGIC SOIL GROUP: D

ST. LOUIS COUNTY NOTES

1.) INTERIM STORMWATER DRAINAGE CONTROL IN THE FORM OF SILTATION CONTROL MEASURES ARE REQUIRED.

2.) THE DEVELOPER IS REQUIRED TO PROVIDE ADEQUATE STORMWATER SYSTEMS IN ACCORDANCE WITH ST. LOUIS COUNTY AND MSD STANDARDS.

3.) INTERNAL (PRIVATE) STORM SEWERS WILL REQUIRE A SEPARATE DRAINLAYER PERMIT FROM ST. LOUIS COUNTY DEPARTMENT OF PUBLIC WORKS.

4.) ALL CONSTRUCTION SHALL BE PER MOST CURRENT DETAILS LOCATED IN THE ST. LOUIS COUNTY DESIGN CRITERIA MANUAL AND/OR THE SEDIMENT AND EROSION CONTROL MANUAL.

5.) ANY LAND CLEARING, CONSTRUCTION, OR DEVELOPMENT INVOLVING THE MOVEMENT OF EARTH SHALL BE IN ACCROADANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN, AND THE PERSON ISSUED A LAND DISTURBANCE PERMIT ASSUMES AND ACKNOWLEDGES RESPONSIBILITY FOR COMPLIANCE WITH THE ST. LOUIS COUNTY LAND DISTURBANCE CODE AND THE APPROVED STORMWATER POLLUTION PREVENTION PLAN AT THE SITE OF THE PERMITTED ACTIVITY.

6.) PRIOR TO ANY MAJOR LAND DISTURBANCE ACTIVITY, A LAND DISTURBANCE PERMIT FROM THE STATE OF MISSOURI DEPARTMENT OF NATURAL RESOURCES WILL BE REQUIRED.

7.) 24-HOUR EMERGENCY CONTACT INFORMATION:
CONTACT: J. SCOTT BENNETT, P.E. – PARKWAY SCHOOL DISTRICT
455 N. WOODS MILL ROAD
CHESTERFIELD, MISSOURI 63017
PH: 314-415-8231 (24-HOUR)

8.) SPECIAL INSPECTOR
CONTACT: ANDREW DIXON – STOCK & ASSOCIATES
257 CHESTERFIELD BUSINESS PARKWAY
CHESTERFIELD, MISSOURI 63005
PH: 636-530-9100

9.) IN THE EVENT OF SILT RUNOFF FROM SUBJECT PROPERTY ONTO OFFSITE PROPERTY OWNERS: THE CONTRACTOR SHALL NOTIFY OFFSITE PROPERTY OWNER AND OBTAIN CONSENT TO REMOVE SEDIMENT AND RESTORE THE SITE TO ORIGINAL CONDITION.

DEMOLITION NOTES

1.) THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY COMPANY PRIOR TO BEGINNING ANY WORK THAT WILL AFFECT AN EXISTING UTILITY.

2.) REMOVAL AND/OR ABANDONEMENT OF EXISTING SEWERS SHALL BE IN ACCORDANCE WITH THE STANDARD CONSTRUCTION SPECIFICATIONS FOR SEWER AND DRAINAGE FACILITIES OF THE METROPOLITAN ST. LOUIS SEWER DISTRICT, LATEST EDITION.

3.) REMOVAL OF PAVEMENT, CURB & GUTTER, SIDEWALKS, ETC. SHALL BE TO THE NEAREST EXISTING JOINT OR SAWCUT AT LIMITS OF REMOVAL.

4.) CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT THE EXISTING TRACK SURFACE DURING EXCAVATION AND REMOVAL OF THE EXISTING CONCRETE CURB AND GUTTER, AND DURING FIELD EXCAVATION AND HAUL OPERATIONS.

5.) CONSTRUCTION DEBRIS, INCLUDING BUT NOT LIMITED TO, CONDUIT, PIPES, FITTINGS, VALVES, WIRES AND OTHER DEBRIS TO BE REMOVED, SHALL BE DISPOSED OF OFF-SITE, AND IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

6.) CONTRACTOR TO PROVIDE ALL NECESSARY FENCING, BARRICADES, SIGNAGE, ETC. FOR PEDESTRIAN SAFETY DURING SITE DEMOLITION ACTIVITIES.

7.) CONTRACTOR TO REMOVE EXISTING 4" UNDERDRAIN SYSTEM LOCATED IN FIELD.

8.) CONTRACTOR TO RECONNECT EXISTING DRAIN LINES UNDER TRACK TO THE PROPOSED STORM SEWER COLLECTOR PIPE.

9.) CONTRACTOR TO REMOVE EXISTING IRRIGATION SYSTEM LOCATED WITHIN THE FIELD.

10.) CONTRACTOR TO CAP IRRIGATION SUPPLY LINE INSIDE TRACK.

11.) CONTRACTOR TO REMOVE EXISTING FIELD GOAL POSTS AND FOUNDATION.

12.) CONTRACTOR TO REMOVE AND REPLACE EXISTING ELECTRICAL CONDUIT, WIRING, JUNCTION BOXES, AND APPURTENANCES AS NEEDED FOR FIELD CONSTRUCTION.

13.) CONTRACTOR TO FULL DEPTH SAWCUT AND REMOVE EXISTING CONCRETE CURB AND GUTTER INSIDE THE TRACK AS SHOWN ON THE PLANS.

14.) CONTRACTOR TO REMOVE DRAINS IN EXISTING INNER CURB AND GUTTER. DRAIN LINES TO BE PLUGGED WITH CONCRETE.

15.) EXISTING TRACKS, SAND TRAPS, FLAGPOLES, ETC. LOCATED WITHIN THE ENDS OF THE FIELD AREAS TO BE USED IN PLACE. CONTRACTOR TO INSTALL TURF NAILER BOARD TO ACCOMMODATE TURF INSTALLATION.

S.U.P. # 12-295-A1
H.& T. # 1872
M.S.D. P# 11236-16
BASE MAP # 24-Q

MAR. 7, 2011

100% COMPLETE

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY NUMBER: 000996

2 2011-03-07 REVISED PER MSD, COUNTY COMMENTS
1 2011-02-21 REVISED PER MSD, COUNTY COMMENTS

PARKWAY SOUTH HIGH SCHOOL

EXISTING CONDITIONS/DEMO/SWPPP

STOCK & ASSOCIATES
Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530-9100
FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
J.M.B.	12/17/10	G.M.S.	12/22/10	210-4671	C2 of 11

NON-SEDIMENT POLLUTION CONTROL

PHYSICAL DESCRIPTION:

Control measures designed to prohibit chemicals, hazardous materials, solid waste and construction debris from polluting stormwater. Pollutants carried in solution or as surface films on runoff will be carried through most erosion control and sediment capture BMP's. Keeping substances like fuel, oil, asphalt, paint, solvents, fertilizer, soil additives, concrete wash water, solid waste and construction debris from polluting runoff can be accomplished to a large extent through good housekeeping on the site and following the manufacturer's recommendations for disposal.

WHERE BMP IS TO BE INSTALLED:

Collection, storage and fueling areas should be located onsite in an area that does not receive a substantial amount of runoff from upland areas and does not drain directly to lakes, creeks, streams, rivers, sewers, groundwater, wetlands, or road ditches.

CONDITIONS FOR EFFECTIVE USE OF BMP:

- ✓ Reduction in pollutants depends heavily on how construction personnel perform their duties. An effective management system requires training and signage to promote proper storage, handling and disposal of materials. Follow up observations of actions and inspection of storage areas by management personnel is also required.
- ✓ Plans should contain notes clearly stating requirements for addressing potential pollutants
- ✓ Fueling areas and storage areas for hazardous materials should be protected by berms or other means of catching leaks or spills

WHEN BMP IS TO BE INSTALLED:

Immediately following installation of construction entrance and wash station

INSTALLATION/CONSTRUCTION PROCEDURES:

- ✓ Place waste receptacles near area of work
- ✓ Construct protective berm or other devices around fueling and hazardous materials storage areas
- ✓ Install appropriate signage
- ✓ Post guidelines for proper handling, storage and disposal of materials, and emergency spill cleanup on site

O&M PROCEDURES:

- ✓ Inspect activities on regular basis
- ✓ Inspect storage areas and control devices at least every two weeks and after every storm
- ✓ Make necessary corrections and repairs

SITE CONDITIONS FOR REMOVAL:

Maintain practices until all construction on the site has been completed

TYPICAL DETAILS:

General pollution prevention notes attached

O&M PROCEDURES:

- ✓ Inspect every week and after every storm
- ✓ Protect area from vehicular and foot traffic
- ✓ Reseed areas that have not sprouted within 21 days of planting.
- ✓ Repair damaged or eroded areas and reseed and stabilize as needed
- ✓ Do not mow until 4 inches of growth occurs
- ✓ During the first 4 months, mow no more than 1/3 the grass height
- ✓ Refertilize during 2nd growing season

SITE CONDITIONS FOR REMOVAL:

Does not require removal, but temporary seeding can be removed immediately prior to work returning to an area

TYPICAL DETAILS:

Minimum seeding rates and acceptable dates for work attached

SEEDING

PHYSICAL DESCRIPTION:

Establishment of vegetation by spreading grass seed designed to protect exposed soil from erosion by eliminating direct impact of precipitation and slowing overland flow rates. Once established, the vegetative cover will also filter pollutants from the runoff.

WHERE BMP IS TO BE INSTALLED:

Exposed soil after a phase of rough or finish grading has been completed, or areas where no activity will occur for 30 days

CONDITIONS FOR EFFECTIVE USE OF BMP:

Type of Flow:	Sheet flow
Contributing Slope Length:	30 foot maximum for 3:1 slopes 50 foot maximum for slope between 3:1 and 10:1 100 foot maximum for slopes under 10%
Minimum Rates:	See attached chart(s)
Acceptable Dates:	See attached chart

WHEN BMP IS TO BE INSTALLED:

Immediately after rough or finished grading is completed

INSTALLATION/CONSTRUCTION PROCEDURES:

- ✓ Install upstream BMP's to protect area to be seeded
- ✓ Rough grade area and remove all debris larger than 1 inch in diameter and concentrated areas of smaller debris
- ✓ Install stabilization grids, if needed
- ✓ Mix soil amendments (lime, fertilizer, etc.) into top 3"-6" of soil as needed
- ✓ Plant seed ¼ - ½ inch deep
- ✓ Roll lightly to firm surface
- ✓ Cover seeded area with mulch unless seeding completed during optimum spring and summer dates
- ✓ Install additional stabilization (netting, bonded fiber matrix, etc.) as required
- ✓ Water immediately – enough to soak 4 inches into soil without causing runoff

POLLUTION PREVENTION PROCEDURES

1) **HANDLING AND DISPOSAL OF HAZARDOUS MATERIALS**

DO:
- Prevent spills
- Use products up
- Follow label directions for disposal
- Remove lids from empty bottles and cans when disposing in trash
- Recycle wastes whenever possible

DON'T:
- Don't pour waste into sewers or waterways on the ground
- Don't pour waste down the sink, floor drain or septic tanks
- Don't bury chemicals or containers, or dispose of them with construction debris
- Don't burn chemicals or containers
- Don't mix chemicals together

2) Containers shall be provided for collection of all waste material including construction debris, trash, petroleum products and any hazardous materials to be used onsite. All waste material shall be disposed of at facilities approved for that material.

3) No waste materials shall be buried on-site.

4) Mixing, pumping, transferring or otherwise handling construction chemicals such as fertilizer, lime, asphalt, concrete drying compounds, and all other potentially hazardous materials shall be performed in an area away from any watercourse, ditch or storm drain.

5) Equipment fueling and maintenance, oil changing, etc., shall be performed only in an area designated for that purpose. The designated area is equipped for recycling oil and catching spills.

6) Concrete wash water shall not be allowed to flow directly to storm sewers, streams, ditches, lakes, etc without being treated. A sump or pit shall be constructed to contain concrete wash water.

7) If substances such as oil, diesel fuel, hydraulic fluid, antifreeze, etc. are spilled, leaked, or released onto sod, the soil shall be dug up and disposed of at a licensed sanitary landfill (not a construction/demolition debris landfill). Spills on pavement shall be absorbed with sawdust, kitty litter or product designed for that purpose and disposed of at a licensed sanitary landfill. Hazardous or industrial wastes such as most solvents, gasoline, oil-based paints, and cement curing compounds require special handling. These materials will be removed from the site and recycled or disposed of in accordance with MoDNR requirements.

8) State law requires the party responsible for a petroleum product spill in excess of 50 gallons to report the spill to Missouri Department of Natural Resources (MoDNR) at (537) 634-2436, as soon as practical after discovery. Federal law requires the responsible party to report any release of oil if it reaches or threatens a sewer, lake, creek, stream, river, groundwater, wetland, or area, like a road ditch, that drains into one of the above

INLET PROTECTION - FABRIC DROP

PHYSICAL DESCRIPTION:

A woven fabric barrier braced around an area inlet designed to prevent sediment from entering the storm sewer. Shallow temporary ponding during and after rainfall should be expected.

WHERE BMP IS TO BE INSTALLED:

At inlets designed to drain a small gently sloping area with maximum grade of 5%. Overflow capacity is limited on standard area inlets.

CONDITIONS FOR EFFECTIVE USE OF BMP:

Type of Flow:	Shallow sheet flow
Contributing Area:	Maximum of 2 cfs flowing to inlet

WHEN BMP IS TO BE INSTALLED:

Immediately after placement of inlet.

INSTALLATION/CONSTRUCTION PROCEDURES:

- ✓ Backfill, compact and uniformly grade area around inlet
- ✓ Construct downstream berm. If required. Rock bags or sand bags may be used to construct berm.
- ✓ Drive posts or wood frame close to inlet sill so overflow will fall directly on the structure and not on unprotected soil
- ✓ Dig trench around inlet for fabric to be buried
- ✓ Cut required length of fabric from one roll to eliminate joints. Fasten fabric tightly around posts/frame to enhance stability.
- ✓ Backfill and compact trench.

O&M PROCEDURES:

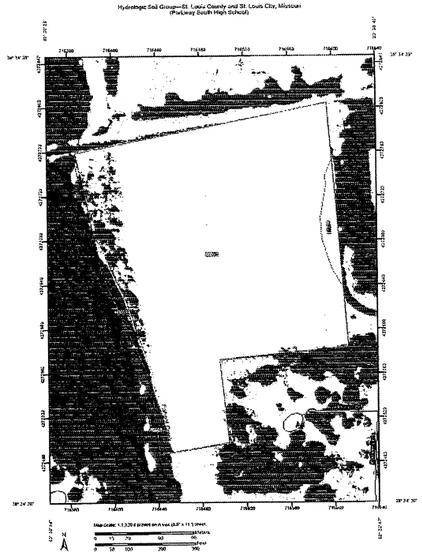
- ✓ Inspect every week and after every storm
- ✓ Remove trash accumulation and sediment once it reaches depth of 6" at inlet.
- ✓ Replace loose, torn or clogged fabric
- ✓ Repair any erosion or settlement of temporary berm downstream of inlet

SITE CONDITIONS FOR REMOVAL:

Remove after contributing drainage areas have been adequately stabilized. Restore area to grade and vegetate.

TYPICAL DETAIL: SC-3

Hydrologic Soil Group—St. Louis County and St. Louis City, Missouri (Parkway South High School)



USDA Natural Resources Conservation Service — Web Soil Survey, National Cooperative Soil Survey — 12/27/2010 Page 1 of 4

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — St. Louis County and St. Louis City, Missouri

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
60006	Menfro silt loam, 20 to 35 percent slopes	B	0.2	1.8%
60223	Urban land-Harvester complex, 9 to 20 percent slopes	D	0.3	2.3%
66092	Pickpot-Urban land complex, 0 to 5 percent slopes, rarely flooded	D	11.9	95.8%
Totals for Area of Interest			13.4	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

SEEDING REQUIREMENTS

Dates for Seeding

Permanent Seeding	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Tall Fescue			O	O	O			O	O			
Smooth Brome			O	O	O			O	O			
Fescue & Brome			O	O	O	O		O	O			
Fescue, Rye & Bluegrass	A	A	O	O	O	P	P	O	O	P	P	A

Temporary Seeding	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Rye or Sudan	A	A	O	O	O	O	O	O	O	O	A	A
Oats		A	O	O	O	O	O	O	O			

O = Optimum seeding dates
A = Annapolis seeding dates
P = Permitted seeding dates with reseeding 2 months later - initially use 50% of seed and 75% of fertilizer. Reseed with additional 75% seed and remaining fertilizer.

Minimum Fertilizer and Seeding Rates

Permanent Seeding*	Pounds per acre	Pounds Per 1000 sq ft
Tall Fescue	300	7.0
Smooth Brome	200	4.6
Mixture # 1	250	5.7
Mixture # 2	210	4.8

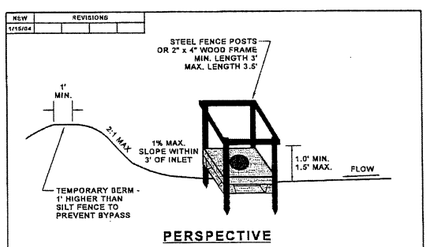
Mixture # 1 = Tall Fescue @ 150 pounds per acre and Brome @ 100 pounds per acre.
Mixture # 2 = Tall Fescue @ 100 pounds per acre; Perennial Rye grass @ 100 pounds per acre; and Kentucky Blue grass @ 10 pounds per acre.
* = Seeding rate for slopes in excess of 20% (5:1), shall be 10 pounds per 1000 sq. ft.

Temporary Seeding	Pounds per acre	Pounds Per 1000 sq ft
Rye or Sudan	150	3.5
Oats	200	2.5

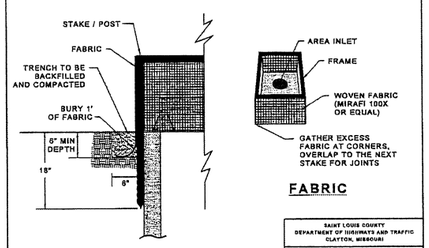
Fertilizer	Permanent Seeding (pounds per acre)	Temporary Seeding (pounds per acre)
Nitrogen	40	30
Phosphate	65	30
Potassium	65	30
Lime - Ehlit	600	600

Ehlit = Effective neutralizing material per State evaluation of quarried rock.

NEW	REVISIONS				
1/15/04					



PERSPECTIVE



ELEVATION

FABRIC

SAINT LOUIS COUNTY
DEPARTMENT OF HIGHWAYS AND TRAFFIC
CLAYTON, MISSOURI

TYPICAL BMP DETAIL
INLET PROTECTION - FABRIC DROP

REVISION DATE: January 16, 2008

DRAWING SC-3

S.U.P. # 12-295-A1
H.& T. # 1872
M.S.D. P# 11236-16
BASE MAP # 24-Q

MAR. 7, 2011

100% COMPLETE

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

2 2011-03-07 REVISED PER MSD, COUNTY COMMENTS
1 2011-02-21 REVISED PER MSD, COUNTY COMMENTS

PARKWAY SOUTH HIGH SCHOOL

SWPPP DETAILS

STOCK & ASSOCIATES
Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530-9100
FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET
J.M.B.	12/17/10	G.M.S.	12/22/10	210-4671	C3 of 11

ROCK OUTLET

PHYSICAL DESCRIPTION:

A rock apron installed over a geotextile fabric at a point of concentrated discharge, designed to slow the velocity of flow and protect the receiving area from erosion.

WHERE BMP IS TO BE INSTALLED:

Installed at BMP outlets, for example, at the end of pipe slope drains, the emergency overflow or outlet pipe of a sediment basin.

CONDITIONS FOR EFFECTIVE USE OF BMP:

Type of Flow: Concentrated flow

Flow at Outlet: Maximum velocity of 10 fps

WHEN BMP IS TO BE INSTALLED:

With the construction of the upstream BMP that creates the concentrated discharge.

INSTALLATION/CONSTRUCTION PROCEDURES:

- ✓ Grade subgrade of rock blanket to required section
- ✓ Place filter fabric, providing enough slack to assure that rock will not tear the fabric when it is placed
- ✓ Install rock with uniform profile and cross section

O&M PROCEDURES:

- ✓ Inspect every week and after every storm during construction
- ✓ Remove sediment and trash accumulation
- ✓ Replace displaced rock - larger rock may be required.
- ✓ Stabilize eroded areas - extend if necessary

SITE CONDITIONS FOR REMOVAL:

Removed concurrently with upstream BMP.

TYPICAL DETAIL: EC-5

SILT FENCE

PHYSICAL DESCRIPTION:

A fence constructed of woven filter fabric and wire mesh stretched between posts and entrenched in the ground designed to pond stormwater runoff and cause sediment to settle out.

WHERE BMP IS TO BE INSTALLED:

Installed along slopes, at base of slopes, and around perimeter of site as final barrier to sediment being carried off site. Spacing of fence along slopes is relative to slope:

CONDITIONS FOR EFFECTIVE USE OF BMP:

Type of Flow: Sheet flow only
Contributing Slope Length: 30 foot maximum for 3:1 slopes
50 foot maximum for slopes between 3:1 and 10:1
100 foot maximum for slopes under 10%.

WHEN BMP IS TO BE INSTALLED:

Prior to disturbance of natural vegetation and at intervals during construction of fill slopes

INSTALLATION/CONSTRUCTION PROCEDURES:

- ✓ Drive post for fence line
- ✓ Dig trench to required dimensions in front of posts for fabric burial
- ✓ Attach wire mesh to posts
- ✓ Attach fabric to posts, allowing required length below ground level to run fabric along bottom of trench
- ✓ Backfill and compact soil in trench to protect and anchor fabric

Alternate Construction: Install fence by slicing it into ground with specialized equipment
Install posts at reduced spacing indicated on detail

O&M PROCEDURES:

- ✓ Inspect every week and after every storm
- ✓ Remove sediment buildup deeper than ½ the fence height or 12", whichever is less
- ✓ Replace torn of clogged fabric; repair loose fabric
- ✓ Repair unstable or broken posts
- ✓ Stabilize any areas susceptible to undermining
- ✓ Extend fence or add additional row(s) of fence if necessary to provide adequate protection

CONSTRUCTION ENTRANCE

PHYSICAL DESCRIPTION:

A stabilized entrance to a construction site designed to minimize the amount of sediment tracked from the site on vehicles and equipment. Stabilization generally consists of aggregate over fabric. Mud and sediment fall off of tires as they travel along the stabilized entrance; however, additional measures in the form of a washdown area should also be included on site. The stabilized entrance also distributes the axle load of vehicles over a larger area; thereby mitigating the rutting impact vehicles normally have on unpaved areas.

WHERE BMP IS TO BE INSTALLED:

At locations where it is safe for construction vehicles and equipment to access existing streets – preferably at locations of future streets or drives.

CONDITIONS FOR EFFECTIVE USE OF BMP:

Drainage: Ditches or pipes, if needed, sized for 15 year, 20 minute storm; HGL 6" below surface of entrance

WHEN BMP IS TO BE INSTALLED:

First order of work, along with washdown area, prior to vehicles or equipment accessing unpaved areas.

INSTALLATION/CONSTRUCTION PROCEDURES:

- ✓ Grade and compact area of construction entrance
- ✓ Install culvert under entrance if needed to maintain positive drainage
- ✓ Place fabric and cover with aggregate, forming diversion across entrance if needed to direct runoff away from roadway
- ✓ See Washdown Station BMP for additional steps

O&M PROCEDURES:

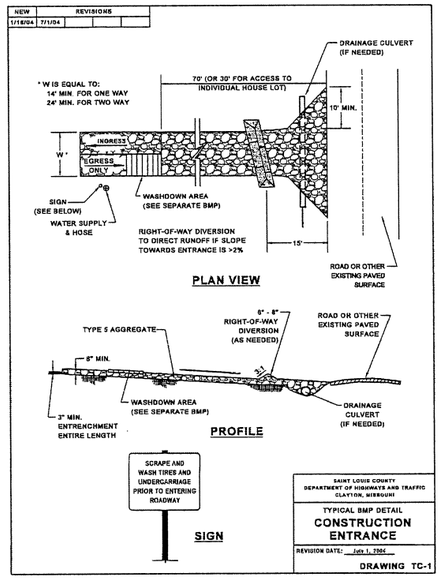
- ✓ Immediately remove any mud or debris tracked onto paved surfaces
- ✓ Remove sediment and clods of dirt from construction entrance continuously
- ✓ Replace rock if necessary to maintain clean surface
- ✓ Repair settled areas

SITE CONDITIONS FOR REMOVAL:

Remove when vehicles and equipment will no longer access unpaved areas

TYPICAL DETAIL: TC-1

NEW REVISIONS 1/18/04 7/1/04



SAINT LOUIS COUNTY
DEPARTMENT OF HIGHWAYS AND TRAFFIC
CLAYTON, MISSOURI

TYPICAL BMP DETAIL
CONSTRUCTION ENTRANCE

REVISION DATE: July 1, 2004

DRAWING TC-1

SITE CONDITIONS FOR REMOVAL:

After permanent vegetation of slope is established. Remove fence, regrade trench area and vegetate.

TYPICAL DETAIL: SC-8

WASHDOWN STATION

PHYSICAL DESCRIPTION:

An area located at construction entrances designed to wash sediment from the tires and undercarriage of exiting vehicles and prevent sediment from being tracked onto existing roadways.

WHERE BMP IS TO BE INSTALLED:

Across or immediately adjacent to exit paths from unpaved construction sites.

CONDITIONS FOR EFFECTIVE USE OF BMP:

Drainage: Downstream BMP sized to treat dirty runoff from washdown station

WHEN BMP IS TO BE INSTALLED:

First order of work, along with construction entrance, prior to vehicles or equipment accessing unpaved areas.

INSTALLATION/CONSTRUCTION PROCEDURES:

- ✓ Grade and compact area for drainage under washdown pad
- ✓ Install steel-ribbed plate on frame or other support to allow a 2" drain space
- ✓ Grade and vegetate downstream BMP (v-ditch shown on detail)
- ✓ Install water supply and hose
- ✓ Post sign in advance of station indicating that all exiting vehicles and equipment must use station prior to exiting site

O&M PROCEDURES:

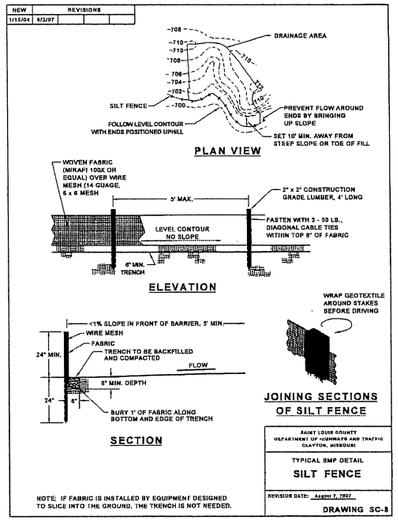
- ✓ Remove sediment daily
- ✓ Repair settled areas
- ✓ Replace rock if necessary to maintain clean surface

SITE CONDITIONS FOR REMOVAL:

Remove when vehicles and equipment will no longer access unpaved areas

TYPICAL DETAIL: TC-4

NEW REVISIONS 1/15/04 6/3/07



NOTE: IF FABRIC IS INSTALLED BY EQUIPMENT DESIGNED TO SLICE INTO THE GROUND, THE TRENCH IS NOT NEEDED.

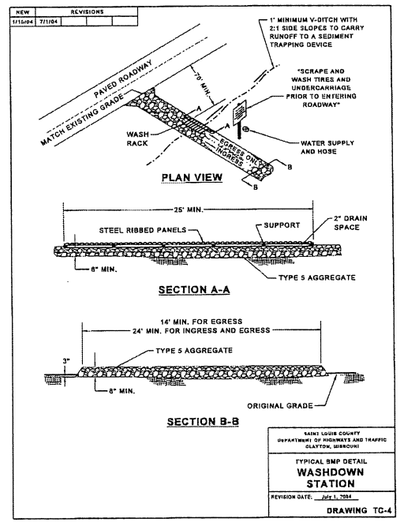
SAINT LOUIS COUNTY
DEPARTMENT OF HIGHWAYS AND TRAFFIC
CLAYTON, MISSOURI

TYPICAL BMP DETAIL
SILT FENCE

REVISION DATE: August 7, 2007

DRAWING SC-8

NEW REVISIONS 1/15/04 7/1/04



SAINT LOUIS COUNTY
DEPARTMENT OF HIGHWAYS AND TRAFFIC
CLAYTON, MISSOURI

TYPICAL BMP DETAIL
WASHDOWN STATION

REVISION DATE: July 1, 2004

DRAWING TC-4

GUTTERBUDDY® Specification
For Curb Gutter Storm Drains

1.0 Description

1.1 This work shall consist of furnishing, placing, maintaining and removing the Gutterbuddy® sediment control device as directed by the engineer and as shown on the contract drawings. The Gutterbuddy® sediment control system distributed by:

ACF Environmental, Inc.
1601 A Wills Road
Richmond, Virginia 23234
Phone: 800-448-9221 Fax: 804-271-1674
www.acfenvironmental.com

2.0 Materials

2.1 **GUTTERBUDDY®**

The Gutterbuddy® shall be a synthetic filter manufactured from recycled synthetic fibers.

2.1.1 The Gutterbuddy® will be manufactured to be 9" in diameter and are available in 2', 3', 4', 5' and 10' lengths and a minimum of twenty four (24) inches longer than the curb inlet opening. This will allow for sufficient length to cover the inlet with twelve (12") inches beyond the inlet on both ends.

3.0 Construction Sequence

3.1 **General**

3.1.1 Install the Gutterbuddy® in front of the curb inlet opening. Each end of the Gutterbuddy® should overlap the curb inlet approximately 12".

3.1.2 The Gutterbuddy® should be cleaned if a visual inspection shows silt and debris build up around the Gutterbuddy®.

3.1.3 To remove the Gutterbuddy®, lift out of the opening.

3.1.4 The Gutterbuddy® is reusable, once the construction project is complete and it is no longer needed for sediment control, remove, clean and store out of the rainfall until needed on the next project.

3.1.5 Ponding is likely if sediment is not removed regularly. Inspection of Gutterbuddy® should be on a regular basis and immediately after major rain events.

4.0 Basis of Payment

4.1 The payment for any Gutterbuddy® used during the construction is to be included in the bid of the overall erosion and sediment control plan and priced by the linear foot.

ACF/SI Combine Forces for Solution Implementation
A Partnership for Water Quality

ACF Environmental
2711 Caldwell Road
Richmond, Virginia 23234
(804) 271-1674 FAX (800) 448-9221
www.acfenvironmental.com

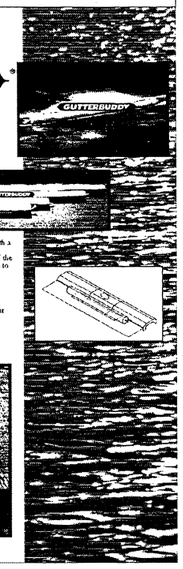
Gutterbuddy Inc.

SI Geosolutions
9420 Lee Highway, Suite 436
Fairfax, VA 22031
(866) 421-3044 • FAX (703) 359-7879
www.sigeosolutions.com

NOW LAMINATED INSIDE

GUTTERBUDDY®

Curb Gutter Storm Drains



Gutterbuddy® Curb Inlet and Ditch Pavement Filters

Gutterbuddy® Advantages

- Easy to transport, install and maintain
- Keeps out sand, asphalt millings and other fine sediment
- Washable
- Reusable

Gutterbuddy® Curb Inlet Filters

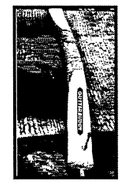
effectively prevent sediment, debris and other pollutants from entering storm water systems. Their filtering action lets water freely flow through the fiberous material while stopping sediment and debris.

Long lasting Gutterbuddy® Curb Inlet Filters are 9" in diameter and can be purchased in 3', 6', 12' and 16' lengths. Since they are made from recycled materials, they can be washed and reused and are flexible enough to conform to any curb radius, allowing for quick and easy installation.

Gutterbuddy® Ditch Pavement Filters

effectively prevent sediment, debris and other pollutants from entering storm water systems or other areas that ditch pavement is used to channel water runoff. Their filtering action lets water freely flow through the fiberous material while stopping sediment and debris. Gutterbuddy® Ditch Pavement Filters are 9" in diameter and can be purchased in 3', 6', 12' and 16' lengths. Each ditch pavement filter comes with a stake hole at each end and has bendable steel in the middle of the fabric that allows it to conform to all types of ditch pavement.

For more information about Gutterbuddy® Curb Inlet and Drainage Ditch Filters, call your ACF Environmental® or SI Geosolutions® distributor.



S.U.P. # 12-295-A1
H.& T. # 1872
M.S.D. P# 11236-16
BASE MAP # 24-Q

MAR. 7, 2011

100% COMPLETE

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

2 2011-03-07 REVISED PER MSD, COUNTY COMMENTS
1 2011-02-21 REVISED PER MSD, COUNTY COMMENTS

PARKWAY SOUTH HIGH SCHOOL

SWPPP DETAILS

STOCK & ASSOCIATES
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FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
J.M.B.	12/17/10	G.M.S.	12/22/10	210-4671	C4 of 11

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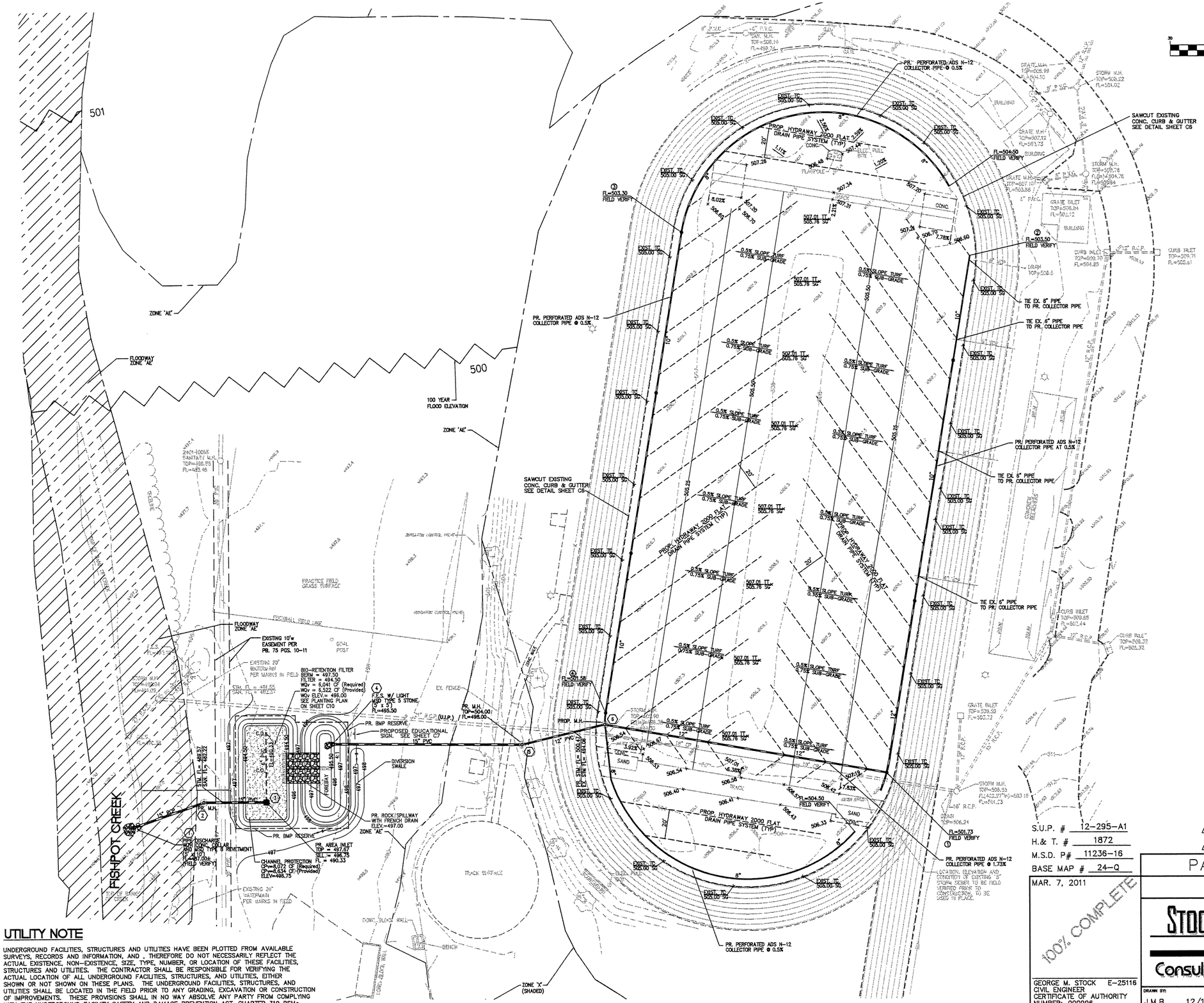

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

NORTH

NOTES:

1. PROPOSED FIELD UNDERDRAIN SYSTEM PER MANUFACTURER.
2. GEOTECHNICAL ENGINEER SHALL BE PRESENT TO INSPECT SUBGRADE AND CONFIRM ADEQUACY FOR PLACEMENT OF ROCK FIELD BASE.
3. CONTRACTOR SHALL VERIFY UNDERDRAIN SYSTEM LAYOUT, SPACING, PIPE SIZE AND INSTALLATION PROCEDURE PRIOR TO COMMENCING CONSTRUCTION.
4. CONTOURS SHOWN WITHIN TRACK ARE TO FIELD SUBGRADE.
5. EXISTING LONG JUMP TRACK AND PITS TO BE USED IN PLACE.

EARTHWORK NOTES

Bulk Cut 6,250 ± CUBIC YARDS

Bulk Fill 0 ± CUBIC YARDS (0% SHRINKAGE)

Net 6,250 (CUT) ± CUBIC YARDS

THE ENGINEER HAS CALCULATED THE ABOVE QUANTITIES OF EARTHWORK TO BE REGARDED AS AN ESTIMATE OF THE BULK MOVEMENT OR REDISTRIBUTION OF SOILS ON THIS PROJECT. AS AN ESTIMATE, THESE QUANTITIES ARE INTENDED FOR GENERAL USE, AND THE ENGINEER ASSUMES NO LIABILITY FOR COST OVERRUNS DUE TO EXCESS EXCAVATED MATERIALS OR SHORTAGES OF FILL.

THE QUANTITIES ESTIMATED FOR EACH OF THE IMPROVEMENT ITEMS LISTED ABOVE ARE BASED UPON THE HORIZONTAL AND VERTICAL LOCATION OF THE IMPROVEMENTS AS PROPOSED ON THE SITE ENGINEERING PLANS PREPARED BY STOCK AND ASSOCIATES CONSULTING ENGINEERS.

THE ENGINEER'S EARTHWORK ESTIMATE DOES NOT INCLUDE ANY OF THE FOLLOWING ITEMS REQUIRING EARTHWORK THAT MAY BE NECESSARY FOR COMPLETION OF THE PROJECT: MISCELLANEOUS UNDERGROUND CONDUITS, INCLUDING SEWER LINES AND WATER MAINS LESS THAN TWENTY-FOUR INCHES IN DIAMETER, STANDARD MANHOLES; PROCESS OR TRANSFER PIPING; ELECTRICAL OR TELEPHONE CONDUITS OR DUCT BANKS; BASES FOR LIGHT STANDARDS; BUILDING FOOTINGS AND FOUNDATIONS, RETAINING WALL BACKFILL, ETC.

THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACTUAL SIZE OF THE FIELD EXCAVATIONS MADE FOR THE INSTALLATION OF UNDERGROUND STRUCTURES, AND AS SUCH, THE ACTUAL QUANTITIES OF EARTHWORK FROM SUCH ITEMS MAY VARY FROM THE ESTIMATE SHOWN ABOVE.

THE ENGINEER ASSUMES NO RESPONSIBILITY FOR COSTS INCURRED DUE TO REMOVAL OF UNSUITABLE MATERIAL WHICH MUST BE REMOVED FROM SITE.

THE ENGINEER HAS MADE THE FOLLOWING ASSUMPTIONS IN THE ABOVE STATED QUANTITIES:

PROPOSED GRADING TO THE SUBGRADE ("SG") ELEVATIONS NOTED ON THE PLAN.
PROPOSED CONTOURS REFLECT SUBGRADE ELEVATIONS
EXCAVATION FOR NEW COLLECTOR PIPES RUNNING ALONG INTERIOR OF TRACK IS "NOT" INCLUDED IN CUT NUMBERS.
0% SHRINKAGE
TOPSOIL REMOVAL INCLUDED
EARTHWORK QUANTITIES INCLUDE STORMWATER QUALITY BASIN.

IT IS THE RESPONSIBILITY OF THE GRADING CONTRACTOR TO PERFORM AN INDEPENDENT EARTHWORK ANALYSIS PRIOR TO SUBMISSION OF BID. IN THE EVENT A DISCREPANCY EXISTS THE GRADING CONTRACTOR SHALL NOTIFY ENGINEER OF DISCREPANCY PRIOR TO SUBMISSION OF BID.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO REMOVE AND/OR EXPORT ANY AND ALL MATERIALS NEEDED TO COMPLETE THE FINISHED GRADES AND ELEVATIONS AS SHOWN ON THE "SITE GRADING PLAN" SHEET C5.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN "ALL" GEOTECHNICAL INVESTIGATIONS FROM THE "OWNER". CONTRACTOR SHALL REVIEW AND FAMILIARIZE THEMSELVES WITH RECOMMENDATIONS AS OUTLINED BY THE PROJECT GEOTECHNICAL ENGINEER AND INCORPORATE IT IN THEIR PROPOSED SCOPE OF WORK.

RE-USE OF EXISTING STOCKPILE MATERIALS AND EXCAVATION SPOILS ON-SITE SHALL BE VERIFIED AND COORDINATED WITH THE PROJECT GEOTECHNICAL ENGINEER.

CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ANY ROCK ENCOUNTERED. CONTRACTOR SHOULD FAMILIARIZE THEMSELVES WITH ALL THE GEOTECHNICAL REPORTS AVAILABLE AND REVIEW THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.

AFTER CONTRACTOR RECEIVES AWARD AND NOTICE TO PROCEED (NTP), CONTRACTOR SHALL FIELD VERIFY EXISTING TOPOGRAPHY AND PERFORM EARTHWORK ANALYSIS PRIOR TO COMMENCING GRADING TO RE-CONFIRM BID QUANTITIES.

UTILITY NOTE

UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS, RECORDS AND INFORMATION, AND , THEREFORE DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NON-EXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE FACILITIES, STRUCTURES AND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS. THE UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319 RSMo..

S.U.P. # 12-295-A1
H.& T. # 1872
M.S.D. P# 11236-16
BASE MAP # 24-Q

MAR. 7, 2011

100% COMPLETE

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

2 2011-03-07 REVISED PER MSD, COUNTY COMMENTS
1 2011-02-21 REVISED PER MSD, COUNTY COMMENTS

PARKWAY SOUTH HIGH SCHOOL

SITE AND GRADING PLAN

STOCK & ASSOCIATES
Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005
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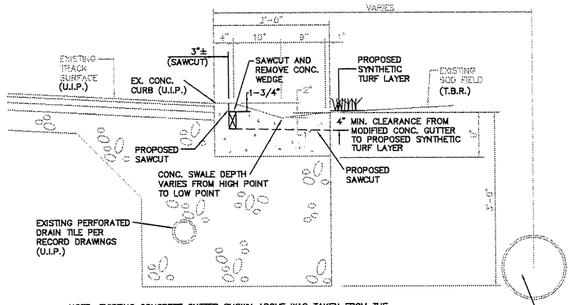
FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

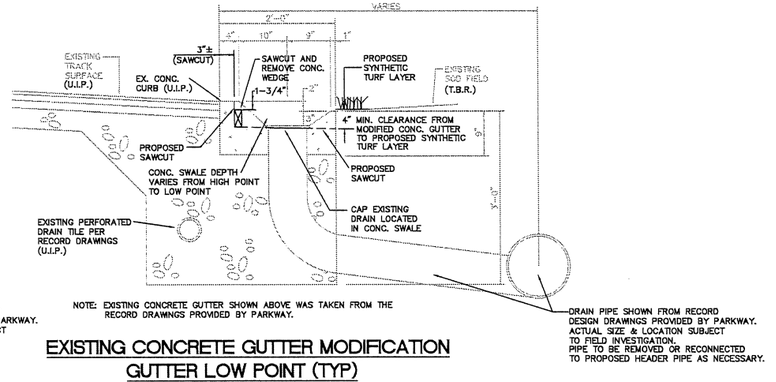
DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
J.M.B.	12/17/10	G.M.S.	12/22/10	210-4671	C5 of 11



NOTE: EXISTING CONCRETE GUTTER SHOWN ABOVE WAS TAKEN FROM THE RECORD DRAWINGS PROVIDED BY PARKWAY.

EXISTING CONCRETE GUTTER MODIFICATION GUTTER HIGH POINT (TYP)

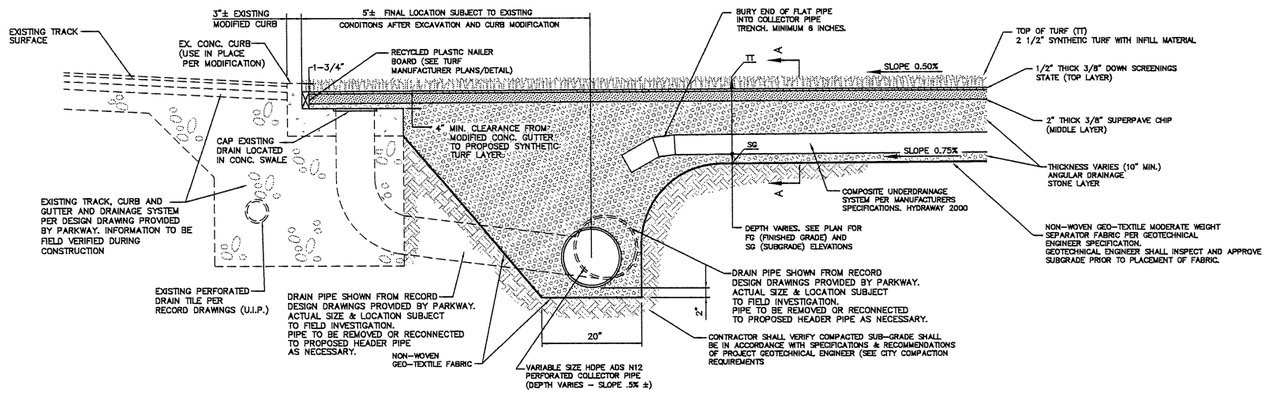
(N.T.S.)



NOTE: EXISTING CONCRETE GUTTER SHOWN ABOVE WAS TAKEN FROM THE RECORD DRAWINGS PROVIDED BY PARKWAY.

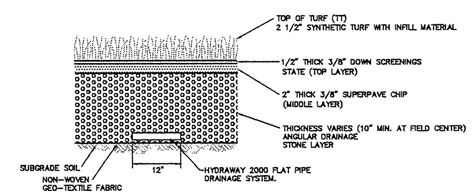
EXISTING CONCRETE GUTTER MODIFICATION GUTTER LOW POINT (TYP)

(N.T.S.)



TYPICAL SECTION THROUGH FIELD

(N.T.S.)



SUBSURFACE DRAINAGE IN FIELD DETAIL A-A

(N.T.S.)

UTILITY NOTE

UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS, RECORDS AND INFORMATION, AND , THEREFORE DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NON-EXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE FACILITIES, STRUCTURES AND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS. THE UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319 RSMo..

ST. LOUIS COUNTY NOTE:

THIS SHEET NOT INCLUDED WITH ST. LOUIS COUNTY APPROVAL.

S.U.P. # 12-295-A1
H.& T. # 1872
M.S.D. P# 11236-16
BASE MAP # 24-Q

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PARKWAY SOUTH HIGH SCHOOL

FIELD DETAILS

STOCK & ASSOCIATES
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J.M.B.	12/17/10	G.M.S.	12/22/10	210-4671	C6 of 11

GENERAL NOTES:

1.) ALL UTILITIES SHOWN HAVE BEEN LOCATED BY THE ENGINEER FROM AVAILABLE RECORDS. THEIR LOCATION SHOULD BE CONSIDERED APPROXIMATE. THE CONTRACTOR HAS THE RESPONSIBILITY TO NOTIFY ALL UTILITY COMPANIES, PRIOR TO CONSTRUCTION, TO HAVE EXISTING UTILITIES FIELD LOCATED.

2.) GRADING CONTRACTOR SHALL INSTALL SILTATION CONTROL PRIOR TO STARTING THE GRADING. ADDITIONAL SILTATION CONTROL DEVICES SHALL BE INSTALLED AS DIRECTED BY CITY OF MANCHESTER AND ST. LOUIS COUNTY DEPARTMENT OF HIGHWAYS AND TRAFFIC.

3.) ALL MATERIALS AND METHODS OF CONSTRUCTION TO MEET THE CURRENT STANDARDS AND SPECIFICATIONS OF CITY OF MANCHESTER AND THE METROPOLITAN ST. LOUIS SEWER DISTRICT (MSD).

4.) GRADING & STORM WATER PER 2009 M.S.D. STANDARD CONSTRUCTION SPECIFICATIONS AND DETAILS.

5.) ALL GRADED AREAS SHALL BE PROTECTED FROM EROSION BY EROSION CONTROL DEVICES AND/OR SEEDING AND MULCHING.

6.) ALL FILLS AND BACKFILLS SHALL BE MADE OF SELECTED EARTH MATERIALS, FREE FROM BROKEN MASONRY, ROCK, FROZEN EARTH, RUBBISH, ORGANIC MATERIAL AND DEBRIS.

7.) GRADING CONTRACTOR SHALL KEEP EXISTING ROADWAYS CLEAN OF MUD AND DEBRIS AT ALL TIMES.

8.) NO GRADE SHALL EXCEED 3:1 SLOPE, EXCEPT AS NOTED AND APPROVED PER GEOTECHNICAL ENGINEER.

9.) ALL LANDSCAPE AREAS TO BE FILLED WITH A MINIMUM OF 6" OF TOPSOIL

10.) ALL LANDSCAPED AREAS DISTURBED BY OFF-SITE WORK SHALL BE IMMEDIATELY SEEDED OR SODDED.

11.) ADEQUATE TEMPORARY OFF-STREET PARKING FOR CONSTRUCTION EMPLOYEES SHALL BE PROVIDED. PARKING ON NON-SURFACED AREAS SHALL BE PROHIBITED IN ORDER TO ELIMINATE THE CONDITION WHEREBY MUD FROM CONSTRUCTION AND EMPLOYEES' VEHICLES IS TRACKED ONTO THE PAVEMENT CAUSING HAZARDOUS ROADWAY AND DRIVEWAY CONDITIONS

12.) ALL PUBLIC SEWER CONSTRUCTION MUST CONFORM TO 2009 M.S.D. "STANDARD CONSTRUCTION SPECIFICATIONS AND DETAILS"

13.) THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM SURVEY AND AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, NUMBER OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UTILITIES, SHOWN OR NOT SHOWN, AND SAID UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319, RSMO.

14.) CLEARING TECHNIQUES THAT RETAIN EXISTING VEGETATION TO THE MAXIMUM EXTENT PRACTICABLE SHALL BE USED AND THE TIME PERIOD FOR DISTURBED AREAS TO BE WITHOUT VEGETATIVE COVER SHALL BE MINIMIZED TO THE EXTENT PRACTICAL.

15.) THE DEVELOPER IS ADVISED THAT UTILITY COMPANIES WILL REQUIRE COMPENSATION FOR RELOCATION OF THEIR UTILITY FACILITIES WITHIN PUBLIC ROAD RIGHT-OF-WAY. UTILITY RELOCATION COST SHALL BE CONSIDERED THE DEVELOPER'S RESPONSIBILITY.

16.) THE DEVELOPER SHOULD ALSO BE AWARE OF EXTENSIVE DELAYS IN UTILITY COMPANY RELOCATION AND ADJUSTMENTS. SUCH DELAYS WILL NOT CONSTITUTE A CAUSE TO ALLOW OCCUPANCY PRIOR TO COMPLETION OF IMPROVEMENTS.

17.) AREAS SHALL BE SEEDED AFTER CLEARING AND GRUBBING WHEN NO ACTIVITY WILL OCCUR WITHIN THIRTY (30) DAYS.

18.) ALL OFFSITE PROPERTY OWNERS SHALL BE GIVEN 48 HOURS NOTICE IN ADVANCE OF ANY WORK.

19.) ANY DISTURBED OFF SITE PROPERTY (i.e. BUSHES, FENCES, MAILBOXES, etc..) SHALL BE REPLACED IN KIND, AT THE DEVELOPER'S EXPENSE.

20.) ALL PROPOSED UTILITIES TO BE LOCATED UNDERGROUND.

21.) ALL SIDEWALKS TO BE CONSTRUCTED TO ST. LOUIS COUNTY ADA STANDARDS.

22.) DRIVEWAYS AND ENTRANCES PER ST. LOUIS COUNTY STANDARDS.

23.) SITE SIGNAGE SHALL COMPLY WITH CITY OF MANCHESTER SIGN ORDINANCE.

24.) STORMWATER SHALL BE DISCHARGED AT AN ADEQUATE NATURAL DISCHARGE POINT. SINKHOLES ARE NOT ADEQUATE NATURAL DISCHARGE POINTS.

25.) IT IS NOT WARRANTED THAT THIS PLAT CONTAINS COMPLETE INFORMATION REGARDING EASEMENTS, RESERVATIONS, RESTRICTIONS, RIGHTS-OF-WAY, BUILDING LINES, AND OTHER ENCUMBRANCES. FOR COMPLETE INFORMATION, A TITLE OPINION OR COMMITMENT FOR TITLE INSURANCE SHOULD BE OBTAINED.

26.) THIS PLAN IS SUBJECT TO ALL LOCAL, STATE AND FEDERAL REGULATIONS. THERE HAS BEEN NO WETLAND DELINEATION, GEOTECHNICAL INVESTIGATION OR ENVIRONMENTAL DATA PROVIDED TO THIS ENGINEER PRIOR TO DESIGNING THIS PLAN.

27.) WATER QUALITY CALCULATIONS BASED UPON FIELD DISTURBED AREA ONLY.

28.) CHANNEL PROTECTION CALCULATIONS BASED UPON FIELD DISTURBED AREA ONLY.

29.) STORMWATER QUALITY SYSTEMS ARE SUBJET TO REVIEW AND APPROVAL BY MSD.

30.) FOOTBALL AND SOCCER FIELD STRIPING PER MISSOURI STATE HIGH SCHOOL ATHLETIC ASSOCATIONS REGULATIONS.

31.) SOCCER FIELD STRIPING TO BE HELD MINIMUM OF 9 FEET FROM EDGE OF INNER CURBERS INSIDE OF RUNNING TRACK.

32.) INTERNAL (PRIVATE) STORM SEWERS WILL REQUIRE A SEPARATE DRAINLAYER PERMIT FROM ST. LOUIS COUNTY DEPARTMENT OF PUBLIC WORKS.

33.) TRUCKS SHALL NOT EXCEED POSTED WEIGHT LIMITS FOR ST. LOUIS COUNTY BRIDGES DURING HAUL OPERATIONS.

34.) SEDIMENT SHALL BE WASHED FROM ALL VEHICLES AT WASHDOWN STATION PRIOR TO LEAVING SITE. NO TRACKING OF MUD ONTO COUNTY ROADS SHALL BE ALLOWED.

35.) EXISTING INFORMATION SHOWN ON THE PLANS IS A COMBINATION OF RECORD DRAWINGS PROVIDED BY PARKWAY AND AN ACTUAL FIELD SURVEY PERFORMED BY STOCK AND ASSOCIATES. THE TOPOGRAPHIC SURVEY PROVIDED GROUND ELEVATIONS AND LOCATIONS OF EXISTING (VISIBLE) IMPROVMENTS. RECORD DRAWINGS WERE USED TO SHOW UNDERGROUND UTILITIES AND DRAINAGE SYSTEMS THAT COULD NOT BE VERIFIED FROM THE SURFACE. CONTRACTOR SHOULD USE CAUTION DURING CONSTRUCTION AND REPORT ANY FINDINGS THAT ARE NOT SHOWN ON THE PLAN TO THE ENGINEER IMEDIATELY.

36.) NO GRADING SHALL OCCUR ON THE SITE UNTIL A GRADING PERMIT IS ISSUED.

STORM SEWER NOTES

1.) ALL MEANS AND METHODS OF CONSTRUCTION FOR STORM SEWERS SHALL BE IN ACCORDANCE WITH M.S.D. "STANDARD CONSTRUCTION SPECIFICATIONS FOR SEWERS AND DRAINAGE FACILITIES", 2009.

2.) ALL CONCRETE SHALL BE REINFORCED, AND CONFORM TO A.S.T.M. DESIGNATION C76-80 CLASS III UNLESS NOTED.

3.) TYPE "C" BEDDING PER M.S.D. AND ST. LOUIS COUNTY STANDARDS IS REQUIRED FOR PIPES IN ROCK.

4.) ALL TRENCHES UNDER AREAS TO BE PAVED AND UNDER EXISTING PAVING SHALL BE GRANULARLY FILLED WITH 3/4" MINUS CRUSHED LIMESTONE ONLY. BACKFILL SHALL BE PLACED IN ACCORDANCE WITH M.S.D. AND ST. LOUIS COUNTY STANDARDS.

5.) ALL TRENCH BACKFILLS UNDER PAVEMENT WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE GRANULAR BACKFILLED. TRENCH BACKFILLS UNDER PAVED AREAS, OUTSIDE OF PUBLIC RIGHT-OF-WAY SHALL BE GRANULAR BACKFILL IN LIEU OF THE EARTH BACKFILL COMPACTED TO 90 PERCENT OF THE MODIFIED AASHTO T-180 COMPACTION TEST A.S.T.M. D-1557.

6.) JETTING IS NOT AN ACCEPTABLE METHOD OF ACHIEVING BACKFILL COMPACTION. ALL BACKFILL MATERIAL SHALL BE MECHANICALLY COMPACTED TO AT LEAST 95 PERCENT OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY.

7.) FOR SEWER PIPE (STORM, SANITARY AND COMBINED) WITH A DESIGN GRADE LESS THAN ONE PERCENT (1%), VERIFICATION OF THE PIPE GRADE WILL BE REQUIRED FOR EACH INSTALLED REACH OF SEWER, PRIOR TO ANY SURFACE RESTORATION OR INSTALLATION OF ANY SURFACE IMPROVEMENTS. THE CONTRACTOR'S FIELD SUPERVISOR WILL BE REQUIRED TO PROVIDE DAILY DOCUMENTATION VERIFYING THAT THE AS-BUILT PIPE GRADE MEETS THE DESIGN GRADE THROUGH THE SUBMITTAL OF SIGNED CUT SHEETS TO THE MSD INSPECTOR UPON REQUEST.

FIELD SURVEYED VERIFICATION MUST BE MADE UNDER THE DIRECTION OF A LICENSED LAND SURVEYOR OR REGISTERED ENGINEER. THE CONTRACTOR WILL BE REQUIRED TO REMOVE AND REPLACE ANY SEWER REACH HAVING AN AS-BUILT GRADE WHICH IS FLATTER THAN THE DESIGN GRADE BY MORE THAN 0.1%. SEWERS WITH GRADE GREATER THAN THE DESIGN SLOPE MAY BE LEFT IN PLACE, PROVIDED NO OTHER SEWER GRADE IS REDUCED BY THIS VARIANCE IN THE AS-BUILT GRADE.

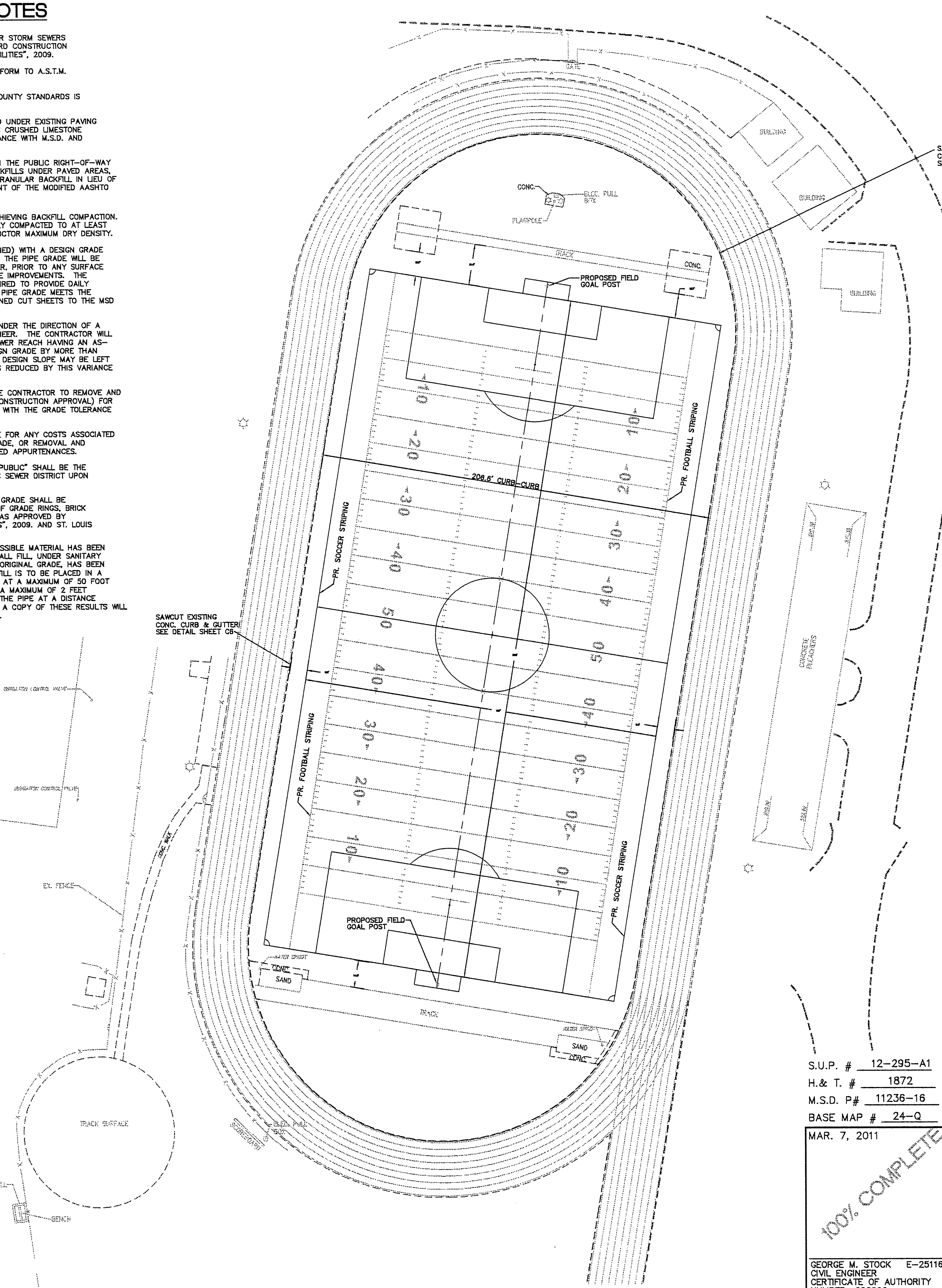
MSD ALSO RESERVES THE RIGHT TO REQUIRE THE CONTRACTOR TO REMOVE AND REPLACE ANY SEWER (AT ANY TIME PRIOR TO CONSTRUCTION APPROVAL) FOR WHICH THE AS-BUILT GRADE DOES NOT COMPLY WITH THE GRADE TOLERANCE STATED IN THE ABOVE PARAGRAPH.

THE SEWER CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COSTS ASSOCIATED WITH THE FIELD VERIFICATION OF THE SEWER GRADE, OR REMOVAL AND REPLACEMENT OF THE SEWER PIPE OR ASSOCIATED APPURTENANCES.

8.) MAINTENANCE OF THE SEWERS DESIGNATED AS "PUBLIC" SHALL BE THE RESPONSIBILITY OF THE METROPOLITAN ST. LOUIS SEWER DISTRICT UPON DEDICATION OF THE SEWERS TO THE DISTRICT.

9.) STRUCTURES NOTED TO BE ADJUSTED TO FINISH GRADE SHALL BE ADJUSTED BY EITHER REMOVAL OR PLACEMENT OF GRADE RINGS, BRICK WORK, OR MORTAR BEDDING BY SUCH METHODS AS APPROVED BY M.S.D. "STANDARD CONSTRUCTION SPECIFICATIONS", 2009. AND ST. LOUIS COUNTY SPECIFICATIONS FOR STORM SEWERS.

10.) SOILS ENGINEER WILL VERIFY THAT ALL COMPRESSIBLE MATERIAL HAS BEEN REMOVED PRIOR TO FILL PLACEMENT AND THAT ALL FILL, UNDER SANITARY AND STORM SEWER LINES CONSTRUCTED ABOVE ORIGINAL GRADE, HAS BEEN COMPACTED TO 90% OF "MODIFIED PROCTOR." FILL IS TO BE PLACED IN A MAXIMUM OF 9" LIFTS. TESTS SHALL BE TAKEN AT A MAXIMUM OF 50 FOOT INTERVALS ALONG THE ROUTE OF THE PIPE, AT A MAXIMUM OF 2 FEET VERTICALLY, AND LATERALLY ON EACH SIDE OF THE PIPE AT A DISTANCE EQUAL TO THE DEPTH OF FILL OVER THE PIPE. A COPY OF THESE RESULTS WILL BE SUBMITTED TO MSD PRIOR TO CONSTRUCTION.



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

NORTH

NOTES:

1. PROPOSED FOOTBALL AND SOCCER FIELD STRIPING AND GOAL POSTS PER MISSOURI STATE HIGH SCHOOL ATHLETIC ASSOCATION STANDARDS (MSHSAA).

2. PROPOSED FIELD LOGO, END ZONE LETTERING AND STRIPING COLORS TO BE COORDINATED WITH PARKWAY SCHOOL DISTRICT.

2'-0" (Min.)

1'-6" (Min.)

WHAT IS THIS ?

THIS IS A BIO-RETENTION FILTER BASIN. BIO-RETENTION FILTER BASINS ARE DESIGNED TO REMOVE TOXINS THROUGH FILTRATION AND PLANTS DESIGNED TO ABSORB FERTILIZERS, PESTICIDES, OILS AND OTHER WASTE PRIOR TO ENTERING OUR STREAMS.

EDUCATIONAL SIGN DETAIL

NOTE: EDUCATIONAL SIGN TO BE PROVIDED BY OWNER.

UTILITY NOTE

UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS, RECORDS AND INFORMATION, AND , THEREFORE DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NON-EXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE FACILITIES, STRUCTURES AND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS. THE UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319 RSMo..

S.U.P. # 12-295-A1
H.& T. # 1872
M.S.D. P# 11236-16
BASE MAP # 24-Q

2 2011-03-07 REVISED PER MSD, COUNTY COMMENTS
1 2011-02-21 REVISED PER MSD, COUNTY COMMENTS

MAR. 7, 2011

100% COMPLETE

PARKWAY SOUTH HIGH SCHOOL

SITE GEOMETRIC PLAN / SPECIFICATIONS

STOCK & ASSOCIATES
Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005
PH. (636) 530-9100
FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
J.M.B.	12/17/10	G.M.S.	12/22/10	210-4671	C7 of 11

Project name:	*Parkway South High School*		Calculated By:	*J.M.B.*		15 year - 20 minute								Revisions:	*February 14, 2011*												
Project number:	*210-4671*		Checked By:	*G.M.S.*		*Bend Coefficients:*																					
Project Location:	*Manchester, Missouri*		Date:	*12/23/2010*		5^0 = 0.06	20^0 = 0.24	35^0 = 0.4	50^0 = 0.50	65^0 = 0.57	80^0 = 0.65			HEAD LOSS					Hydraulic Elevations								
						10^0 = 0.11	25^0 = 0.30	40^0 = 0.43	55^0 = 0.52	70^0 = 0.60	85^0 = 0.67															
	LINE		FLOW LINE ELEVATIONS			15^0 = 0.18	30^0 = 0.35	45^0 = 0.47	60^0 = 0.55	75^0 = 0.62	90^0 = 0.70												Structure	TOP	Free	
Structure Number	Upper structure	Lower structure	Upper structure	Lower Structure	Length (ft)	Flowline Grade (ft/ft)	Pipe Size (in.)	Full Flow Cap. (cfs)	Total (Q) (cfs)	Mean Full Flow Vel.(V) (ft/s)	Bend Coef.	Curve Coef.	Velocity Head (Vh) (ft)	$Q\sqrt{s}$ (ft^3/s)	Pipe Coef. (n)	Hf (ft)	Junction (ft)	Bend (ft)	Curve (ft)	Total H_{out}	Upper P.I. + Dia.	Lower H.E. +Hf	Lower H.E.	Upper H.E. + H_{out}	Structure Elevation	Board	Structure Number
3	3	2	490.83	489.00	42.39	0.0432	15	13.46	8.77	7.15	0.00	0.00	0.79	6.95	0.013	0.78	0.00	0.00	0.00	0.00	492.08	498.69	497.91	498.69	497.67	-1.02	3
2	2	1	488.00	487.00	52.45	0.0191	15	8.94	8.77	7.15	0.24	0.00	0.79	6.95	0.013	0.97	0.00	0.19	0.00	0.19	489.25	497.72	496.75	497.91	497.00	-0.91	2
1	1		487.00																15 YR CREEK HGL(FEMA)=					496.75			1
6	6	5	500.76	498.00	57.83	0.0477	12	7.80	8.77	11.17	0.00	0.00	1.94	16.98	0.013	3.50	0.00	0.00	0.00	0.00	501.76	503.02	499.52	503.02	506.30	3.28	6
5	5	4	498.00	495.50	129.20	0.0193	15	9.01	8.77	7.15	0.18	0.00	0.79	6.95	0.013	2.38	0.00	0.14	0.00	0.14	499.25	499.38	497.00	499.52	504.00	4.48	5
4	4		495.50																CPv ELEVATION=					497.00			4

MEAN FULL FLOW VELOCITY = Q_{ACT}/A_{PIPE}

FRICTION LOSS (H_f): $Hf = 2.87\ n^2\ (LV^2/d^{1.33})$

VELOCITY HEAD: $V_h = V^2/2g$

JUNCTION LOSES (JUNC.) = $[\ Q_{out}Vh_{out} - Sum\ (Q_{in}V_{in})]x\ 1.33/[Q_{out}]$

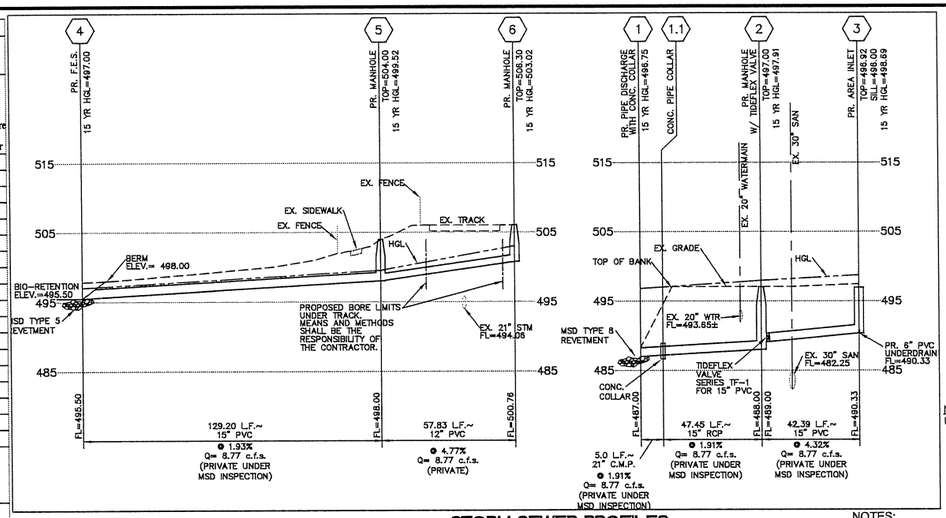
BEND LOSES (BEND) = (V^2) * ANGLE COEFFICIENT

CURVE LOSS=V_h*CURVE COEFFICIENT

Note:

1. IF MORE THAN ONE INCOMING LINE, CALC. EACH BEND LOSS AND ADD TOGETHER.
2. NO STRUCTURE LOSES TO BE CALCULATED AT A DROP
3. IF $QV_{h(in)} > QV_{h(out)}$, NO JUNCTION LOSES TO BE CALCULATED.

Note (s):



STORM SEWER PROFILES

SCALE: 1" = 30' HORIZ
1" = 10' VERT

UTILITY CONFLICT NOTE:

CONTRACTOR SHALL VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF EXISTING UTILITIES AND SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY POTENTIAL UNDERGROUND UTILITY CONFLICT AT THE TIME OF EXCAVATION.

LINETYPE LEGEND

- EXISTING GRADE.....
- PROPOSED GRADE...
- 15 YR HYDRAULIC GRADE...
- 100 YR HYDRAULIC GRADE...
- PROPOSED PAVEMENT....
- GRANULAR BACKFILL.....
- COMPACTED FILL.....

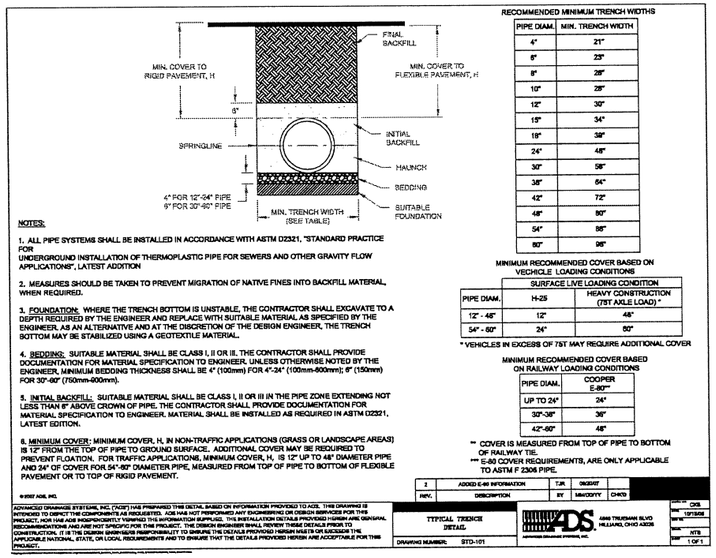
CONSTRUCTION NOTES:

1. ALL R.C.P. SHALL BE CLASS III UNLESS NOTED OTHERWISE.
2. ALL P.V.C. SHALL BE SDR 35 UNLESS NOTED OTHERWISE.
3. ENGINEER APPROVED SHOP DRAWINGS MUST BE SUBMITTED TO MSD FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. OF SEWER STRUCTURES.

NOTE: ALL SEWERS SHOWN ON THIS SHEET SHALL BE "PRIVATE" UNLESS NOTED OTHERWISE.

NOTES:

1. THE REMOVAL AND REPLACEMENT, OR REHABILITATION OF EXISTING SEWER STRUCTURES WILL BE DETERMINED BY THE MSD FIELD INSPECTOR. IF THE STRUCTURE IS DETERMINED TO REMAIN IN PLACE THEN THE TOP SHALL BE ADJUSTED TO GRADE IF NECESSARY.



NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER, AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-600mm).
5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-80" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

REV.	DESCRIPTION	BY	MM/DD/YY	CHK'D
2	ADDED E-60 INFORMATION	TJR	09/25/07	

TYPICAL TRENCH DETAIL

DRAWING NUMBER: STD-101

4640 TRUEMAN BLVD. HILLIARD, OHIO 43026

DWN: CRS
DATE: 12/13/06
CHK'D:
DATE:
SCALE: NTS
SHT: 1 OF 1

RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
4"	21"
6"	23"
8"	28"
10"	28"
12"	30"
15"	34"
18"	38"
24"	48"
30"	58"
36"	64"
42"	72"
48"	80"
54"	88"
60"	96"

MINIMUM RECOMMENDED COVER BASED ON VECHICLE LOADING CONDITIONS

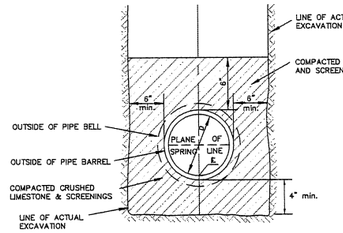
PIPE DIAM.	SURFACE LIVE LOADING CONDITION H-25	HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48"	12"	48"
54" - 60"	24"	60"

* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

MINIMUM RECOMMENDED COVER BASED ON RAILWAY LOADING CONDITIONS

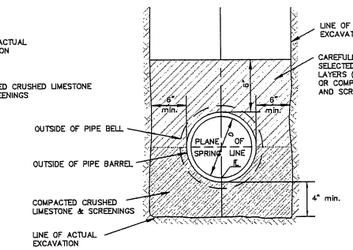
PIPE DIAM.	COOPER E-80**
UP TO 24"	24"
30"-36"	36"
42"-60"	48"

** COVER IS MEASURED FROM TOP OF PIPE TO BOTTOM OF RAILWAY TIE.
*** E-80 COVER REQUIREMENTS, ARE ONLY APPLICABLE TO ASTM F 2306 PIPE.



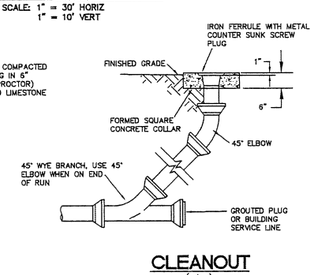
PIPE BEDDING CLASS "C"

(FOR ALL PIPE EXCEPT REINFORCED CONCRETE PIPE)



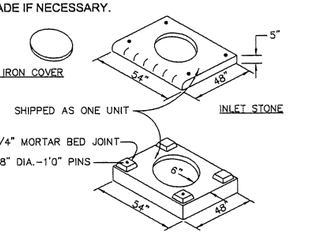
PIPE BEDDING CLASS "C"

(MODIFIED FOR REINFORCED CONCRETE PIPE)

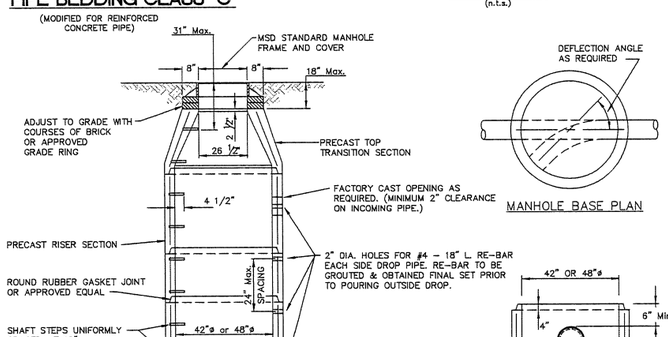


CLEANOUT

(n.t.s.)



4 WAY CONCRETE UNIT

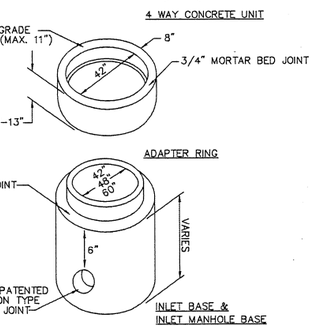


PRECAST MANHOLE

(n.t.s.)

MANHOLE BASE PLAN

BASE SECTION



PRECAST AREA INLET DETAIL

(n.t.s.)

H.D.P.E. STORM SEWER NOTE:

CONTRACTOR SHALL READ AND FOLLOW SPECIFIC INSTALLATION REQUIREMENTS OF H.D.P.E. PIPE MANUFACTURER BASED UPON PIPE TYPE UTILIZED AND FOLLOW ASTM D-2321 INSTALLATION PROCEDURES AS DIRECTED BY THE ON SITE SUPERVISING GEOTECHNICAL ENGINEER.
GEOTECHNICAL ENGINEER SHALL INSPECT INSTALLATIONS TO CONFIRM PROPER INSTALLATION (BEDDING, BACKFILL, COVER, etc) AND CONFIRM SAID INSTALLATION PROCEDURE BASED UPON ON-SITE SOIL TYPE AT PIPE INSTALLATION LOCATIONS ON PROJECT.
IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL SAID RECOMMENDATIONS FOR PROPER INSTALLATION OF H.D.P.E. PIPE SYSTEM INSTALLED.

H.D.P.E. STORM SEWER NOTES:
(IF PERMISSIBLE BY LOCAL AUTHORITY)

1.) STORM SEWER PIPE DESIGNATED AS HIGH DENSITY POLYETHYLENE (H.D.P.E.) SHALL HAVE WATER TIGHT GASKETED JOINTS WITH RUBBER O-RING GASKETS MEETING ASTM F477. O-RING GASKET SHALL BE INSTALLED ON THE SPIGOT END OF PIPE.

2.) 12" TO 36" PIPE SHALL CONFORM TO THE AASHTO M294 CLASSIFICATION "TYPE S" AND 42" TO 48" SHALL CONFORM TO AASHTO MP6-95 CLASSIFICATION "TYPE D."

3.) ALL PIPE JOINTS SHALL CONSIST OF BELL AND SPIGOT JOINING SYSTEM WITH THE BELL COVERING TWO PIPE CORRUGATIONS AS RECOMMENDED IN AASHTO M294.

4.) PIPE MANUFACTURED FOR THIS SPECIFICATION SHALL COMPLY WITH THE REQUIREMENTS FOR TEST METHODS, DIMENSIONS AND MARKINGS FOUND IN AASHTO DESIGNATIONS M252 AND M294. PIPE AND FITTINGS SHALL BE MADE FROM VIRGIN PE COMPOUNDS WHICH CONFORM WITH THE REQUIREMENTS OF CELL CLASS 335420C AS DEFINED AND DESCRIBED IN ASTM D3350.

H.D.P.E. STORM SEWER NOTES CONT'D:
(IF PERMISSIBLE BY LOCAL AUTHORITY)

5.) FITTINGS MAY BE EITHER MOLDED OR FABRICATED AND SHALL CONFORM TO THE REQUIREMENTS AASHTO M252 AND M294. THE FITTINGS SHALL NOT REDUCE OR IMPAIR THE OVERALL INTEGRITY OR FUNCTION OF THE PIPE LINE. ONLY FITTINGS SUPPLIED OR RECOMMENDED BY THE PIPE MANUFACTURER SHALL BE USED.

6.) INSTALLATION OF THE PIPE SPECIFIED ABOVE SHALL BE IN ACCORDANCE WITH THE ASTM RECOMMENDED PRACTICE D2321.

7.) BOTH BELL AND SPIGOT (WITH O-RING GASKET) ENDS OF THE PIPE SHALL BE LUBRICATED AS RECOMMENDED BY MANUFACTURER AND INSERTED TO THE HOMING MARK ON THE SPIGOT END OF THE PIPE.

8.) MINIMUM RECOMMENDED TRENCH WIDTH SHALL BE NOT LESS THAN THE GREATER OF EITHER PIPE OUTSIDE DIAMETER PLUS 16 INCHES OR THE PIPE OUTSIDE DIAMETER TIMES 1.25, PLUS 12 INCHES AS OUTLINED HEREIN:

NOMINAL PIPE DIAMETER	MINIMUM TRENCH WIDTH
8" (200mm)	28"
10" (250mm)	28"
12" (300mm)	30"
15" (375mm)	34"
18" (450mm)	39"
24" (600mm)	48"
30" (750mm)	58"
36" (900mm)	64"
42" (1050mm)	72"
48" (1200mm)	80"
54" (1350mm)	88"
60" (1500mm)	96"

Tideflex Technologies — Technical Data

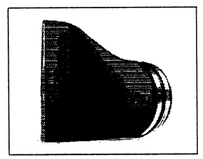
Series TF-1—Tideflex® Check Valve

Features & Benefits

- Ideal for manhole installations
- Lightweight, all-elastomer design
- Seals around entrapped solids
- Cost-effective, maintenance-free design

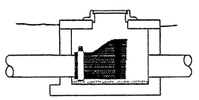
Materials of Construction

- Elastomers available in Pure Gum Rubber, Neoprene, Hypalon®, Chlorobutyl, Buna-N, EPDM, and Viton®

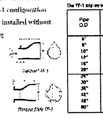


We are pleased to announce the introduction of the revolutionary TF-1 Check Valve. It functions and operates under the same simple principle of operation as the original TF-2 Tideflex®.

This design is ideal for existing manhole installations where the invert of the pipe is close to the floor of the vault. There are many check valves in interceptor, manholes, and vaults. These vaults are designed so that there would be a maximum gravity head; thus, the invert pipe is as close to the base as possible. The TF-1 allows installations in such applications.



The Tideflex® Technologies Series TF-1 Tideflex® Check Valve is designed for applications in manholes, where the bottom of the manhole is close to the invert of the pipe. The TF-1 configuration allows the valve to be properly installed without manhole modifications, ensuring positive backflow prevention and a lifetime of maintenance-free performance.



Dimensions for TF-1 Tideflex® Check Valve

The TF-1 duck are removable to bend as the O.D. of the mating Pipe. For an elastomer sheet, contact factory.

Pipe O.D.	Tideflex TF-1 Duck Size Cut Length A	TF-1 Percent Wide Flange Size	Maximum Length L	Maximum Height H
6"	7"	6"	11"	12"
8"	9"	8"	13-1/2"	15-1/2"
10"	11"	10"	21-1/2"	15-1/2"
12"	13"	12"	19"	19"
15"	16"	15"	22"	24"
18"	19"	18"	25"	28"
24"	25"	24"	31"	34"
30"	31"	30"	37-1/2"	40"
36"	37"	36"	43"	46"
42"	43"	42"	49-1/2"	52"
48"	49"	48"	56"	58"
54"	55"	54"	62-1/2"	70-1/2
60"	61"	60"	69"	77"
72"	73"	72"	83"	90"

Tideflex Technologies, Inc. • 348 Gilmar Dr., Pittsburgh, PA 15205 USA • 412-919-0919 • Fax 412-919-0918 • www.tideflex.com

ALL DETAILS SHOWN ON THIS SHEET ARE FOR THE CONVENIENCE OF THE CONTRACTOR. THE DETAILS ARE TO BE VERIFIED PER MSD'S STANDARD CONSTRUCTION SPECIFICATIONS, 2009. ALL METHODS, MEANS AND MATERIALS SHALL CONFORM TO MSD CURRENT STANDARD CONSTRUCTION SPECIFICATION, 2009.

AREA INLET #3 CAPACITY

$Q = Cd \times A \times \sqrt{(2(g)(h))}$

WHERE:
Q = DISCHARGE (c.f.s.)
Cd = COEFFICIENT OF DISCHARGE (Cd=0.61)
A = CROSS-SECTIONAL AREA OF FLOW AT THE ORIFICE ENTRANCE (SQ. FT.) (ONE SIDE)
g = ACCELERATION OF GRAVITY ($g=32.2\ ft/sec^{-2}$)
h = DRIVING HEAD (ft), MEASURED FROM THE CENTROID OF THE ORIFICE AREA TO THE WATER SURFACE.
FOR 6" OF PONDING AT THE INLET, h=0.50'

$Q = Cd \times A \times \sqrt{(2(g)(h))}$

$Q = 0.61 \times 5.87\ ft^{\wedge}2 \times \sqrt{(2)(32.2\ ft/sec^{\wedge}2)(0.50')}$

$Q = 19.63$ c.f.s./ AREA INLET (OPEN 4 SIDES)

Q(100) = (2.2 Ac.) x (2.29) + (1.42 Ac.) x (4.77) = 11.81 CFS
11.81 CFS < 19.63 CFS, THEREFORE INLET HAS SUFFICIENT CAPACITY.

NOTES:

1. THE REMOVAL AND REPLACEMENT, OR REHABILITATION OF EXISTING SEWER STRUCTURES WILL BE DETERMINED BY THE MSD FIELD INSPECTOR. IF THE STRUCTURE IS DETERMINED TO REMAIN IN PLACE THEN THE TOP SHALL BE ADJUSTED TO GRADE IF NECESSARY.

ST. LOUIS COUNTY NOTE:

THIS SHEET NOT INCLUDED WITH ST. LOUIS COUNTY APPROVAL.

S.U.P. # 12-295-A1
H.& T. # 1872
M.S.D. P# 11236-16
BASE MAP # 24-Q

MAR. 7, 2011

100% COMPLETE

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

2 2011-03-07 REVISED PER MSD, COUNTY COMMENTS
1 2011-02-21 REVISED PER MSD, COUNTY COMMENTS

PARKWAY SOUTH HIGH SCHOOL

STORM SEWER PROFILES, DETAILS & HYDRAULICS

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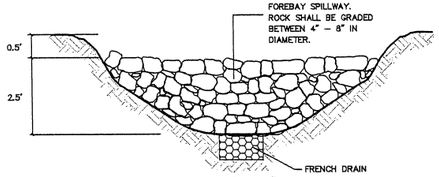
Web: www.stockassoc.com

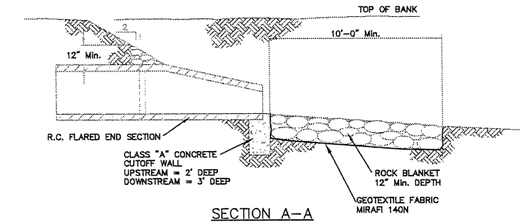
DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
J.M.B.	12/17/10	G.M.S.	12/22/10	210-4671	C8 of 11



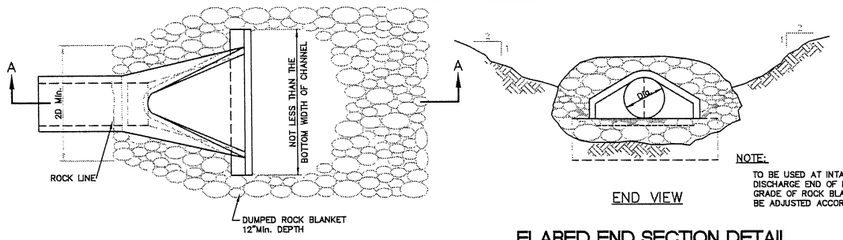
FOREBAY SPILLWAY DETAIL

N.T.S.

NOTE: FOREBAY SPILLWAY SHALL BE INSPECTED ANNUALLY. ROCKS SHALL BE REMOVED AND REPLACED IF FOULING OCCURS.



SECTION A–A



FLARED END SECTION DETAIL

(n.t.s.)

CONSTRUCTION NOTES:

IT IS IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF THE BIORETENTION AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF BIORETENTION AREAS ARE EXCAVATED USING A LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.

COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS A CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO FRACTURE THE SOIL PROFILE THROUGH THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE DESIGN OR GEOTECHNICAL ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.

THE IN-PLACE PERMEABILITY OF THE PLANTING SOIL SHALL BE 2.0 TO 3.5 FT/DAY, AND VERIFIED BY AN INFILTRATION TEST PERFORMED PER THE MARYLAND STORMWATER MANUAL, APPENDIX D.1, "INFILTRATION TESTING REQUIREMENTS (FIELD TESTING REQUIRED)". A MINIMUM OF ONE PERCOLATION TEST SHALL BE PERFORMED PER FACILITY. THE MSD FIELD INSPECTOR SHALL BE ALLOWED TO SELECT THE LOCATION OF PERCOLATION TESTS. THE MSD FIELD INSPECTOR SHALL BE PROVIDED A COPY OF ALL TEST RESULTS, SIGNED AND SEALED BY A MISSOURI PROFESSIONAL ENGINEER. TEST RESULTS SHALL REPORT IN UNITS OF FT/DAY. RESULTS SHALL DEMONSTRATE ACCEPTABLE PERMEABILITY PRIOR TO CONSTRUCTION APPROVAL.

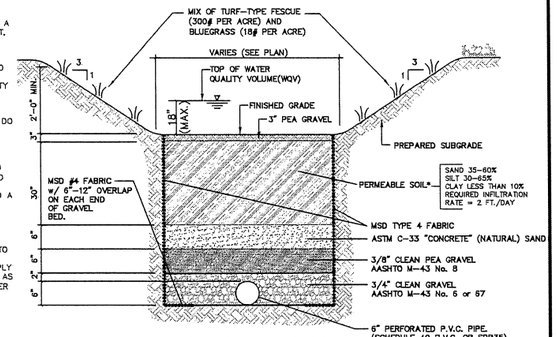
WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS OF 12 TO 18 INCHES. DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS. THE LANDSCAPER AND OR GEOTECHNICAL ENGINEER SHOULD BE PRESENT ON SITE DURING THE CONSTRUCTION OF THE BIORETENTION FACILITIES TO ENSURE QUALITY CONTROL.

Planting Soil Characteristics

Parameter	Value
pH range	5.2 to 8.00
Organic matter	1.5 to 5.0%
Magnesium	35 lbs. per acre, minimum
Phosphorous (P205)	75 lbs. per acre, minimum
Potassium (K20)	85 lbs. per acre, minimum
Soluble salts	≤ 500 ppm

NOTES:

1. DURING CONSTRUCTION SITE RUNOFF SHALL NOT FLOW INTO BIORETENTION AND/OR SAND FILTER AREAS. ALL STORMWATER FLOW TO SAND FILTER AND BIORETENTIONAREAS SHALL BE DIVERTED, PLUGGED, OR DISCONNECTED UNTIL THE CONSTRUCTION SITE IS STABLE AND THE MSD INSPECTOR PROVIDE APPROVAL TO PLACE THE BMPS ONLINE.
2. SEE LANDSCAPE PLAN (SHEET C10) FOR ADDITIONAL DETAILS ON PLANTINGS IN BIORETENTION AREAS.
3. CLEANOUTS TOP ELEVATION TO BE 6" ABOVE PEA GRAVEL SURFACE.



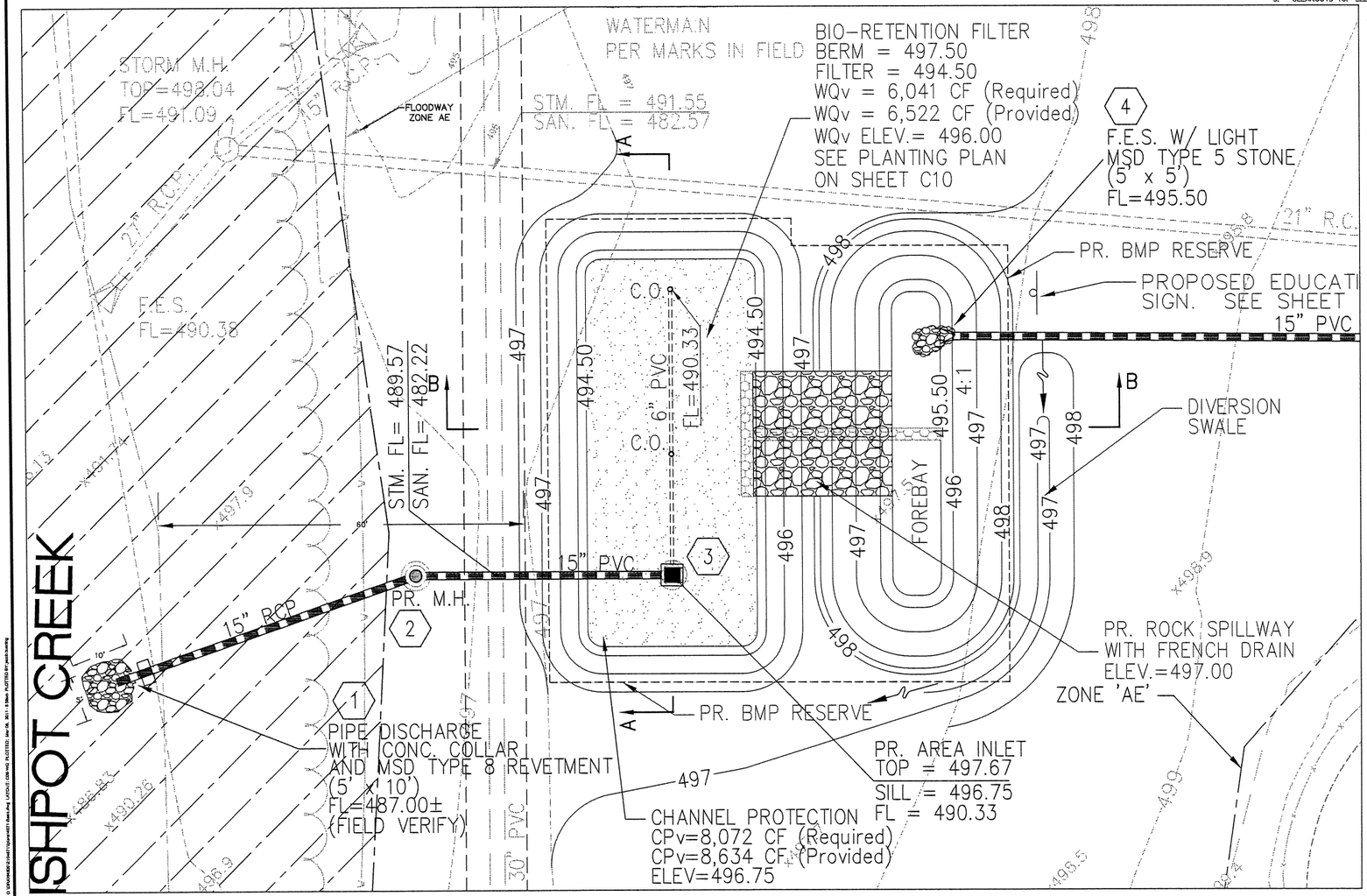
BIO-RETENTION DETAIL

(N.T.S.)

ANY FUTURE LAND DISTURBANCE AND/OR INCREASE IN IMPERVIOUS AREA ON THIS SITE PLAN MAY REQUIRE ADDITIONAL STORM WATER MANAGEMENT PER MSD REGULATIONS IN PLACE AT THAT TIME (INCLUDING TOTAL LAND DISTURBANCE AND/OR IMPERVIOUSNESS ADDED ON THIS PLAN, P-11236-16)

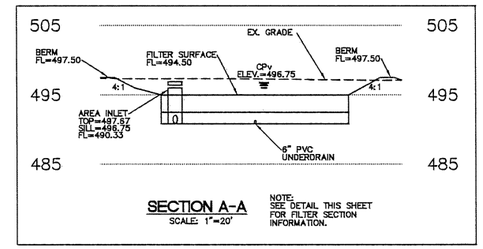
STORMWATER MANAGEMENT – WATER QUALITY NOTE
LAND AREA DISTURBED = 2.56 ACRES
ANY FURTHER DEVELOPMENT SHALL INCLUDE THESE IMPROVEMENTS AS WELL

LIMITS OF DISTURBANCE
THE CONTRACTOR SHALL STAY WITHIN THE LIMITS OF DISTURBANCE AS SHOWN ON THE PLANS AND MINIMIZE DISTURBANCE WITHIN THE WORK AREA WHEREVER POSSIBLE.



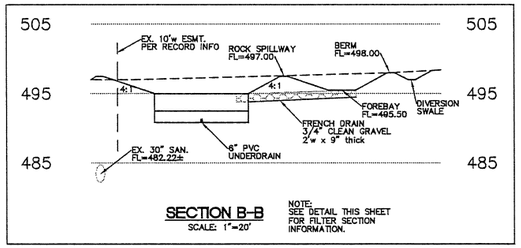
BIO-RETENTION DETAIL

SCALE: 1" = 10'



SECTION A-A
SCALE: 1"=20'

NOTE: SEE DETAIL THIS SHEET FOR FILTER SECTION INFORMATION.



SECTION B-B
SCALE: 1"=20'

NOTE: SEE DETAIL THIS SHEET FOR FILTER SECTION INFORMATION.

BIO-RETENTION SECTIONS

SCALE: 1" = 20' HORIZ.
SCALE: 1" = 10' VERT.

ST. LOUIS COUNTY NOTE:

THIS SHEET NOT INCLUDED WITH ST. LOUIS COUNTY APPROVAL.

S.U.P. # 12-295-A1
H.& T. # 1872
M.S.D. P# 11236-16
BASE MAP # 24-Q

MAR. 7, 2011

100% COMPLETE

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

2 2011-03-07 REVISED PER MSD, COUNTY COMMENTS
1 2011-02-21 REVISED PER MSD, COUNTY COMMENTS

PARKWAY SOUTH HIGH SCHOOL

WATER QUALITY DETAILS

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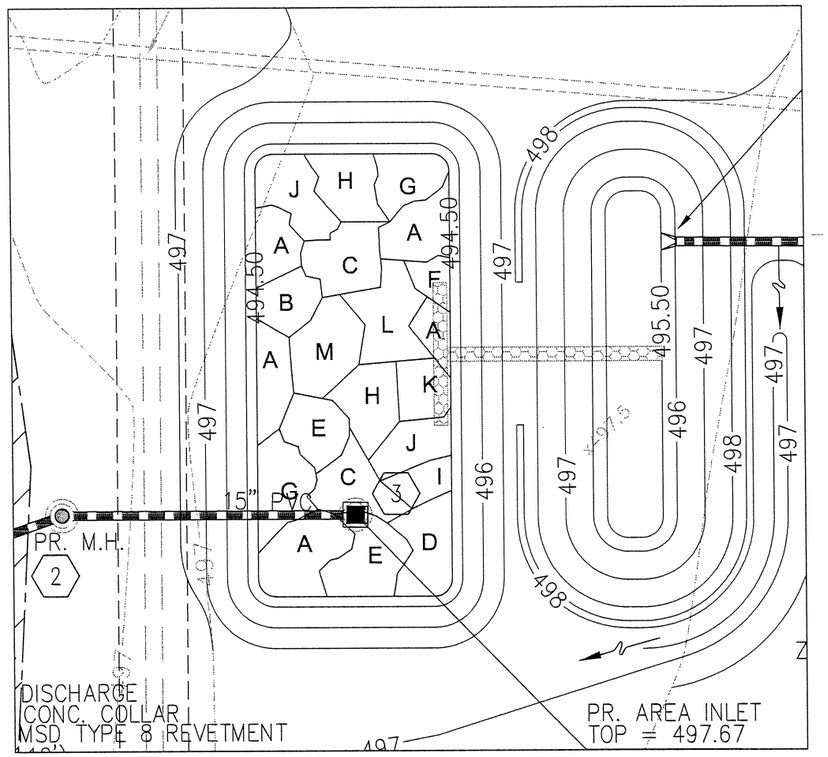
Web: www.stockassoc.com

DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
J.M.B.	12/17/10	G.M.S.	12/22/10	210-4671	C9 of 11



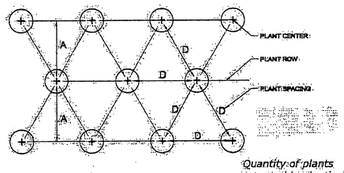
BIO-RETENTION PLANTING PLAN

SCALE: 1" = 10'

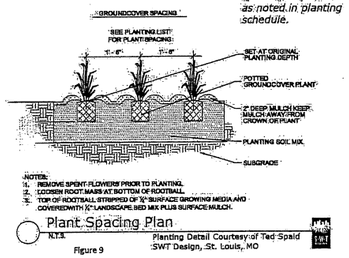
PLANTING SCHEDULE						
PLANT DESIGNATOR	QUANTITY	BOTANICAL NAME	COMMON NAME	TYPE	"D" SPACING	SIZE
				GRASSES/SEDGES		
A	166	ANDROPOGON GERARDII	BIG BLUESTEM	GRASSES/SEDGES	1.50	2" PLUG
B	32	CAREX GRAYI	BUR SEDGE	GRASSES/SEDGES	1.50	2" PLUG
C	72	CAREX SHORTIANA	SHORTS SEDGE	GRASSES/SEDGES	1.50	2" PLUG
D	31	CHASMANTHIUM LATIFOLIUM	RIVER OATS	GRASSES/SEDGES	1.50	2" PLUG
E	72	SPOROBOLUS HETEROLEPIS	PRAIRIE DROPSEED	FORBS	1.50	2" PLUG
F	32	COREOPSIS LANCEOLATA	LANCELEAF COREOPSIS	FORBS	1.50	2" PLUG
G	34	ECHINACEA PALLIDA	PALE PURPLE CONEFLOWER	FORBS	1.50	2" PLUG
H	41	ERYNGIUM YUCCIFOLIUM	RATTLESNAKE MASTER	FORBS	1.50	2" PLUG
I	32	PYCNANTHEMUM TENUIFOLIUM	SLENDER MOUNTAIN MINT	FORBS	1.50	2" PLUG
J	47	EUPATORIUM COELESTINUM	MIST FLOW; WILD AGERATUM	FORBS	1.50	2" PLUG
K	30	SOLIDAGO RUGOSA	ROUGH-LEAVED GOLDENROD	FORBS	1.50	2" PLUG
L	53	ZIZIA AUREA	GOLDEN ALEXANDER	FORBS	1.50	2" PLUG
M	51	ECHINACEA PURPUREA	PURPLE CONEFLOWER	FORBS	1.50	2" PLUG

SPACING "D"	ROW "A"	NUMBER OF PLANTS/SQ. FT.
36"	26"	160
24"	20.8"	225
18"	15.6"	450
15"	13.0"	640
12"	10.4"	1.00
10"	8.66"	1.44
9"	8.65"	2.25

NOTE: PLANT QUANTITIES WERE DETERMINED BY MULTIPLYING AREA (SQ. FT.) BY NUMBER OF PLANTS/SQ. FT. FOR "REQUIRED SPACING."



Quantity of plants as noted in planting schedule.



NOTES:
1. REMOVE SPENT FLOWERS PRIOR TO PLANTING.
2. LOOSEN ROOT MASS AT BOTTOM OF ROOTBALL.
3. TOP OF ROOTBALL STRIPPED OF ½" SURFACE GROWING MEDIA AND COVERED WITH ½" LANDSCAPE BED MIX PLUS SURFACE MULCH.

Plant Spacing Plan

N.T.S.

Planting Detail Courtesy of Ted Spaid SWT Design, St. Louis, MO

Figure 9

Planting, Water and Mulch Requirements for Stormwater BMPs

Table 3: Planting, Water and Mulch Requirements

Water Availability	Required Planting Period	Minimum Container Size	Water Requirement First 3 Weeks*	Water Requirement After 3 Weeks*	Maximum Mulch Depth****
No ability to water after	Late Feb. – April only	2.25" x 3.75" or larger	Water each plug immediately		1.5 for plugs
Manual watering with standard sprinkler	Late Feb. – Early June	4.5" x 5" (quart) or larger in summer & fall	1" (60 min) every 4 days	1" (60 min) every 7 days until plants established***	1.5" for plugs
Automatic irrigation (set to water more frequently than normal during first two months after planting)	Late Feb. – Early Oct.	2.25" x 3.75" (plug) or larger in spring 4.5" x 5" (quart) or larger in summer & fall	1" (60 min) every 4 days in spring and fall 1" (60 min) every 3 days in summer	1" (60 min) every 7 days until plants established***	1.5" for plugs 2.5" for quarts

**This water amount includes natural rainfall. If you get a ½ inch of natural rain then you will need to add a ½ inch of water to meet the 1 inch requirement.*

***Requires transport of water to the planting site in large containers and pouring enough water onto each plant (after planting) to moisten the entire planting pit.*

****Plants are established when roots have grown out of the container soil and into the native soil by 3-5 inches. This normally takes 3-4 months for most perennials and grasses and up to 6-7 months for trees and shrubs.*

*****Shredded leaf compost is recommended for use with perennials and grasses. Shredded bark mulch is recommended for tree and shrub plantings at a depth of 3 inches.*

ST. LOUIS COUNTY NOTE:

THIS SHEET NOT INCLUDED WITH ST. LOUIS COUNTY APPROVAL.

S.U.P. # 12-295-A1
H.& T. # 1872
M.S.D. P# 11236-16
BASE MAP # 24-Q

MAR. 7, 2011

100% COMPLETE

GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

2 2011-03-07 REVISED PER MSD, COUNTY COMMENTS
1 2011-02-21 REVISED PER MSD, COUNTY COMMENTS

PARKWAY SOUTH HIGH SCHOOL

BMP PLANTING PLAN

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Web: www.stockassoc.com

DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
J.M.B.	12/17/10	G.M.S.	12/22/10	210-4671	C10 of 11

BMP/STORM WATER CREDIT SUMMARY TABLE

Area	Acres	Description of Area	BMP	Stormwater Credit	WQv Reduction Type (1 of 3 Types)	WQv Required (Cu. Ft.)	WQv Provided (Cu. Ft.)
1	3.62	SYNTHETIC TURF & TRACK	BIO-RETENTION FILTER	-	4,240	6,041	6,522
Total	3.62						

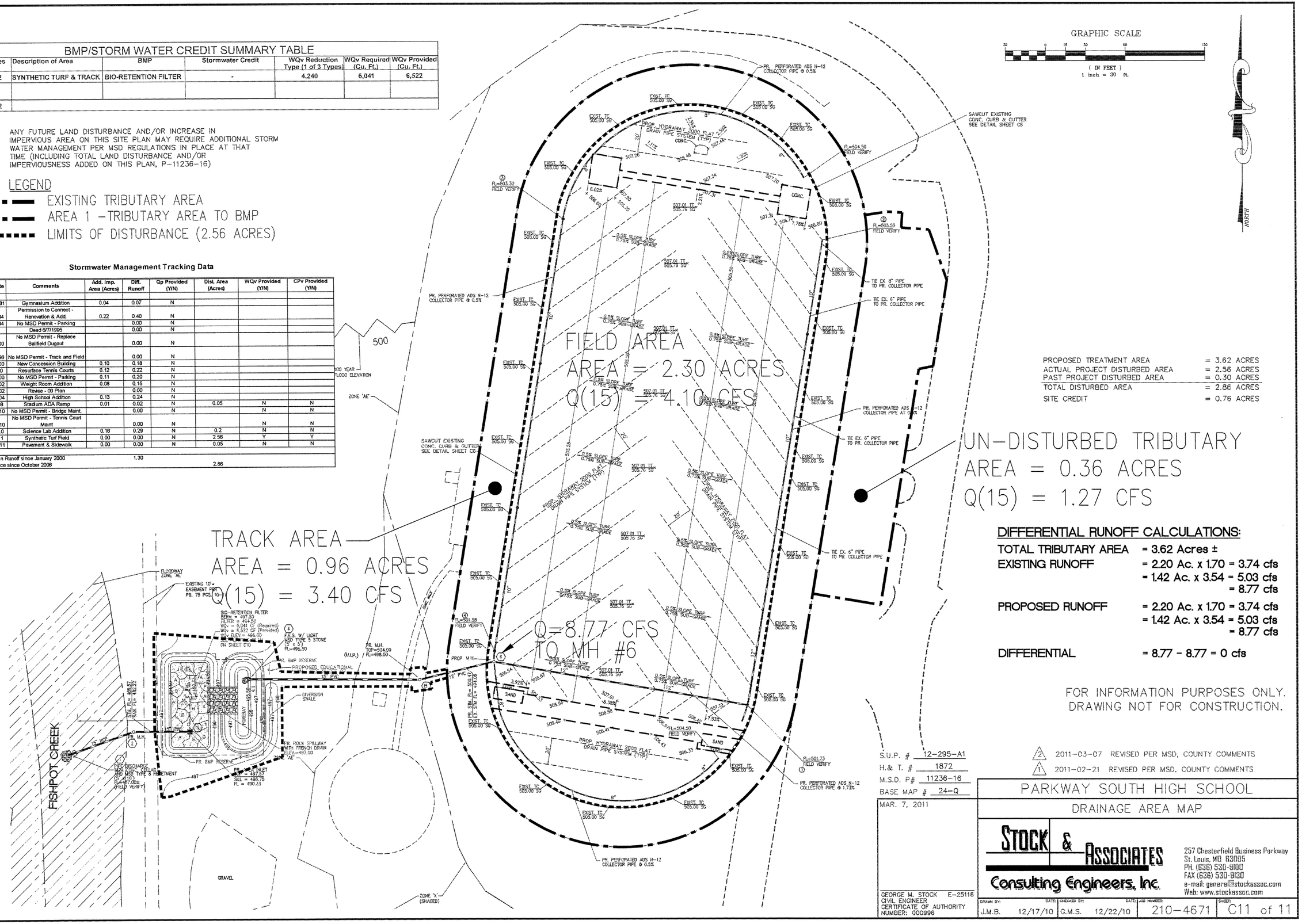
ANY FUTURE LAND DISTURBANCE AND/OR INCREASE IN IMPERVIOUS AREA ON THIS SITE PLAN MAY REQUIRE ADDITIONAL STORM WATER MANAGEMENT PER MSD REGULATIONS IN PLACE AT THAT TIME (INCLUDING TOTAL LAND DISTURBANCE AND/OR IMPERVIOUSNESS ADDED ON THIS PLAN, P-11236-16)

LEGEND

- EXISTING TRIBUTARY AREA
- AREA 1 – TRIBUTARY AREA TO BMP
- LIMITS OF DISTURBANCE (2.56 ACRES)

Stormwater Management Tracking Data

Project #	App. Date	Comments	Add. Imp. Area (Acres)	Diff. Runoff	Qp Provided (Y/N)	Dist. Area (Acres)	WQv Provided (Y/N)	CPv Provided (Y/N)
P-11236-00	12/31/1981	Gymnasium Addition	0.04	0.07	N			
-01	5/27/1994	Permission to Connect - Renovation & Add.	0.22	0.40	N			
-02	7/22/1994	No MSD Permit - Parking		0.00	N			
-03		Dead 6/7/1995		0.00	N			
-04	7/12/2000	No MSD Permit - Replace Ballfield Dugout		0.00	N			
-05	7/24/1998	No MSD Permit - Track and Field		0.00	N			
-06	5/19/2000	New Concession Building	0.10	0.18	N			
-07	7/3/2000	Resurface Tennis Courts	0.12	0.22	N			
-08	7/12/2000	No MSD Permit - Parking	0.11	0.20	N			
-09	2/14/2002	Weight Room Addition	0.08	0.15	N			
-10	6/11/2002	Revise - 09 Plan		0.00	N			
-11	9/12/2004	High School Addition	0.13	0.24	N			
-12	5/1/2008	Stadium ADA Ramp	0.01	0.02	N	0.05	N	N
-13	2/25/2010	No MSD Permit - Bridge Maint.		0.00	N		N	N
-14	3/17/2010	No MSD Permit - Tennis Court Maint		0.00	N		N	N
-15	Per C0.0	Science Lab Addition	0.16	0.29	N	0.2	N	N
-16	1/3/2011	Synthetic Turf Field	0.00	0.00	N	2.56	Y	Y
-17	1/21/2011	Pavement & Sidewalk	0.00	0.00	N	0.05	N	N
Cumulative Increase in Runoff since January 2000				1.30				
Cumulative Disturbance since October 2009						2.86		



DIFFERENTIAL RUNOFF CALCULATIONS:

TOTAL TRIBUTARY AREA	= 3.62 Acres ±
EXISTING RUNOFF	= 2.20 Ac. x 1.70 = 3.74 cfs = 1.42 Ac. x 3.54 = 5.03 cfs = 8.77 cfs
PROPOSED RUNOFF	= 2.20 Ac. x 1.70 = 3.74 cfs = 1.42 Ac. x 3.54 = 5.03 cfs = 8.77 cfs
DIFFERENTIAL	= 8.77 - 8.77 = 0 cfs

FOR INFORMATION PURPOSES ONLY.
DRAWING NOT FOR CONSTRUCTION.

S.U.P. # 12-295-A1
H.& T. # 1872
M.S.D. P# 11236-16
BASE MAP # 24-Q

MAR. 7, 2011

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2 2011-03-07 REVISED PER MSD, COUNTY COMMENTS
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PARKWAY SOUTH HIGH SCHOOL

DRAINAGE AREA MAP

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DRAWN BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER:	SHEET:
J.M.B.	12/17/10	G.M.S.	12/22/10	210-4671	C11 of 11

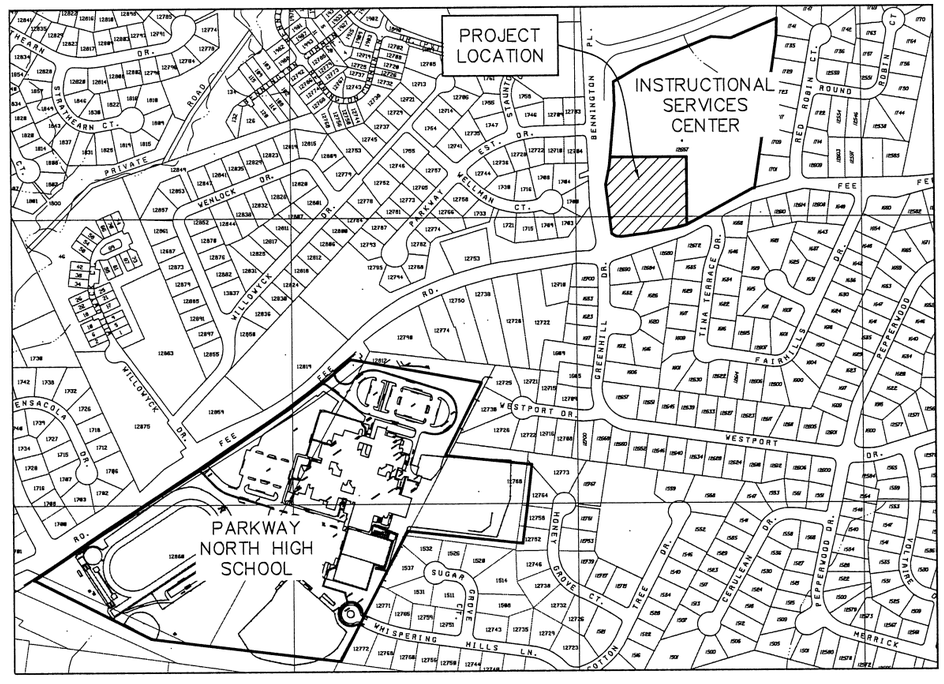
SECTION 11

INSTRUCTIONAL SERVICES CENTER

BMP ORIGINAL PROJECT INFORMATION

INSTRUCTIONAL SERVICES CENTER
PSD PROJECT: 750902B
SOFTBALL FIELD IMPROVEMENTS

12657 FEE FEE ROAD
UNINCORPORATED ST. LOUIS COUNTY, MISSOURI 63146



GENERAL NOTES

1. ALL DISTURBED AREAS SHALL BE RESTORED WITH TOPSOIL AND SOD.
2. THE CONTRACTOR SHALL ASSUME COMPLETE RESPONSIBILITY FOR CONTROLLING ALL SILTATION AND EROSION OF THE PROJECT AREA. THE CONTRACTOR SHALL USE THE MEANS NECESSARY TO CONTROL SILTATION AND EROSION. CONTROL MEANS AND METHODS SHALL FOLLOW ST. LOUIS COUNTY'S "SEDIMENT & EROSION CONTROL MANUAL" AND REQUIREMENTS OF THE ORDINARY LAND DISTURBANCE PERMIT. THE OWNER OR ST. LOUIS COUNTY MAY AT THEIR OPTION DIRECT THE CONTRACTOR AS DEEMED FIT TO CONTROL EROSION. CONTROL SHALL COMMENCE WITH LAND DISTURBANCE AND BE MAINTAINED THROUGHOUT THE PROJECT UNTIL ACCEPTANCE OF THE WORK BY BOTH ST. LOUIS COUNTY AND THE OWNER. ALL COST ASSOCIATED WITH EROSION CONTROL SHALL BE INCLUDED IN THE CONTRACTOR'S BID.
3. PROPOSED ELEVATIONS ARE SHOWN TO FINISH PAVEMENT OR GRADE.
4. NOTIFY THE ST. LOUIS COUNTY DEPARTMENT OF PUBLIC WORKS 48 HOURS PRIOR TO THE COMMENCEMENT OF GRADING OR PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
5. ALL TRASH AND DEBRIS ON-SITE, EITHER EXISTING OR FROM CONSTRUCTION, MUST BE REMOVED AND PROPERLY DISPOSED OF OFF-SITE.
6. NO EXCAVATION SHALL BE MADE SO CLOSE TO THE PROPERTY LINE AS TO ENDANGER ANY ADJOINING PROPERTY OF ANY PUBLIC OR PRIVATE STREET WITHOUT SUPPORTING AND PROTECTING SUCH PUBLIC OR PRIVATE STREET OR PROPERTY FROM SETTLING, CRACKING OR OTHER DAMAGE.
7. CONTRACTOR TO PLACE VEHICLE WASHDOWN STATION AT CONSTRUCTION ENTRANCE IN ACCORDANCE WITH ST. LOUIS COUNTY REQUIREMENTS.
8. ANY EXISTING IMPROVEMENTS DAMAGED BY CONSTRUCTION ON THE PROJECT PROPERTY SHALL BE REPLACED IN KIND AT THE CONTRACTORS EXPENSE.
9. EXISTING ASPHALT PAVEMENT SHALL BE REMOVED AND PROPERLY DISPOSED OF OFF-SITE.
10. ALL EXISTING IMPROVEMENTS ARE TO REMAIN UNLESS NOTED OTHERWISE.
11. THE UNDERGROUND UTILITIES SHOWN HEREON ARE TAKEN FROM UTILITY LOCATIONS AS MARKED IN THE FIELD BY DIGRITE AND MAPS OBTAINED FROM LACLEDE GAS COMPANY, METROPOLITAN ST. LOUIS SEWER DISTRICT AND MISSOURI-AMERICAN WATER COMPANY AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319, RSMO.
12. SITE IS SUBJECT TO PRIVATE UTILITY INSTALLATIONS. PRIVATE UTILITY INSTALLATIONS DO NOT APPEAR ON UTILITY BASE MAPS, NOR DOES DIGRITE LOCATE PRIVATE UTILITIES.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING TOPS AND FLOWLINES OF ALL EXISTING SEWERS PRIOR TO COMMENCING WORK AND NOTIFY THE ENGINEER OF DISCREPANCIES.
14. ALL MATERIALS AND WORKMANSHIP ASSOCIATED WITH SITE IMPROVEMENT CONSTRUCTION SHALL CONFORM TO THE LATEST STANDARDS AND SPECIFICATIONS OF ST. LOUIS COUNTY.
15. ALL GRADING AND DRAINAGE SHALL CONFORM TO THE LATEST STANDARDS AND SPECIFICATIONS OF ST. LOUIS COUNTY AND THE METROPOLITAN ST. LOUIS SEWER DISTRICT.
16. ALL SEWERS AND STRUCTURES SHALL BE IN ACCORDANCE WITH THE METROPOLITAN ST. LOUIS SEWER DISTRICT STANDARD CONSTRUCTION SPECIFICATIONS FOR SEWER AND DRAINAGE FACILITIES, 2009.
17. ALL MATERIALS AND WORKMANSHIP ASSOCIATED WITH THE GAS SERVICE SHALL COMPLY WITH THE LATEST STANDARDS AND SPECIFICATIONS OF LACLEDE GAS COMPANY.
18. ALL MATERIALS AND WORKMANSHIP ASSOCIATED WITH THE WATER SERVICE SHALL COMPLY WITH THE LATEST STANDARDS AND SPECIFICATIONS OF MISSOURI AMERICAN WATER COMPANY.
19. ALL MATERIALS AND WORKMANSHIP ASSOCIATED WITH THE PHONE SERVICE SHALL COMPLY WITH THE LATEST STANDARDS AND SPECIFICATIONS OF AT&T DISTRIBUTION.
20. ALL MATERIALS AND WORKMANSHIP ASSOCIATED WITH ELECTRIC SERVICE SHALL COMPLY WITH THE LATEST STANDARDS AND SPECIFICATIONS OF AMERENUE.
21. ALL MATERIALS AND WORKMANSHIP ASSOCIATED WITH CABLE SERVICE SHALL COMPLY WITH THE LATEST STANDARDS AND SPECIFICATIONS OF CHARTER COMMUNICATIONS.
22. INSTALLATION OF LANDSCAPING AND ORNAMENTAL ENTRANCE MONUMENT OR IDENTIFICATION SIGNAGE CONSTRUCTION, IF SHOWN ON PLANS, SHALL BE REVIEWED BY THE DEPARTMENT OF HIGHWAYS AND TRAFFIC FOR SIGHT DISTANCE CONSIDERATIONS AND APPROVED PRIOR TO INSTALLATION OR CONSTRUCTION.
23. ALL STORM WATER SHALL BE DISCHARGED AT AN ADEQUATE NATURAL DISCHARGE POINT.
24. INTERIM STORM WATER DRAINAGE CONTROL IN THE FORM OF SILTATION CONTROL MEASURES ARE REQUIRED.
25. THE DEVELOPER IS REQUIRED TO PROVIDE ADEQUATE STORM WATER SYSTEMS IN ACCORDANCE WITH ST. LOUIS COUNTY AND MSD STANDARDS.
26. ADDITIONAL SILTATION CONTROL SHALL BE INSTALLED AS REQUIRED BY ST. LOUIS COUNTY DEPARTMENT OF HIGHWAYS AND TRAFFIC.
27. ALL OFFSITE PROPERTY OWNERS SHALL BE GIVEN NOTICE 48 HOURS IN ADVANCE OF ANY WORK.
28. ANY DISTURBED OFF SITE PROPERTY (I.E. BUSHES, FENCES, MAILBOXES, ETC.) SHALL BE REPLACED, IN LIKE KIND, AT THE DEVELOPERS EXPENSE.
29. PROVIDE ADEQUATE OFF-STREET PARKING FOR CONSTRUCTION EMPLOYEES. PARKING ON NON-SURFACED AREAS SHALL BE PROHIBITED IN ORDER TO ELIMINATE THE CONDITION WHEREBY MUD FROM CONSTRUCTION AND EMPLOYEE VEHICLES IS TRACKED ONTO THE PAVEMENT CAUSING HAZARDOUS ROADWAY AND DRIVEWAY CONDITIONS.
30. ALL EXCAVATIONS, GRADING OR FILLING SHALL HAVE A FINISHED GRADE NOT TO EXCEED A 4:1 SLOPE (25%), UNLESS SPECIFICALLY APPROVED OTHERWISE. NO SLOPE SHALL EXCEED 3:1 MAXIMUM.
31. ALL DISTURBED EARTH AREAS WITHIN ST. LOUIS COUNTY RIGHT-OF-WAY SHALL BE SODDED.
32. INTERNAL (PRIVATE) STORM SEWERS WILL REQUIRE SEPARATE DRAINLAYERS PERMIT FROM ST. LOUIS COUNTY DEPARTMENT OF PUBLIC WORKS.
33. SEDIMENT SHALL BE WASHED FROM ALL VEHICLES AT WASHDOWN STATION PRIOR TO LEAVING SITE. MUD TRACKED ONTO COUNTY ROADS SHALL BE REMOVED AND KEPT CLEAN AT ALL TIMES.
34. ANY LAND CLEARING, CONSTRUCTION, OR DEVELOPMENT INVOLVING THE MOVEMENT OF EARTH SHALL BE IN ACCORDANCE WITH THE STORM WATER POLLUTION PREVENTION PLAN, AND THE PERSON ISSUED A LAND DISTURBANCE PERMIT ASSUMES AND ACKNOWLEDGES RESPONSIBILITY FOR COMPLIANCE WITH THE ST. LOUIS COUNTY LAND DISTURBANCE CODE AND THE APPROVED STORM WATER POLLUTION PREVENTION PLAN AT THE SITE OF THE PERMITTED ACTIVITY.
35. CLEARING TECHNIQUES THAT RETAIN EXISTING VEGETATION TO THE MAXIMUM EXTENT PRACTICABLE SHALL BE USED AND THE TIME PERIOD FOR DISTURBED AREAS TO BE WITHOUT VEGETATIVE COVER SHALL BE MINIMIZED TO THE EXTENT PRACTICAL.
36. ADDITIONAL SILTATION CONTROL SHALL BE INSTALLED AS REQUIRED BY ST. LOUIS COUNTY DEPARTMENT OF PUBLIC WORKS AND/OR HIGHWAYS AND TRAFFIC.
37. AREAS SHALL BE SEEDED WHEN NO ACTIVITY WILL OCCUR WITHIN THIRTY DAYS.

UTILITY CONTACTS

AMEREN UE
1132 LOCUST ST.
ST. LOUIS, MO 63101
314-878-5787

MISSOURI AMERICAN WATER CO.
727 CRAIG RD.
ST. LOUIS, MO 63131
314-996-2432

CHARTER COMMUNICATIONS
2275 CASSENS DR.
FENTON, MO 63026
314-878-5787

ENBRIDGE ENERGY
3000 FIFTH AVENUE PLACE
425 1ST STREET S.W.
CALGARY, ALBERTA
T2P 3L8 CANADA
1-800-858-5253

EDWARD JONES
12555 MANCHESTER ROAD
ST. LOUIS, MO 63131
314-515-2000

CABLE AMERICA
11422 SCHENK DRIVE
MARYLAND HEIGHTS, MO 63043
314-995-4800

AT&T DISTRIBUTION
12930 OLIVE STREET RD.
CREVE COEUR, MO 63141
314-878-5787

LACLEDE GAS
3950 FOREST PARK BLVD.
ST. LOUIS, MO 63108
314-658-5417

METROPOLITAN ST. LOUIS
SEWER DISTRICT
2350 MARKET ST.
ST. LOUIS, MO 63103-2555
314-768-6262

PARKWAY SCHOOL DISTRICT
455 N. WOODS MILL RD.
CHESTERFIELD, MO 63017
314-415-8100

MODOT
1590 WOODLAKE DRIVE
CHESTERFIELD, MO 63017
314-340-4100

LEVEL 3 COMMUNICATIONS
1025 ELDORADO BOULEVARD
BROOMFIELD, COLORADO 80021
1-800-441-0223

CODE REVIEW FOR DUGOUTS

BUILDING TYPE: GROUP U-UTILITY AND MISCELANEOUS

CONSTRUCTION TYPE: TYPE IIB

APPLICABLE CODE: INTERNATIONAL BUILDING CODE 2003

REGULATORY JURISDICTIONS

CREVE COEUR PROTECTION DISTRICT
11221 OLIVE BOULEVARD
CREVE COEUR, MO 63141
314-432-6670

ST. LOUIS COUNTY DEPARTMENT OF PUBLIC WORKS
41 S. CENTRAL AVENUE, 6TH FLOOR
CLAYTON, MO 63105
314-615-5184

METROPOLITAN ST. LOUIS SEWER DISTRICT
2350 MARKET STREET
ST. LOUIS, MO 63103-2555
314-768-6200

LOCATOR NUMBER: 150130381
ZONING OF TRACT: INSTITUTIONAL

SHEET INDEX

USGS DATUM BENCHMARK

ST. LOUIS COUNTY BENCHMARK #8-164 (ELEVATION 528.81)
ALUMINUM TABLET SET IN SOUTHWEST END ON TOP OF RETAINING WALL; 335' NORTHEAST OF WILLOWWYCK DRIVE AND 34' NORTHWEST OF CENTERLINE OF FEE FEE ROAD.

SITE BENCHMARK

T.B.M. "A" (ELEVATION 545.44)
CUT CROSS ON NORTHERN EDGE OF SIDEWALK LOCATED AT THE NORTHEAST QUADRANT OF THE INTERSECTION OF FEE FEE ROAD AND BENNINGTON PLACE; APPROXIMATELY 38.0 FEET FROM A POWER POLE AND 51.9 FEET FROM A YIELD SIGN.

LEGEND

△	CONTROL POINT
TBM	TEMPORARY BENCHMARK
	DRAINAGE ARROW
	EXISTING LIGHT STANDARD
	EXISTING TREE
CO	EXISTING CLEANOUT
S	EXISTING SANITARY MANHOLE
D	EXISTING SANITARY MANHOLE
	EXISTING CURB INLET
	EXISTING DOUBLE CURB INLET
	EXISTING GRATE INLET
	EXISTING FLARED END
G	EXISTING GAS VALVE
W	EXISTING WATER METER
W	EXISTING WATER VALVE
	EXISTING SIGN
	EXISTING UTILITY POLE
	EXISTING UTILITY POLE WITH GUYWIRE
	NEW EDGE OF PAVEMENT
	EXISTING EDGE OF PAVEMENT
	EXISTING CURB
-x-x-x-	EXISTING FENCE
-x-x-x-	NEW FENCE
SF	NEW EROSION CONTROL
SD$_x$	EXISTING STORM SEWER
G$_x$	EXISTING GAS LINE
EU$_x$	EXISTING UNDERGROUND ELECTRIC CONDUIT
PKWY FO	EXISTING PARKWAY FIBER OPTIC LINE
SS$_x$	EXISTING SANITARY SEWER
CATV	EXISTING CABLE TELEVISION LINE
TU$_x$	EXISTING UNDERGROUND TELEPHONE
STLC	EXISTING ST. LOUIS COUNTY UNDERGROUND CABLE
FO$_x$	EXISTING FIBER OPTIC
624	EXISTING 1' CONTOUR
625	EXISTING 5' CONTOUR
624	PROPOSED 1' CONTOUR
625	PROPOSED 5' CONTOUR
x 601.92	EXISTING SPOT ELEVATION
TP 601.62	PROPOSED SPOT ELEVATION
1	KEYED NOTE IDENTIFIER
	PROPOSED BASE, PITCHERS RUBBER AND HOME PLATE
	PROPOSED SPRINKLER HEADS
	PROPOSED HOSE BIB

ABBREVIATIONS

AC	AIR CONDITIONER
ASPH	ASPHALT
ATG	ADJUST TO GRADE
BLDG	BUILDING
BM	BENCHMARK
CLR	CLEARANCE
CO	CLEANOUT
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
DIA	DIAMETER
EX	EXISTING
ELEV	ELEVATION
FF	FINISH FLOOR
FG	FINISH GRADE
FH	FIRE HYDRANT
FL	FLOWLINE
G	GUTTER
HC	HANDICAPPED
IRR	IRRIGATION
LS	LIGHT STANDARD
MAX	MAXIMUM
ME	MATCH EXISTING
MH	MANHOLE
MIN	MINIMUM
NTS	NOT TO SCALE
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
SAN	SANITARY
S.D.	SCHOOL DISTRICT
STM	STORM
T	TOP
TBM	TEMPORARY BENCHMARK
TC	TOP OF CURB
TP	TOP OF PAVEMENT
TYP	TYPICAL
UIP	USE IN PLACE
W/	WITH

MSD P-XXXXX-XX BASE MAP: 150

REVISIONS

NO.	DESCRIPTION	BY	DATE

PROJECT: INSTRUCTIONAL SERVICES CENTER
PSD PROJECT: 750902B
SOFTBALL FIELD IMPROVEMENTS

TITLE: COVER SHEET

CLIENT: PARKWAY SCHOOL DISTRICT
455 North Woods Mill Road
Chesterfield, Missouri 63017
Phone: 314-415-8100 Fax: 314-415-8207

amec

AMEC Earth & Environmental, Inc.
15933 Clayton Road, Suite 215
Ballwin, Missouri 63011 636-386-3604
Phone: 636-386-3600 Fax: 636-386-3604
Discipline: Engineering Corporation
Corp Cert. of Auth. #2002000326

Date:
Brad P. Loomis - Engineer
MO PE-2006019682

ISSUE FOR BID

Proj. No. 2008008	REV No. 0
DR: MJR	CHK: BPL
DATE: 04/13/2010	

C-1
SHEET NUMBER

KEYED NOTES (#)

1. EXISTING WOOD DUGOUT TO BE REMOVED.
2. EXISTING CONCRETE TO BE REMOVED.
3. EXISTING ASPHALT PAVEMENT TO BE REMOVED.
4. EXISTING METAL BLEACHER TO BE REMOVED AND RELOCATED AS DIRECTED ON SITE PLAN.
5. EXISTING CHAIN LINK FENCE TO BE REMOVED.
6. EXISTING CHAIN LINK BACKSTOP TO BE REMOVED.
7. EXISTING TIE WALL TO BE REMOVED.
8. EXISTING TREE TO BE PROTECTED DURING CONSTRUCTION.
9. EXISTING GATE TO BE REMOVED.
10. SAWCUT LINE.
11. LIMITS OF CONSTRUCTION.

0 20' 40'

BENNINGTON (WIDTH VARIES) PLACE

FEE FEE (WIDTH VARIES) ROAD

MSD P-XXXXX-XX BASE MAP: 150

REVISIONS			
NO.	DESCRIPTION	BY	DATE

PROJECT: INSTRUCTIONAL SERVICES CENTER
PSD PROJECT: 750902B
SOFTBALL FIELD IMPROVEMENTS

TITLE: DEMOLITION PLAN

CLIENT: PARKWAY SCHOOL DISTRICT
455 North Woods Mill Road
Chesterfield, Missouri 63017
Phone: 314-415-8100 Fax: 314-415-8207

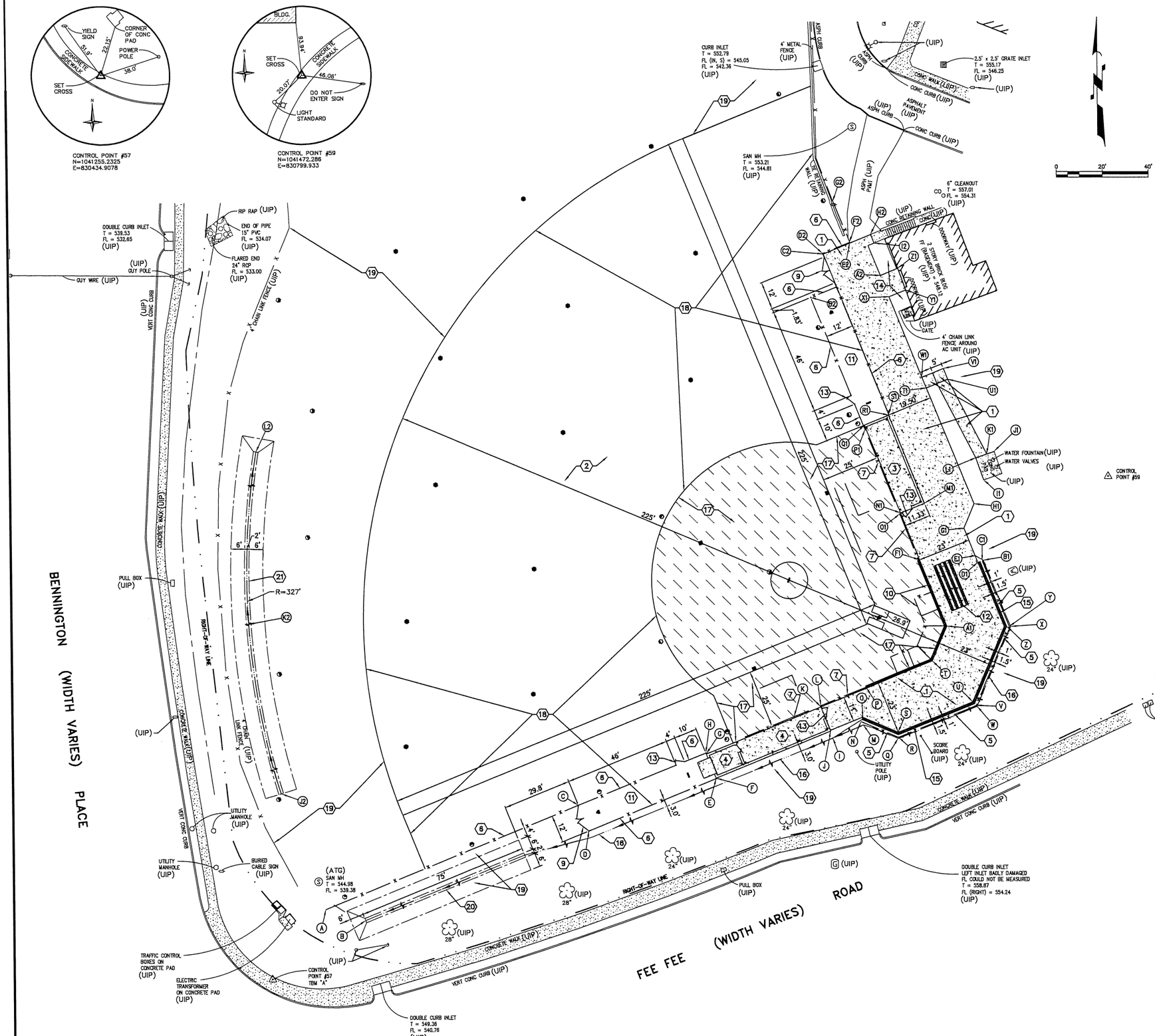
AMEC Earth & Environmental, Inc.
19933 Clayton Road, Suite 215
Ballwin, Missouri 63011 636-386-3604
Phone: 636-386-3600 Fax: 636-386-3604
Discipline: Engineering Corporation
Corp Cert. of Auth. #2002000328

Date:
Brad P. Loomis – Engineer
MO PE-2006019662

ISSUE FOR BID

Proj. No. 2008008	REV No. 0
DR: MJR	CHK: BPL
DATE: 04/13/2010	

C-2
SHEET NUMBER



KEYED NOTES

1. NEW CONCRETE WALK. REFER TO DETAIL ON SHT. C-5.
2. NEW SOFTBALL FIELD LAYOUT. REFER TO DETAIL ON SHT. C-5.
3. NEW DUGOUT. REFER TO DUGOUT-1 DETAIL ON ARCHITECTURAL SHEETS.
4. NEW DUGOUT. REFER TO DUGOUT-2 DETAIL ON ARCHITECTURAL SHEETS.
5. NEW 4' HIGH BLACK VINYL COATED CHAIN LINK FENCE. REFER TO DETAIL ON SHT. C-5.
6. NEW 6' HIGH CHAIN LINK FENCE. REFER DETAIL ON SHT. C-5.
7. NEW 8' HIGH CHAIN LINK FENCE. REFER TO DETAIL ON SHT. C-5.
8. NEW 12' HIGH CHAIN LINK FENCE. REFER TO DETAIL ON SHT. C-5.
9. NEW 12' WIDE DOUBLE SWING GATE. REFER TO DETAIL ON SHT. C-5.
10. NEW BACKSTOP. REFER TO DETAIL ON SHT. C-6.
11. NEW BULLPEN.
12. RELOCATED EXISTING BLEACHERS.
13. NEW MAN GATE. REFER TO DETAIL ON SHT. C-5.
14. NEW LANDSCAPE AREA. PLANTINGS PROVIDED AND INSTALLED BY OWNER.
15. NEW MANUFACTURED MODULAR WALL. REFER TO DETAIL ON SHT. C-5.
16. NEW GRASS SWALE. REFER TO DETAIL ON SHT. C-5.
17. NEW ATHLETIC FIELD TOP DRESSING.
18. NEW ATHLETIC FIELD SOD.
19. NEW SOD.
20. DRY SWALE #1. REFER TO DETAIL ON SHT C-5.
21. DRY SWALE #2. REFER TO DETAIL ON SHT C-5.

CURB INLET
T = 561.87
FL = 557.47
(UIP)

COORDINATE TABLE

A.	N=1041285.41	E=830458.42	END OF FENCE
B.	N=1041280.51	E=830475.60	END DRY SWALE
C.	N=1041330.08	E=830568.63	FENCE CORNER
D.	N=1041318.96	E=830573.13	FENCE CORNER
E.	N=1041341.50	E=830628.74	FENCE CORNER
F.	N=1041341.65	E=830628.68	STORAGE CORNER
G.	N=1041352.16	E=830624.42	STORAGE CORNER
H.	N=1041352.62	E=830624.23	END OF FENCE
I.	N=1041358.88	E=830679.60	DITCH
J.	N=1041361.94	E=830678.72	DUGOUT CORNER
K.	N=1041372.44	E=830674.46	DUGOUT CORNER
L.	N=1041373.00	E=830674.51	END OF FENCE
M.	N=1041364.57	E=830692.95	DITCH
N.	N=10413666.01	E=830691.96	END OF FENCE
O.	N=1041367.85	E=830692.74	END OF WALL
P.	N=1041380.53	E=830694.41	END OF BACKSTOP
Q.	N=1041358.60	E=830708.19	DITCH
R.	N=1041359.14	E=830708.19	FENCE CORNER
S.	N=1041361.30	E=830708.21	ANGLE IN WALL
T.	N=1041392.19	E=830723.18	ANGLE IN BACKSTOP
U.	N=1041374.45	E=830740.64	ANGLE IN WALL
V.	N=1041372.91	E=830742.16	FENCE CORNER
W.	N=1041372.52	E=830742.54	DITCH
X.	N=1041407.09	E=830757.17	DITCH
Y.	N=1041407.10	E=830756.63	FENCE CORNER
Z.	N=1041407.11	E=830755.55	ANGLE IN WALL
A1.	N=1041407.30	E=830729.57	ANGLE IN BACKSTOP
B1.	N=1041435.88	E=830745.50	DITCH
C1.	N=1041435.67	E=830745.05	END OF FENCE
D1.	N=1041434.92	E=830743.20	END OF WALL
E1.	N=1041437.85	E=830742.01	DITCH
F1.	N=1041436.07	E=830717.91	END OF BACKSTOP
G1.	N=1041449.76	E=830737.18	WALK CORNER
H1.	N=1041460.34	E=830741.66	WALK CORNER
I1.	N=1041470.68	E=830745.86	WALK CORNER
J1.	N=1041483.08	E=830750.53	WALK CORNER
K1.	N=1041481.96	E=830747.28	WALK CORNER
L1.	N=1041480.29	E=830742.50	WALK CORNER
M1.	N=1041460.58	E=830720.21	DUGOUT CORNER
N1.	N=1041456.32	E=830709.70	DUGOUT CORNER
O1.	N=1041455.90	E=830709.33	END OF FENCE
P1.	N=1041492.59	E=830694.46	END OF FENCE
Q1.	N=1041494.63	E=830694.18	DUGOUT CORNER
R1.	N=1041498.89	E=830704.68	DUGOUT CORNER
S1.	N=1041499.07	E=830704.78	FENCE CORNER
T1.	N=1041510.65	E=830721.26	WALK CORNER
U1.	N=1041514.40	E=830730.54	WALK CORNER
V1.	N=1041519.04	E=830728.66	WALK CORNER
W1.	N=1041515.28	E=830719.39	WALK CORNER
X1.	N=1041550.22	E=830705.23	WALK CORNER
Y1.	N=1041553.18	E=830712.53	WALK CORNER
Z1.	N=1041562.57	E=830709.07	WALK CORNER
A2.	N=1041559.49	E=830701.47	WALK CORNER
B2.	N=1041550.05	E=830671.17	FENCE CORNER
C2.	N=1041568.83	E=830676.68	WALK CORNER
D2.	N=1041569.08	E=830676.43	FENCE CORNER
E2.	N=1041573.56	E=830688.37	WALK CORNER
F2.	N=1041573.89	E=830688.30	FENCE CORNER
G2.	N=1041591.64	E=830681.10	FENCE TIE TO EX
H2.	N=1041577.23	E=830697.40	WALK CORNER
I2.	N=1041573.48	E=830698.87	WALK CORNER
J2.	N=1041335.70	E=830439.21	BEGIN DRY SWALE
K2.	N=1041409.34	E=830425.91	MID POINT DRY SWALE
L2.	N=1041484.08	E=830429.72	END DRY SWALE

MSD P-XXXXX-XX BASE MAP: 150

REVISIONS

NO.	DESCRIPTION	BY	DATE

INSTRUCTIONAL SERVICES CENTER
PSD PROJECT: 750902B
SOFTBALL FIELD IMPROVEMENTS

SITE PLAN

CLIENT:
PARKWAY SCHOOL DISTRICT
455 North Woods Mill Road
Chesterfield, Missouri 63017
Phone: 314-415-8100 Fax: 314-415-8207

PROJECT:

TITLE:

amec

AMEC Earth & Environmental, Inc.
15933 Clayton Road, Suite 215
Ballwin, Missouri 63011 636-394-3804
Phone: 636-394-3804 Fax: 636-394-3805
Discipline: Engineering Corporation
Corp Cert. of Auth. #2002000328

Date:
Brad P. Loomis – Engineer
MO PE-2006019562

ISSUE FOR BID

Proj. No. 2008008	REV No. 0
DR MJR	CHK BPL
DATE: 04/13/2010	

C-3
SHEET NUMBER

KEYED NOTES (#)

1. EROSION CONTROL – FILTER ROLL. REFER TO DETAIL ON SHT C-5.
2. LIMITS OF CONSTRUCTION.
3. NEW PVC IRRIGATION PIPE.
4. NEW SPRINKLER HEAD.
5. NEW HOSE BIB.
6. CONNECT NEW SPRINKLER SYSTEM TO NEW BACKFLOW PREVENTER INSIDE EXISTING BUILDING.
7. CONTRACTOR TO ROUGH GRADE INFIELD AREA 6" BELOW FINISHED GRADE FOR INSTALLATION OF NEW INFIELD SURFACE.

NOTE

1. STORM AND SANITARY SEWER PLOTTED FROM SURVEY AND AVAILABLE AS–BUILT INFORMATION.

BMP NOTES

1. FILTER ROLL: 620 LF
2. DRY SWALE #1: 75 LF.
2. DRY SWALE #2: 150 LF.

0 20' 40'

BENNINGTON (WIDTH VARIES) PLACE

FEE FEE (WIDTH VARIES) ROAD

MSD P-XXXXX-XX BASE MAP: 150

REVISIONS

NO.	DESCRIPTION	BY	DATE

PROJECT: INSTRUCTIONAL SERVICES CENTER
PSD PROJECT: 750902B
SOFTBALL FIELD IMPROVEMENTS

TITLE: GRADING PLAN, UTILITY PLAN AND SWPPP

CLIENT: PARKWAY SCHOOL DISTRICT
455 North Woods Mill Road
Chesterfield, Missouri 63017
Phone: 314-415-8100 Fax: 314-415-8207

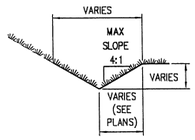
AMEC Earth & Environmental, Inc.
15933 Clayton Road, Suite 215
Ballwin, Missouri 63011-3804
Phone: 636-386-3804 Fax: 636-386-3804
Discipline: Engineering Corporation
Corp Cert. of Auth. #2002000328

Date:
Brad P. Loomis – Engineer
MO PE-2006019882

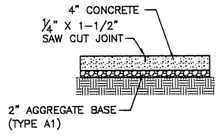
ISSUE FOR BID

Proj. No. 2008008	REV No. 0
DR: MJR	CHK: BPL
DATE: 04/13/2010	

C-4
SHEET NUMBER

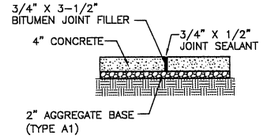


GRASS SWALE DETAIL
NTS



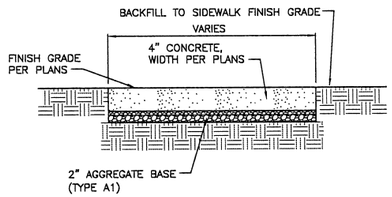
NOTE: SPACING EQUALS WIDTH OF SIDEWALK OR 15'-0" MAXIMUM.

CONTRACTION JOINT



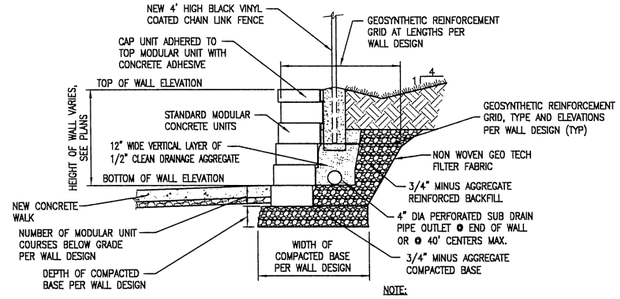
NOTE: MAXIMUM SPACING EQUALS 45'-0" ON CENTER.

EXPANSION JOINT



CONCRETE WALK SECTION

TYPICAL CONCRETE WALK DETAILS
NTS

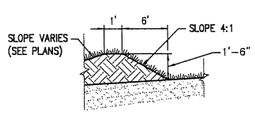


NOTE:

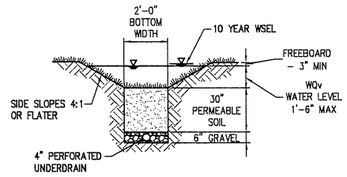
COLOR TO CONFORM TO JOB SPECIFICATIONS.

SEPARATE PERMIT REQUIRED FOR ALL WALLS 48" OR HIGHER.

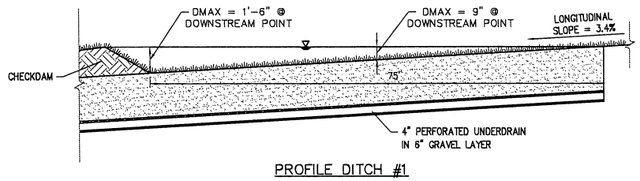
TYPICAL SECTION – MANUFACTURED MODULAR WALL
NTS



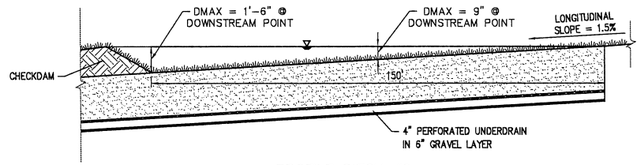
CHECKDAM DETAIL
NTS



CROSS SECTION

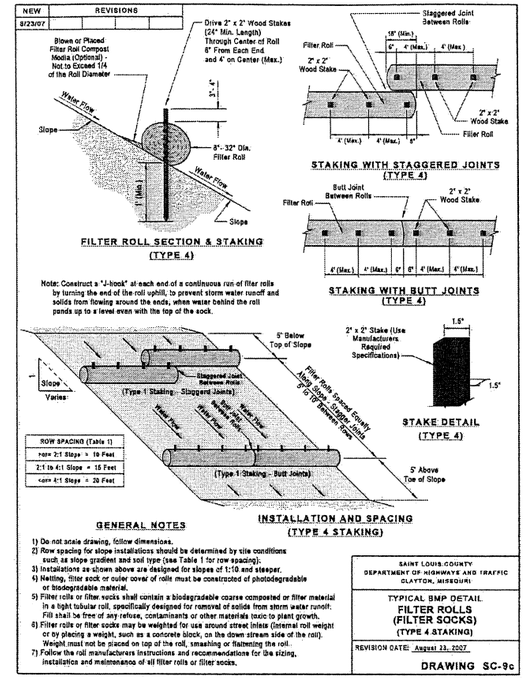


PROFILE DITCH #1

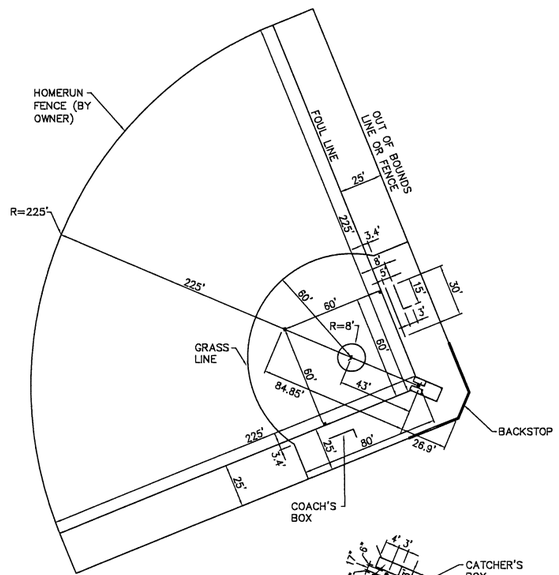


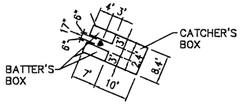
PROFILE DITCH #2

DRY SWALE DETAIL
NTS



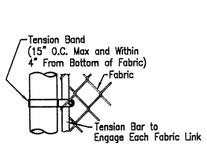
EROSION CONTROL FILTER ROLL (FILTER SOCK) DETAIL
NTS



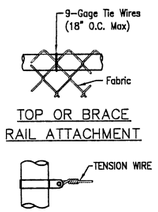


HOME PLATE AREA DETAIL

SOFTBALL FIELD LAYOUT
NTS

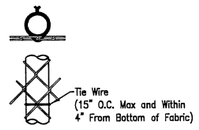


CORNER, TERMINAL OR GATE POST DETAIL



TOP OR BRACE RAIL ATTACHMENT

TENSION BAND DETAIL

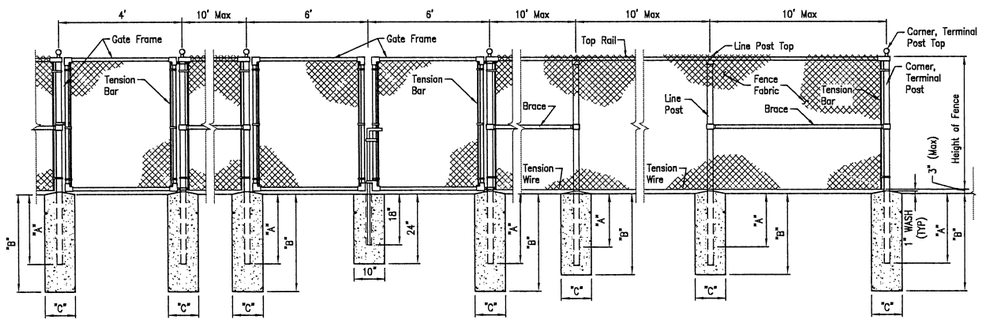


LINE POST ATTACHMENTS

FASTENING DETAILS
NTS

Description		Height of Fence			
		48"	72"	96"	144"
Line Post	Size	2.38"ø	2.38"ø	2.38"ø	2.88"ø
	"A"	24"	36"	36"	38"
	"B" x "C"	30" x 10"	42" x 10"	48" x 12"	48" x 12"
Corner & Terminal Post	Size	3.5"ø	3.5"ø	3.5"ø	4.0"ø
	"A"	30"	36"	42"	42"
	"B" x "C"	36" x 10"	42" x 12"	48" x 12"	48" x 12"
Gate Post * (single gate or leaf gate of double width)	Pedestrian	3.5"ø	3.5"ø	3.5"ø	3.5"ø
	Vehicular	6.63"ø	6.63"ø	6.63"ø	6.63"ø
Top Rail and Brace		1.66"ø	1.66"ø	1.66"ø	1.66"ø
Gate Frame	Pedestrian	1.66"ø	1.66"ø	1.66"ø	1.66"ø
	Vehicular	1.9"ø	1.9"ø	1.9"ø	1.9"ø
Fabric	2" diamond mesh interwoven wire, 9 gage thick, top selvage knuckle and end closed, bottom selvage twisted tight				
Tension Wire	6 gage thick steel, single strand				
Tension Band	0.1" thick steel				
Tension Bar	0.1" thick steel				
Tie Wire	Aluminum alloy steel wire				

* "A", "B", and "C" are the same as Corner & Terminal Post



TYPICAL MAN GATE ELEVATION

TYPICAL DOUBLE SWING GATE ELEVATION

TYPICAL FENCE ELEVATION

CHAIN LINK FENCE DETAIL
NTS

MSD P-XXXXX-XX BASE MAP: 150

REVISIONS

NO.	DESCRIPTION	BY	DATE

PROJECT: INSTRUCTIONAL SERVICES CENTER
PSD PROJECT: 750902B
SOFTBALL FIELD IMPROVEMENTS

TITLE: SITE DETAILS

CLIENT: PARKWAY SCHOOL DISTRICT
455 North Woods Mill Road
Chesterfield, Missouri 63017
Phone: 314-415-8100 Fax: 314-415-8207

amec
AMEC Earth & Environmental, Inc.
1593 Clayton Road, Suite 215
Ballwin, Missouri 63021-5804
Phone: 636-386-3804
Discipline: Engineering
Corporation
Corp Cert. of Auth. #2002000326

Date:
Brad P. Loomis – Engineer
MO PE-2006019862

ISSUE FOR BID

Proj. No. 2008008	REV No. 0
DR: MJR	CHK: BPL
DATE: 04/13/2010	

C-5
SHEET NUMBER

SECTION 12

SORRENTO SPRINGS ELEMENTARY

BMP ORIGINAL PROJECT INFORMATION

GENERAL NOTES

1. ALL DISTURBED AREAS SHALL BE RESTORED WITH TOPSOIL AND SOD.
2. THE CONTRACTOR SHALL ASSUME COMPLETE RESPONSIBILITY FOR CONTROLLING ALL SILTATION AND EROSION OF THE PROJECT AREA. THE CONTRACTOR SHALL USE THE MEANS NECESSARY TO CONTROL SILTATION AND EROSION. CONTROL MEANS AND METHODS SHALL FOLLOW ST. LOUIS COUNTY "SEDIMENT & EROSION CONTROL MANUAL" AND REQUIREMENTS OF THE ORDINARY LAND DISTURBANCE PERMIT. THE OWNER OR ST. LOUIS COUNTY MAY AT THEIR OPTION DIRECT THE CONTRACTOR AS DEEMED FIT TO CONTROL EROSION. CONTROL SHALL COMMENCE WITH LAND DISTURBANCE AND BE MAINTAINED THROUGHOUT THE PROJECT UNTIL ACCEPTANCE OF THE WORK BY BOTH ST. LOUIS COUNTY AND THE OWNER. ALL COST ASSOCIATED WITH EROSION CONTROL SHALL BE INCLUDED IN THE CONTRACTOR'S BID.
3. PROPOSED ELEVATIONS ARE SHOWN TO FINISH PAVEMENT OR GRADE.
4. NOTIFY THE ST. LOUIS COUNTY DEPARTMENT OF PUBLIC WORKS 48 HOURS PRIOR TO THE COMMENCEMENT OF GRADING OR PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
5. ALL TRASH AND DEBRIS ON-SITE, EITHER EXISTING OR FROM CONSTRUCTION, MUST BE REMOVED AND PROPERLY DISPOSED OF OFF-SITE.
6. NO EXCAVATION SHALL BE MADE SO CLOSE TO THE PROPERTY LINE AS TO ENDANGER ANY ADJOINING PROPERTY OF ANY PUBLIC OR PRIVATE STREET WITHOUT SUPPORTING AND PROTECTING SUCH PUBLIC OR PRIVATE STREET OR PROPERTY FROM SETTLING, CRACKING OR OTHER DAMAGE.
7. CONTRACTOR TO PLACE VEHICLE WASHDOWN STATION AT CONSTRUCTION ENTRANCE IN ACCORDANCE WITH ST. LOUIS COUNTY REQUIREMENTS.
8. ANY EXISTING IMPROVEMENTS DAMAGED BY CONSTRUCTION ON THE PROJECT PROPERTY SHALL BE REPLACED IN KIND AT THE CONTRACTORS EXPENSE.
9. ALL EXISTING IMPROVEMENTS ARE TO REMAIN UNLESS NOTED OTHERWISE.
10. THE UNDERGROUND UTILITIES SHOWN HEREON ARE TAKEN FROM UTILITY LOCATIONS AS MARKED IN THE FIELD BY DIGRITE AND MAPS OBTAINED FROM SPIRE, METROPOLITAN ST. LOUIS SEWER DISTRICT AND MISSOURI-AMERICAN WATER COMPANY AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319, RSMO.
11. SITE IS SUBJECT TO PRIVATE UTILITY INSTALLATIONS. PRIVATE UTILITY INSTALLATIONS DO NOT APPEAR ON UTILITY BASE MAPS, NOR DOES DIGRITE LOCATE PRIVATE UTILITIES.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING TOPS AND FLOWLINES OF ALL EXISTING SEWERS PRIOR TO COMMENCING WORK AND NOTIFY THE ENGINEER OF DISCREPANCIES.
13. ALL MATERIALS AND WORKMANSHIP ASSOCIATED WITH SITE IMPROVEMENT CONSTRUCTION SHALL CONFORM TO THE LATEST STANDARDS AND SPECIFICATIONS OF ST. LOUIS COUNTY.
14. ALL GRADING AND DRAINAGE SHALL CONFORM TO THE LATEST STANDARDS AND SPECIFICATIONS OF ST. LOUIS COUNTY AND THE METROPOLITAN ST. LOUIS SEWER DISTRICT.
15. ALL STORM AND SANITARY SEWER STRUCTURES AND APPURTENANCES TO BE DEDICATED TO MSD, OR TO BE PRIVATE UNDER MSD INSPECTION, SHALL CONFORM TO THE METROPOLITAN ST. LOUIS SEWER DISTRICT, STANDARD CONSTRUCTION SPECIFICATIONS FOR SEWER AND DRAINAGE FACILITIES, 2009. THAT WILL INCLUDE STANDARD DETAILS SHOWN THEREIN, AND SHALL INCLUDE ALL SUBSEQUENT CHANGES MADE THERETO.
16. ALL MATERIALS AND WORKMANSHIP ASSOCIATED WITH THE GAS SERVICE SHALL COMPLY WITH THE LATEST STANDARDS AND SPECIFICATIONS OF SPIRE.
17. ALL MATERIALS AND WORKMANSHIP ASSOCIATED WITH THE WATER SERVICE SHALL COMPLY WITH THE LATEST STANDARDS AND SPECIFICATIONS OF MISSOURI AMERICAN WATER COMPANY.
18. ALL MATERIALS AND WORKMANSHIP ASSOCIATED WITH THE PHONE SERVICE SHALL COMPLY WITH THE LATEST STANDARDS AND SPECIFICATIONS OF AT&T DISTRIBUTION.
19. ALL MATERIALS AND WORKMANSHIP ASSOCIATED WITH ELECTRIC SERVICE SHALL COMPLY WITH THE LATEST STANDARDS AND SPECIFICATIONS OF AMEREN MISSOURI.
20. ALL MATERIALS AND WORKMANSHIP ASSOCIATED WITH CABLE SERVICE SHALL COMPLY WITH THE LATEST STANDARDS AND SPECIFICATIONS OF SPECTRUM.
21. INSTALLATION OF LANDSCAPING AND ORNAMENTAL ENTRANCE MONUMENT OR IDENTIFICATION SIGNAGE CONSTRUCTION, IF SHOWN ON PLANS, SHALL BE REVIEWED BY THE DEPARTMENT OF HIGHWAYS AND TRAFFIC FOR SIGHT DISTANCE CONSIDERATIONS AND APPROVED PRIOR TO INSTALLATION OR CONSTRUCTION.
22. ALL STORM WATER SHALL BE DISCHARGED AT AN ADEQUATE NATURAL DISCHARGE POINT. "SINKHOLES ARE NOT ADEQUATE DISCHARGE POINTS".
23. INTERIM STORM WATER DRAINAGE CONTROL IN THE FORM OF SILTATION CONTROL MEASURES ARE REQUIRED.
24. THE CONTRACTOR IS REQUIRED TO PROVIDE ADEQUATE STORM WATER SYSTEMS IN ACCORDANCE WITH ST. LOUIS COUNTY AND MSD STANDARDS.
25. ADDITIONAL SILTATION CONTROL SHALL BE INSTALLED AS REQUIRED BY ST. LOUIS COUNTY DEPARTMENT OF HIGHWAYS AND TRAFFIC.
26. ALL OFFSITE PROPERTY OWNERS SHALL BE GIVEN NOTICE 48 HOURS IN ADVANCE OF ANY WORK.
27. ANY DISTURBED OFF SITE PROPERTY (I.E. BUSHES, FENCES, MAILBOXES, ETC.) SHALL BE REPLACED, IN LIKE KIND, AT THE CONTRACTORS EXPENSE.
28. PROVIDE ADEQUATE OFF-STREET PARKING FOR CONSTRUCTION EMPLOYEES. PARKING ON NON-SURFACED AREAS SHALL BE PROHIBITED IN ORDER TO ELIMINATE THE CONDITION WHEREBY MUD FROM CONSTRUCTION AND EMPLOYEE VEHICLES IS TRACKED ONTO THE PAVEMENT CAUSING HAZARDOUS ROADWAY AND DRIVEWAY CONDITIONS.
29. ALL EXCAVATIONS, GRADING OR FILLING SHALL HAVE A FINISHED GRADE NOT TO EXCEED A 4:1 SLOPE (25%), UNLESS SPECIFICALLY APPROVED OTHERWISE. NO SLOPE SHALL EXCEED 3:1 MAXIMUM.
30. ALL DISTURBED EARTH AREAS WITHIN ST. LOUIS COUNTY RIGHT-OF-WAY SHALL BE SODDED.
31. INTERNAL (PRIVATE) STORM SEWERS WILL REQUIRE SEPARATE DRAINLAYERS PERMIT FROM ST. LOUIS COUNTY DEPARTMENT OF PUBLIC WORKS.
32. SEDIMENT SHALL BE WASHED FROM ALL VEHICLES AT WASHDOWN STATION PRIOR TO LEAVING SITE. MUD TRACKED ONTO COUNTY ROADS SHALL BE REMOVED AND KEPT CLEAN AT ALL TIMES.
33. UTILITIES MUST REMAIN IN CONTINUOUS SERVICE UNLESS WRITTEN PERMISSION IS RECEIVED FROM THE OWNER TO ALLOW INTERRUPTION OF SERVICE.
34. ALL SIDEWALKS TO BE CONSTRUCTED TO CURRENT ST. LOUIS COUNTY AND ADA STANDARDS.
35. ALL PROPOSED IMPROVEMENTS SHALL BE CONSTRUCTED TO ST. LOUIS COUNTY STANDARDS.
36. ANY LAND DISTURBANCE ACTIVITY INVOLVING ONE ACRE OR MORE OF LAND IS A MAJOR LAND DISTURBANCE (MLD) AND A LAND DISTURBANCE PERMIT FOR THE MLD MUST BE OBTAINED FROM THE DEPARTMENT OF PUBLIC WORKS. ANY LAND DISTURBANCE ACTIVITY INVOLVING LESS THAN ONE ACRE OF LAND IS AN ORDINARY LAND DISTURBANCE AND THE APPROPRIATE PERMIT MUST BE OBTAINED FROM THE DEPARTMENT OF PUBLIC WORKS.
37. NO STEPS TO ACCESSIBLE ENTRANCE DOORS.
38. THE LANDSCAPING PLAN IS APPROVED PER SECTION 1003.162(2.2.c) OF THE ZONING ORDINANCE.
39. PRIOR TO IMPROVEMENT/CONSTRUCTION PLAN APPROVAL, THE ENGINEER SHALL PROVIDE A SIGNED AND SEALED NOTE ON THE PLANS FOR BOTH RESIDENTIAL AND COMMERCIAL PROJECTS, STATING THAT THE UNIMPROVED EXISTING SIDEWALK IN THE LIMITS OF THE PROJECT MEETS CURRENT ST. LOUIS COUNTY/ADA STANDARDS.
40. THE PERMIT PROCESS REQUIRES A SEPARATE IMPROVEMENT PLAN SUBMITTAL TO THE ST. LOUIS COUNTY TRANSPORTATION DEPARTMENT.
41. BACKFLOW PREVENTION SHALL BE PROVIDE IN ACCORDANCE WITH THE CURRENT PLUMBING CODE.
42. ALL IMPROVEMENTS WILL CONFORM TO RELATED ST. LOUIS COUNTY CAPITAL IMPROVEMENT PROJECT AR 1468.
43. A LAND DISTURBANCE PERMIT IS REQUIRED.
44. ANY ENTITY THAT PERFORMS WORK ON ST. LOUIS COUNTY MAINTAINED PROPERTY SHALL PROVIDE THE COUNTY WITH A CERTIFICATE OF INSURANCE EVIDENCING GENERAL LIABILITY COVERAGE (BODY INJURY AND PROPERTY DAMAGE) IN THE AMOUNT SPECIFIED AS THE LIMITS OF LIABILITY SET BY THE STATE FOR PUBLIC ENTITIES. SUCH CERTIFICATES SHALL INCLUDE "ST. LOUIS COUNTY" AS ADDITIONALLY INSURED AND SHALL BE PROVIDED PRIOR TO THE ISSUANCE OF ANY PERMIT. THE CERTIFICATE SHALL PROVIDE FOR A 30 DAY POLICY CANCELLATION NOTICE TO ST. LOUIS COUNTY. UPON REQUEST, THE COUNTY WILL PROVIDE THE SPECIFIC AMOUNTS FOR BOTH PERSON AND PER OCCURRENCE LIMITS.

GENERAL NOTES CONT.

45. ALL HYDRANTS, POWER POLES OR OTHER POTENTIAL OBSTRUCTIONS WITHIN THE ST. LOUIS COUNTY ROAD RIGHT-OF-WAY SHALL HAVE A MINIMUM TWO (2) FOOT SETBACK FROM THE FACE OF CURB, AS DIRECTED BY THE ST. LOUIS COUNTY DEPARTMENT OF TRANSPORTATION.
46. ALL CONSTRUCTION SHALL BE PER MOST CURRENT DETAILS LOCATED IN THE ST. LOUIS COUNTY DESIGN CRITERIA MANUAL AND/OR THE SEDIMENT AND EROSION CONTROL MANUAL.
47. THE CONTRACTOR SHALL MAINTAIN EXISTING TRAFFIC CONTROL SIGNS (STREET NAME, STOP, NO PARKING, ONE-WAY, TURN, ETC.) UNTIL SUCH A TIME AS THEY NEED TO BE REMOVED / RELOCATED FOR CONSTRUCTION OPERATIONS. TEMPORARY SIGNING SHALL BE IN ACCORDANCE WITH THE CURRENT VERSION OF MUTCD CHAPTER 6F (TEMPORARY TRAFFIC CONTROL ZONE DEVICES). EXISTING SIGNS SHALL NOT LIE ON THE GROUND FOR ANY PERIOD OF TIME. PORTABLE SUPPORTS SHALL NOT BE LOCATED ON SIDEWALKS OR AREA DESIGNATED FOR PEDESTRIAN TRAFFIC. SIGNS SHALL BE CRASHWORTHY AND PROPERLY MAINTAINED FOR CLEANLINESS, VISIBILITY, AND PROPER POSITIONING, AND SHALL BE COORDINATED WITH THE ST. LOUIS COUNTY SIGN SHOP AT (314) 615-0242.

UTILITY CONTACTS

AMEREN MISSOURI
1132 LOCUST STREET
ST. LOUIS, MISSOURI 63101
314-878-5787

AT&T DISTRIBUTION
12930 OLIVE STREET ROAD
CREVE COEUR, MO 63141
314-878-5787

MISSOURI-AMERICAN WATER COMPANY
727 CRAIG RD
ST. LOUIS, MO 63131
314-996-2432

SPECTRUM
2275 CASSENS DR
FENTON, MO 63026
314-878-5787

SPIRE
3950 FOREST PARK BLVD
ST. LOUIS, MO 63108
314-658-5417

METROPOLITAN ST. LOUIS SEWER DISTRICT
2350 MARKET ST
ST. LOUIS, MO 63103-2555
314-768-6200

PARKWAY SCHOOL DISTRICT
455 N. WOODSMILL RD
CHESTERFIELD, MO 63017
314-415-8100

REGULATORY JURISDICTIONS

WEST COUNTY EMS & FIRE PROTECTION DISTRICT
17065 MANCHESTER ROAD
WILDWOOD, MO 63040
314-458-2100

ST. LOUIS COUNTY DEPARTMENT OF PUBLIC WORKS
41 S. CENTRAL AVENUE, 6TH FLOOR
CLAYTON, MO 63105
314-615-5184

METROPOLITAN ST. LOUIS SEWER DISTRICT
2350 MARKET STREET
ST. LOUIS, MO 63103-2555
314-768-6200

STORMWATER MANAGEMENT NOTE:

ANY FUTURE LAND DISTURBANCE AND/OR INCREASE IN IMPERVIOUS AREA ON THIS SITE MAY REQUIRE ADDITIONAL STORM WATER MANAGEMENT PER MSD REGULATIONS IN PLACE AT THAT TIME (INCLUDING TOTAL LAND DISTURBANCE AND/OR IMPERVIOUSNESS ADDED ON THIS PLAN, P-XXXXX-XX)

$Q_{Existing}$ = 4.23 cfs
$Q_{Proposed}$ = 3.79 cfs
DIFFERENTIAL RUNOFF = -0.44 cfs

LEGEND

- CONTROL POINT
- TBM — TEMPORARY BENCHMARK
- DRAINAGE ARROW
- EXISTING TREE
- EXISTING BUSH
- EXISTING SIGN
- NEW SIGN
- EDGE OF EXISTING PAVEMENT
- EDGE OF NEW PAVEMENT
- EXISTING CURB
- NEW CURB
- X — EXISTING FENCE
- X — NEW FENCE
- SF — NEW EROSION CONTROL
- LIMITS OF CONSTRUCTION
- P-F.O. — EXISTING PARKWAY FIBER OPTIC LINE
- EJ-F.O. — EXISTING EDWARD JONES FIBER OPTIC LINE
- ATT-T — EXISTING ATT TRANSMISSION LINE
- E — EXISTING UNDERGROUND ELECTRIC LINE
- G — EXISTING GAS LINE
- W — EXISTING WATER LINE
- SD — EXISTING STORM SEWER
- SS — EXISTING SANITARY LINE
- SS — PROPOSED SANITARY LINE
- PROPOSED STORM / SANITARY MANHOLE
- EXISTING STORM / SANITARY MANHOLE
- EXISTING GRATE INLET
- PROPOSED GRATE INLET
- PROPOSED CURB INLET
- EXISTING DOUBLE CURB INLET
- EXISTING AREA INLET
- PP — EXISTING UTILITY POLE
- FH — EXISTING FIRE HYDRANT
- WV — EXISTING WATER VALVE
- GV — EXISTING GAS VALVE
- GM — EXISTING GAS METER
- 624 — EXISTING 1' CONTOUR
- 625 — EXISTING 5' CONTOUR
- 624 — PROPOSED 1' CONTOUR
- 625 — PROPOSED 5' CONTOUR
- x 601.92 — EXISTING SPOT ELEVATION
- (#) — KEYED NOTE IDENTIFIER
- (A) — COORDINATE IDENTIFIER
- TP 601.62 — PROPOSED SPOT ELEVATION

ABBREVIATIONS

ASPH	ASPHALT	GV	GAS VALVE	R	RADIUS
ATG	ADJUST TO GRADE	HC	HANDICAPPED	RCP	REINFORCED CONCRETE PIPE
BM	BENCHMARK	IP	IRON PIPE	T	TOP
BOC	BACK OF CURB	IR	IRON ROD	TBM	TEMPORARY BENCHMARK
CI	CURB INLET	LS	LIGHT STANDARD	TBR	TO BE REMOVED
CLR	CLEARANCE	MAX	MAXIMUM	TBREL	TO BE RELOCATED
CONC	CONCRETE	ME	MATCH EXISTING	TBR&R	TO BE REMOVED AND REPLACED
DCI	DOUBLE CURB INLET	MH	MANHOLE	TC	TOP OF CURB
ELEV	ELEVATION	MIN	MINIMUM	TP	TOP OF PAVEMENT
EOP	EDGE OF PAVEMENT	NTS	NOT TO SCALE	TR	TO REMAIN
EX	EXISTING	PB	ELECTRIC PULLBOX	TYP	TYPICAL
FG	FINISH GRADE	P.B.	PLAT BOOK	UIP	USE IN PLACE
FH	FIRE HYDRANT	PC	POINT OF CURVATURE	UP	UTILITY POLE
FL	FLOWLINE	PCC	POINT OF COMPOUND CURVATURE	VCP	VITRIFIED CLAY PIPE
FOC	FACE OF CURB	PGS.	PAGES	WM	WATER METER
G	GUTTER	PT	POINT OF TANGENCY	WV	WATER VALVE
GM	GAS METER	PVMT	PAVEMENT		

MSD P-XXXXX-XX BASEMAP: 24R

ISSUANCE

NO.	DATE	DESCRIPTION
1	10/18/19	BID/PERMIT DOCUMENTS

CIVIL
Wood
15933 Clayton Road
Suite 215
St. Louis, MO 63011
Phone: 636.386.3800
Missouri State Certificate of Authority #2002000326

LANDSCAPE ARCHITECT
SWT Design
7722 Big Bend Boulevard
St. Louis, MO 63119
Phone: 314.644.5700
Missouri State Certificate of Authority #2006002904

PROFESSIONAL SEAL
DATE: 10-18-2019
STATE OF MISSOURI — STUART M. HAW III — NUMBER E-22997 — REGISTERED PROFESSIONAL ENGINEER
10/18/2019
Stuart M. Haw III, PE
MO E-22997
EXPIRATION DATE: 12/31/19

DATE	10/18/19
DRAWN	MJR
CHECKED	SJM
APPROVED	SMH

wood. Corporate Certificate of Authority #2002000326

SORRENTO SPRINGS BUILDING RENOVATIONS & SITE IMPROVEMENTS
PARKWAY SCHOOLS

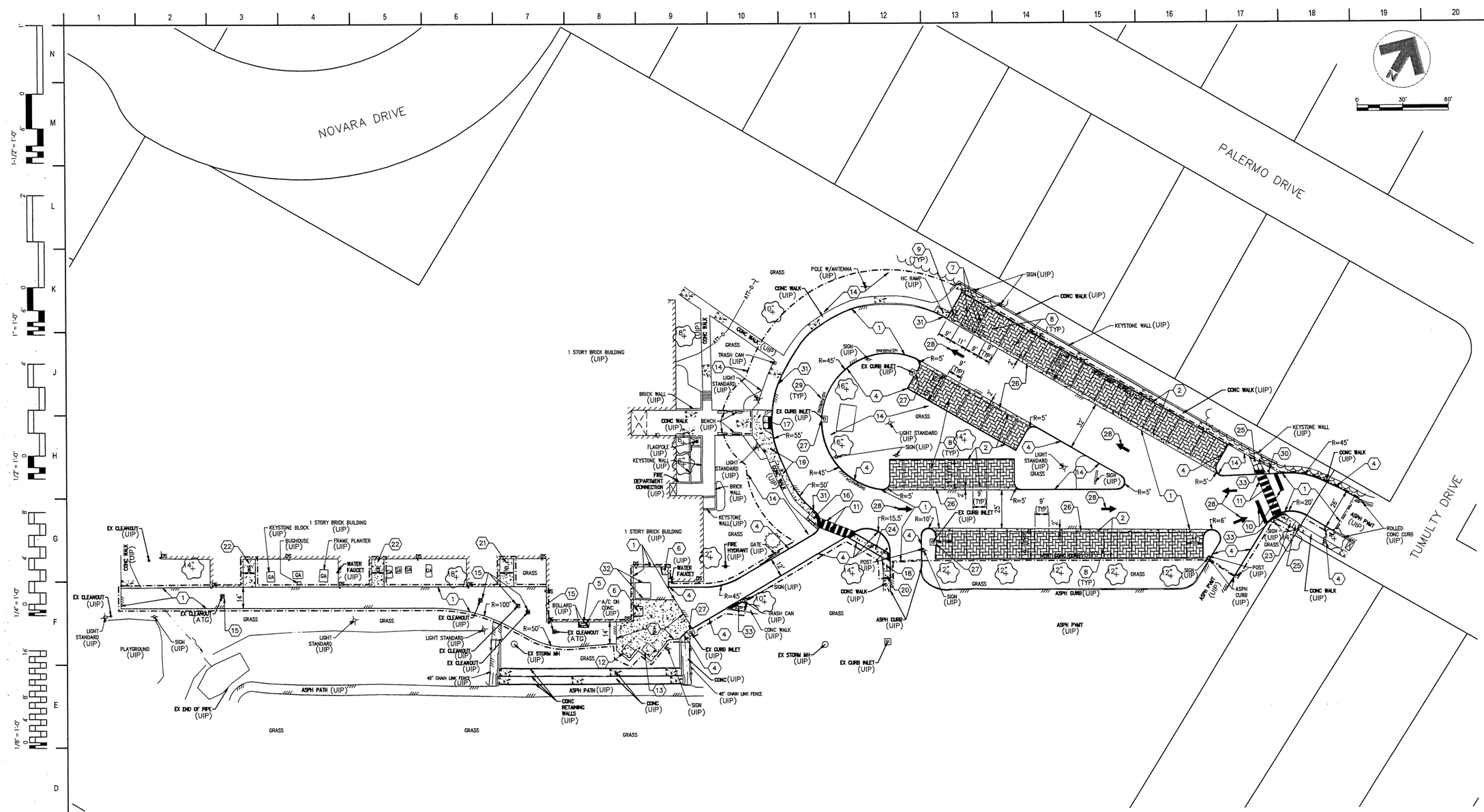
PROJECT LOCATION:
390 Tumulty Dr.
Ballwin, MO 63021

OWNER:
Administrative Office
455 N Woods Mill Road
Chesterfield, Missouri 63107

GENERAL NOTES

SHEET NO.
C1.0.0

PSD PROJECT #: PN1819018
FGM JOB #: 19-2682.01



KEYED NOTES (#)

1. NEW HEAVY DUTY ASPHALT PAVEMENT. REFER TO DETAIL ON SHT. C6.0.0.
2. NEW PERMEABLE PAVERS. REFER TO DETAIL ON SHT. C7.0.0.
3. NEW CONCRETE DUMPSTER PAD. REFER TO DETAIL ON SHT. C6.0.0.
4. NEW VERTICAL CONCRETE CURB. REFER TO DETAIL ON SHT. C6.0.0.
5. NEW CONCRETE PAVEMENT AROUND A/C BLOCKS AND BOLLARDS.
6. NEW CONCRETE RAMP.
7. NEW PAINTED ISLAND (BLUE). REFER TO DETAIL ON SHT. C6.0.0.
8. NEW PAINTED PARKING STRIPE. REFER TO DETAIL ON SHT. C6.0.0.
9. NEW PAINTED HANDICAP SYMBOL. REFER TO DETAIL ON SHT. C6.0.0.
10. NEW PAINTED STOP BAR. REFER TO DETAIL ON SHT. C6.0.0.
11. NEW PAINTED CROSS WALK. REFER TO DETAIL ON SHT. C6.0.0.
12. RELOCATED RECYCLING DUMPSTER.
13. RELOCATED TRASH DUMPSTER.
14. NEW LANDSCAPE AREA. REFER TO LANDSCAPE PLANS.
15. NEW CLEANOUT CAP, FRAME AND CONCRETE COLLAR. REFER TO DETAIL ON SHT. C6.0.0.
16. NEW TYPE 1 ACCESS RAMP (WITH PRECAST DETECTABLE TACTICAL WARNING SURFACE). REFER TO DETAIL ON SHT. C7.0.0.
17. NEW TYPE 2 ACCESS RAMP (WITH PRECAST DETECTABLE TACTICAL WARNING SURFACE). REFER TO DETAIL ON SHT. C7.0.0.
18. NEW TYPE 3 ACCESS RAMP (WITH PRECAST DETECTABLE TACTICAL WARNING SURFACE). REFER TO DETAIL ON SHT. C7.0.0.
19. NEW VARIABLE WIDTH CONCRETE WALK WITH INTEGRAL CURB. REFER TO DETAIL ON SHT. C6.0.0.
20. NEW 5' WIDE CONCRETE WALK WITH INTEGRAL CURB. REFER TO DETAIL ON SHT. C6.0.0.
21. NEW 9' WIDE CONCRETE WALK. REFER TO DETAIL ON SHT. C6.0.0.
22. NEW 8' WIDE CONCRETE WALK. REFER TO DETAIL ON SHT. C6.0.0.
23. NEW 5' WIDE CONCRETE WALK. REFER TO DETAIL ON SHT. C6.0.0.
24. NEW 4' WIDE CONCRETE WALK. REFER TO DETAIL ON SHT. C6.0.0.
25. NEW VARIABLE WIDTH CONCRETE WALK. REFER TO DETAIL ON SHT. C6.0.0.
26. NEW CONCRETE PAVEMENT. REFER TO DETAIL ON SHT. C6.0.0.
27. NEW DEBRIS GRATING AT INLET OPENING.
28. NEW PAINTED DIRECTIONAL ARROW. REFER TO DETAIL ON SHT.C6.0.0.
29. NEW PAINTED WORDING "NO PARKING" LETTERS TO BE 2' TALL (YELLOW).
30. RELOCATED SIGN "YIELD HERE TO".
31. CONTRACTOR TO PAINT CURB YELLOW.
32. RELOCATED FRAME SHED.
33. NEW TYPE 4 ACCESS RAMP (WITH PRECAST DETECTABLE TACTICAL WARNING SURFACE). REFER TO DETAIL ON SHT. C7.0.0.

6/3/2019 2:35:19 PM
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ISSUANCE		
NO.	DATE	DESCRIPTION
1	10/18/19	BID/PERMIT DOCUMENTS

CIVIL
Wood
15933 Clayton Road
Suite 215
St. Louis, MO 63011
Phone: 636.386.3800

Missouri State Certificate of Authority #2002000326

LANDSCAPE ARCHITECT
SWT Design
7722 Big Bend Boulevard
St. Louis, MO 63119
Phone: 314.644.5700

Missouri State Certificate of Authority #2006002904

PROFESSIONAL SEAL
DATE: 10-18-2019

STATE OF MISSOURI
STUART M. HAW III
NUMBER E-22997
REGISTERED PROFESSIONAL ENGINEER

Stuart M. Haw III, PE
MO E-22997

EXPIRATION DATE: 12/31/19

DATE	10/18/19
DRAWN	MJR
CHECKED	SJM
APPROVED	SMH

wood.
Corporate Certificate of Authority #2003000326

SORRENTO SPRINGS BUILDING RENOVATIONS & SITE IMPROVEMENTS
PARKWAY SCHOOLS

PROJECT LOCATION:
390 Tumulty Dr.
Ballwin, MO 63021

OWNER:
Administrative Office
455 N Woods Mill Road
Chesterfield, Missouri 63107

SITE PLAN

SHEET NO.
C3.0.0

PSD PROJECT #: PN1819018
FGM JOB #: 19-2685.01

SECTION 13

SOUTH MIDDLE

BMP ORIGINAL PROJECT INFORMATION

CIVIL ABBREVIATIONS

ASPH	ASPHALT	OHE	OVERHEAD ELECTRIC
BC	BACK OF CURB	ORD	ORDINANCE
BIT	BITUMINOUS	OU	OVERHEAD UTILITY
BK	BOOK	PB	PLAT BOOK
BM	BENCHMARK	PC	POINT OF CURVATURE
BOP	BEGINNING OF PROJECT	PCA	PORTLAND CONCRETE ASSOCIATION
BW	BOTTOM OF WALL	PCC	PORTLAND CEMENT CONCRETE
CL	CENTERLINE	PCH	PIPE CULVERT HEADWALLS
CI	CURB INLET	PG	PAGE
CJ	CONSTRUCTION JOINT	PI	POINT OF INTERSECTION
CMP	CORRUGATED METAL PIPE	PIV	POST INDICATOR VALVE
CO	CLEANOUT	PL	PROPERTY LINE
CONC	CONCRETE	PP	POWER POLE
CPR	COPPER PIPE	PROP	PROPOSED
CS	COMBINED SEWER	PSI	POUNDS PER SQUARE INCH
CT	COOLING TOWER	PT	POINT OF TANGENT
D	DEGREE OF CURVE	PVC	POINT OF VERTICAL CURVE,
DI	DUCTILE IRON PIPE		POLYVINYL CHLORIDE PIPE
DIA	DIAMETER	PVI	POINT OF VERTICAL INTERSECTION
DIM	DIMENSION	PVMT	PAVEMENT
DND	DO NOT DISTURB	PVT	POINT OF VERTICAL TANGENT
DS	DOWNSPOUT	PUMI	PRIVATE UNDER MSD INSPECTION
DW	DOMESTIC WATER	R, RAD	RADIUS
ELEC	ELECTRIC	RCP	REINFORCED CONCRETE PIPE
ELEV	ELEVATION	RD	ROADWAY
EOP	EDGE OF PAVEMENT	ROW	RIGHT OF WAY
EX, EXIST	EXISTING	RTE	ROUTE
EJ	EXPANSION JOINT	SP	SPACES
ET	ELECTRIC TRANSFORMER	SPEC	SPECIFICATION
FF	FINISH FLOOR	SS, SA	SANITARY SEWER
FH	FIRE HYDRANT	ST	STORM SEWER
FL	FLOW LINE	STA	STATION
FO	FIBER OPTIC	STL	STEEL PIPE
FP	FIRE PROTECTION	TBA	TO BE ABANDONED
FW	FIRE WATER	TBA&F	TO BE ABANDONED AND FILLED
G	NATURAL GAS	TBR	TO BE REMOVED
GM	GAS METER	TBR&R	TO BE REMOVED AND REPLACED
GV	GAS VALVE	TBR&S	TO BE REMOVED AND SALVAGED
HORIZ	HORIZONTAL	TC	TOP OF CURB
ID	INSIDE DIAMETER	TELE	TELEPHONE
INV	INVERT	TI	TOP OF INLET
L	LENGTH OF CURVE	TW	TOP OF WALL
MAX	MAXIMUM	TYP	TYPICAL
MEP	MECHANICAL/ELECTRICAL/PLUMBING	UG	UNDERGROUND
MH	MANHOLE	UGE	UNDERGROUND ELECTRIC
MIN	MINIMUM	UGT	UNDERGROUND TELEPHONE
MISC	MISCELLANEOUS	UIP	USE IN PLACE
MON	MONUMENT	VAC	VACATED
N	NORTH	VCP	VITRIFIED CLAY PIPE
NIC	NOT IN CONTRACT	VERT	VERTICAL
NO	NUMBER	W	WATER
NTS	NOT TO SCALE	W/	WITH
OC	ON CENTER	WM	WATER METER
OD	OUTSIDE DIAMETER	WV	WATER VALVE
OH	OVERHEAD	WWF	WELDED WIRE FABRIC
		UNO	UNLESS NOTED OTHERWISE

CIVIL LEGEND

- PROPERTY LINE
- SILTATION FENCE
- ST — STORM SEWER
- UD — STORM UNDERDRAIN
- SS — SANITARY SEWER
- G — GAS SERVICE
- FW — FIRE SERVICE WATER
- W — DOMESTIC SERVICE WATER
- CLEANOUT
- FH — FIRE HYDRANT
- WV — WATER VALVE
- FPIV — FIRE SERVICE POST INDICATOR VALVE

PUBLIC UTILITY CONTACTS

CONTACT TYPE:	COMPANY NAME:	CONTACT PHONE:	STREET ADDRESS:	
STORM/SANITARY:	METROPOLITAN ST. LOUIS SEWER DISTRICT (MSD)	(314) 768-6200	2350 MARKET ST.	ST. LOUIS, MO 63103
ELECTRIC:	AMEREN MISSOURI	(866) 992-6619	1901 CHOUTEAU AVE.	ST. LOUIS, MO 63166
NATURAL GAS:	SPIRE	(314) 621-6960	720 OLIVE ST.	ST. LOUIS, MO 63101
WATER:	MISSOURI AMERICAN WATER	(866) 430-0820	727 CRAIG RD.	ST. LOUIS, MO 63141

CIVIL DRAWING INDEX

SURVEY INFORMATION

BENCHMARK INFORMATION:

STATION SL-64 = ST LOUIS COUNTY BENCHMARK 13-223 ELEVATION 846.21
"STANDARD ALUMINUM DISK" STAMPED SL-64 1992 IS AT THE NORTHWEST CORNER OF CLAYTON ROAD AND CABERNET DRIVE - 36' WEST OF THE CENTERLINE OF CABERNET DRIVE AND 19' NORTH OF THE NORTH EDGE OF CLAYTON ROAD.

STATION SL-65 = ST LOUIS COUNTY BENCHMARK 13-224
ELEVATION 491.89
"STANDARD ALUMINUM DISK" STAMPED SL-65 1992, DISK IS AT THE ENTRACE TO #14208 MANCHESTER ROAD; 41' SOUTH OF THE CENTERLINE OF MANCHESTER ROAD AND 18' WEST OF A POWER POLE. APPROXIMATELY 0.4 MILES EAST OF THE INTERSECTION OF HIGHWAY 141 AND MANCHESTER ROAD.

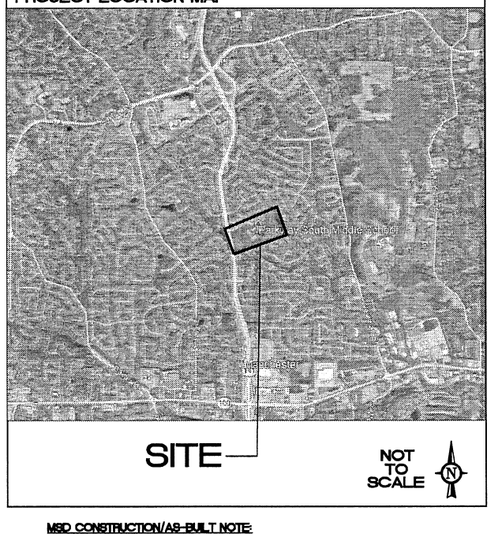
TBM 'A' - 'O' IN OPEN ON FIRE HYDRANT 55'± NW OF THE NW BUILDING CORNER, AS SHOWN ELEV=574.72

PROPERTY INFORMATION

INFORMATION BELOW PER ST. LOUIS COUNTY ASSESSOR'S WEBSITE:

PROPERTY OWNER:	PARKWAY SCHOOL DISTRICT
PROPERTY ADDRESS:	760 WOODS MILL RD. BALLWIN, MO 63011
PARCEL #:	21Q210815
ZONING:	NU
AREA OF PROPERTY:	29.26 ACRES
FIRM PANEL:	29189C0282K, EFFECTIVE 02/04/2015 ZONE X: AREA OF MINIMAL FLOODING

PROJECT LOCATION MAP



MSD CONSTRUCTION/AS-BUILT NOTE:

CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETING ALL SEWER AND DRAINAGE WORK REQUIRED IN ORDER TO COMPLETE THIS PROJECT. THIS INCLUDES, BUT IS NOT LIMITED TO, COMPLETING ALL WORK AND REQUIREMENTS ASSOCIATED WITH THE MSD PERMIT. FURTHER, THIS WORK SHALL INCLUDE COORDINATING AND SCHEDULING INSPECTIONS WITH MSD INSPECTORS. IF THE MSD INSPECTOR NOTICES ANY DEFICIENCIES WITH THE CONTRACTOR'S WORK, THE CONTRACTOR SHALL REPAIR THESE DEFICIENCIES TO THE SATISFACTION OF THE MSD INSPECTOR. FURTHERMORE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING ANY AND ALL AS-BUILT SURVEYS, IF REQUIRED BY THE MSD PERMIT, FOR ANY STRUCTURES, BASINS, AND/OR APPURTENANCES. THE CONTRACTOR SHALL COORDINATE WITH THE MSD INSPECTOR FOR CLARIFICATIONS ON WHICH COMPLETED ITEMS MUST BE SURVEYED. THE CONTRACTOR SHALL MAKE THE AS-BUILT SURVEY(S) AVAILABLE TO THE DESIGN TEAM IN BOTH ELECTRONIC AND HARD COPY FORMAT.

STORMWATER MANAGEMENT FUTURE NOTE:

PREVIOUS PROJECT: (MSD P-17269-03)
PROJECT DISTURBANCE = 0.15 ACRES
PROJECT RUNOFF DIFFERENTIAL = 0.03 CFS (INCREASE)

CURRENT PROJECT:
PROJECT DISTURBANCE = 5.00 ACRES
(INCLUDES 1.50 ACRES OF EXISTING PAVEMENT RESTORATION/MAINTENANCE)
PROJECT RUNOFF DIFFERENTIAL = 1.56 CFS (INCREASE)

ANY FUTURE LAND DISTURBANCE AND/OR INCREASE IN IMPERVIOUS AREA ON THIS SITE MAY REQUIRE ADDITIONAL STORM WATER MANAGEMENT PER MSD REGULATIONS IN PLACE AT THAT TIME (INCLUDING TOTAL LAND DISTURBANCE AND/OR IMPERVIOUSNESS ADDED ON THIS PLAN).

MSD NOTES (APPLY TO ALL CIVIL SHEETS):

1. PRIOR TO OBTAINING A CONSTRUCTION PERMIT FROM THE METROPOLITAN ST. LOUIS SEWER DISTRICT, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE THE DISTRICT WITH A COPY OF AN EXECUTED CERTIFICATE OF INSURANCE INDICATING THAT THE PERMITTEE HAS OBTAINED AND WILL CONTINUE TO CARRY COMMERCIAL GENERAL LIABILITY AND COMPREHENSIVE AUTO LIABILITY INSURANCE. THE REQUIREMENTS AND LIMITS SHALL BE AS STATED IN THE "RULES AND REGULATIONS AND ENGINEERING DESIGN REQUIREMENTS FOR SANITARY AND STORMWATER DRAINAGE FACILITY", SECTION 10.090(ADDENDUM).
2. ANY ABANDONED SEWERS SHALL BE REMOVED OR COMPLETELY GROUT FILLED.
3. ALL FILLED AREAS, INCLUDING TRENCH BACKFILLS, UNDER BUILDINGS, PROPOSED STORM AND SANITARY SEWER LINES, AND PAVED AREAS, SHALL BE COMPACTED TO A MINIMUM OF 90 PERCENT OF "MODIFIED PROCTOR". "F.I.L.S. TO BE PLACED IN A MAXIMUM OF 8-INCH LIFTS. TESTS SHALL BE TAKEN AT A MAXIMUM OF 50-FOOT INTERVALS ALONG THE ROUTE OF THE PIPE; AT A MAXIMUM OF 2-FOOT VERTICALLY; AND LATERALLY ON EACH SIDE OF THE PIPE. AT A DISCHARGE EQUAL TO THE DEPTH OF FILL OVER THE PIPE. A COPY OF THESE RESULTS SHALL BE SUBMITTED TO MSD PRIOR TO CONSTRUCTION APPROVAL.
4. CONTRACTOR SHALL PROVIDE SIGNED AND SEALED SHOP DRAWINGS TO BE APPROVED BY THE PROJECT ENGINEER & MSD. CONTACT MSD AT PHONE NUMBER 314-335-2072.
5. PIPE JOINTS WITH ADAPTERS AND COUPLINGS SHALL BE SUPPLIED AND INSTALLED WITH 316 STAINLESS STEEL NUT AND BOLT CLAMPS (T-BOLT) CONFIGURATION; AND WITH STAINLESS STEEL SHEAR BANDS, BEING A MINIMUM OF TWELVE (12) MILS (MSD STD. CONST SPECS. PT. 2, SUBSECTION H 11). WORM DRIVE HOSE CLAMPS AND CONCRETE BACKFILLING (CAUSTICITY) WILL NO LONGER BE ALLOWED AT THOSE JOINTS. GRANULAR BACKFILL SHOULD BE USED. IF FLOWABLE FILL IS REQUIRED, THE CONTRACTOR SHALL WRAP AND TAPE THE ADAPTERS AND COUPLINGS WITH A SIX (6) MIL POLYETHYLENE SHEET.
6. STANDARD CONSTRUCTION:

   ALL STORM AND SANITARY SEWER STRUCTURES AND APPURTENANCES TO BE DEDICATED TO MSD, OR TO BE PRIVATE UNDER MSD INSPECTION, SHALL CONFORM TO THE METROPOLITAN ST. LOUIS SEWER DISTRICT, STANDARD CONSTRUCTION SPECIFICATIONS FOR SEWERS AND DRAINAGE FACILITIES, 2009. THAT WILL INCLUDE STANDARD DETAILS SHOWN THEREIN, AND SHALL INCLUDE ALL SUBSEQUENT CHANGES MADE THERETO.

   SOME RECENT CHANGES CONCERN PLASTIC PIPE MATERIALS AND PIPE FIELD TESTING AND PERFORMANCE, AND INCLUDE THE FOLLOWING:

   PART 2 - MATERIALS OF CONSTRUCTION

   HIGH DENSITY POLYETHYLENE (HDPE) PIPE IS NOT ALLOWED FOR GRAVITY SEWERS FOR STORM, COMBINED, OR SANITARY SEWERS THAT ARE "PUBLIC" OR "PRIVATE UNDER MSD INSPECTION".

   POLYPROPYLENE (PP) PIPE IS ALLOWED AS FOLLOWS FOR GRAVITY SEWERS THAT ARE "PUBLIC" OR "PRIVATE UNDER MSD INSPECTION:

   FOR USE IN SANITARY AND COMBINED SEWERS 12 TO 60 INCHES IN DIAMETER IT SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2764 "STANDARD SPECIFICATION FOR 6 TO 60 IN. POLYPROPYLENE (PP) CORRUGATED DOUBLE AND TRIPLE WALL PIPE AND FITTINGS FOR NON-PRESSURE SANITARY SEWER APPLICATIONS."
   FOR USE IN STORM SEWERS 12 TO 24 INCHES IN DIAMETER IT SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2881 "STANDARD SPECIFICATION FOR 12 TO 60 IN. POLYPROPYLENE (PP) DUAL WALL PIPE AND FITTINGS FOR NON-PRESSURE STORM SEWER APPLICATIONS;" OR FOR USE IN STORM SEWERS 12 TO 60 INCHES IN DIAMETER IT SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2764 "STANDARD SPECIFICATION FOR 6 TO 60 IN. POLYPROPYLENE (PP) CORRUGATED DOUBLE AND TRIPLE WALL PIPE AND FITTINGS FOR NON- PRESSURE SANITARY SEWER APPLICATIONS."

   PART 4 - PIPE SEWER CONSTRUCTION

   SECTION B, PIPE FIELD TESTS, PARAGRAPH 2, REACH INTEGRITY TESTING - DELETE THE FIRST SENTENCE AND THE FOLLOWING REPLACEMENT APPLIES:

   ALL SANITARY AND COMBINED SEWERS SHALL SUSTAIN A MAXIMUM LEAKAGE LIMIT OF 100 GALLONS/INCH OF PIPE DIAMETER/MILE OF LINE/DAY, AS REQUIRED BY THE MISSOURI DEPARTMENT OF NATURAL RESOURCES SPECIFICATIONS.

   SECTION B, PIPE FIELD TESTS, PARAGRAPH 2, REACH INTEGRITY TESTING, SUBPARAGRAPH C, INFILTRATION/EXFILTRATION TESTING - DELETE THE SIXTH SENTENCE, CONCERNING LEAKAGE LIMITS, AND THE FOLLOWING REPLACEMENT APPLIES:

   THE MEASUREMENT OF LEAKAGE SHALL NOT EXCEED 100 GALLONS/INCH OF PIPE DIAMETER/MILE OF LINE/DAY, AS REQUIRED BY THE MISSOURI DEPARTMENT OF NATURAL RESOURCES SPECIFICATIONS.

   SECTION B, PIPE FIELD TESTS, PARAGRAPH 4, MANHOLE TESTING, SUBPARAGRAPH A, VACUUM TESTING - AFTER THE FIRST SENTENCE, THE FOLLOWING ADDITION APPLIES:

   THE VACUUM TEST MUST BE PERFORMED PRIOR TO BACKFILLING AROUND THE MANHOLE UNLESS THE CONTRACTOR PROVIDES DOCUMENTATION FROM THE PRECAST MANHOLE MANUFACTURER STATING THAT THE MANHOLE MAY BE VACUUM TESTED AFTER BACKFILLING HAS TAKEN PLACE. THE CONTRACTOR MUST SUBMIT THIS DOCUMENTATION PRIOR TO BACKFILLING AROUND ANY MANHOLE.

MSD NOTES (CONTINUED)

   SECTION B, PIPE FIELD TESTS, PARAGRAPH 4, MANHOLE TESTING, SUBPARAGRAPH B, EXFILTRATION TESTING - DELETE THE SECOND SENTENCE, CONCERNING LEAKAGE LIMITS, AND THE FOLLOWING ADDITION APPLIES:

   FOR EXFILTRATION TESTING, THE ALLOWABLE LEAKAGE LIMIT IS 100 GALLONS/INCH OF PIPE DIAMETER/MILE OF LINE/DAY WHEN THE AVERAGE HEAD ON THE TEST SECTION IS THREE FEET (3') OR LESS.

   IF REINFORCED CONCRETE PIPE IS USED FOR SANITARY OR COMBINED SEWERS LARGER THAN 27", ALL PIPE AND JOINTS SHALL CONFORM TO ASTM C 361. IN ADDITION, IF THE DIAMETER IS LARGER THAN 48", THE JOINT TYPE MUST INCLUDE A GASKET THAT IS CONFINED IN A GROOVE IN THE SPIGOT OF THE PIPE.

7. MAINTENANCE OF THE SEWERS DESIGNATED "PUBLIC" SHALL BE THE RESPONSIBILITY OF THE METROPOLITAN ST. LOUIS SEWER DISTRICT UPON DEDICATION OF THE SEWERS TO THE DISTRICT.

GRADING NOTES (APPLY TO ALL CIVIL SHEETS):

1. INTERIM STORM WATER DRAINAGE CONTROL IN THE FORM OF SILTATION CONTROL MEASURES ARE REQUIRED.
2. NO SLOPES SHALL EXCEED 3H:1V.
3. PROPOSED ELEVATIONS SHOWN ON PLAN ARE FINISH GRADE ELEVATIONS.
4. CONTRACTOR SHALL TAKE SPECIAL CARE DURING COMPACTION OF BACKFILL MATERIALS OVER THE TOP OF STRUCTURES OR PIPES IN ORDER TO PREVENT ANY DAMAGE TO BELOW GRADE STRUCTURES.
5. CLEARING TECHNIQUES THAT RETAIN VEGETATION TO THE MAXIMUM EXTENT PRACTICAL SHALL BE USED, AND THE TIME PERIOD FOR DISTURBED AREAS TO BE WITHOUT VEGETATIVE COVER SHALL BE MINIMIZED TO THE EXTENT PRACTICAL.
6. WHEN ANY GRADING OCCURS PRIOR TO FINAL GRADING, THE SITE SHALL AT ALL TIMES BE MAINTAINED SUCH THAT ALL STORM WATER RUNOFF IS DIVERTED TO SOIL EROSION AND SEDIMENT CONTROL FACILITIES.
7. ALL EXCESS EARTHWORK MATERIALS SHALL BE HAULED OFF-SITE AND DISPOSED OF IN A LEGAL MANNER.
8. ALL NEW ADA PARKING SPACES AND ACCESS AISLES SHALL NOT BE SLOPPED GREATER THAN 2 PERCENT IN ANY DIRECTION. ADA ACCESS PATHS SHALL NOT HAVE A LATERAL (CROSS) SLOPE GREATER THAN 2 PERCENT AND A LONGTUDINAL (RUNNING) SLOPE GREATER THAN 5 PERCENT.

GENERAL NOTES:

1. UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THE VERIFICATION OF THE LOCATION OF UNDERGROUND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE LOCATED PRIOR TO ANY GRADING OR CONSTRUCTION OF IMPROVEMENTS.
2. TOPOGRAPHIC SURVEY PREPARED AND FIELD DATA COLLECTED BY CIVIL DESIGN INC. IN OCTOBER, 2018.
3. AREAS OF NEW SOIL/ROCK FILL PLACEMENT INCLUDING TRENCH BACKFILLS, UNDER BUILDINGS, SANITARY SEWER LIES AND/OR PAVED AREAS SHALL BE COMPACTED IN ACCORDANCE WITH THE SOILS REPORT FOR THIS PROJECT, UNLESS OTHERWISE SPECIFIED.
4. TRENCH BACKFILLS UNDER PAVED AREA SHALL BE GRANULAR BACKFILL, UNLESS OTHERWISE SPECIFIED.
5. EXISTING ABOVE AND BELOW GRADE UTILITIES ARE TO BE PROTECTED AND USED IN PLACE, UNLESS OTHERWISE SPECIFIED.
6. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND PAYING FOR ALL PERMITS REQUIRED FOR COMPLETION OF THIS PROJECT.
7. ALL CONSTRUCTION ACTIVITIES SHALL COMPLY WITH ALL APPLICABLE OSHA REGULATIONS.
8. LOCATION AND ELEVATION OF EXISTING INLETS, MANHOLES, AND PIPES TO BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL VERIFY ALL FIGURES AND ELEVATIONS BEFORE PROCEEDING WITH THE WORK. IF ANY INFORMATION IN THE FIELD DIFFERS FROM THAT ON THE DRAWINGS OR SPECIFICATIONS, THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE IMMEDIATELY.
9. CIVIL DRAWINGS SHALL NOT BE USED TO LOCATE OR CONSTRUCT BUILDING FOOTINGS, FOUNDATIONS, OR ANY OTHER STRUCTURE(S) ASSOCIATED WITH THE BUILDING(S). FOR LOCATION AND CONSTRUCTION OF BUILDING FOOTINGS, FOUNDATIONS, ETC., REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS.
10. ALL TRASH AND DEBRIS ON-SITE, EITHER EXISTING OR FROM CONSTRUCTION ACTIVITIES, MUST BE REMOVED AND LEGALLY DISPOSED OF OFF-SITE.
11. DIMENSIONS SHOWN ARE TO FACE OF CURB, FACE OF WALL, OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

UTILITY NOTES (APPLY TO ALL CIVIL SHEETS):

1. LOCATE EXISTING UNDERGROUND UTILITIES AND SEWERS IN AREAS OF WORK PRIOR TO STARTING OPERATIONS. WHEN UTILITIES ARE TO REMAIN IN PLACE, PROVIDE ADEQUATE MEANS OF PROTECTION DURING OPERATIONS. SHOULD UNKNOWN UTILITIES BE ENCOUNTERED DURING EXCAVATION, CONTRACTOR SHALL NOTIFY THE OWNERS REPRESENTATIVE IMMEDIATELY FOR FURTHER DIRECTION.
2. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 10' HORIZONTAL DISTANCE AND 18" VERTICAL DISTANCE BETWEEN ANY WATER LINE AND ANY SANITARY SEWER LINE.
3. CONTRACTOR SHALL PROVIDE TEMPORARY COVERS FOR ANY EXCAVATIONS LEFT UNATTENDED FOR ANY PERIOD OF TIME.
4. THE CONTRACTOR SHALL COMPLETE ALL UTILITY WORK TO THE APPROPRIATE STANDARDS OF EACH RESPECTIVE UTILITY COMPANY.
5. SIZE OF UTILITY LINE EXCAVATIONS SHOWN ON THE PLANS ARE APPROXIMATE ONLY. CONTRACTOR SHALL ADJUST SIZE OF TRENCH EXCAVATIONS AS REQUIRED ON A CASE BY CASE BASIS TO PROPERLY CONSTRUCT UTILITY SERVICES. CONTRACTOR SHALL BE RESPONSIBLE FOR SHORING EXCAVATIONS AS REQUIRED ACCORDING TO ALL FEDERAL, STATE, LOCAL, AND OSHA REGULATIONS.
6. BACKFLOW PREVENTION ON ALL DOMESTIC AND FIRE WATER LINES ARE REQUIRED IN ACCORDANCE WITH CURRENT PLUMBING STANDARDS.
7. CONTRACTOR SHALL COORDINATE AND IS RESPONSIBLE FOR ALL DESIGN AND PERMITTING OF PROPOSED FIRE WATER SERVICE AND CONNECTION TO PUBLIC MAIN.

DEMOLITION NOTES (APPLY TO ALL CIVIL SHEETS):

1. THE STREETS AND AREAS SURROUNDING THIS PROJECT SERVE BOTH PEDESTRIAN AND VEHICLE TRAFFIC. ALL NECESSARY CARE SHALL BE TAKEN BY THE CONTRACTOR TO ENSURE SAFETY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING AND MAINTAINING SAFE AND EFFICIENT PROJECT LIMITS. THE CONTRACTOR SHALL FOLLOW ALL FEDERAL, STATE, AND LOCAL GUIDELINES WITH REGARDS TO CONSTRUCTION SAFETY THROUGHOUT THE ENTIRE DURATION OF THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY BREACHES OF SAFETY OR DESTRUCTION OF PROPERTY RELATED TO THE CONSTRUCTION OF THIS PROJECT.
2. ALL DEMOLITION DEBRIS SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF OFF SITE ACCORDING TO ALL FEDERAL, STATE, AND LOCAL REGULATIONS.
3. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS NOT TO DAMAGE ANY EXISTING SITE FEATURES TO REMAIN. IF ANY DAMAGE OCCURS, THE CONTRACTOR SHALL CONTACT THE OWNER'S REPRESENTATIVE IMMEDIATELY. THE CONTRACTOR SHALL REPAIR ALL DAMAGED ITEMS TO THE SATISFACTION OF THE OWNER AT NO ADDITIONAL COST.
4. WHERE PAVEMENT, WALKS, ETC. ARE TO BE REMOVED, SAWCUT AT LOCATIONS SHOWN, OR REMOVE ENTIRELY TO NEAREST AVAILABLE JOINT.
5. USE OF EXPLOSIVES AND/OR BURNING ON SITE IS NOT PERMITTED.
6. CONTRACTOR TO COORDINATE IDENTIFICATION, REMOVAL AND/OR ABANDONMENT AND REESTABLISHMENT OF EXISTING IRRIGATION SYSTEMS WITH OWNER PRIOR TO DEMOLITION.
7. CONTRACTOR TO COORDINATE ALL DEMOLITION ACTIVITIES/SCHEDULE WITH ABATEMENT CONTRACTOR AND PROPOSED WORK SEQUENCE AS SHOWN ON SHEETS C200 AND C300. CONTRACTOR WILL BE RESPONSIBLE FOR ALL COST ASSOCIATED WITH SITE WORK SEQUENCE INCLUDING, BUT NOT LIMITED TO, TEMPORARY ACCESS ROAD(S), PEDESTRIAN ACCESS, PIPING, ROAD CLOSURE BARRICADES/SIGNAGE, TRAFFIC CONTROL PERSONNEL (FLAGMEN, SPOTTERS, ETC.)

MSD PROJECT 18MSD-00571 MSD MAP 21Q

PRINTED: 10/5/2018 7:07:59 AM

Christner ARCHITECTS
Architecture / Interior Design / Graphics
1415 S. Brentwood Blvd. St. Louis, Missouri 63144
314.725.0300 FAX 314.725.0144 www.christner.com

Parkway South Middle School Building Addition, Renovations & Site Improvements -

760 Woods Mill Road
Ballwin, MO 63011

REVISIONS:

BID / PERMIT SET 02-04-2019

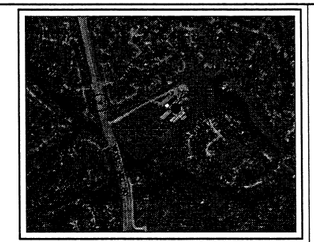
CIVIL GENERAL INFORMATION

PSD Project No.:	411801B
Project Number:	2018.033
Date:	02.04.2019
Drawn By:	NJC

C001

TOPOGRAPHIC SURVEY

A TRACT OF LAND BEING PART OF PARKWAY SOUTH JUNIOR HIGH SCHOOL #760 WOODS MILL ROAD IN ST. LOUIS COUNTY, BALLWIN, MISSOURI



LOCATION MAP
NOT TO SCALE

MISSOURI LAND SURVEYING CORPORATION LICENSE NUMBER: 2011020042 EXPIRES: 12-31-2019

SYMBOLS & ABBREVIATIONS:

AC	ACRES
ASPH	ASPHALT
BK	BOOK
BLDG	BUILDING
(C)	CALCULATED
CLF	CHAIN LINK FENCE
CONC	CONCRETE
DB	DEED BOOK
E	EAST
E MH	ELECTRIC MANHOLE
ELEV	ELEVATION
FF	FINISHED FLOOR
FL	FLOW LINE
L	LENGTH
(M)	MEASURED IN FIELD BY SURVEYOR
MH	MANHOLE
N	NORTH
NTS	NOT TO SCALE
PB	PLAT BOOK
PG	PAGE
PVC	POLYVNYL CHLORIDE
PVMT	PAVEMENT
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
(R)	PER RECORDED DOCUMENT
RR TIE	RAIL ROAD TIE WALL
S	SOUTH
SA	SANITARY
SBM	SITE BENCHMARK
SF	SQUARE FEET
ST	STORM
TRANS	TRANSFORMER
VCP	VITRIFIED CLAY PIPE
W	WEST
WC	WALL CORNER
W MH	WATER MANHOLE
W/	DENOTES WITH
PP	POWER POLE W/GUY WIRE
PP	POWER POLE
	GUY WIRE
	STREET SIGN
GV	GAS VALVE
GM	GAS METER
WV	WATER VALVE
WM	WATER METER
WF/WS	WATER FAUCET OR SPRINKLER
CO	CLEAN OUT
YD	YARD DRAIN
EB/EM	ELECTRIC BOX OR METER
MB	MAIL BOX
TB/CM	TELEPHONE OR CABLE BOX
LS	LIGHT STANDARD
FH	FIRE HYDRANT
TS	TRAFFIC SIGNAL
EYL	ELECTRIC YARD LIGHT
CM	COIN METER
	CONTROL STATION
	SURVEY CONTROL POINT
	SET IRON ROD W/PLASTIC CAP
	SET CUT CROSS
	FOUND MONUMENT AS NOTED
	AREA/GRATE INLET
	CURB/DROP INLET
	MANHOLE
OU	OVERHEAD UTILITY LINE
G	UNDERGROUND GAS LINE
T	UNDERGROUND TELEPHONE LINE
E	UNDERGROUND ELECTRIC LINE
FO	UNDERGROUND FIBER OPTIC LINE
X	FENCE LINE
	TREE LINE
±	PLUS OR MINUS
10"	TREE W/ SIZE
48"	BUSH W/ SIZE

EX STM GRATE TOP=573.77 FL(OUT)(E)=566.62

EX STM GRATE TOP=574.44 FL(OUT)(N)=570.64

EX STM INLET TOP=572.76 FL(IN)(W)=564.91 FL(OUT)(E)=564.48

EX AREA DRAIN TOP=563.36

EX STM INLET TOP=568.52 FL(IN)(NW)=564.47 FL(OUT)(S)=564.37

FF=576.24 FF=576.21 FF=576.15 FF=576.17 FF=576.06 FF=563.78 FF=576.10 FF=576.14 FF=576.12 FF=568.16 FF=568.15 FF=562.88

HEADWALL FL=564.31 FL=563.91 FL=563.27

SOCCER GOAL BENCH BENCH

GRAPHIC SCALE
20 0 10 20
1 INCH = 20 FEET

BENCHMARK INFORMATION:

ST. LOUIS COUNTY BENCHMARK 12301
660.93 – CUR SQUARE FEET WEST OF THE EAST END OF THE TOP OF CONCRETE BARRIER WALL ALONG THE NORTH SIDE OF THE BRIDGE A-4064 FOR CLAYTON ROAD OVER HIGHWAY 141, ROUGHLY 50 FEET NORTH OF CENTERLINE OF CLAYTON ROAD AND 180 FEET EAST OF CENTERLINE OF HIGHWAY 141. (NAVD88)

HORIZONTAL CONTROL STATEMENT:

STATE PLANE COORDINATES ON THIS PROJECT WERE ESTABLISHED UTILIZING THE MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION GLOBAL NAVIGATION SATELLITE REAL TIME NETWORK FOR CONTINUOUS OPERATING REFERENCE STATIONS DURING THE MONTH OF NOVEMBER 2018, AND ARE BASED ON THE MISSOURI COORDINATE SYSTEM OF NAD1983, ZONE EAST, 2401.

VERTICAL CONTROL STATEMENT:

ELEVATIONS ON THIS PROJECT WERE ESTABLISHED UTILIZING THE MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION GLOBAL NAVIGATION SATELLITE REAL TIME NETWORK FOR CONTINUOUS OPERATING REFERENCE STATIONS DURING THE MONTH OF NOVEMBER 2018, AND ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88).

SOURCE OF TITLE INFORMATION:

NO TITLE INSURANCE COMMITMENT WAS FURNISHED TO THE SURVEYOR; THEREFORE THERE MAY BE OTHER EASEMENTS, COVENANTS AND RESTRICTIONS AFFECTING THE SUBJECT PROPERTY THAT ARE NOT SHOWN ON THIS SURVEY.

UTILITY INFORMATION:

THE UNDERGROUND STRUCTURES, UTILITIES AND EASEMENTS HAVE BEEN PLOTTED FROM READILY AVAILABLE RECORDS AND AVAILABLE MAPS AS WELL AS FIELD OBSERVED MARKINGS AT THE TIME OF THE FIELD VISIT. LOCATIONS ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR TO ANY CONSTRUCTION.

THE CLIENT IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. LOCATION, RELOCATION AND CONNECTION OF THE UTILITIES SHALL BE COORDINATED WITH THE UTILITY COMPANIES.

SURVEYOR'S CERTIFICATION:

THIS IS TO CERTIFY THAT CIVIL DESIGN, INC., AT THE ORDER OF THE PARKWAY C-2 SCHOOL DISTRICT, EXECUTED A PARTIAL TOPOGRAPHIC SURVEY OF A TRACT OF LAND BEING PART OF #760 WOODS MILL ROAD OF ST. LOUIS COUNTY, MISSOURI. FURTHERMORE, THIS SURVEY WAS PERFORMED IN ACCORDANCE WITH THE CURRENT STANDARDS FOR PROPERTY BOUNDARY SURVEYS AND THE RESULTS OF SAID SURVEY ARE SHOWN ON THIS PLAT. WE CERTIFY THAT THE ABOVE PLAT WAS MADE FROM AN ACTUAL SURVEY PERFORMED IN THE FIELD DURING THE MONTH OF NOVEMBER 2018 ACCORDING TO THE RECORDS AVAILABLE AND RECORDED.

PHILIP A. GROUT
MISSOURI PLS-2010018902

DATED

Missouri One Call System, Inc.
Call Before You Dig!
1-800-DIG-RITE
(1-800-344-7483)

All the improvements & facilities and utilities, above ground and underground shown herein were plotted from available information and do not necessarily reflect the actual existence, nonexistence, elevation, size, type, number or location of these or other improvements, facilities, or utilities.
The General Contractor and/or owner shall be responsible for verifying the actual location & elevation of all improvements, facilities, & utilities, shown or not shown, and said improvements, facilities, & utilities shall be located in the field prior to any grading, excavation or construction of any improvements. These provisions shall in no way absolve any part from complying with the Underground Facility Safety & Damage Prevention Act, Chapter 319, RSMo.

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Parkway South Middle School Building Addition, Renovations & Site Improvements -

760 Woods Mill Road
Ballwin, MO 63011

REVISIONS:

PARTIAL TOPOGRAPHIC SURVEY

PSD Project No.:	411801B
Project Number:	2018.033
Date:	02.04.2019
Drawn By:	GWK

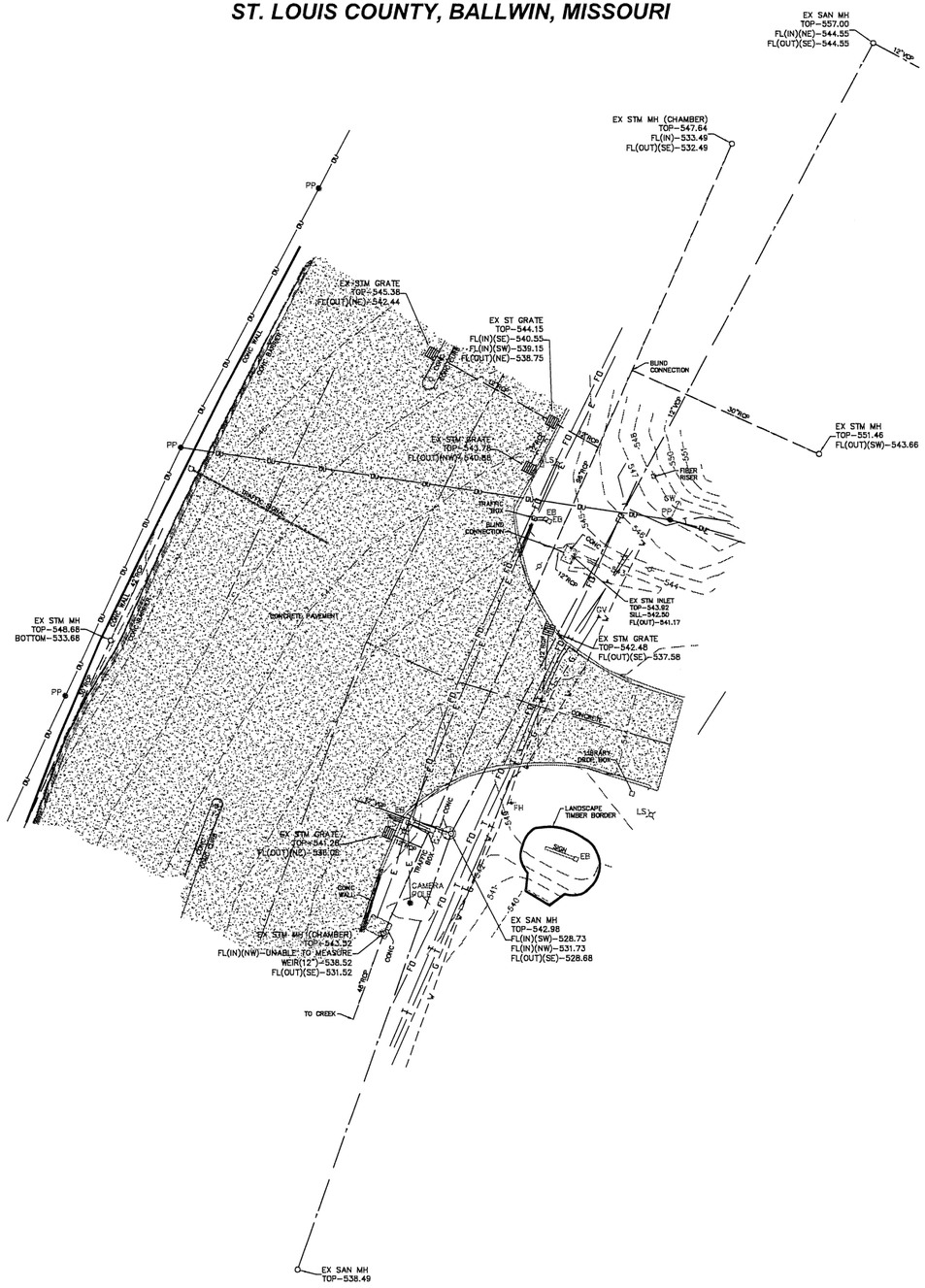
C100

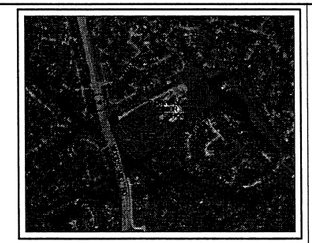
TOPOGRAPHIC SURVEY

A TRACT OF LAND BEING PART OF PARKWAY SOUTH JUNIOR HIGH SCHOOL #760 WOODS MILL ROAD IN ST. LOUIS COUNTY, BALLWIN, MISSOURI

SYMBOLS & ABBREVIATIONS:

AC	ACRES
ASPH	ASPHALT
BK	BOOK
BLDG	BUILDING
(C)	CALCULATED
CLF	CHAIN LINK FENCE
CONC	CONCRETE
DB	DEED BOOK
E	EAST
E MH	ELECTRIC MANHOLE
ELEV	ELEVATION
FF	FINISHED FLOOR
FL	FLOW LINE
L	LENGTH
(M)	MEASURED IN FIELD BY SURVEYOR
MH	MANHOLE
N	NORTH
NTS	NOT TO SCALE
PB	PLAT BOOK
PG	PAGE
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
(R)	PER RECORDED DOCUMENT
RR TIE	RAIL ROAD TIE WALL
S	SOUTH
SA	SANITARY
SBM	SITE BENCHMARK
SF	SQUARE FEET
ST	STORM
TRANS	TRANSFORMER
VCP	VITRIFIED CLAY PIPE
W	WEST
WC	WALL CORNER
W MH	WATER MANHOLE
W/	DENOTES WITH
PP	POWER POLE W/GUY WIRE
PP	POWER POLE
	GUY WIRE
	STREET SIGN
GV	GAS VALVE
GM	GAS METER
WV	WATER VALVE
WM	WATER METER
WF/WS	WATER FAUCET OR SPRINKLER
CO	CLEAN OUT
YD	YARD DRAIN
EB/EM	ELECTRIC BOX OR METER
MB	MAIL BOX
TB/CM	TELEPHONE OR CABLE BOX
LS	LIGHT STANDARD
FH	FIRE HYDRANT
TS	TRAFFIC SIGNAL
EYL	ELECTRIC YARD LIGHT
CM	COIN METER
	CONTROL STATION
	SURVEY CONTROL POINT
	SET IRON ROD W/PLASTIC CAP
	SET CUT CROSS
	FOUND MONUMENT AS NOTED
	AREA/GRATE INLET
	CURB/DROP INLET
	MANHOLE
OU	OVERHEAD UTILITY LINE
G	UNDERGROUND GAS LINE
T	UNDERGROUND TELEPHONE LINE
E	UNDERGROUND ELECTRIC LINE
FO	UNDERGROUND FIBER OPTIC LINE
X	FENCE LINE
	TREE LINE
±	PLUS OR MINUS
10"	TREE W/ SIZE
48"	BUSH W/ SIZE





LOCATION MAP
NOT TO SCALE

20 0 10 20
GRAPHIC SCALE
1 INCH = 20 FEET

MISSOURI LAND SURVEYING CORPORATION LICENSE NUMBER: 2011020042 EXPIRES: 12-31-2019

BENCHMARK INFORMATION:

ST. LOUIS COUNTY BENCHMARK 12301
660.93 – CUR SQUARE FEET WEST OF THE EAST END OF THE TOP OF CONCRETE BARRIER WALL ALONG THE NORTH SIDE OF THE BRIDGE A-4064 FOR CLAYTON ROAD OVER HIGHWAY 141, ROUGHLY 50 FEET NORTH OF CENTERLINE OF CLAYTON ROAD AND 180 FEET EAST OF CENTERLINE OF HIGHWAY 141. (NAVD88)

HORIZONTAL CONTROL STATEMENT:

STATE PLANE COORDINATES ON THIS PROJECT WERE ESTABLISHED UTILIZING THE MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION GLOBAL NAVIGATION SATELLITE REAL TIME NETWORK FOR CONTINUOUS OPERATING REFERENCE STATIONS DURING THE MONTH OF NOVEMBER 2018, AND ARE BASED ON THE MISSOURI COORDINATE SYSTEM OF NAD1983, ZONE EAST, 2401.

VERTICAL CONTROL STATEMENT:

ELEVATIONS ON THIS PROJECT WERE ESTABLISHED UTILIZING THE MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION GLOBAL NAVIGATION SATELLITE REAL TIME NETWORK FOR CONTINUOUS OPERATING REFERENCE STATIONS DURING THE MONTH OF NOVEMBER 2018, AND ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88).

SOURCE OF TITLE INFORMATION:

NO TITLE INSURANCE COMMITMENT WAS FURNISHED TO THE SURVEYOR; THEREFORE THERE MAY BE OTHER EASEMENTS, COVENANTS AND RESTRICTIONS AFFECTING THE SUBJECT PROPERTY THAT ARE NOT SHOWN ON THIS SURVEY.

UTILITY INFORMATION:

THE UNDERGROUND STRUCTURES, UTILITIES AND EASEMENTS HAVE BEEN PLOTTED FROM READILY AVAILABLE RECORDS AND AVAILABLE MAPS AS WELL AS FIELD OBSERVED MARKINGS AT THE TIME OF THE FIELD VISIT. LOCATIONS ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR TO ANY CONSTRUCTION.

THE CLIENT IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. LOCATION, RELOCATION AND CONNECTION OF THE UTILITIES SHALL BE COORDINATED WITH THE UTILITY COMPANIES.

SURVEYOR'S CERTIFICATION:

THIS IS TO CERTIFY THAT CIVIL DESIGN, INC., AT THE ORDER OF THE PARKWAY C-2 SCHOOL DISTRICT, EXECUTED A PARTIAL TOPOGRAPHIC SURVEY OF A TRACT OF LAND BEING PART OF #760 WOODS MILL ROAD OF ST. LOUIS COUNTY, MISSOURI. FURTHERMORE, THIS SURVEY WAS PERFORMED IN ACCORDANCE WITH THE CURRENT STANDARDS FOR PROPERTY BOUNDARY SURVEYS AND THE RESULTS OF SAID SURVEY ARE SHOWN ON THIS PLAT. WE CERTIFY THAT THE ABOVE PLAT WAS MADE FROM AN ACTUAL SURVEY PERFORMED IN THE FIELD DURING THE MONTH OF NOVEMBER 2018 ACCORDING TO THE RECORDS AVAILABLE AND RECORDED.

PHILIP A. GROUT
MISSOURI PLS-2010018902

DATED

Missouri One Call System, Inc.
Call Before You Dig!
1-800-DIG-RITE
(1-800-344-7483)

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Parkway South Middle School
Building Addition, Renovations & Site Improvements -
760 Woods Mill Road
Ballwin, MO 63011

REVISIONS:

PARTIAL TOPOGRAPHIC SURVEY

PSD Project No.:	411801B
Project Number:	2018.033
Date:	02.04.2019
Drawn By:	GWK

C101

C201

C202

C203

C204

SEQUENCE I CONSTRUCTION LIMITS

SEQUENCE II CONSTRUCTION LIMITS

20'W. TEMPORARY ROAD (PAVED) AS NEEDED FOR FIRE TRUCK ACCESS DURING CONSTRUCTION. COORDINATE WITH WORK SEQUENCING AND PROPOSED IMPROVEMENTS.

EX. PAVED SURFACE TO BE USED FOR FOR FIRE TRUCK ACCESS DURING CONSTRUCTION. COORDINATE WITH WORK SEQUENCING

TRACK

LONG JUMP

NOTES:

1. PROPOSED SEQUENCE CONSTRUCTION LIMITS SHOWN IS TO SERVE ONLY AS A GUIDE FOR BIDDING PURPOSES. A DETAILED FINAL CONSTRUCTION SEQUENCING PLAN AND SCHEDULE SHALL BE DEVELOPED BY THE CONTRACTOR AND COORDINATED WITH AND APPROVED BY THE OWNER.
2. CONTRACTOR WILL BE RESPONSIBLE TO MAINTAIN ONE (1) LANE OF ROADWAY ACCESS THROUGHOUT DURATION OF THE PROJECT.
3. CONTRACTOR IS RESPONSIBLE FOR ALL ASSOCIATED COST TO PROVIDE ROADWAY ACCESS. SEE ALSO DEMOLITION NOTES ON SHEET C001.
4. SEE SHEET C300 FOR ADDITIONAL SEQUENCING INFORMATION.

GRAPHIC SCALE

1 INCH = 50 FT.

MSD PROJECT 18MSD-00571 MSD MAP 21Q

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Ballwin, MO 63011

REVISIONS:

OVERALL DEMOLITION PLAN AND WORK SEQUENCE

PSD Project No.:	411801B
Project Number:	2018.033
Date:	02.04.2019
Drawn By:	NJC

C200

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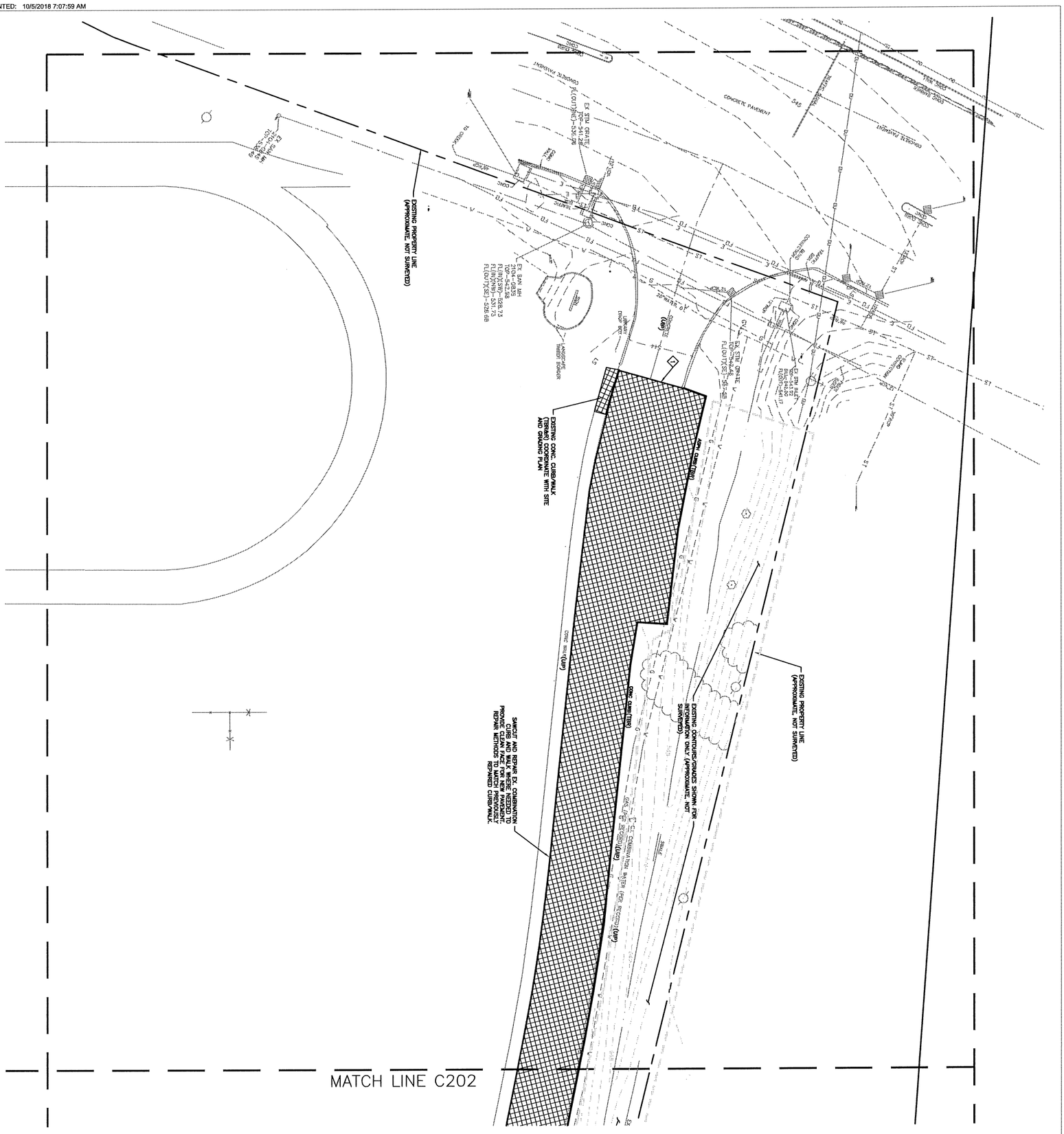

LEGEND

PAVEMENT REMOVAL LIMITS

(UIP) USE IN PLACE

(TBR) TO BE REMOVED

(TBR&R) TO BE REMOVED & REPLACED

KEYED NOTES

◇ FULL DEPTH PAVEMENT SAWCUT

GRAPHIC SCALE
1 INCH = 20 FT.

MSD PROJECT 18MSD-00571 MSD MAP 21Q

BID / PERMIT SET 02-04-2019

C201

ENLARGED DEMOLITION PLAN

PSD Project No.: 4119018

Project Number: 2018.033

Date: 02-04-2019

Drawn By: NJC

REVISIONS:

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& Site Improvements -
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Ballwin, MO 63011

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LEGEND

	PAVEMENT REMOVAL LIMITS
(UIP)	USE IN PLACE
(TBR)	TO BE REMOVED
(TBR&R)	TO BE REMOVED & REPLACED

KEYED NOTES:

1. FULL DEPTH PAVEMENT SAWCUT

GRAPHIC SCALE

(IN FEET)
1 INCH = 20 FT.

MSD PROJECT 18MSD-00571 MSD MAP 21Q

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Ballwin, MO 63011

REVISIONS:

ENLARGED DEMOLITION PLAN

PSD Project No.:	411801B
Project Number:	2018.033
Date:	02.04.2019
Drawn By:	NJC

C202

MATCH LINE C202

EXISTING SOUTH MIDDLE SCHOOL BUILDING

EXISTING ASPHALT PLAY AREA (TBR)

EXISTING ASPHALT WALK (TBR)

CONTRACTOR TO DOCUMENTS EXISTING PAVEMENT STRIPING TO REPRODUCE AFTER NEW SURFACE IS INSTALLED (TYP. ALL). SEE SITE PLAN

EXISTING CONC. WALK TO REMAIN IN PLACE

EXISTING ASPHALT WALK (TBR)

EXISTING EXTERIOR STAIRS (TBR) SEE NOTES ON SITE AND GRADING PLAN

EXISTING ASPHALT WALK (TBR)

EXISTING CONC. LANDING (TBR) SEE SITE AND GRADING PLAN

EXISTING EXTERIOR STAIRS (TBR) SEE NOTES ON SITE AND GRADING PLAN

EX.STM MH (PER REC)
2104-1780
TOP-556.00
FL-556.41

EXISTING ASPHALT WALK (TBR)

CONC

EXISTING CONC. LANDING (TBR) SEE NOTES ON SITE AND GRADING PLAN

EXISTING EXTERIOR STAIRS (TBR) SEE NOTES ON SITE AND GRADING PLAN

EX. SAN. MH
TOP-558.17
FL-554.85

EXISTING ASPHALT WALK (TBR)

12" (DND)

24" (DND)

15" (DND)

18" (DN

EX.END OF PIPE
(PER REC)
2104-1600

TENNIS COURT

EXISTING PROPERTY LINE (APPROXIMATE, NOT SURVEYED)

EX. SAN. MH
(PER REC)
2104-0505

LEGEND

PAVEMENT REMOVAL LIMITS

(UIP) USE IN PLACE

(TBR) TO BE REMOVED

(TBR&R) TO BE REMOVED & REPLACED

KEYED NOTES:

1 FULL DEPTH PAVEMENT SAWCUT

GRAPHIC SCALE

1 IN (HALF)
1 INCH = 20 FT

MSD PROJECT 18MSD-00571 MSD MAP 21Q

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Ballwin, MO 63011

REVISIONS:

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ENLARGED DEMOLITION PLAN

PSD Project No.:	411801B
Project Number:	2018.033
Date:	02.04.2019
Drawn By:	NJC

C203

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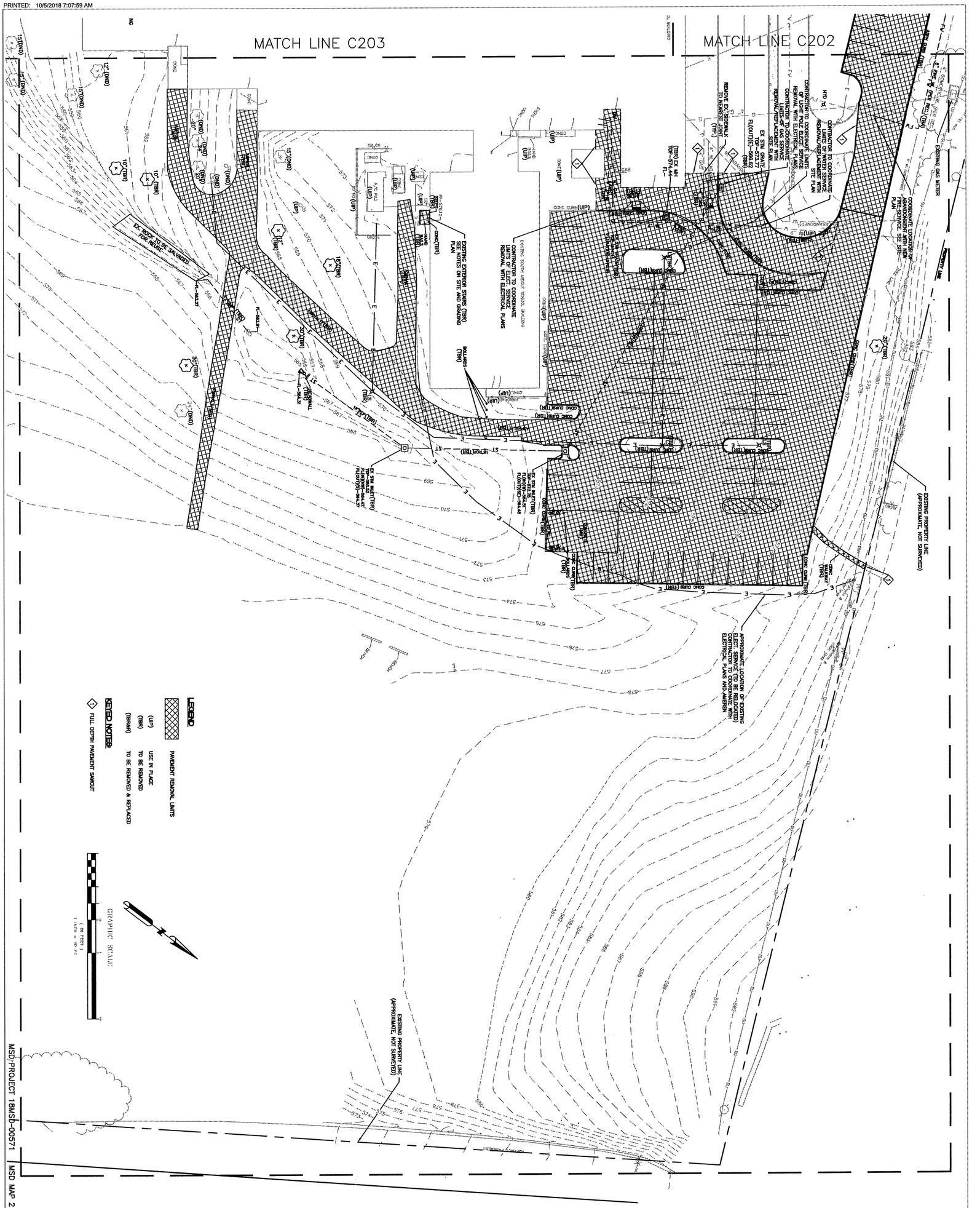

MSD PROJECT 1BMSD-00571 MSD MAP 21Q

BID / PERMIT SET 02-04-2019

C204

ENLARGED DEMOLITION PLAN

PSD Project No.: 411801B
Project Number: 2016.033
Date: 02.04.2019
Drawn By: NJC

REVISIONS:

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Building Addition, Renovations
& Site Improvements -
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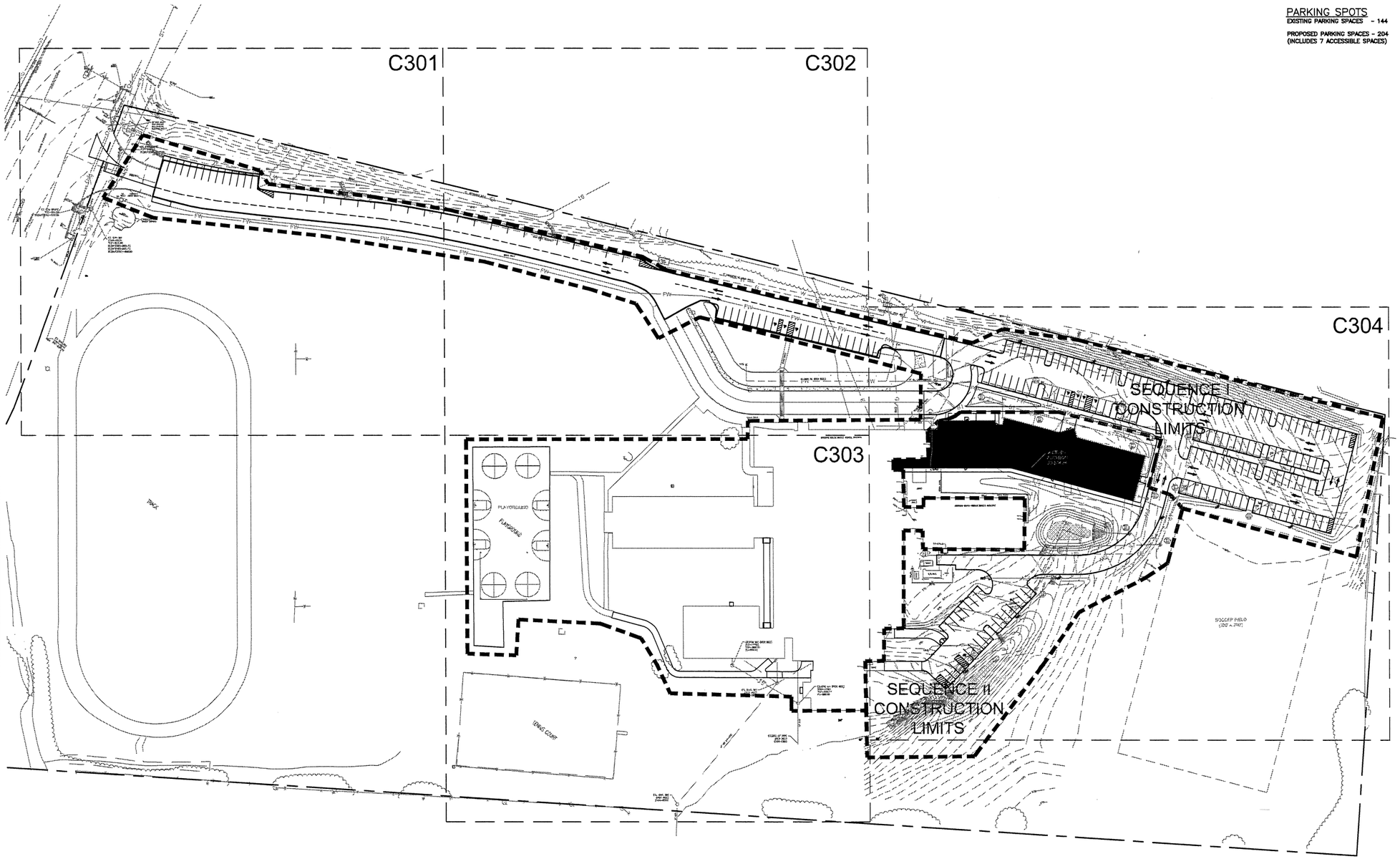

PARKING SPOTS
EXISTING PARKING SPACES - 144

PROPOSED PARKING SPACES - 204
(INCLUDES 7 ACCESSIBLE SPACES)

SOUTH MIDDLE SCHOOL BUILDING ADDITION, RENOVATION AND SITE IMPROVEMENTS WORK SEQUENCE

SEQUENCE I CONSTRUCTION:

1. SEQUENCE IA: MAY 23, 2019 THROUGH MAY 26, 2019 – OWNER TO VACATE EXISTING PARKING AND PAVED AREAS INVOLVED IN THE CONSTRUCTION AND AREAS OF RENOVATION REQUIRING ABATEMENT INCLUDING EXISTING ROOMS 1606, 1607, 1608, 1609, 1706 AND CORRIDOR C1B EACH SIDE OF EXISTING LOCKER ROOMS. CONTRACTOR ALLOWED TO BEGIN THE SITE WORK IN THE FIELD MAY 28, 2019.
2. SEQUENCE IB: MAY 28, 2019 THROUGH AUGUST 2, 2019 – CONTRACTOR BEGINS SITE WORK AND COMPLETES ALL SITE WORK EXCEPT THAT RELATED TO THE BUILDING ADDITION AND THAT LOCATED SOUTH OF THE NEW PARKING LOT. CONTRACTOR ALLOWED TO BEGIN IN THE FIELD MAY 28, 2019.
3. SEQUENCE IC: MAY 28, 2019 THROUGH JUNE 10, 2019 – OWNER'S ABATEMENT CONTRACTOR WILL PROVIDE DEMOLITION AND ABATEMENT OF THE EXISTING ROOMS INVOLVED IN THE RENOVATION INCLUDING ROOMS 1606, 1607, 1608, 1609, 1706 AND CORRIDOR C1B EACH SIDE OF EXISTING LOCKER ROOMS. CONTRACTOR IS TO MARK ALL AREAS WHERE SPOT ABATEMENT IS REQUIRED FOR THE NEW WORK IN CORRIDOR C1B. ABATEMENT CONTRACTOR ALLOWED TO BEGIN IN THE FIELD MAY 28, 2019.
4. SEQUENCE ID: JUNE 11, 2019 THROUGH AUGUST 2, 2019 – CONTRACTOR BEGINS AND COMPLETES RENOVATION WORK IN ALL AREAS OF THE EXISTING BUILDING INCLUDING RENOVATION OF THE EXISTING MAIN ENTRANCE, RENOVATION OF EXISTING LOCKER ROOM AREAS INCLUDING ROOMS 1606, 1607, 1608, 1706 AND CORRIDOR C1B, RE-ROOFING EXISTING ROOF AREAS, REPLACEMENT OF EXISTING CHILLER AND CHILLED WATER PUMPS, REPLACEMENT OF ROOF TOP EQUIPMENT, INSTALLATION OF NEW MEP EQUIPMENT SUPPORTING THE OPERATION OF THE EXISTING BUILDING, REPLACEMENT OF THE NATURAL GAS SERVICE ENTRANCE AND ALL WORK REQUIRED TO ALLOW OCCUPANCY AND USE OF THE EXISTING BUILDING FOR THE SCHOOL YEAR 2019-2020. CONTRACTOR ALLOWED TO BEGIN IN THE FIELD JUNE 11, 2019.

SEQUENCE II CONSTRUCTION:

1. SEQUENCE II: MAY 28, 2019 THROUGH JULY 17, 2020 – CONTRACTOR BEGINS AND COMPLETES ALL WORK RELATED TO THE BUILDING ADDITION AND ALL REMAINING SITE WORK. CONTRACTOR ALLOWED TO BEGIN IN THE FIELD MAY 28, 2019.

ADDITIONAL SITE SEQUENCING NOTES:

1. PROPOSED SEQUENCE CONSTRUCTION LIMITS SHOWN IS TO SERVE ONLY AS A GUIDE FOR BIDDING PURPOSES. A DETAILED FINAL CONSTRUCTION SEQUENCING PLAN AND SCHEDULE SHALL BE DEVELOPED BY THE CONTRACTOR AND COORDINATED WITH AND APPROVED BY THE OWNER.
2. CONTRACTOR WILL BE RESPONSIBLE TO MAINTAIN ONE (1) LANE OF ROADWAY ACCESS AND PEDESTRIAN ACCESS WHERE NEEDED THROUGHOUT DURATION OF THE PROJECT.
3. CONTRACTOR IS RESPONSIBLE FOR ALL ASSOCIATED COST TO PROVIDE ROADWAY ACCESS. SEE ALSO SHEET C200 AND DEMOLITION NOTES ON SHEET C001.

GRAPHIC SCALE

1 INCH = 50 FT.

MSD PROJECT 18MSD-00571 MSD MAP 21Q

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Parkway South Middle School
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760 Woods Mill Road
Ballwin, MO 63011

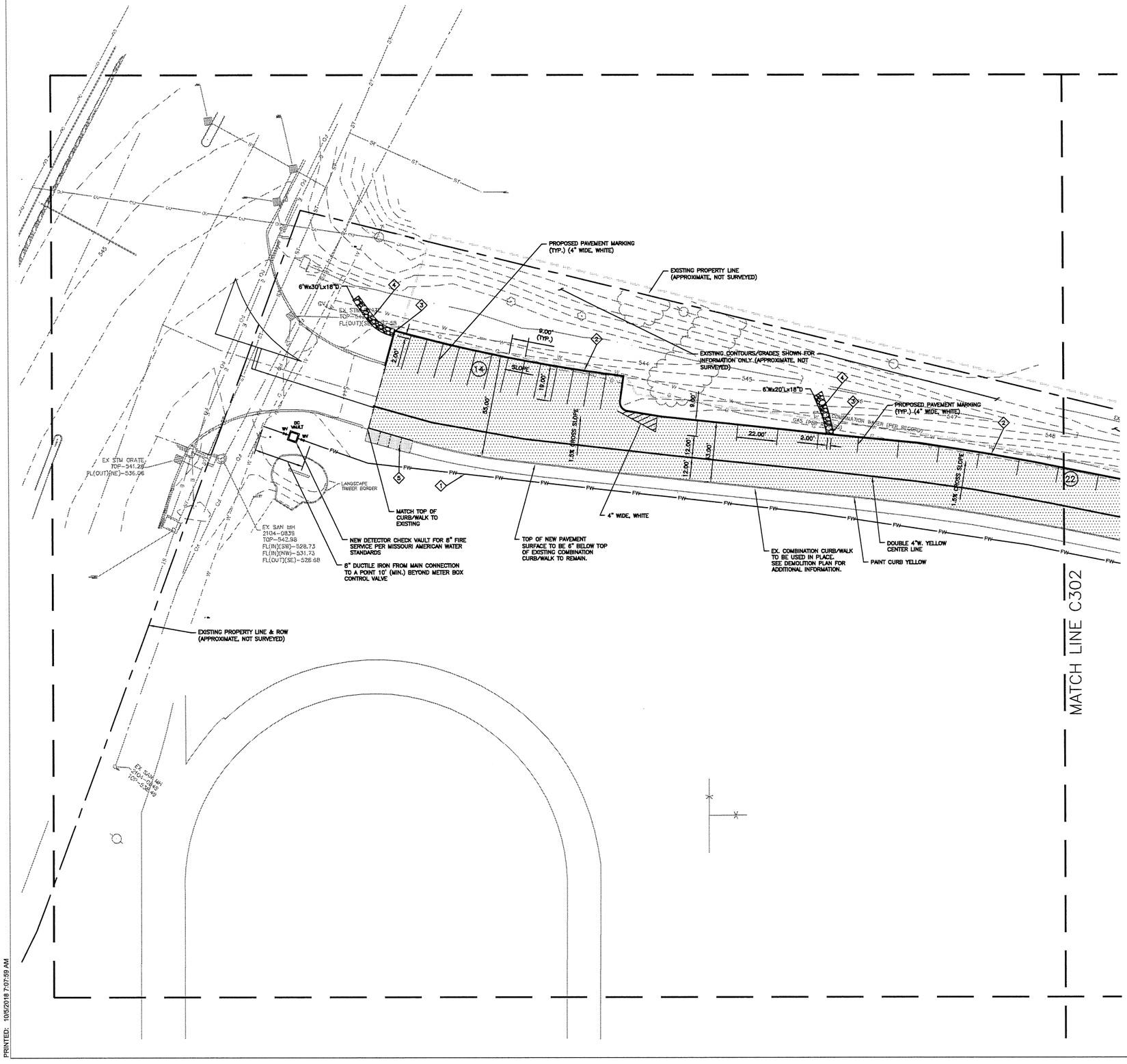
REVISIONS:

BID / PERMIT SET 02-04-2019

OVERALL SITE AND GRADING PLAN AND WORK SEQUENCE

PSD Project No.:	411801B
Project Number:	2018.033
Date:	02.04.2019
Drawn By:	NJC

C300



LEGEND

- ASPHALT PAVEMENT (SEE DETAIL A/C400)
- ASPHALT PLAY SURFACE (SEE DETAIL H/C400)
- CONCRETE PAVEMENT (SEE DETAIL E/C400)
- PERMEABLE PAVERS (SEE BMP DETAILS)
- SIDEWALK PAVEMENT (SEE DETAIL B/C400)
- 580 — PROPOSED CONTOUR
- 000.00 — PROPOSED FINISH GRADE ELEVATION

KEYED NOTES:
APPLIES TO SHEETS C301-C304)

1. 8 INCH DEDICATED FIRE MAIN (C900 PVC)
2. CONCRETE VERTICAL CURB (SEE DETAIL F/C400)
3. CURB CUT IN VERTICAL CURB (SEE DETAIL Q/C400)
4. ROCK BLANKET OUTLET PROTECTION (PER MSD STANDARDS FOR ROCK BLANKET)
5. COMBINED CURB AND WALK (SEE DETAIL G/C400)
6. 6 INCH DEDICATED FIRE MAIN
7. FIRE HYDRANT WITH 6 INCH SUPPLY LINE
8. WHEEL STOP (TYP.) (SEE DETAIL Q/C400)
9. ACCESSIBLE CURB RAMP (SEE DETAIL M/C400)

MSD PROJECT 18MSD-00571 MSD MAP 21Q

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REVISIONS:

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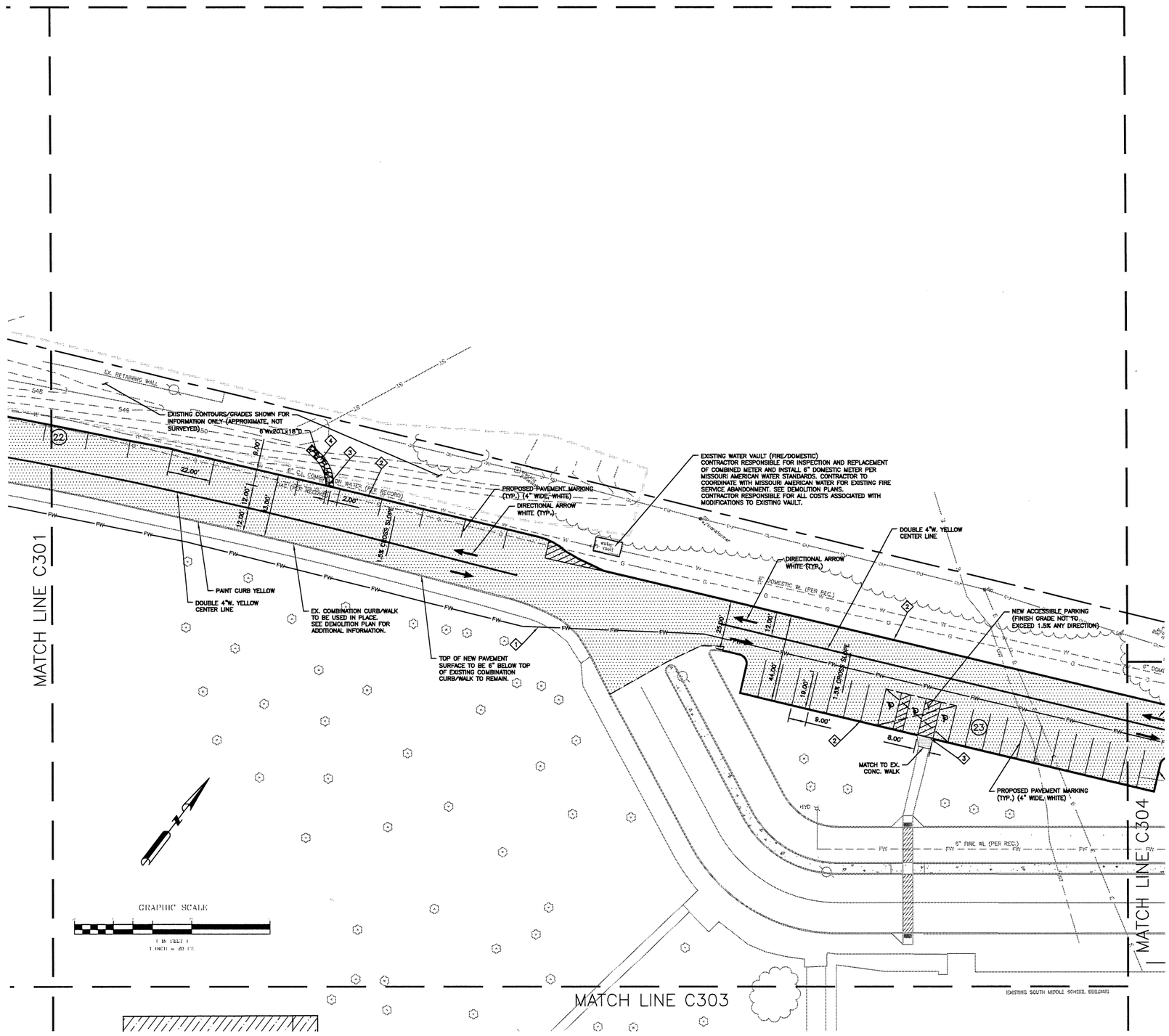
ENLARGED SITE AND GRADING PLAN

PSD Project No.:	411801B
Project Number:	2018.033
Date:	02.04.2019
Drawn By:	NJC

C301



LEGEND

- ASPHALT PAVEMENT (SEE DETAIL A/C400)
- ASPHALT PLAY SURFACE (SEE DETAIL H/C400)
- CONCRETE PAVEMENT (SEE DETAIL E/C400)
- PERMEABLE PAVERS (SEE BMP DETAILS)
- SIDEWALK PAVEMENT (SEE DETAIL B/C400)
- 580 — PROPOSED CONTOUR
- 000.00 — PROPOSED FINISH GRADE ELEVATION

KEYED NOTES:

APPLIES TO SHEETS C301-C304)

1. 8 INCH DEDICATED FIRE MAIN (C900 PVC)
2. CONCRETE VERTICAL CURB (SEE DETAIL F/C400)
3. CURB CUT IN VERTICAL CURB (SEE DETAIL G/C400)
4. ROCK BLANKET OUTLET PROTECTION (PER MSD STANDARDS FOR ROCK BLANKET)
5. COMBINED CURB AND WALK (SEE DETAIL G/C400)
6. 6 INCH DEDICATED FIRE MAIN
7. FIRE HYDRANT WITH 6 INCH SUPPLY LINE
8. WHEEL STOP (TYP.) (SEE DETAIL O/C400)
9. ACCESSIBLE CURB RAMP (SEE DETAIL M/C400)

MSD PROJECT 18MSD-00571 MSD MAP 21Q

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Ballwin, MO 63011

REVISIONS:

ENLARGED SITE AND GRADING PLAN

PSD Project No.:	411801B
Project Number:	2018.033
Date:	02.04.2019
Drawn By:	NJC

C302

MATCH LINE C302

MATCH LINE C304

EXISTING SOUTH MIDDLE SCHOOL BUILDING

PLAYGROUND

PLAYGROUND

100'±

38'±

EXISTING CONC. WALK

MATCH EXISTING GRADE

8.00'

SLOPE NEW WALK TO DRAIN (2% (MAX.) CROSS SLOPE AND 5% (MAX.) LONGITUDINAL SLOPE)

NEW 5'x5' CONC. LANDING AT DOOR
1. SET TOP OF LANDING 0.5" BELOW DOOR SILL AND SLOPE AWAY AT 1.5%

NEW CONCRETE STAIRS W/ HANDRAILS
1. CONTRACTOR TO REMOVE AND REPLACE EXISTING STAIRS AND HANDRAILS TO MATCH EXISTING AND ACCORDING TO DISTRICT STANDARDS.
2. CONTRACTOR TO DOCUMENT EXISTING CONDITIONS/ELEVATIONS PRIOR TO DEMOLITION IN ORDER TO REPLICATE.
3. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR APPROVAL PRIOR TO CONSTRUCTION.
4. INSTALL NEW STAIRWELL DRAIN TO MATCH EXISTING AND CONNECT TO EXISTING STAIRWELL DRAIN OUTLET. ENSURE EXISTING OUTLET IS IN GOOD WORKING CONDITION.

EX. STM MH (PER REC)
2104-178D
TOP=556.00
FL=556.41

RECONSTRUCT EXISTING WALK (SID-016)

RECONSTRUCT EXISTING WALK (SID-015)

NEW CONCRETE STAIRS W/ HANDRAILS
1. CONTRACTOR TO REMOVE AND REPLACE EXISTING STAIRS AND HANDRAILS TO MATCH EXISTING AND ACCORDING TO DISTRICT STANDARDS.
2. CONTRACTOR TO DOCUMENT EXISTING CONDITIONS/ELEVATIONS PRIOR TO DEMOLITION IN ORDER TO REPLICATE.
3. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR APPROVAL PRIOR TO CONSTRUCTION.

EX. SAN. MH (PER REC) 2104-195S

EX. STM MH (PER REC)
2104-178D
TOP=558.17
FL=554.65

5'

MATCH WIDTH OF DOOR

NEW CONC. LANDING AT DOOR
1. SET TOP OF LANDING 0.5" BELOW DOOR SILL AND SLOPE AWAY AT 1.5%

TOP OF PIPE (PER REC) 2104-180D

MSD 7 - (CONTRAC
12" STONE.

24"

15"

15"

TENNIS COURT

EXISTING PROPERTY LINE (APPROXIMATE, NOT SURVEYED) (PER REC) 2104-050S

LEGEND

- ASPHALT PAVEMENT (SEE DETAIL A/C400)
- ASPHALT PLAY SURFACE (SEE DETAIL H/C400)
- CONCRETE PAVEMENT (SEE DETAIL E/C400)
- PERMEABLE PAVERS (SEE BMP DETAILS)
- SIDEWALK PAVEMENT (SEE DETAIL B/C400)
- 580 PROPOSED CONTOUR
- 000.00 PROPOSED FINISH GRADE ELEVATION

KEYED NOTES:
APPLIES TO SHEETS C301-C304)

1. 8 INCH DEDICATED FIRE MAIN (C900 PVC)
2. CONCRETE VERTICAL CURB (SEE DETAIL F/C400)
3. CURB CUT IN VERTICAL CURB (SEE DETAIL G/C400)
4. ROCK BLANKET OUTLET PROTECTION (PER MSD STANDARDS FOR ROCK BLANKET)
5. COMBINED CURB AND WALK (SEE DETAIL G/C400)
6. 6 INCH DEDICATED FIRE MAIN
7. FIRE HYDRANT WITH 6 INCH SUPPLY LINE
8. WHEEL STOP (TYP.) (SEE DETAIL O/C400)
9. ACCESSIBLE CURB RAMP (SEE DETAIL M/C400)

GRAPHIC SCALE
(IN FEET)
1 INCH = 20 FT.

MSD PROJECT 18MSD-00571 MSD MAP 21Q

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Parkway South Middle School Building Addition, Renovations & Site Improvements -

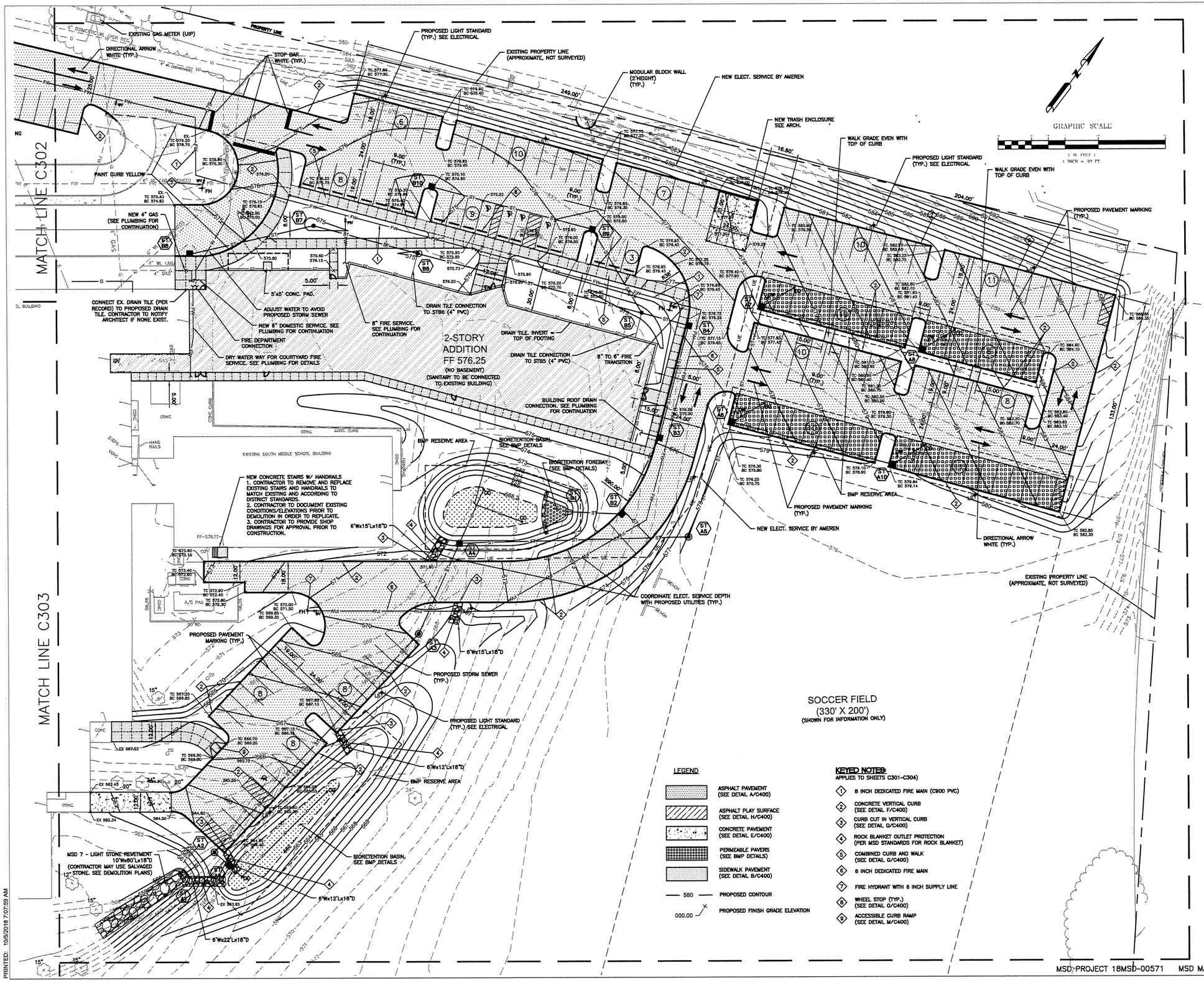
760 Woods Mill Road
Ballwin, MO 63011

REVISIONS:

ENLARGED SITE AND GRADING PLAN

PSD Project No.:	411801B
Project Number:	2018.033
Date:	02.04.2019
Drawn By:	NJC

C303



MSD PROJECT 18MSD-00571 MSD MAP 21Q

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Parkway South Middle School
Building Addition, Renovations & Site Improvements - Revised
760 Woods Mill Road
Ballwin, MO 63011

REVISIONS:

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PSD Project No.:	411801B
Project Number:	2018.033
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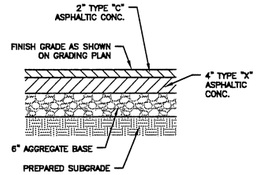
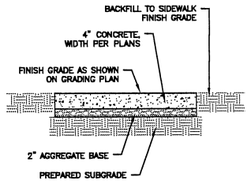
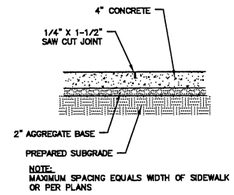
C304



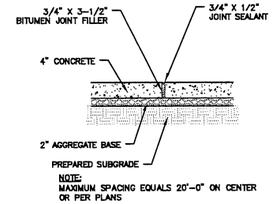
A 6/4/2 ASPHALT PAVEMENT
NOT TO SCALE



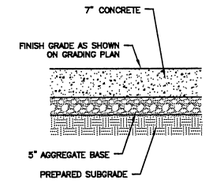
B SIDEWALK PAVEMENT
NOT TO SCALE



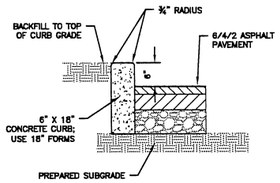
C SIDEWALK CONTRACTION JOINT
NOT TO SCALE



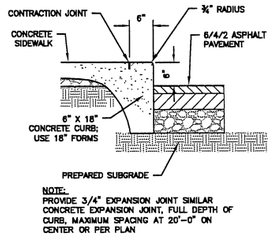
D SIDEWALK EXPANSION JOINT
NOT TO SCALE



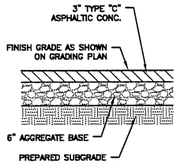
E CONCRETE PAVEMENT
NOT TO SCALE



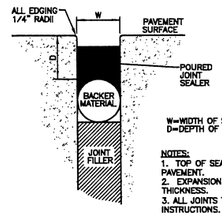
F CONCRETE VERTICAL CURB
NOT TO SCALE



G COMBINED CURB/SIDEWALK
NOT TO SCALE



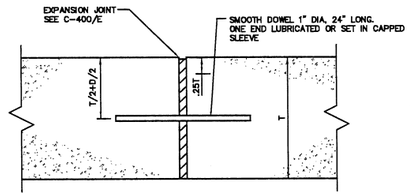
H 6/3 ASPHALT PAVEMENT
NOT TO SCALE



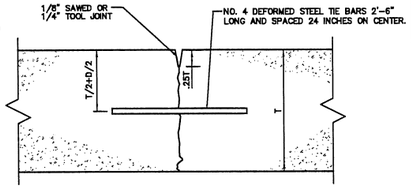
TABLE

JOINT SPACING FT.	WIDTH, (IN.) MIN.	MAX.
<25	1/2	5/8
25-50	3/4	7/8
>50	1.0	1-1/8

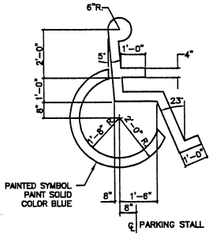
E CONCRETE PAVEMENT EXPANSION JOINT
NOT TO SCALE



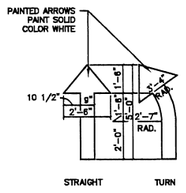
I DOWELED EXPANSION JOINT
NOT TO SCALE



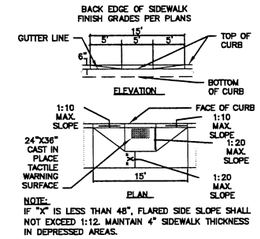
J CONTRACTION JOINT - TIED
NOT TO SCALE



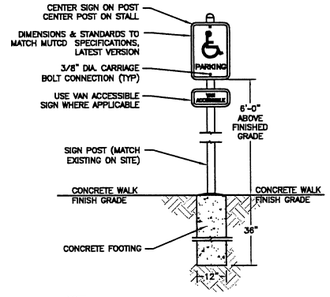
K ACCESSIBLE PARKING STALL SYMBOL
NOT TO SCALE



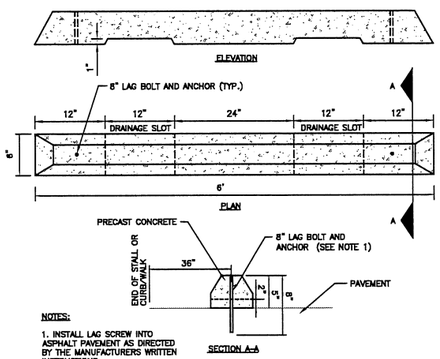
L PAINTED DIRECTIONAL ARROWS
NOT TO SCALE



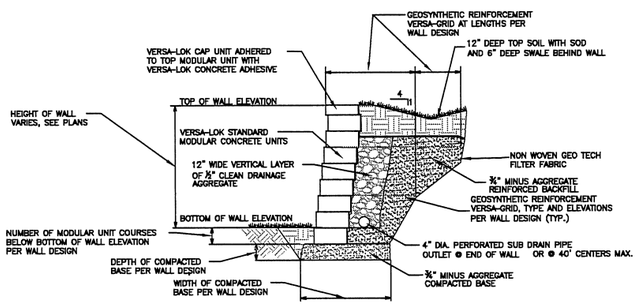
M ACCESSIBLE CURB RAMP
NOT TO SCALE



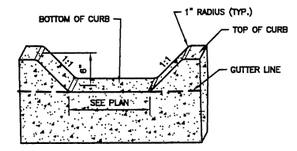
N ACCESSIBLE PARKING SIGN
NOT TO SCALE



O WHEEL STOP (PRECAST CONCRETE)
NOT TO SCALE



P MODULAR BLOCK WALL
NOT TO SCALE



Q CONCRETE CURB CUT
NOT TO SCALE

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CIVIL SITE DETAILS

PSD Project No.:	411801B
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Drawn By:	NJC

C400

MSD PROJECT 18MSD-00571 MSD MAP 21Q

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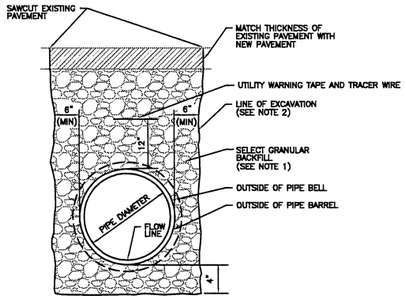
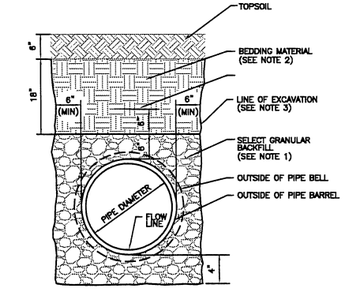


NOTES:

1. SELECT GRANULAR BACKFILL SHALL CONSIST OF CRUSHED LIMESTONE AND SCREENINGS. COMPACT BACKFILL TO 95% MAXIMUM DENSITY AS DETERMINED BY THE MODIFIED PROCTOR COMPACTION TEST. (ASTM D 1557)
2. CONTRACTOR SHALL BE RESPONSIBLE FOR SHORING AND BENCHING TRENCH EXCAVATIONS IN ACCORDANCE WITH ALL LOCAL, STATE, FEDERAL AND OSHA REQUIREMENTS.

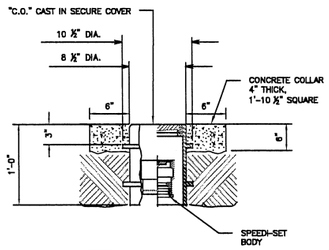
A UTILITY TRENCH - UNDER STRUCTURES
NOT TO SCALE



NOTES:

1. SELECT GRANULAR BACKFILL SHALL CONSIST OF CRUSHED LIMESTONE AND SCREENINGS. COMPACT BACKFILL TO 95% MAXIMUM DENSITY AS DETERMINED BY THE MODIFIED PROCTOR COMPACTION TEST. (ASTM D 1557)
2. COMPACT BEDDING MATERIAL UNDER LAWNS TO 85% MAXIMUM DENSITY AS DETERMINED BY THE MODIFIED PROCTOR COMPACTION TEST. (ASTM D 1557)
3. CONTRACTOR SHALL BE RESPONSIBLE FOR SHORING AND BENCHING TRENCH EXCAVATIONS IN ACCORDANCE WITH ALL LOCAL, STATE, FEDERAL AND OSHA REQUIREMENTS.

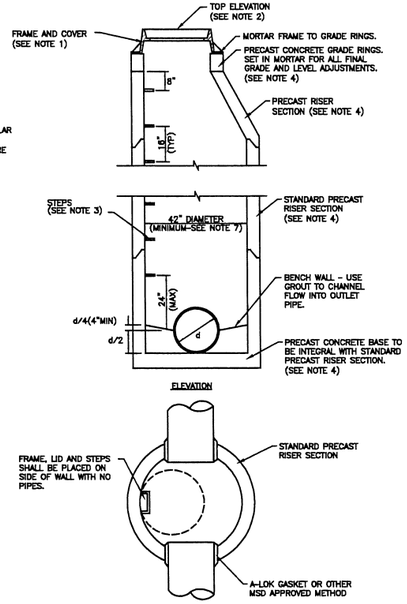
B UTILITY TRENCH - UNDER LAWN
NOT TO SCALE



NOTES:

1. CLEANOUT IS J.R.SMITH MODEL 4261L
2. SEE DETAIL F, THIS SHEET FOR BOTTOM SECTION OF CLEANOUT.

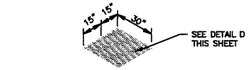
C CLEANOUT TOP SECTION
NOT TO SCALE



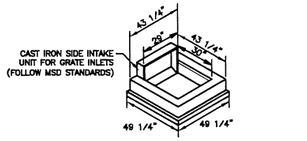
NOTES:

1. FRAME SHALL BE NEENAH R-3501-H4 OR MSD APPROVED EQUAL.
2. SET TOPS OF MANHOLE COVERS AND GRATE INLETS FLUSH WITH SURROUNDING FINAL GRADES.
3. STEPS SHALL BE NEENAH R-1981-Y OR MSD APPROVED EQUAL. STEP SPACING AND ALIGNMENT SHALL BE MAINTAINED UNIFORM AND VERTICAL THROUGHOUT THE TOTAL DEPTH AS INDICATED.
4. PRECAST CONCRETE SECTIONS SHALL CONFORM TO ASTM C-478. ALL JOINTS BETWEEN THESE SECTIONS SHALL BE GROUTED SHUT.
5. WHEN MANHOLES AND INLETS ARE SET IN PAVEMENTS, BACKFILL AROUND STRUCTURE SHALL BE COMPACTED GRANULAR MATERIAL.
6. THIS DETAIL IS ONLY TO BE USED AS A GENERAL GUIDE TO MANHOLE AND INLET CONSTRUCTION. ALL SEWER PIPES AND STRUCTURES MUST BE BUILT IN ACCORDANCE WITH THE MSD STANDARD CONSTRUCTION SPECIFICATIONS FOR SEWERS AND DRAINAGE FACILITIES-2009.
7. MINIMUM MANHOLE/INLET DIAMETER SHALL BE 42" DIAMETER, WHERE APPLICABLE. CONTRACTOR TO DETERMINE MANHOLE/INLET DIAMETER NECESSARY FOR EACH SPECIFIC CIRCUMSTANCE. CONTRACTOR TO SUBMIT PRECAST SHOP DRAWINGS, WITH EACH MANHOLE/INLET DIAMETER CLEARLY MARKED, TO ENGINEER FOR APPROVAL.
8. ALL MANHOLE/INLET DETAILS MUST FOLLOW CURRENT MSD STANDARDS.

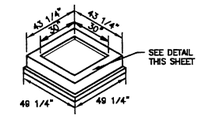
D MANHOLE / INLET DETAIL
NOT TO SCALE



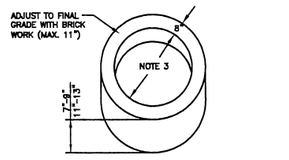
2 GRATES



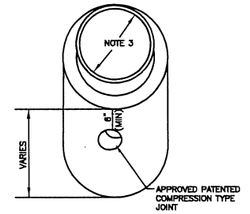
GRATE SEAT W/SIDE INTAKE



GRATE SEAT



ADAPTER RING

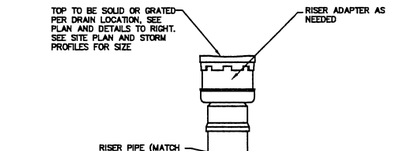


MANHOLE / INLET BASE

NOTES:

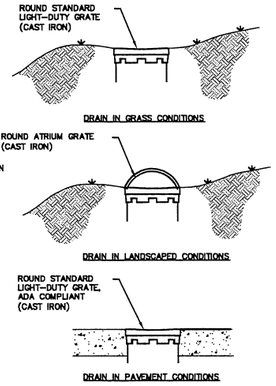
1. SEE DETAIL A, THIS SHEET FOR MANHOLE/INLET BASE DETAILS.
2. ALL INLET DETAILS MUST FOLLOW CURRENT MSD STANDARDS.
3. USE MINIMUM STANDARD SIZE DIAMETERS PER MSD STANDARDS.

E CURB INLET
NOT TO SCALE

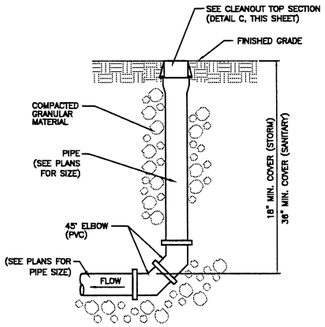


NOTE:

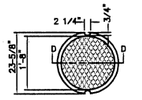
1. BASIS OF DESIGN PROVIDED BY NYLOPLAST. CONTRACTOR SHALL INSTALL NYLOPLAST STRUCTURE, OR AN EQUIVALENT STRUCTURE APPROVED BY ENGINEER.
2. PIPE AND FITTINGS UNDER LAWNS/LANDSCAPING SHALL BE PVC;SDR-35. PIPE AND FITTINGS UNDER PAVEMENTS SHALL BE PVC;SDR-26.
3. CONTRACTOR SHALL FOLLOW MANUFACTURER SPECIFICATIONS FOR STRUCTURE INSTALLATION.



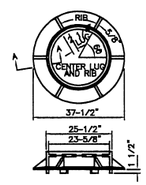
F DRAIN BASIN
NOT TO SCALE



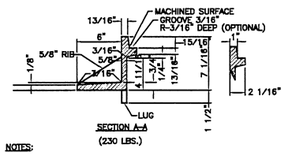
G CLEANOUT
NOTE TO SCALE



CLOSED-TYPE COVER



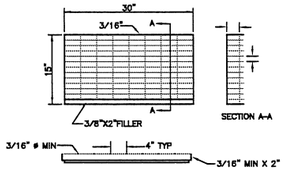
CAST IRON MANHOLE FRAME



NOTES:

1. FOLLOW MSD STANDARDS FOR CONSTRUCTION.
2. FOLLOW LID MANUFACTURER SPECIFICATIONS FOR SETTING AND ATTACHING TO PRECAST ECCENTRIC CONE SECTION OR GRADE RINGS.

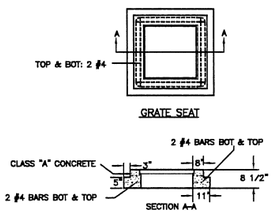
H MANHOLE FRAME AND LID
NOT TO SCALE



FINISH	-ASPHALTIC 10 MIL COATING
MATERIAL	-MILD CARBON STEEL: ASTM A569
CAPACITY	-H-20 LOADING
WEIGHT	-65 LB MINIMUM
TOLERANCES	-ALL DIMENSIONS ± 1/8"
IDENTIFICATION	-THE MANUFACTURER MUST PLACE THEIR NAME OR MARK ON EACH UNIT FOR THE PURPOSE OF IDENTIFICATION

NOTE: MINIMUM DISTANCE FROM THE FLOWLINE TO THE TOP OF THE GRATE IS 31" FOR 12" PIPES AND 34" FOR 15" PIPES.

I GRATE (30"x15")
NOTE TO SCALE



STEEL REQUIREMENTS FOR GRATE SEAT

J GRATE SEAT
NOTE TO SCALE

NOTES:

1. DETAILS ON THIS SHEET ARE TO BE USED FOR PRIVATE CONSTRUCTION ONLY AND AS A GENERAL GUIDE TO MANHOLE AND INLET CONSTRUCTION. ALL SEWER PIPES AND STRUCTURES MUST BE BUILT IN ACCORDANCE WITH THE MSD STANDARD CONSTRUCTION SPECIFICATIONS FOR SEWER AND DRAINAGE FACILITIES, 2009.

MSD PROJECT 18MSD-00571 MSD MAP 21Q

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Parkway South Middle School Building Addition, Renovations & Site Improvements - 760 Woods Mill Road Ballwin, MO 63011

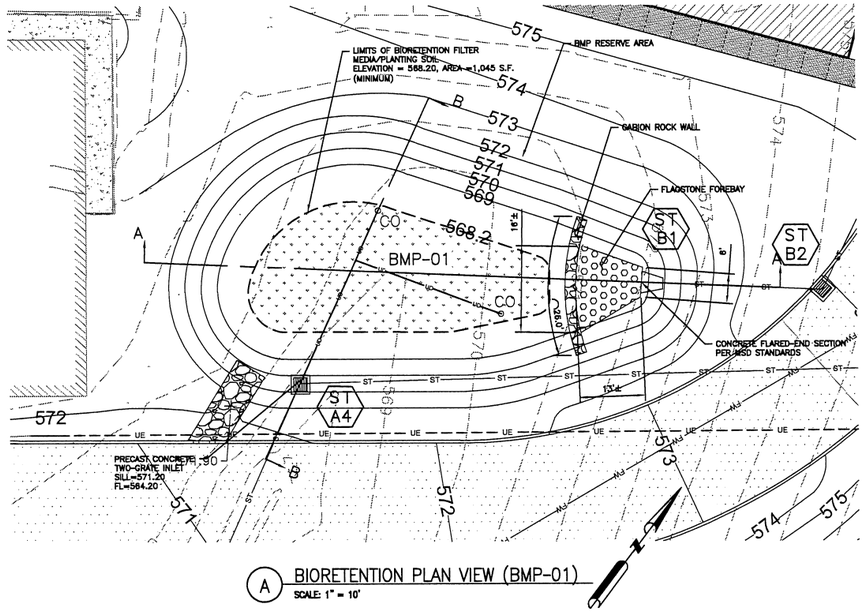
REVISIONS:

BID / PERMIT SET 02-04-2019

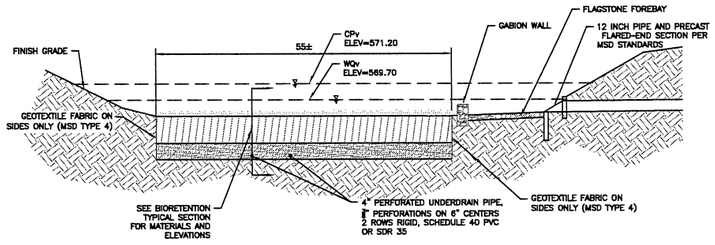
CIVIL UTILITY DETAILS

PSD Project No.:	411801B
Project Number:	2018.033
Date:	02.04.2019
Drawn By:	NJC

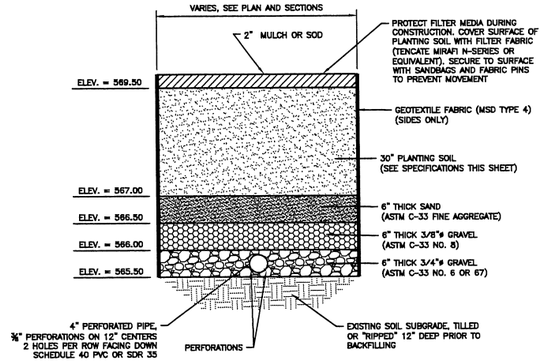
C401



A BIORETENTION PLAN VIEW (BMP-01)
SCALE: 1" = 10'



B BIORETENTION SECTION A-A
VERTICAL: 1"=5', HORIZONTAL: 1"=10'



D BIORETENTION BASIN TYPICAL SECTION
NOT TO SCALE

PLANTING SOIL SPECIFICATIONS

THE PLANTING SOIL SHOULD BE A SANDY LOAM OR LOAMY SAND (SHOULD CONTAIN A MINIMUM OF 60 PERCENT SAND, BY VOLUME). THE CLAY CONTENT FOR THESE SOILS SHOULD BE LESS THAN 10 PERCENT BY VOLUME. A SATURATED HYDRAULIC CONDUCTIVITY OF AT LEAST 2.0 FEET PER DAY (1.0 INCHES PER HOUR) IS REQUIRED. THE SOIL SHOULD BE FREE OF STONES, STUMPS, ROOTS, OR OTHER WOODY MATERIAL OVER 1 INCH IN DIAMETER. FOR BEST RESULTS, BRUSH OR SEEDS FROM NOXIOUS WEEDS, SUCH AS JOHNSON GRASS, MUGWORT, NUTSEDGE AND CANADIAN THISTLE SHOULD NOT BE PRESENT IN THE SOILS. PLACEMENT OF THE PLANTING SOIL SHOULD BE IN LIFTS OF 12 TO 18 INCHES, LOOSELY COMPACTED (RUBBER WHEELED HEAVY EQUIPMENT AND MECHANICAL TAMPING DEVICES ARE NOT RECOMMENDED FOR COMPACTION). THE SPECIFIC CHARACTERISTICS ARE PRESENTED IN THE FOLLOWING TABLE.

PARAMETER	VALUE
pH RANGE	5.2 TO 8.00
ORGANIC MATTER	1.5 TO 5.0%
MAGNESIUM	35 lbs. per acre, minimum
PHOSPHORUS (P_2O_5)	75 lbs. per acre, minimum
POTASSIUM (K_2O)	85 lbs. per acre, minimum
SOLUBLE SALTS	≤ 500 ppm

SHOP DRAWINGS FOR BMPS:

MSD SHOP DRAWING SUBMITTAL REQUIRED FOR BMP AND ITS COMPONENTS PRIOR TO CONSTRUCTION.
MSD CONTACT: PLEASE CONTACT THE DISTRICT'S CONSTRUCTION MANAGEMENT DIVISION AT (314) 335-2072 FOR QUESTIONS.

GENERAL NOTES AND SPECIFICATIONS FOR INFILTRATION BASIN:

1. COMPACTION

COMPACTION OF BOTH THE BASE OF THE BIORETENTION AREA AND THE REQUIRED BACKFILL SHALL BE MINIMIZED DURING ALL STAGES OF CONSTRUCTION. IF BIORETENTION AREAS ARE EXCAVATED USING A LOADER, THE CONTRACTOR SHALL USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH PRESSURE TIRES WILL SIGNIFICANTLY CONTRIBUTE TO SUBGRADE AND BACKFILL COMPACTION, WHICH WILL RESULT IN DESIGN FAILURE.

COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS A CHISEL PLOW, RIPPER OR SUBSOILER. THESE TILLING OPERATIONS ARE TO REFRACTURE THE SOIL PROFILE THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.

WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN 12" TO 18" LIFTS. DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS, SANDS, AND AGGREGATE. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A LOADER WITH MARSH TRACKS.

2. MULCH

MULCH SHOULD BE PLACED TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (5 TO 12 MONTHS) PRIOR TO INSTALLATION.

3. UNDERDRAINS

THE ENDS OF THE UNDERDRAIN SYSTEM NOT CONNECTED TO A CLEANOUT OR STRUCTURE SHALL BE CAPPED. THE MAIN COLLECTOR PIPE FOR THE UNDERDRAIN SYSTEM SHALL BE INSTALLED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELLS, OR CLEANOUT PIPES SHALL BE PROVIDED PER PLANS.

4. SETTLING OF FILTER MATERIAL

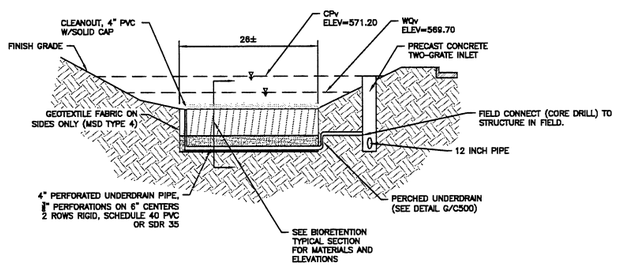
AFTER A PERIOD OF TIME THAT INCLUDES TWO (2) SIGNIFICANT (1" OR GREATER) STORM EVENTS, THE CONTRACTOR SHALL APPLY ADDITIONAL FILTER MEDIA (PLANTING SOIL) AS REQUIRED TO RESTORE THE FILTER BED AREA TO PLAN GRADE.

5. CONSTRUCTION SITE RUNOFF:

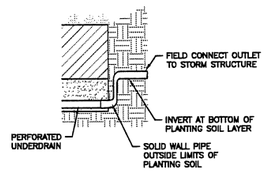
CONSTRUCTION SITE RUNOFF SHALL NOT FLOW INTO BMP AREAS. ALL STORMWATER FLOW TO BMP AREAS SHALL BE DIVERTED, PLUGGED, OR DISCONNECTED UNTIL THE CONSTRUCTION SITE IS STABLE AND THE MSD DEDICATION INSPECTOR PROVIDES APPROVAL TO PLACE THE BMP ON-LINE.

6. INFILTRATION TESTING (FOR WHEN UTILIZING ONSITE SOILS AND/OR MIXING ONSITE FOR PLANING SOIL:

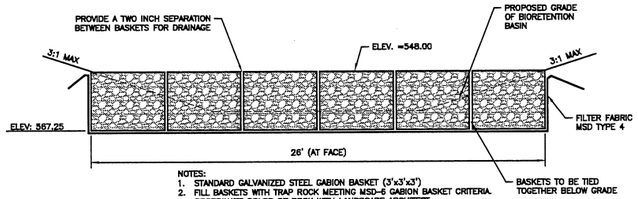
THE IN-PLACE PERMEABILITY OF THE PLANTING SOIL SHALL BE 2.0 TO 3.5 FT/DAY, AND VERIFIED BY AND INFILTRATION TEST PERFORMED PER THE MARYLAND STORMWATER MANUAL, APPENDIX D.1, "INFILTRATION TESTING REQUIREMENTS (FIELD TESTING REQUIRED)". A MINIMUM OF ONE PERCOLATION TEST SHALL BE PERFORMED PER FACILITY. THE MSD FIELD INSPECTOR SHALL BE ALLOWED TO SELECT THE LOCATION OF PERCOLATION TESTS. THE MSD FIELD INSPECTOR SHALL BE PROVIDED A COPY OF ALL TEST RESULTS, SIGNED AND SEALED BY A MISSOURI PROFESSIONAL ENGINEER. TEST RESULTS SHALL REPORT IN UNITS OF FT/DAY. RESULTS SHALL DEMONSTRATE ACCEPTABLE PERMEABILITY PRIOR TO CONSTRUCTION APPROVAL. NOTE THESE TESTS ARE NOT REQUIRED IF UTILIZING PREMIXED PLANTING SOIL SUPPLIED BY A LOCAL MSD APPROVED SOILS SUPPLIER.



C BIORETENTION SECTION B-B
VERTICAL: 1"=5', HORIZONTAL: 1"=10'

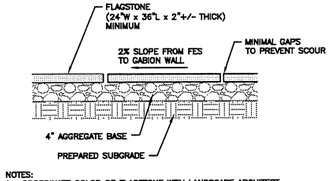


G PERCHED UNDERDRAIN DETAIL
NOT TO SCALE



NOTES:
1. STANDARD GALVANIZED STEEL GABION BASKET (3'w3'w3')
2. FILL BASKETS WITH TRAP ROCK MEETING MSD-6 GABION BASKET CRITERIA. COORDINATE COLOR OF ROCK WITH LANDSCAPE ARCHITECT.
3. PLACE FILTER FABRIC AROUND ALL SIDES OF GABION BASKET IN CONTACT WITH SOIL

E GABION BASKET SPILLWAY
NOT TO SCALE



NOTES:
1. COORDINATE COLOR OF FLAGSTONE WITH LANDSCAPE ARCHITECT.

F FLAGSTONE FOREBAY SECTION
NOT TO SCALE

MSD PROJECT 18MSD-00571 MSD MAP 21Q

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Christner ARCHITECTS
Architecture / Interior Design / Graphics
1411 S. Big Bend Blvd. St. Louis, MO 63117
314.725.5588 • mail@christner.com

Parkway South Middle School Building Addition, Renovations & Site Improvements -

760 Woods Mill Road
Ballwin, MO 63011

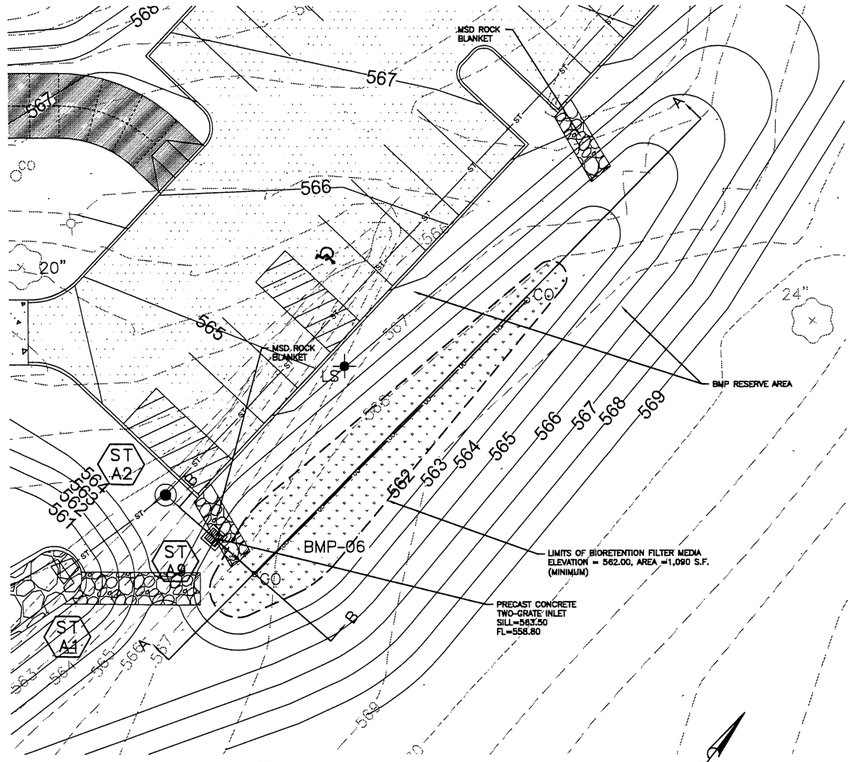
REVISIONS:

BID / PERMIT SET 02-04-2019

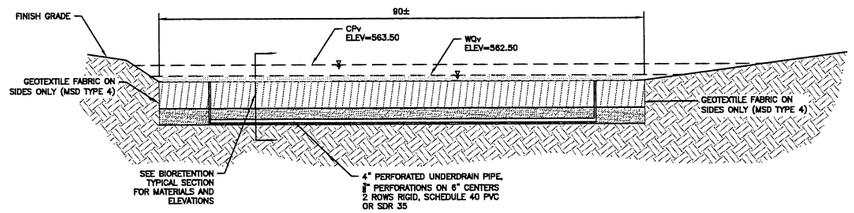
BMP DETAILS

PSD Project No.:	411801B
Project Number:	2018.033
Date:	02.04.2019
Drawn By:	NJC

C500



A BIORETENTION PLAN VIEW (BMP-06)
SCALE: 1" = 10'



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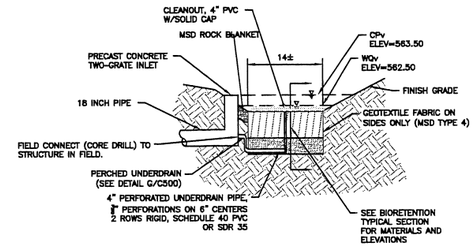
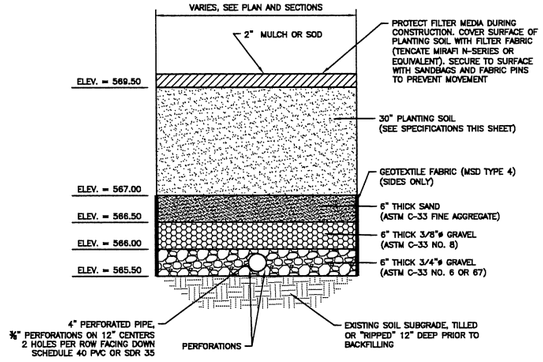
VERTICAL: 1"=5', HORIZONTAL: 1"=10'



C BIORETENTION SECTION B-B
VERTICAL: 1"=5', HORIZONTAL: 1"=10'



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MSD PROJECT 18MSD-00571 MSD MAP 21Q

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Christner, Inc. ARCHITECTS
Architecture / Interior Design / Graphics
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Parkway South Middle School
Building Addition, Renovations
& Site Improvements -
760 Woods Mill Road
Ballwin, MO 63011

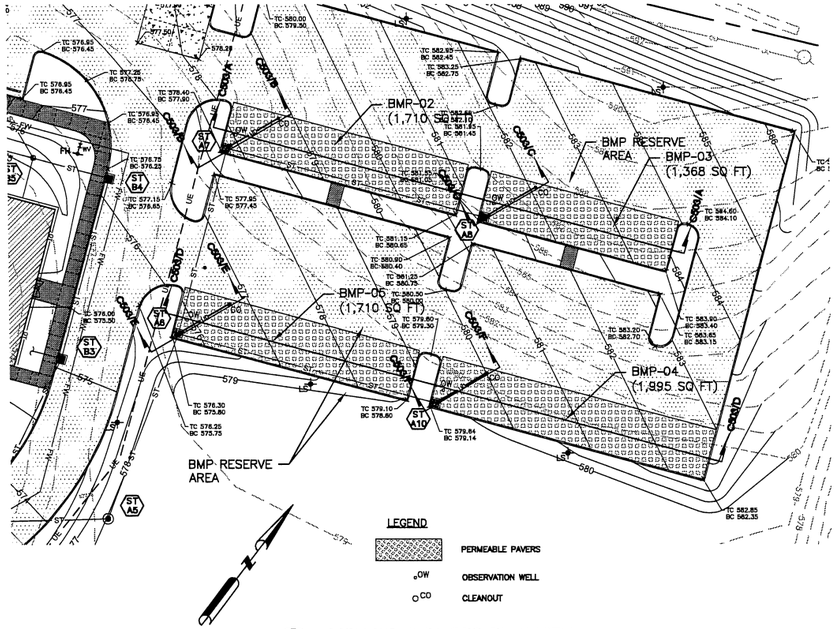
REVISIONS:

BID / PERMIT SET 02-04-2019

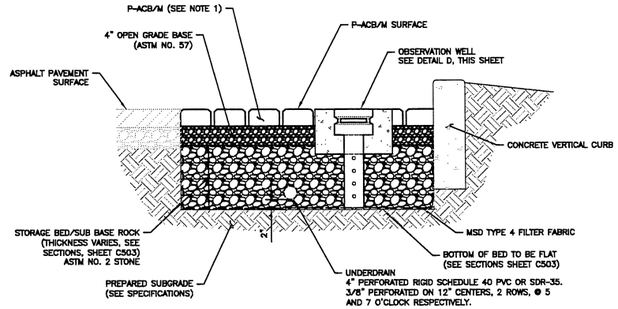
BMP DETAILS

PSD Project No.:	411801B
Project Number:	2018.033
Date:	02.04.2019
Drawn By:	NJC

C501



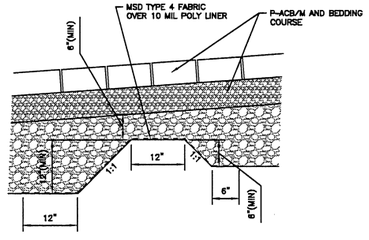
A PERMEABLE PAVERS PLAN VIEW
SCALE: 1" = 20'



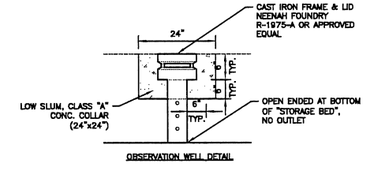
NOTES:

1. P-ACB/B PAVEDRAIN PAVERS. INSTALL PAVERS PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
2. CONTRACTOR SHALL INSTALL A MOCKUP FOR APPROVAL.
3. IT IS RECOMMENDED THAT A RUBBER BLADE BE USED DURING THE EVENT THAT A SNOW PLOW IS USED. A STEEL BLADE HAS THE TENDENCY TO CATCH THE PAVER AND PULL IT FREE.
4. TERRACING OF SUBGRADE BELOW PICP SECTION WILL BE UTILIZED. MINIMUM DEPTH OF STORAGE BED TO BE MAINTAINED. (SEE C503 FOR SECTIONS)
5. PROVIDE JOINTS IN THE CONCRETE EDGE RESTRAINT AS FOLLOWS; PROVIDE CONTRACTION JOINTS AT 10' CENTERS AND AT RADIUS POINTS.
6. PROVIDE EXPANSION JOINTS AT 80' MAX SPACING.

B PERMEABLE - ARTICULATING CONCRETE BLOCK/MAT TYPICAL SECTION
NOT TO SCALE



C TERRACED BERM DETAIL
NOT TO SCALE



D OBSERVATION WELL DETAIL
NOT TO SCALE

PERMEABLE CONCRETE BLOCK PAVEMENT

POWER WASHING, RESURFACING, AND THE USE OF SAND ABRASIVES FOR WINTER TIRE TRACKING ARE PROHIBITED.

CARE SHALL BE TAKEN DURING SNOW PLOWING. USE RUBBER BLADE

NOTES:

1. STANDARD 18"x12"x0.080" ALUMINUM SIGN FACE WITH BLACK TEXT ON WHITE BACKGROUND GALVANIZED STEEL POST PAINTED BLACK 9'-6" LONG.
2. SET BOTTOM OF SIGN 5'-0" ABOVE GRADE.
3. SET BOTTOM OF POST 3'-0" BELOW GRADE.

E P-ACB/M INFORMATION SIGN
NOT TO SCALE

NOTES:

1. THE CONTRACTOR SHALL OBTAIN THE CONCRETE PAVER MANUFACTURER'S CERTIFICATION THAT THE PAVING UNITS SUPPLIED TO CONSTRUCT THE PERMEABLE - ARTICULATING CONCRETE BLOCK/MAT (P-ACB/M) HAVE BEEN APPROVED BY MSD AND MEET THE REQUIREMENTS IN ASTM C936. THIS CERTIFICATION SHALL BE PROVIDED TO THE MSD DIVISION INSPECTOR. THE CERTIFICATION SHALL INCLUDE THE MANUFACTURER'S NAME, AND STATE THAT THE P-ACB/M SUPPLIED MEETS THE ASTM C936 SPECIFICATIONS, (TESTING SHOULD BE CURRENT WITHIN PREVIOUS 12 MONTHS) AND THAT THE PAVING MATERIALS MEET ALL REQUIREMENTS AS EVALUATED UNDER THE MANUFACTURER'S QUALITY CONTROL PROGRAM.
2. PRIOR TO OBTAINING A CONSTRUCTION PERMIT FROM MSD TO CONSTRUCT THE PERMEABLE - ARTICULATING CONCRETE BLOCK/MAT (P-ACB/M) FOR A GIVEN PROJECT, THE CONTRACTOR'S ENGINEER PROVIDING THE AS-BUILT CERTIFICATION SHALL VERIFY THAT THE INSTALLING CONTRACTOR HAS PAST HISTORY DEMONSTRATING APPLICABLE EXPERIENCE. THE P-ACB/M INSTALLATION CONTRACTOR MUST HAVE A CURRENT LEVEL 1 CERTIFICATE FROM THE INTERLOCKING CONCRETE PAVEMENT INSTITUTE'S CONCRETE PAVER INSTALLER PROGRAM.
3. THE CONTRACTOR SHALL PREVENT AND DIVERT SEDIMENT FROM ENTERING THE SUBBASE AND PAVEMENT SURFACE UNTIL THE TRIBUTARY AREAS ARE DEEMED STABLE BY THE ASSIGNED MSD INSPECTOR.
4. VEHICULAR TRAFFIC SHALL BE PROHIBITED ON THE P-ACB/M UNTIL THE SITE IS STABLE TO PREVENT MUD FROM BEING DEPOSITED BY VEHICLES.
5. NO PRODUCT OR MATERIAL SUBSTITUTIONS ARE PERMITTED UNLESS PREVIOUSLY APPROVED BY THE MSD PLAN REVIEW ENGINEER OR BY THE MSD FIELD INSPECTOR ASSIGNED TO THE PROJECT. ALL SUBSTITUTIONS SHALL BE PRESENTED TO MSD THROUGH THE ENGINEER RESPONSIBLE FOR THE DESIGN OF THE P-ACB/M SYSTEM.
6. STONE SHOULD BE CLEAN, WASHED, 90 PERCENT FRACTURED FACES WITH A LOS ANGELES ABRASION INDEX OF LESS THAN 40 AND CONFORM TO THE GRADING REQUIREMENTS IN ASTM D448.
7. DO NOT CLEAN THE PAVER SURFACE WITH HIGH-PRESSURE HOSES OR ABRASIVES. WHEN CLEANING IS NECESSARY, COMBINATION CLEANING MACHINES THAT COMBINE A WET SPRAY AND VACUUM PROCESS HAVE BEEN FOUND TO BE EFFECTIVE.
8. A PERMANENT SIGN SHALL BE POSTED WARNING THAT CARE SHOULD BE TAKEN DURING SNOW PLOWING; AND PROHIBIT THE FOLLOWING: RESURFACING, THE USE OF SAND ABRASIVES FOR WINTER TIRE TRACTION, AND THE USE OF POWER WASHERS.
9. AT COMPLETION OF THE PROJECT, PRIOR TO FINAL DEDICATION, AN AS-BUILT CERTIFICATION, SIGNED AND SEALED BY A MISSOURI PROFESSIONAL ENGINEER, SHALL BE PROVIDED BY THE CONTRACTOR.

MANUFACTURER'S PREQUALIFICATION:

THE P-ACB/M MANUFACTURER SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING A QUALITY CONTROL PROGRAM TO ASSURE COMPLIANCE WITH REQUIREMENTS IN ASTM C936. PRIOR TO USE ON PROJECTS REQUIRING MSD APPROVAL, THE MANUFACTURER SHALL SUBMIT FIVE (5) COPIES OF A COMPLETED PERVIOUS PAVING APPLICATION AS WELL AS DOCUMENTATION DESCRIBING THE QUALITY CONTROL PROGRAM. THE COMPLETED APPLICATION AND OTHER DOCUMENTS SHALL BE SUBMITTED TO:

MSD BMP COMMITTEE
METROPOLITAN ST. LOUIS SEWER DISTRICT
2350 MARKET STREET
ST. LOUIS, MISSOURI 63103-2555

MATERIAL CERTIFICATION:

THE CONTRACTOR SHALL OBTAIN THE CONCRETE PAVER MANUFACTURER'S CERTIFICATION THAT THE PAVING UNITS SUPPLIED TO CONSTRUCT THE P-ACB/M HAVE BEEN APPROVED BY MSD AND MEET THE REQUIREMENTS IN ASTM C936. THIS CERTIFICATION SHALL BE PROVIDED TO THE MSD DIVISION INSPECTOR. THE CERTIFICATION SHALL INCLUDE THE MANUFACTURER'S NAME, AND STATE THAT THE P-ACB/M SUPPLIED MEETS THE ASTM C936 SPECIFICATIONS, (TESTING SHOULD BE CURRENT WITHIN PREVIOUS 12 MONTHS) AND THAT THE PAVING MATERIALS MEET ALL REQUIREMENTS AS EVALUATED UNDER THE MANUFACTURER'S QUALITY CONTROL PROGRAM.

CONTRACTOR PREQUALIFICATION:

PRIOR TO OBTAINING A CONSTRUCTION PERMIT FROM MSD TO CONSTRUCT THE PERMEABLE ARTICULTING CONCRETE BLOCK/MAT (P-ACB/M) FOR A GIVEN PROJECT, THE CONTRACTOR'S ENGINEER PROVIDING AS-BUILT CERTIFICATION SHALL VERIFY THAT THE INSTALLING CONTRACTOR HAS:
1. PAST HISTORY DEMONSTRATING APPLICABLE EXPERIENCE.
2. THE P-ACB/M INSTALLATION CONTRACTOR MUST HAVE A CURRENT LEVEL 1 CERTIFICATE FROM THE INTERLOCKING CONCRETE PAVEMENT INSTITUTE'S CONCRETE PAVER INSTALLER PROGRAM.

AS-BUILT CERTIFICATION:

AT COMPLETION OF PROJECT, PRIOR TO FINAL DEDICATION, AN AS-BUILT CERTIFICATION, SIGNED AND SEALED BY THE CONTRACTOR'S LICENSED PROFESSIONAL ENGINEER, SHALL BE PROVIDED CERTIFYING:
1. THE P-ACB/M SYSTEM WAS BUILT IN ACCORDANCE WITH THE DETAILS, DIMENSIONS, AND MATERIALS AS APPROVED BY MSD FOR THIS PROJECT.
2. THE P-ACB/M SYSTEM WAS INSTALLED BY A QUALIFIED CONTRACTOR, AND HAS SATISFIED ALL APPLICABLE QUALITY CONTROL AND PERFORMANCE TESTS.
3. THE P-ACB/M SYSTEM INSTALLATION WAS WITNESSED BY THE CERTIFYING ENGINEER OR A REPRESENTATIVE UNDER HIS/HER DIRECT SUPERVISION.

MSD PROJECT 18MSD-00571 MSD MAP 21Q

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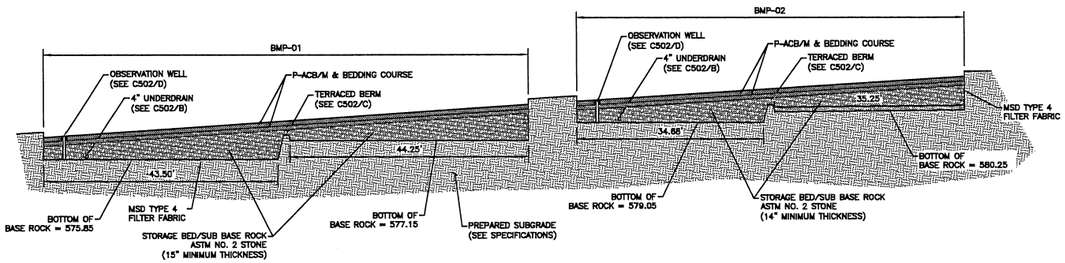
Parkway South Middle School Building Addition, Renovations & Site Improvements - 760 Woods Mill Road Ballwin, MO 63011

REVISIONS:

BMP DETAILS

PSD Project No.:	411801B
Project Number:	2018.033
Date:	02.04.2019
Drawn By:	NJC

C502



A PERMEABLE PAVERS SECTION A-A
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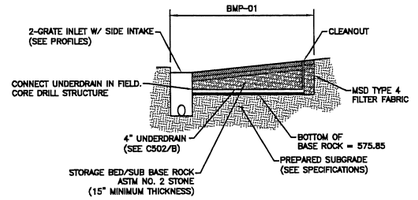

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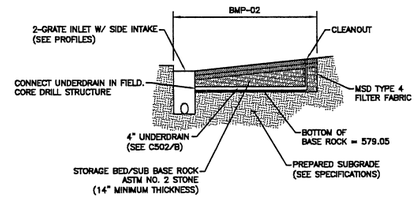

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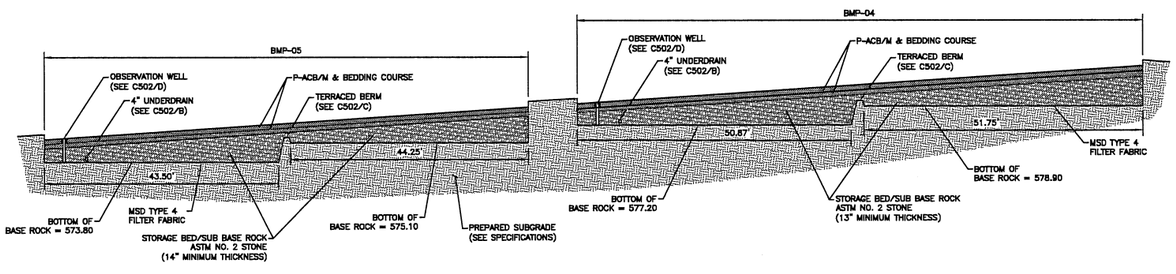

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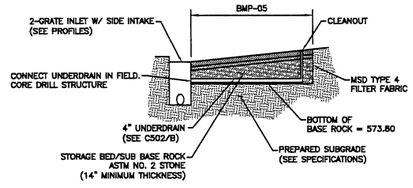
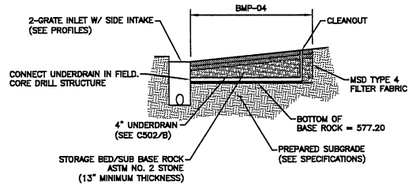


E PERMEABLE PAVERS SECTION E-E
VERTICAL: 1"=5', HORIZONTAL: 1"=10'



F PERMEABLE PAVERS SECTION F-F
VERTICAL: 1"=5', HORIZONTAL: 1"=10'

MSD PROJECT 18MSD-00571 MSD MAP 21Q

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REVISIONS:

BMP DETAILS

PSD Project No.:	411801B
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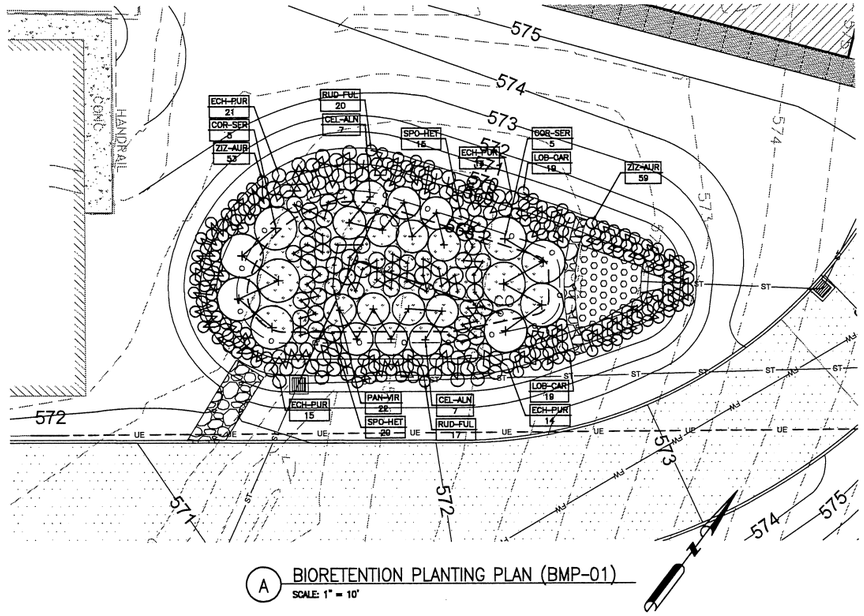
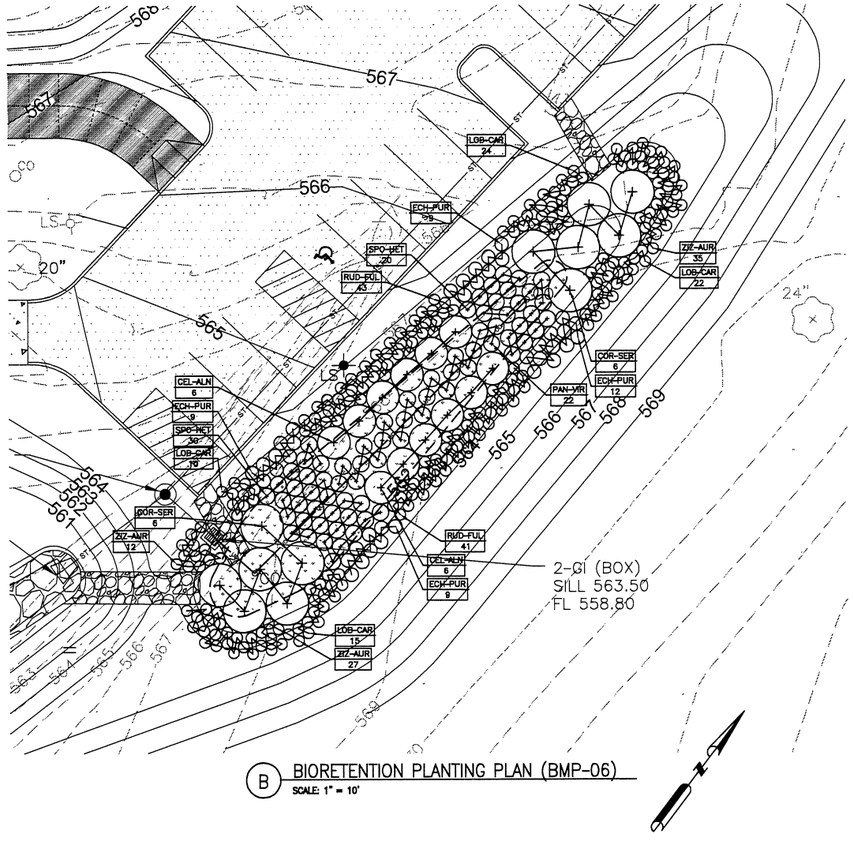
Drawn By:	NJC

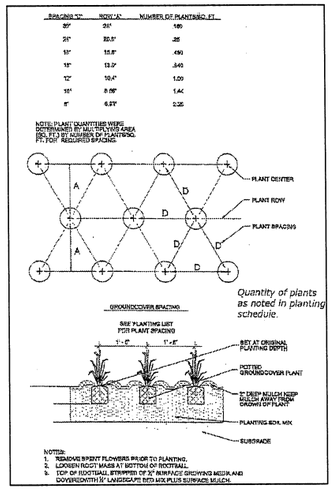
C503



A BIORETENTION PLANTING PLAN (BMP-01)
SCALE: 1" = 10'



B BIORETENTION PLANTING PLAN (BMP-06)
SCALE: 1" = 10'



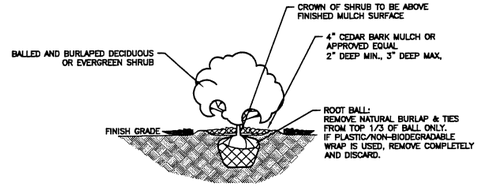
D BIORETENTION PLANT SPACING
NOT TO SCALE

PLANT MATERIALS

	KEY	BOTANICAL/COMMON NAME	METHOD	SIZE	QUANITY	REMARKS
SHRUBS / PERENNIALS	CLE-ALN	CLETHRA ALNIFOLIA SWEET PEPPERBUSH	CONT	5 GAL	26	FULL HEALTHY PLANT
	COR-SER	CORNUS SERICEA 'SILVER & GOLD' SILVER & GOLD YELLOW TWIG DOGWOOD	CONT	5 GAL	22	FULL HEALTHY PLANT
	ECH-PUR	ECHINACEA PURPUREA PURPLE CONEFLOWER	CONT	1 GAL	102	FULL HEALTHY PLANT
	LOB-CAR	LOBELIA CARDINALIS CARDINAL FLOWER	CONT	1 GAL	109	FULL HEALTHY PLANT
	PAN-VIR	PANICUM VIRGATUM SWITCHGRASS	CONT	3 GAL	44	FULL HEALTHY PLANT
	RUD-SUB	RUDBECKIA FULGIDA ORANGE CONEFLOWER	CONT	1 GAL	121	FULL HEALTHY PLANT
	SPO-HET	SPOROBOLUS HETEROLEPIS PRAIRIE DROPSEED	CONT	3 GAL	85	FULL HEALTHY PLANT
	ZIZ-AUR	ZIZIA AUREA GOLDEN ALEXANDER	CONT	1 GAL	136	FULL HEALTHY PLANT

PLANTING NOTES:

1. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITY LINES AND OTHER UNDERGROUND OBSTRUCTIONS IN AREAS OF WORK PRIOR TO START OF OPERATIONS.
2. EXTERMINATE AND REMOVE ALL EXISTING WEEDS FROM SITE AREA PRIOR TO PLANTING.
3. THE STANDARDS SET FORTH IN "AMERICAN STANDARDS FOR NURSERY STOCK" REPRESENT GENERAL GUIDELINE SPECIFICATIONS ONLY AND WILL CONSTITUTE MINIMUM QUALITY REQUIREMENTS FOR PLANT MATERIAL.
4. ANY PLANT MATERIAL THAT DIES OR DEFOLIATES (PRIOR TO ACCEPTANCE OF WORK) SHALL BE REMOVED AND REPLACED.
5. THE OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO REJECT ANY PLANT MATERIAL NOT MEETING SPECIFICATIONS.
6. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR SOIL SAMPLING AND TESTING TO DETERMINE EXACT FERTILIZER REQUIREMENTS.
7. ALL SHRUB PLANTING AREAS SHALL RECEIVE A MINIMUM OF 3 INCH DEPTH OF SHREDDED OAK MULCH OR APPROVED EQUAL AFTER INSTALLATION OF PLANT MATERIAL.
8. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR WATERING ALL PLANTS UNTIL THE TIME THE LANDSCAPE IS APPROVED BY THE OWNER'S REPRESENTATIVE.
9. LANDSCAPE CONTRACTOR SHALL PROVIDE UNIT COSTS AND POSSIBLE ALTERNATIVES FOR PLANT MATERIAL TO THE LANDSCAPE ARCHITECT.
10. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR COMPLETELY MAINTAINING THE WORK (NCLUDING BUT NOT LIMITED TO: WATERING, MULCHING, SPRAYING, FERTILIZING, ETC.) OF ALL PLANTING AND TURF AREAS UNTIL TOTAL ACCEPTANCE OF THE WORK BY THE LANDSCAPE DESIGNER AND OWNER.
11. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL WORK FOR A PERIOD OF ONE YEAR BEGINNING AT THE DATE OF ACCEPTANCE BY OWNER'S REPRESENTATIVE.



C SHRUB PLANTING DETAIL
NOT TO SCALE

Table 3 Planting, Water and Mulch Requirements

Water Availability	Required Planting Period	Minimum Container Size	Water Requirement First 3 Weeks*	Water Requirement After 3 Weeks*	Minimum Mulch Depth****
No ability to water after	Late Feb. – April only	2.25" x 3.75" or larger	Water each plug immediately		1.5 for plugs
Manual watering with standard sprinkler	Late Feb. – Early June Sept – October	4.5" x 5" (quart) or larger in summer & fall	1" (60 min) every 4 days	1" (60 min) every 7 days until plants established***	1.5" for plugs 2.5" for quarts
Automatic irrigation (set to water more frequently than normal during first two months after planting)	Late Feb. – Early Oct.	2.25" x 3.75" (plug) or larger in spring 4.5" x 5" (quart) or larger in summer & fall	1" (60 min) every 4 days in spring and fall 1" (60 min) every 3 days in summer	1" (60 min) every 7 days until plants established***	1.5" for plugs 2.5" for quarts

*This water amount includes natural rainfall. If you get a ½ inch of natural rain then you will need to add a ½ inch of water to meet the 1 inch requirement.

**Requires transport of water to the planting site in large containers and pouring enough water onto each plant (after planting) to moisten the entire planting pit.

***Plants are established when roots have grown out of the container soil and into the native soil by 3-5 inches. This normally takes 3-4 months for most perennials and grasses and up to 6-7 months for trees and shrubs.

****Shredded leaf compost is recommended for use with perennials and grasses. Shredded bark mulch is recommended for tree and shrub plantings at a depth of 3 inches.

E BIORETENTION PLANTING, WATER & MULCH TABLE
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MSD PROJECT 18MSD-00571 MSD MAP 21Q

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Parkway South Middle School
Building Addition, Renovations
& Site Improvements -
760 Woods Mill Road
Ballwin, MO 63011

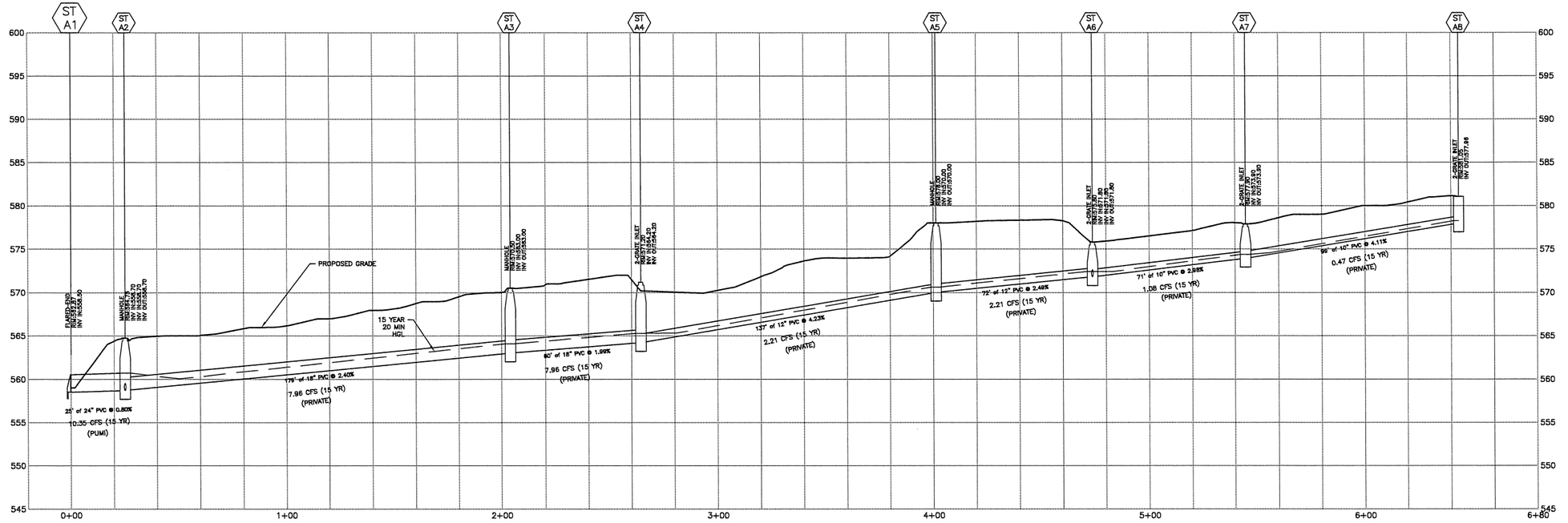
REVISIONS:

BID / PERMIT SET 02-04-2019

BMP PLANTING PLANS

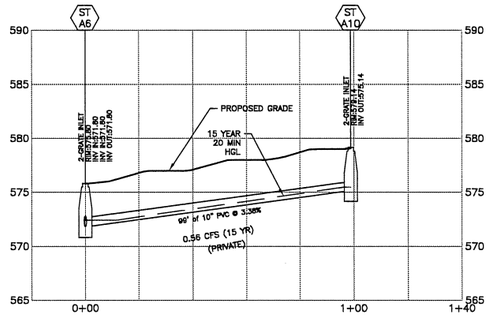
PSD Project No.: 411801B
Project Number: 2018.033
Date: 02.04.2019
Drawn By: NJC

C504



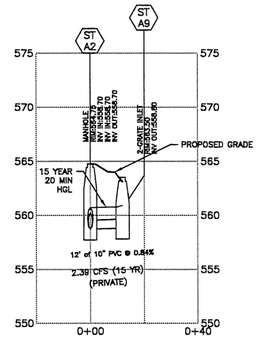
A STORM A1-A8 PROFILE

SCALE: HORZ. 1"=20', VERT. 1"=5'



B STORM A6-A10 PROFILE

SCALE: HORZ. 1"=20', VERT. 1"=5'



C STORM A2-A9 PROFILE

SCALE: HORZ. 1"=20', VERT. 1"=5'

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Parkway South Middle School Building Addition, Renovations & Site Improvements -

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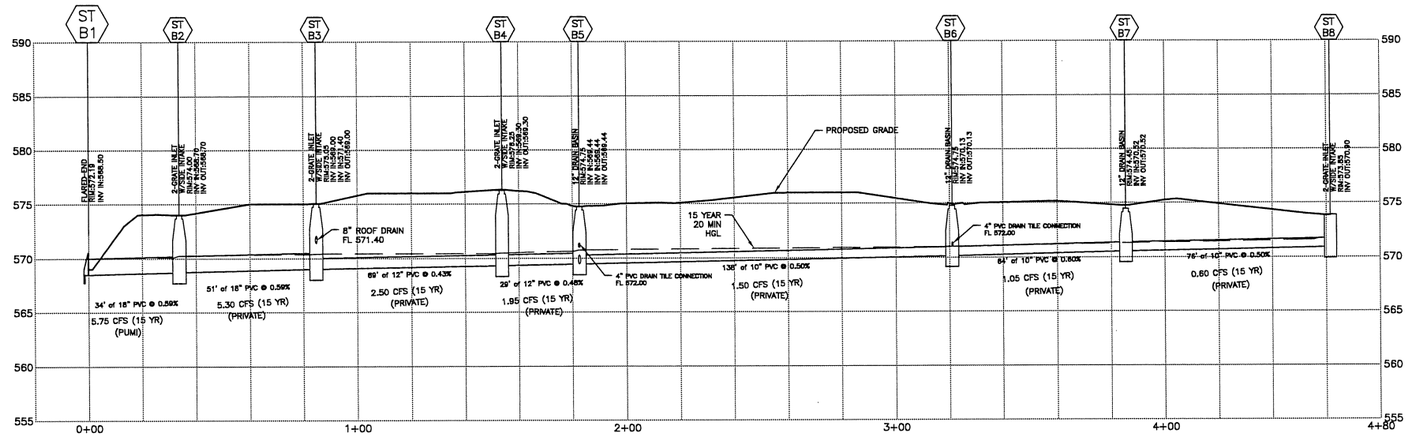
Ballwin, MO 63011

REVISIONS:

STORM SEWER PROFILES

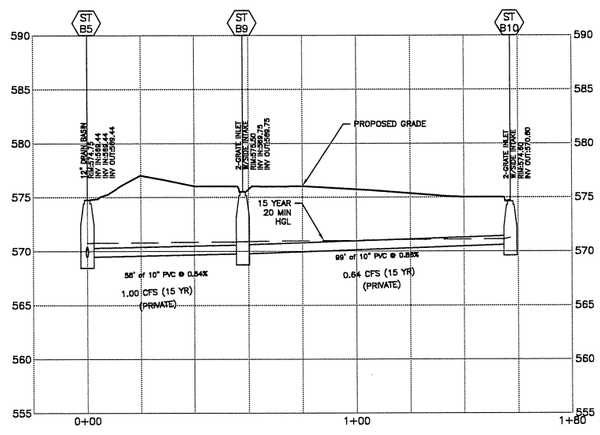
PSD Project No.:	411801B
Project Number:	2018.033
Date:	02.04.2019
Drawn By:	NJC

C600



D STORM B1-B8 PROFILE

SCALE: HORZ. 1"=20', VERT. 1"=5'



E STORM B5-B10 PROFILE

SCALE: HORZ. 1"=20', VERT. 1"=5'

MSD PROJECT 18MSD-00571 MSD MAP 21Q

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Building Addition, Renovations
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760 Woods Mill Road
Ballwin, MO 63011

REVISIONS:

STORM SEWER PROFILES

PSD Project No.:	411801B
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Drawn By:	NJC

C601

GRAPHIC SCALE

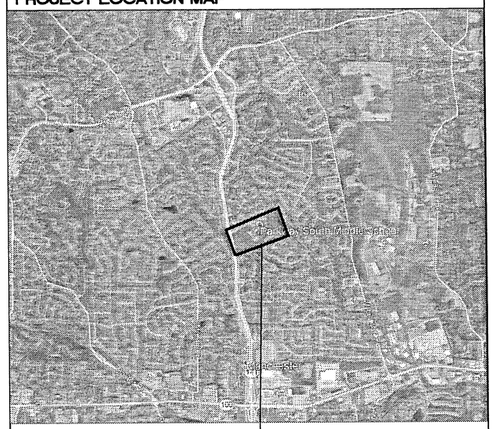
(IN FEET)
1 INCH = 50 FT.

PROPERTY ADDRESS
760 WOODS MILL ROAD
BALLWIN, MISSOURI 63011

OWNER INFORMATION
PARKWAY CONSOLIDATED SCHOOL DISTRICT
760 WOODS MILL ROAD
BALLWIN, MISSOURI 63011
CONTACT:
P:

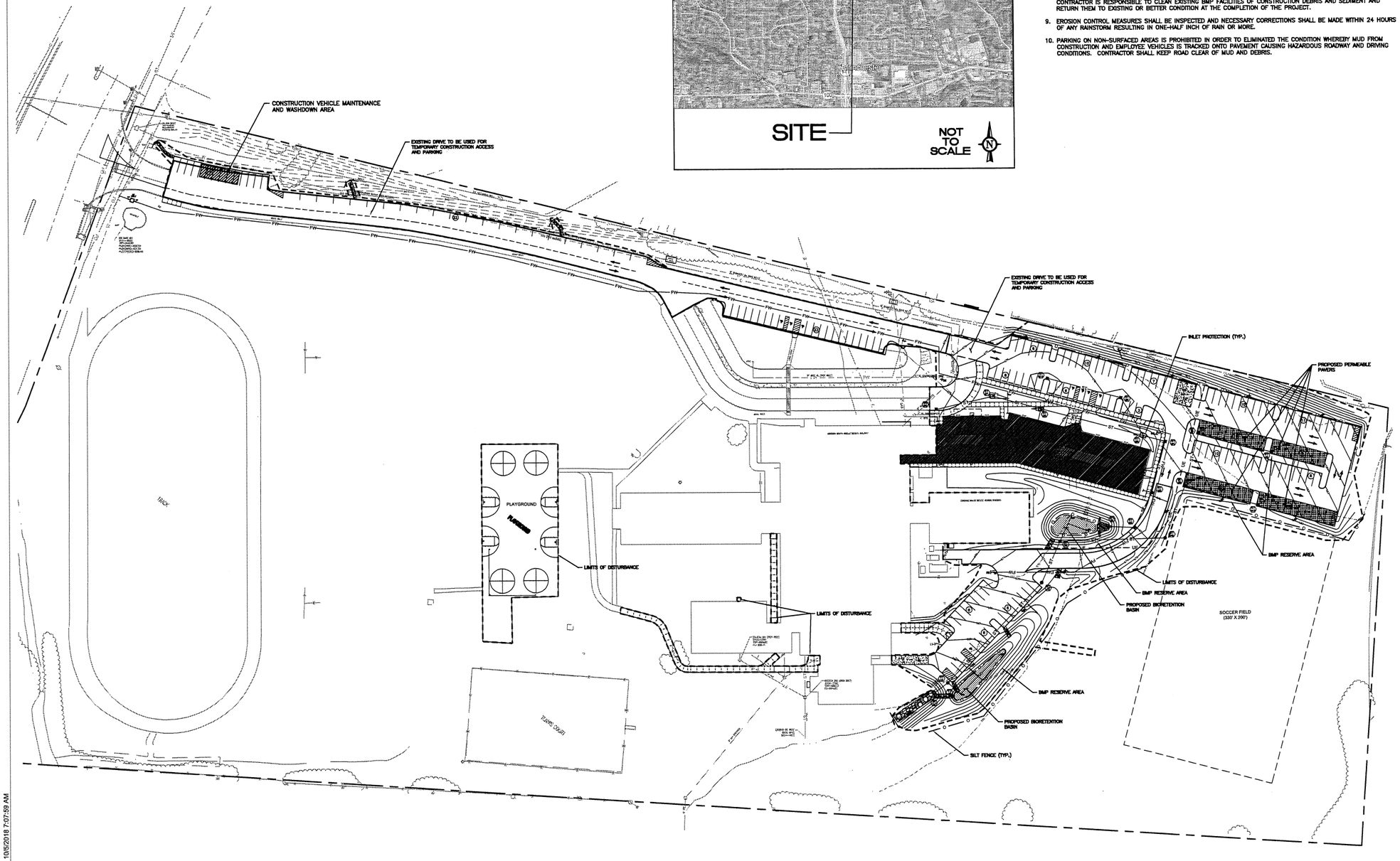
PROJECT INFORMATION
PROJECT DISTURBANCE: 5.0 ACRES

PROJECT LOCATION MAP



EROSION AND SEDIMENT CONTROL NOTES:

1. CONTRACTOR TO PROVIDE TEMPORARY SEEDING OVER ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES WHICH ARE LEFT INACTIVE FOR 30 DAYS. TEMPORARY SEEDING SHALL BE IN ACCORDANCE WITH THE ST. LOUIS COUNTY STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
2. ALL EROSION CONTROL AND SEDIMENTATION CONTROL MEASURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL, INSPECT AND MAINTAIN. THE MAINTENANCE OF THESE EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CONSIDERED INCIDENTAL TO THE DEVICES THEMSELVES. MAINTENANCE SHALL CONTINUE TO BE THE RESPONSIBILITY OF THE CONTRACTOR UNTIL THE OWNER TAKES OWNERSHIP OF THE IMPROVEMENTS.
3. ALL EROSION CONTROL SHALL CONFORM TO THE ST. LOUIS COUNTY STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
4. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO BEGINNING CONSTRUCTION.
5. A WASHDOWN AREA FOR VEHICLES SHALL BE PROVIDED TO REDUCE THE RISK OF VEHICLES TRACKING SEDIMENT AND DEBRIS.
6. PAVED AREAS WITHIN THE PROPERTY LIMITS AND STREETS ADJACENT TO THE CONSTRUCTION SITE SHALL BE CLEANED DAILY OR MORE FREQUENTLY AS NECESSARY. CLEANING SHALL INCLUDE SCRAPING SIGNIFICANT AMOUNTS OF SOIL AND POWER SWEEPING AS NEEDED TO REMOVE ANY EXCESS MUD, DIRT, OR ROCK TRACKED FROM THE CONSTRUCTION AREA. SEDIMENT SHALL NOT BE ALLOWED TO LEAVE THE SITE AND BE DEPOSITED ON THE CITY STREETS.
7. ALL INLETS STRUCTURES RECEIVING DRAINAGE FROM THE PROPOSED DISTURBED AREAS SHALL BE PROTECTED WITH SEDIMENT CONTROL MEASURES TO PREVENT SEDIMENT FROM ENTERING THE STORM SYSTEM AND DISCHARGING TO EXISTING BMP FACILITIES. SEDIMENT CONTROL MEASURES SHALL REMAIN UNTIL THE DISTURBED DRAINAGE AREAS HAVE BEEN PROPERLY STABILIZED.
8. THE CONTRACTOR SHALL DOCUMENT EXISTING CONDITIONS OF EXISTING BMP FACILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE TO CLEAN EXISTING BMP FACILITIES OF CONSTRUCTION DEBRIS AND SEDIMENT AND RETURN THEM TO EXISTING OR BETTER CONDITION AT THE COMPLETION OF THE PROJECT.
9. EROSION CONTROL MEASURES SHALL BE INSPECTED AND NECESSARY CORRECTIONS SHALL BE MADE WITHIN 24 HOURS OF ANY RAINSTORM RESULTING IN ONE-HALF INCH OF RAIN OR MORE.
10. PARKING ON NON-SURFACED AREAS IS PROHIBITED IN ORDER TO ELIMINATED THE CONDITION WHEREBY MUD FROM CONSTRUCTION AND EMPLOYEE VEHICLES IS TRACKED ONTO PAVEMENT CAUSING HAZARDOUS ROADWAY AND DRIVING CONDITIONS. CONTRACTOR SHALL KEEP ROAD CLEAR OF MUD AND DEBRIS.



MSD PROJECT 18MSD-00571 MSD MAP 21Q

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REVISIONS:

SWPP PLAN

PSD Project No.:	411801B
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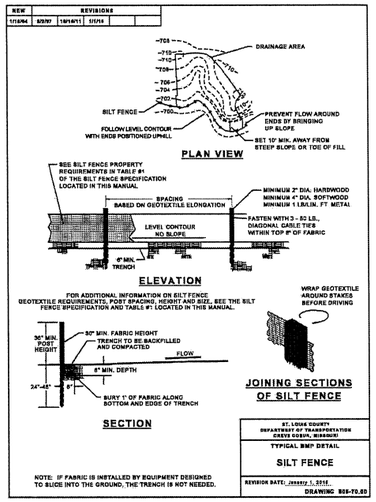
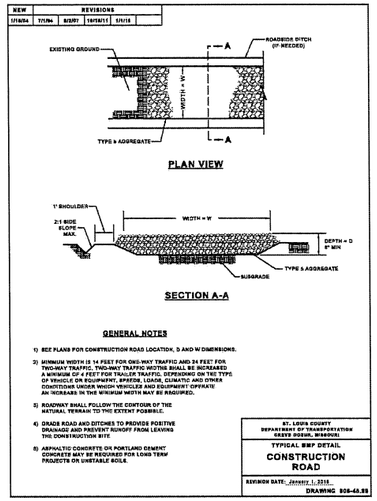
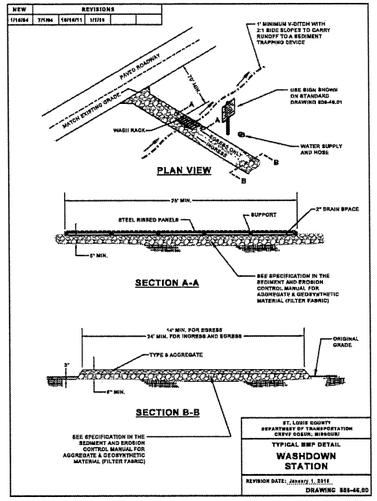
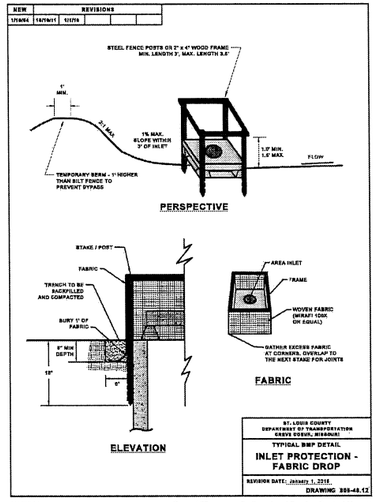
C700









VEHICLE MAINTENANCE AND WASHING AREAS

DESCRIPTION - Ideally, vehicle maintenance and washing occurs in garages and wash facilities, not on active construction sites. However, if these activities must occur onsite, operators should follow appropriate BMPs to prevent untreated nutrient-enriched wastewater or hazardous wastes from being discharged to surface or ground waters. Vehicle maintenance and washing BMPs prevent construction site spills of wash water, fuel, or coolant from contaminating surface or ground water. They apply to all construction sites.

APPROPRIATE APPLICATION OF BMP - Inspect construction vehicles daily, and repair any leaks immediately. Dispose of all used oil, antifreeze, solvents and other automotive-related chemicals according to manufacturer instructions. These wastes require special handling and disposal. Used oil, antifreeze, and some solvents can be recycled at designated facilities, but other chemicals must be disposed of at a hazardous waste disposal site. Local government agencies can help identify such facilities.

Designate special paved areas for vehicle repair. To direct wash water to sanitary sewer systems or other treatment facilities, ensure that vehicle washing areas are impervious and are bermed. Use blowers or vacuums instead of water to remove dry materials from vehicles if possible. Because water alone can remove most dirt adequately, use high-pressure water spray without detergents at vehicle washing areas. If you must use detergents, avoid phosphate or organic-based cleansers to reduce nutrient enrichment and biological oxygen demand in wastewater. Use only biodegradable products that are free of halogenated solvents. Clearly mark all washing areas, and inform workers that all washing must occur in this area.

O&M PROCEDURES - Vehicle maintenance operations produce substantial amounts of hazardous and other wastes that require regular disposal. Clean up spills and dispose of cleanup materials immediately. Inspect equipment and storage containers regularly to identify leaks or signs of deterioration. Maintenance of vehicle wash areas is minimal, usually involving repairs to berms and drainage to the sanitary sewer system.

TYPICAL DETAILS - Not applicable.

NON-SEDIMENT POLLUTION CONTROL

PHYSICAL DESCRIPTION - Control measures designed to prohibit chemicals, hazardous materials, solid waste and construction debris from polluting stormwater. Pollutants carried in solution or as surface films on runoff will be carried through most erosion control and sediment capture BMPs. Keeping substances like fuel, oil, asphalt, paint, solvents, fertilizer, soil additives, concrete wash water, solid waste and construction debris from polluting runoff can be accomplished to a large extent through good housekeeping on the site and following the manufacturer's recommendations for disposal.

WHERE BMP IS TO BE INSTALLED - Collection, storage and fueling areas should be located onsite in an area that does not receive a substantial amount of runoff from upland areas and does not drain directly to lakes, creeks, streams, rivers, sewers, groundwater, wetlands, or road ditches.

CONDITIONS FOR EFFECTIVE USE OF BMPs

- ✓ Reduction in pollutants depends heavily on how construction personnel perform their duties. An effective management system requires training and signage to promote proper storage, handling and disposal of materials. Follow up observations of actions and inspection of storage areas by management personnel is also required.
- ✓ Plans should contain notes clearly stating requirements for addressing potential pollutants.
- ✓ Fueling areas and storage areas for hazardous materials should be protected by berms or other means of catching leaks or spills. Do not store hazardous chemicals, drums, or bagged materials directly on the ground. Place these items on a pallet and under cover in secondary containment.

WHEN BMP IS TO BE INSTALLED - Immediately following installation of construction entrance and wash station.

INSTALLATION / CONSTRUCTION PROCEDURES

- ✓ Place waste receptacles near area of work.
- ✓ Construct protective berm or other devices around fueling and hazardous materials storage areas.
- ✓ Install appropriate signage.
- ✓ Post guidelines for proper handling, storage and disposal of materials, and emergency spill cleanup on site.

O&M PROCEDURES:

- ✓ Inspect activities on regular basis.
- ✓ Inspect storage areas and control devices at least every two weeks and after every storm.
- ✓ Make necessary corrections and repairs.

SITE CONDITIONS FOR REMOVAL - Maintain practices until all construction on the site has been completed.

TYPICAL DETAILS - General pollution prevention notes attached.

NOTE:
CONTRACTOR RESPONSIBLE FOR ALL COST ASSOCIATED WITH INSTALLATION AND MAINTENANCE OF EROSION CONTROL FOR DURATION OF PROJECT. REFER TO ST. LOUIS COUNTY SEDIMENT AND EROSION CONTROL MANUAL FOR O&M PROCEDURES.

MSD PROJECT 18MSD-00571 MSD MAP 21Q

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REVISIONS:

SWPP DETAILS

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C701

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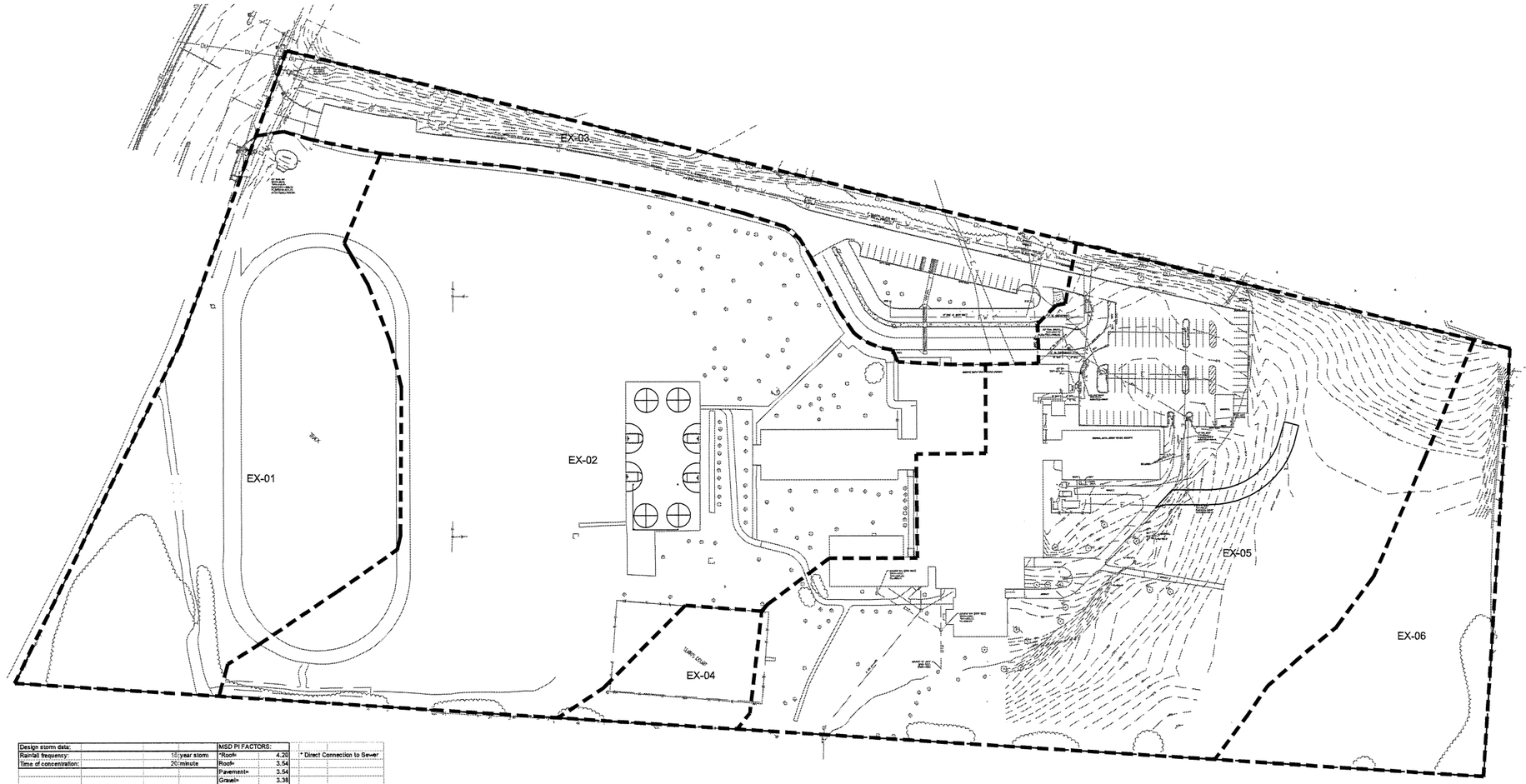

Design storm data:			MSD PI FACTORS:		
Rainfall frequency:	10	year storm	*Roofs=	4.20	* Direct Connection to Sewer
Time of concentration:	20	minute	Roofs=	3.54	
			Pavement=	3.54	
			Gravel=	3.38	
			Lawn=	1.78	

Existing Drainage Areas:								
Drainage Area Title:	EX-01	Description	Area (SF)	Area (AC)		MSD PI		Flow (CFS)
Description:	Track	*Roofs=	0	0.00	x	4.20	=	0.00
		Roofs=	0	0.00	x	3.54	=	0.00
Q=PPA	Q= flow (cfs)	Pavement=	42960	0.44	x	3.54	=	1.56
	PI= PI factor (MSD)	Gravel=	0	0.00	x	3.38	=	0.00
	A=area (acres)	Lawn=	199940	4.59	x	1.78	=	8.17
		DA Totals=	243901	5.03				9.73
Drainage Area Title:	EX-02	Description	Area (SF)	Area (AC)		MSD PI		Flow (CFS)
Description:	Playground	*Roofs=	0	0.00	x	4.20	=	0.00
		Roofs=	28773	0.66	x	3.54	=	2.34
Q=PPA	Q= flow (cfs)	Pavement=	52878	1.21	x	3.54	=	4.29
	PI= PI factor (MSD)	Gravel=	0	0.00	x	3.38	=	0.00
	A=area (acres)	Lawn=	360567	8.35	x	1.78	=	14.86
		DA Totals=	442258	10.22				21.48
Drainage Area Title:	EX-03	Description	Area (SF)	Area (AC)		MSD PI		Flow (CFS)
Description:	Entrance/Dropoff	*Roofs=	0	0.00	x	4.20	=	0.00
		Roofs=	0	0.00	x	3.54	=	0.00
Q=PPA	Q= flow (cfs)	Pavement=	64978	1.49	x	3.54	=	5.27
	PI= PI factor (MSD)	Gravel=	0	0.00	x	3.38	=	0.00
	A=area (acres)	Lawn=	58108	1.33	x	1.78	=	2.37
		DA Totals=	123086	2.83				7.64
Drainage Area Title:	EX-04	Description	Area (SF)	Area (AC)		MSD PI		Flow (CFS)
Description:	Tennis Court	*Roofs=	0	0.00	x	4.20	=	0.00
		Roofs=	0	0.00	x	3.54	=	0.00
Q=PPA	Q= flow (cfs)	Pavement=	17424	0.40	x	3.54	=	1.42
	PI= PI factor (MSD)	Gravel=	0	0.00	x	3.38	=	0.00
	A=area (acres)	Lawn=	10890	0.25	x	1.78	=	0.45
		DA Totals=	28314	0.65				1.88
Drainage Area Title:	EX-05	Description	Area (SF)	Area (AC)		MSD PI		Flow (CFS)
Description:	Parking	*Roofs=	0	0.00	x	4.20	=	0.00
		Roofs=	57971	1.33	x	3.54	=	4.71
Q=PPA	Q= flow (cfs)	Pavement=	56929	1.30	x	3.54	=	4.62
	PI= PI factor (MSD)	Gravel=	0	0.00	x	3.38	=	0.00
	A=area (acres)	Lawn=	283086	6.54	x	1.78	=	11.65
		DA Totals=	399986	9.18				20.98
Drainage Area Title:	EX-06	Description	Area (SF)	Area (AC)		MSD PI		Flow (CFS)
Description:	Misc Areas	*Roofs=	0	0.00	x	4.20	=	0.00
		Roofs=	0	0.00	x	3.54	=	0.00
Q=PPA	Q= flow (cfs)	Pavement=	0	0.00	x	3.54	=	0.00
	PI= PI factor (MSD)	Gravel=	0	0.00	x	3.38	=	0.00
	A=area (acres)	Lawn=	101626	2.33	x	1.78	=	4.15
		DA Totals=	101626	2.33				4.15
Existing Drainage Summary:								
		Description	Area (SF)	Area (AC)		MSD PI		Flow (CFS)
		*Roofs=	0	0.00	x	4.20	=	0.00
		Roofs=	86744	1.99	x	3.54	=	7.05
		Pavement=	235789	5.40	x	3.54	=	19.12
		Gravel=	0	0.00	x	3.38	=	0.00
		Lawn=	1019217	23.40	x	1.78	=	41.65
		Totals=	1341731	30.80				67.82

LEGEND

DRAINAGE AREA

GRAPHIC SCALE

(IN FEET)
1 INCH = 60 FT.

DRAINAGE AREA MAP FOR REVIEW INFORMATION ONLY. NOT FOR CONSTRUCTION

MSD PROJECT 18MSD-00571 MSD MAP 21Q

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Parkway South Middle School
Building Addition, Renovations & Site Improvements -
760 Woods Mill Road
Ballwin, MO 63011

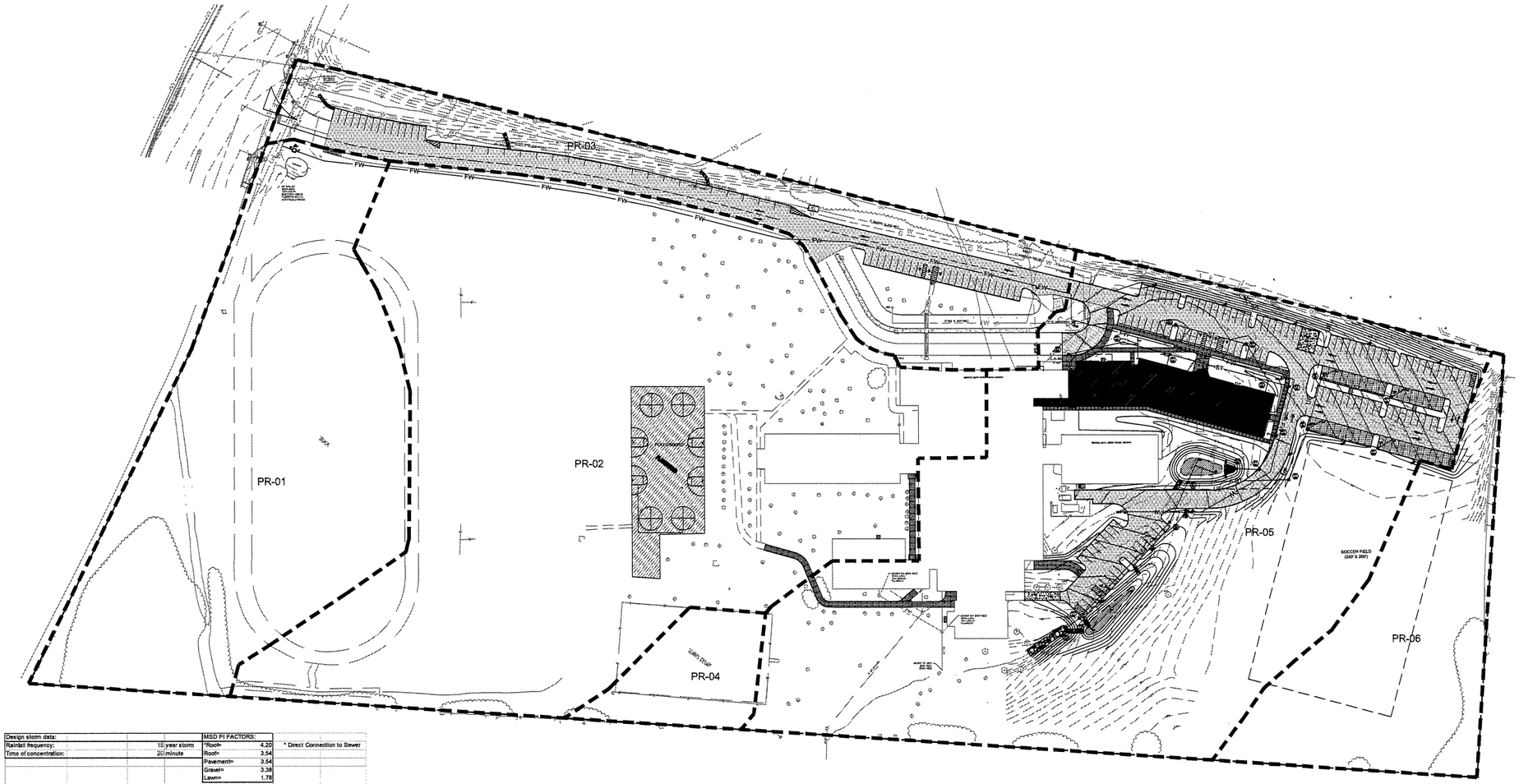
REVISIONS:

BID / PERMIT SET 02-04-2019

EXISTING DRAINAGE AREA MAP

PSD Project No.: 411801B
Project Number: 2018.033
Date: 02.04.2019
Drawn By: NJC

DAM1



Design storm data:			MSD PI FACTORS:		
Rainfall frequency:	10	year storm	*Roof=	4.20	* Direct Connection to Sewer
Time of concentration:	20	minute	Roof=	3.54	
			Pavement=	3.54	
			Gravel=	3.38	
			Lawn=	1.78	

Site Differential Summary: Undetained (Proposed Development)

Existing Drainage	Total Q=	67.82	CFS	
Proposed Drainage	Total Q=	69.47	CFS	
Differential	Total Q=	1.65	CFS	INCREASE

Proposed Drainage Areas:

Drainage Area Title:	PR-01	Description	Area (SF)	Area (AC)		MSD PI		Flow (CFS)
Description:	Track	*Roof=	0	0.00	x	4.20	=	0.00
		Roof=	0	0.00	x	3.54	=	0.00
Q=PI*A	Q= flow (cfs)	Pavement=	42560	0.44	x	3.54	=	1.56
	PI= PI factor (MSD)	Gravel=	0	0.00	x	3.38	=	0.00
	A=area (acres)	Lawn=	199340	4.59	x	1.78	=	8.17
		DA Totals=	243501	5.03				9.73

Drainage Area Title:	PR-02	Description	Area (SF)	Area (AC)		MSD PI		Flow (CFS)
Description:	Playground	*Roof=	0	0.00	x	4.20	=	0.00
		Roof=	28772	0.66	x	3.54	=	2.34
Q=PI*A	Q= flow (cfs)	Pavement=	52878	1.21	x	3.54	=	4.29
	PI= PI factor (MSD)	Gravel=	0	0.00	x	3.38	=	0.00
	A=area (acres)	Lawn=	363597	8.35	x	1.78	=	14.86
		DA Totals=	445239	10.22				21.48

Drainage Area Title:	PR-03	Description	Area (SF)	Area (AC)		MSD PI		Flow (CFS)
Description:	Entrance/Dropoff	*Roof=	0	0.00	x	4.20	=	0.00
		Roof=	0	0.00	x	3.54	=	0.00
Q=PI*A	Q= flow (cfs)	Pavement=	69141	1.82	x	3.54	=	5.36
	PI= PI factor (MSD)	Gravel=	0	0.00	x	3.38	=	0.00
	A=area (acres)	Lawn=	58945	1.31	x	1.78	=	2.33
		DA Totals=	122086	2.83				7.69

Drainage Area Title:	PR-04	Description	Area (SF)	Area (AC)		MSD PI		Flow (CFS)
Description:	Tennis Court	*Roof=	0	0.00	x	4.20	=	0.00
		Roof=	0	0.00	x	3.54	=	0.00
Q=PI*A	Q= flow (cfs)	Pavement=	17424	0.40	x	3.54	=	1.42
	PI= PI factor (MSD)	Gravel=	0	0.00	x	3.38	=	0.00
	A=area (acres)	Lawn=	10890	0.25	x	1.78	=	0.45
		DA Totals=	28314	0.65				1.86

Drainage Area Title:	PR-05	Description	Area (SF)	Area (AC)		MSD PI		Flow (CFS)
Description:	Parking	*Roof=	0	0.00	x	4.20	=	0.00
		Roof=	75153	1.73	x	3.54	=	6.11
Q=PI*A	Q= flow (cfs)	Pavement=	79196	1.82	x	3.54	=	6.45
	PI= PI factor (MSD)	Gravel=	0	0.00	x	3.38	=	0.00
	A=area (acres)	Lawn=	245313	5.63	x	1.78	=	10.02
		DA Totals=	399996	9.18				22.58

Drainage Area Title:	PR-06	Description	Area (SF)	Area (AC)		MSD PI		Flow (CFS)
Description:	Misc Areas	*Roof=	0	0.00	x	4.20	=	0.00
		Roof=	0	0.00	x	3.54	=	0.00
Q=PI*A	Q= flow (cfs)	Pavement=	0	0.00	x	3.54	=	0.00
	PI= PI factor (MSD)	Gravel=	0	0.00	x	3.38	=	0.00
	A=area (acres)	Lawn=	101626	2.33	x	1.78	=	4.15
		DA Totals=	101626	2.33				4.15

Proposed Drainage Summary:

	Description	Area (SF)	Area (AC)		MSD PI		Flow (CFS)
	*Roof=	0	0.00	x	4.20	=	0.00
	Roof=	103929	2.39	x	3.54	=	8.45
	Pavement=	259501	5.95	x	3.54	=	21.05
	Gravel=	0	0.00	x	3.38	=	0.00
	Lawn=	978301	22.46	x	1.78	=	39.98
	Totals=	1341731	30.80				69.47

LEGEND

DRAINAGE AREA

GRAPHIC SCALE

(IN FEET)
1 INCH = 60 FT.

DRAINAGE AREA MAP FOR REVIEW INFORMATION ONLY. NOT FOR CONSTRUCTION

MSD PROJECT 18MSD-00571 MSD MAP 21Q

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Parkway South Middle School Building Addition, Renovations & Site Improvements -

760 Woods Mill Road
Ballwin, MO 63011

REVISIONS:

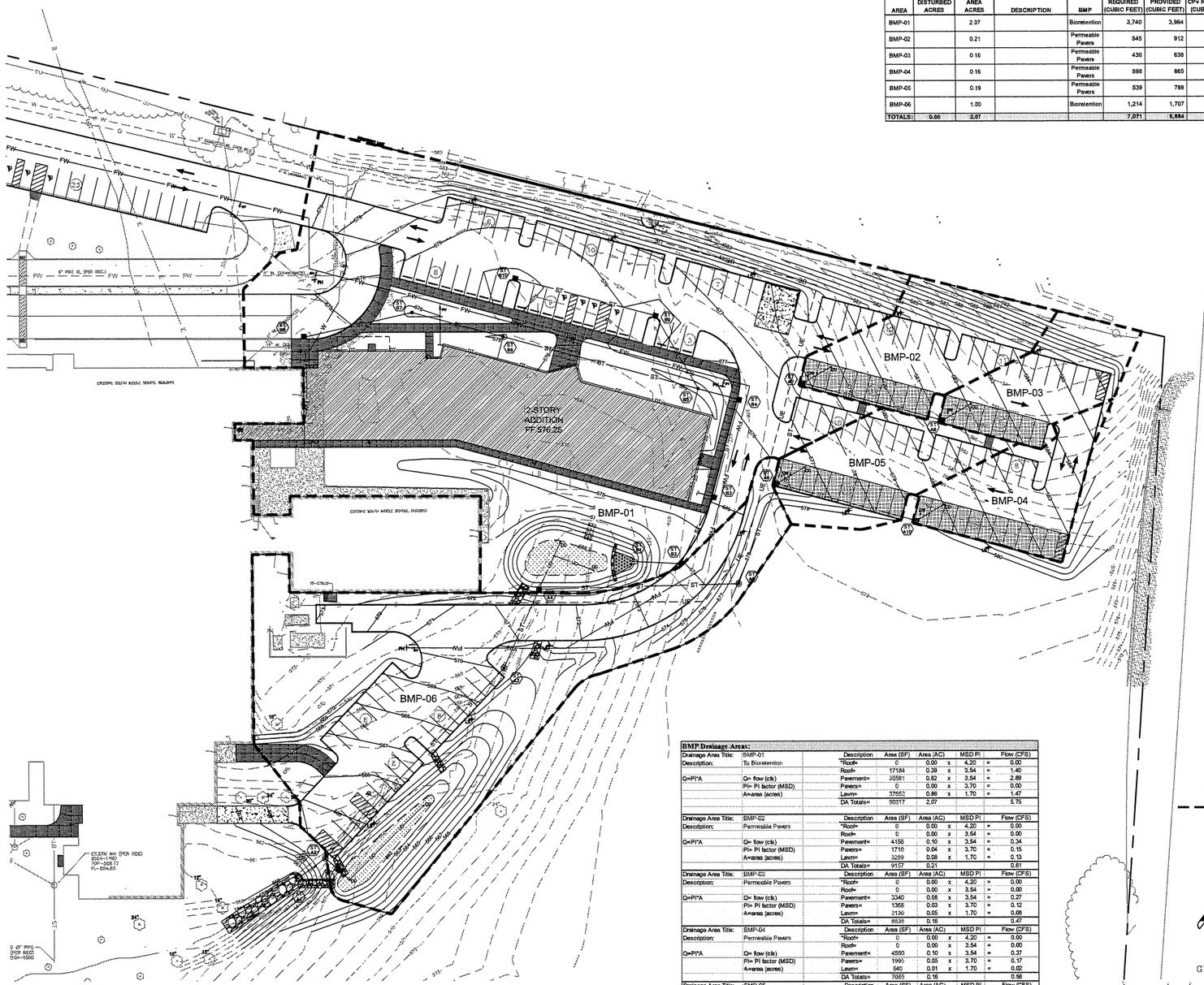
PROPOSED DRAINAGE AREA MAP

PSD Project No.:	411801B
Project Number:	2018.033
Date:	02.04.2019
Drawn By:	NJC

DAM2

BMP SUMMARY TABLE

AREA	PREVIOUSLY DISTURBED ACRES	DRAINAGE AREA ACRES	DESCRIPTION	BMP	WQv REQUIRED (CUBIC FEET)	WQv PROVIDED (CUBIC FEET)	CPv REQUIRED (CUBIC FEET)	CPv PROVIDED (CUBIC FEET)	Qp REQUIRED	Qp PROVIDED	REMARKS
BMP-01		2.07		Bioretention	3,740	3,964	7,851	8,539	NO	N/A	
BMP-02		0.21		Permeable Pavers	545	912	837	912	NO	N/A	
BMP-03		0.16		Permeable Pavers	436	638	626	638	NO	N/A	
BMP-04		0.16		Permeable Pavers	598	865	829	865	NO	N/A	
BMP-05		0.19		Permeable Pavers	539	798	782	798	NO	N/A	
BMP-06		1.00		Bioretention	1,214	1,707	3,074	3,492	NO	N/A	
TOTALS:	0.00	2.07			7,071	8,884	13,999	15,244			



BMP Drainage Areas:

			Description	Area (SF)	Area (AC)		MSD PI		Flow (CFS)
Drainage Area Title:	BMP-01		*Roof=	0	0.00	x	4.20	=	0.00
Description:	To Bioretention		Roof=	17184	0.39	x	3.54	=	1.40
Q=PI*A	Q= flow (cfs)		Pavement=	35561	0.82	x	3.54	=	2.89
	PI= PI factor (MSD)		Pavers=	0	0.00	x	3.70	=	0.00
	A=area (acres)		Lawn=	37552	0.86	x	1.70	=	1.47
			DA Totals=	90317	2.07				5.75
Drainage Area Title:	BMP-02		Description	Area (SF)	Area (AC)		MSD PI		Flow (CFS)
Description:	Permeable Pavers		*Roof=	0	0.00	x	4.20	=	0.00
			Roof=	0	0.00	x	3.54	=	0.00
Q=PI*A	Q= flow (cfs)		Pavement=	4158	0.10	x	3.54	=	0.34
	PI= PI factor (MSD)		Pavers=	1716	0.04	x	3.70	=	0.15
	A=area (acres)		Lawn=	3289	0.08	x	1.70	=	0.13
			DA Totals=	9157	0.21				0.61
Drainage Area Title:	BMP-03		Description	Area (SF)	Area (AC)		MSD PI		Flow (CFS)
Description:	Permeable Pavers		*Roof=	0	0.00	x	4.20	=	0.00
			Roof=	0	0.00	x	3.54	=	0.00
Q=PI*A	Q= flow (cfs)		Pavement=	3340	0.08	x	3.54	=	0.27
	PI= PI factor (MSD)		Pavers=	1368	0.03	x	3.70	=	0.12
	A=area (acres)		Lawn=	2130	0.05	x	1.70	=	0.08
			DA Totals=	6838	0.16				0.47
Drainage Area Title:	BMP-04		Description	Area (SF)	Area (AC)		MSD PI		Flow (CFS)
Description:	Permeable Pavers		*Roof=	0	0.00	x	4.20	=	0.00
			Roof=	0	0.00	x	3.54	=	0.00
Q=PI*A	Q= flow (cfs)		Pavement=	4550	0.10	x	3.54	=	0.37
	PI= PI factor (MSD)		Pavers=	1995	0.05	x	3.70	=	0.17
	A=area (acres)		Lawn=	540	0.01	x	1.70	=	0.02
			DA Totals=	7085	0.16				0.56
Drainage Area Title:	BMP-05		Description	Area (SF)	Area (AC)		MSD PI		Flow (CFS)
Description:	Permeable Pavers		*Roof=	0	0.00	x	4.20	=	0.00
			Roof=	0	0.00	x	3.54	=	0.00
Q=PI*A	Q= flow (cfs)		Pavement=	4113	0.09	x	3.54	=	0.33
	PI= PI factor (MSD)		Pavers=	1710	0.04	x	3.70	=	0.15
	A=area (acres)		Lawn=	2302	0.05	x	1.70	=	0.09
			DA Totals=	8125	0.19				0.57
Drainage Area Title:	BMP-06		Description	Area (SF)	Area (AC)		MSD PI		Flow (CFS)
Description:	To Bioretention		*Roof=	0	0.00	x	4.20	=	0.00
			Roof=	0	0.00	x	3.54	=	0.00
Q=PI*A	Q= flow (cfs)		Pavement=	16512	0.38	x	3.54	=	1.34
	PI= PI factor (MSD)		Pavers=	0	0.00	x	3.70	=	0.00
	A=area (acres)		Lawn=	26912	0.62	x	1.70	=	1.05
			DA Totals=	43424	1.00				2.39

LEGEND

DRAINAGE AREA

GRAPHIC SCALE

(IN FEET)
1 INCH = 20' FT.

DRAINAGE AREA MAP FOR REVIEW INFORMATION ONLY. NOT FOR CONSTRUCTION

MSD PROJECT 18MSD-00571 MSD MAP 21Q

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Ballwin, MO 63011

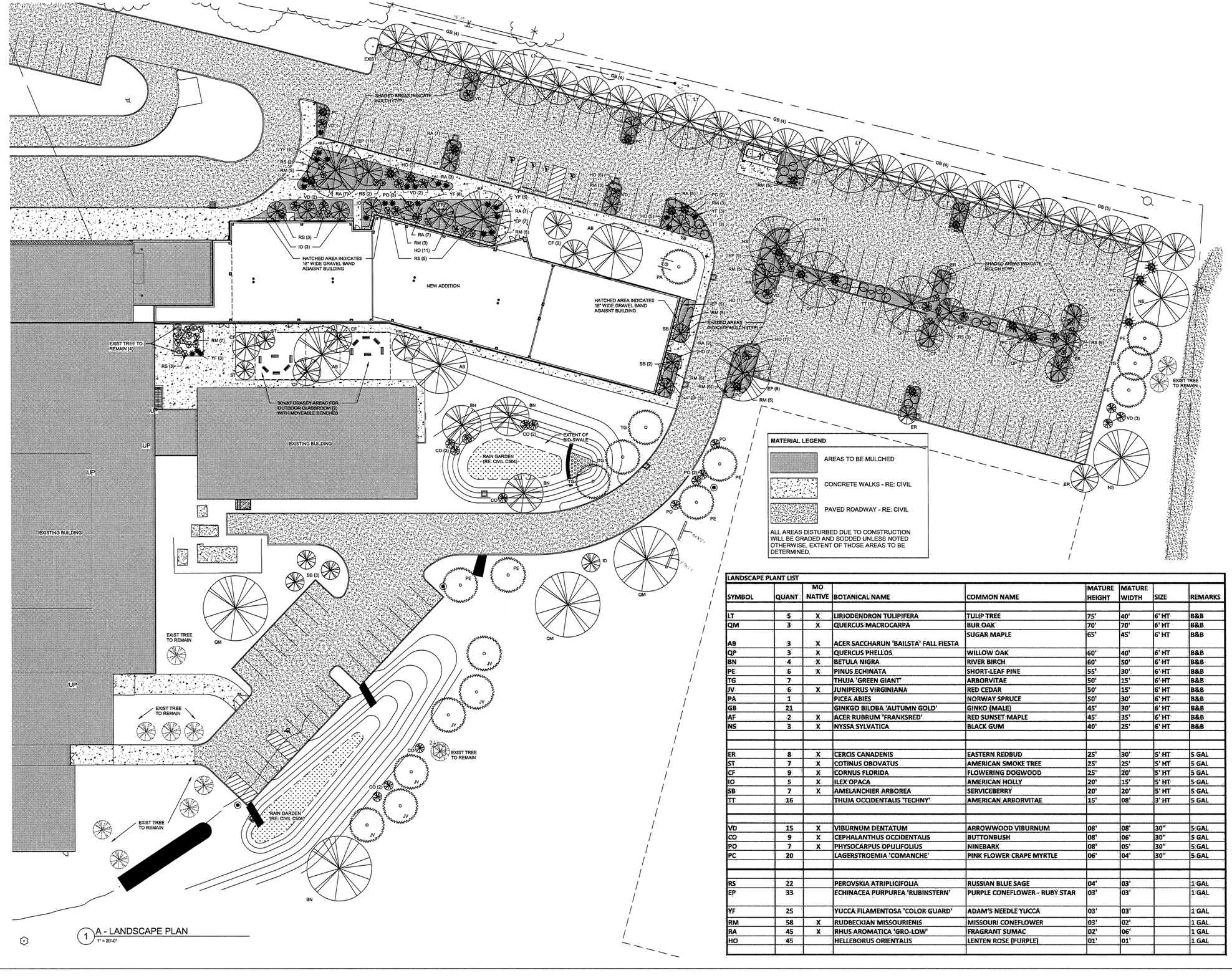
REVISIONS:

BID / PERMIT SET 02-04-2019

BMP DRAINAGE AREA MAP

PSD Project No.: 411801B
Project Number: 2018.033
Date: 02.04.2019
Drawn By: NJC

DAM3



1 A - LANDSCAPE PLAN
1" = 20'-0"

MATERIAL LEGEND

- AREAS TO BE MULCHED
- CONCRETE WALKS - RE: CIVIL
- PAVED ROADWAY - RE: CIVIL

ALL AREAS DISTURBED DUE TO CONSTRUCTION WILL BE GRADED AND SODDED UNLESS NOTED OTHERWISE. EXTENT OF THOSE AREAS TO BE DETERMINED.

LANDSCAPE PLANT LIST

SYMBOL	QUANT	MO NATIVE	BOTANICAL NAME	COMMON NAME	MATURE HEIGHT	MATURE WIDTH	SIZE	REMARKS
LT	5	X	LIRIODENDRON TULIPIFERA	TULIP TREE	75'	40'	6' HT	B&B
QM	3	X	QUERCUS MACROCARPA	BUR OAK	70'	70'	6' HT	B&B
AB	3	X	ACER SACCHARUN 'BAILSTA' FALL FIESTA	SUGAR MAPLE	65'	45'	6' HT	B&B
QP	3	X	QUERCUS PHELLOS	WILLOW OAK	60'	40'	6' HT	B&B
BN	4	X	BETULA NIGRA	RIVER BIRCH	60'	50'	6' HT	B&B
PE	6	X	PINUS ECHINATA	SHORT-LEAF PINE	55'	30'	6' HT	B&B
TG	7		THUJA 'GREEN GIANT'	ARBORVITAE	50'	15'	6' HT	B&B
JV	6	X	JUNIPERUS VIRGINIANA	RED CEDAR	50'	15'	6' HT	B&B
PA	1		PICEA ABIES	NORWAY SPRUCE	50'	30'	6' HT	B&B
GB	21		GINKGO BILOBA 'AUTUMN GOLD'	GINKO (MALE)	45'	30'	6' HT	B&B
AF	2	X	ACER RUBRUM 'FRANKSRED'	RED SUNSET MAPLE	45'	35'	6' HT	B&B
NS	3	X	NYSSA SYLVATICA	BLACK GUM	40'	25'	6' HT	B&B
ER	8	X	CERCIS CANADENIS	EASTERN REDBUD	25'	30'	5' HT	5 GAL
ST	7	X	COTINUS OBOVATUS	AMERICAN SMOKE TREE	25'	25'	5' HT	5 GAL
CF	9	X	CORNUS FLORIDA	FLOWERING DOGWOOD	25'	20'	5' HT	5 GAL
IO	5	X	ILEX OPACA	AMERICAN HOLLY	20'	15'	5' HT	5 GAL
SB	7	X	AMELANCHIER ARBOREA	SERVICEBERRY	20'	20'	5' HT	5 GAL
TT	16		THUJA OCCIDENTALIS 'TECHNY'	AMERICAN ARBORVITAE	15'	08'	3' HT	5 GAL
VD	15	X	VIBURNUM DENTATUM	ARROWWOOD VIBURNUM	08'	08'	30"	5 GAL
CO	9	X	CEPHALANTHUS OCCIDENTALIS	BUTTONBUSH	08'	06'	30"	5 GAL
PO	7	X	PHYSOCARPUS OPULIFOLIUS	NINEBARK	08'	05'	30"	5 GAL
PC	20		LAGERSTROEMIA 'COMANCHE'	PINK FLOWER CRAPE MYRTLE	06'	04'	30"	5 GAL
RS	22		PEROVSKIA ATRIPLICIFOLIA	RUSSIAN BLUE SAGE	04'	03'		1 GAL
EP	33		ECHINACEA PURPUREA 'RUBINSTERN'	PURPLE CONEFLOWER - RUBY STAR	03'	03'		1 GAL
YF	25		YUCCA FILAMENTOSA 'COLOR GUARD'	ADAM'S NEEDLE YUCCA	03'	03'		1 GAL
RM	58	X	RUDBECKIAN MISSOURIENIS	MISSOURI CONEFLOWER	03'	02'		1 GAL
RA	45	X	RHUS AROMATICA 'GRO-LOW'	FRAGRANT SUMAC	02'	06'		1 GAL
HO	45		HELLEBORUS ORIENTALIS	LENTEN ROSE (PURPLE)	01'	01'		1 GAL

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BID/ PERMIT SET 02-04-2019

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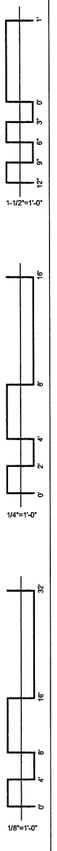
Parkway South Middle School
Building Addition, Renovations & Site Improvements - 2018.033
760 Woods Mill Road
Manchester, MO 63011

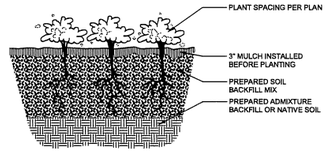
REVISIONS:

LANDSCAPE PLAN

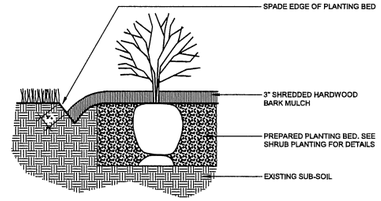
PSD Project No.: 411801B
Project Number: 2018.033
Date: 02.04.2019
Drawn By: RJL

L100

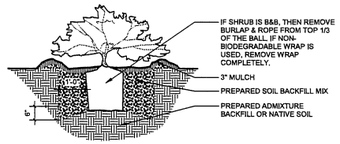




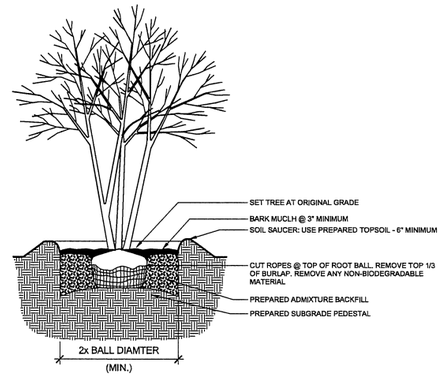
1 ANNUAL / PERENNIAL PLANTING
1/2" = 1'-0"



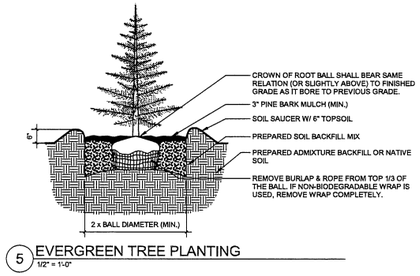
2 SPADE-CUT EDGE DETAIL
1/2" = 1'-0"



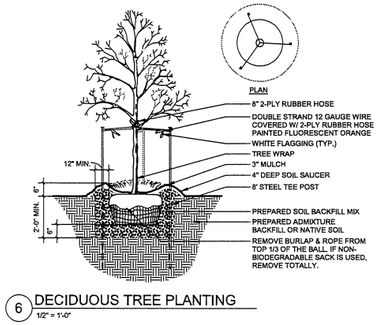
3 EVERGREEN / DECIDUOUS SHRUB PLANTING
1/2" = 1'-0"



4 MULTI-STEM TREE PLANTING
1/2" = 1'-0"



5 EVERGREEN TREE PLANTING
1/2" = 1'-0"



6 DECIDUOUS TREE PLANTING
1/2" = 1'-0"

LANDSCAPE NOTES

GENERAL LANDSCAPE NOTES:

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 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 CONTRACTOR'S RESPONSIBILITY TO DETERMINE OR VERIFY THE EXISTENCE OF AND EXACT LOCATION OF THE ABOVE (CALL 1-800-DIG-RITE).
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 CONTRACTOR'S RESPONSIBILITY TO:
   A.) VERIFY ALL EXISTING AND PROPOSED FEATURES SHOWN ON THE DRAWINGS PRIOR TO COMMENDMENT 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 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 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 PLANT MATERIAL BY THE ARCHITECT PRIOR TO ACCEPTANCE. PLANTS NOT CONFORMING EXACTLY TO 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. TEH 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.

MULCH:

1. ALL MULCH TO BE SHREDDED OAK BARK MULCH AT 3" DEPTH (AFTER COMPACTION) UNLESS OTHERWISE NOTED. MULCH SHALL BE CLEAN AND FREE OF ALL FOREIGN MATERIALS, INCLUDING WEEDS, MOLD, DELETERIOUS MATERIALS, ETC.
2. NO PLASTIC SHEETING OR FILTER FABRIC SHALL BE PLACED BENEATH SHREDDED BARK MULCH BEDS. MYRAFI FABRIC SHALL BE USED BENEATH ALL GRAVEL MULCH BEDS.
3. EDGE ALL BEDS WITH SPADE-CUT EDGE UNLESS OTHERWISE NOTED. REFER TO DETAIL.

MAINTENANCE:

1. CONTRACTOR SHALL PROVIDE A SEPERATE 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.

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 TOP SOIL 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. CONTRACTOR TO APPLY PRE-EMERGENT HERBICIDE TO ALL PLANTING BEDS UPON COMPLETION OF PLANTING OPERATIONS AND BEFORE APPLICATION OF SHREDDED BARK MULCH.

MISCELLANEOUS 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.

TURF:

1. ALL DISTURBED LAWN AREAS TO BE SEEDED WITH A MIXTURE OF TURF-TYPE FESCUE (300# PER ACRE) AND BLUEGRASS (18# PER ACRE). 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.
2. ANY POINTS CARRYING CONCENTRATED WATER LOADS AND ALL SLOPES OF 15% OR GREATER SHALL BE SODDED.
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. CONTRACOTR TO ENSURE SOD IS PLACED BELOW SIDEWALK AND ALL PAVED AREA ELEVATIONS TO ALLOW FOR PROPER DRAINAGE.

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BID/ PERMIT SET 02-04-2019

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Parkway South Middle School Building Addition, Renovations & Site Improvements -

760 Woods Mill Road
Manchester, MO 63011

REVISIONS:

LANDSCAPE DETAILS

PSD Project No.:	411801B
Project Number:	2018.033
Date:	02.04.2019
Drawn By:	RJL

L101