

BAND PRACTICE AREA PAVEMENT ADDITION TO ROCKWALL HIGH SCHOOL

Rockwall Independent School District

Index Of Drawings

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- C 4 Erosion Control Notes

Prepared For
Rockwall Independent School District
1191 T.L. Townsend Drive
Rockwall, Texas 75087
Telephone 972 772-1148

Engineer

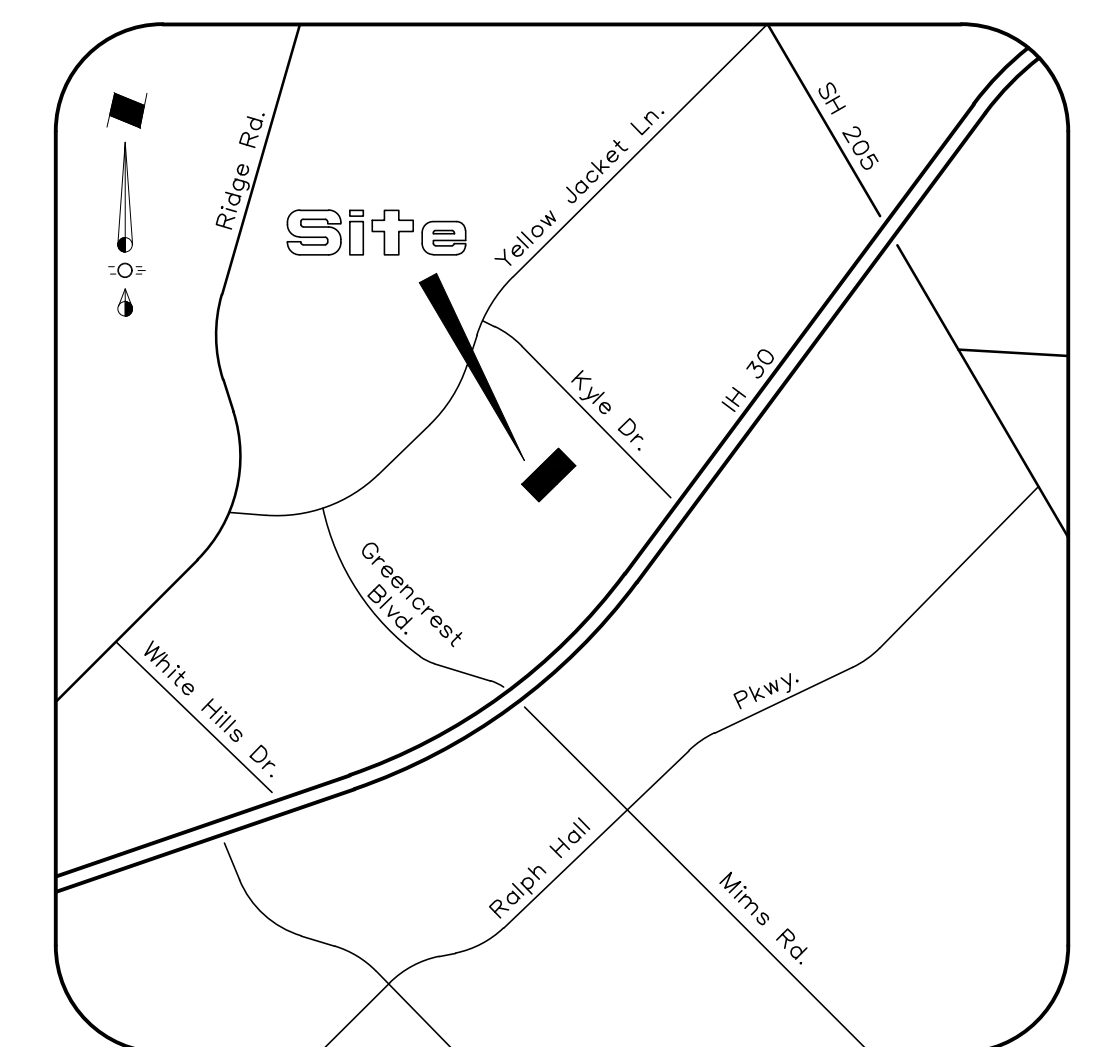


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(972) 359-1733 Off
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Texas Registration No. 579



RECORD
DRAWING

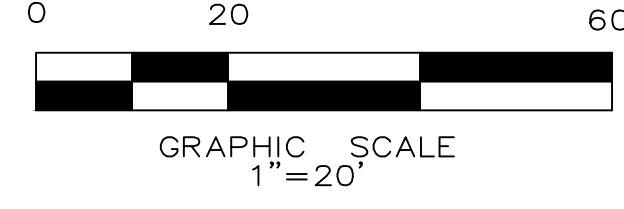
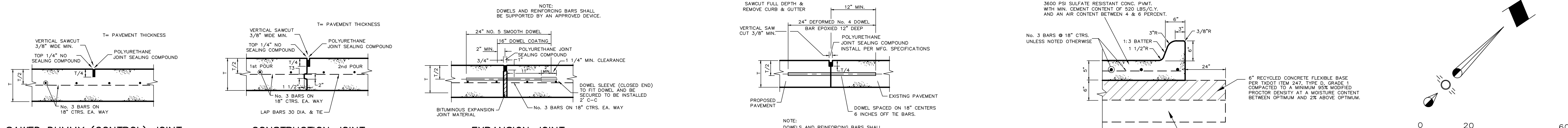
REVISED TO CONFORM TO
CONSTRUCTION RECORDS
Ronny Klingbeil, P.E.
11-1-16
Date



Vicinity Map

NOTE:

Prior to beginning any construction or construction staking, it shall be the Contractor's responsibility to contact the civil engineer to insure that all parties are in possession of the most current set of construction documents.



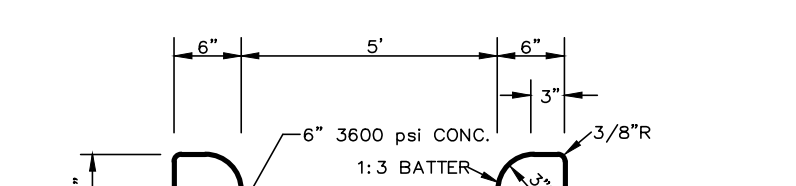
SAWED DUMMY (CONTROL) JOINT
N.T.S.
MAXIMUM SPACING IS 15' CTRS. (TYP.)

CONSTRUCTION JOINT
N.T.S.

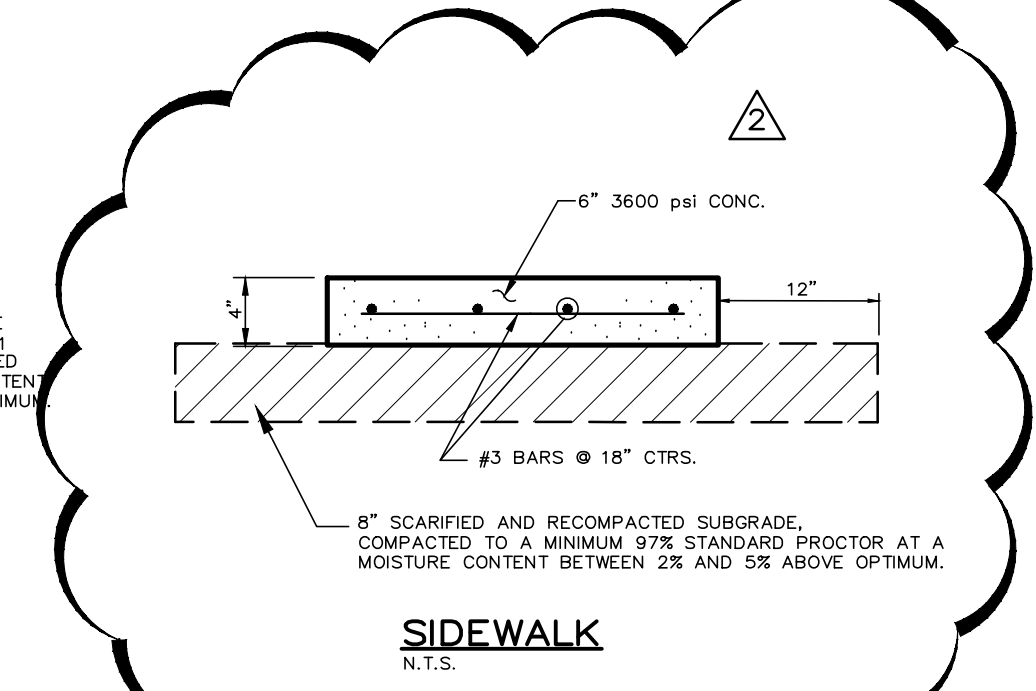
EXPANSION JOINT
N.T.S.

LONGITUDINAL BUTT JOINT
N.T.S.

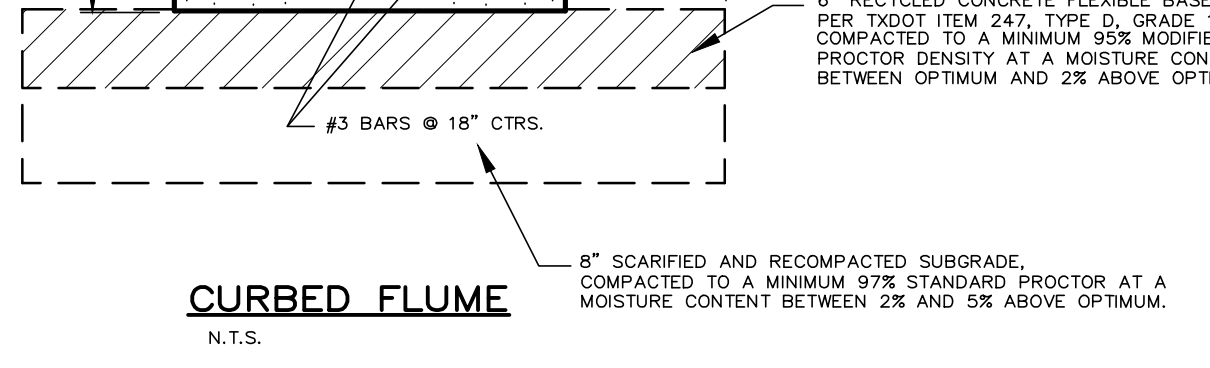
CONCRETE PAVEMENT SECTION
N.T.S.



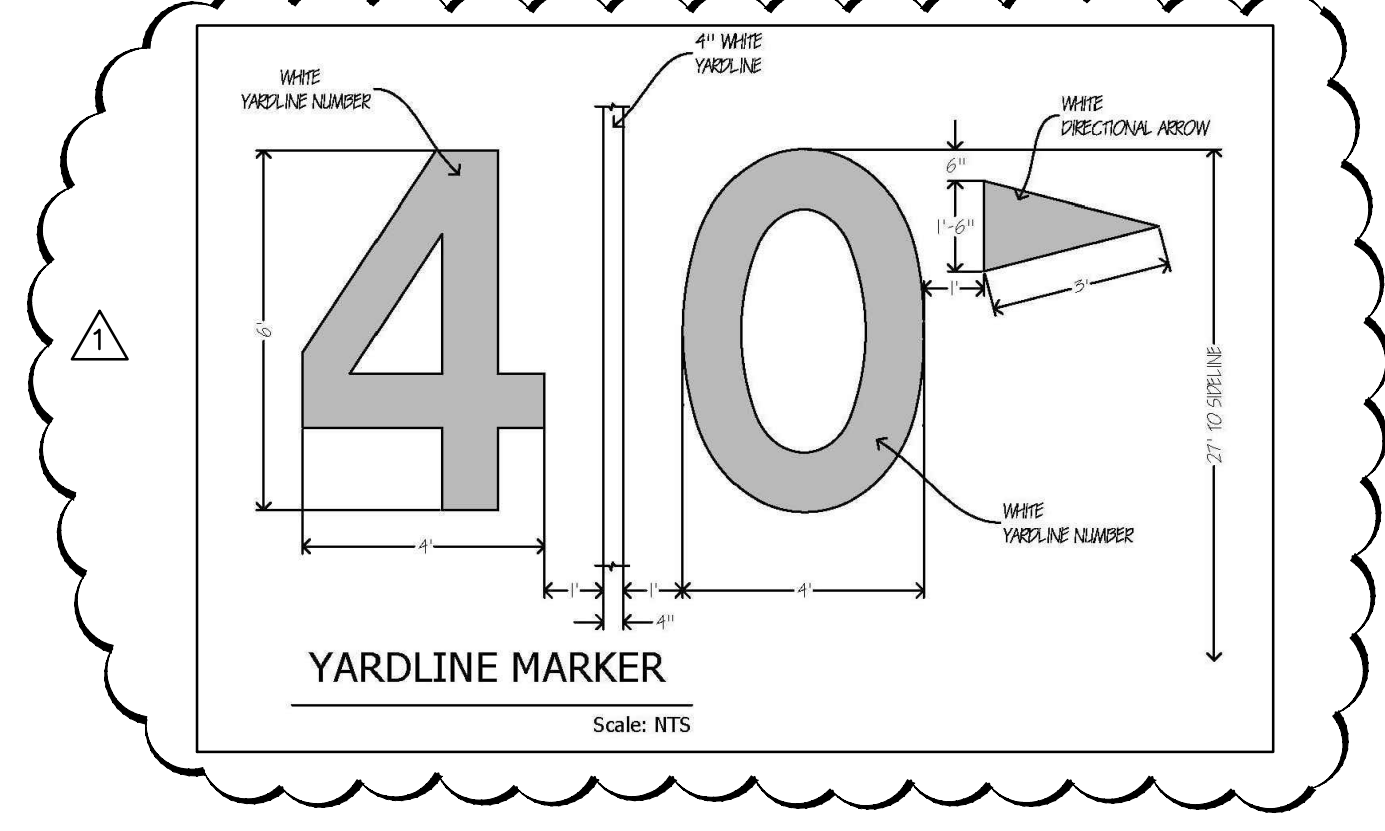
CURBED FLUME
N.T.S.



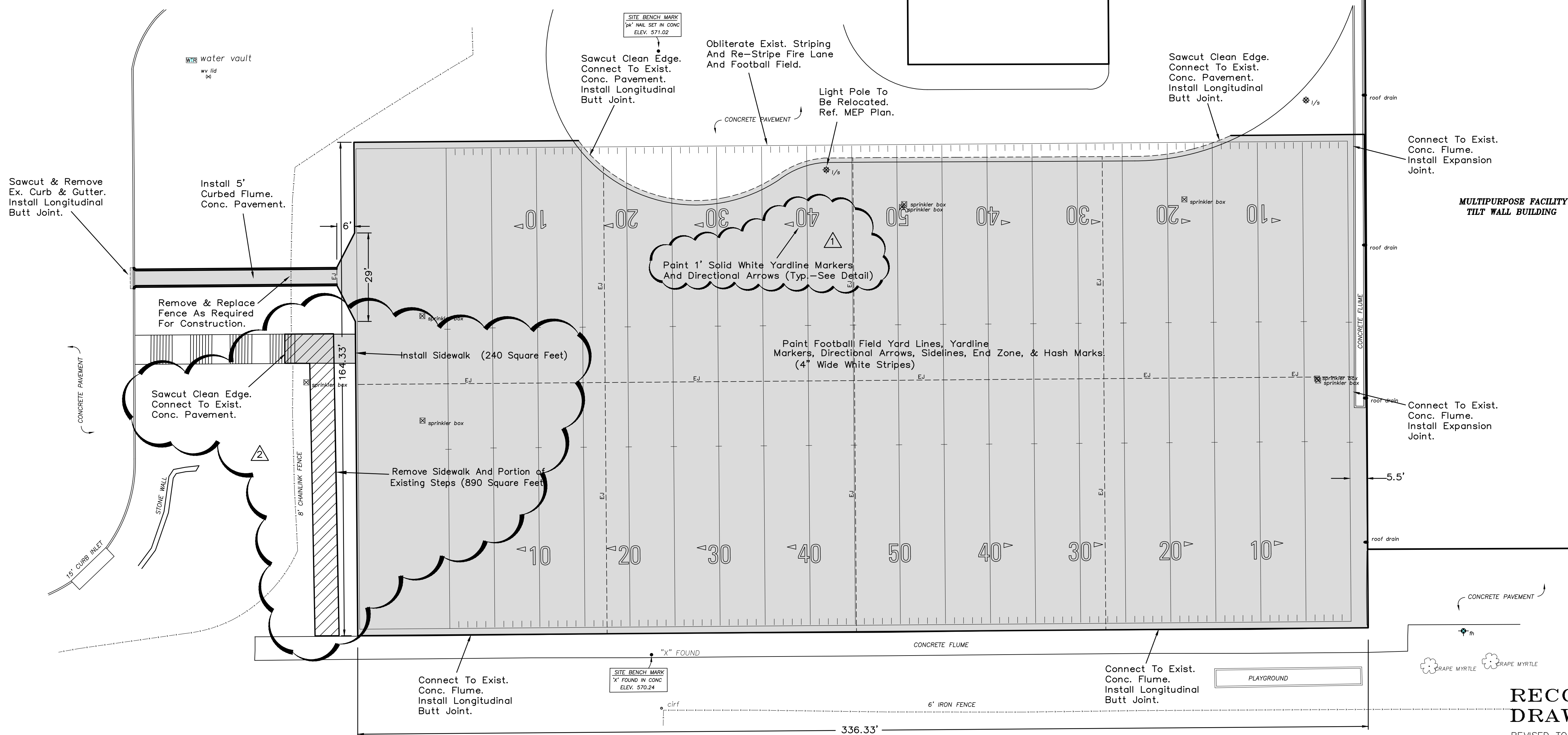
SIDEWALK
N.T.S.



CONCRETE PAVEMENT SECTION
N.T.S.



YARDLINE MARKER
Scale: N.T.S.



PAVING NOTES

- All materials and construction shall conform to the City of Rockwall Standards and Specifications, and North Central Texas Council of Governments Standard Specifications for Public Works Construction, Latest Edition.
- It shall be the responsibility of the Contractor to protect all public and non-public utilities in the construction of this project. All manholes, cleanouts, valve boxes, fire hydrants, etc. must be adjusted to proper line and grade by the Contractor prior to and after the placing of permanent paving and/or vegetation. Utilities must be maintained to proper line and grade during construction of this project.
- The Contractor shall be responsible for coordinating with all the appropriate utility companies for the location of all utilities within the construction area.
- The Paving Contractor shall not place permanent pavement until all sleeving for irrigation, electric, gas, telephone, cable TV, site lighting, etc. has been installed. It shall be the Paving Contractor's responsibility to insure that all sleeving is in place prior to placing permanent paving.
- All paving and earthwork operations shall conform to the recommendations in the Geotechnical Exploration Report.
- All dimensions are to face of curb unless otherwise noted.
- Construct barrier free ramps at all driveway and street intersections.
- Stripe fire lanes per City of Rockwall Standards.
- Irrigation to be capped by contractor and relocated by Owner.
- Solid sod common bermuda shall be installed in all disturbed areas.

LEGEND

- 5" 3600 PSI (Min 6.5 Sack Mix) Sulfate Resistant Reinf. Conc. Pavement On 6" Compacted Flexible Base Material On Recompacted Subgrade.
- Expansion Joint

CAUTION EXISTING UTILITIES!!!!
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RECORD DRAWING

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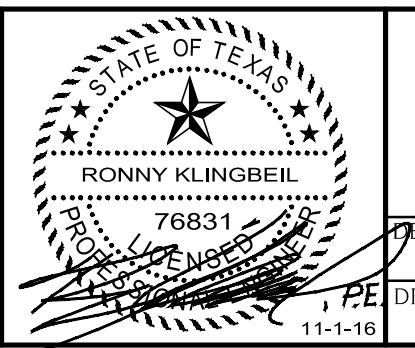
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REVISION	DATE	DESCRIPTION
1	5-2-16	Added Yardline Markers And Directional Arrows
2	7-11-16	Removed Sidewalk, Added Sidewalk, And Revised Grading

MISC. INFORMATION



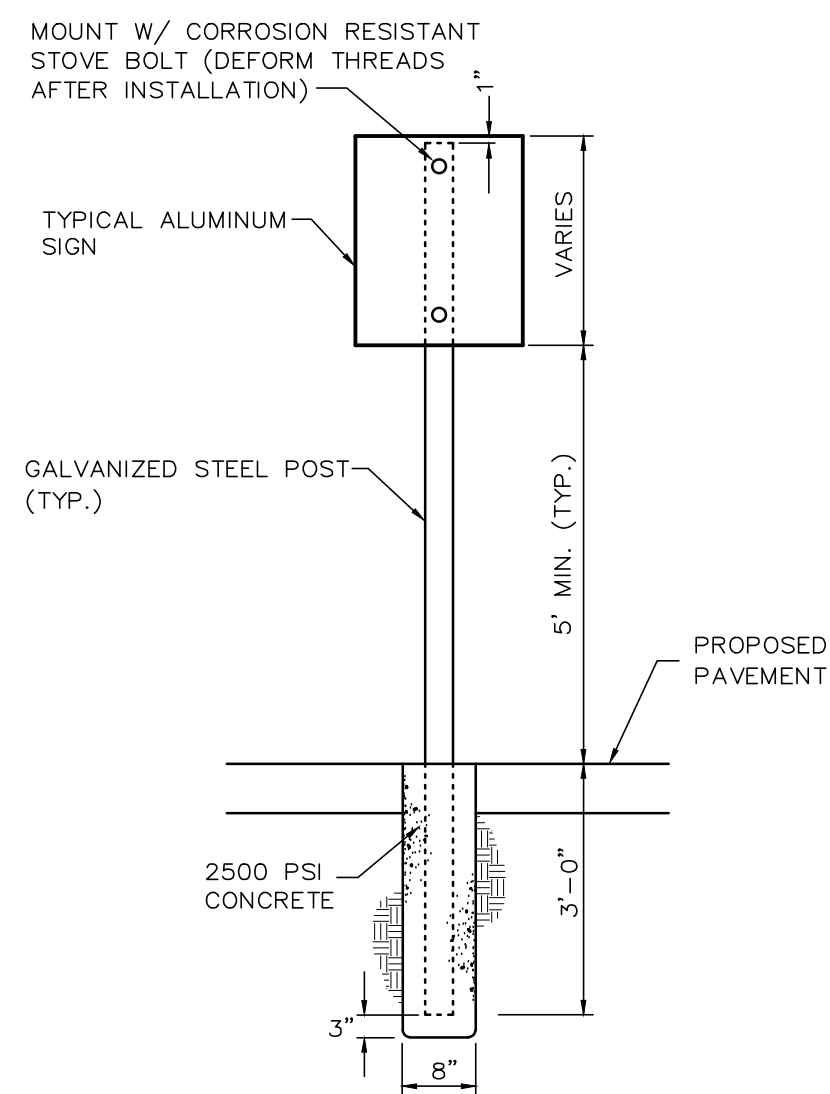
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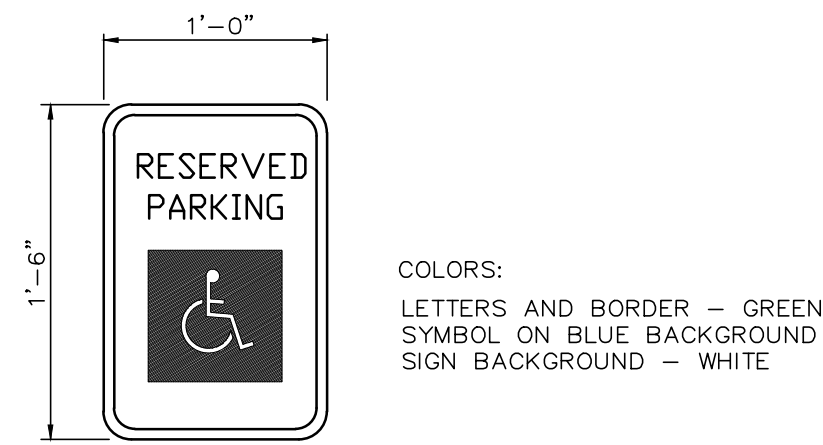
SIGNED BY: RLK Engineering	TECH REVIEW: 16028 PAV.dwg	DRAWING FILE: 1-2017	SHEET: C1 OF 4
DRAWN BY: RLK Engineering	PEER REVIEW: RLK	DRAWING DATE: 4-12-16	PROJECT NUMBER: RLK 16028

PAVING PLAN
ROCKWALL HIGH SCHOOL
ROCKWALL, TEXAS

Nov 02, 2016 - 9:31am. User: rony

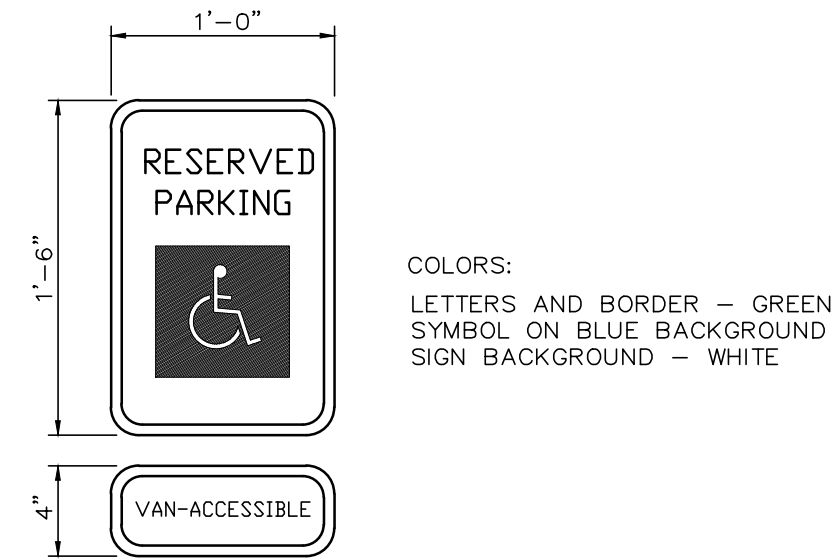


TYPICAL SIGNAGE MOUNTING DETAIL
N.T.S.



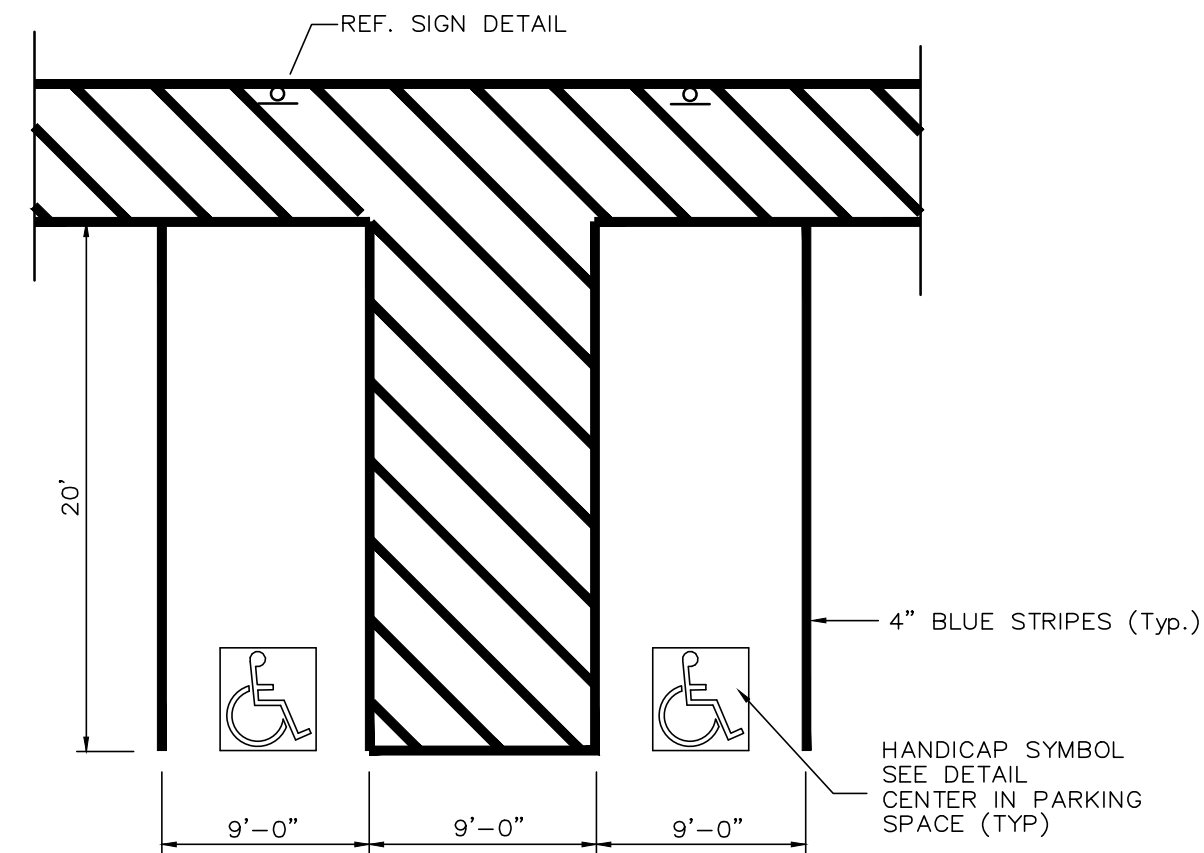
NOTES:
 1. SPACING BETWEEN LETTERS, COLORS, AND PROCESSES SHALL CONFORM STANDARD HIGHWAY AND SIGN DESIGNS FOR TEXAS.
 2. INSTALL WHERE INDICATED ON PLANS.
 3. VAN-ACCESSIBLE SIGNAGE ON VAN SPACES ONLY.

ACCESSIBLE PARKING SIGN
N.T.S.

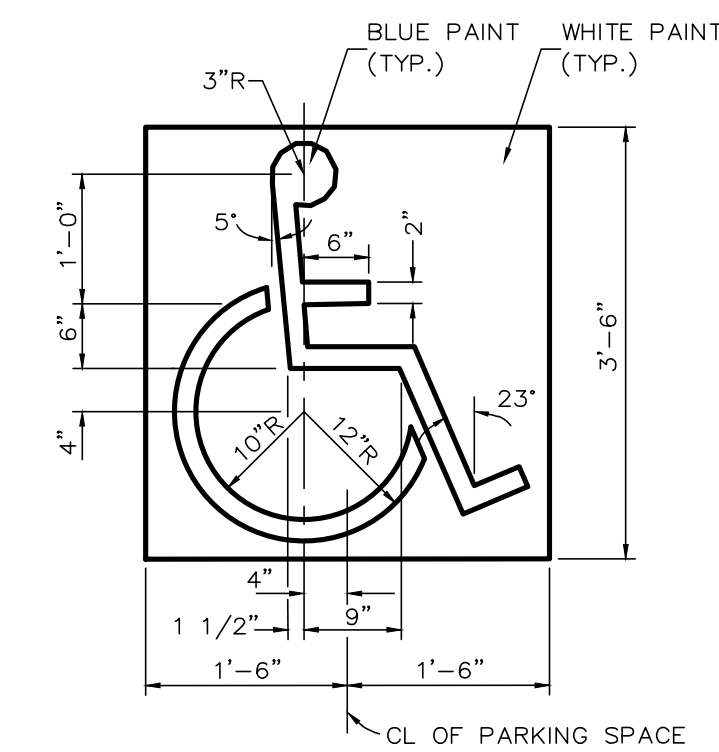


NOTES:
 1. SPACING BETWEEN LETTERS, COLORS, AND PROCESSES SHALL CONFORM STANDARD HIGHWAY AND SIGN DESIGNS FOR TEXAS.
 2. INSTALL WHERE INDICATED ON PLANS.
 3. VAN-ACCESSIBLE SIGNAGE ON VAN SPACES ONLY.
 4. A MINIMUM ONE VAN-ACCESSIBLE SIGN SHALL BE PROVIDED.

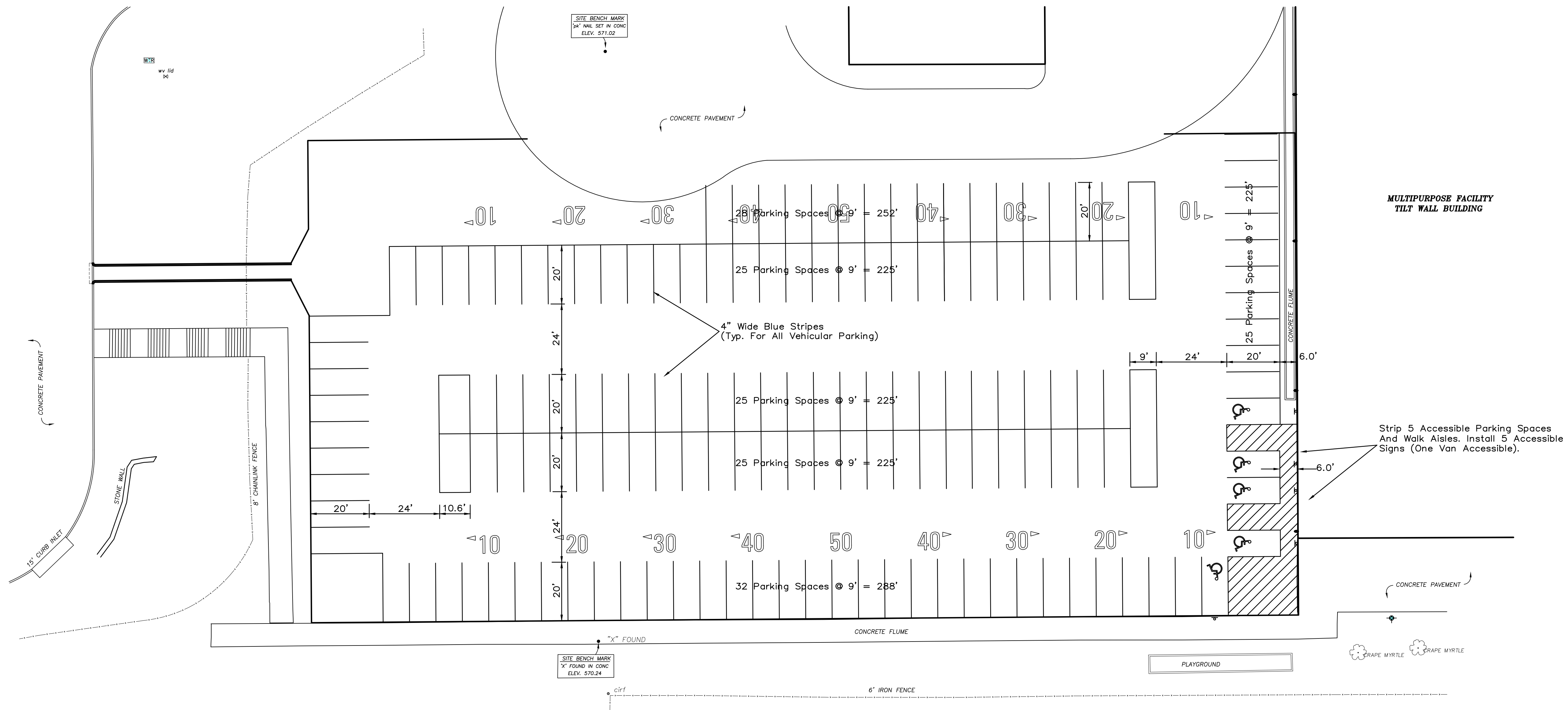
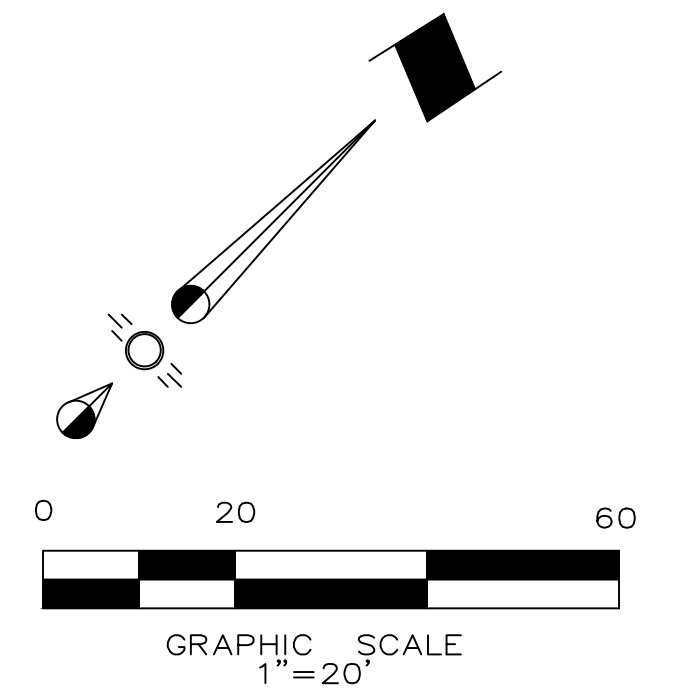
VAN-ACCESSIBLE PARKING SIGN
N.T.S.



ACCESSIBLE STRIPING DETAIL
N.T.S.



ACCESSIBLE SYMBOL DETAIL
N.T.S.



MULTIPURPOSE FACILITY
TILT WALL BUILDING

Strip 5 Accessible Parking Spaces
And Walk Aisles. Install 5 Accessible
Signs (One Van Accessible).

**RECORD
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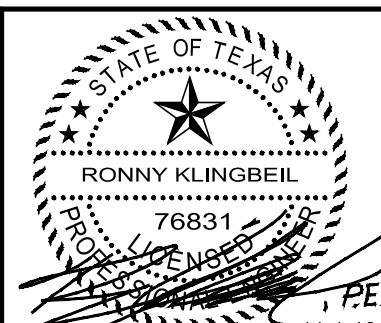
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NOTE:
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REVISION	DATE	DESCRIPTION
1	5-2-16	Added Vehicular Striping And Signage Plan



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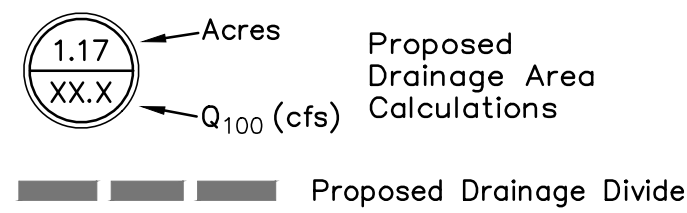


PARKING LOT STRIPING AND SIGNAGE PLAN
 ROCKWALL HIGH SCHOOL
 ROCKWALL, TEXAS

SIGNED BY: RLK Engineering	TECH REVIEW: RLK	DRAWING FILE: 16028 Vehicular Parking Lot Striping and Signage.dwg	DRAWING SCALE: AS SHOWN	SHEET: C 1.1 OF 4
DRAWN BY: RLK Engineering	PEER REVIEW: RLK	DRAWING DATE: 4-12-16	PROJECT NUMBER: RLK 16028	

Nov 02, 2016 - 9:33am User: rony

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PROPOSED CONDITIONS DRAINAGE CALCULATIONS

Area Designation (Acres)	Area (Acres)	Runoff Coefficient	Time of Concentration (Min)	Rainfall Intensity (in/hr)	100 Year Runoff Rate (CFS)
D.A. 1	1.17	0.90	10	9.8	10.3
D.A. 2	0.45	0.90	10	9.8	4.0

EXISTING VRS. PROPOSED RUNOFF

Proposed Pavement Area = 1.22 Acres

Existing Conditions 100 Year Runoff Rate Within The Proposed 1.22 Acre Pavement Area = $(0.35)(8.3)(1.22) = 3.54\text{cfs}$

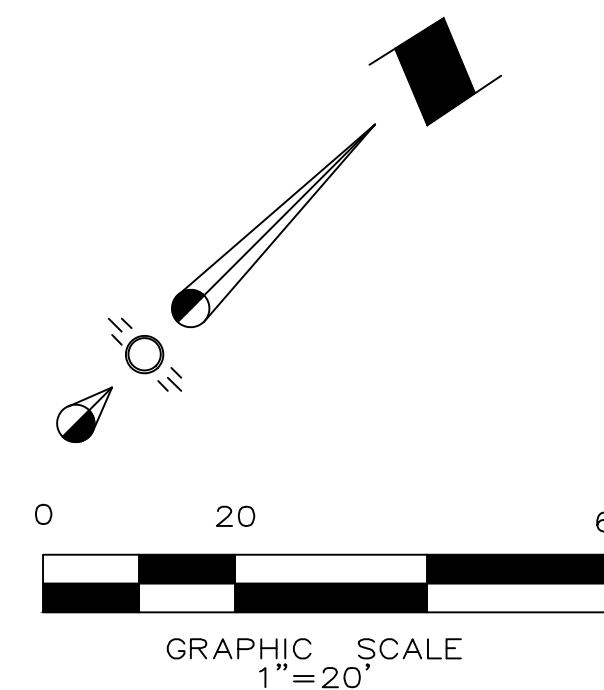
Proposed Conditions 100 Year Runoff Rate Within The Proposed 1.22 Acre Pavement Area: $(0.9)(9.8)(1.22) = 10.76\text{cfs}$

ORIGINAL DESIGN RUNOFF VRS. PROPOSED RUNOFF

The Downstream Storm Sewer System Was Designed Utilizing A Runoff Coefficient Of 0.8 And An 100 Year Intensity of 9.8 in/hr. Which Yields A Total 100 Year Runoff Rate Of 12.7cfs For Drainage Areas DA-1, and DA-2.

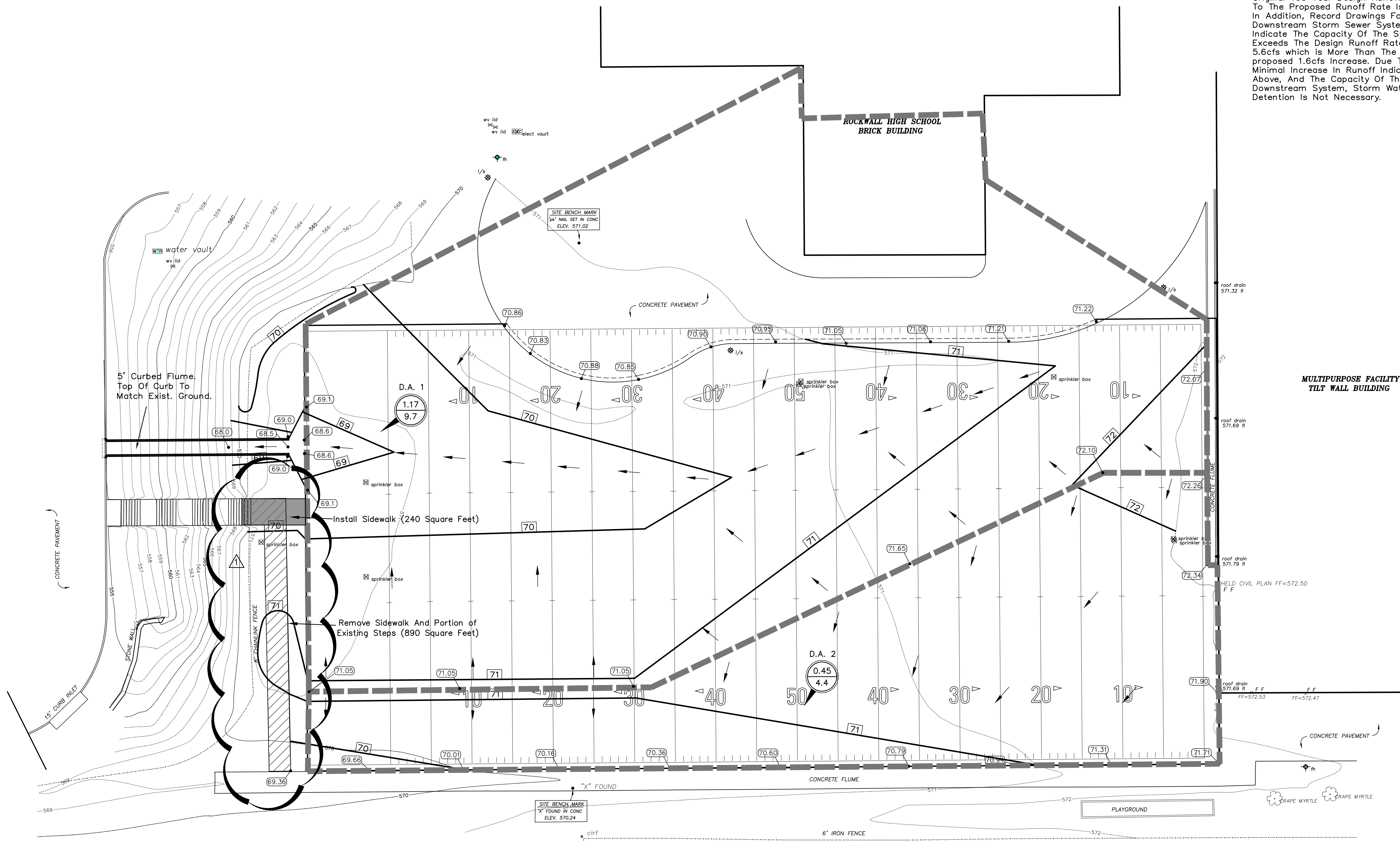
Proposed Conditions Runoff For These Two Areas, Using A Runoff Coefficient Of 0.9 And An 100 Year Intensity of 9.8 in/hr., Yields A Total 100 Year Runoff Rate Of 14.3cfs For Drainage Areas DA-1, and DA-2.

Therefore The Increase From The Original 100 Year Design Runoff Rate To The Proposed Runoff Rate Is 1.6cfs. In Addition, Record Drawings For The Downstream Storm Sewer System Indicate The Capacity Of The System Exceeds The Design Runoff Rate By 5.6cfs which is More Than The proposed 1.6cfs Increase. Due To The Minimal Increase In Runoff Indicated Above, And The Capacity Of The Downstream System, Storm Water Detention Is Not Necessary.



GRADING NOTES

- All materials and construction shall conform to the City of Rockwall Standards and Specifications, and North Central Texas Council of Governments Standard Specifications for Public Works Construction, 3rd Edition.
- Prior to starting construction, the Contractor shall make certain that all required permits and approvals have been obtained. No construction or fabrication shall begin until the Contractor has received and thoroughly reviewed all plans and other documents approved by all of the permitting authorities.
- In the event an item is not covered in the City's specs., the City Engineer's decision shall apply.
- Contractor shall meet O.S.H.A requirements for trench safety.
- Barricading, traffic control, and project signs shall conform To Texas Department of Transportation.
- The Contractor shall verify the suitability of all existing and proposed site conditions, including grades and dimensions before commencement of any construction. In the event of any conflict, and prior to commencement of any construction, immediately notify Engineer. Minor adjustments of finish grade to accomplish spot drainage are acceptable if necessary, upon prior approval of Engineer. All paving installed shall "flush out" at any juncture with existing paving. All islands shall be crowned to allow positive drainage over top of curb.
- The locations of underground utilities shown on this plan are based on field surveys and local utility company records. It shall be the Contractor's full responsibility to contact the various utility companies to locate their utilities prior to starting construction. Any damage to existing utilities is to be repaired at Contractor's expense.
- Proposed spot elevations are finished grade elevations.
- All subgrade preparation shall be as directed in accordance with the Geotechnical Report.
- All proposed grades in landscaped areas are finished grade elevations. Contractor to allow for sodding of these areas.
- Any damage to adjoining property during construction shall be repaired to pre construction conditions or better at the expense of the Contractor.
- Erosion control shall be in place prior to the disturbance of any existing surface.
- All sidewalk slopes including crosswalks, shall not exceed the following ADA requirements:
 1:20 longitudinal (along the walk)
 1:50 per foot transverse (across the walk)
- All accessible parking space slopes including walks aisles, shall not exceed 2.0% or 1:50 in any direction.
- It shall be the Contractor's responsibility to remove excess earthwork material from the site at no additional cost to the owner.
- If additional earthwork material is required to achieve the grades indicated, it shall be imported by the Contractor at no additional cost to the owner.
- All Fill To Be Compacted to a minimum 95% of maximum dry density as defined by ASTM D698, with the moisture content between 2% and 5% above optimum. The upper 8" below the pavement or imported pavement subgrade material shall be compacted to a minimum 97% of maximum dry density as defined by ASTM D698, with the moisture content between optimum and 3% above optimum.



RECORD DRAWING
 REVISED TO CONFORM TO CONSTRUCTION RECORDS
 Ronny Klingbell, P.E.
 11-1-16
 Date

LEGEND

	Proposed Spot Elevation
	Existing Spot Elevation
	Proposed Contour
	Existing Contour
	Direction Of Flow

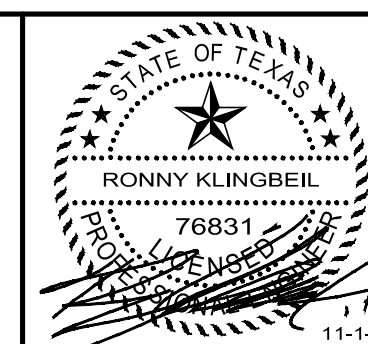
MISC. INFORMATION

REVISION	DATE	DESCRIPTION
1	7-11-16	Removed Sidewalk, Added Sidewalk, And Revised Grading.

NOTE:
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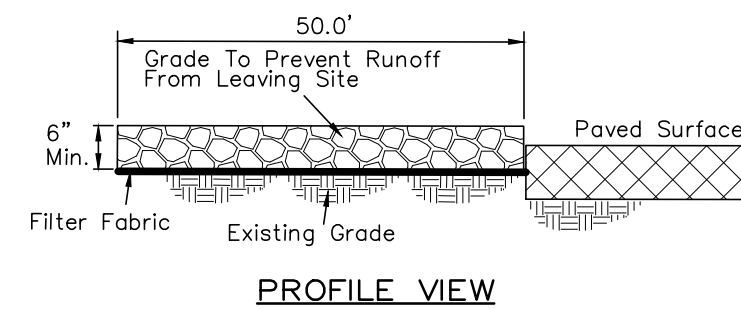
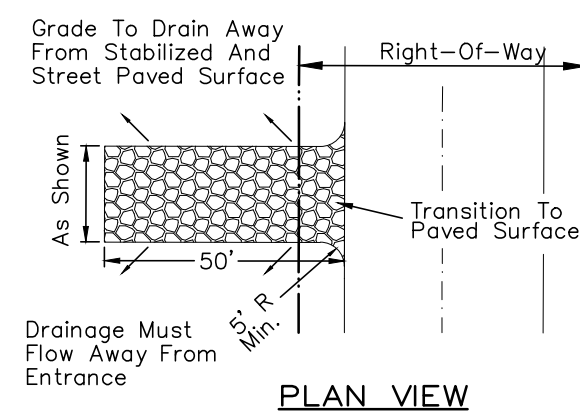


GRADING & DRAINAGE PLAN
 ROCKWALL HIGH SCHOOL
 ROCKWALL, TEXAS

DESIGNED BY: RLK Engineering	TECH REVIEW: RLK	DRAWING FILE: 16028 GRAD.dwg	SHEET: C 2 OF 4
DRAWN BY: RLK Engineering	PEER REVIEW: RLK	DRAWING DATE: 4-12-16	PROJECT NUMBER: RLK 16028

NOTES

- Stone shall be 4 to 6 inch diameter crushed rock.
- When necessary, vehicles shall be cleaned to remove sediment prior to entrance onto a public roadway. When washing is required, it shall be done on an area stabilized with crushed stone, with drainage flowing away from both the street and the stabilized entrance. All sediment shall be prevented from entering any storm drain, ditch, or watercourse using approved methods.
- The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto paved surfaces. This may require periodic top dressing with additional stone as conditions demand. All sediment spilled, dropped, washed, or tracked onto paved surfaces must be removed immediately.
- The entrance must be properly graded or incorporate a drainage swale to prevent runoff from leaving the construction site.
- Exact location of stabilized construction entrance shall be determined by contractor at time of construction.

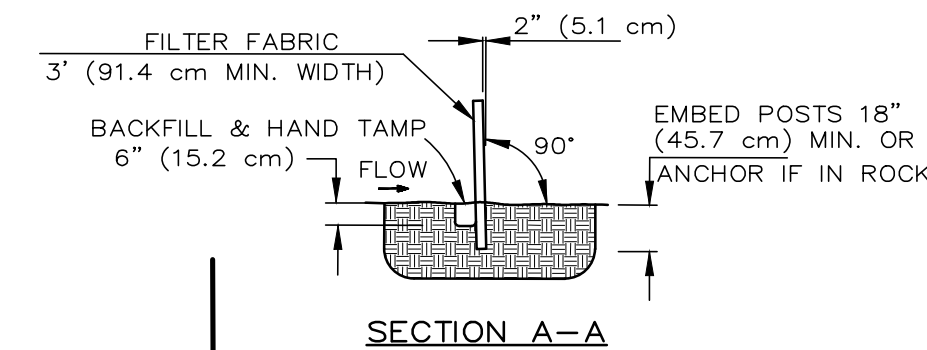
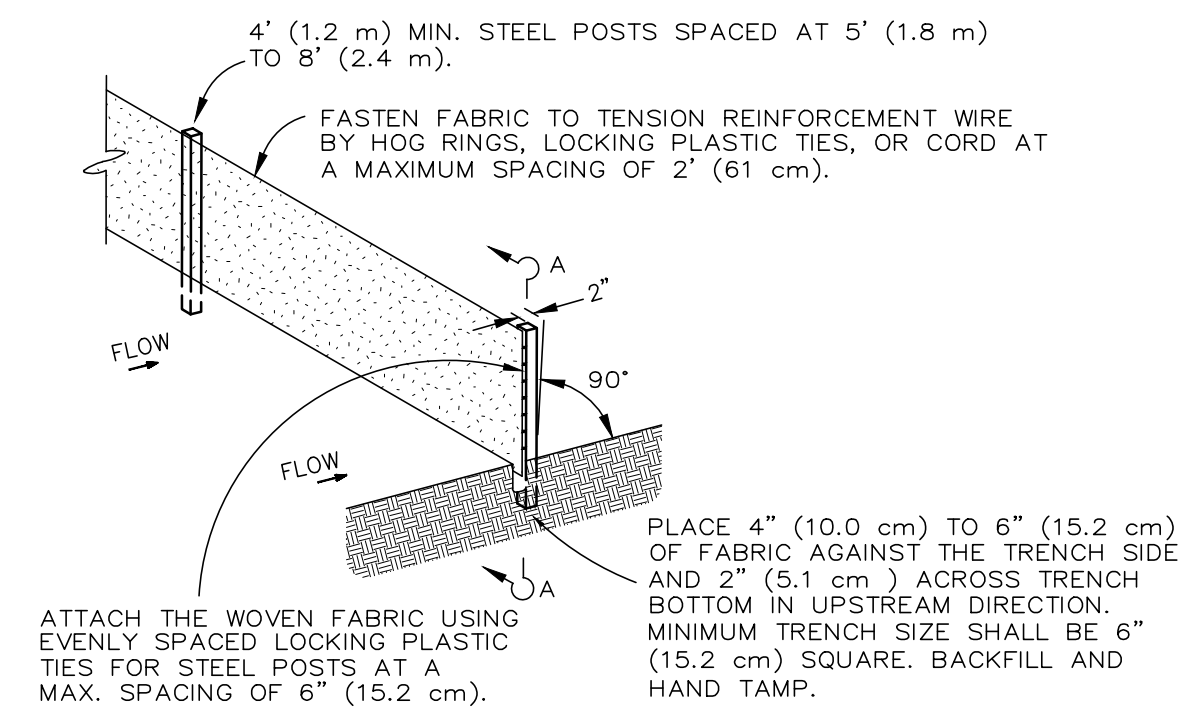


STABILIZED CONSTRUCTION ENTRANCE

Location of stabilized construction entrance shall be determined by contractor at time of construction.

SILT FENCE

- Steel posts which support the silt fence shall be installed on a slight angle toward the anticipated runoff source. Post must be embedded a minimum of one foot.
- The toe of the silt fence shall be trenched in with a spade or mechanical trencher, so that the downslope face of the trench is flat and perpendicular to the line of flow. Where fence cannot be trenched (e.g. pavement), weight fabric flap with washed gravel on uphill side to prevent flow under fence.
- The trench must be a minimum of 6" deep and 6" wide to allow for the silt fence fabric to be laid in the ground and backfilled with compacted material.
- Silt fence should be securely fastened to each steel support post or to woven wire, which is then in turn attached to the steel fence post. There shall be a 6" double overlap, securely fastened where ends of fabric meet.
- Inspection shall be made weekly or after each rainfall event. Repair or replacement shall be made promptly as needed.
- Silt fence shall be removed when the site is completely stabilized so as not to block or impede storm flow or drainage.
- Accumulated silt shall be removed when it reaches a depth of 6". The silt shall be disposed of in an approved site and in such a manner as to not contribute to additional siltation.
- Wood posts are not allowed.



SILT FENCE
N.T.S.

EROSION CONTROL NOTES

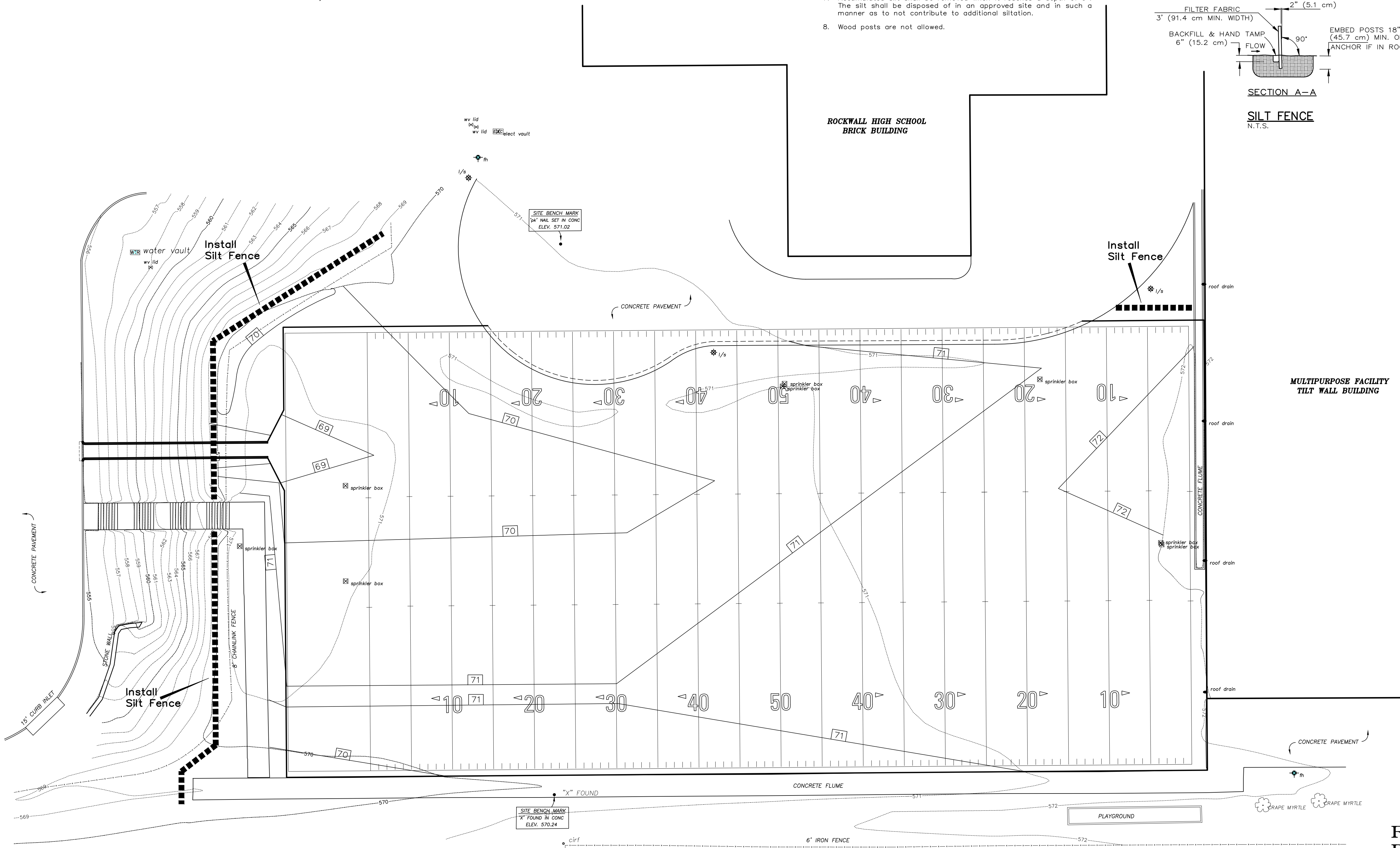
- Erosion control devices shown on this plan shall be installed prior to the start of land disturbing activities on the project.
- All erosion control devices are to be installed in accordance with the approved plans and specifications for this project. Changes are to be approved before construction by the design Engineer and the City of Rockwall.
- If the Erosion Control Plan as approved cannot control erosion and off-site sedimentation from the project, the Erosion Control Plan will be required to be revised and/or additional erosion control devices will be required on site.
- Off-site soil borrow and spoil areas are considered as part of the project site, and must also comply with the erosion control requirements for this project. This includes the installation of BMPs to control offsite sedimentation and the establishment of permanent ground cover on disturbed areas prior to final approval of the project.
- Inspections shall be made weekly and after rain storm events to insure that the devices are functioning properly. When sediment or mud has clogged the void spaces between stones or mud is being tracked onto a public roadway the aggregate pad must be washed down or replaced. Runoff from the wash down operation shall not be allowed to drain directly off site without first flowing through another BMP to control off site sedimentation. Periodic re-grading or the addition of new stone may be required to maintain the efficiency of the installation.
- Contractor shall be responsible for submittal of N.O.I., N.O.T. and any additional information required by the E.P.A. Contractor shall comply with all E.P.A. storm water pollution prevention requirements.
- Contractor shall control mud accumulation on all streets surrounding the project. No mud accumulation will be allowed in public streets.

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RECORD DRAWING

REVISED TO CONFORM TO CONSTRUCTION RECORDS
Ronny Klingbeil, P.E.
11-1-16
Date

NOTE:
Owner and Contractor to be responsible for submitting N.O.I. (Notice Of Intent) prior to beginning any construction. Owner and Contractor also to submit N.O.T. (Notice Of Termination).



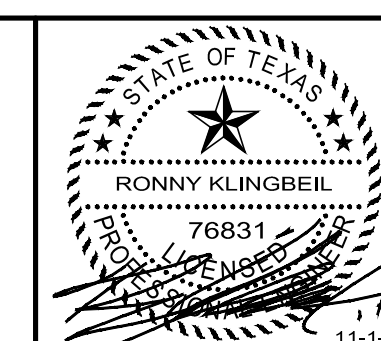
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SIGNED BY: RLK Engineering
DRAWN BY: RLK Engineering

TECH REVIEW: RLK
PEER REVIEW: RLK

DRAWING FILE: 16028 EC.dwg
DRAWING DATE: 4-12-16

DRAWING SCALE: 1"=20'
PROJECT NUMBER: RLK 16028

SHEET: C 3 OF 4

EROSION CONTROL PLAN

ROCKWALL HIGH SCHOOL
ROCKWALL, TEXAS

SANDBLASTING WASTE MANAGEMENT

DESCRIPTION

The objective of the management program is to minimize the potential of storm water quality degradation from sandblasting activities at construction sites. The key issues in this program are prudent handling and storage of sandblast media, dust suppression, and proper collection and disposal of spent media. It is not the intent of this program to outline all of the worker safety issues pertinent to this practice. Safety issues should be addressed by construction safety programs as well as local, state, and federal regulations utilized at sites in which Sandblasting waste is present.

INSTALLATION/APPLICATION CRITERIA

Since the media consists of fine abrasive granules, it can be easily transported by running water. Sandblasting activities typically create a significant dust problem which must be contained and collected to prevent off-site migration problem which must be contained and collected to prevent off-site migration or fines.

Operational Procedures

Use only inert, non-degradable sandblast media.
Use appropriate equipment for the job, do not over-blast.
Wherever possible, blast in a downward direction.
Install a wind sock or other wind direction instrument.
Cease blasting activities in high winds or if wind direction could transport grit to drainage facilities.
Install dust shielding around sandblasting areas.
Collect and dispose of all spent sandblast grit, use dust containment fabrics and dust collection hoppers and barrels.
Non-hazardous sandblast grit may be disposed in permitted construction debris landfills or permitted sanitary landfills.
If sandblast media cannot be fully contained, construct sediment traps downstream from blasting area where appropriate.
Use sand fencing where appropriate in areas where blast media cannot be fully contained.
If necessary, install misting equipment to remove sandblast grit from the air - prevent runoff from misting operations from entering drainage systems.
Use vacuum grit collection systems where possible.
Keep records of sandblasting materials, procedures, and weather conditions on a daily basis.
Take all reasonable precautions to ensure that sandblasting grit is contained and kept away from drainage structures.

Educational Issues

Educate all on-site employees of potential dangers to humans and the environment from sandblast grit.
Instruct all on-site employees of the potential hazardous nature of sandblast grit and possible symptoms of overexposure to sandblast grit.
Instruct operators of sandblasting equipment on safety procedures and personal protection equipment.
Instruct operators on proper procedures regarding storage, handling, and containment of sandblast grit.
Instruct operators to recognize unfavorable weather conditions regarding sandblasting activities.
Instruct operators and supervisors on current local, state, and federal regulations regarding fugitive dust and hazardous waste from sandblast grit.
Have weekly meetings with operators to discuss and reinforce proper operational procedures.
Establish a continuing education program to indoctrinate new employees.

Material Handling Recommendations

Sandblast media should always be stored under cover away from drainage structures.
Ensure that stored media or grit is not subject to transport by wind.
Ensure that all sandblasting equipment as well as storage containers comply with local, state, and federal regulations.
Refer to Hazardous Waste BMP fact sheet if sandblast grit is known or suspected to contain hazardous components.
Capture and treat runoff which comes into contact with sandblasting material or waste.
Foreman and/or construction supervisor should monitor all sandblasting activities and safety procedures.

Quality Assurance

Educate, and if necessary, discipline workers who violate procedures.
Take all reasonable precautions to ensure that sandblast grit is not transported off-site or into drainage facilities.

Requirements

Education and awareness program for all employees regarding control of sandblasting and potential dangers to humans and the environment.
Operator and supervisor education program for those directly involved in sandblasting activities - instructions on material handling, proper equipment operation, personal protective equipment, fugitive dust control, record keeping and reporting.
Proper sandblast equipment for the job.
Site-specific fugitive dust control and containment equipment.
Site-specific fugitive dust control procedure.
Compliance by supervisors and workers.

Costs

Minimal cost for training and monitoring.
Potential for significant cost for containment procedures on large jobs.
Potential for significant costs associated with cleanup, correction and remediation if containment occurs.

LIMITATIONS

Site specific solutions to sandblasting problems may be required.
Sandblasting operations on structures known to contain hazardous materials require special procedures not specifically outlined above including professional hazardous waste specialists.
Where hazardous materials are known or suspected, a site assessment and remediation plan may be necessary.

HAZARDOUS WASTE MANAGEMENT

DESCRIPTION

The hazardous waste management BMP addresses the problem of storm water polluted with hazardous waste through spills or other forms of contact. The objective of the Management Program is to minimize the potential of storm water contamination from common construction site hazardous wastes through appropriate recognition, handling, storage, and disposal practices.

It is not the intent of this Management Program to supersede or replace normal site assessment and remediation procedures. Significant spills and/or contamination warrant immediate response by trained professionals. Suspected job-site contamination should be immediately reported to regulatory authorities and protective actions taken. The General Permit requires reporting of significant spills to the National Response Center (NRC) at (800)424-8802.

PRIMARY USE

These management practices along with applicable OSHA and EPA guidelines should be incorporated at all construction sites which use or generate hazardous wastes. Many wastes such as fuel, oil, grease, fertilizer, and pesticide are present at most construction sites.

INSTALLATION, APPLICATION AND DISPOSAL CRITERIA

The hazardous waste management techniques presented here are based on proper recognition, handling, and disposal practices by construction workers and supervisors. Key elements of the management program are education, proper disposal practices, as well as provisions for safe storage and disposal. Following are lists describing the targeted materials and recommended procedures:

Targeted Hazardous Waste Materials

- Paints
- Solvents
- Stains
- Wood preservatives
- Cutting oils
- Greases
- Roofing tar
- Pesticides
- Fuel and lube oils
- Lead based paints (Demolition)

Storage Procedures

Wherever possible, minimize use of hazardous materials.
Minimize generation of hazardous wastes on the job-site.
Segregate potentially hazardous waste from non-hazardous construction site debris.
Designate a foreman or supervisor to oversee hazardous materials handling procedures.
Keep liquid or semi-liquid hazardous waste in appropriate containers (closed drums or similar) and under cover.
Store waste materials away from drainage ditches, swales, and catch basins.
Use containment berms in fueling and maintenance areas and where the potential for spills is high.
Ensure that adequate hazardous waste storage volume is available.
Ensure that hazardous waste collection containers are conveniently located.
Do not allow potentially hazardous waste materials to accumulate on the ground.
Enforce hazardous waste handling and storage procedures.
Clearly mark on all hazardous waste containers which materials are acceptable for the container.

Disposal Procedures

Regularly schedule hazardous waste removal to minimize on-site storage.
Use only reputable, licensed hazardous waste haulers.

Education

Instruct workers in identification of hazardous waste.
Educate workers of potential dangers to humans and the environment from hazardous wastes.
Instruct workers on safety procedures for common construction site hazardous wastes.
Educate all workers on hazardous waste storage and disposal procedures.
Have regular meetings to discuss and reinforce identification, handling and disposal procedures (incorporate in regular safety seminars).
Establish a continuing education program to indoctrinate new employees.

Quality Assurance

Foreman and/or construction supervisor shall monitor on-site hazardous waste storage and disposal procedures.
Educate, and if necessary, discipline workers who violate procedures.
Ensure that the hazardous waste disposal contractor is reputable and licensed.

Requirements

Job-site waste handling and disposal education and awareness program.
Commitment by management to implement hazardous waste management practices.
Compliance by workers.
Sufficient and appropriate hazardous waste storage containers.
Timely removal of stored hazardous waste materials.

Costs

Possible modest cost impact for additional hazardous storage containers.
Small cost impact for training and monitoring.
Potential cost impact for hazardous waste collection and disposal by licensed hauler - actual cost depends on type of material and volume.

LIMITATIONS

This practice is not intended to address site-assessments and pre-existing contamination.
Major contamination, large spills and other serious hazardous waste incidents require immediate response from specialists.
Demolition activities and potential pre-existing materials, such as asbestos, are not addressed by this program. Site specific information on plans is necessary.
Contaminated soils are not addressed.
One part of a comprehensive construction site waste management program.

SOLID WASTE MANAGEMENT

DESCRIPTION

Large volumes of solid waste are often generated at construction sites including: packaging, pallets, wood waste, concrete waste, soil, electrical wiring, cuttings, and a variety of other materials. The solid waste management practice lists techniques to minimize the potential of storm water contamination from solid waste through appropriate storage and disposal practices.

PRIMARY USE

These practices should be a part of all construction practices. By limiting the trash and debris on site, storm water quality is improved along with reduced clean up requirements at the completion of the project.

APPLICATIONS

The solid waste management practice for construction sites is based on proper storage and disposal practices by construction workers and supervisors. Key elements of the program are education and modification of improper disposal habits. Cooperation and vigilance is required on the part of supervisors and workers to ensure that the recommendations and procedures are followed. Following are lists describing the targeted materials and recommended procedures:

Targeted Solid Waste Materials

- Paper and cardboard containers
- Plastic packaging
- Styrofoam packing and forms
- Insulation materials (non-hazardous)
- Wood pallets
- Wood cuttings
- Pipe and electrical cuttings
- Concrete, brick, and mortar waste
- Shingle cuttings and waste
- Roofing tar
- Steel (cuttings, nails, rust residue)
- Gypsum board cuttings and waste
- Sheathing cuttings and waste
- Miscellaneous cutting and waste
- Food waste
- Demolition waste

Storage Procedures

Wherever possible, minimize production of solid waste materials.
Designate a foreman or supervisor to oversee and enforce proper solid waste procedures.
Instruct construction workers in proper solid waste procedures.
Segregate potentially hazardous waste from non-hazardous construction site debris.
Keep solid waste materials under cover in either a closed dumpster or other enclosed trash container that limits contact with rain and runoff.
Store waste materials away from drainage ditches, swales and catch basins.
Do not allow trash containers to overflow.
Do not allow waste materials to accumulate on the ground.
Prohibit littering by workers and visitors.
Police site daily for litter and debris.
Enforce solid waste handling and storage procedures.

Disposal Procedures

If feasible, segregate recyclable wastes from non-recyclable waste materials and dispose of properly.
General construction debris may be hauled to a licensed construction debris landfill (typically less expensive than a sanitary landfill).
Use waste facilities approved by local jurisdiction.
Runoff which comes into contact with unprotected waste shall be directed into structural treatment such as silt fence to remove debris.

Education

Educate all workers on solid waste storage and disposal procedures.
Instruct workers in identification of solid waste and hazardous waste.
Have regular meetings to discuss and reinforce disposal procedures (incorporate in regular safety seminars).
Clearly mark on all solid waste containers which materials are acceptable.

Quality Control

Foreman and/or construction supervisor shall monitor on-site solid waste storage and disposal procedures.
Discipline workers who repeatedly violate procedures.

Requirements

Jobsite waste handling and disposal education and awareness program.
Commitment by management to implement and enforce Solid Waste Management Program.
Compliance by workers.
Sufficient and appropriate waste storage containers.
Timely removal of stored solid waste materials.
Possible modest cost impact for additional waste storage containers.
Small cost impact for training and monitoring.
Minimal overall cost impact.

LIMITATIONS

Only addresses non-hazardous solid waste.
One part of a comprehensive construction site management program.

CONCRETE WASTE MANAGEMENT

DESCRIPTION

Concrete waste at construction sites comes in two forms: 1) excess fresh concrete mix including truck and equipment washing, and 2) concrete dust and concrete debris resulting from demolition and sawing. Both forms have the potential to impact water quality through storm water runoff contact with the waste.

PRIMARY USE

Concrete waste is present at most construction sites. This BMP should be utilized at sites in which concrete waste is present.

APPLICATIONS

A number of water quality parameters can be affected by introduction of concrete - especially fresh concrete. Concrete affects the pH of runoff, causing significant chemical changes in water bodies and harming aquatic life. Suspended solids in the form of both cement and aggregate dust are also generated from both fresh and demolished concrete waste:

Current Unacceptable Waste Concrete Disposal Practices

- Dumping in vacant areas on the job-site.
- Illicit dumping off-jobsite.
- Dumping into ditches or drainage facilities.

Recommended Disposal Practices

- Avoid unacceptable dumping practices listed above.
- Develop predetermined, safe concrete disposal areas.
- Provide a washout area with a minimum of 6 cubic feet of containment area volume for every 10 cubic yards of concrete poured.
- Never dump waste concrete illicitly or without property owners knowledge and consent.
- Treat runoff from storage area through the use of structural controls as required.

Education

Drivers and equipment operators should be instructed on proper disposal and equipment washing practices (see above).
Supervisors must be made aware of the potential environmental consequences of improperly handling concrete waste.

Enforcement

The construction site manager or foreman must ensure that employees and pre-mix companies follow proper procedures for concrete disposal and equipment washing.
Employees violating disposal or equipment cleaning directives must be reeducated or disciplined if necessary.

Demolition Practices

Monitor weather and wind direction to ensure concrete dust is not entering drainage structures and surface waters.
Where appropriate, construct sediment traps or other types of sediment detention devices downstream of demolition activities.

Requirements

Use predetermined disposal for waste concrete.
Prohibit dumping waste concrete anywhere but predetermined areas.
Assign predetermined truck and equipment washing areas.
Educate drivers and operators on proper disposal and equipment cleaning procedures.

Costs

Minimal cost impact for training and monitoring.
Concrete disposal cost depends on availability and distance to suitable disposal areas.
Additional costs involved in equipment washing could be significant.

LIMITATIONS

This concrete waste management program is one part of a comprehensive construction site management program.

RECORD DRAWING

REVISED TO CONFORM TO CONSTRUCTION RECORDS


Ronny Klingbeil, P.E.

11-1-16
Date

EROSION CONTROL NOTES

ROCKWALL HIGH SCHOOL
ROCKWALL, TEXAS

DESIGNED BY: RLK Engineering	TECH REVIEW: RLK	DRAWING FILE: 16028-EC.dwg	DRAWING SCALE:	SHEET:
DRAWN BY: RLK Engineering	PEER REVIEW: RLK	DRAWING DATE: 4-12-16	PROJECT NUMBER: RLK 16028	C 4 OF 4

MISC. INFORMATION

REVISION	DATE	DESCRIPTION



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