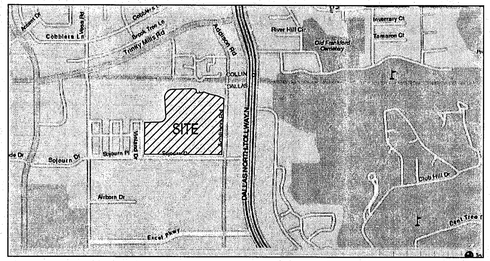
CONSTRUCTION PLANS
FOR

TRINITY CHRISTIAN ACADEMY
DRAINAGE & DRIVE IMPROVEMENTS
NEAR THE UPPER SCHOOL
(FIELD CHANGE TO PERFORMING ARTS CENTER)
PW#2006-13

17001 ADDISON ROAD
TOWN OF ADDISON, TEXAS



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LOCATION MAP - TRINITY CHRISTIAN ACADEMY

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TRINITY CHRISTIAN ACADEMY

GENERAL NOTE:
CONTRACTOR TO UTILIZE CITY APPROVED CONSTRUCTION PLANS FOR CONSTRUCTION OF ALL CIVIL RELATED FACILITIES. CONTRACTOR TO NOTIFY ARCHITECT/ENGINEER IMMEDIATELY OF ANY COST DISCREPANCIES BETWEEN THE CITY APPROVED SET AND BID SET WITH LATEST ADDENDUMS.

OWNER

TRINITY CHRISTIAN ACADEMY
17001 ADDISON ROAD
ADDISON, TEXAS 75001-5096
(972) 931 - 8325

ENGINEER

GLENN ENGINEERING
105 DECKER COURT, SUITE 910
IRVING, TEXAS 75062
(972) 717-5151

CAUTION!!!!
CONTACT:

DIG TESS	1-800-344-8377
ATMOS	1-800-344-8377
AT&T:	1-800-344-8377
TXU:	1-800-344-8377
SOUTHWESTERN BELL:	1-800-344-8377
TOWN OF ADDISON	972 - 450 - 2871

AT LEAST
48 HOURS PRIOR TO CONSTRUCTION

BENCHMARK:
TOWN OF ADDISON BENCHMARK 6, BRASS DISC SETON TOP OF EXISTING INLET, LOCATED ON THE EAST SIDE OF ADDISON ROAD, DIRECTLY EAST OF THE LOWER SCHOOL PLAYGROUNDS.
ELEV.= 639.88'

APPROVED FOR CONSTRUCTION
Town of Addison
Public Works Department
APPROVED BY: Craig Brashear
DATE: 7-8-2010

All responsibility for the adequacy of these plans remains with the Engineer who prepared them. In approving these plans, the Town of Addison makes no representation of adequacy of the work of the Design Engineer.

GLENN ENGINEERING
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IRVING, TEXAS 75062

TRINITY CHRISTIAN ACADEMY
DRAINAGE & DRIVE IMPROVEMENTS NEAR THE UPPER SCHOOL

COVER SHEET

STATE OF TEXAS
THOMAS J. CASEY IV
86213
LICENSED
PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY THOMAS J. CASEY IV, P.E. 86213, ON JULY 8, 2010

Issue Dates:
Review: June 23, 2010
Comments: June 30, 2010
Comments: July 2, 2010
Comments: July 8, 2010

Construction:

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Checked By:	CMA
Project No.:	10 - 599.150

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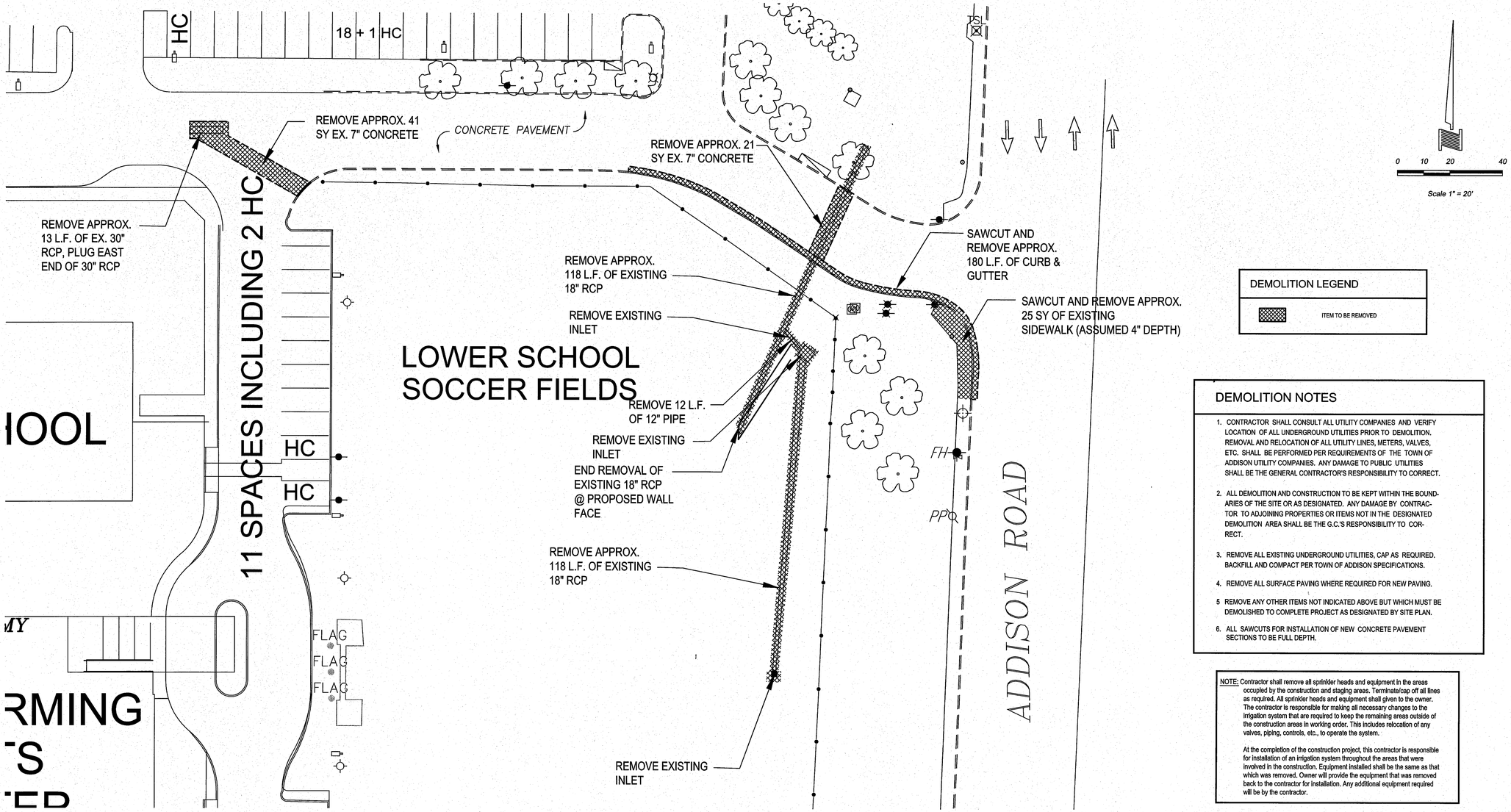
of 15



DEMOLITION LEGEND

ITEM TO BE REMOVED

DEMOLITION NOTES

1. CONTRACTOR SHALL CONSULT ALL UTILITY COMPANIES AND VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DEMOLITION. REMOVAL AND RELOCATION OF ALL UTILITY LINES, METERS, VALVES, ETC. SHALL BE PERFORMED PER REQUIREMENTS OF THE TOWN OF ADDISON UTILITY COMPANIES. ANY DAMAGE TO PUBLIC UTILITIES SHALL BE THE GENERAL CONTRACTOR'S RESPONSIBILITY TO CORRECT.
2. ALL DEMOLITION AND CONSTRUCTION TO BE KEPT WITHIN THE BOUNDARIES OF THE SITE OR AS DESIGNATED. ANY DAMAGE BY CONTRACTOR TO ADJOINING PROPERTIES OR ITEMS NOT IN THE DESIGNATED DEMOLITION AREA SHALL BE THE G.C.'S RESPONSIBILITY TO CORRECT.
3. REMOVE ALL EXISTING UNDERGROUND UTILITIES, CAP AS REQUIRED. BACKFILL AND COMPACT PER TOWN OF ADDISON SPECIFICATIONS.
4. REMOVE ALL SURFACE PAVING WHERE REQUIRED FOR NEW PAVING.
5. REMOVE ANY OTHER ITEMS NOT INDICATED ABOVE BUT WHICH MUST BE DEMOLISHED TO COMPLETE PROJECT AS DESIGNATED BY SITE PLAN.
6. ALL SAWCUTS FOR INSTALLATION OF NEW CONCRETE PAVEMENT SECTIONS TO BE FULL DEPTH.

NOTE: Contractor shall remove all sprinkler heads and equipment in the areas occupied by the construction and staging areas. Terminate/cap off all lines as required. All sprinkler heads and equipment shall given to the owner. The contractor is responsible for making all necessary changes to the irrigation system that are required to keep the remaining areas outside of the construction areas in working order. This includes relocation of any valves, piping, controls, etc., to operate the system.

At the completion of the construction project, this contractor is responsible for installation of an irrigation system throughout the areas that were involved in the construction. Equipment installed shall be the same as that which was removed. Owner will provide the equipment that was removed back to the contractor for installation. Any additional equipment required will be by the contractor.

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TRINITY CHRISTIAN ACADEMY
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DEMOLITION PLAN

STATE OF TEXAS
THOMAS J. CASEY IV
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LICENSED PROFESSIONAL ENGINEER

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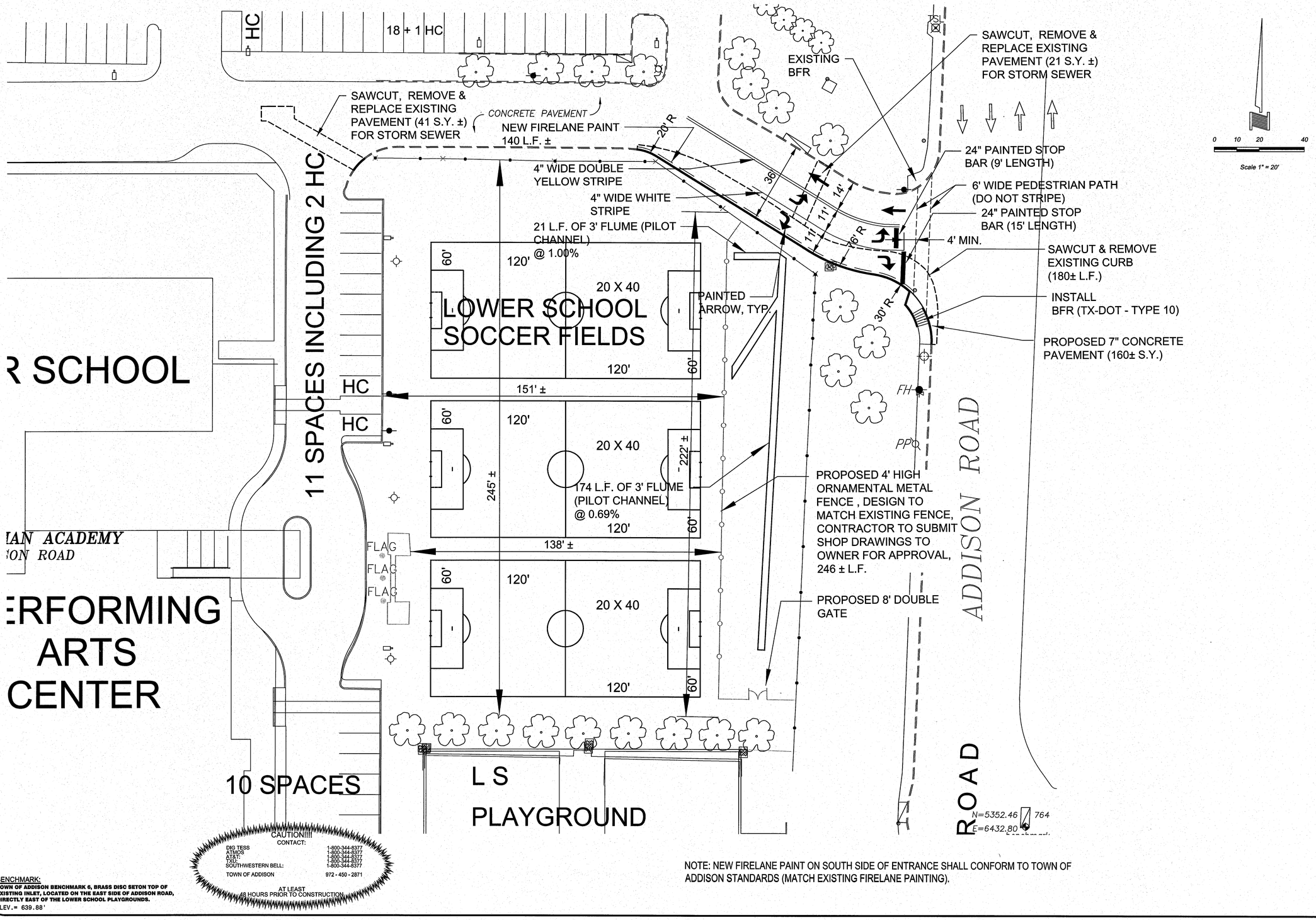

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NOTE: NEW FIRELANE PAINT ON SOUTH SIDE OF ENTRANCE SHALL CONFORM TO TOWN OF ADDISON STANDARDS (MATCH EXISTING FIRELANE PAINTING).

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TRINITY CHRISTIAN ACADEMY
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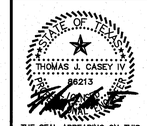
SITE PLAN



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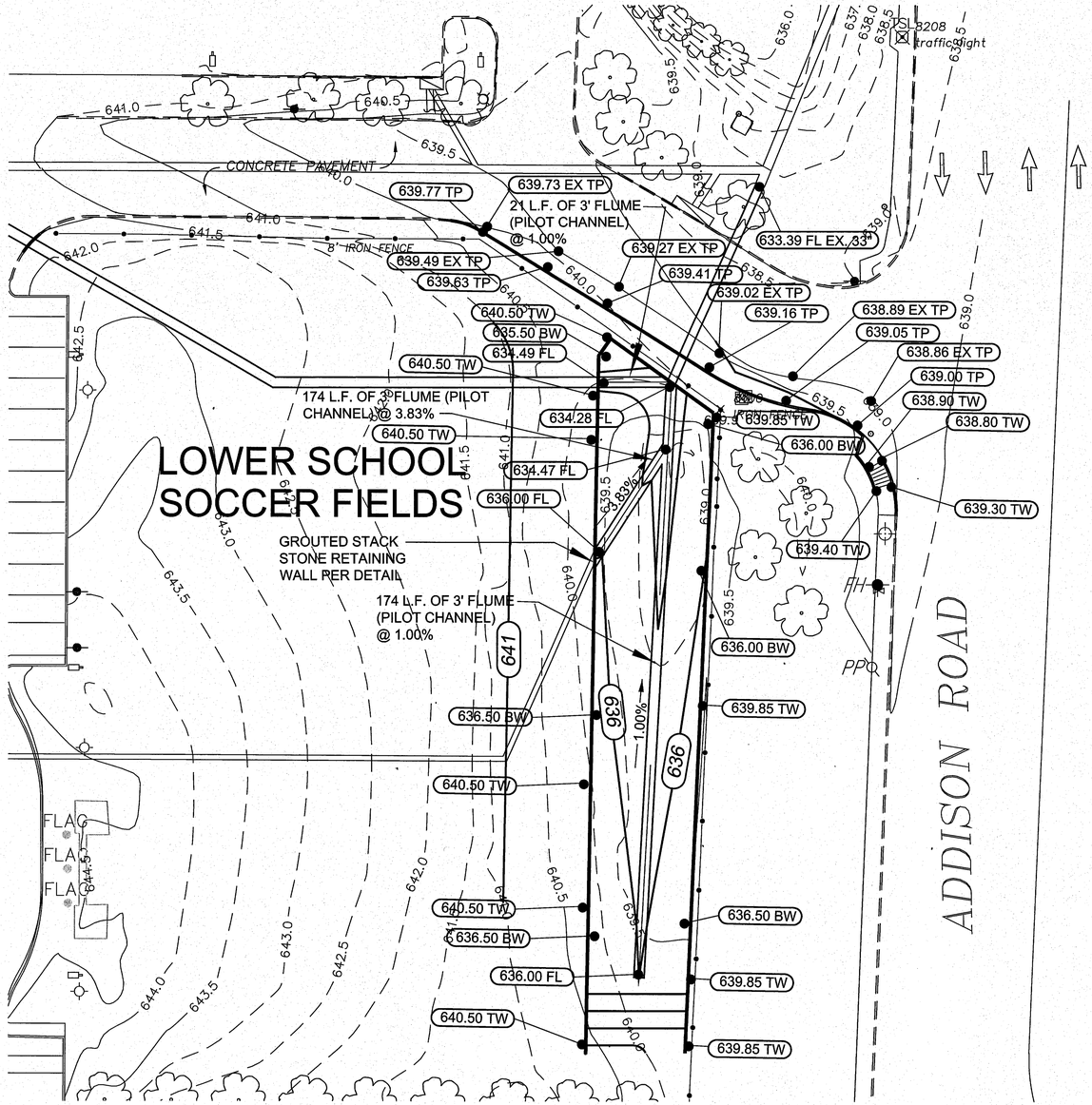
GENERAL GRADING AND DRAINAGE NOTES

1. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THESE PLANS AND TOWN OF ADDISON STANDARDS AND SPECIFICATIONS.
2. 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.
3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE REQUIREMENTS AND STANDARDS OF THE LOCAL GOVERNING AUTHORITY.
4. IN THE EVENT AN ITEM IS NOT COVERED IN THE TOWN OF ADDISON SPECIFICATIONS, THE TOWN OF ADDISON ENGINEER'S DECISION SHALL APPLY.
5. BARRICADING, TRAFFIC CONTROL, AND PROJECT SIGNS SHALL CONFORM TO "STATE DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION BARRICADING AND CONSTRUCTION STANDARDS".
6. THE GENERAL CONTRACTOR AND ALL SUB-CONTRACTORS 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. PAVING INSTALLED SHALL 'FLUSH OUT' AT ANY JUNCTURE WITH EXISTING PAVING.
7. 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.
8. CONTRACTOR SHALL VERIFY ALL EXISTING INVERTS AND RIM ELEVATIONS PRIOR TO CONSTRUCTION.
9. ALL PROPOSED CONTOURS ARE APPROXIMATE. PROPOSED SPOT ELEVATIONS AND DESIGNATED GRADIENT ARE TO BE USED IN THE EVENT OF ANY DISCREPANCIES.
10. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND/OR ESTABLISH A BENCHMARK (BASE UPON EXISTING CONDITION SHOWN ON THIS PLAN) PRIOR TO CONSTRUCTION.



NOTE: SLOPE PROPOSED TURN LANE 2% TOWARDS EXISTING PAVEMENT AS INDICATED BY SPOT ELEVATIONS.

0 10 20 40

Scale 1" = 20'

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TOWN OF ADDISON	972 - 450 - 2871

AT LEAST
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IRVING, TEXAS 75062
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TRINITY CHRISTIAN ACADEMY

DRAINAGE & DRIVE IMPROVEMENTS NEAR THE UPPER SCHOOL

GRADING PLAN

STATE OF TEXAS
THOMAS J. CASEY IV
86213
LICENSED PROFESSIONAL ENGINEER

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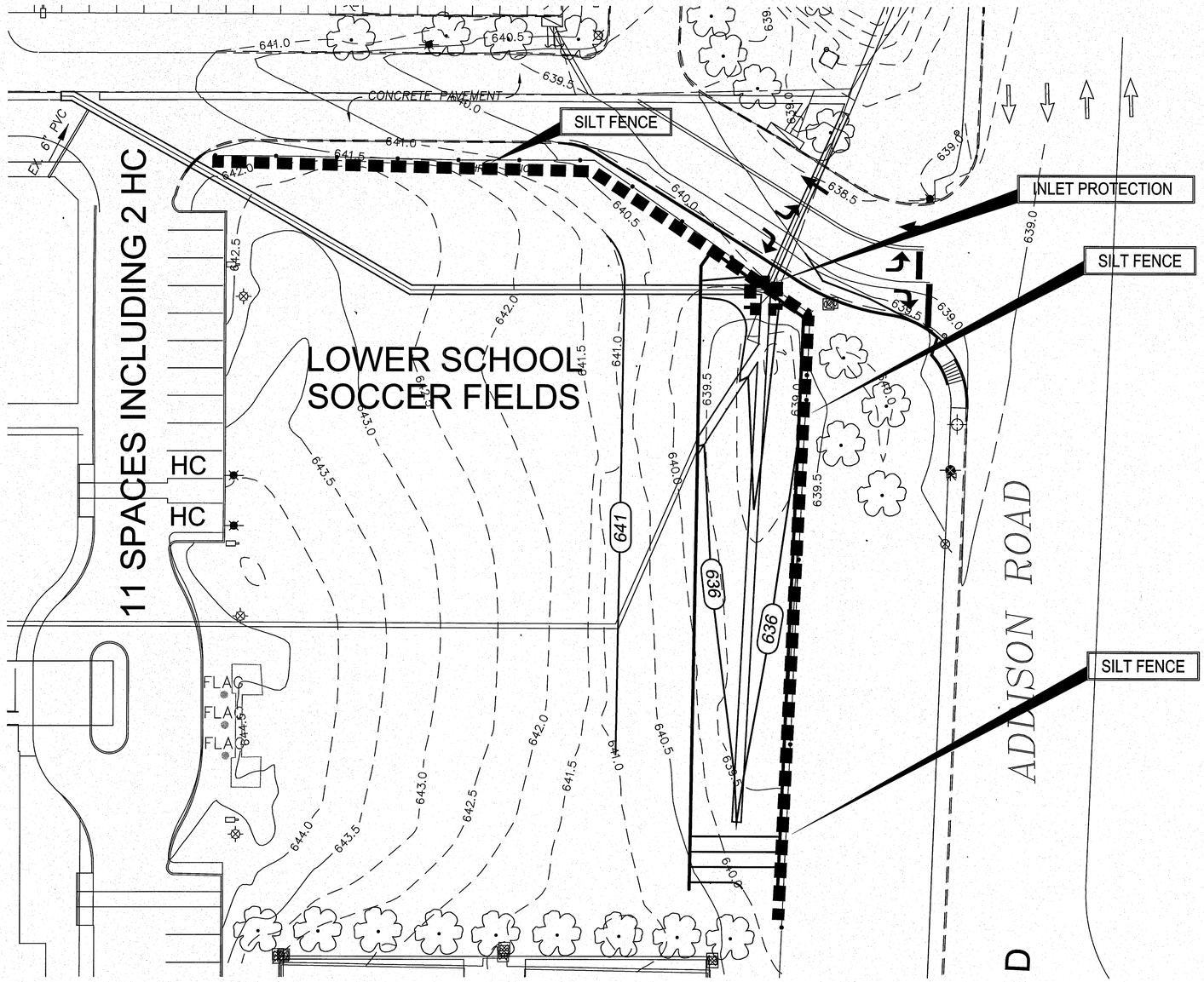

0 10 20 40

Scale 1" = 20'

GENERAL EROSION CONTROL NOTES

GENERAL EROSION CONTROL NOTES

1. CONTRACTOR SHALL CONTROL SEDIMENT ACCUMULATION ON ALL STREETS SURROUNDING THE PROJECT. SEDIMENTS SHOULD NOT ENTER PUBLIC RIGHTS OF WAY, NOR SHOULD THEY ESCAPE THE SITE. SEDIMENTS THAT HAVE ESCAPED FROM THE SITE MUST BE REMOVED WITHIN A REASONABLE AMOUNT OF TIME, 3-7 DAYS.
2. MAINTAIN ALL FILTERS DURING CONSTRUCTION TO PREVENT ANY BLOCKAGES FROM ACCUMALTED SEDIMENT. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DURING CONSTRUCTION AS SPECIFIED BY ENGINEER OR CITY INSPECTOR.
3. ALL PROPOSED PARKING AREAS TO BE PAVED AS SOON AS POSSIBLE AFTER SUBGRADE IS PREPARED.
4. TEMPORARY ERSION AND SEDIMENT CONTROLS SHOULD BE REMOVED AFTER ALL EXPOSED SOILS HAVE BEEN FINALLY STABILIZED, AND NON-CONCRETE AREAS HAVE A BACKGROUND VEGETATIVE COVER OF AT LEAST 70%.

GENERAL SILT FENCE NOTES

1. 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 1 FOOT.
2. 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 PERPINDICULAR 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.
3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE SHOULD BE SECURELT FESTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST. THERE SHALL BE A 6 INCH DOUBLE OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
6. INSPECTION SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. ACCUMLATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 6 INCHES. THE SILT SHALL BE DISPOSED OF IN AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.

GENERAL STABILIZED CONSTRUCTION ENTRANCE NOTES

1. STONE SIZE - 3 TO 5 INCHES CRUSHED ROCK.
2. LENGTH - AS EFFECTIVE, BUT NOT LESS THAN 50 FEET, UNLESS DEPTH OF LOT IS LESS THAN 150 FEET FROM EDGE OF PAVEMENT WHERE LENGTH MUST ONLY BE 30 FEET.
3. THICKNESS - NOT LESS THAN 8 INCHES.
4. WIDTH - NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
5. WASHING - WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
6. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAY, MUST BE REMOVED IMMEDIATELY.
7. DRAINAGE - ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.
8. ALL EROSION CONTROL MEASURES TO BE MAINTAINED IN PLACE UNTIL 70% GROUND COVER IS OBTAINED.
9. EROSION CONTROL MEASURES MAY ONLY BE PLACED IN FRONT OF INLETS, OR IN CHANNELS, DRAINAGEWAYS OR BORROW DITCHES AT RISK OF CONTRACTOR. CONTRACTOR SHALL REMAIN LIABLE FOR ANY DAMAGE CAUSED BY THE MEASURES, INCLUDING FLOODING DAMAGE WHICH MAY OCCUR DUE TO BLOCKED DRAINAGE. AT THE CONCLUSION OF ANY PROJECT, ALL CHANNELS, DRAINAGEWAYS AND BORROW DITCHES IN THE WORK ZONE SHALL BE DREDGED OF ANY SEDIMENT GENERATED BY THE PROJECT OR DEPOSITED AS A RESULT OF EROSION CONTROL MEASURES.

CAUTION!!!!
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TOWN OF ADDISON	972 - 450 - 2871

AT LEAST
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TRINITY CHRISTIAN ACADEMY
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SWPP PLAN

STATE OF TEXAS
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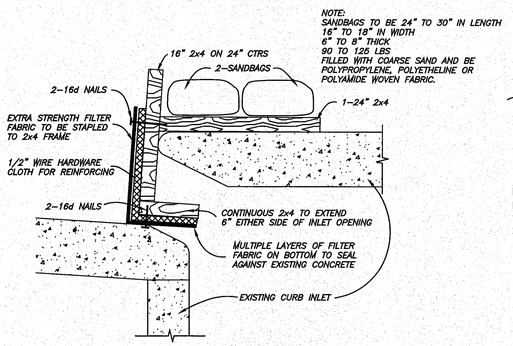
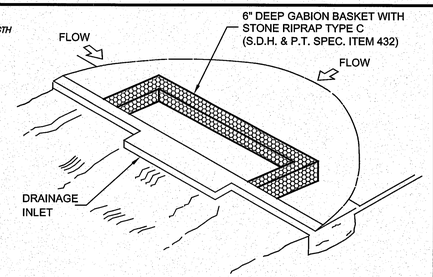


CURB INLET PROTECTION ON GRADE

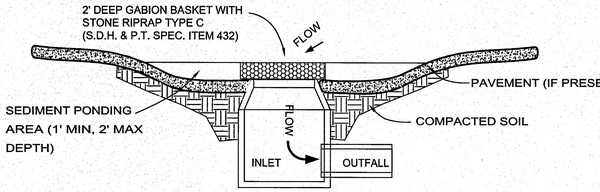
NOT TO SCALE



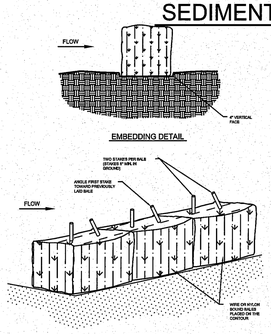
TO BE INSTALLED AT EACH LOW POINT INLET

LOW POINT CURB INLET SEDIMENT FILTER

NOT TO SCALE

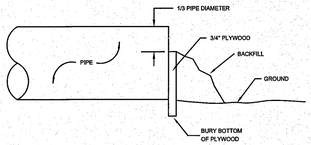


SEDIMENT POND @ CURB INLETS & AREA DRAINS



HAY BALE DETAIL

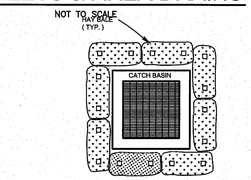
NOT TO SCALE



NOTE:
DUE TO ANY STOPPAGE IN CONSTRUCTION OR AT COMPLETION OF LINE, CONTRACTOR SHALL INSTALL 3/4" PLYWOOD OVER END OF PIPE AND BACKFILL TO SECURELY HOLD IN PLACE TO PREVENT SEDIMENT FROM ENTERING PIPE

PLYWOOD PROTECTION AT PIPE

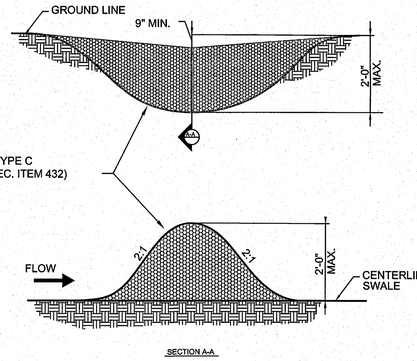
NOT TO SCALE



INLET PROTECTION

FOOTBALL FIELD INLETS ONLY

NOT TO SCALE



SECTION A-A

ROCK CHECK DAM DETAIL

NOT TO SCALE

CAUTION!!!
CONTACT:

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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 cuttings 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 area 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 be dirt 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
- ☐ Job-site 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.
- ☐ Minimal overall cost Impact.

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

Applications: Perimeter Control; Slope Protection; Sediment Trapping; Channel Protection; Temporary Stabilization; Permanent Stabilization; **Waste Management**; Housekeeping Practices

Targeted Constituents: ○ Sediment; ● Nutrients Toxic Materials; ○ Oil & Grease; ● Floatable Materials; ● Other Construction Wastes

Implementation Requirements: ◒ Capital Costs; ◒ Maintenance; ◒ Training; ○ Suitability for Slopes > 5%

Legend: ● Significant Impact; ◒ Medium Impact; ○ Low Impact; ? Unknown or Questionable Impact

W–1

Silt Fence

DESCRIPTION
A silt fence consists of geotextile fabric supported by poultry netting or other backing stretched between either wooden or metal posts with the lower edge of the fabric securely embedded in the soil. The fence is typically located downstream of disturbed areas to intercept runoff in the form of sheet flow. Silt fence provides both filtration and time for sedimentation to reduce sediment and it reduces the velocity of the runoff. Properly designed silt fence is economical since it can be re-located during construction and re-used on other projects.

PRIMARY USE
Silt fence is normally used as perimeter control located downstream of disturbed areas. It is only feasible for non-concentrated, sheet flow conditions.

APPLICATIONS
Silt fence is an economical means to treat overland, non-concentrated flows for all types of projects. Silt fences are used as perimeter control devices for both site developments and linear (roadway) type projects. They are most effective with coarse to silty soil types. Due to the potential of clogging, silt fence should not be used with clay soil types.

In order to reduce the length of silt fence, it should be placed adjacent to the down slope side of the construction activities.

elevation (along a contour line) where possible.
- ☐ Maximum slope adjacent to the fence is 1:1
- ☐ Maximum distance of flow to silt fence should be 200 feet or less.
- ☐ Maximum concentrated flow to silt fence shall be 1 CFS per 20 feet of fence.
- ☐ If 50% or less of soil, by weight, passes the U.S. Standard sieve No. 200, select the equivalent opening size (E.O.S.) to retain 85% of the soil.
- ☐ Maximum equivalent opening size shall be 70 (#70 sieve).
- ☐ Minimum equivalent opening size shall be 100 (#100 sieve).
- ☐ If 85% or more of soil, by weight, passes the U.S. Standard sieve No. 200, silt fences shall not be used due to potential clogging.
- ☐ Sufficient room for the operation of sediment removal equipment shall be provided between the silt fence and other obstructions in order to properly maintain the fence.
- ☐ The ends of the fence shall be turned upstream to prevent bypass of stormwater, bypass of stormwater.

LIMITATIONS
Minor ponding will likely occur at the upstream side of the silt fence resulting in minor flocalized flooding.

Fences which are constructed in swales or low areas subject to concentrated flow may be concentrated overtopped resulting in failure of the filter fence. Silt fences subject to areas of concentrated flow (waterways with flows > 1 cfs) are not acceptable.

Silt fence can Interfere with construction operations, therefore planning of access routes onto the site is critical.

Silt fence can fall structurally under heavy storm flows, creating maintenance problems and reducing the effectiveness of the system.

MAINTENANCE REQUIREMENTS
Inspections should be made on a weekly basis, especially after large storm events. If the fabric becomes clogged, it should be cleaned or if necessary, replaced.

Sediment should be removed when it reaches approximately one-half the height of the fence.

Applications: Perimeter Control; **Slope Protection**; Sediment Trapping; Channel Protection; Temporary Stabilization; Permanent Stabilization; Waste Management; Housekeeping Practices

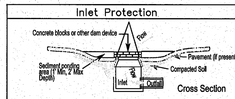
Targeted Constituents: ● Sediment; ○ Nutrients Toxic Materials; ○ Oil & Grease; ◒ Floatable Materials; ○ Other Construction Wastes

Implementation Requirements: ◒ Capital Costs; ● Maintenance; ○ Training; ◒ Suitability for Slopes > 5%

Legend: ● Significant Impact; ◒ Medium Impact; ○ Low Impact; ? Unknown or Questionable Impact

Fe=0.75
S–1

Inlet Protection



DESCRIPTION
Inlet protection consists of a variety of methods of intercepting sediment at low point Inlets through the use of stone, filter fabric and other materials. This is normally located at the Inlet, providing either detention or filtration to reduce sediment and floatable materials in storm water.

PRIMARY USE
Inlet protection is normally used as a secondary defense in site erosion control due to the limited effectiveness and applicability of the technique. It is normally used in new developments that include new inlets or roads with new curb Inlets or during major repairs to existing roadways. Inlet protection has limited use in developed areas due to the potential for flooding, traffic safety and pedestrian safety and maintenance problems. Inlet protection can reduce sediment in storm sewer system by serving as a back up system to on-site controls or by reducing sediment loads from controls with limited effectiveness such as straw bale dikes.

APPLICATIONS
Different variations are used for different conditions as follows:

- ☐ Filter barrier protection (similar to a silt fence barrier around the Inlet) is appropriate when the drainage area is less than five (5) percent. This type of protection is not applicable in paved areas. (See details, Section 9)
- ☐ Block and gravel (crushed stone, recycled concrete is also appropriate) protection is used when flows exceed 0.5 cfs and it is necessary to allow for overtopping to prevent flooding (See sketch at top of fact sheet).
- ☐ Wire mesh and gravel protection (crushed stone, recycled concrete is also appropriate) is used when flows exceed 0.5 cfs and construction traffic may occur over the Inlet. This form of protection may be used with both curb and drop Inlets (See details Section 9).
- ☐ Excavated impoundment protection around a drop Inlet may be used for protection against sediment entering a storm drain system. With this method, it is necessary to Install weep holes to allow the impoundment to drain completely. The Impoundment shall be sized such that the volume of excavation shall be equal to 1800 to 3600 cubic feet per acre of contributing drainage area entering the Inlet for full effectiveness. Smaller volumes can be used for reduced effectiveness (SEE details Section 9).
- ☐ Filter fabric protection shall be designed and maintained in a manner similar to silt fence.
- ☐ Maximum depth of flow shall be (6) eight inches or less depending on vehicular and pedestrian traffic.
- ☐ Positive drainage is critical in the design of Inlet protection. If overflow is not provided for at the Inlet, flows which exceed the capacity of the Inlet protection system shall be routed through established swales, streets or other watercourses to minimize damage due to ponding and to provide for public safety.

LIMITATIONS
Ponding will occur at the Inlet with possible flooding as a result.

Inlet protection is only viable at low point Inlets. Inlets which are on a slope cannot be effectively protected because storm water will bypass the Inlet and continue downstream, causing an overload condition at Inlets beyond.

MAINTENANCE REQUIREMENTS
Inspections should be made on a weekly basis, especially after large (>0.5 Inches) storm events. When silt fence is used and the fabric becomes clogged, it should be cleaned or if necessary, replaced. Also, sediment should be removed when it reaches approximately one-half the height of the fence. If a sump is used, sediment should be removed when the volume of the basin is reduced by 50%.

For systems using stone filters, when the stone filter becomes clogged with sediment, the stones must be pulled away from the Inlet and cleaned or replaced. Since cleaning of gravel at a construction site may be difficult, an alternative approach would be to use the clogged stone as fill material and put new stone around the Inlet.

Applications: Perimeter Control; Slope Protection; **Sediment Trapping**; Channel Protection; Temporary Stabilization; Permanent Stabilization; Waste Management; Housekeeping Practices

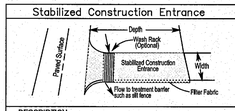
Targeted Constituents: ● Sediment; ○ Nutrients Toxic Materials; ○ Oil & Grease; ◒ Floatable Materials; ○ Other Construction Wastes

Implementation Requirements: ● Capital Costs; ● Maintenance; ○ Training; ○ Suitability for Slopes > 5%

Legend: ● Significant Impact; ● Medium Impact; ○ Low Impact; ? Unknown or Questionable Impact

Fe=0.67–0.75
S–4

Stabilized Construction Entrance



DESCRIPTION
A stabilized construction entrance consists of a pad consisting of gravel, crushed stone, recycled concrete or other rock like material on top of geotextile filter cloth to facilitate the wash down and removal of sediment and other debris from construction equipment prior to exiting the construction site. For added effectiveness, a wash rack area can be incorporated into the design to further reduce sediment tracking. For long term projects, cattle guards or other type of permanent rock system can be used in conjunction with a wash rack. This directly addresses the problem of silt and mud deposition in roadways used for construction site access.

PRIMARY USE
Stabilized construction entrances are used primarily for sites in which significant truck traffic occurs on a daily basis. It reduces the need to remove sediment from streets. If used properly, it also directs the majority of traffic to to a single location, reducing the number and quantity of disturbed areas on the site and providing protection for other structural controls through traffic control.

APPLICATIONS
Stabilized construction entrances are a required part of the erosion control plan for all site developments larger than 5 acres and a recommended practice for all construction sites. It is not suitable for long, linear projects. If possible, small entrances should be incorporated into small lot construction due to the large percentage of disturbed area on the site and the high potential for offsite tracking of silt and mud.

DESIGN CRITERIA
- ☐ Stabilized construction entrances are to be constructed such that drainage across the entrance is directed to a controlled, stabilized outlet on site with provisions for storage, proper filtration and removal of wash water.
- ☐ The entrance must be properly graded so that storm water is not allowed to leave the site and enter roadways.
- ☐ Minimum width of entrance shall be 15 feet, but in no case shall the width be less than that of the entry way to be used.
- ☐ Minimum depth of entrance shall be 8 inches for the entire length of the control.
- ☐ Minimum dimensions for entrances of tract areas less than 1 acre shall be an average lot depth of 100 feet with a minimum entrance width of 15 feet and a minimum entrance depth of 20 feet.

LIMITATIONS
Selection of the construction entrance location is critical in that to be effective, it must be used exclusively.

Stabilized entrances are rather expensive considering that it must be installed in combination with one or more other sediment control techniques, but it may be cost effective compared to labor intensive street cleaning.

MAINTENANCE REQUIREMENTS
Inspections should be made on a regular basis and after large storm events in order to ascertain whether or not sediment and pollution are being effectively detained on site.

When sediment has substantially clogged the void area between the rocks, the aggregate mat must be washed down or replaced.

Periodic re-grading and top dressing with additional stone must be done to keep the efficiency of the entrance from diminishing.

Applications: Perimeter Control; Slope Protection; Sediment Trapping; Channel Protection; **Temporary Stabilization**; Permanent Stabilization; Waste Management; Housekeeping Practices

Targeted Constituents: ◒ Sediment; ○ Nutrients Toxic Materials; ○ Oil & Grease; ○ Floatable Materials; ○ Other Construction Wastes

Implementation Requirements: ◒ Capital Costs; ◒ Maintenance; ○ Training; ○ Suitability for Slopes > 5%

Legend: ● Significant Impact; ◒ Medium Impact; ○ Low Impact; ? Unknown or Questionable Impact

Fe=N/A
S–9

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. 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 solfits 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-site.
- ☐ Dumping into ditches or drainage facilities.

Recommended Disposal Practices
- ☐ Avoid unacceptable disposal practices listed above.
- ☐ Develop pre-determined, 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 areas 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 handled 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 re-educated 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 pre-determined disposal sites for waste concrete.
- ☐ Prohibit dumping waste concrete anywhere but pre-determined areas.
- ☐ Assign pre-determined truck and equipment washing areas
- ☐ Educate drivers and operators on proper disposal and equipment cleaning procedures.

Retention
- ☐ 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 waste management program.

Applications: Perimeter Control; Slope Protection; Sediment Trapping; Channel Protection; Temporary Stabilization; Permanent Stabilization; **Waste Management**; Housekeeping Practices

Targeted Constituents: ○ Sediment; ● Nutrients Toxic Materials; ○ Oil & Grease; ● Floatable Materials; ● Other Construction Wastes

Implementation Requirements: ◒ Capital Costs; ◒ Maintenance; ◒ Training; ○ Suitability for Slopes > 5%

Legend: ● Significant Impact; ◒ Medium Impact; ○ Low Impact; ? Unknown or Questionable Impact

W–3

Legend

- —SF— Silt Fence
- – – – Limits of Construction
- ——— Property Boundary
- 600 Elevation Contours
- Building Building Foot Print
- T Covered Trash
- → Direction of Storm Water Runoff Flow
- S Covered Storage
- Vegetated/Preserved Buffer Strip
- C Concrete Wash Area
- Inlet Protection
- North Arrow
- Stabilized Construction Entrance
  - ☐ Rock ☐ Dolly Mulch
  - ☐ Swale ☐ Other (Specify)
  - ☐ Erosion Mat

LEAST ONCE A WEEK OR WITHIN 24 HOURS OF ANY STORM EVENT OR 0.5 INCHES OR GREATER. IF A REPAIR IS NECESSARY IT WILL BE DONE AT THE EARLIEST PRACTICABLE DATE BUT WITHIN 48 HOURS.

SWPPP DETAILS

SCALE: AS SHOWN

GLENN ENGINEERING
T.B.P.E. FIRM #F - 303
PHONE 972-717-5151
105 DECKER COURT-SUITE 910
FAX 972-717-2176
IRVING, TEXAS 75062

TRINITY CHRISTIAN ACADEMY
DRAINAGE & DRIVE IMPROVEMENTS NEAR THE UPPER SCHOOL

SWPPP DETAILS SHEET 1

STATE OF TEXAS
THOMAS J. CASEY IV
86213
LICENSED PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY THOMAS J. CASEY IV, P.E. 86213, ON JUNE 23, 2010

Issue Dates:
Review: June 23, 2010

Construction:

Scale:	AS NOTED
Drawn By:	TJC
Checked By:	CMA
Project No.:	10 - 599.150

Sheet 6 of 15

SITE DESCRIPTION

PROJECT NAME & LOCATION: TRINITY CHRISTIAN ACADEMY
ADDISON, TEXAS

OWNER NAME & ADDRESS: TRINITY CHRISTIAN ACADEMY
17001 ADDISON ROAD
ADDISTON, TEXAS 75001

PROJECT DESCRIPTION: DRAINAGE & DRIVE IMPROVEMENTS

SEQUENCE OF MAJOR ACTIVITIES:
PLACEMENT OF EROSION CONTROL DEVICES
DENUDE SITE
INSTALLATION OF UTILITY LINES
PLACEMENT OF CONCRETE PAVEMENT
PLACEMENT OF GRASS
REMOVAL OF EROSION CONTROL DEVICES

MAJOR SOIL DISTURBING ACTIVITIES:
DENUDE SITE
INSTALLATION OF UTILITY LINES
PLACEMENT OF GRASS

PRE-DEVELOPMENT RUNOFF COEFFICIENT: 0.54

FINAL RUNOFF COEFFICIENT AFTER CONSTRUCTION: 0.83

TOTAL PROJECT AREA: 1 ACRES

TOTAL AREA TO BE DISTURBED: 1 ACRES

DESCRIPTION OF EXISTING SOIL: CLAY SOILS

DESCRIPTION OF STABILIZATION OF EXISTING DRAINAGE WAYS:

DESCRIPTION OF STABILIZATION OF EXISTING DRAINAGE WAYS:
SILT FENCE
INLET PROTECTION

DESCRIPTION OF EXISTING QUALITY OF STORM WATER DISCHARGE FOR SITE (IF AVAILABLE):

NAME OF RECEIVING WATERS:
TOWN OF ADDISON STORM SEWER

ADDITIONAL COMMENTS:

ESTIMATED PROJECT START DATE: JUNE 2010

ESTIMATED PROJECT END DATE: AUGUST 2010

SEQUENCE AND TIMING OF INDICATED EROSION CONTROL PRACTICES AND/OR FEATURES

PRIOR TO STARTING CONSTRUCTION:
PLACEMENT OF SILT FENCES
INSTALLATION OF INLET PROTECTION FOR STREET INLETS

DURING CONSTRUCTION:
INSPECTION AND MAINTENANCE OF SILT FENCES
INSTALLATION OF INLET PROTECTION FOR ON-SITE PAVING
PLACEMENT ROCK FILTER DAM

COMPLETION OF SITE:
INSTALLATION OF GRASS
REMOVAL OF EROSION CONTROL DEVICES

SITE RATING FACTOR UTILIZING INDICATED EROSION CONTROL & MEASURES = 0.70
(MUST BE 0.70 OR LARGER)

BENCHMARK:
TOWN OF ADDISON BENCHMARK 6, BRASS DISC SETON TOP OF EXISTING INLET, LOCATED ON THE EAST SIDE OF ADDISON ROAD, DIRECTLY EAST OF THE LOWER SCHOOL PLAYGROUNDS.
ELEV.= 639.88'

CAUTION!!!
CONTACT:

DIG TESS	1-800-344-8377
ATMOS	1-800-344-8377
AT&T:	1-800-344-8377
TXU:	1-800-344-8377
SOUTHWESTERN BELL:	1-800-344-8377
TOWN OF ADDISON	972 - 450 - 2871

AT LEAST
48 HOURS PRIOR TO CONSTRUCTION

EROSION AND SEDIMENT CONTROLS

STABILIZATION PRACTICES:
DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITY HAS CEASED (TEMPORARILY OR PERMANENTLY) SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITIES ARE SCHEDULED TO RESUME WITHIN 21 DAYS.

TEMPORARY	PERMANENT	
____	_X_	SEED OR SOD
____	____	VEGETATION OTHER THAN SEED OR SOD
____	_X_	EROSION CONTROL MATS
____	____	PRESERVATION OF NATURAL VEGETATION
____	____	OTHER (DESCRIBE)

ADDITIONAL COMMENTS:

STRUCTURAL PRACTICES:

TEMPORARY	PERMANENT	
_X_	____	SILT FENCE
____	____	HAY BALES
____	____	ROCK BERMS
____	____	DIVERSION, INTERCEPTOR OR PERIMETER DIKES
____	____	DIVERSION, INTERCEPTOR OR PERIMETER SWALES
____	____	PIPE SLOPE DRAIN
____	____	TRIANGULAR SEDIMENT FILTER DIKE
_X_	____	INLET PROTECTION
____	____	STONE OUTLET SEDIMENT TRAP
____	____	SEDIMENT BASIN (REQUIRED FOR 10 ACRES OR LARGER WHERE ATTAINABLE)
____	____	CHECK DAM
____	____	TEMPORARY SEDIMENT TANK
_X_	____	STABILIZED CONSTRUCTION ENTRANCE
____	____	SANDBAG BERM
____	____	OTHER (DESCRIBE):

ADDITIONAL COMMENTS:

OTHER ADDITIONAL STORM WATER MANAGEMENT FEATURES:

PERMANENT	
_X_	CURB & GUTTER
_X_	STORM SEWER INLETS
_X_	STORM SEWER
____	CULVERTS
____	STORM WATER DETENTION POND
____	VELOCITY DISSIPATION DEVICES
____	OTHER (DESCRIBE):

ADDITIONAL COMMENTS:

EROSION AND SEDIMENT CONTROLS

MAINTENANCE/INSPECTION PROCEDURES

1. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN A RAIN GAUGE UTILIZING MIN. 0.1 INCH INCREMENTS AT THE PROJECT SITE.
2. CONTROL MEASURES WILL BE INSPECTED AT LEAST ONCE A WEEK OR WITHIN 24 HOURS OF ANY STORM EVENT OF 0.5 INCH OR GREATER. IF A REPAIR IS NECESSARY IT WILL BE DONE AT THE EARLIEST PRACTICABLE DATE.
3. INSPECTION WILL BE PERFORMED BY THE OWNERS REPRESENTATIVE AT LEAST ONCE A WEEK AS WELL AS AFTER EVERY 0.5 INCH OF RAIN OR GREATER. AN INSPECTION AND MAINTENANCE REPORT WILL BE MADE FOR EACH INSPECTION AND KEPT AT THE PROJECT SITE. THE INSPECTION SHOULD USE THE OPERATOR INSPECTION FORM IN THE NCTCOG CONSTRUCTION BMP MANUAL OR OTHER FORM APPROVED BY THE CITY.
4. THE CONTRACTOR SHALL KEEP RECORDS OF THE CONSTRUCTION ACTIVITY ON THE SITE.

OTHER (DESCRIBE)

OTHER BEST MANAGEMENT (HOUSEKEEPING) PRACTICES:
THE FOLLOWING INDICATED PRACTICES SHALL BE FOLLOWED:

LIME STABILIZATION:
_X_ ATTACHED BMP S-11 FROM NCTCOG CONSTRUCTION BMP MANUAL
____ OTHER (DESCRIBE):

SOLID WASTE MANAGEMENT:
_X_ ATTACHED BMP W-1 FROM NCTCOG CONSTRUCTION BMP MANUAL
____ OTHER (DESCRIBE):

CONTRACTOR TO HAVE A TRASH RECEPTABLE ON SITE TO COLLECT SOLID WASTE TO PREVENT AIRBORNE DEBRIS.

HAZARDOUS WASTE MANAGEMENT:
_X_ ATTACHED BMP W-2 FROM NCTCOG CONSTRUCTION BMP MANUAL
____ STORAGE AREAS (DESCRIBE):
____ OTHER (DESCRIBE):

CONCRETE WASTE MANAGEMENT:
_X_ ATTACHED BMP W-3 FROM NCTCOG CONSTRUCTION BMP MANUAL
____ OTHER (DESCRIBE):

SANDBLASTING WASTE MANAGEMENT:
_X_ ATTACHED BMP W-4 FROM NCTCOG CONSTRUCTION BMP MANUAL
____ OTHER (DESCRIBE):

DUST REDUCTION MEASURES:
_X_ DISTURBED AREAS DAMPENED PERIODICALLY FOR DUST CONTROL
____ EXCESS DIRT ON ADJACENT ROADS REMOVED DAILY
____ OTHER (DESCRIBE):

ALLOWABLE NON-STORM WATER DISCHARGES

- DISCHARGES FROM FIRE FIGHTING ACTIVITIES.
- FIRE HYDRANT FLUSHINGS. *
- WATER USED TO WASH VEHICLES OR CONTROL DUST.
- POTABLE WATER SOURCES (INCLUDING WATERLINE FLUSHINGS CONTAINING LESS THAN 1000 GALLONS). *
- UNCONTAMINATED GROUND WATER (INCLUDING DEWATERING GROUNDWATER INFILTRATION).
- FOUNDATION OR FOOTING DRAINS WHERE FLOWS ARE NOT CONTAMINATED WITH PROCESS MATERIALS SUCH AS SOLVENTS.
- SPRINGS, RIPARIAN HABITATS, WETLANDS AND UNCONTAMINATED GROUNDWATER.
- IRRIGATION WATER.
- EXTERIOR BUILDING WASH DOWN WITHOUT DETERGENTS.
- PAVEMENT WASH WATERS WHERE SPILLS OR LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE NOT OCCURRED (UNLESS ALL SPILL MATERIAL HAS BEEN REMOVED) AND WHERE DETERGENTS ARE NOT USED.
- AIR CONDITIONING CONDENSATE.

* HEAVILY CHLORINATED WATER (3.5 MG/L OR GREATER FREE CHLORINE) RESULTING FROM WATER LINE STERILIZATION SHALL BE DIRECTED UNDER PERMIT TO THE SANITARY SEWER UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL APPLY TO THE ENGINEERING DEPARTMENT FOR A SANITARY SEWER DISCHARGE PERMIT AFTER THE MANDATORY CHLORINE RETENTION TIME (USUALLY 24 HOURS). THE HEAVILY CHLORINATED WATER MAY BE DISCHARGED TO THE SANITARY SEWER, BEGINNING TWO WORKING DAYS AFTER PERMIT APPLICATION.

SIGNATORY REQUIREMENTS

THE CITY HAS ADOPTED THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS (NCTCOG) CONSTRUCTION BMP MANUAL. THESE OUTLINES WERE DEVELOPED AS AN AID FOR THOSE PREPARING STORM WATER POLLUTION PREVENTION PLANS (SW3P'S) FOR VARIOUS CONSTRUCTION ACTIVITIES IN THE CITY. THEIR USE DOES NOT RELIEVE THE DESIGN ENGINEER OR OPERATOR(S) FROM COMPLYING WITH THE NCTCOG BMP MANUAL OR THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR STORM WATER DISCHARGE FROM CONSTRUCTION SITES.

THE SW3P SHALL BE SEALED BY A TEXAS REGISTERED PROFESSIONAL ENGINEER AND CERTIFIED BY THE OWNER THAT THE INFORMATION IS TRUE AND THAT THEY ASSUME RESPONSIBILITY FOR THE PLAN. ADDITIONALLY, THEY SHALL CERTIFY THAT THE PLAN MEETS STATE AND LOCAL REQUIREMENTS FOR EROSION AND SEDIMENT CONTROL AND STORM WATER QUALITY. IN ALL CASES, A DULY AUTHORIZED REPRESENTATIVE AS INDICATED IN THE GENERAL PERMIT MAY CERTIFY THIS PLAN.

PRIOR TO THE COMMENCEMENT OF WORK, THE OWNER AND GENERAL CONTRACTOR MUST SUBMIT NOTICES OF INTENT (NOI) AS CO-PERMITTEES TO DISCHARGE STORM WATER FROM A CONSTRUCTION SITE UNDER THE NPDES PERMIT. ADDITIONALLY, ALL CONTRACTORS AND SUBCONTRACTORS (INCLUDING FRANCHISE UTILITIES) WHOSE ACTIVITIES IMPACT THE SW3P MUST SIGN AN APPROVED CERTIFICATION THAT THEY UNDERSTAND THEIR RESPONSIBILITIES UNDER THE PLAN. NO WORK WILL BE ALLOWED UNTIL COPIES OF ALL APPROPRIATE NOI'S AND CERTIFICATIONS ARE RECEIVED BY THE CITY.

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

SIGNATURE: _____ DATE: _____
(OWNER)

TITLE: _____

I CERTIFY THAT THE STORM WATER POLLUTION PREVENTION PLAN REFLECTS THE TOWN OF ADDISON REQUIREMENTS FOR STORM WATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL AS ESTABLISHED IN THE NCTCOG BMP MANUAL.

SIGNATURE: _____ DATE: _____
(OWNER)

TITLE: _____

SWPPP DETAILS

SCALE: AS SHOWN

GLENN ENGINEERING
T.B.P.E. FIRM #F-303
PHONE 972-717-5151 FAX 972-717-2176
105 DECKER COURT-SUITE 910 IRVING, TEXAS 75062

TRINITY CHRISTIAN ACADEMY
DRAINAGE & DRIVE IMPROVEMENTS NEAR THE UPPER SCHOOL

SWPPP DETAILS SHEET 2

STATE OF TEXAS
THOMAS J. CASEY IV
86213
LICENSED PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY THOMAS J. CASEY IV, P.E. 86213, ON JUNE 30, 2010

Issue Dates:
Review: June 23, 2010

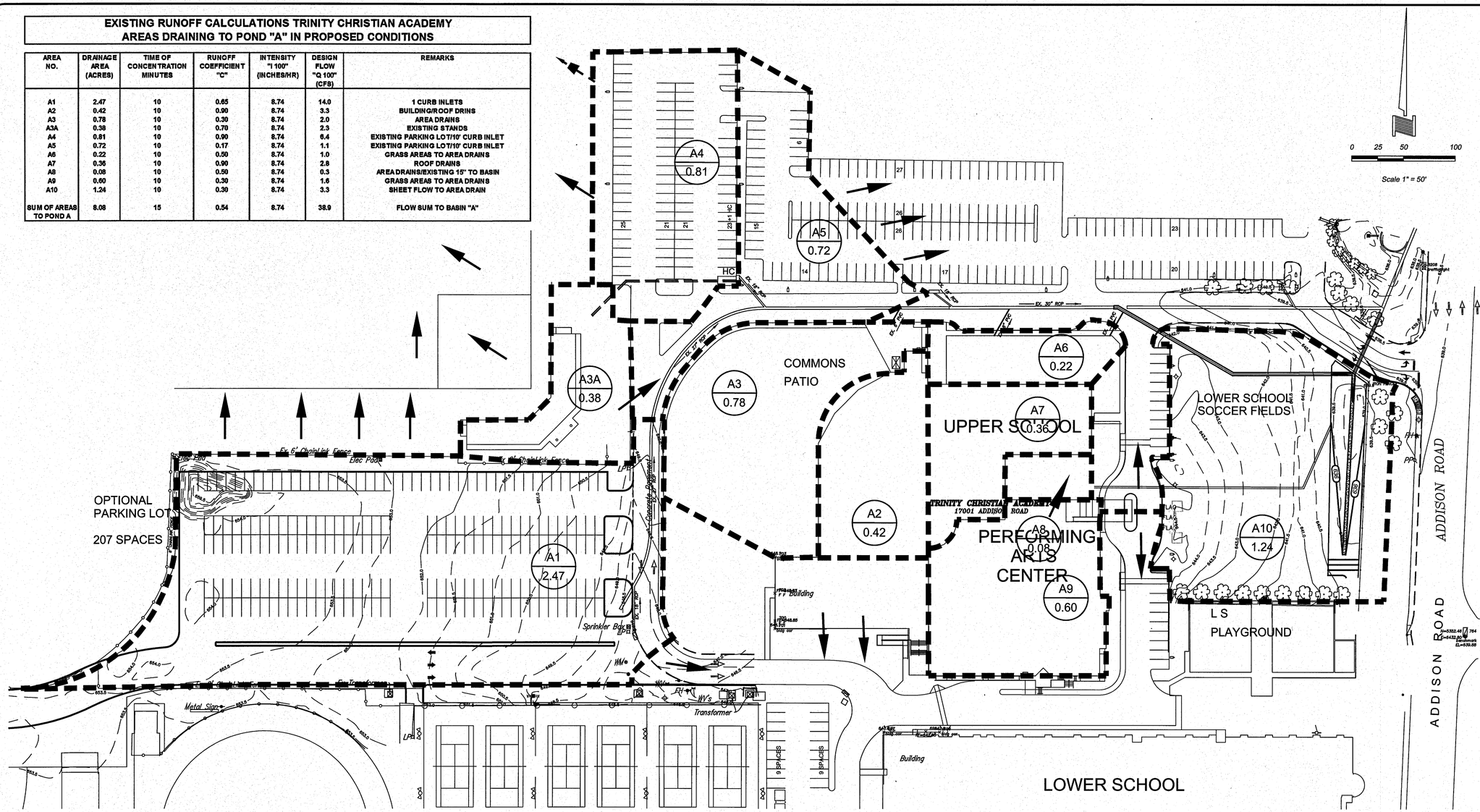
Construction:

Scale:	AS NOTED
Drawn By:	TJC
Checked By:	CMA
Project No.:	10 - 599.150

Sheet 7 of 15

EXISTING RUNOFF CALCULATIONS TRINITY CHRISTIAN ACADEMY
AREAS DRAINING TO POND "A" IN PROPOSED CONDITIONS

AREA NO.	DRAINAGE AREA (ACRES)	TIME OF CONCENTRATION MINUTES	RUNOFF COEFFICIENT "C"	INTENSITY "I 100" (INCHES/HR)	DESIGN FLOW "Q 100" (CFS)	REMARKS
A1	2.47	10	0.65	8.74	14.0	1 CURB INLETS
A2	0.42	10	0.90	8.74	3.3	BUILDING/ROOF DRINS
A3	0.78	10	0.30	8.74	2.0	AREA DRAINS
A3A	0.38	10	0.70	8.74	2.3	EXISTING STANDS
A4	0.81	10	0.90	8.74	6.4	EXISTING PARKING LOT/10' CURB INLET
A5	0.72	10	0.17	8.74	1.1	EXISTING PARKING LOT/10' CURB INLET
A6	0.22	10	0.50	8.74	1.0	GRASS AREAS TO AREA DRAINS
A7	0.36	10	0.90	8.74	2.8	ROOF DRAINS
A8	0.08	10	0.50	8.74	0.3	AREA DRAINS/EXISTING 15" TO BASIN
A9	0.60	10	0.30	8.74	1.6	GRASS AREAS TO AREA DRAINS
A10	1.24	10	0.30	8.74	3.3	SHEET FLOW TO AREA DRAIN
SUM OF AREAS TO POND A	8.08	15	0.54	8.74	38.9	FLOW SUM TO BASIN "A"



PROPOSED RUNOFF CALCULATIONS TRINITY CHRISTIAN ACADEMY
TO POND A

AREA NO.	DRAINAGE AREA (ACRES)	TIME OF CONCENTRATION MINUTES	RUNOFF COEFFICIENT "C"	INTENSITY "I 100" (INCHES/HR)	DESIGN FLOW "Q 100" (CFS)	REMARKS
A1	2.47	10	0.90	8.74	19.4	PROPOSED PARKING LOT - 2 CURB INLETS
A2	0.42	10	0.90	8.74	3.3	BUILDING/ROOF DRINS
A3	0.78	10	0.90	8.74	6.1	FUTURE BUILDING EXPANSION/ROOF DRAINS
A3A	0.38	10	0.90	8.74	3.0	FUTURE COURTYARD EXPANSION & EXISTING STANDS
A4	0.81	10	0.90	8.74	6.4	EXISTING PARKING LOT/10' CURB INLET
A5	0.72	10	0.90	8.74	5.7	EXISTING PARKING LOT/10' CURB INLET
A6	0.22	10	0.90	8.74	1.7	GRASS AREAS TO AREA DRAINS
A7	0.36	10	0.90	8.74	2.8	ROOF DRAINS
A8	0.08	10	0.70	8.74	0.5	COURTYARD TO AREA DRAINS/EXISTING 18" TO BASIN
A9	0.60	10	0.90	8.74	4.7	ROOF DRAINS TO EXISTING 18" TO BASIN
A10	1.24	10	0.50	8.74	5.3	SHEET FLOW TO BASIN - GRASS
SUM OF AREAS TO POND A	8.08	15	0.83	8.74	59.7	FLOW SUM TO BASIN "A"

CAUTION!!!!
CONTACT:

DIG TESS	1-800-344-8377
ATMOS	1-800-344-8377
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SOUTHWESTERN BELL:	1-800-344-8377
TOWN OF ADDISON	972 - 450 - 2871

AT LEAST
48 HOURS PRIOR TO CONSTRUCTION

BENCHMARK:
TOWN OF ADDISON BENCHMARK 6, BRASS DISC SETON TOP OF EXISTING INLET, LOCATED ON THE EAST SIDE OF ADDISON ROAD, DIRECTLY EAST OF THE LOWER SCHOOL PLAYGROUNDS.
ELEV.= 639.88'

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TRINITY CHRISTIAN ACADEMY
DRAINAGE & DRIVE IMPROVEMENTS NEAR THE UPPER SCHOOL

DRAINAGE AREA MAP

STATE OF TEXAS
THOMAS J. CASEY IV
86213
LICENSED PROFESSIONAL ENGINEER
THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY THOMAS J. CASEY IV, P.E. 86213, ON JUNE 23, 2010

Issue Dates:
Review: June 23, 2010

Construction:

Scale:	AS NOTED
Drawn By:	TJC
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Project No.:	10 - 599.150

Sheet 8 of 15

COMPUTATION SHEET

HYDRAULIC COMPUTATIONS FOR STORM DRAINS

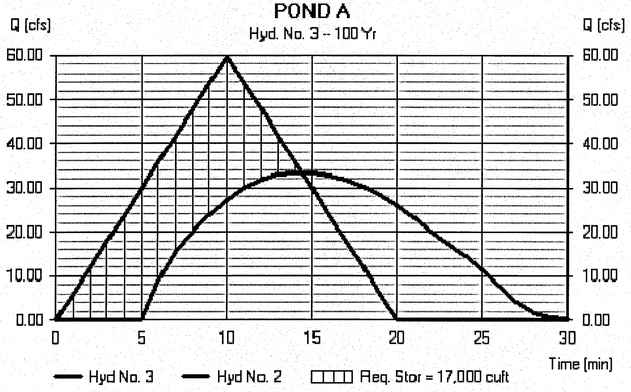
STORM DRAIN HYDRAULIC CALCULATIONS TABLE BASED ON CITY OF DALLAS DETENTION METHOD WITH STARTING W.S. ELEV. = 638.95

FROM	TO	Pipe Length	Drainage Area Incremental		Runoff	Incr.	Total	Time Of Concentration			5-year	100-year	Q-5	Q-100	Inlet	Q	Pipe	Manning's		HGL		HEAD LOSS CALCULATIONS								Design	Invert Elev.		T/C
				Total	"C"	CA	CA	Inlet	Travel	Total	Intensity	Intensity	Runoff	Runoff	Bypass	pipe	Size	n	Sf	D/S	U/S	V1 (in)	V2 (out)	V1^2/2G	V2^2/2G	Kj	KjV1^2/2G	Hk		HGL	FROM	TO	ELEV.	
		feet	No.	Area	Area			min.	min.	min.	in/hr	in/hr	cfs	cfs	cfs	cfs	in		ft/ft	Elev.	Elev.	ft/sec	ft/sec	ft	ft		ft	ft		Elev.	ft	ft.	ft.	COMMENTS
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
LINE "A" PRIVATE																																		
653	1014	381.0	A1	2.47	2.47	0.90	2.22	2.22	10.00	NA	10.00	5.74	8.74	12.8	19.4	0.0	19.4	27	0.013	0.0039	645.19	646.60	NA	4.86	NA	0.37	1.25	0.46	0.46	647.06	640.88	642.32	647.7 +/-	FUTURE CURB INLET TC = 647.7 +/-
520.0	653.0	133.0	A3A & A4	1.19	3.66	0.90	3.29	3.29	10.00	NA	10.00	5.74	8.74	18.9	28.8	0.0	28.8	27	0.013	0.0086	643.59	644.73	7.24	9.61	0.81	1.43	0.75	0.61	0.82	644.73	639.01	640.88	NA	
470.0	520.0	50.0	A2 & A3	1.20	4.86	0.90	1.08	4.37	10.00	NA	10.00	5.74	8.74	25.1	38.2	0.0	38.2	27	0.013	0.0152	642.01	642.77	9.61	8.94	1.43	1.24	0.75	1.08	0.17	642.77	638.06	639.01	NA	BRANCH LINE EXISTING INLET TC = 645.8+/-
313.1	470.0	156.9	A5	0.72	5.58	0.90	0.65	5.02	10.00	NA	10.00	5.74	8.74	28.8	43.9	0.0	43.9	30	0.013	0.0114	640.05	641.84	8.94	5.03	1.24	0.39	NA	NA	-0.42	641.84	635.81	638.06	NA	FROM CITY OF DALLAS HL = V2^2/4G - V1^2/4G
181.0	313.1	132.1	A6 & A7	0.58	6.16	0.90	0.52	5.54	10.00	NA	10.00	5.74	8.74	31.8	48.4	0.0	48.4	42	0.013	0.0023	640.17	640.47	5.03	5.03	0.39	0.39	0.25	0.10	0.29	640.47	635.06	635.81	NA	
85.7	181.0	95.3	NA	NA	6.16	NA	NA	NA	10.00	NA	10.00	5.74	8.74	31.8	48.4	0.0	48.4	42	0.013	0.0023	639.85	640.07	5.03	NA	0.39	NA	0.25	0.10	0.10	640.07	634.50	635.06	NA	
64.0	85.7	21.7	A8, A9 &A10	1.92	8.08	0.67	1.29	6.83	10.00	NA	10.00	5.74	8.74	39.2	59.7	0.0	59.7	42	0.013	0.0000	639.85	639.85	NA	NA	NA	NA	NA	NA	NA	639.85	634.28	634.50	NA	
0.0	64.0	64.0	ROUTED THROUGH	NA	8.08	NA	NA	NA	10.00	NA	10.00	5.74	8.74	22.3	36.4	0.0	36.4	30	0.013	0.0035	636.72	639.85	10.03	5.3	1.56	0.44	0.23	0.36	NA	639.85	633.64	634.28	NA	
			DETENTION BASIN																															

HYDRAFLOW HYDROGRAPHS INFORMATION
(IF 26.5" ORIFICE PLATE WAS REMOVED)

EXECUTIVE SUMMARY - POND "A" - 100 YEAR STORM

BASIN ANALYSIS METHOD	QMAX TO PROPOSED BASIN (CFS)	QMAX EXISTING (CFS)	QMAX OUT OF BASIN (ROUTED) (CFS)	MAX. 100 YR WATER SURFACE ELEVATION	MAX. STORAGE C.F.
TAILWATER ANALYSIS, ELEV. 636.72	59.7	38.9	33.4	638.71	17,000
NO TAILWATER ANALYSIS	59.7	38.9	36.3	637.91	12,226



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AT LEAST
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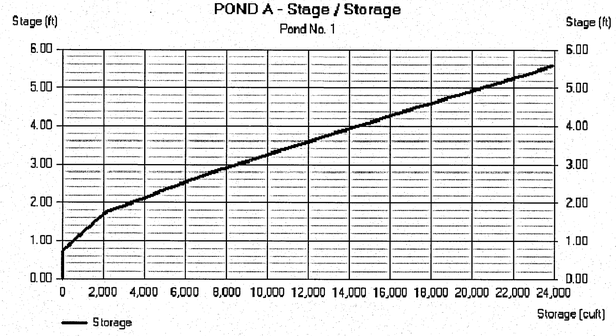
TOWN OF ADDISON BENCHMARK 6, BRASS DISC SETON TOP OF EXISTING INLET, LOCATED ON THE EAST SIDE OF ADDISON ROAD, DIRECTLY EAST OF THE LOWER SCHOOL PLAYGROUNDS.
ELEV.= 639.88'

OUTLET RATING - NO TAILWATER - 26.5" ORIFICE PLATE
(DALLAS METHOD)

$$Q = C*A*\sqrt{2*G*H}$$

WHERE:
C = 0.60
A = 3.82 S.F.
H = 4.47 FT (MAX. ELEV. ABOVE CENTERLINE)
G = 32.2 FPS/S
Q = 38.9 CFS

POND A STAGE STORAGE INFORMATION
STAGE 0 = ELEVATION 634.28
(COMMON TO BOTH DESIGN METHODS)



DALLAS METHOD DETENTION BASIN VOLUME CALCULATIONS
TRINITY CHRISTIAN ACADEMY

DURATION (Hours)	DURATION (Minutes)	Rainfall Intensity (in/hr)	Inflow Rate (cfs)	Inflow Volume (cf)	Outflow Rate (cfs)	Outflow Volume (cf)	Inflow - Outflow Volume (cf)	
0.17	10	8.71	59.7	35820	38.9	23340	12480	
0.25	15	7.52	51.4	46230	38.9	29175	17055	
0.33	20	6.80	46.4	55738	38.9	35010	20728	
0.50	30	5.74	39.2	70574	38.9	46680	23894	
0.67	40	4.94	33.7	80984	38.9	58350	22634	
0.83	50	4.37	29.9	89550	38.9	70020	19530	
1.00	60	3.90	26.6	95903	38.9	81690	14213	
1.17	70	3.65	24.9	104714	38.9	93360	11354	
1.33	80	3.35	22.9	109837	38.9	105030	4807	
1.50	90	3.08	21.0	113608	38.9	116700	-3092	
1.67	100	2.87	19.6	117624	38.9	128370	-10746	
1.83	110	2.70	18.4	121722	38.9	140040	-18318	
2.00	120	2.53	17.3	124427	38.9	151710	-27283	

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TRINITY CHRISTIAN ACADEMY
DRAINAGE & DRIVE IMPROVEMENTS NEAR THE UPPER SCHOOL

DRAINAGE CALCS

STATE OF TEXAS
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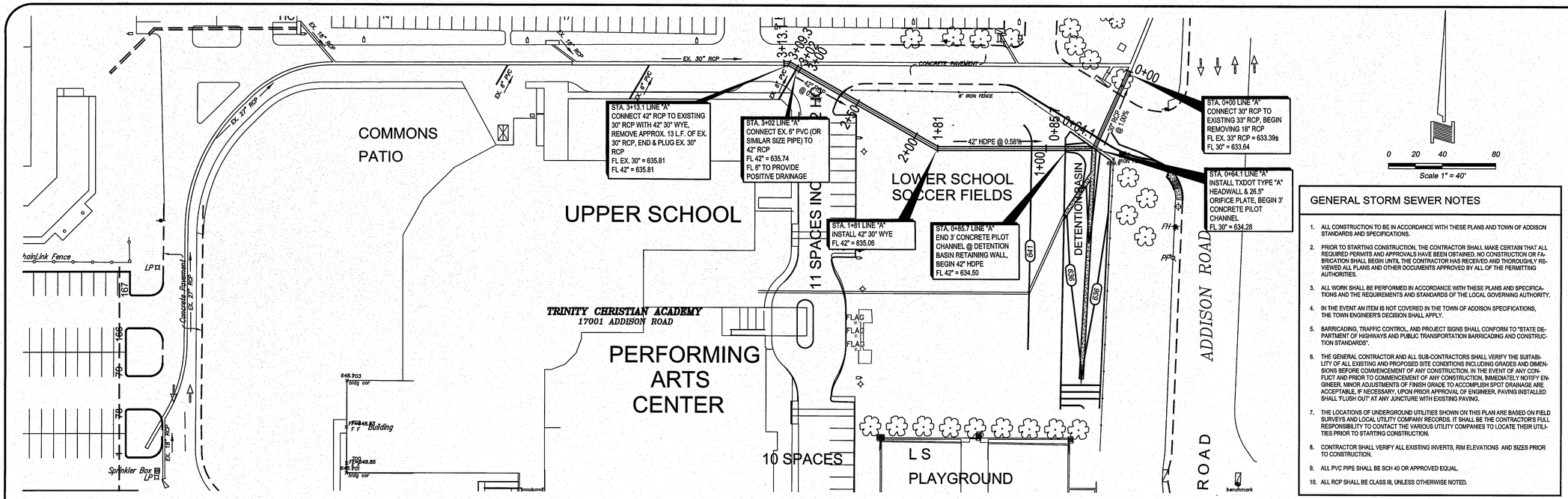
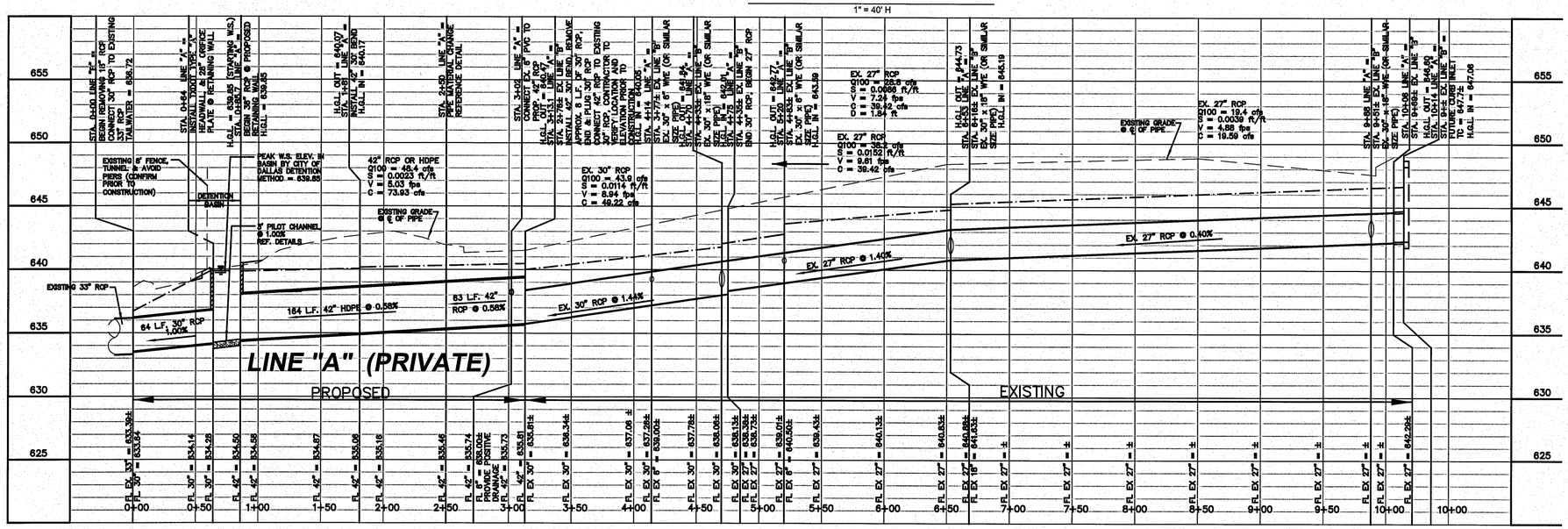


GENERAL STORM SEWER NOTES

1. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THESE PLANS AND TOWN OF ADDISON STANDARDS AND SPECIFICATIONS.
2. 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.
3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE REQUIREMENTS AND STANDARDS OF THE LOCAL GOVERNING AUTHORITY.
4. IN THE EVENT AN ITEM IS NOT COVERED IN THE TOWN OF ADDISON SPECIFICATIONS, THE TOWN ENGINEER'S DECISION SHALL APPLY.
5. BARRICADING, TRAFFIC CONTROL, AND PROJECT SIGNS SHALL CONFORM TO "STATE DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION BARRICADING AND CONSTRUCTION STANDARDS".
6. THE GENERAL CONTRACTOR AND ALL SUB-CONTRACTORS 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. PAVING INSTALLED SHALL "FLUSH OUT" AT ANY JUNCTURE WITH EXISTING PAVING.
7. 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.
8. CONTRACTOR SHALL VERIFY ALL EXISTING INVERTS, RIM ELEVATIONS AND SIZES PRIOR TO CONSTRUCTION.
9. ALL PVC PIPE SHALL BE SCH 40 OR APPROVED EQUAL.
10. ALL RCP SHALL BE CLASS III, UNLESS OTHERWISE NOTED.

STORM SEWER PLAN

1" = 40' H



STORM SEWER PROFILE

SCALE: 1" = 4' V
1" = 40' H

CAUTION!!!!
CONTACT:

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TOWN OF ADDISON	972 - 450 - 2871

AT LEAST
48 HOURS PRIOR TO CONSTRUCTION

BENCHMARK:
TOWN OF ADDISON BENCHMARK 6, BRASS DISC SETON TOP OF EXISTING INLET, LOCATED ON THE EAST SIDE OF ADDISON ROAD, DIRECTLY EAST OF THE LOWER SCHOOL PLAYGROUNDS.
ELEV.= 639.88'

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TRINITY CHRISTIAN ACADEMY
DRAINAGE & DRIVE IMPROVEMENTS NEAR THE UPPER SCHOOL

STORM SEWER PLAN & PROFILE

STATE OF TEXAS
THOMAS J. CASEY IV
86213
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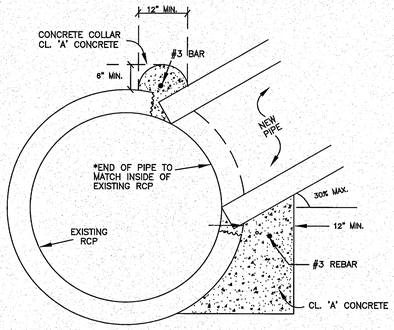
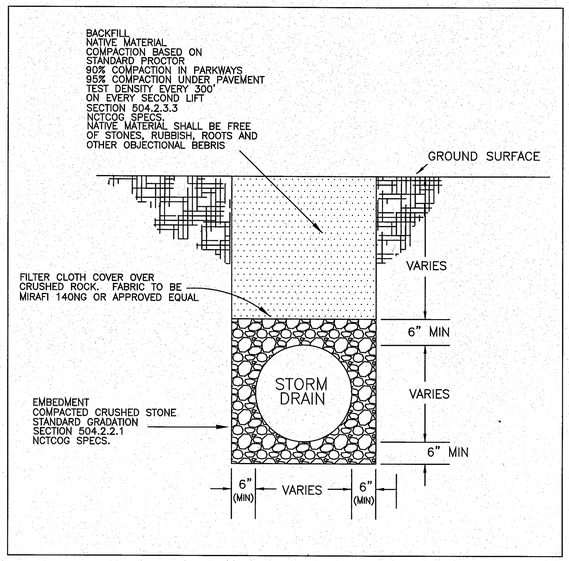


* REMOVAL OF PLUG FROM EXISTING RCP TO BE ACCOMPLISHED BY USING A MASONRY DRILL AT A SPACING EQUAL TO THE DRILL BIT DIAMETER IN A CIRCULAR PATTERN OR A MASONRY SAW IN AN OCTAGONAL PATTERN PER DETAIL.

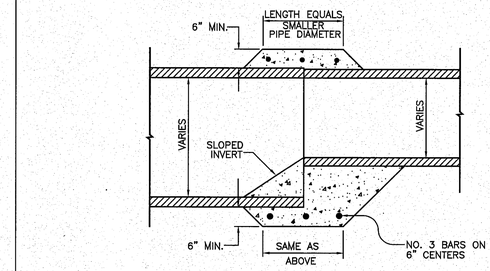
STORM DRAIN CONNECTION TO EXISTING RCP

NTS

THIS DETAIL APPLICABLE ONLY FOR APPLICATIONS WHERE NEW PIPE IS LESS THAN OR EQUAL TO ONE HALF THE DIAMETER OF THE EXISTING PIPE. FOR APPLICATIONS WHERE THE NEW PIPE IS GREATER THAN HALF THE SIZE OF THE EXISTING PIPE, A PREFABRICATED WYE SHALL BE USED.



STORM DRAIN EMBEDMENT



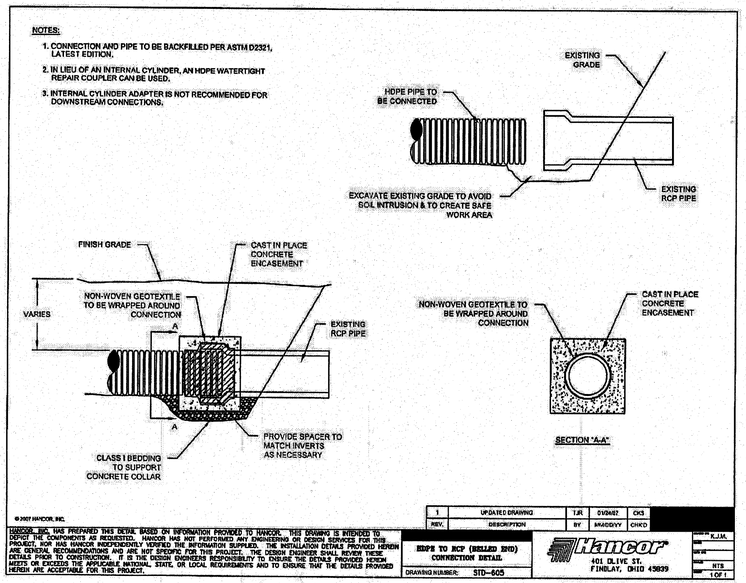
PIPE COLLAR DETAIL

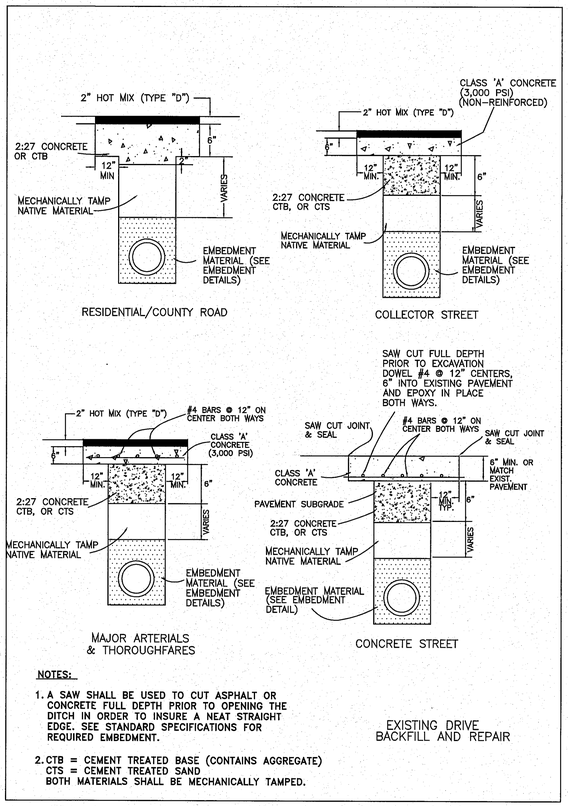
NOTES

1. THIS PROCEDURE/DETAIL WILL ONLY BE USED WHEN A PREFAB REDUCTION IS NOT POSSIBLE.
2. CONCRETE FOR COLLAR WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERED SUBSIDIARY TO THE VARIOUS OTHER BIDS.
3. CONCRETE SHALL BE 5 SACK 3000 PSI.

PIPE COLLAR

ORIFICE PLATE DETAIL





NOTES:

1. A SAW SHALL BE USED TO CUT ASPHALT OR CONCRETE FULL DEPTH PRIOR TO OPENING THE DITCH IN ORDER TO INSURE A NEAT STRAIGHT EDGE. SEE STANDARD SPECIFICATIONS FOR REQUIRED EMBEDMENT.
2. CTB = CEMENT TREATED BASE (CONTAINS AGGREGATE)
   CTS = CEMENT TREATED SAND
   BOTH MATERIALS SHALL BE MECHANICALLY TAMPED.

EXISTING DRIVE BACKFILL AND REPAIR

BENCHMARK:
TOWN OF ADDISON BENCHMARK 6, BRASS DISC SETON TOP OF EXISTING INLET, LOCATED ON THE EAST SIDE OF ADDISON ROAD, DIRECTLY EAST OF THE LOWER SCHOOL PLAYGROUNDS.
ELEV.= 639.88'

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AT LEAST 48 HOURS PRIOR TO CONSTRUCTION

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TRINITY CHRISTIAN ACADEMY
DRAINAGE & DRIVE IMPROVEMENTS NEAR THE UPPER SCHOOL

STORM SEWER DETAILS

STATE OF TEXAS
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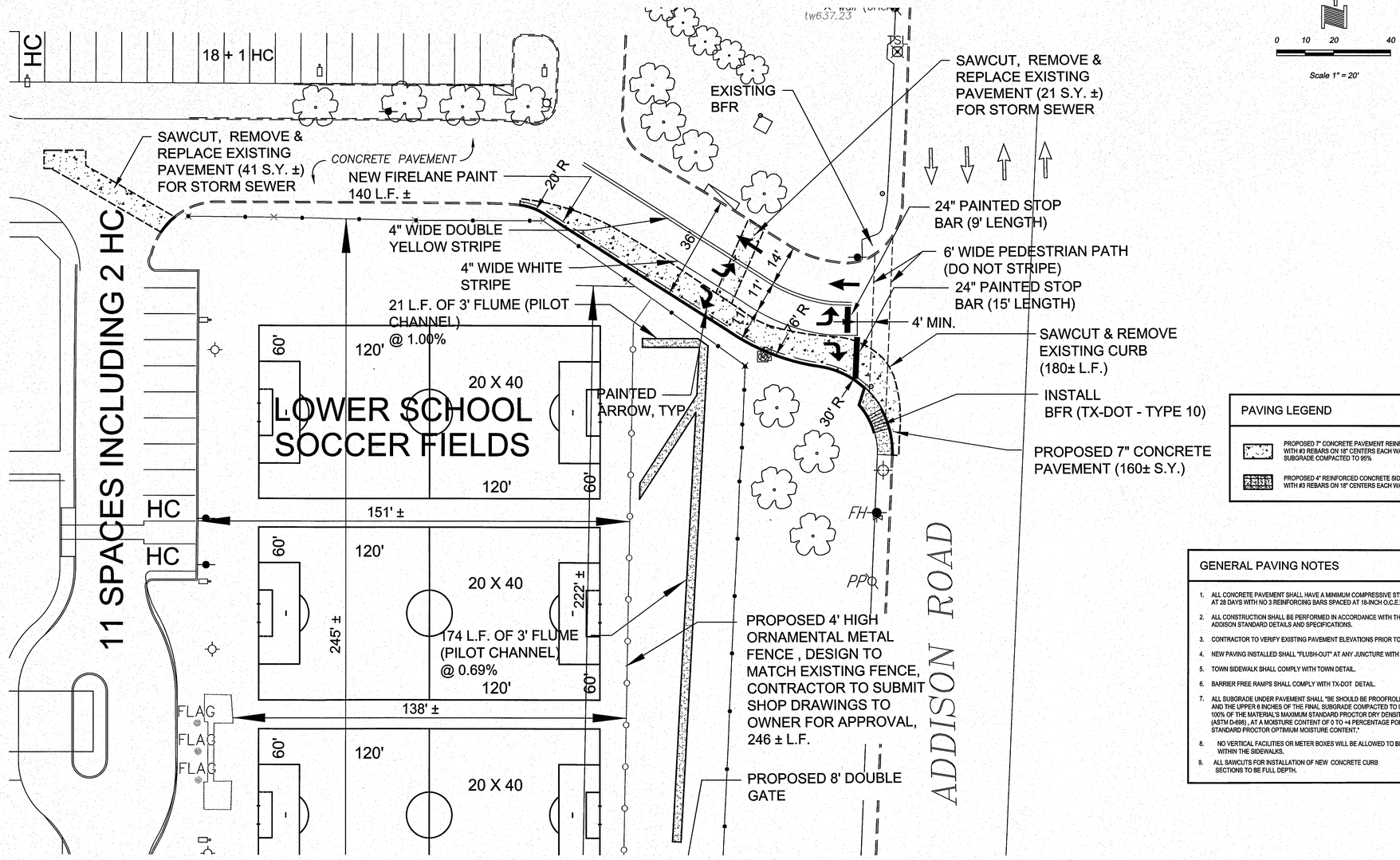


PAVING LEGEND

- PROPOSED 7" CONCRETE PAVEMENT REINFORCED WITH #3 REBARS ON 18" CENTERS EACH WAY ON SUBGRADE COMPACTED TO 95%
- PROPOSED 4" REINFORCED CONCRETE SIDEWALK WITH #3 REBARS ON 18" CENTERS EACH WAY

GENERAL PAVING NOTES

1. ALL CONCRETE PAVEMENT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3600 PSI AT 28 DAYS WITH NO 3 REINFORCING BARS SPACED AT 18-INCH O.C.E.W. MINIMUM.
2. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE TOWN OF ADDISON STANDARD DETAILS AND SPECIFICATIONS.
3. CONTRACTOR TO VERIFY EXISTING PAVEMENT ELEVATIONS PRIOR TO CONSTRUCTION.
4. NEW PAVING INSTALLED SHALL "FLUSH-OUT" AT ANY JUNCTURE WITH EXISTING PAVING.
5. TOWN SIDEWALK SHALL COMPLY WITH TOWN DETAIL.
6. BARRIER FREE RAMPS SHALL COMPLY WITH TX-DOT DETAIL.
7. ALL SUBGRADE UNDER PAVEMENT SHALL "BE SHOULD BE PROOFROLLED AND THE UPPER 6 INCHES OF THE FINAL SUBGRADE COMPACTED TO 95% - 100% OF THE MATERIAL'S MAXIMUM STANDARD PROCTOR DRY DENSITY (ASTM D-698) ,AT A MOISTURE CONTENT OF 0 TO +4 PERCENTAGE POINTS OF STANDARD PROCTOR OPTIMIUM MOISTURE CONTENT."
8. NO VERTICAL FACILITIES OR METER BOXES WILL BE ALLOWED TO BE LOCATED WITHIN THE SIDEWALKS.
9. ALL SAWCUTS FOR INSTALLATION OF NEW CONCRETE CURB SECTIONS TO BE FULL DEPTH.

CAUTION!!!!
CONTACT:

DIG TESS	1-800-344-8377
ATMOS	1-800-344-8377
AT&T:	1-800-344-8377
TXU:	1-800-344-8377
SOUTHWESTERN BELL:	1-800-344-8377
TOWN OF ADDISON	972 - 450 - 2871

AT LEAST 48 HOURS PRIOR TO CONSTRUCTION

BENCHMARK:
TOWN OF ADDISON BENCHMARK 6, BRASS DISC SETON TOP OF EXISTING INLET, LOCATED ON THE EAST SIDE OF ADDISON ROAD, DIRECTLY EAST OF THE LOWER SCHOOL PLAYGROUNDS.
ELEV.= 639.88'

NOTE: NEW FIRELANE PAINT ON SOUTH SIDE OF ENTRANCE SHALL CONFORM TO TOWN OF ADDISON STANDARDS (MATCH EXISTING FIRELANE PAINTING).

GLENN ENGINEERING
T.B.P.E. FIRM # F - 303
PHONE 972-717-5151
105 DECKER COURT-SUITE 910
IRVING, TEXAS 75062
FAX 972-717-2176

TRINITY CHRISTIAN ACADEMY
DRAINAGE & DRIVE IMPROVEMENTS NEAR THE UPPER SCHOOL

PAVING PLAN

STATE OF TEXAS
THOMAS J. CASEY IV
86213
LICENSED PROFESSIONAL ENGINEER

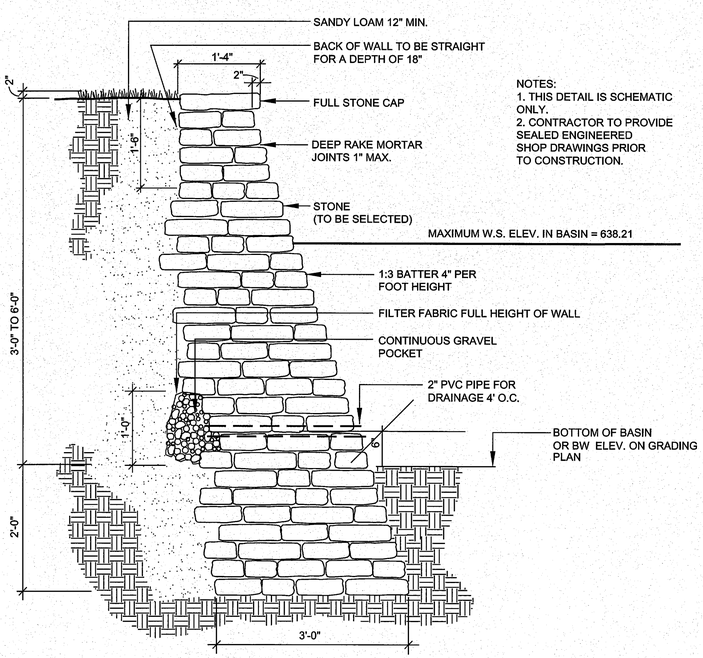
THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY THOMAS J. CASEY IV, P.E. 86213, ON JULY 8, 2010

Issue Dates:
Review: June 23, 2010
Comments: June 30, 2010
Comments: July 2, 2010
Comments: July 8, 2010

Construction:

Scale:	AS NOTED
Drawn By:	TJC
Checked By:	CMA
Project No.:	10 - 599.150

Sheet 12 of 15



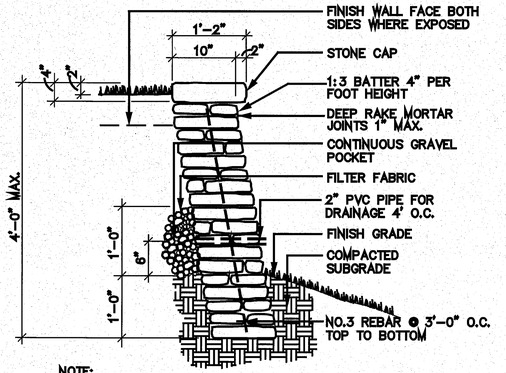
NOTES:
1. THIS DETAIL IS SCHEMATIC ONLY.
2. CONTRACTOR TO PROVIDE SEALED ENGINEERED SHOP DRAWINGS PRIOR TO CONSTRUCTION.

STONE RETAINING WALL 3' TO 6' TALL

NTS

NOTES:
1. THIS DETAIL IS SCHEMATIC ONLY.
2. CONTRACTOR TO PROVIDE SEALED ENGINEERED SHOP DRAWINGS PRIOR TO CONSTRUCTION.

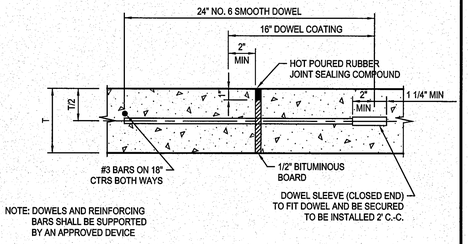
STEEL SCHEDULE:
REF: STRUCTURAL ENGINEER



NOTE:
STONE TYPE TO BE SELECTED

X STONE RETAINING WALL 3'-0" MAX.

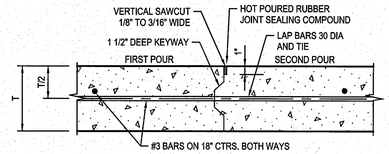
SCALE: N.T.S.



NOTE: DOWELS AND REINFORCING BARS SHALL BE SUPPORTED BY AN APPROVED DEVICE

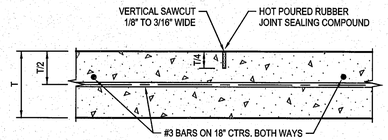
EXPANSION JOINT DETAIL

NTS MAXIMUM SPACING = 150 FEET



CONSTRUCTION JOINT DETAIL (L)

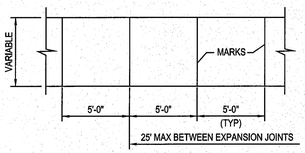
NTS



NTS MAXIMUM SPACING = 15 FEET

SAWED DUMMY JOINT DETAIL (T)

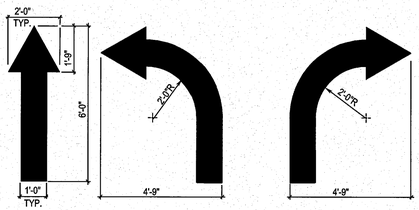
NOTE: REFERENCE ATTACHED TX-DOT RAMP DETAILS FOR ALL PEDESTRIAN (BFR) RAMPS.



NOTES:
1. AT MARKINGS THE CONCRETE SHALL BE A TOOLED JOINT 3/4" DEEP, FOLLOWED BY GROOVING TOOL. STRENGTH SHALL BE AS NOTED ON PAVING PLAN.

SIDEWALK PLAN

NTS

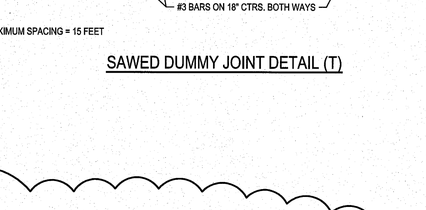


ALL FLOW ARROWS TO BE SOLID YELLOW REFLECTIVE TRAFFIC PAINT AS PER DIMENSIONS ABOVE.

REVERSE ARROWS FOR OPPOSITE DIRECTION OF FLOW.

PAINTED TRAFFIC ARROWS

NOT TO SCALE



* HOT-POURED RUBBER JOINT SEALING COMPOUND PER S.D.H.P.T. ITEM 360, SECTION 360.2 (8)(C), CLASS2 (GREY)

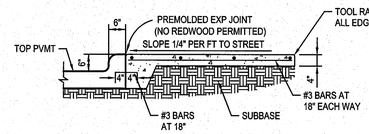
TO BE USED WHERE PROPOSED CONCRETE PAVEMENT MEETS EXISTING CONCRETE PAVEMENT

NOTES:
1. NO. 5 SMOOTH DOWEL BAR MAY BE USED IN 5", 6" AND 7" PAVEMENT THICKNESS.
2. LONGITUDINAL BUTT CONSTRUCTION MAY BE UTILIZED IN PLACE OF LONGITUDINAL HINGED (KEYWAY) JOINT AT CONTRACTOR'S OPTION.
3. DOWEL BARS SHALL BE DRILLED INTO PAVEMENT HORIZONTALLY BY USE OF A MECHANICAL RIG. DRILLING BY HAND IS NOT APPLICABLE. PUSHING DOWEL BARS INTO GREEN CONCRETE IS NOT ACCEPTABLE.

LONGITUDINAL BUTT DETAIL

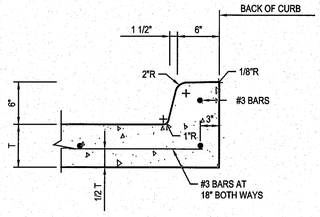
NTS

NOTE: NO SAND WILL BE PERMITTED UNDER PAVEMENT.



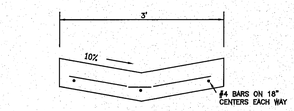
INTERIOR SIDEWALK TYPICAL SECTION

NTS



INTEGRAL CURB & GUTTER

NTS



FLUME SECTION

CAUTION!!!!
CONTACT:

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ATMOS	1-800-344-8377
AT&T:	1-800-344-8377
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TOWN OF ADDISON	972 - 450 - 2871

AT LEAST 48 HOURS PRIOR TO CONSTRUCTION

BENCHMARK:
TOWN OF ADDISON BENCHMARK 6, BRASS DISC SETON TOP OF EXISTING INLET, LOCATED ON THE EAST SIDE OF ADDISON ROAD, DIRECTLY EAST OF THE LOWER SCHOOL PLAYGROUNDS.
ELEV.= 639.88'

PAVING & RETAINING WALL DETAILS

SCALE: AS SHOWN

GLENN ENGINEERING
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TRINITY CHRISTIAN ACADEMY
DRAINAGE & DRIVE IMPROVEMENTS NEAR THE UPPER SCHOOL

PAVING & RETAINING WALL DETAILS

STATE OF TEXAS
THOMAS J. CASEY IV
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LICENSED PROFESSIONAL ENGINEER

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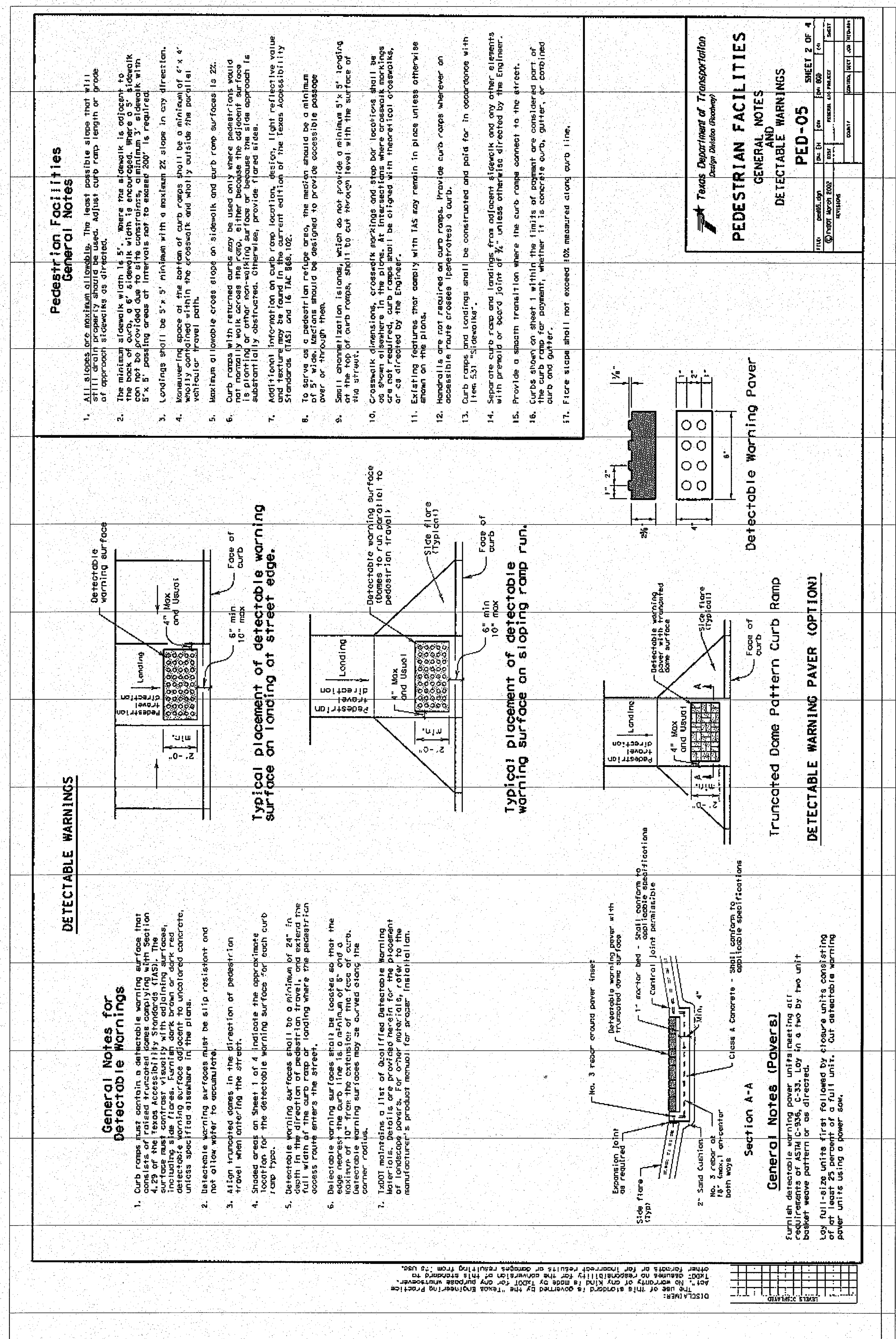
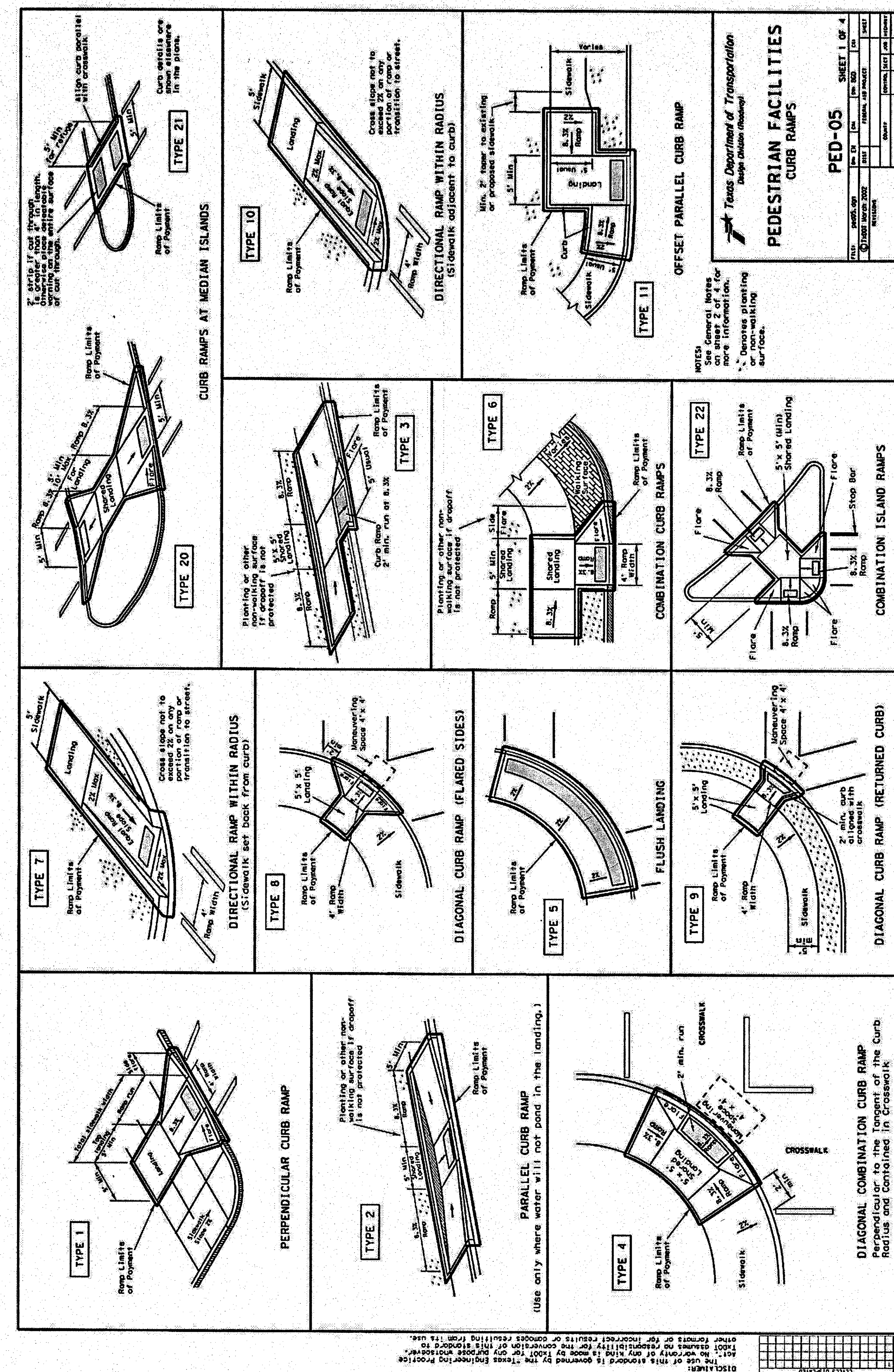
Sheet 13 of 15


Texas Department of Transportation
PEDESTRIAN FACILITIES
GENERAL NOTES AND DETECTABLE WARNINGS
PED-05
SHEET 2 OF 4
DETECTABLE WARNINGS
Pedestrian Facilities General Notes
General Notes for Detectable Warnings
Typical placement of detectable warning surface on landing at street edge.
Typical placement of detectable warning surface on sloping ramp run.
Truncated Dome Pattern Curb Ramp
DETECTABLE WARNING PAVER (OPTION)
Detectable Warning Paver
Section A-A
General Notes (Pavers)


Texas Department of Transportation
PEDESTRIAN FACILITIES
CURB RAMPS
PED-05
SHEET 1 OF 4
TYPE 1
PERPENDICULAR CURB RAMP
TYPE 2
PARALLEL CURB RAMP
TYPE 4
DIAGONAL COMBINATION CURB RAMP
TYPE 7
DIRECTIONAL RAMP WITHIN RADIUS
TYPE 8
DIAGONAL CURB RAMP (FLARED SIDES)
TYPE 5
FLUSH LANDING
TYPE 9
DIAGONAL CURB RAMP (RETURNED CURB)
TYPE 20
TYPE 21
CURB RAMPS AT MEDIAN ISLANDS
TYPE 3
TYPE 6
COMBINATION CURB RAMPS
TYPE 22
COMBINATION ISLAND RAMPS
TYPE 10
DIRECTIONAL RAMP WITHIN RADIUS
TYPE 11
OFFSET PARALLEL CURB RAMP

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105 DECKER COURT-SUITE 910 IRVING, TEXAS 75062

TRINITY CHRISTIAN ACADEMY

DRAINAGE & DRIVE IMPROVEMENTS NEAR THE UPPER SCHOOL

BFR DETAILS SHEET 1

STATE OF TEXAS
THOMAS J. CASEY IV
86213
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Issue Dates:
Review: June 23, 2010

Construction:

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Drawn By:	TJC
Checked By:	CMA
Project No.:	10 - 599.150

Sheet 14
of 15

USE 8'-0"

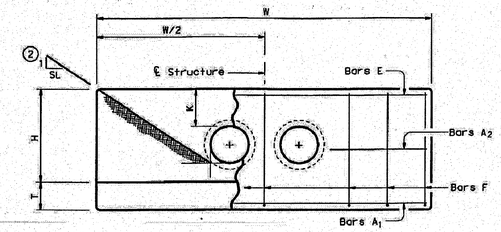
TABLE OF VARIABLE DIMENSIONS AND QUANTITIES FOR ONE HEADWALL (4)

SLOPE	DIA OF PIPE, D	Values for one Pipe W	Reinf (Lbs)	Conc (CY) (1)	Values to be added for each add'l Pipe W	Reinf (Lbs)	Conc (CY) (1)
2:1	12"	9'- 0"	122	1.1	1'- 9"	15	0.2
	15"	10'- 3"	135	1.3	2'- 2"	16	0.2
	18"	11'- 6"	163	1.5	2'- 8"	19	0.3
	21"	12'- 9"	200	1.8	3'- 1"	31	0.4
	24"	14'- 0"	217	2.1	3'- 7"	34	0.4
	27"	15'- 3"	254	2.4	3'-11"	37	0.5
	30"	16'- 6"	272	2.7	4'- 4"	40	0.6
	33"	17'- 9"	314	3.1	4'- 8"	43	0.6
	36"	19'- 0"	371	3.9	5'- 1"	46	0.8
	42"	21'- 6"	442	4.9	5'-10"	52	1.0
	48"	25'- 0"	569	6.4	6'- 7"	59	1.3
	54"	27'- 6"	701	7.5	7'- 6"	82	1.6
	60"	30'- 0"	794	8.8	8'- 3"	90	1.8
	66"	32'- 6"	894	10.2	8'- 9"	96	2.0
	72"	35'- 0"	1055	11.7	9'- 4"	103	2.3
3:1	12"	13'- 0"	175	1.6	1'- 9"	14	0.2
	15"	14'- 9"	193	1.9	2'- 2"	17	0.2
	18"	16'- 6"	228	2.2	2'- 8"	19	0.3
	21"	18'- 3"	299	2.6	3'- 1"	31	0.4
	24"	20'- 0"	323	3.0	3'- 7"	33	0.4
	27"	21'- 9"	371	3.5	3'-11"	37	0.5
	30"	23'- 6"	415	4.0	4'- 4"	40	0.5
	33"	25'- 3"	469	4.6	4'- 8"	43	0.6
	36"	27'- 0"	556	5.7	5'- 1"	46	0.8
	42"	30'- 6"	675	7.1	5'-10"	52	1.0
	48"	35'- 6"	837	9.2	6'- 7"	59	1.3
	54"	39'- 0"	1015	11.0	7'- 6"	84	1.6
	60"	42'- 6"	1171	12.9	8'- 3"	91	1.8
	66"	46'- 0"	1298	14.9	8'- 9"	98	2.0
	72"	49'- 6"	1561	17.1	9'- 4"	103	2.3
4:1	12"	17'- 0"	229	2.0	1'- 9"	15	0.2
	15"	19'- 3"	266	2.4	2'- 2"	17	0.2
	18"	21'- 6"	308	2.9	2'- 8"	19	0.3
	21"	23'- 9"	382	3.5	3'- 1"	31	0.3
	24"	26'- 0"	430	3.9	3'- 7"	34	0.4
	27"	28'- 3"	486	4.7	3'-11"	37	0.5
	30"	30'- 6"	539	5.2	4'- 4"	40	0.6
	33"	32'- 9"	603	6.0	4'- 8"	42	0.6
	36"	35'- 0"	738	7.5	5'- 1"	47	0.8
	42"	39'- 6"	881	9.3	5'-10"	52	1.0
	48"	46'- 0"	1102	12.1	6'- 7"	61	1.3
	54"	50'- 6"	1364	14.4	7'- 6"	84	1.6
	60"	55'- 0"	1547	16.9	8'- 3"	91	1.8
	66"	59'- 6"	1741	19.5	8'- 9"	98	2.0
	72"	64'- 0"	2069	22.4	9'- 4"	102	2.3
6:1	12"	25'- 0"	336	3.0	1'- 9	14	0.2
	15"	28'- 3"	384	3.6	2'- 2"	17	0.2
	18"	31'- 6"	452	4.2	2'- 8"	19	0.3
	21"	34'- 9"	581	5.1	3'- 1"	31	0.4
	24"	38'- 0"	644	5.8	3'- 7"	34	0.4
	27"	41'- 3"	737	6.9	3'-11"	37	0.5
	30"	44'- 6"	807	7.7	4'- 4"	39	0.6
	33"	47'- 9"	912	8.9	4'- 8"	44	0.6
	36"	51'- 0"	1108	11.0	5'- 1"	48	0.8
	42"	57'- 6"	1318	13.7	5'-10"	54	1.0
	48"	67'- 0"	1674	17.9	6'- 7"	59	1.3
	54"	73'- 6"	2064	21.3	7'- 6"	83	1.6
	60"	80'- 0"	2343	24.9	8'- 3"	89	1.8
	66"	86'- 6"	2635	28.9	8'- 9"	96	2.0
	72"	93'- 0"	3123	33.1	9'- 4"	101	2.3

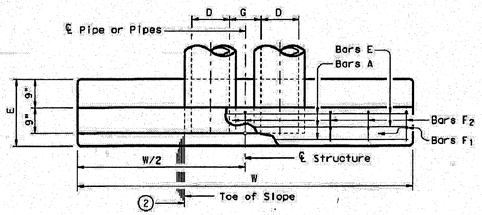
DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty by the Department is made or implied for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

ACC:

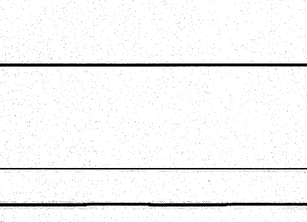
EXHIBIT DISPLAYED



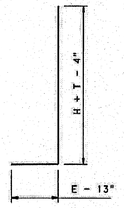
ELEVATION



PLAN OF NON-SKEWED PIPES



℄ SECTION



BARS F2

TABLE OF CONSTANT DIMENSIONS

DIA OF PIPE, D	G	K	H	T	E
12"	9"	1'- 0"	2'- 8"	9"	1'- 9"
15"	11"	1'- 0"	2'-11"	9"	1'- 9"
18"	1'- 2"	1'- 0"	3'- 2"	9"	1'- 9"
21"	1'- 4"	1'- 0"	3'- 5"	9"	2'- 0"
24"	1'- 7"	1'- 0"	3'- 8"	9"	2'- 0"
27"	1'- 8"	1'- 0"	3'-11"	9"	2'- 3"
30"	1'-10"	1'- 0"	4'- 2"	9"	2'- 3"
33"	1'-11"	1'- 0"	4'- 5"	9"	2'- 6"
36"	2'- 1"	1'- 0"	4'- 8"	1'- 0"	2'- 6"
42"	2'- 4"	1'- 0"	5'- 2"	1'- 0"	2'- 9"
48"	2'- 7"	1'- 3"	5'-11"	1'- 0"	3'- 0"
54"	3'- 0"	1'- 3"	6'- 5"	1'- 0"	3'- 3"
60"	3'- 3"	1'- 3"	6'-11"	1'- 0"	3'- 6"
66"	3'- 3"	1'- 3"	7'- 5"	1'- 0"	3'- 9"
72"	3'- 4"	1'- 3"	7'-11"	1'- 0"	4'- 0"

TABLE OF REINFORCING STEEL (4)

Bar	Size	Spa	No.
A1	# 5	-	2
A2	# 5	1'-6"	-
E	# 5	-	2
F	# 5	1'-0"	-

GENERAL NOTES:

Designed according to AASHTO LRFD Specifications.

Reinforcing steel shall be placed with the center of the outside layer of bars 2" from the surface of the concrete.

All reinforcing steel shall be Grade 60.

All concrete shall be Class "C" and shall have a minimum compressive strength of 3600 psi.

No bridge rails of any type may be mounted directly to these culvert headwalls.

(1) Quantities shown are for concrete pipe and will increase slightly for metal pipe installations.

(2) Indicated slope is perpendicular to centerline Pipe or Pipes.

(3) For vehicle safety, curbs shall project no more than 3" above finished grade. Curb heights shall be reduced, if necessary, to meet these requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

(4) Quantities shown are for one structure end only (one headwall).

Texas Department of Transportation
Bridge Division

CONCRETE HEADWALLS WITH PARALLEL WINGS FOR NON-SKEWED PIPE CULVERTS

CH-PW-0

FILE: chpw0ste.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: CAF
©TxDOT February 2010	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	COUNTY	CONTROL	SECT	JOB	HIGHWAY

CAUTION!!!!
CONTACT:

DIG TESS	1-800-344-8377
ATMOS	1-800-344-8377
AT&T:	1-800-344-8377
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SOUTHWESTERN BELL:	1-800-344-8377
TOWN OF ADDISON	972 - 450 - 2871

AT LEAST
48 HOURS PRIOR TO CONSTRUCTION

BENCHMARK:
TOWN OF ADDISON BENCHMARK 6, BRASS DISC SETON TOP OF EXISTING INLET, LOCATED ON THE EAST SIDE OF ADDISON ROAD, DIRECTLY EAST OF THE LOWER SCHOOL PLAYGROUNDS.
ELEV.= 639.88'

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IRVING, TEXAS 75062
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TRINITY CHRISTIAN ACADEMY
DRAINAGE & DRIVE IMPROVEMENTS NEAR THE UPPER SCHOOL

TXDOT TYPE "A" HEADWALL DETAILS

STATE OF TEXAS
THOMAS J. CASEY IV
86213
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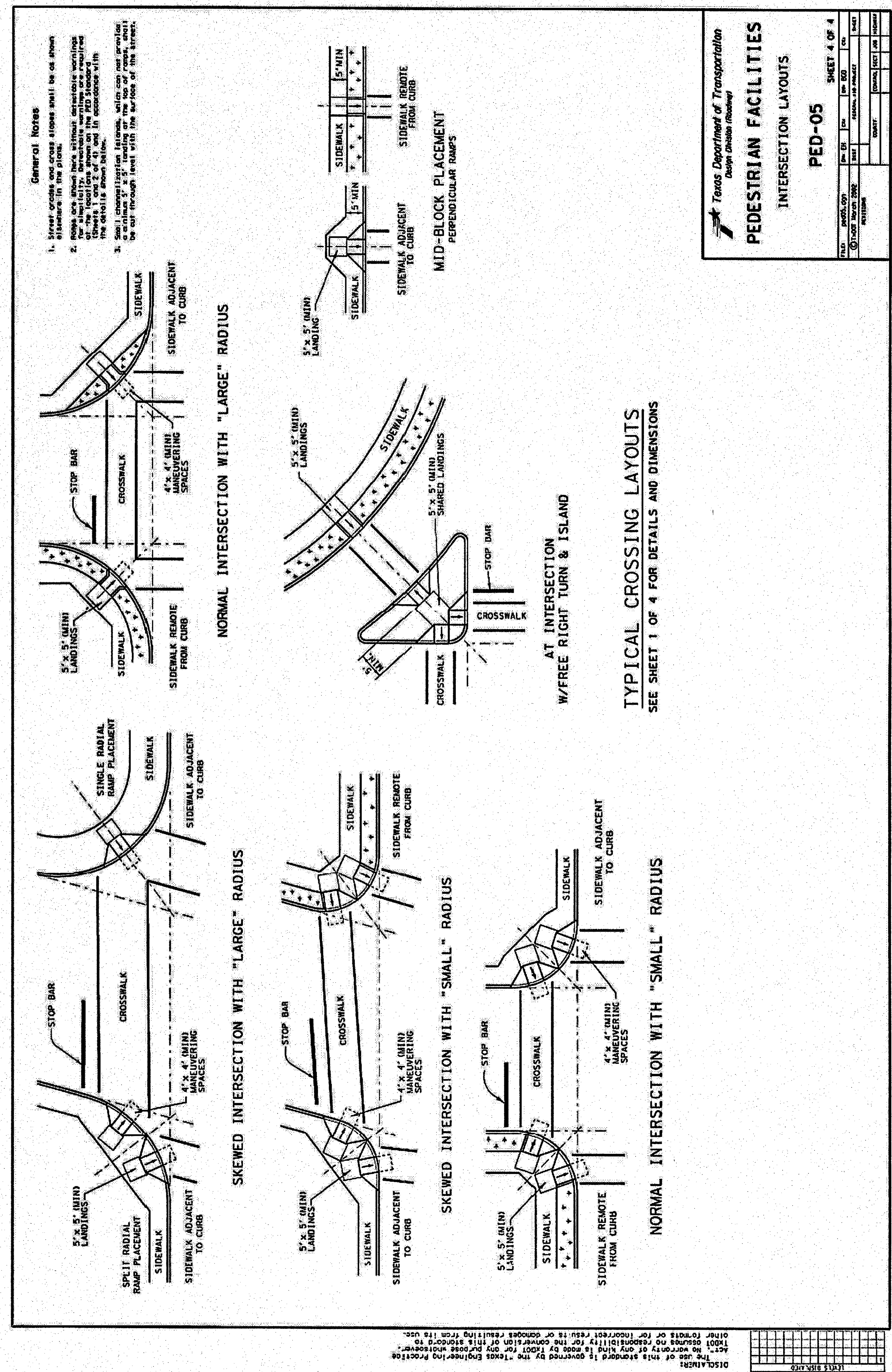
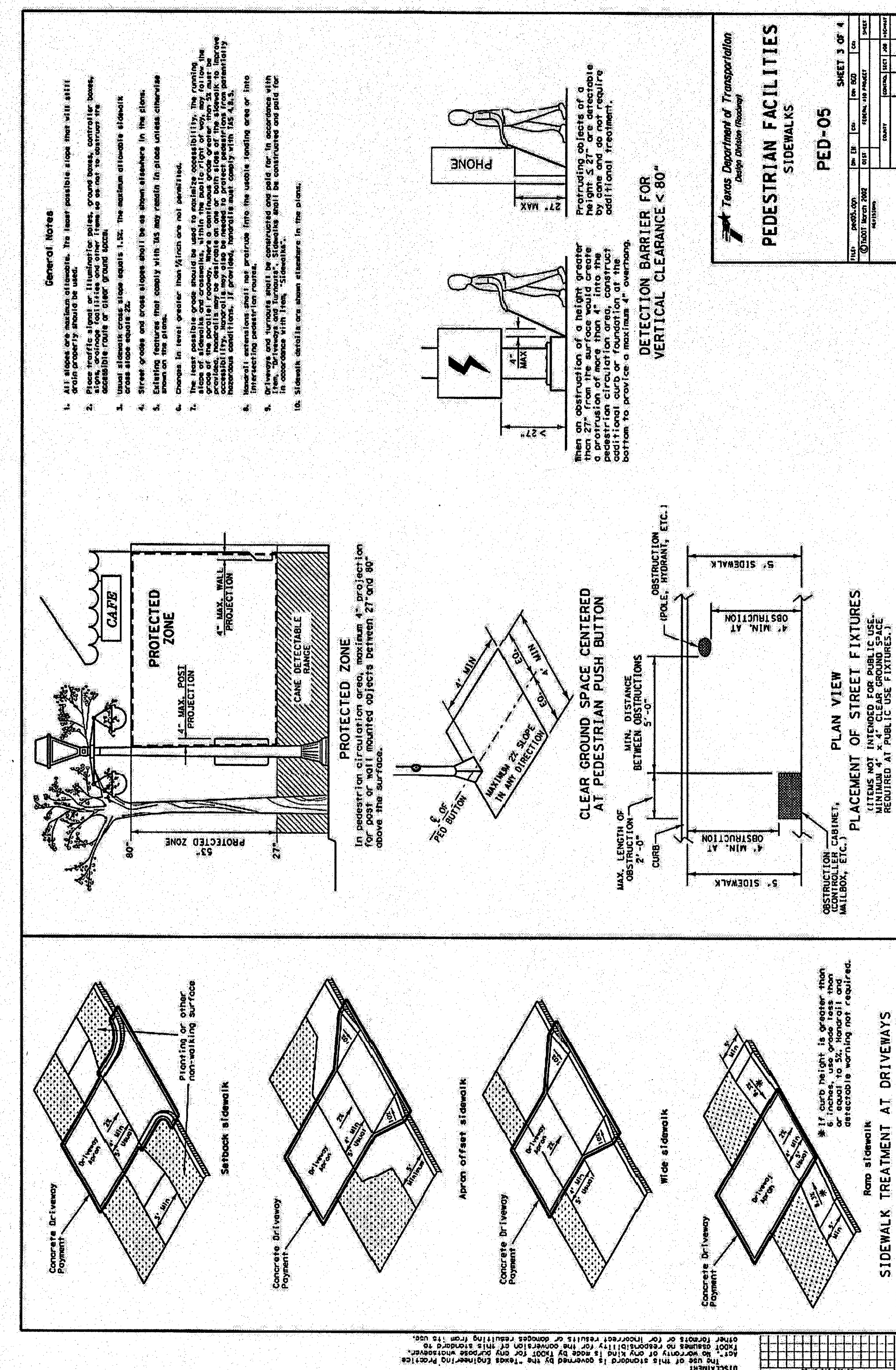
Sheet 15A
of 15


PEDESTRIAN FACILITIES
INTERSECTION LAYOUTS
PED-05
TYPICAL CROSSING LAYOUTS
SEE SHEET 1 OF 4 FOR DETAILS AND DIMENSIONS
NORMAL INTERSECTION WITH "LARGE" RADIUS
SKEWED INTERSECTION WITH "LARGE" RADIUS
SKEWED INTERSECTION WITH "SMALL" RADIUS
NORMAL INTERSECTION WITH "SMALL" RADIUS
AT INTERSECTION W/FREE RIGHT TURN & ISLAND
MID-BLOCK PLACEMENT PERPENDICULAR RAMPS



CAUTION!!!!
CONTACT:

DIG TESS	1-800-344-8377
ATMOS	1-800-344-8377
AT&T:	1-800-344-8377
TXU:	1-800-344-8377
SOUTHWESTERN BELL:	1-800-344-8377
TOWN OF ADDISON	972 - 450 - 2871

AT LEAST
48 HOURS PRIOR TO CONSTRUCTION

BENCHMARK:
TOWN OF ADDISON BENCHMARK 6, BRASS DISC SETON TOP OF EXISTING INLET, LOCATED ON THE EAST SIDE OF ADDISON ROAD, DIRECTLY EAST OF THE LOWER SCHOOL PLAYGROUNDS.
ELEV.= 639.88'

GLENN ENGINEERING
T.B.P.E. FIRM # F - 303
PHONE 972-717-5151
105 DECKER COURT-SUITE 910
FAX 972-717-2176
IRVING, TEXAS 75062

TRINITY CHRISTIAN ACADEMY
DRAINAGE & DRIVE IMPROVEMENTS NEAR THE UPPER SCHOOL

BFR DETAILS SHEET 2

STATE OF TEXAS
THOMAS J. CASEY
86213
LICENSED PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY THOMAS J. CASEY IV, P.E. 86213, ON JUNE 23, 2010

Issue Dates:
Review: June 23, 2010

Construction:

Scale:	AS NOTED
Drawn By:	TJC
Checked By:	CMA
Project No.:	10 - 599.150

Sheet 15
of 15